MWRD

Hazard Mitigation Plan Point of Contact

Primary Point of Contact	Alternate Point of Contact
Anne Wright, Public Affairs Specialist Engineering Department, Stormwater Management 111 East Erie Chicago, Illinois 60611 Telephone: 312-751-3150 Email Address: wrighta@mwrd.org	Catherine O'Connor, Director of Engineering Engineering Department 100 East Erie Chicago, Illinois 60611 Telephone: 312-751-7905 Email Address: Catherine.O'Connor@mwrd.org

Jurisdiction Profile

Origin and History

The Metropolitan Water Reclamation District of Greater Chicago (District) is an independent government and taxing body encompassing approximately 92 percent of the land area and 98 percent of the assessed valuation of Cook County, Illinois.

The District is a separate legal entity sharing an overlapping tax base with the City of Chicago, the Chicago Board of Education, the County of Cook, the Forest Preserve District of Cook County, the Chicago Park District, the Chicago Public Building Commission, the Cook County Community College District, and various municipalities and school districts outside the City of Chicago but within the District's boundaries.

The District was originally organized as the Sanitary District of Chicago in 1889 under an act of the Illinois General Assembly which has been modified from time to time to increase the District's authority and jurisdiction. The District's enabling legislation, enacted in 1889, was in direct response to a long standing problem with contamination of the water supply and nuisance conditions of Chicago area rivers. The District reversed the flow of the Chicago and Calumet River systems to stop the discharge of sewage into Lake Michigan and instead, discharge it to the Des Plaines River, where it could be diluted as it flowed into the Illinois River and eventually the Mississippi River. Prior to the District's construction of a 61.3 mile system of canals and waterway improvements, the Chicago and Calumet River systems were tributaries to Lake Michigan. These river systems are now tributaries to the Illinois River system.

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 the Metropolitan Water Reclamation District of Greater Chicago.

Mission and Responsibilities

The mission of the District is to protect the health and safety of the public in its service area, protect the quality of the water supply source (Lake Michigan), improve the quality of water in watercourses in its service area, protect businesses and homes from flood damages, and manage water as a vital resource for its service area.

The District collects wastewater from municipalities in its service area, conveys it to water reclamation plants, provides full secondary treatment, and discharges treated water to local waterways. The District is also responsible for stormwater management for all of Cook County, including areas outside of the District's corporate boundaries.

Services

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

Treated wastewater, along with runoff from rainfall, enters local canals, rivers, and streams that serve as headwaters of the Illinois River system. Stormwater in the separate sewered area is controlled to reduce flood damages by a number of stormwater detention reservoirs. In the combined sewer area, the District's Tunnel and Reservoir Plan has significantly reduced basement backups and overflows to local waterways.

Flow within the Chicago Area Waterway System and the Lake Michigan discretionary diversion flow are controlled by three inlet structures on Lake Michigan: the Wilmette Pumping Station, the Chicago River Controlling Works, and the O'Brien Lock and Dam. The single outlet control structure is the Lockport Lock and Powerhouse.

While exercising no direct control over wastewater collection systems owned and maintained by cities, villages, sewer districts, and utilities, the District does control municipal sewer construction by permits outside the City of Chicago. It also owns a network of intercepting sewers to convey wastewater from the local collection systems to the water reclamation plants.

Governance

The District is governed by a nine-member Board of Commissioners (Board). Commissioners are elected at large and serve on a salaried basis. Three Commissioners are elected every two years for six-year terms. Biannually, the Board elects from its membership a President, Vice President, and Chairman of the Committee on Finance.

Organization Structure

The Executive Director (ED) is appointed by and reports directly to the Board of Commissioners. The ED manages the District's day-to-day operations. Eight appointed Department Heads report to the ED. General Administration, which includes the Administrative Services Division, Diversity Section, and Public Affairs Section are direct staff and support units, reporting to the ED. There are nearly 2,000 employees that work for the District.

The Treasurer of the District, its chief financial officer, is appointed by and reports directly to the Board.

Tax Sources

All District funds, with the exception of the Capital Improvements Bond Fund, derive their revenues primarily from 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 income 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. These revenues, received directly from the State of Illinois, typically trend with the economy.

Funding Capital Projects: Bonds, Grants, and Loans

The District's Capital Improvement Program (CIP) is financed primarily with State Revolving Fund (SRF) loans and general obligation bond sale proceeds. Additionally, a series of Public Acts have provided further non-referendum authority to the District to issue "limited bonds". Bond sales are used to provide revenue for capital project cash flows. The District's debt is authorized under the Illinois Compiled Statutes. Appropriations and tax levies are adjusted for new bond sales or State Revolving Fund loans. The Capital Budget includes the Construction Fund and the Capital Improvement Bond Fund, which are described below.

User Charges, Property, Services, & Miscellaneous

Another major revenue source for the District is a user charge system, which imposes a surcharge above property tax payments for commercial, industrial, and tax exempt users of the sewerage system. Other sources of revenue include land rentals, investment income, sewer permit fees, connection impact fees, grants, and other miscellaneous revenues.

Funds to Control District Financial Activities

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 for 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 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 sub-fund 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.

Key Information

The following is a summary of key information about the jurisdiction:

Population Served—The District serves an equivalent population of 10.35 million people; 5.25 million actual population, a commercial and industrial equivalent of 4.5 million people, and a combined sewer overflow equivalent of 0.6 million people.

Land Area Served—The District is located primarily within the boundaries of Cook County, Illinois. The District's corporate limits encompass an area of 883.1 square miles which includes the City of Chicago and 125 suburban communities. The District also has authority for stormwater management for all of Cook County, including areas that lie outside the District's corporate limits, but within Cook County.

Value of Area Served—The estimated value of the area served by the jurisdiction is 98 percent of the assessed valuation of Cook County, which is 92 percent of the land area.

Land Area Owned—The District currently owns approximately 24,000 acres of land located in Cook, Will, DuPage, and Fulton Counties in Illinois and controls approximately 76 miles of navigable waterways, which include the Calumet-Sag Channel, Chicago Sanitary and Ship Canal (Main Channel), and the North Shore Channel. Additionally, the District has acquired rights-of-way and easements for the construction and installation of its facilities and structures upon, under, and through miles of real estate owned by other parties.

