



# 2019 Budget in Brief

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The Main Channel of the Sanitary and Ship Canal Extension, including the Lockport Powerhouse and Lock, were completed in 1907. The opening of the Lock connected the Great Lakes to the Mississippi River system. In the photo, officials tour the Lockport Powerhouse and Lock on August 4, 1907.



## 2019 Budget in Brief

## Metropolitan Water Reclamation District of Greater Chicago

This 2019 Budget in Brief serves as an addendum to the Metropolitan Water Reclamation District of Greater Chicago's (District) formal budget book and provides an overview of the organization's core mission, operations, and budget appropriations. The annual budget is the principal planning device for carrying out the mission of the District and accomplishing our operational goals. As a key communication tool, the budget shows how resources are acquired and allocated for current operations, long-range planning, and financing.

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January 2, 2019

To Residents of the Metropolitan Water Reclamation District,

I am pleased to present the Metropolitan Water Reclamation District of Greater Chicago's 2019 Budget. The budget is a fiscally responsible plan that supports the District's mission of protecting our water environment and the health and safety of the public in our service area.

The District will celebrate its 130th anniversary during 2019 and our mission remains largely the same since our inception as the Sanitary District of Chicago in 1889. While our first assignments of reversing the flow of the Chicago River and constructing a vast network of waterways to protect the quality of Lake Michigan were clear, the District continues to evolve and implement new technologies that further our commitment to environmental protection.

The 2019 Corporate Fund budget reflects modest growth of 2.0 percent over the 2018 appropriation and prioritizes the maintenance and operation of our seven water reclamation plants. The Stormwater Management Program continues to implement flood control projects and support local stormwater issues. During 2019, construction will begin on both channel improvements on Addison Creek and the Addison Creek Reservoir. Together, these projects will reduce overbank flooding for over 2,000 structures. Our \$727.5 million Capital Improvement Program provides great value for taxpayers by utilizing a combination of funding options including low-interest State Revolving Fund loans, bonds, and pay-as-you-go funding to invest in Cook County infrastructure.

The District continues to operate as a fiscally sound organization by maintaining a AAA bond rating with Fitch Ratings and a AA+ bond rating from Standard & Poor's. The District's funding policies for both the Retirement Fund and Other Postemployment Benefits Trust demonstrate the District's commitment to long-term fiscal management and contribute to strong credit ratings.

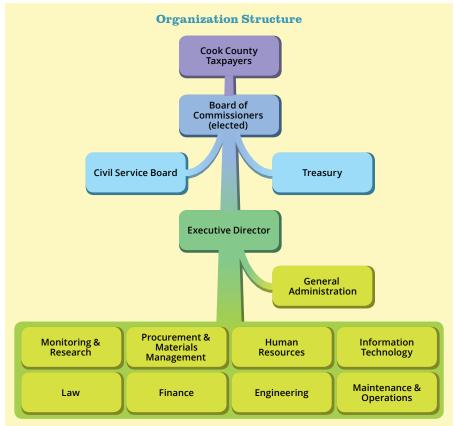
This Budget in Brief is a summary of our budget and describes how the 2019 funding priorities align with our Strategic Business Plan, *Recovering Resources, Transforming Water*. For the complete budget document and Strategic Business Plan, please visit mwrd.org. We are committed as an agency to providing the excellent service expected of the District.

Respectfully submitted,

Mariyana T. Spyropoulos, President

#### Mission & Governance

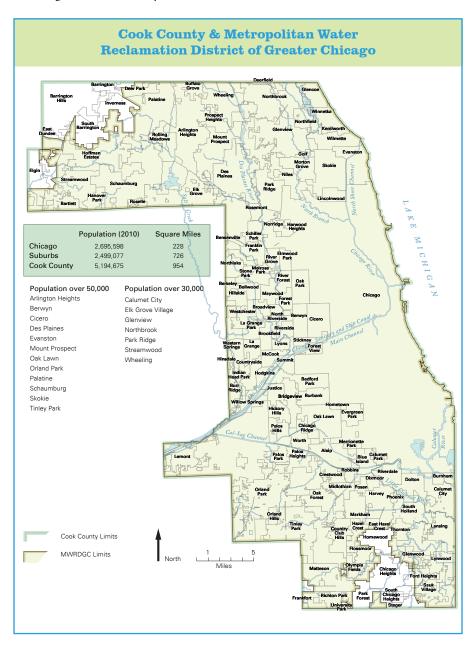
The District is governed by a nine-member Board of Commissioners (Board). Each commissioner is elected at large and serves on a salaried basis. Three Commissioners are elected every two years for six-year terms. The Board biannually elects from its membership a President, Vice President, and Chairman of the Committee on Finance. The District is an independent government and taxing body operating primarily within the boundaries of Cook County, Illinois. The agency serves an area of 882.1 square miles, including the City of Chicago and 128 surrounding communities. Wastewater is collected from municipalities by the District and conveyed to one of seven reclamation plants for full treatment. Clean water is then discharged to local waterways. The District is also responsible for stormwater management for all of Cook County, including areas outside of its corporate boundaries. The District's commitment to the environmental quality of the region involves protecting Lake Michigan from pollution, maintaining public health and safety, protecting homes and businesses from flooding, and managing water as a vital resource.



