



# National Pollutant Discharge Elimination System Permits Consent Decree **2015 Annual Report**

**Metropolitan Water Reclamation District of Greater Chicago**






# Introduction

Metropolitan Water Reclamation District of Greater Chicago (District) National Pollutant Discharge Elimination System (NPDES) Permits Consent Decree (Civil Action No. 11 C 8859)—2015 Annual Report

This report is being submitted to comply with the District's Consent Decree entered on January 6, 2014. Per the Consent Decree, this required Annual Report is for calendar year 2015 and is due March 30, 2016.





*In July, 2015, the District introduced disinfection via chlorination and dechlorination to its treatment process at the Calumet Water Reclamation Plant. The new step reduced the amount of pathogenic bacteria in the water released into the Calumet River system to improve water quality and reduce health risk resulting from contact with the water while recreating on a waterway.*

**Per Section XII.44.a of the District's Consent Decree, this pre-TARP completion annual report transmits the following information:**

- 1.** Status of Design and Construction Activities (Consent Decree Section V) and Reservoir Mining Progress for Thornton Composite and McCook Reservoirs.
- 2.** Combined Sewer Overflow (CSO) Quarterly Discharge Reports submitted to the Illinois Environmental Protection Agency (IEPA) for calendar year 2015.
- 3.** 2015 Water Quality Data for Waterway Systems within the District's Jurisdiction.
- 4.** Record of Floatable Control Activities (Consent Decree Paragraph 18 and Appendix B).
- 5.** Green Infrastructure (GI) Activities (Consent Decree Section V of Appendix E).

This Annual Report for calendar year 2015 is intended to demonstrate satisfactory compliance with the Annual Reporting obligation of the District per the Consent Decree entered on January 6, 2014.

In addition to the above, the District would like to note that it is in compliance with Section II, Paragraph 5 of the Consent Decree, which requires the District to transmit copies of the Consent Decree to its officers, employees, and agents, as well as to CSO municipalities and its contractors. Letters were transmitted to all of the parties and a copy of the Consent Decree has been posted on the District's website. Language regarding the Consent Decree continues to be included in all contracts where the required work may impact the ability of the District to comply with the terms and conditions of the Consent Decree.

Also, as required in Section V of the Consent Decree, the District remitted the civil penalty to both the IEPA and USEPA within 30 days from the date the Court entered the Consent Decree.









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## McCook and Thornton Composite Reservoir March 2016 Progress Report

*Beginning on November 26, 2015, the Thornton Composite Reservoir began to fill for the first time. It reached 17 feet and contained 400 million gallons of combined sewer overflow prior to being transported by tunnel for treatment at the Calumet Water Reclamation Plant.*



This report provides an update on the progress of the McCook and Thornton Composite Reservoirs as required in the Consent Decree paragraphs 21 and 44.

## McCook Reservoir

The District owns the land for the McCook Reservoir, which will be built within the Lawndale Avenue Solids Management Area (LASMA). A Project Cooperation Agreement (PCA) with the US Army Corps of Engineers (Corps) to construct, operate, and maintain the reservoir was signed on May 10, 1999. Under the PCA, the Corps is responsible for designing and constructing the reservoir features, and the District is responsible for providing lands,

easements, right-of-way, and relocations, including providing the storage capacity for the reservoir through excavation of overburden and rock mining. The reservoir is planned to be completed in two stages. The first stage will provide 3.5 billion gallons of storage and the second stage will expand the total capacity to 10 billion gallons of storage.

### District Work

**In order to accomplish its responsibilities under the PCA, the District has initiated a number of projects which are described below, along with their status.**

**DECOMMISSIONING OF LOW SOLIDS LAGOONS:** Seventeen of the District's biosolids stabilization and drying lagoons were decommissioned to provide the land necessary for constructing the reservoir.

**WILLOW SPRINGS BERM (96-149-2P):** Approximately 300,000 cubic yards of the reservoir overburden was hauled off-site in a test project and placed as a berm along the canal.

**SITE PREPARATION (73-161-BH):** Sludge lines that cut through the reservoir footprint were relocated, and earthwork was performed to drain the reservoir footprint to facilitate future work. This work commenced in July 1999 and was the start of construction work for the McCook Reservoir.

**CONVEYANCE TUNNEL (73-161-AH):** This tunnel was constructed to connect LASMA to Vulcan's McCook Quarry and is used to transport the crushed rock to the Vulcan processing plant.

**STAGES 1 AND 2 OVERBURDEN REMOVAL (73-161-CH):** Approximately 7.3 million cubic yards of overburden was removed from the footprint of

the original Stage 1 and 2 McCook Reservoir sites to expose the top of rock for mining.

**MISCELLANEOUS OVERBURDEN REMOVAL (73-161-JH):** An additional 450,000 cubic yards of overburden was removed from the site under this contract.

**EXPANDED STAGE 2 OVERBURDEN REMOVAL (73-161-DH):** The remaining 1.8 million cubic yards of overburden overlying the rock in the expanded Stage 2 portion of the reservoir has now been removed, fulfilling the District's obligations from Paragraph 17.d. of the Consent Decree ahead of schedule.

**VULCAN CONVEYANCE SYSTEM AND MAINTENANCE FACILITIES (73-161-FH):** Mining facilities were constructed to crush and transport the rock from the reservoir site to the existing Vulcan Quarry. The contract included construction of the conveyance system, the office and maintenance buildings, installation of a rock crusher, relocation of the LASMA access road and sludge lines, and miscellaneous site work (access ramp, parking



*The Mainstream Tunnel at the McCook Reservoir is currently under construction and will be completed by 2017. It will connect the reservoir to the Mainstream Pumping Station.*



area, site lighting). The crusher was purchased separately in advance due to the long lead time.

**VULCAN MINING EQUIPMENT (73-161-GH AND 73-161-HH):** A fleet of mining trucks and other mining equipment were procured to facilitate mining of the reservoir.

**MINING (73-161-EH):** The District entered into an agreement with Vulcan on October 1, 2003, to mine the rock to create the storage capacity required for the original two stage reservoir. Terms of the Agreement require Vulcan to mine at the same production rates they would have achieved at the existing quarry to meet the market demand.

- ✓ Mining for Stage 1 commenced in 2008 and was approximately 84 percent complete at the end of 2015. Paragraph 17.a. of the Consent Decree requires that the Stage 1 mining be completed by December 31, 2016.
- ✓ A mining ramp into Stage 2 was initiated in 2013 and production mining began in 2014, concurrent with Stage 1 mining. Approximately

10 percent of the stone from Stage 2 had been mined by the end of 2015. Paragraph 17.e. of the Consent Decree requires that the Stage 2 mining be completed by December 31, 2028.