List of Critical Infrastructure/Equipment Owned by the Jurisdiction:

A. The District's 560 miles of intercepting sewers and force mains range from 6 inches to 27 feet in diameter and have approximately 10,000 local sewer system connections.

B. The District's Tunnel and Reservoir Plan (TARP) is one of the county's largest public works projects for pollution and flood control. Four tunnel systems total 109.4 miles of tunnels, 9 to 33 feet in diameter and 150 to 300 feet underground. The tunnels empty into three reservoirs to provide storage for polluted water captured by TARP. Gloria Malitto Majewski Reservoir, Thorton Composite Reservoir, and Stage 1 of McCook Reservoir are in operation and construction is in progress on Stage 2 of McCook Reservoir for the Chicagoland Underflow Plan (CUP).

C. The District owns and operates 23 pump stations.

D. The District manages 76.1 miles of navigable waterways which are part of the inland waterway system connecting the Great Lakes with the Gulf of Mexico. The navigable waterways are controlled by District infrastructure at the Wilmette Pump Station, the Chicago River Controlling Works, O'Brien Controlling Works, Lockport Powerhouse and Lockport Controlling Works. Sidestream Elevated Pool Aeration (SEPA) stations located along the navigable waterways provide dissolved oxygen to the waterways.

E. The District operates 37 regional stormwater detention reservoirs located throughout Cook County. Two of the operating reservoirs are part of the TARP system.

F. The District owns and maintains 6 dams in Cook County and 2 dams in Fulton County.

G. The District's Small Streams Maintenance Program maintains 532 miles of stream, rivers, and canals within Cook County. The objective of the Program is to remove obstructions and debris in small streams and rivers that impede natural drainage and could cause flooding in urban areas.

Total Value of Critical Infrastructure/Equipment—The value of critical infrastructure and equipment maintained, operated, or owned by the jurisdiction is provided in the table below.

TABLE: TOTAL VALUE CRITICAL INFRASTRUCTURE/EQUIPMENT			
Infrastructure/Equipment	**Address**	**Quantity**	**Replacement Cost (2019 Dollars)**
A. Intercepting Sewers	**Throughout Cook County**	**554 Miles**	**$17,584,908,891**
B. TARP			
1. Tunnels	See TARP map	109.4 Miles, 2.305 BG	$10,207,814,353
2. Gloria Alitto Majewski Reservoir	Elk Grove, IL	0.35 BG	$76,281,574
3. Thornton Transitional Reservoir	Thornton, IL 60476	3.1 BG	$110,089,034
4. Thornton Composite Reservoir	Thornton, IL 60476	7.9 BG	$416,650,948
5. McCook Reservoir - Stage 1 McCook Reservoir - Stage 2	McCook, IL 60525	3.5 BG 6.5 BG	$1,015,813,866 Under Construction
C. Pump Stations (PS)*			
1. Alsip PS*	4858 W. 115th Street, Alsip, IL 60803	1 Unit	$633,640
2. Bartlett PS*	Devon Ave & Berteau Ave, Bartlett, IL 60103	1 Unit	$15,238,429
3. Calumet TARP PS*	400 East 130th Street, Chicago, IL 60628	1 Unit	$129,244,541
4. East Markham PS*	161st Street & Dixie Hwy, Markham, IL 60426	1 Unit	$2,215,376
5. Evanston PS*	1455 Elmwood Ave, Evanston, IL 60201	1 Unit	$25,040,187

6. McCook PS*	49th Street and Egandale Ave, McCook, IL 60525	1 Unit	$1,636,559
7. North Branch PS*	4860 N. Francisco, Ave., Chicago, IL 60625	1 Unit	$31,029,317
8. Palos Park PS*	76th Ave, Worth, IL 60482	1 Unit	$3,570,940
9. Palos Hills PS*	90th Ave and 119th Street, Palos Park, IL 60464	1 Unit	$1,903,043
10. Prospect Meadows PS*	Rand Road & Elmhurst Ave, Mt. Prospect, IL 60056	1 Unit	$2,079,485
11. Racine Ave. PS*	Racine Ave & 39th Street, Chicago, IL 60609	1 Unit	$215,954,680
12. TARP Mainstream PS*	5600 S. River Rd., Hodgkins, IL 60525	1 Unit	$900,256,695
13. Thornton PS*	700 East Chicago Rd., Hodgkins, IL	1 Unit	$1,872,546
14. Upper Des Plaines PS*	Thatcher & Greenfield Ave, River Forest, IL 60305	1 Unit	$25,039,928
15. Walters Rd. PS*	4195 Walters Rd., Northbrook, IL 60062	1 Unit	$2,778,859
16. Wellington PS*	2220 Wellington Ave., Chicago, IL 60618	1 Unit	$4,185,929
17. Westchester PS*	1134 Gardner Rd., Westchester, IL 60154	1 Unit	$24,128,357
18. Willow Springs PS *	91st St. & Wolf Rd., Willow Springs, IL 60480	1 Unit	$1,142,803
19. Wilmette PS*	Sheridan Rd. & the North Shore Channel, Wilmette, IL 60091	1 Unit	$51,341,322
20. 95th St. PS*	9512 S. Baltimore Ave, Chicago, IL 60617	1 Unit	$9,334,803
21. 122nd St. PS*	12205 S. Burley Ave., Chicago, IL 60633	1 Unit	$14,883,571
22. 125th St. PS*	125th St. & Michigan Ave., Chicago, IL 60628	1 Unit	$6,052,617
D. Navigable Waterways – Chicago Area Waterway System			
1. Canals		76.1 Miles	N/A
2. Lockport Powerhouse	Lockport, IL	1 Unit	$553,058,848
3. Lockport Controlling Works	Lockport, IL	1 Unit	$91,042,768