The Executive Director, who reports directly to the Board, manages the District's day-to-day operations. Eight appointed department heads report to the Executive Director. The Treasurer of the District, its chief financial officer, is appointed by and reports directly to the Board. General Administration, which includes the Administrative Services Division, Diversity Section, and Public Affairs Section, are direct staff and support units, reporting to the Executive Director.

## Service Area—District Map

The District is responsible for stormwater management for all of Cook County, including areas that currently lie outside the District's boundaries.



#### District Fast Facts

#### The District:

- Serves an equivalent population of 10.35 million people: 5.25 million individuals, a commercial and industrial equivalent of 4.5 million people, and a combined sewer overflow equivalent of 0.6 million people.
- Treats an average of 1.3 billion gallons of wastewater per day with a wastewater treatment capacity of over 2.0 billion gallons per day.
- Performs nearly 560,000 laboratory analyses per year to assure operations meet mandated standards of environmental quality, to enforce industrial standards, and to monitor water quality in waterways.
- Captures and treats an annual average of 113.1 million pounds of various pollutants found in combined sewer overflows through the Tunnel and Reservoir Plan system.
- Owns and operates seven modern and effective water reclamation plants, 560.0 miles of intercepting sewers and force mains, 23 pumping stations, 34 stormwater detention reservoirs, and three Tunnel and Reservoir Plan reservoirs.
- Controls 76.1 miles of navigable waterways, which connect the Great Lakes with the Gulf of Mexico.
- Unveiled the first stage of the McCook Reservoir with a storage capacity of 3.5 billion gallons on December 4, 2017, initiating the final phase of the historic Tunnel and Reservoir Plan.



The Nicholas J. Melas Centennial Fountain was built in 1989 to commemorate the District's 100th anniversary.

#### Sources of Revenue

#### **Tax Sources**

All District funds, with the exception of the Capital Improvements Bond Fund, derive their revenues primarily from property taxes. Approximately 71.2 percent of the 2019 appropriation is supported by property taxes. Taxes levied in one year are collected in the next year, and Working Cash Funds for the Corporate, Construction, and Stormwater Management Funds provide temporary financing while awaiting property tax receipts.

A personal property replacement tax provides tax revenue from corporations, partnerships, and the invested capital of public utilities to replace the personal property taxes that were once received from these sources. Revenue from this source is estimated at \$33.3 million for 2019, a decrease of \$4.8 million from the 2018 Adjusted Budget. These revenues, received directly from the State of Illinois, typically trend with the economy.

#### Funding Capital Projects: Bonds, Grants, & Loans

The District's Capital Improvement Program is financed primarily with State Revolving Fund (SRF) loans and general obligation bond sale proceeds. State law provides authority to issue debt, but also limits the amount that the District can borrow.

Currently, the District's statutory debt limit is estimated at \$8.5 billion. Actual net outstanding debt applicable to the debt limit totals \$2.9 billion. The debt margin, the difference between issued debt applicable to the debt limit and the statutory limit, is \$5.6 billion, or 66.1 percent of the limit. The District does not plan on new bond sales until 2020, but anticipates receiving \$120.0 million in low-interest SRF loans in 2019 based on the current capital project schedule. In 2019, \$11.3 million in Federal Build America Bonds subsidy is also budgeted.