The overall market for stone has been improving in the Chicagoland area. While still below the long term average stone production rates at McCook, 2015 removal rates were again the highest since the reservoir project began in 2008. The poor quality of stone in the lower level of Stage 1 has limited its marketability; as a result, significant quantities of stone were mined from Stage 2. In order to maintain a schedule which will allow for an on-time completion of the reservoir, Vulcan has agreed to mine at a rate that exceeds market demand and dispose of the excess poor quality material on their property. Currently, mining of Stage 1 and Stage 2 are still expected to be completed by December 31, 2016 and December 31, 2028, respectively. Vulcan's annual mining progress report for 2015 was transmitted to the IEPA and USEPA within 30 days of receipt (per paragraph 21 of the Consent Decree).

## Corps Work

**The following projects have been completed or are being pursued by the Corps for the Stage 1 McCook Reservoir:**

**TEST GROUT CURTAIN:** A test grout curtain was constructed along 400 linear feet of the reservoir perimeter to test the effectiveness of a grout curtain to prevent polluted water in the reservoir from migrating into the groundwater aquifer.

**STAGE 1 GROUT CURTAIN:** Based on the performance of the Test Grout Curtain, a grout curtain was constructed around the north and west sides of the reservoir perimeter to create a full hydraulic barrier between the reservoir rock walls and surrounding groundwater.

**STAGE 1 GROUNDWATER CUT-OFF WALL:** A bentonite slurry wall was constructed through the overburden, around the perimeter of Stage 1 of the reservoir, to prevent migration of groundwater into the reservoir.

**ADDITION OF PUMPS AND MOTORS:** Two additional 330 cubic feet per second pumps were installed at the Mainstream Pumping Station to provide adequate pumping capacity to dewater the reservoir to the Stickney Water Reclamation Plant.

**DISTRIBUTION TUNNEL SYSTEM:** Tunnels and an underground control chamber were installed to connect the future reservoir to the Mainstream Pumping Station.

**DISTRIBUTION TUNNELS EMERGENCY WORK:** Due to excessive infiltration in the new Distribution Chamber from the Distribution Tunnels, emergency leakage investigation and repair work was completed.

**DISTRIBUTION TUNNELS FOLLOW-ON CONTRACT:** Corroded equipment in the Distribution Chamber will need to be replaced and new communication for fire and gas alarms installed. This work began in 2015 and will continue throughout 2016.

**The following projects have been completed or are being pursued by the Corps to complete the Stage 2 McCook Reservoir:**

**STAGE 2 GROUT CURTAIN:** Based on the performance of the Test Grout Curtain Contract, a grout curtain was constructed around the south and east sides of the reservoir perimeter to create a full hydraulic barrier between the reservoir rock walls and surrounding groundwater.

**STAGE 2 GROUNDWATER CUT-OFF WALL:** A bentonite slurry wall was constructed through the overburden, around the perimeter of Stage 2 of the reservoir, to prevent migration of groundwater into the reservoir.

**STAGE 2 ROCKWALL STABILITY CONTRACTS:** As the final vertical rock faces of the reservoir are exposed, scaling, rock bolting, or other ground

**STAGE 1A AND 1B ROCKWALL STABILITY CONTRACTS:** As the final vertical rock faces of the reservoir are exposed, scaling, rock bolting, and other ground support is installed as required to make the permanent walls stable. This work was completed under two separate contracts for Stage 1 of the reservoir.

**STAGE 1 OVERBURDEN RETAINING WALLS:** Retaining walls were constructed in several areas of Stage 1 where the top of rock is lower than expected, in order to allow the footprint of the reservoir to be mined; due to time constraints, the District did part of this work. This work is completed.

**MAIN TUNNELS AND GATES:** The Mainstream Tunnel will be connected to the reservoir by a new set of tunnels and control gates. This work was split among three contracts: one to fabricate the gates, another to excavate the main shaft, and the third to complete the tunnels and install the gates in the shaft. The fabrication of the gates and the main shaft excavation are completed and the third contract to complete the tunnels and install the gates is underway with completion expected in 2017.

**FINAL RESERVOIR PREP:** Final connections to the reservoir will be made, including completion of the Distribution Tunnel and Outlet Structure. Floor drainage, reservoir aeration, ramps, roads, and other miscellaneous work will be completed under this contract which was awarded in 2015 and is scheduled for completion in 2017.

**INSTRUMENTATION AND GROUNDWATER MONITORING WELLS:** Groundwater monitoring wells, piezometers, inclinometers, and other instrumentation will be provided to monitor the reservoir under several different contracts. The groundwater monitoring wells and instrumentation for Stage 1 have been installed and are now functioning.

support will be installed as required to make the permanent walls stable. This work is under construction.

**STAGE 2 OVERBURDEN RETAINING WALL:** A retaining wall is being constructed in several areas to hold back the overburden and allow the footprint of the reservoir to be mined.

**STAGE 2 MISCELLANEOUS FLOOR FEATURES:** Drainage improvements to the reservoir floor and reservoir aeration provisions will be provided after the mining is completed.



## Thornton Composite Reservoir

The Thornton Composite Reservoir currently provides 7.9 billion gallons of storage for combined sewage from the Calumet TARP Service Area. In the future, flood waters from Thorn Creek will also be diverted to the Thornton Composite Reservoir when the Thornton Transitional Reservoir is decommissioned. Design and construction of the Thornton Composite Reservoir was planned to be a joint venture between the Corps and the District. However, due to uncertainties in federal funding that threatened to deprive the Corps of appropriations sufficient to work on both the McCook and Thornton projects simultaneously, the District committed to proceed with the Corps work on the Thornton Composite Reservoir using the District's own resources in 2004 at a total cost of approximately \$420 million. The following projects were completed as part of construction of Thornton Composite Reservoir:

**VINCENNES AVENUE RELOCATION (77-235-AF):** Approximately 2,500 feet of roadway that cut through the footprint of the reservoir was relocated in order to provide the required storage volume.

**THORNTON TRANSITIONAL RESERVOIR (77-235-BF):** This temporary reservoir was constructed to provide floodwater storage for Thorn Creek while the Thornton Composite Reservoir was being constructed. At the end of 2020, the Thorn Creek flood water will be rerouted to the composite reservoir and the transitional reservoir will be decommissioned and turned back over to the quarry. At that time, the reservoir volume allocated for capturing CSOs will be 4.8 billion gallons while the remaining 3.1 billion gallons will be allocated for floodwater storage from Thorn Creek. Many of the facilities constructed for the transitional reservoir will be reused at the composite reservoir.

**MINING (77-235-2F):** The District entered into an agreement with Material Service Corporation (MSC) to purchase a portion of its existing rock quarry to be used for the reservoir. Under the agreement, MSC expanded their existing quarry to neighboring lands purchased by the District in order to achieve the required storage volume. Mining for the Thornton Composite Reservoir was completed in 2013, in fulfillment of the requirements outlined in Paragraph 16.a. of the Consent Decree.

