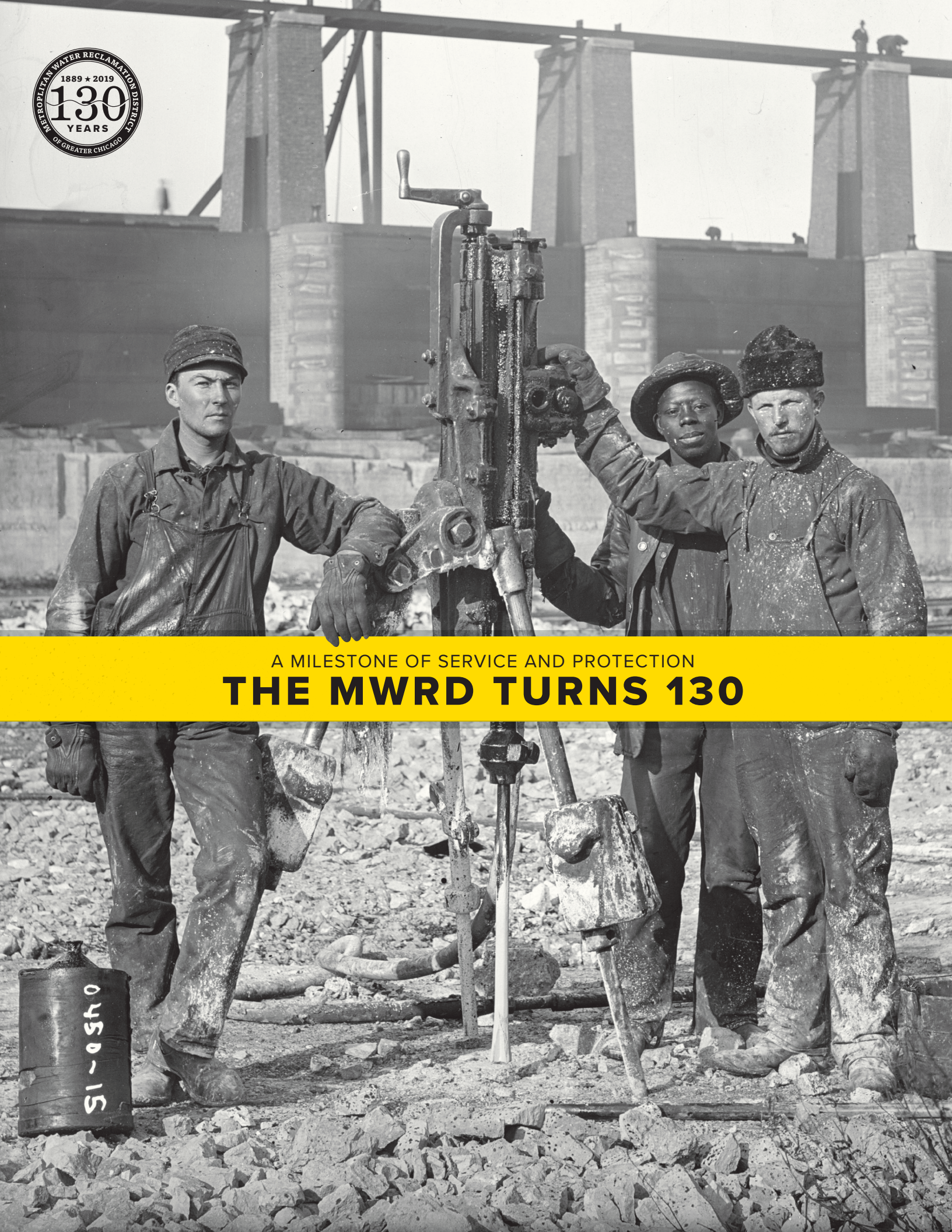
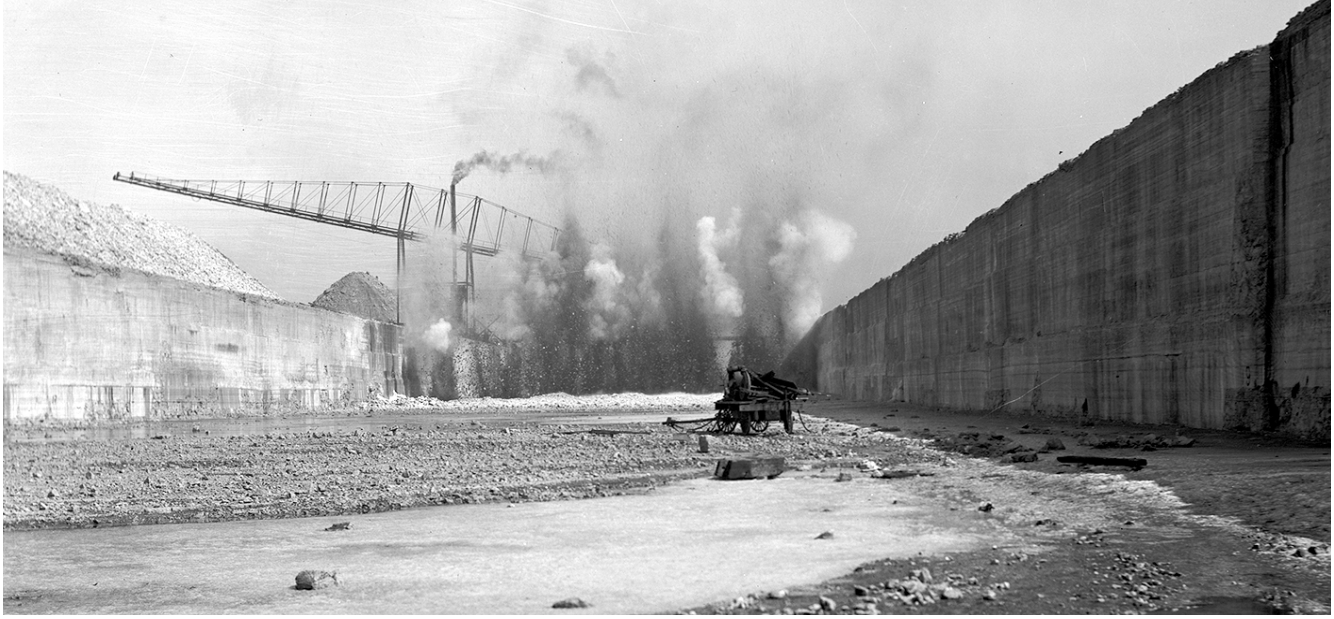
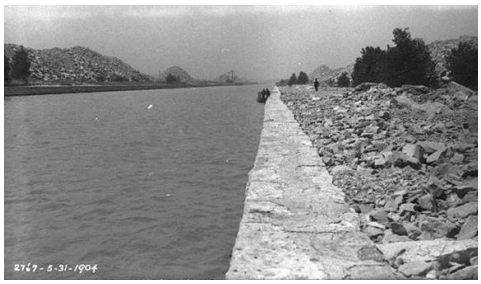