The 2019 appropriation for bond redemption and interest payments totals \$238.4 million, a decrease of \$17.9 million, or 7.0 percent, from the 2018 Adjusted Budget. The decrease is due to a \$28.4 million advance payment on SRF loans in 2018 that will result in \$9.6 million in interest savings over the life of the loan. Appropriations and tax levies are adjusted for new bond sales or SRF loans. Debt service for outstanding bonds consists of six refunding bonds, 10 capital improvements bonds, and 58 SRF loans.

## User Charges, Property, Services, & Miscellaneous

A major revenue source for the District is the user charge system, which imposes a surcharge above property tax payments for commercial, industrial, and tax-exempt users of the sewerage systems. Estimated user charge revenues in 2019 are \$46.0 million. Land rentals, investment income, sewer permit fees, connection impact fees, and other revenues will provide an estimated \$53.7 million in 2019. A \$4.2 million equity transfer from the Capital Improvements Bond Fund's accumulated interest income will be used to supplement the Corporate Fund revenues.

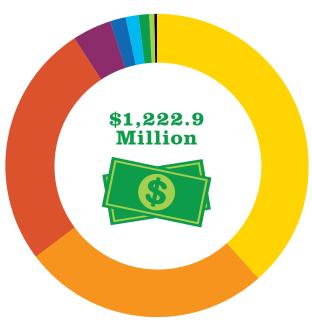
#### Tax Levy

The overall 2019 Tax Levy is \$642.8 million, an increase of \$20.4 million, or 3.3 percent, from the 2018 Adjusted Levy.

#### **Tax Rate**

The overall tax rate for 2019, based on the most recent Equalized Assessed Valuation, totals 40.97 cents per \$100 of assessed property value, a 0.14 cent increase from the 2018 Adjusted Tax Rate.

## **Where District Money Comes From**



	\$437.1 M	35.7%	Net Assets Appropriated
\$361.3 M 29.5%		29.5%	State Revolving Fund Loans & Future Bond Sales
	\$313.6 M	25.6%	Net Tax Sources
	\$46.0 M	3.8%	User Charge Income
	\$21.5 M	1.8%	Land Rentals
	\$17.0 M	1.4%	Miscellaneous
	\$14.2 M	1.2%	Investment Income
	\$11.3 M	0.9% (	Grants
	\$0.9 M	0.1%	Sewer Permit Fees
	\$1,222.9 M	100.0%	TOTAL

For a \$100,000 home, the 2019 estimated District tax is \$121.38.



## **Description of Funds**

The District uses the following funds to control its financial activities:

**CORPORATE FUND:** Accounts for property tax levies and other revenues used for the operations and payments of general expenditures of the District not specifically chargeable to other funds.

**CAPITAL IMPROVEMENTS BOND FUND:** Accounts for bond sale proceeds authorized by the Illinois General Assembly, government grants, and other revenues used for improvements, replacements, and additions to designated environmental improvement projects.

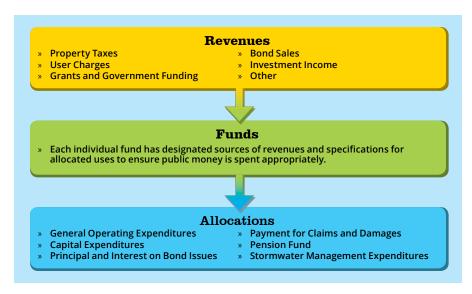
**CONSTRUCTION FUND:** Accounts for a specific property tax levy and other revenues used as a pay-as-you-go capital fund for the construction or replacement of long-term assets used in the principal functions of the District.

**STORMWATER MANAGEMENT FUND:** Accounts for property tax levies and other revenues, such as interest on investments and permit fees, for planning, implementing, and financing stormwater management activities throughout all of Cook County, including stream maintenance in areas that currently lie outside the district's boundaries.

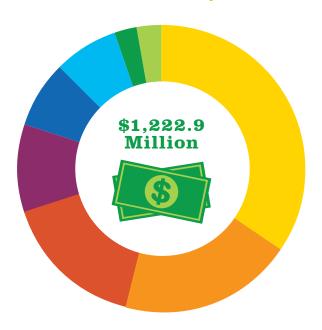
**RETIREMENT FUND:** Accounts for a specific property tax levy to fund pension costs in accordance with statutory provisions. The taxes are collected by the District and paid to the MWRD Retirement Fund, a pension trust fund.