**TOLLWAY DAM, GROUT CURTAIN AND QUARRY PLUGS (04-201-4F):** The south side of the reservoir is a rock dam that separates the reservoir from the rest of the quarry and carries the I-80/294 Tollway. A large opening and two haul tunnels in this wall were plugged to hydraulically isolate the reservoir from the quarry. Also, as part of this contract, a grout curtain was constructed around the entire reservoir perimeter, creating a hydraulic barrier and providing stability to the rock dam. This contract was completed in 2015 as required in Paragraph 16.b. of the Consent Decree.

**CONNECTING TUNNELS AND GATES (04-202-4F):** The existing TARP tunnels were extended to connect to the reservoir. A large gate chamber was constructed to allow for isolation of the tunnels from the reservoir. This contract work was completed in 2015 as required in Paragraph 16.c. of the Consent Decree.

**SURFACE AERATION (04-203-AF):** Floating solar aerators were installed in the reservoir to mitigate odors that may come from the reservoir. This contract was completed in 2015. An additional thirteen floating solar aerators are currently being procured and will be installed in the reservoir.

**FINAL RESERVOIR PREPARATION (04-203-4F):** All remaining items required for operation of the Thornton Composite Reservoir such as the future Thorn Creek tunnel connection, live connections to the existing Thorn Creek tunnel, creating a drainage conduit in the Thorn Creek tunnel, site landscaping and stabilization of the finished reservoir walls was completed under this contract in 2015, and the reservoir was placed in operation as required in Paragraph 16.d. of the Consent Decree.

The Thornton Composite Reservoir became operational January 1, 2016. Before the gates were fully operational at the end of 2015, the reservoir took water for the first time on November 26 and 27, 2015. Approximately 1.16 inches of rain was recorded in the Thornton Service Area during this storm. The reservoir filled approximately 15 feet and captured approximately 653 million gallons of combined sewer overflows in the tunnels and reservoirs.







*A ribbon cutting ceremony was held to great fanfare at the Thornton Composite Reservoir on September 1, 2015.*









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## Combined Sewer Overflow Quarterly Discharge Reports submitted to the IEPA for Calendar Year 2015

*Kayakers enjoy a day on the North Branch of the Chicago River.*









**“CSO monitoring reports and other CSO-related reports submitted to Illinois EPA including, but not limited to, all documentation of water quality data for the waterway systems within MWRD’s jurisdiction, as required by the Calumet, North Side, and Stickney NPDES Permits.” (44(a)(iii))**

### **CSO Monitoring**

The District utilizes its approved CSO Representative Monitoring and Reporting Plans for the North, Central, and South Areas to track the frequency, duration, and volume of individual CSOs within the Des Plaines River and Chicago Area Waterway System (Plans on the enclosed CD).

In summary, the District monitors 221 (28 permitted to the District; 193 permitted to the City of Chicago and Suburbs) of the 394 (39 permitted to the District; 355 permitted to the City of Chicago and Suburbs) total outfalls within its service area. Most of the monitored outfalls have tide gates with telemetry; however, there are six monitored outfall locations permitted to the District that are pump stations. Unmonitored outfalls are assumed to discharge when select monitored ones discharge because of similar invert elevations. Signals are transmitted to the Stickney and Calumet Water Reclamation Plants (WRPs) when the outfall tide gate is open and assumed to be discharging. Plant staff is also aware when the pumps are activated at the six pump stations. Volume estimates at six pump station locations are based on pump ratings and run times while volume estimates at the other outfall locations are performed via a conservative method which assumes that **all** rainfall that falls during the period that a tide gate is open is being discharged to the waterway. These discharge volumes are then compared to two boundary conditions: (1) total area rainfall volume and (2) outfall pipe capacity. The minimum of these three values are used as the final discharge volumes.

CSO Quarterly Discharge Reports submitted to the IEPA for calendar year 2015 are on the enclosed CD.

*The main stem of the Chicago River at Lake Michigan, flowing through the heart of downtown Chicago. The river is a popular destination for tourists and residents.*









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## 2015 Water Quality Data for Waterway Systems within the District's Jurisdiction

*The District's Monitoring and Research vessel samples water quality along the south branch of the Chicago River.*









“CSO monitoring reports and other CSO-related reports submitted to Illinois EPA including, but not limited to, **all documentation of water quality data for the waterway systems within MWRD’s jurisdiction**, as required by the Calumet, North Side, and Stickney NPDES Permits.” (44(a)(iii))

The District conducts Ambient Water Quality Monitoring (AWQM) and Continuous Dissolved Oxygen Monitoring (CDOM) on the Chicago Area Waterway System (CAWS).

In 2015, AWQM was conducted monthly at fifteen locations (weekly at Lockport) on the CAWS in accordance with the attached Quality Assurance Project Plan (See [Appendix A](#) on the enclosed CD). A spreadsheet containing the water quality data generated from this monitoring is submitted as [Attachment 1](#) on the enclosed CD.

The CAWS Use Attainability Analysis (IPCB Rulemaking R08-009) resulted in more stringent water quality standards for the CAWS, effective July 1, 2015, based on new CAWS A and CAWS B Aquatic Life Use designations. The CAWS exhibited high compliance with water quality standards. Of the parameters analyzed that had applicable water quality standards, only dissolved oxygen (DO), fecal coliform, and low-level mercury (human health criteria) were exceeded more than once at any station.

In 2015, CDOM was conducted at fourteen locations on the CAWS in accordance with the attached Quality Assurance Project Plan (See [Appendix B](#) on the enclosed CD). A spreadsheet containing the hourly dissolved oxygen data generated from this monitoring is submitted as [Attachment 2](#) on the enclosed CD.

The District submitted a petition for variance related to the more stringent DO water quality standards for the CAWS, resulting in a stay of the DO standards that would otherwise have been effective July 1, 2015. As such, most CAWS waterways were subject to the Secondary Contact and Indigenous Aquatic Life Use DO water quality standard of 4.0 mg/L, with the exception of the Cal-Sag Channel, which had a DO standard of 3.0 mg/L, anytime, and the Chicago River, which was subject to General Use Standards. The DO concentration was greater than the applicable water quality standard over 95 percent of the time on an annual basis at 9 out of 14 stations on the CAWS.

A draft of the Calumet TARP System Post Construction Monitoring Plan was submitted to the required agencies on November 7, 2014 in accordance with Section IX, paragraph 35a of the Consent Decree. Discussions regarding the proposal plan were ongoing in 2015 and continue into 2016.