A MILESTONE OF SERVICE AND PROTECTION

THE MWRD TURNS 130





Counter-clockwise, from top, the Chicago Sanitary and Ship Canal in 1895 and after completion in 1904, followed by the North Shore Channel under construction in 1906 and the Cal-Sag Channel in 1914.

While much of the mission remains the same, the work of the Metropolitan Water Reclamation District of Greater Chicago (MWRD) continues to evolve and benefit the planet.

That work of improving the environment and protecting public health is reinforced in 2019 as the MWRD commemorates 130 years since its inception as the Sanitary District of Chicago in 1889.

There was a sense of urgency creating a sanitary district due to a booming population, the fear of waterborne illness, the quality of the drinking water supply in Lake Michigan and a contaminated river. Two previous attempts at legislation in the Illinois General Assembly had been stalled over concerns of discharging wastewater downstream. A special commission consisting of Chicago Mayor John Roche, two members of the Illinois House and two members of the Illinois Senate were appointed to gather public opinion and then buy-in for another round of legislation. The committee proposed constructing a canal wide enough to accommodate steamboat traffic, satisfying downstate interests. The chance to promote economic development linking the Great Lakes to the Gulf of Mexico ultimately persuaded the rest of the state to adopt legislation. On May 29, 1889, the General Assembly approved "the Act to Create Sanitary Districts and to Remove Obstructions in the Des Plaines and Illinois Rivers."