**BOND REDEMPTION & INTEREST FUND:** Accounts for property tax levies and interest on investments for the payment of principal and interest of general obligation bond issues. A subfund is created for each bond issue.

**RESERVE CLAIM FUND:** Accounts for a specific property tax levy and other revenues and pays for claims, awards, losses, or liabilities that might be imposed against the District and for the replacement or repair of damaged property. The accounts of the Reserve Claim Fund are included in the General Corporate Fund for financial reporting purposes.



## **Where District Money Goes**



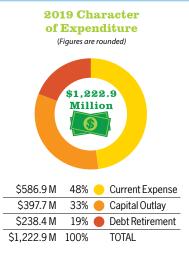
\$421.7 M	34.5% 🛑	Construction & Design
\$238.4 M	19.5%	Bond Redemption & Interest Fund
\$196.6 M	16.1%	Plant Operation & Maintenance
\$124.2 M	10.1%	Staff Services
\$91.4 M	7.5%	Stormwater Management
\$87.3 M	7.1%	MWRD Retirement Fund
\$31.8 M	2.6%	Claims & Judgments
\$31.5 M	2.6%	Monitoring & Research
\$1.222.9 M	100.0%	TOTAL

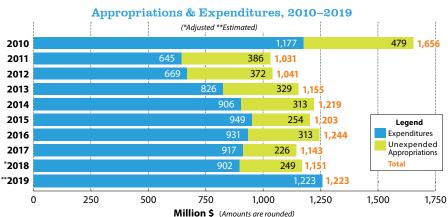


The Buffalo Creek Reservoir Expansion Project in Buffalo Grove, Illinois will protect 104 structures and provide in excess of \$25 million in flood relief benefits.

## **2019 Appropriations**

Appropriations for 2019 total \$1,222.9 million, an increase of \$71.9 million, or 6.2 percent, from the 2018 Adjusted Budget. Appropriations are allocated to seven separate funds. The increase is driven by project timing within the Capital Improvement Program and continued emphasis on implementation of Stormwater Projects throughout Cook County. Each fund maintains a self-balancing set of accounts that are reported separately in their own financial statements. The funds are created to account for the different types of activities and legal restrictions associated with a particular function. In 2019, there are increases of \$65.2 million in the Capital Improvements Bond Fund, \$25.8 million in the Stormwater Management Fund, \$7.4 million in the Corporate Fund, and \$1.5 million in the Reserve Claim Fund offset by decreases of \$17.9 million in the Bond Redemption & Interest Fund, \$7.7 million in the Construction Fund, and \$2.3 million in the Retirement Fund.





Summary by Fund	2019 Budget	2018 Adjusted Budget	Dollar Increase (Decrease)	Percent Change
Corporate Fund	\$377,612,500	\$370,209,200	\$7,403,300	2.0%
Construction Fund	18,340,300	26,080,600	(7,740,300)	(29.7)%
Capital Improvements Bond Fund	378,173,800	312,982,900	65,190,900	20.8%
Stormwater Management Fund	91,410,100	65,581,000	25,829,100	39.4%
Retirement Fund	87,281,000	89,604,000	(2,323,000)	(2.6)%
Reserve Claim Fund	31,767,800	30,289,500	1,478,300	4.9%
Bond Redemption & Interest Fund	238,357,541	256,304,187	(17,946,646)	(7.0)%
Total	\$1,222,943,041	\$1,151,051,387	\$71,891,654	6.2%

#### Estimated Taxes for a \$100,000 Home

2019 Budgeted	2018 Adjusted	Increase	Percent Change
\$121.38	\$120.97	\$0.41	0.34%

## **Appropriations by Operational Objective**

To comply with the Illinois Compiled Statutes, it is necessary to prepare budget estimates and appropriate funds according to programs, organizational units, performance principles, and unit cost data. The graph below displays the allocation of the 2019 appropriation and the personnel assigned to each operational objective across all funds. The District's mission is achieved daily through six main operational functions:

#### **Collection** \$102,692,675 • 285 Personnel

Operation and maintenance of pumping stations, force mains, and intercepting sewers.

#### **Treatment** \$162,445,816 • 460 Personnel

Treatment of influent at water reclamation plants.

#### Solids Processing \$88,451,745 • 254 Personnel

Processing of primary, secondary, and tertiary sludge.

## Flood & Pollution Control \$351,145,583 • 442 Personnel

Programs for the design and construction of flood and pollution control projects and waterways control.