*Monitoring the Chicago Area Waterways System along the main stem of the Chicago River.*









## Record of Floatable Control Activities

*The new skimmer boat "Skimmy Dipper" collects debris near the new riverwalk along the main stem of the Chicago River in downtown Chicago.*



*The "Skim Pickens" and "Skimmy Dipper" take to the South Branch of the Chicago River after being christened during a ceremony near Ping Tom Memorial Park in Chicago in May 2015. The two new skimmers are manned by two crew members from the Metropolitan Water Reclamation District of Greater Chicago to help collect debris from the waterways.*







The following is a record of floatable control activities undertaken pursuant to the Consent Decree Paragraph 18 and Appendix B:

**Dates of purchase and commencement of operations of each skimmer boat:**

- ✓ The two skimmer boats were procured under Contract 13-611-21, "Furnish and Deliver Trash Collection Boats to the Stickney Water Reclamation Plant." The boats were delivered on January 2, 2015 and commenced operations on April 6, 2015.

**The dates on which each skimmer boat, pontoon boat, or other piece of equipment was operated:**

- ✓ A spreadsheet on the enclosed CD, entitled [Summary of 2015 Floatable Control Activities](#), is a summary of data collected for debris and pontoon boat operations.
- ✓ Additionally, scanned copies of the log for each day a boat was in operation is also transmitted on the enclosed CD.

**Status of Combined Sewer Overflow Floatables Control in Addison Creek:**

The final design of the floatables control boom is complete and the District continues the process of obtaining necessary easements from local agencies. The boom will be installed upon receipt of the easements. The necessary permits from the regulatory authorities have been obtained. The following is the summary:

- ✓ In late September 2014, the District spoke to the Village of Broadview and the two private property owners regarding the proposed installation of the debris boom. On January 8, 2015, the District Board adopted an ordinance establishing the right-of way in the installation, operation, and maintenance of the containment boom. The District is currently working on obtaining the easements, which are expected in the second quarter of 2016.
- ✓ On November 14, 2014, the District received a [Letter of No Objection](#) (LONO) from the United States Army Corp of Engineers (USACE) (on the enclosed CD).
- ✓ On July 7, 2015, the District received [Permit No. NE2015032 from the Illinois Department of Natural Resources \(IDNR\)](#) (on the enclosed CD) authorizing the project.

*Metropolitan Water Reclamation District of Greater Chicago President Mariyana Spyropoulos (from left), Friends of the River Executive Director Margaret Frisbie, MWRD Vice President Barbara McGowan, MWRD Commissioner Debra Shore, MWRD Commissioner Kari Steele and MWRD Chairman of Finance Frank Avila introduced the "Skim Pickens" to patrol Chicago Area Waterways at least five days a week and up to seven depending on storms.*









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## Green Infrastructure Activities

*The District partnered with the city of Evanston, IL to rehabilitate the Morton Civic Center parking lot. Evanston's first city-owned sustainable public parking lot uses various permeable pavements, rain gardens, and native plantings to reduce stormwater runoff. The District funded nearly half of the project cost.*



The following is a report on Green Infrastructure activities undertaken pursuant to Consent Decree Section V of Appendix E:

## Introduction

The Consent Decree required the District to submit a Green Infrastructure Program Plan (GIPP) to the EPA and IEPA for approval within one year of the effective date. A Draft of the District's GIPP was submitted to the EPA and IEPA on December 23, 2014 and ultimately approved on October 7, 2015. (See [Green Infrastructure Program Plan](#) on the enclosed CD)

Going forward, the Consent Decree (Appendix E, Section V), requires the District to include Green Infrastructure reporting in its Annual Report.

## 2015 Rain Barrel Program Annual Report (Appendix E.II.A)

### Enhanced Rain Barrel Program

In May 2015, the District revised and expanded the rain barrel distribution program that offers free rain barrels to Cook County residents and organizations to increase the number of barrels disseminated. (See revised [Rain Barrel Policy Program](#) on the enclosed CD.) The District delivers free rain barrels through three distribution networks: municipalities; campus-type facilities; and non-government organizations, planning groups, or community groups.

Municipalities must sign an intergovernmental agreement (IGA) with the District to participate. Once registered, residents living in those municipalities can order up to four 55 gallon rain barrels. The barrels are offered in blue, black, terra cotta and gray and are delivered directly to residents' homes. In 2015, 53 municipalities were enrolled as partners. (See [complete list of participants](#) and a [template for an IGA Rain Barrel Agreement](#) on the enclosed CD.)

The District also provides free rain barrels to campus-type facilities that are committed to being a community partner and good steward of stormwater. These types of facilities include: schools, municipal properties (i.e. town halls, libraries, park district buildings, fire and police stations, garage/outbuildings), churches, community centers, senior centers, hospitals and clinics. The facility representative can request rain barrels by writing the

The GIPP outlines the District's strategy to gain the public's acceptance and understanding of how GI can be beneficial to alleviate flooding issues and Combined Sewer Overflows in addition to describing how the District will satisfy the Consent Decree's GI Design Retention Capacity (DRC) requirements. The District is required to provide a minimum of 2 million gallons of DRC within five years and 10 million gallons of DRC within 15 years, of the approval date of the Consent Decree.

District and including information about the location of where the rain barrels will be installed.

Non-government organizations (NGO), planning groups, or community groups throughout Cook County also have access to the District's Rain Barrel Program by signing a Memorandum of Understanding. These entities must submit a detailed plan and assure that there will be proper installation, education, care and maintenance of the barrels. In 2015, nine NGO partners enrolled in the rain barrel distribution program. (See [template for an NGO/Community Rain Barrel Agreement](#) on the enclosed CD.)

For Cook County residents who do not have access to the District's free rain barrel program, the District sells and delivers barrels for \$48 each via mwrdd.org.

### Marketing Activities

The District vigorously marketed rain barrels through multiple channels in 2015. (See a [list of all media mentions](#) on the enclosed CD.)

Our marketing materials introduce rain barrels to those unfamiliar with them and emphasize their utility in preventing flooding and improving water quality. The marketing efforts also attempt to counter common barriers to acceptance of rain barrels. To address concerns about the



The District marketed rain barrels through multiple channels, including creating an instructional installation video featuring our partners at Openlands, a not-for-profit organization that unites people and resources around the goal of land and water protection. We also produced and distributed a rain barrel brochure to promote rain barrels as well as customized brochures for each participating municipality.



difficulty of installation, simple installation instructions are included in every barrel and link to an installation video is available with an easy to follow demonstration. Concerns that rain barrels will have a negative impact on the appearance of a property are countered by using photography of rain barrels installed in beautifully landscaped yards.

The District enlisted the help of municipalities participating in the enhanced rain barrel program to help market them to their residents.

**PUBLICATIONS:** The District produced a new rain barrel brochure to be distributed by municipalities participating in the enhanced rain barrel program. (See [Lansing Rain Barrel Brochure](#) on the enclosed CD.) In addition to the marketing messages described above, the brochure provides specific details for ordering. The District customizes these brochures for each participating municipality with the municipal logo and specific ordering instructions unique to each municipality. 5,000 brochures were produced for 10 participating municipalities in 2014, and 13,000 brochures were produced for 13 participating municipalities in 2015.