The Enabling Act required a referendum establishing the boundaries of the District, roughly covering 185 square miles from the lakefront west to Harlem Avenue and from Devon Avenue on the north to 87th Street on the south. The District's services were in such demand that the residents living in the proposed

1889
Sanitary District of Chicago is established.

1900
Chicago Sanitary and Ship Canal reverses flow of river.

1910
North Shore Channel reverses north branch of Chicago River.

1922
Cal-Sag Channel ready for operation.

Calumet Sewage Treatment Plant opens.

A District scientist tests water quality on May 26, 1923.

area voted in a landslide 70,958 to 242 in favor of its creation. Today the demand for clean water and the MWRD continues.

"While much has changed over the past 130 years, we continue to proudly protect our water environment while recovering resources," said MWRD President Kari K. Steele. "We look forward to continuing to pursue this high level of service for another 130 years."

From 1955 through 1988, the District was called The Metropolitan Sanitary District of Greater Chicago. In order to provide a more accurate perception of the District's current functions and responsibilities, the name was changed effective January 1, 1989, to Metropolitan Water Reclamation District of Greater Chicago.

Proposing to reverse a river is one challenge, but actually delivering it is an altogether different story of determination, toil, strife and labor. The District followed through on that promise. The District reversed the flow of the Chicago River in 1900 by constructing the Chicago Sanitary and Ship Canal to redirect sewage away from Lake Michigan to send downstream, thus protecting the source of the region's drinking water. The water was discharged to the Des Plaines River, where it could be diluted as it flowed into the Illinois River and eventually the Mississippi River. The Sanitary and Ship Canal was so successful that two more canals were built. In 1910, the North Shore Channel was completed to provide drainage to the marshy areas north of the city and to direct lake water into the North Branch of the Chicago River for dilution. The Cal-Sag Channel was ready for operation in 1922, which also was the year the first treatment plant of the Sanitary District of Chicago was finished (The Calumet Sewage Treatment Plant). The Cal-Sag Channel reversed the Calumet Rivers. As the District established the Chicago Area Waterways System (CAWS), water treatment technology was advancing, leading to the creation of treatment plants and interceptor sewers that conveyed water from local collection systems to the plants for treatment.

The MWRD constructed 560 miles of intercepting sewers and force mains ranging in size from 6 inches to 27 feet in diameter. The intercepting sewers are fed by approximately 10,000 local sewer system connections and are critical in managing stormwater and preserving the waterways.

The MWRD built six additional water reclamation plants (WRPs) soon thereafter, one of which is the world's largest, the Stickney WRP.

Today, the MWRD treats an average of 1.3 billion gallons of water each day, and the MWRD's total water treatment capacity is over 2 billion gallons per day. The MWRD also controls 76.1 miles of navigable waterways, which are part of the inland waterway system connecting the Great Lakes with the Gulf of Mexico. It also owns and operates 34 stormwater detention reservoirs to provide regional stormwater flood damage reduction.

In 1972, the MWRD started making plans to create the MWRD's Tunnel and Reservoir Plan (TARP), one of the country's largest public works projects for pollution and flood control. Today, three reservoirs are in operation, in addition to 109 miles of tunnels that hold rainwater mixed with wastewater during storm events. TARP covers the 375-mile combined sewer area, which includes Chicago and 51 suburbs, and provides 20.55 billion gallons of storage capacity,

McCook Reservoir Stage 1 was unveiled in 2017.

1955
Name changes to The Metropolitan Sanitary District of Greater Chicago.

Chicago Sewage Disposal System named one of seven engineering wonders of the world.

1972
MWRD begins plans to create the Tunnel and Reservoir Plan.

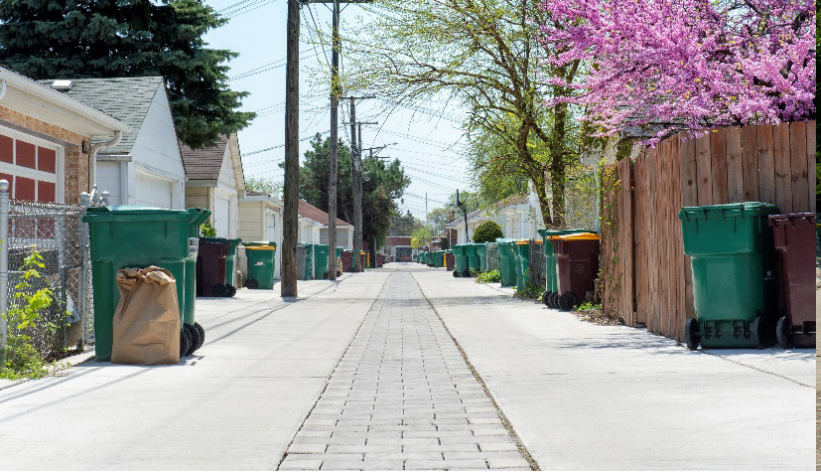
1989
Centennial Fountain comes online.