4. Chicago River Controlling Works	Chicago, IL	1 Unit	$206,456,676
5. O'Brien Controlling Works	Chicago, IL	1 Unit	Constructed by Corps of Engineers
6. Wilmette Gate	Wilmette, IL	1 Unit	Part of Pump Station, See C.19.
7. Centennial Fountain	400 N. McClurg Court, Chicago, IL	1 Unit	$6,120,244
8. SEPA 1	North Side of Calumet River at Torrence Avenue, Chicago, IL	1 Unit	$ 48,209,160 See D.9 & D.12.
9. SEPA 2	North Side of Little Calumet River at Indiana Avenue, Chicago, IL	1 Unit	Replacement cost is included with SEPA 1. See D.8.
10. SEPA 3	North Bank of Cal Sag Channel at Western Avenue, Blue Island, IL	1 Unit	$51,940,782 See D.11.
11. SEPA 4	North Bank of Cal Sag Channel at Harlem Avenue, Worth, IL	1 Unit	Replacement cost is included with SEPA 3, See D.10.
12. SEPA 5	North Side of Cal Sag Channel at Rt. 83, DuPage County, IL	1 Unit	Replacement cost is included with SEPA 1. See D.8.
13. Devon Avenue In-Stream Aeration	North Shore Channel and Devon Avenue, Chicago, IL	1 Unit	$15,159,591
14. Webster Avenue In-Stream Aeration	North Branch of Chicago River and Webster Avenue, Chicago, IL	1 Unit	$9,715,294
E. Regional Detention Reservoirs			
1. Bedford Park Reservoir	Bedford Park, IL	188 AC-FT	Constructed by Village Bedford Park
2. Buffalo Creek Reservoir (Expansion of Reservoir)	Buffalo Grove, IL	720 AC-FT	$10,849,693 Under Construction**
3. Calumet Union Reservoir	Hazel Crest, IL	500 AC-FT	$38,066,062
4. Deer Creek Reservoir	Ford Heights, IL	238 AC-FT	Constructed by Corps of Engineers
5. Deerfield Reservoir	Deerfield, IL	575 AC-FT	Constructed by Corps of Engineers
6. Dolphin Park Reservoir	Streamwood, IL	96 AC-FT	$2,7421,103 See E.10.
7. Dr. Mary Woodland Reservoir	Lynwood, IL	1076 AC-FT	$20,538,449
8. Edward C. Howell Reservoir	Markham, IL	589 AC-FT	$16,535,438
9. Heritage Park Reservoir	Wheeling, IL	151 AC-FT	$38,493,825

10. Hillside Park Reservoir	Streamwood, IL	35 AC-FT	Replacement cost is included Dolphin Park Reservoir, See E.6.
11. Hillside Reservoir	Hillside, IL	100 AC-FT	$7,032,487
12. Margreth Riemer Reservoir	Palatine, IL	572 AC-FT	$35,495,992
13. Mayfair Reservoir	Westchester, IL	74 AC-FT	$6,353.278
14. Melvina Ditch Reservoir	Burbank, IL	165 AC-FT	$10,567,585
15. Middle Fork Reservoir	Northbrook, IL	600 AC-FT	$23,579,838
16. Mount Prospect Reservoir	Mt. Prospect, IL	130 AC-FT	$7,538,721
17. Northlake Reservoir	Northlake, IL	427 AC-FT	$12,404,480
18. O'Hare/Touhy Avenue Reservoir	Des Plaines, IL	1178 AC-FT	$42,139,037
19. Oak Hill Park Reservoir	Streamwood, IL	77 AC-FT	$2,933,438
20. Oak Lawn Reservoir	Oak Lawn, IL	24 AC-FT	$1,497,147
21. Plum Grove Reservoir	Palatine, IL	218 AC-FT	$4,289,236
22. Silver Creek Reservoir	Franklin Park, IL	501 AC-FT	$20,432,477
23. St. Michael Reservoir	Rolling Meadows, IL	407 AC-FT	$15,115,942
24. Techny 32A (Northbrook) Reservoir	Northbrook, IL	300 AC-FT	$23,770,793 See E.25 & E.26.
25. Techny 32B Reservoir	Northbrook, IL	250 AC-FT	Replacement cost is included with Techny A Reservoir, See E.24.
26. Techny 32C (Glenview) Reservoir	Glenview, IL	1040 AC-FT	Replacement cost is included with Techny A Reservoir, See E.24.
27. Tinley Park Reservoir	Tinley Park, IL	616 AC-FT	$29,143,982
28. Tom T. Hamilton Reservoir	Palatine, IL	537 AC-FT	$32,092,201
29. Twin Lakes Reservoir	Palatine, IL	429 AC-FT	$12,588,802
30. Upper DuPage Reservoir	Hanover Park, IL	230 AC-FT	$22,023,257
31. White Pine Ditch Reservoir	Wheeling, IL	65.5 AC-FT	$2,025,304
32. Whilke Kirchoff Reservoir	Arlington Heights, IL	100 AC-FT	$7,870,013
33. Willow-Higgins Reservoir	Chicago, IL	1300 AC-FT	Constructed by the City of Chicago
F. Dams			
1. Buffalo Creek Reservoir Dam	Buffalo Grove, IL	1 Unit	Part of Reservoir, See E.2.
2. Plum Grove Reservoir Dam	Palatine, IL	1 Unit	Part of Reservoir, See E.20.
3. St. Michael Reservoir Dam	Rolling Meadows, IL	1 Unit	Part of Reservoir, See E.23.
4. Twin Lakes Reservoir Dam	Palatine, IL	429 AC-FT	Part of Reservoir, See E.28.
5. O'Hare/Touhy Avenue Reservoir Dam	Des Plaines, IL	1178 AC-FT	Part of Reservoir, See E.19
6. Thornton Gap Dam	Thornton, IL		Part of Reservoir, See B.4.
7. Acid Lake Dam	Fulton, IL	70 AC-FT	Not in Cook County
8. Little Sister Dam	Fulton, IL	393 AC-FT	Not in Cook County

G. Rivers/Streams	**Cook County**	**532 Miles**	**N/A**
* Replacement cost for the pump station is only for the machinery and equipment.			

Current and Anticipated Service Trends

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 preserving water as a vital resource. As the stormwater management authority for Cook County, the District will continue to address flooding on multiple fronts through the administration of the Small Streams Maintenance Program, the Stormwater Management Capital Improvement Program, and the comprehensive stormwater management regulatory ordinance, known as the Watershed Management Ordinance.