The District produced and distributed a version of this brochure to promote the rain barrels that are available from the District for \$48. (See [MWRD Rain Barrel Brochure](#) on the enclosed CD.)

The District also produced and illustrated an installation, use and maintenance instructional guide for rain barrels which are distributed with our rain barrels and available at [mwrdd.org](#). (See [MWRD Rain Barrel Instructions](#) on the enclosed CD.)

**SOCIAL MEDIA:** The District promoted rain barrels throughout the year on social media by posting photos, press releases, videos and sharing the productive uses of rain barrels and other green infrastructure via Facebook and Twitter. Postings included general educational information regarding the environmental and monetary value of utilizing rain barrels, while other postings detailed specific events where rain barrels were distributed to community members. We will utilize the hashtag #stormwaterselfie to promote barrels on social media in 2016.

**WEBSITE:** Rain barrels are prominently advertised with a large graphic on the home page of the District's website, [mwrdd.org](#). The rain barrel content on [mwrdd.org](#) was refreshed in 2015 to match the messaging and content of the other marketing materials. The website is routinely updated as new municipalities and NGOs enroll.

**PRESS RELEASES:** Rain barrels were mentioned in three District-issued press releases in 2014 and nine press releases in 2015. The 2015 press releases detailed various green initiatives and Earth Day events where barrels were given away. One press release highlights an award that was given to a community for most rain barrels distributed. (See complete list of press releases on the enclosed CD.)

## Early Monitoring, Evaluation & Knowledge Building (Appendix E.II.B.)

The Consent Decree also required the District to implement one or more GI projects and dedicate a minimum of \$325,000 towards such projects prior to January 6, 2015, within one year of the effective date of the Consent Decree or prior to approval of the GI Plan, whichever was later. As further described below, the District satisfied this requirement in 2014 through collaboration with the Chicago Public School System (CPS) and the City of Chicago Department of Water Management (DWM) in the Space to Grow Program (Phase I Space to Grow) and continues to participate in this program in 2015 (Phase II Space to Grow). The District and the DWM each invested approximately \$2 million towards the construction of GI at four CPS schools in 2014. The District's \$2 million investment was used solely for GI improvements at the selected CPS schools, thereby far exceeding the minimum \$325,000 requirement of the Consent Decree.

**DIRECT MAIL:** In 2015, Board of Commissioner President Mariyana Spyropoulos mailed a letter targeted to Cook County mayors inviting their municipalities to join the District's rain barrel-municipal distribution program. (See Letter from Spyropoulos on the enclosed CD.)

**OUTREACH EVENTS AND RAIN BARREL DRAWINGS:** The District heavily promoted rain barrels at public outreach events by bringing a rain barrel to these events and giving it away in a drawing to an attendee. To qualify, event attendees are required to fill out a "Water Environment Pledge" detailing water conservation actions. Eighty-seven rain barrels were distributed in this manner at different events. (See [list of all events with rain barrel drawings](#) on the enclosed CD.) These outreach efforts were established to educate the public on the value of rain barrels and other green infrastructure in the District's pursuit of water quality improvements and flooding solutions. The benefits of rain barrels were also marketed through the Space to Grow program, which works to transform Chicago Public Schools playgrounds into vibrant outdoor spaces that better absorb rain water. For more information on this program, please see below in the Green Infrastructure Section. At our annual Sustainability Summit, we presented an award to the Village of Oak Lawn for the highest number of rain barrels (4000+) distributed in 2015; we also held neighborhood events where residents could pick up free rain barrels. (See [list of all outreach events](#) on the enclosed CD.) Finally, we had children paint rain barrels at our annual employee picnic.

**WATER ENVIRONMENT PLEDGE MAILING LIST:** The District maintains a mailing list of those who have signed the Water Environment Pledge. These individuals have a demonstrated interest in rain barrels and may be targeted in future marketing efforts. 1528 names were added to this database in 2015.

### Number of Barrels Distributed

The District distributed 925 rain barrels in 2014 and 29,358 barrels in 2015.

### Technical Assistance

The District provides instructions on how to install a rain barrel with each order. Additionally, we worked with Openlands, a not-for-profit organization that unites people and resources around the goal of land and water protection, to create a YouTube video that shows how to install a rain barrel (See [storyboards](#) and [YouTube video](#) on the enclosed CD.)

### Potential Volume

If all rain barrels were properly utilized during the entire year, the volume of rainwater kept out of the sewer system in 2015 would have been 92,037,330 gallons:

29,358 rain barrels × 55 gallons × 57 average annual days of rain = 92,037,330 gallons

## Phase I Space to Grow Program – Partnership between the District, CPS & DWM

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 projects promote active and healthy lifestyles and connect people with nature in their daily lives. The schoolyards are also designed to prevent flooding and water pollution via rainfall-capturing green infrastructure features such as permeable surfaces, native plants and rain gardens.

The program is co-managed by the Healthy Schools Campaign and Openlands with capital funding, leadership and expertise from the District, CPS and the DWM. The District also provides technical support for green



infrastructure elements to ensure that the new schoolyards provide optimal stormwater capture benefits.

Each Space to Grow schoolyard is unique, and the architectural landscape designs incorporate input from neighborhood residents, students, families, staff and faculty. Prior to renovations, many of the schoolyards were little more than asphalt parking lots with aging, or in many cases a lack of, playground equipment. In contrast, the new schoolyards typically feature expanded and safer playground equipment, track and field areas, multi-purpose courts on permeable asphalt, turf fields, outdoor classrooms, rain gardens and vegetable gardens. Also, on average, each Space to Grow schoolyard has the capacity to capture hundreds of thousands of gallons of rainwater that otherwise would have drained into local sewers.

The four elementary schools selected for Phase I Space to Grow are all in low income areas throughout the City:

- ✓ Virgil I. Grissom Elementary School, 12810 S. Escanaba
- ✓ Morrill Elementary School of Math & Science, 6011 S. Rockwell Street
- ✓ Schmid Elementary School, 9755 S. Greenwood Avenue
- ✓ George Leland Elementary School, 512 S. Laverne

These schools were prioritized for implementation by CPS, DWM, and the District based on flood risk, site suitability, and socioeconomic factors. Numerous community meetings were held to describe project details and benefits. The District and CPS executed an intergovernmental agreement (IGA) to facilitate this project whereby long term maintenance responsibilities are assigned to CPS. The District has perpetual rights to inspect the GI to ensure it is being properly maintained in accordance with the Operations and Maintenance (O&M) Manual developed for each school.

The District reviewed and provided comments on the construction drawings and specifications at various intervals during the course of design. During

the course of construction, the District frequently visited the sites to gain knowledge on the installation of GI. The four sites combine for a Design Retention Capacity (DRC) of 731,004 gallons per rain event. Educational signage has been placed at the sites to inform students and the surrounding community of the benefits of GI. Neighborhood residents were involved in the installation of GI plantings at some of the schools.