#### Solids Utilization \$27,549,217 • 43 Personnel

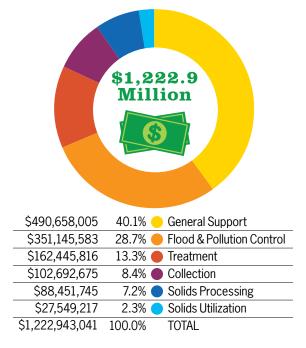
Drying and beneficial utilization of secondary and tertiary solids from the treatment process.

### General Support (Debt Service, Retirement, Reserve Funds, & Support Departments) \$490,658,005 • 483 Personnel

Indirect costs essential for achieving operational goals.

In 2019, a total of 1,967 positions are budgeted across all operational objectives.

2019 Appropriations by Operational Objective



#### Collection & Treatment

The District treats an average of 1.3 billion gallons of wastewater per day, with a total capacity of over 2.0 billion gallons per day. In 2019, the District expects to collect and treat approximately 492.6 billion gallons of wastewater at its seven water reclamation plants. The District's reclaimed wastewater, along with runoff from rainfall, is returned to the Chicago Area Waterway System, which includes local canals, rivers, and streams that serve as headwaters of the Illinois River System.

The District provides reclamation for residential and industrial wastewater, meeting permitted discharge limits virtually at all times. The water reclamation process is protected by a pre-treatment program to guard against hazardous substances and toxic chemicals. These are strictly regulated by federal and state requirements. The District routinely monitors all industry and non-residential sources to assure that those wastes are disposed of in an environmentally responsible and lawful manner.

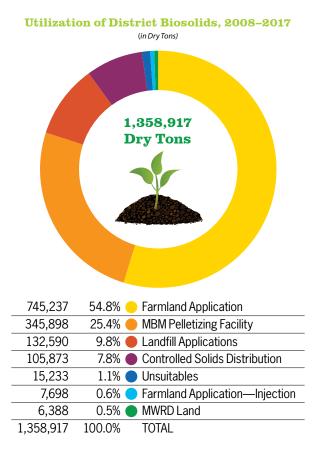
The collection and treatment processes are performed in compliance with discharge permits issued by the Environmental Protection Agency, which regulates the quality of the effluent as it leaves the treatment plants. To enhance its treatment process and increase its level of compliance, the District implemented a disinfection facility at the Calumet Water Reclamation Plant in 2015 and an ultraviolent radiation disinfection system at the O'Brien Water Reclamation Plant in 2016. The District's high level of compliance produces consistently excellent results. The District's overall 2017 (latest year for which figures are available) compliance with the National Pollutant Discharge and Elimination System requirements is 99.99 percent.



Workers pause for a photo during construction of a portion of the Southwest Intercepting Sewer on November 21, 1935.

#### **Biosolids Processing & Utilization**

The District's biosolids production operation is the largest of its kind in the country. The water reclamation processes produce approximately 187,000 dry tons of biosolids annually. In 2019, the District will remove and process approximately 182,600 dry tons of concentrated sewage through three biosolids handling facilities and produce an estimated 99,800 dry tons of biosolids for beneficial utilization.



In 2019, the District will continue its program for the beneficial utilization of biosolids. Biosolids are produced as a safe and environmentally friendly alternative to synthetic fertilizer. Illinois law recognizes Exceptional Quality (EQ) biosolids and EQ biosolids blends as soil amendments.

The District is developing a biosolids market through several initiatives including a pilot program to distribute bags of composts at trade and landscaping events to showcase the EQ product, and through a mutually beneficial arrangement with the Illinois Tollway to provide compost for their extensive landscaping work. Over 99 percent of all compost distributions in 2018 were made at no cost to non-profit organizations, golf courses, and public entities. In order to encourage increased compost use among local residents and businesses, the same no-charge policy was extended to all compost users in October 2018.

#### Flood & Pollution Control

#### Tunnel and Reservoir Plan

The District's Tunnel and Reservoir Plan is one of the country's largest public works projects for pollution and flood control. The Tunnel and Reservoir Plan has been successful in preventing flooding and pollution caused by combined sewer overflows, by capturing and storing combined stormwater and sewage that would otherwise overflow into waterways in rain weather.