The District's capital improvement projects preserve the useful life or increase the capacity or efficiency of District facilities or infrastructure. Capital projects involve the acquisition, improvement, replacement, remodeling, completion, alteration, construction, and enlargement of District facilities or infrastructure. Through proper operation, maintenance, repair, replacement, and new construction, the District ensures continued efficient and reliable service and protection of its investment and infrastructure, while meeting necessary permit requirements.

List of Critical Facilities Owned by the Jurisdiction:

A. The District owns and operates 7 Water Reclamation Plants (WRP). The District treats an average of 1.3 billion gallons of wastewater each day, with a total treatment capacity of over 2.0 billion gallons per day.

B. District's Main Office Building, 100 East Erie, Chicago, IL

C. District's Main Office Building Annex, 111 East Erie, Chicago, IL

Total Value of Critical Facilities—The total value of critical facilities owned by the jurisdiction are provided in the table below

TABLE: TOTAL VALUE CRITICAL FACILITIES			
Critical Facilities	**Address**	**Quantity**	**Replacement Cost (2019 Dollars)**
A. Water Reclamation Plants (WRPs)			
1. Stickney WRP	6001 West Pershing, Stickney, IL 60804	1 Unit	$3,317,875,492
2. Calumet WRP	400 E. 130 Street, Chicago, IL 60628	1 Unit	$1,832,108,134
3. Terrence J. O'Brien (North Side) WRP	3500 West Howard Street, Skokie, IL 60076	1 Unit	$1,746,483,724
4. James C. Kirie WRP	701 W Oakton, Des Plaines, IL 60018	1 Unit	$672,235,634
5. John E. Egan WRP	5560 S. Meachum Road, Schaumburg, IL 60193	1 Unit	$550,527,870
6. Hanover WRP	1220 Sycamore Avenue, Hanover Park, IL 60103	1 Unit	$190,733,930
7. Lemont WRP	13 Stevens and River Road, Lemont, IL 60437	1 Unit	$84,673,298

B. LASMA - Solid Maintenance Area	**7601 S. LaGrange Road, Willow Springs, IL 60480**	**1 Unit**	**$5,479,663***
C. Main Office Building	**100 East Erie, Chicago, IL 60611**	**1 Unit**	**$42,725,022**
D. Main Office Building Annex	**111 East Erie, Chicago, IL 60611**	**1 Unit**	**$31,138,299**
Total			**$8,473,981,066**
*Replacement cost does not include the drying beds and lagoons at LASMA			

Jurisdiction-Specific Natural Hazard Event History

The information provided below was solicited from the jurisdiction and supported by NOAA and other relevant data sources.

Federal Disasters Declared

Disaster Declaration Number	Date Declared	Event
DR-227	4/25/1967	Tornado
DR-351	9/4/1972	Flood
DR-373	4/26/1973	Flood
DR-509	6/18/1976	Severe Storm(s)
DR-643	6/30/1981	Severe Storm(s)
DR-776	10/7/1986	Flood
DR-798	8/21/1987	Flood
DR-997	7/9/1993	Flood
DR-1129	7/25/1996	Severe Storm(s)
DR-1188	9/17/1997	Severe Storm(s)
DR-1729	9/25/2007	Severe Storm(s)
DR-1800	10/3/2008	Severe Storm(s)
DR-1935	8/19/2010	Severe Storm(s)
DR-1960	3/17/2011	Snow
EM-3068	1/16/1979	Snow
EM-3134	1/8/1999	Snow
EM-3161	1/17/2001	Snow
EM-3230	9/7/2005	Hurricane – Katrina Evacuation
EM-3435	3/13/2020	Biological
DR-4116	5/10/2013	Flood
DR-4489	3/26/2020	Biological
DR-4728	8/15/2023	Severe Storm(s)
DR-4749	11/20/2023	Flood

State Disaster Declarations

Date Declared	Event
7/26/2010	Severe Storms, High Winds, Torrential Rain
1/31/2011	Winter Weather
4/25/2011 5/25/2011	High Wind, Tornadoes, Torrential Rain
4/18/2013	Severe Storms, Heavy Rainfall, Flooding, Straight-line Winds

4/20/2013 4/21/2013 4/25/2013 4/30/2013	
1/6/2014	Heavy Snowfall, Frigid Temperatures
7/12/2017 7/14/2017	Thunderstorms, Heavy Rainfall, Flooding
1/29/2019	Winter Storm
2/6/2020	Severe Storms
3/12/2020 – present (reissued monthly)	COVID-19
2/16/2021	Winter Storms
2/1/2022	Winter Storms
8/1/2022 (reissued monthly through 10/28/2022)	Monkeypox

The *Natural Hazard Events Table* lists all past occurrences of major natural hazards within the jurisdiction.

TABLE: NATURAL HAZARD EVENTS

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment to MWRD-Owned Infrastructure
Severe Storms, Straight-Line Winds and Flooding	DR-4116, Incident period: 4/16/13 - 5/5/13	4/26/2013	$1,655,432
Severe Winter Storm and Snowstorm	DR-1960, Incident period: 1/31/11 - 2/3/11	1/31/2011	$101,384
Severe Storms and Flooding	DR-1935, Incident period: 7/19/10 - 8/7/10	7/19/2010	$1,417,486
Severe Storm and Flooding	-	2/26/2009	$1,475,876
Severe Storms and Flooding	DR-1800, Incident period: 9/13/08 - 10/5/08	9/13/2008	$4,544,335
Severe Storms and Flooding	DR-1729, Incident period: 8/20/07 - 8/31/07	8/20/2007	$2,519,450
Illinois Hurricane Katrina Evacuation	EM-3230, Incident period: 8/29/05 - 10/1/05	9/7/2005	Not available at this time.*
Illinois Severe Winter Storm	EM-3161, Incident period: 12/11/00 - 12/31/00	12/11/2000	Not available at this time.*
Illinois Winter Snow Storm	EM-3134, Incident period: 1/1/99 - 1/15/99	1/1/1999	Not available at this time.*