2004
Illinois General Assembly grants authority to MWRD to manage stormwater for Cook County.

2013
Cook County Watershed Management Ordinance approved by MWRD Board of Commissioners.

2015
Thornton Composite Reservoir unveiled.

2017
Stage 1 of McCook Reservoir unveiled.



An MWRD green alley in Berwyn slowly filters water into the ground.

Kayakers paddle on the Main Stem of the Chicago River in downtown Chicago.

allowing the WRPs a chance to keep up during heavy rain events.

In 2004, the Illinois General Assembly granted authority to the MWRD to manage stormwater for Cook County. The MWRD further put its skills into practice in 2013 when the MWRD Board of Commissioners approved the Watershed Management Ordinance (WMO). The WMO provides uniform stormwater management regulations for Cook County in order to prevent future commercial, municipal, and residential development and redevelopment projects from exacerbating flooding.

In addition to TARP, the MWRD currently has more than 120 stormwater management projects in design or construction. The MWRD's stormwater projects incorporate elements of both gray and green infrastructure, ranging in size between massive reservoirs to green alleys and permeable parking lots. Green infrastructure mimics the natural environment by handling precipitation where it falls by detaining and infiltrating runoff through rain gardens, permeable pavement, cisterns and other practices. By letting water slowly filter into the ground, this relieves some of the stress on old combined sewer systems. Other projects include improving Chicago schoolyards to better manage water through a partnership known as Space to Grow, acquiring flood prone properties to take homes out of the flood plain, and distributing more than 130,000 rain barrels and nearly 60,000 free oak tree saplings to soak up stormwater, while also offsetting the regional loss of ash trees due to severe weather and the emerald ash borer.

Improving stormwater management and developing new technology at WRPs has led to cleaner area waterways. The MWRD created an Industrial Waste Division and pre-treatment program to control water leaving industrial facilities and entering the plant for treatment. The MWRD now controls what is leaving the plant through new disinfection technologies that include chlorination/dechlorination at Calumet WRP and UV disinfection at the O'Brien WRP.

A testament to the improvements in water quality in the CAWS is swimming below the surface. The number of fish species has shown a steady increase following the implementation of the TARP and Sidestream Elevated Pool Aeration stations. The number of fish species found in the CAWS has drastically increased since the 1970s when monitoring of the fish population first began. From 10 known species in 1974, that number has increased to 77, including 60 that have been found in the CAWS since 2000. Decreases in ammonia levels and increases in dissolved oxygen levels have proven to be essential factors for aquatic life, while TARP has also cut the amount of combined sewer overflows in half, leading to less polluted water and healthier homes for fish along the CAWS.

Since its inception, the MWRD has worked to improve the environment and protect public health, but the way it views its work has evolved over 130 years. Sewage is no longer a waste product, but instead a collection of resources to be recovered and reused. The MWRD is implementing several innovations in renewable energy, while also recovering and developing reuse opportunities for water, biosolids, algae, phosphorus, and other nutrients collected during the water treatment process. Each of the seven plants has made strides in helping the MWRD meet its goal of developing a resource recovery model that provides a sustainable return to both taxpayers and the environment.

Through these opportunities, the MWRD will add value in traditional and non-traditional ways, while protecting the region's water quality. The MWRD has also become a proactive agency that prides itself on many partnerships and collaborative efforts to improve the quality of life throughout Cook County. Through its culture of excellence, collaboration, innovation, and work that extends beyond traditional water management, the MWRD is truly a "Utility of the Future."

The MWRD recovers resources that can be reused in both fertilizer and compost products.

UPDATED 3/4/19

COVER: *This November 1896 image shows laborers posing next to a compressed air rock drill during the construction of the Chicago Sanitary and Ship canal, with the nearly completed sluice gates for the Lockport Controlling Works in the background. Drilling into rock requires a fluid, or drilling mud, which is splattered all over the workers. Explosives were placed into the holes and detonated, and the rock debris could then be removed from the worksite.*