Groundbreaking ceremonies were held at each of the schools and were attended by students, parents, school staff, local residents, and elected officials, including the District's Commissioners. The four projects have positively impacted thousands of local residents by providing a safe place for their children to play, educating all to the benefits of GI, and providing much needed relief to localized flooding. CPS has indicated that the new playgrounds are being utilized by students at a far greater rate than before, as well as reducing gang activity within close proximity to the schools.

The Space to Grow program has won numerous awards, including:

- ✓ The Active Design Excellence Award, Honorable Mention: This was the only submission from Chicago to be recognized this year. Fellow award recipients span the globe.
- ✓ The Emerald Award from the Illinois Chapter of the U.S. Green Building Council, Mission category.
- ✓ The New Champions Award from the National Physical Activity Plan Alliance (NPAPA).
- ✓ The Sustainability Award from the Illinois Association for Floodplain and Stormwater Management (IAFSM), which recognizes excellence in stormwater management across the state of Illinois.

The District is proud to be a part of the Space to Grow program as it successfully brings communities together, enhances the educational experience for children throughout Chicago, connects people to nature and encourages physical activity while reducing the risk of flooding and water pollution.

## Green Infrastructure Program (Appendix E)

### Phase II Space to Grow Program – Partnership between the District, CPS & DWM

Given the success of the Phase I Space to Grow Program, the District's Board of Commissioners authorized expansion of the program to fund GI at up to thirty schools over the next five years, starting in 2015, with a total investment by the District of \$15 million. These projects will not only address localized flooding but will also serve to educate students, parents, and school staff about the benefits of GI.

In 2015, plans and specifications were prepared for six schools and construction completed for two schools: Willa Cather (Cather) Elementary School, located at 2908 W. Washington Boulevard, and the Orozco Fine Arts and Sciences (Orozco) Elementary School, located at 1940 W. 18th Street. Both of these elementary schools are located in low income neighborhoods in the City. The combined DRC for these two schools is an estimated 364,504 gallons per rain event. The District will contribute a total of \$898,477.66 for the work at Cather and Orozco..

One of the main criteria for choosing Cather and Orozco was to identify playgrounds that could facilitate a large amount of Design Retention Capacity in flood prone areas. The actual work was started once the schools were closed for the summer. Ribbon cuttings for each school were held during October, and all work has since been completed.

#### Willa Cather Elementary School

Cather's scope of work started with the removal of asphalt, an old playground, and fencing. Site improvements included two age-specific playgrounds on rubber play surfacing, enlarged basketball and volleyball courts on permeable asphalt, an asphalt track, baseball backstop, artificial turf, an outdoor classroom, an enlarged running track, and walkways.

Stormwater improvements included a community garden, rain gardens, permeable walks, and infiltration planters. Site amenities included fencing, signage, and site furnishings. The estimated Design Retention Capacity is 56,152 gallons. The District will contribute \$398,477.66 of the project costs.

#### Orozco Fine Arts and Science Elementary School

Orozco's scope of work started with the removal of asphalt, fencing, and utilities. Site improvements included two age-specific playgrounds on rubber play surfacing, basketball courts, an artificial turf soccer field, painted asphalt track, an outdoor classroom, permeable pavers walkways, and asphalt with painted games. Landscape improvements included a community garden, rain gardens, and infiltration planters that directly receive roof runoff through disconnected gutters. Site amenities included fencing, signage, and site furnishings, and utility upgrades included stormwater storage, downspout disconnections, lawn hydrants, and electrical renovations. The estimated Design Retention Capacity is 308,352 gallons. The District will contribute \$500,000.00 of the project costs.

Educational signage has been placed at the sites to inform students and the surrounding community of the benefits of GI. Neighborhood residents were involved in the installation of GI and groundbreaking ceremonies were hosted and well attended.

The four remaining schools designed in 2015 and slated for construction in 2016 are:

- ✓ Daniel J. Corkery Elementary School, 2510 S. Kildare Avenue
- ✓ Frank W. Gunsaulus Elementary Scholastic Academy, 4420 S. Sacramento Avenue





**Willa Cather Before**



**Willa Cather After**



The Space to Grow program is managed by the Healthy Schools Campaign and Openlands organizations and is made possible through the financial support of the District, Chicago Public Schools, and the Chicago Department of Water Management. Space to Grow is working to transform Chicago school yards into spaces that provide students and their communities with opportunities for physical activity, outdoor learning, environmental literacy and engagement with art, while addressing neighborhood flooding issues. Willa Cather Elementary School was one of the transformative schoolyards that underwent a makeover in 2015.



- ✓ James Wadsworth Elementary School, 6650 S. Ellis Avenue
  - ✓ Oliver S. Wescott Elementary School, 409 W. 80th Street
- The combined DRC for these four schools is estimated to be 534,994 gallons.

Design work is currently underway for five additional schools planned to be constructed in 2016,

- ✓ John W. Cook Elementary School, 8150 S. Bishop Street
- ✓ Nathan S. Davis Elementary School, 3014 W. 39th Place,
- ✓ Fernwood Elementary School, 10041 S. Union Avenue,
- ✓ Eugene Field Elementary School, 7019 N. Ashland Avenue
- ✓ Morton School of Excellence, 431 N. Troy Street

These schools were prioritized for implementation by CPS, DWM, and the District based on flood risk, site suitability, and socioeconomic factors. Numerous community meetings were and will continue to be held to describe project details and benefits.

The District and CPS are currently negotiating a new intergovernmental agreement (IGA) to facilitate projects through 2019, whereby long term maintenance responsibilities are assigned to CPS. The District has perpetual rights to inspect the GI to ensure it is being properly maintained in accordance with the Operations and Maintenance (O&M) Manual developed for each school. The District reviewed and provided comments on the construction drawings and specifications at various intervals during the course of design. During construction, the District frequently visited the sites to gain knowledge on the installation of GI.

The DRC for these five schools will be determined once the plans and specifications are completed.

### Additional GI Partnerships

In 2015, the District constructed additional GI projects that conform to the criteria established in the GIPP. The District worked with the City of Blue Island (Blue Island), the City of Evanston (Evanston), and the Village of Wilmette (Wilmette) to develop GI Projects consisting of permeable pavement, rain gardens and swales. The District contributed a total of \$1,422,000 to these projects which provided a combined DRC of 392,764 gallons. The District entered into IGAs with Blue Island and Evanston whereby maintenance responsibilities lie with the municipality and the District retains perpetual rights to inspect the facilities to ensure they are being maintained as required by the O&M Manuals of the respective projects.

**CITY OF BLUE ISLAND:** The District worked with the City of Blue Island to conduct numerous workshops to educate residents on the benefits of GI and how the projects will help to alleviate flooding in addition to other environmental and social benefits. After careful consideration of input from residents and the City, the District put together a comprehensive GI plan for the area. The project consisted of six rain gardens and two permeable pavement parking lots strategically located in a flood prone area in the northeast side of Blue Island. The GI features were designed by a consultant retained by the District and construction activities were supervised by the District's Construction Division. The Project provided 150,809 gallons of DRC at a cost of \$697,000.