Flooding	DR-1188, Incident period: 8/16/97 - 8/17/97	8/16/1997	Not available at this time.*
Flooding	DR-1129, Incident period: 7/17/96 - 8/7/96	7/17/1996	Not available at this time.*
Severe Storms and Flooding	DR-997, Incident period: 4/13/93 - 10/22/93	4/13/1993	Not available at this time.*
Severe Storms and Flooding	DR-798, Incident period: 8/13/87 - 8/30/87	8/13/1987	Not available at this time.*
Severe Storms and Flooding	DR-776, Incident period: 9/21/86 - 10/15/86	9/21/1986	Not available at this time.*
Severe Storms, Flooding, and Tornadoes	DR-643, Incident period: 6/30/81	6/30/1981	Not available at this time.*
Illinois Blizzards and Snowstorms	EM-3068, Incident period: 1/16/1979	1/16/1979	Not available at this time.*
Severe Storms, Flooding, and Tornadoes	DR-509, Incident period: 6/18/76	6/18/1976	Not available at this time.*
Severe Storms and Flooding	DR-373, Incident period: 4/26/73	4/26/1973	Not available at this time.*
Severe Storms and Flooding	DR-351, Incident period: 9/4/72	9/4/1972	Not available at this time.*
Tornadoes	DR-227, Incident period: 4/25/67	4/25/1967	Not available at this time.*
Source: FEMA Disaster History. http://www.fema.gov/news/disasters_state.fema?id=53 *MWRD needs to do further research to determine if damages/cost were incurred.			

Jurisdiction-Specific Hazards: Vulnerabilities and Impacts

Hazards that represent a county-wide risk are addressed in the Risk Assessment section of the 2024 Cook County Multi-Jurisdictional Hazard Mitigation Plan Update. This section only addresses the hazards and their associated impacts that are **relevant** and **unique** to the municipality.

Dam/Levee Failure: If dams failed, the ability to manage stormwater will be impacted, causing flooding in those areas.

Drought: Water quality could become difficult to maintain.

Earthquake: MWRD facilities and waste water treatment could be interrupted depending on how severe an earthquake.

Severe Weather: Severe weather such as high winds, lightning, hail, etc. could affect/interrupt operations of waste water facilities. The entire population of Cook County could be impacted.

Tornado: Tornado's can damage and/or interrupt power to our waste water facilities and affect/or interrupt operations.

Severe Winter Weather: Severe winter weather could affect/interrupt waste water treatment. The entire population of cook county could be impacted.

Wildfire (Wildfire Smoke): Properties are vulnerable.

Jurisdiction-Specific Climate Change Vulnerability and Impacts

The table below outlines if climate change, as assessed by the local planning team, has increased or decreased the municipality's vulnerability/exposure, and thereby the potential impacts, to each natural hazard over the past five (5) years (**Current Vulnerability**), and the effect of climate change in the future probability of occurrence and impacts (**Future Vulnerability**) from each natural hazard.

Hazard	Vulnerability
Current Vulnerability	
Dam and Levee Failure	Increased
Drought	Unknown
Earthquake	Unknown
Flood (Riverine, Urban, Shoreline)	Increased
Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Wings)	Unknown
Severe Winter Weather (Ice Storms, Heavy Snow, Blizzards, Extreme Cold)	Remained the Same
Tornado	Remained the Same
Wildfire (Wildfire Smoke)	Remained the Same

Hazard	Vulnerability
Future Vulnerability	
Dam and Levee Failure	Increase
Drought	Unknown
Earthquake	Unknown
Flood (Riverine, Urban, Shoreline)	Increase
Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Wings)	Unknown
Severe Winter Weather (Ice Storms, Heavy Snow, Blizzards, Extreme Cold)	No Change is Anticipated
Tornado	No Change is Anticipated
Wildfire (Wildfire Smoke)	No Change is Anticipated

Jurisdiction-Specific Changes (or Expected Changes) in Development Trends in Hazard-Prone Areas

The table below outlines if development, as assessed by the local planning team, over the past five (5) years (**Current Vulnerability**) has increased or decreased the jurisdiction's vulnerability/exposure, and thereby the potential impacts, to these natural hazards, and the anticipated effects changes in development may have on the future probability of occurrence and impacts (**Future Vulnerability**) from these natural hazards.

Hazard	Vulnerability
Current Vulnerability	
Dam and Levee Failure	Increased
Drought	Unknown
Earthquake	Unknown
Flood (Riverine, Urban, Shoreline)	Increased

Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Wings)	Unknown
Severe Winter Weather (Ice Storms, Heavy Snow, Blizzards, Extreme Cold)	Remained the Same
Tornado	Remained the Same
Wildfire (Wildfire Smoke)	Remained the Same

Hazard	Vulnerability
Future Vulnerability	
Dam and Levee Failure	Increase
Drought	Unknown
Earthquake	Unknown
Flood (Riverine, Urban, Shoreline)	Increase
Severe Weather (Extreme Heat, Lightning, Hail, Fog, High Wings)	Unknown
Severe Winter Weather (Ice Storms, Heavy Snow, Blizzards, Extreme Cold)	No Change is Anticipated
Tornado	No Change is Anticipated
Wildfire (Wildfire Smoke)	No Change is Anticipated

Underserved communities continue to be more vulnerable to flooding.

Hazard Risk Ranking

The *Hazard Risk Ranking Table* below presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

TABLE: HAZARD RISK RANKING	
Rank	**Hazard Type**
1	Flooding
2	Severe Weather (Extreme Heat, Lightning, Hail, Fog, Wind)
3	Dam and Levee Failures
4	Earthquakes
5	Severe Winter Weather
6	Tornado
7	Drought

New Mitigation Actions

The following are new mitigation actions created during the 2024 update.