Phase I, completed in 2006, consists of four tunnel systems totaling 109.4 miles of deep rock tunnels, eight to 33 feet in diameter and 150 to 300 feet underground. The tunnels provide crucial protection and can capture up to 2.3 billion gallons of the first flush of sewage contaminated stormwater from combined sewers that previously flowed into area waterways.

Phase II, the reservoir component, provides additional storage of combined sewer overflows for flood damage reduction and additional pollution control. The Gloria A. Majewski Reservoir, located in Elk Grove Village, was built by the Army Corps of Engineers and completed in 1998. It provides 350 million gallons of storage. Constructed for approximately \$45 million, it has, since its completion, yielded over \$460.0 million in flood damage reduction benefits to the three communities it serves.

The Thornton Composite Reservoir was completed in 2015. It provides 7.9 billion gallons of storage and since its completion has captured more than 20.0 billion gallons of polluted water. It is projected to provide more than \$40 million annually in benefits to the residents of the 14 communities it serves.

The McCook Reservoir is comprised of two stages. The first stage was unveiled on December 4, 2017 and provides an estimated 3.5 billion gallons of storage. The second stage, expected to be completed in 2029, will provide an estimated 6.5 billion gallons of storage. The McCook Reservoir



Stage 1 of the McCook Reservoir began taking water for the first time during an unusually warm January 11, 2018.

is projected to bring \$143 million per year in flood control benefits to the 3.1 million residents of the 37 communities it serves.

A new 20-foot diameter inflow tunnel and gate shaft, scheduled to be completed in 2020, is being constructed to connect the existing Des Plaines Tunnel system directly to the McCook Reservoir. The new tunnel will provide a greater benefit to the communities served by the Des Plaines Tunnel than using the inflow/outflow tunnels.

#### **Industrial Waste Monitoring & Pollution Control**

The District effectively eliminates offensive or dangerous discharges into the public sewer system through the administration of the Sewage and Waste Control Ordinance. It specifies limits on the quantity and quality of wastes discharged by industrial users as required by the United States Environmental Protection Agency. Industries and non-residential sources are monitored by the District to ensure wastes are disposed of in an environmentally responsible and lawful manner.

The District is designated by the Illinois Environmental Protection Agency as an official response unit for chemical and hazardous waste spills in Cook County and is expected to respond to 160 emergency calls in 2019 from local, state, and federal agencies. Boat patrols are also conducted to locate pollution sources and monitor lakefront recreational events to prevent pollution from entering Lake Michigan.

As water quality continues to improve, recreational activities are growing. The number of fish species in the Chicago Area Waterways System has drastically increased since the 1970s when monitoring of the fish population began. From 10 known species in 1974, the number has increased to 76. In 2018, the District teamed with the Army Corps of Engineers and the Chicago Park District to demolish a century old dam along the North Branch of the Chicago River to allow fish migration and improve navigation for recreational paddlers. The District maintains a mapping application, found at gispub.mwrd.org/awqa, to help the public understand the health of local streams and rivers, making monitoring data available to the public. The Citizen Incident Reporting Application, found on the District's website or via a mobile application, allows citizens to report incidents of odors, stream blockages, and other environmental-related issues.



The "Mississippi" near McDonough Street at the start of a trip down the Des Plaines River to Marseilles on August 13, 1909. The passengers are identified as Mr. W. G. Clark, Mr. Eidman, Mr. Thorne and Mr. Heilbron.

## **Stormwater Management**

The Stormwater Management Program is aggressively working to minimize flooding damage caused by historic rain patterns consisting of intense, short bursts that overwhelm community systems. During 2019, construction will begin on both channel improvements on Addison Creek and the Addison Creek Reservoir. Together these large-scale projects will reduce overbank flooding for over 2,000 structures.

Through flood-prone property acquisition, community partnerships and cost-sharing agreements for local stormwater projects, the District is leveraging tax dollars and investing in both Green Infrastructure projects and large capital projects. The District partnered with the City of Chicago to complete the Albany Park Stormwater Diversion Tunnel in 2018. The tunnel will convey water overflowing at the North Branch of the Chicago River and convey it more than a mile east to the North Shore Channel. The Albany Park neighborhood experienced major flooding that impacted hundreds of homes in the past, and this project will help protect those homes against future flood damages.

Providing stormwater management includes not only building traditional flood control measures, but also incorporating Green Infrastructure into regional planning. The 2019 Budget includes \$34.5 million in the Stormwater Management Fund for Intergovernmental Agreements for stormwater improvements.