**CITY OF EVANSTON:** The City of Evanston approached the District with an opportunity to cost share on a highly visible GI project at its Civic Center to address existing flooding concerns. The District provided \$608,000 towards the \$1.52 million project cost. The project involved reconstruction of an existing impervious parking lot with three types of permeable pavement (asphalt, concrete, and paver blocks) and the installation of several rain gardens. The DRC for this project is 167,278 gallons. District engineers worked with City of Evanston staff on the project design and observed construction on the project at various phases.

**VILLAGE OF WILMETTE:** The Village of Wilmette initiated a Green Alleys program and requested the District to participate in the endeavor.

The District's share of the project was \$117,000 and based on the cost differential between conventional pavement and permeable paver block pavement. Four alleys were completed in 2015 with a DRC of 74,677 gallons. District engineers reviewed and commented on the design drawings and specifications and also observed the construction of this project on occasion.

**BUYOUTS:** The District initiated a buyout program for properties in chronic flood prone areas in 2015. Buildings that qualify will be purchased, demolished, and restored to pervious space, thereby increasing stormwater retention and detention. In 2015, the District partnered with the Village of Glenview and executed an Intergovernmental Agreement for the purchase of 17 homes that were subsequently demolished and restored to open space. These 17 properties provide approximately 169,000 gallons of stormwater retention. The District contributed buyout funds in the amount of \$8,000,000 while the Illinois Emergency Management Authority (IEMA) contributed the balance of the \$9,750,000 total cost. The District is currently negotiating IGAs with seven other municipalities.

The District is actively pursuing additional projects that meet or exceed the goals required by the Consent Decree.

### Chicago-Calumet Rivers Fund

A team of private and public organizations, including the District, have established and funded the Chicago-Calumet (Chi-Cal) Rivers Fund (Fund), administered by the National Fish and Wildlife Foundation. The Fund's main goals include reducing damages caused by flooding, improving water quality, and restoring habitat and safe public access on the local waterways. One method to achieve these goals is through green infrastructure such as rain gardens, green roofs, pervious surfaces, bioswales, and cisterns.

The following two projects, which the District anticipates participating in funding, are within the District's service area and utilize GI solutions to reduce flooding as well as Combined Sewer Overflows:

The Chicago Public Schools will receive a \$300,000 grant for continuing efforts under the Space to Grow program to transform Chicago schoolyards into vibrant outdoor spaces that benefit students, community members, and the environment. The District will contribute \$290,000 of the total grant amount. Schoolyard renovations supported by the grant will incorporate green infrastructure features, such as vegetated swales, rain gardens, permeable surfacing, and underground water storage. Altogether, these features will capture significant rainfall, helping to keep the City's water resources clean and resulting in less neighborhood flooding. The schoolyards will capture and store stormwater for a combined storage capacity of approximately 500,000 gallons and prevent approximately 320,000 gallons of stormwater from entering Chicago's combined sewer system each year. The renovated schoolyards will also expand recreational opportunities by providing five acres of new park space for underserved communities.

Faith in Place will receive a \$250,689 grant to improve stormwater management systems at five houses of worship on the south side of Chicago. The District will contribute \$135,000 of the total grant amount. The project will perform a stormwater audit, develop a stormwater management plan, and implement at least one green infrastructure feature at each site. The project will also develop outreach and education plans to encourage more effective water management on properties surrounding the faith communities. The implementation of these activities will improve stormwater management, create demonstrations of green stormwater infrastructure elements throughout the communities, and prevent 43,000 gallons of stormwater from entering area waterways each year. It will also lead to a better understanding of stormwater management among local communities.

The Chi-Cal Rivers Fund partners will continue to identify additional projects of similar scope to be implemented in 2016 and beyond.





*Native plants, like those pictured here, are a form of green infrastructure and an effective tool in capturing stormwater.*

## Watershed Management Ordinance

The District began requiring stormwater detention in 1972 under the Sewer Permit Ordinance (SPO) for development projects greater than 5 acres. In 2007, the District 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 District'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 District's repealed Sewer Permit Ordinance (SPO). WMO permit requirements are more comprehensive than those of the SPO. The WMO requires use of GI to capture of 1-inch of runoff from impervious surfaces for developments greater than ½ acre in size. The District has included a GI component in its WMO. In 2015, 111 permits were issued that required a total of 7,546,677 gallons of GI retention volume. For the WMO permits issued in 2015, 1,045,949 gallons of retention were completed, 5,428,678 gallons were under construction, and 1,072,050 gallons were approved on projects that have yet to be started. An additional 26,068 gallons of retention capacity permitted in 2014 was constructed in 2015 bringing the total GI installed under the WMO in 2015 to 1,072,017 gallons. The District anticipates that more GI retention volume will be approved in 2016 and beyond.

The total DRC installed at CPS, the District-sponsored projects at Blue Island, Evanston and Wilmette, and due to the requirements of the WMO in 2015 was 1,829,275 gallons (see Green Infrastructure Project Log below).

The District's WMO, approved on May 1, 2014, requires GI for new development and redevelopment projects. As can be seen in the table below, the WMO's GI requirements will lead to the eventual installation of nearly 8 million gallons of DRC throughout Cook County. This number will continue to grow significantly in future years. The District's permit review engineers provide input to design consultants on GI at the onset and during the permitting process.

	2014	2015
WMO GI Permits Issued	8	111
Permitted GI DRC (Gallons) Installed	97,755	1,045,949
Permitted GI DRC (Gallons) Under Construction	128,385	5,428,678
Permitted GI DRC (Gallons) to be Constructed	22,810	1,072,050
<b>Total DRC (Gallons) Permitted</b>	<b>248,950</b>	<b>7,546,677</b>
<b>Cumulative Total</b>	<b>7,795,627</b>	

## Potential Future GI Projects

The District began planning several other GI Projects in 2015. The District is working with the City of Berwyn to partially fund green alleys, the Village of Crestwood to install a permeable parking lot and bioswales as part of a larger project, the Village of Niles to install a bioswale, and the Village of Skokie to build a rain garden in a flood prone area. Most of this work is expected to be completed in 2016. District staff will participate in workshops with the local public to explain the rationale behind these projects and how the projects will help to alleviate flooding while providing a myriad of other environmental and social benefits. Planning and design for the replacement of a deteriorating parking lot at the District's Egan Water Reclamation Plant began in 2015 which will be constructed in 2016 at a cost of approximately \$1,100,000. The new parking lot will be constructed of permeable pavement and include greenways and a rain garden with an estimated DRC of 455,000 gallons.