Action #23

Mitigation Action #23: Design and construct the Deer Creek/Third Creek Stormwater Management Project					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** High	**Potential Funding Source:** General Fund Building Resilient Infrastructure and Communities (BRIC)	**Estimated Projected Completion Date:** Long-term	**Hazard(s) Mitigated:** Flood (Riverine, Urban, Coastal/Shoreline)
Year Initiated		2025			
Applicable Jurisdiction		Metropolitan Water Reclamation District of Greater Chicago			
Applicable Goal		1,2,3,4			
Applicable Objective		2,9,12			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		Design and construct the Deer Creek/Third Creek Stormwater Management Project			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority Completion status legend: **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #24

Mitigation Action #24: Design and construct a stormwater management project in Dixmoor					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Medium	**Potential Funding Source:** General Fund Building Resilient Infrastructure and Communities (BRIC)	**Estimated Projected Completion Date:** Long-term	**Hazard(s) Mitigated:** Flood (Riverine, Urban, Coastal/Shoreline)
Year Initiated		2025			
Applicable Jurisdiction		Metropolitan Water Reclamation District of Greater Chicago			
Applicable Goal		1,2,3,4			
Applicable Objective		2,9			
Cost Analysis (Low, Medium, High)		Medium			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		Design and construct a stormwater management project in Dixmoor			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #25

Mitigation Action #25: Design and construct a stormwater management project in Dolton					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Medium	**Potential Funding Source:** General Fund Building Resilient Infrastructure and Communities (BRIC)	**Estimated Projected Completion Date:** Long-term	**Hazard(s) Mitigated:** Flood (Riverine, Urban, Coastal/Shoreline)
Year Initiated		2025			
Applicable Jurisdiction		Metropolitan Water Reclamation District of Greater Chicago			
Applicable Goal		1,2,3,4			
Applicable Objective		2,9			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		Design and construct a stormwater management project in Dolton			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #26

Mitigation Action #26: Design and construct a stormwater management project in Posen					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Medium	**Potential Funding Source:** General Fund Building Resilient Infrastructure and Communities (BRIC)	**Estimated Projected Completion Date:** Long-term	**Hazard(s) Mitigated:** Flood (Riverine, Urban, Coastal/Shoreline)
Year Initiated		2025			
Applicable Jurisdiction		Metropolitan Water Reclamation District of Greater Chicago			
Applicable Goal		1,2,3,4			
Applicable Objective		2,9			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		Design and construct a stormwater management project in Posen			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #27

Mitigation Action #27: Design and construct a stormwater management project in Markham					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Medium	**Potential Funding Source:** General Fund Building Resilient Infrastructure and Communities (BRIC)	**Estimated Projected Completion Date:** Long-term	**Hazard(s) Mitigated:** Flood (Riverine, Urban, Coastal/Shoreline)
Year Initiated		2025			
Applicable Jurisdiction		Metropolitan Water Reclamation District of Greater Chicago			
Applicable Goal		1,2,3,4			
Applicable Objective		2,9			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		Design and construct a stormwater management project in Markham			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #28

Mitigation Action #28: Design and construct a stormwater management project in Bedford Park					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Medium	**Potential Funding Source:** General Fund Building Resilient Infrastructure and Communities (BRIC)	**Estimated Projected Completion Date:** Long-term	**Hazard(s) Mitigated:** Flood (Riverine, Urban, Coastal/Shoreline)
Year Initiated		2025			
Applicable Jurisdiction		Metropolitan Water Reclamation District of Greater Chicago			
Applicable Goal		1,2,3,4			
Applicable Objective		2,9			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		Design and construct a stormwater management project in Bedford Park			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #29

Mitigation Action #28: Design and construct a stormwater management project in Western Springs					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Medium	**Potential Funding Source:** General Fund Building Resilient Infrastructure and Communities (BRIC)	**Estimated Projected Completion Date:** Long-term	**Hazard(s) Mitigated:** Flood (Riverine, Urban, Coastal/Shoreline)
Year Initiated		2025			
Applicable Jurisdiction		Metropolitan Water Reclamation District of Greater Chicago			
Applicable Goal		1,2,3,4			
Applicable Objective		2,9			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		Design and construct a stormwater management project in Western Springs			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Ongoing Mitigation Actions

During the 2024 update, these "ongoing" mitigation actions and projects were modified and/or amended, as needed.

Action #3 - MWRD

<table>
<tr><td colspan="6">Mitigation Action #3: Reduce flooding and improve Chicagoland’s water quality by completing the Tunnel and Reservoir Plan. Completing Stage II of McCook Reservoir will provide 6.5 billion gallons of storage for combined sewers. When complete, the McCook Reservoir will provide 10.0 billion gallons. Stage II of the McCook Reservoir is planned to be completed in 2029.</td></tr>
<tr><td colspan="2">Lead Agency/Department Organization:
MWRD, Corps of Engineers</td><td>Supporting Agencies/ Organizations:</td><td>Estimated Cost:
High</td><td>Potential Funding Source:
MWRD, Corps of Engineers</td><td>Estimated Projected Completion Date:
Long-term</td><td>Hazard(s) Mitigated:
Flooding</td></tr>
<tr><td colspan="3">Year Initiated</td><td colspan="4">2014</td></tr>
<tr><td colspan="3">Applicable Jurisdiction</td><td colspan="4">MWRD</td></tr>
<tr><td colspan="3">Applicable Goal</td><td colspan="4">2,3</td></tr>
<tr><td colspan="3">Applicable Objective</td><td colspan="4">2, 9, 12</td></tr>
<tr><td colspan="3">Cost Analysis (Low, Medium, High)</td><td colspan="4">High</td></tr>
<tr><td colspan="3">Priority and Level of Importance (Low, Medium, High)</td><td colspan="4">Medium</td></tr>
<tr><td colspan="3">Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)</td><td colspan="4">Medium</td></tr>
<tr><td colspan="3">Action/Implementation Plan and Project Description:</td><td colspan="4">Stage II of McCook Reservoir is under construction, and Stage II is scheduled to be completed by 2029. More information on TARP can be found at https://mwrd.org/what-we-do/tunnel-and-reservoir-plan-tarp .</td></tr>
<tr><td colspan="3">Actual Completion Date or Ongoing Indefinite</td><td colspan="4"></td></tr>
<tr><td colspan="3">Project Status & Changes in Priority
Completion status legend:
N = New; I = In Progress Toward Completion;
O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed</td><td colspan="4">O</td></tr>
</table>

Action #4 - MWRD

Mitigation Action #4: Implementation and enforcement of the Watershed Management Ordinance for Cook County.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD	**Estimated Projected Completion Date:** Short-term and Long-term	**Hazard(s) Mitigated:** Flooding
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2,3,4			
Applicable Objective		2, 3, 4, 6, 8, 10, 12, 13			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		MWRD's Stormwater Management Program Annual Reports update Watershed Management Ordinance (WMO) activities yearly. The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports. More information on the WMO can be found at https://mwrd.org/doing-business/watershed-management-ordinance-and-infiltrationinflow.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #5 - MWRD