In 2017, the District began accepting annual applications to help fund local government projects that utilize Green Infrastructure. In 2017, the District accepted 47 applications and selected 20 projects for funding in 2018. In 2018, the District accepted 48 applications and selections for funding in 2019 are ongoing. Green Infrastructure can reduce wet-weather flows to combined sewer systems, reducing combined sewer overflows to local waterways and protecting water quality in these vital waterways. Green Infrastructure reduces runoff volumes, improves water quality in separate sewer service areas, and provides social benefits that enhance the livability of communities.

The District continues the successful Space to Grow Program with the Chicago Department of Water Management, Chicago Public Schools, the Healthy Schools Campaign, and Openlands, transforming schoolyards with Green Infrastructure. There are currently 15 schools with construction completed, six of which opened in 2018. There are four additional that are planned for construction in 2019.



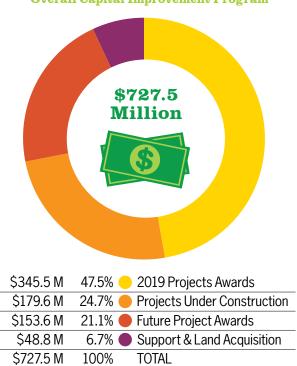
Space to Grow partners unveil a transformed schoolyard at Cook Academy in Chicago's Auburn Gresham neighborhood on September 5, 2018.

## Capital Funds & Projects

Capital improvements preserve the useful life or increase the capacity or efficiency of District facilities. Capital projects involve the acquisition, improvement, replacement, remodeling, completion, alteration, construction, and enlargement of District facilities.

Funding for the Capital Improvement Program consists of the sale of capital improvements bonds, general property tax revenues, SRF loans, and federal and state grants. The 2019 Capital Improvement Program appropriation, which includes the Capital Improvements Bond and Construction Funds, is \$396.5 million. A total of 122 projects funded by the Capital Improvements Bond or Construction Funds will be in the planning, design, or construction phases in 2019. The Capital Improvement Program identifies and prioritizes projects to modernize obsolete equipment and facilities to ensure continued efficient and reliable service, protect infrastructure, and meet National Pollutant Discharge Elimination System permit requirements. The District's overall Capital Improvement Program includes 2019 construction project awards, land, support, future projects, and projects under construction with a total cost of approximately \$727.5 million, as displayed in the graph below.

#### **Overall Capital Improvement Program**



## 130 Years of Dedicated Service

Nearly 500 billion gallons of water flow through the pipes and facilities of the Metropolitan Water Reclamation District of Greater Chicago (District) each year. The District addresses the volume of water that comes with heavy rains and unknown contaminants that are flushed down drains throughout Cook County. It is the diligent men and women of the District and our seven industrious water reclamation plants that maintain that flow and transform wastewater into a clean product that protects our environment and makes our region an attractive place to live and visit. Our water reclamation plants meet the highest standards and uphold our distinguished record of excellence that residents have come to rely on for 130 years. The District's staff are implementing several innovations in renewable energy, while also developing reuse opportunities for water, energy, biosolids, algae, phosphorus, and other nutrients collected during the wastewater treatment process. Each of the seven water reclamation plants add value in traditional and non-traditional ways and protect the region's water quality.



The Stickney Water Reclamation Plant remains unrivaled as the world's largest plant with full secondary treatment by volume, cleaning up to 1.44 billion gallons per day, serving 2.3 million people in a 260 square mile area.



As stewards of our land, the District plants native prairie landscaping at the Terrence I. O'Brien Water Reclamation Plant and other facilities to reduce maintenance costs. increase biodiversity and wildlife habitat, sequester carbon, and meet our goals in managing stormwater.



treatment technologies.



The District is constructing new primary settling tanks and aerated grit tanks, support facilities, service tunnels, and conduits at the Stickney Water Reclamation Plant. This will replace tanks, produce renewable energy, increase and improve grit removal, protect downstream piping and equipment, increase water recycling and reduce odors.

Cover: The John E. Egan Water Reclamation Plant represents major advancements in the art and science of wastewater treatment, combining traditional technologies with new energy efficient processes to remove nitrogen and ammonia.



Metropolitan Water Reclamation District of Greater Chicago 100 East Erie Street • Chicago, Illinois 60611-3154