The District continues to explore innovative ways to harvest and reuse captured stormwater. In 2015, the District began working with the Chicago Housing Authority to utilize a 290,000-gallon storage tank located in their Dearborn Homes complex at 2930 S. Dearborn Street for harvesting stormwater. This stormwater will later be used to irrigate nearby landscaping, which will reduce flow to the combined sewer system, reduce usage of potable water, and help alleviate localized flooding. The design of this project is to be completed in 2016, with construction to start soon thereafter. The total project cost is estimated at \$1,220,000, with a cost to the District of \$327,695.00.

Another innovative project that the District began to evaluate in 2015 involves repurposing an abandoned water tunnel by the City of Chicago to capture water from the downspouts of large buildings that would normally go into the local combined sewer system. The stored water could then be reused to water parks and other areas, and possibly even used by local industries. Inspections of the affected buildings accompanied by the building managers began in March 2016 to determine the feasibility of the project. The District has also started evaluating the potential for installation of large cisterns at each residential property in a flood prone area. The captured stormwater could then be used for irrigation rather than returned to the local collection system.





## Green Infrastructure Comprehensive Land Use Policy (Appendix E.II.C)

As part of the GI Plan, the District has also developed a Comprehensive Land Use Policy.

The District's Comprehensive Land Use Policy was approved by the District's Board of Commissioners on August 6, 2015 and approved by the USEPA on October 7, 2015 (see [Appendix B of the GIPP](#) on the enclosed CD). The Comprehensive Land Use Policy requires public entities leasing property at a nominal fee from the District to provide GI based on the size of the leasehold and the desired use. For any new/renewed lease, the public lessee must now pay for and include GI on its leasehold. Private entities leasing District land are provided incentives to implement and maintain GI for development projects based on the size and type of use of the property.

Private entities installing GI will receive a credit equal to \$0.50 on the \$1.00 up to 10% of the leasehold cost, capped at 10 years, for GI improvements in excess of WMO requirements. The District will seek credit towards the DRC requirements outlined in Section III of this plan for any GI installed by leaseholders of District property due to GI installed as a result of the requirements of the Comprehensive Land Use Policy.

Additionally, the District is in the process of implementing a Geographical Information System (GIS), allowing it, among other things, to input and track the type of GI on its various leaseholds as well as such information as GI stormwater capture rate. It is currently anticipated that the GIS will be implemented in 2016.

## Green Infrastructure Project Log (Appendix E.III)

### 2015 Log of Green Infrastructure Capture Volume 2015 Chicago Public Schools

Elementary Schools	Green Infrastructure Technologies	Design Retention Capacity
Willa Cather Elementary School 2908 West Washington	Rain Gardens, Permeable Surfaces, Bioswales	56,152 gallons
Orozco Fine Arts and Sciences Elementary School 1940 West 18th Street	Rain Gardens, Permeable Surfaces, Bioswales	308,352 gallons
Total Retention for CPS schools		364,504 gallons

### 2015 Log of Green Infrastructure Capture Volume 2015 District-Sponsored Projects

Project	Design Retention Capacity
City of Blue Island	150,809 gallons
City of Evanston	167,278 gallons
Glenview Properties	168,955 gallons
Village of Wilmette	74,677 gallons
Total Retention	561,719 gallons

### Watershed Management Ordinance Permits

111 WMO Permits issued in 2015 Requiring Green Infrastructure

Construction Status	Capacity
GI Permitted Yet to Begin Construction	1,072,050 gallons
GI Permitted Under Construction	5,428,678 gallons
GI Permitted Construction Complete	1,045,949 gallons
Total WMO GI Permitted in 2015	7,546,677 gallons

### GI Installed Through 2015

CPS SCHOOL RETENTION*	+	DISTRICT PARTNERSHIP PROJECTS**	=	1,657,227 GALLONS
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\*six schools completed through 2015

\*\*four projects completed through 2015



# National Pollutant Discharge Elimination System Permits Consent Decree

## 2015 Annual Report Referenced Resources

### CD Table of Contents

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#### Attachments for Item 2 - CSOs

Calumet (South) CSO M&R Plan for web rev August 2014.docx  
O'Brien (North) CSO M&R Plan for web rev August 2014.docx  
Stickney (Central) CSO M&R Plan for web rev January 22, 2016.docx  
IEPA Quarterly Report Jan-Mar 2015.pdf  
IEPA Quarterly Report Apr-June 2015.pdf  
IEPA Quarterly Report July-Sept 2015.pdf  
IEPA Quarterly Report July-Sept 2015 revised letter.pdf  
IEPA Quarterly Report Oct-Dec 2015.pdf

#### Attachments for Item 3 - Water Quality

Appendix\_A\_AWQM QAPP.pdf  
Appendix\_B\_CDOM QAPP.PDF  
Attachment 1\_2015\_CAWS\_AWQM.xlsx  
Attachment 2\_2015\_CAWS\_CDOM.xlsx

#### Attachments for Item 4 - Floatables

Summary of 2015 Floatable Control Activities.pdf  
Floatable Log Debris Boat 1 Jan to Dec 2015.pdf  
Floatable Log Skimmer Boat 1 2015.pdf  
Floatable Log Skimmer Boat 2 2015.pdf  
Floatable Log Pontoon Boat 1 2015.pdf

Floatable Log Pontoon Boat 2 2015.pdf  
Floatable Log Pontoon Boat 3 2015.pdf  
USACE Letter of No Objection – Debris Boom.pdf  
IDNR Approval Letter - Debris Boom.pdf

#### Attachments for Item 5 - Green Infrastructure

Rain Barrel Policy Program.pdf  
Intergovernmental Rain Barrel Agreement.pdf  
NGO/Community Rain Barrel Agreement.pdf  
Free Rain Barrel Communities.pdf  
2015 MWRD Rain Barrel Media Coverage.docx  
Lansing Rain Barrel Brochure.pdf  
MWRD Rain Barrel Brochure.pdf  
MWRD Rain Barrel Instructions.pdf  
Rain Barrel Press Releases.pdf  
Letter from President Spyropoulos February 2015.pdf  
2015 Rain Barrel Drawing Events.pdf  
2015 Rain Barrel Outreach Events.pdf  
Rain Barrel Install Storyboard.pdf  
Green Infrastructure Program Plan.pdf  
GI Design Retention Capacity Accomplishments



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*Cover: Beginning on Thanksgiving, November 26, 2015, the Thornton Composite Reservoir began to fill for the first time. It reached 17 feet and contained 400 million gallons of combined sewer overflow prior to being transported by tunnel for treatment at the Calumet Water Reclamation Plant. The new reservoir holds these overflows before flowing 5.5 miles to the Calumet Water Reclamation Plant for treatment. Communities that will benefit include Blue Island, Burnham, Calumet City, Calumet Park, Chicago (south side), Dixmoor, Dolton, Harvey, Lansing, Markham, Phoenix, Posen, Riverdale and South Holland.*