Mitigation Action #5: Reduce flooding by designing and implementing flood control projects approved and budgeted by the District's Board of Commissioners.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** High	**Potential Funding Source:** MWRD, HMGP, & PDM	**Estimated Projected Completion Date:** Short-term and Long-term	**Hazard(s) Mitigated:** Flooding
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2,3			
Applicable Objective		2, 3, 9, 12			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		MWRD's Stormwater Management Program Annual Reports provide yearly updates on flood control projects under design and construction. The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #6 - MWRD

Mitigation Action #6: Reduce potential damage to structures and infrastructure by designing and implementing stream-bank stabilization projects approved and budgeted by the District's Board of Commissioners.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** High	**Potential Funding Source:** MWRD	**Estimated Projected Completion Date:** Short Term and Long Term	**Hazard(s) Mitigated:** Flooding, Severe Weather
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2,3,4			
Applicable Objective		2, 13			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		MWRD's Stormwater Management Program Annual Reports provide yearly updates on stream-bank stabilization projects under design and construction. The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #7 - MWRD

<table>
<tr><td colspan="6">Mitigation Action #7: Reduce flooding, basement backups, and combined sewer overflows by developing guidelines and a framework for the District's Green Infrastructure Program. The guidelines will help with designing, implementing, and promoting green infrastructure.</td></tr>
<tr><td>Lead Agency/Department Organization:
MWRD</td><td>Supporting Agencies/ Organizations:</td><td>Estimated Cost:
Low</td><td>Potential Funding Source:
MWRD</td><td>Estimated Projected Completion Date:
Short-term and Long-term</td><td>Hazard(s) Mitigated:
Flooding, Severe Weather</td></tr>
<tr><td colspan="2">Year Initiated</td><td colspan="4">2014</td></tr>
<tr><td colspan="2">Applicable Jurisdiction</td><td colspan="4">MWRD</td></tr>
<tr><td colspan="2">Applicable Goal</td><td colspan="4">1,2,3</td></tr>
<tr><td colspan="2">Applicable Objective</td><td colspan="4">2, 3, 9, 12, 13</td></tr>
<tr><td colspan="2">Cost Analysis (Low, Medium, High)</td><td colspan="4">Low</td></tr>
<tr><td colspan="2">Priority and Level of Importance (Low, Medium, High)</td><td colspan="4">Medium</td></tr>
<tr><td colspan="2">Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)</td><td colspan="4">Medium</td></tr>
<tr><td colspan="2">Action/Implementation Plan and Project Description:</td><td colspan="4">MWRD's Stormwater Management Program Annual Reports provide yearly updates on the Green Infrastructure Program. The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports. More information on the Green Infrastructure Partnership Opportunity Program is available at https://mwrd.org/what-we-do/stormwater-management/green-infrastructure.</td></tr>
<tr><td colspan="2">Actual Completion Date or Ongoing Indefinite</td><td colspan="4"></td></tr>
<tr><td colspan="2">Project Status & Changes in Priority
Completion status legend:
N = New; I = In Progress Toward Completion;
O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed</td><td colspan="4">O</td></tr>
</table>

Action #8 - MWRD

Mitigation Action #8: Continue to work with the Watershed Planning Councils					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD	**Estimated Projected Completion Date:** Short-term and Long-term	**Hazard(s) Mitigated:** Flooding
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2,3,4			
Applicable Objective		3, 4, 5, 6, 8, 10, 11, 13			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		MWRD's Stormwater Management Program Annual Reports provide yearly updates on Watershed Planning Councils (WPC). The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports. WPC Meeting Schedule is posted at https://mwrd.org/stormwater/wpc.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #9 - MWRD

<table>
<tr><th colspan="6">Mitigation Action #9: Continue the Small Streams Maintenance Program to reduce potential for flooding in urbanized areas.</th></tr>
<tr><td>Lead Agency/Department Organization:
MWRD</td><td>Supporting Agencies/ Organizations:</td><td>Estimated Cost:
Low</td><td>Potential Funding Source:
MWRD</td><td>Estimated Projected Completion Date:
Short-term and Long-term</td><td>Hazard(s) Mitigated:
Flooding, Severe Weather</td></tr>
<tr><td colspan="2">Year Initiated</td><td colspan="4">2014</td></tr>
<tr><td colspan="2">Applicable Jurisdiction</td><td colspan="4">MWRD</td></tr>
<tr><td colspan="2">Applicable Goal</td><td colspan="4">2,3</td></tr>
<tr><td colspan="2">Applicable Objective</td><td colspan="4">2, 12, 13</td></tr>
<tr><td colspan="2">Cost Analysis (Low, Medium, High)</td><td colspan="4">Low</td></tr>
<tr><td colspan="2">Priority and Level of Importance (Low, Medium, High)</td><td colspan="4">Medium</td></tr>
<tr><td colspan="2">Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)</td><td colspan="4">Medium</td></tr>
<tr><td colspan="2">Action/Implementation Plan and Project Description:</td><td colspan="4">MWRD's Stormwater Management Program Annual Reports provide yearly updates on Small Streams Maintenance Program. The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports. More information on Small Streams Maintenance Program can be found at https://mwrd.org/stormwater/stream-maintenance. The webpage provides information on how much debris was removed from the streams for each year. The webpage also provide a link for municipalities and residents to report blockages along streams within Cook County. The blockages can be reported on the Stream-maintenance page (https://mwrd.org/stormwater/stream-maintenance)</td></tr>
<tr><td colspan="2">Actual Completion Date or Ongoing Indefinite</td><td colspan="4"></td></tr>
<tr><td colspan="2">Project Status & Changes in Priority
Completion status legend:
N = New; I = In Progress Toward Completion;
O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed</td><td colspan="4">O</td></tr>
</table>

Action #10 - MWRD

<table>
<tr><td colspan="6">Mitigation Action #10: Expand Small Streams Maintenance Program’s website content to provide educational materials, as well as general information regarding the management of the Chicago Area Waterways System before, during, and after a storm event.</td></tr>
<tr><td>Lead Agency/Department Organization:
MWRD</td><td>Supporting Agencies/ Organizations:</td><td>Estimated Cost:
High</td><td>Potential Funding Source:
MWRD</td><td>Estimated Projected Completion Date:
Short-term</td><td>Hazard(s) Mitigated:
Flooding, Severe Storm</td></tr>
<tr><td colspan="2">Year Initiated</td><td colspan="4">2014</td></tr>
<tr><td colspan="2">Applicable Jurisdiction</td><td colspan="4">MWRD</td></tr>
<tr><td colspan="2">Applicable Goal</td><td colspan="4">2,3,6</td></tr>
<tr><td colspan="2">Applicable Objective</td><td colspan="4">6</td></tr>
<tr><td colspan="2">Cost Analysis (Low, Medium, High)</td><td colspan="4">High</td></tr>
<tr><td colspan="2">Priority and Level of Importance (Low, Medium, High)</td><td colspan="4">Medium</td></tr>
<tr><td colspan="2">Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)</td><td colspan="4">Medium</td></tr>
<tr><td colspan="2">Action/Implementation Plan and Project Description:</td><td colspan="4">MWRD created educational information on how Chicago Area Waterways System (CAWS) works before, during, and after a storm event. The educational information can be found at https://mwrd.org/what-we-do/reducing-flooding/chicago-area-waterway-system-caws/chicago-area-waterway-system-operations.</td></tr>
<tr><td colspan="2">Actual Completion Date or Ongoing Indefinite</td><td colspan="4"></td></tr>
<tr><td colspan="2">Project Status & Changes in Priority
Completion status legend:
N = New; I = In Progress Toward Completion;
O = Ongoing Indefinitely; C = Project Completed; R = Want Removed from Annex; X = No Action Taken/Delayed</td><td colspan="4">O</td></tr>
</table>

Action #11 - MWRD

Mitigation Action #11: Reduce flooding by continuing to seek and support funding partnership opportunities for projects to address flooding.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** High	**Potential Funding Source:** MWRD, Municipalities Townships, General Fund	**Estimated Projected Completion Date:** Short-term and Long-term	**Hazard(s) Mitigated:** Flooding
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2,3,4			
Applicable Objective		2, 8, 9, 12, 13			
Cost Analysis (Low, Medium, High)		High			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		MWRD's funding partnership opportunities can be found at https://mwrd.org/stormwater/partnerships.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #12 - MWRD

Mitigation Action #12: Continue to update and improve the District's existing critical infrastructure and facilities to mitigate against natural hazards through the capital improvement program.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD, HMGP, & PDM	**Estimated Projected Completion Date:** Short-term and Long-term	**Hazard(s) Mitigated:** All Hazards
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2,3			
Applicable Objective		2, 3, 4, 9, 13			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		MWRD continues to update and improve the District's existing critical infrastructure and facilities to mitigate against natural hazards through capital improvement projects.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #13 - MWRD

Mitigation Action #13: Integrate goals and objectives of the Cook County Natural Hazard Mitigation Plan into existing and future MWRD project and planning actions.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD	**Estimated Projected Completion Date:**	**Hazard(s) Mitigated:** All Hazards

				Short-term and Long-term	
Year Initiated	2014				
Applicable Jurisdiction	MWRD				
Applicable Goal	1,2,3,4,5,6				
Applicable Objective	All				
Cost Analysis (Low, Medium, High)	Low				
Priority and Level of Importance (Low, Medium, High)	Medium				
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium				
Action/Implementation Plan and Project Description:	MWRD continues integrate goals and objectives of the Cook County HMP into existing and future projects through planning, designing, and construction.				
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed	O				

Action #14 - MWRD

Mitigation Action #14: Continue to initiate preliminary design, final design, or construction of Phase II- Localized Stormwater Management projects.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** High	**Potential Funding Source:** MWRD, Municipalities Townships, Cook County, IDOT, HMGP, & PDM	**Estimated Projected Completion Date:** Short-term and Long-term	**Hazard(s) Mitigated:** Flooding
Year Initiated	2014				
Applicable Jurisdiction	MWRD				
Applicable Goal	1				
Applicable Objective	1, 2, 8, 9, 12, 13				
Cost Analysis (Low, Medium, High)	High				
Priority and Level of Importance (Low, Medium, High)	High				

Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	High
Action/Implementation Plan and Project Description:	MWRD's Stormwater Management Program Annual Reports provide yearly updates on Phase II-Localized Stormwater Management. The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports.
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed	O

Action #15 - MWRD

Mitigation Action #15: Continue the ongoing process of updating existing plans and procedures to mitigate against all hazards, and continue to develop new plans and procedures to mitigate new hazards.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD, HMGP, & PDM	**Estimated Projected Completion Date:** Short-term and Long-term	**Hazard(s) Mitigated:** All Hazards
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		1,2,3			
Applicable Objective		1, 2, 4, 5, 8, 12, 13			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		MWRD continues to update plans and procedures to mitigate natural hazards.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority		O			

Completion status legend: **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed	

Action #16 - MWRD

Mitigation Action #16: Continue to support the countywide initiatives identified in this plan.					
Lead Agency/Department Organization: MWRD, Cook Co. EMRS	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD, Cook Co. EMRS	**Estimated Projected Completion Date:** Ongoing	**Hazard(s) Mitigated:** All Hazards
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2,3			
Applicable Objective		5, 6, 8, 12			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High			
Action/Implementation Plan and Project Description:		MWRD continues to support countywide initiatives through our Stormwater Management Program and at our facilities.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #17 - MWRD

Mitigation Action #17: Actively participate in the plan maintenance strategy identified in this plan.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:**	**Estimated Projected**	**Hazard(s) Mitigated:** All Hazards

			MWRD	**Completion Date:** Ongoing	
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2,3			
Applicable Objective		1, 6, 8			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			
Action/Implementation Plan and Project Description:		MWRD continues to provide annual reports for the HMP.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #18 - MWRD

Mitigation Action #18: Reduce flooding and improve Chicagoland's water quality by continuing to use the 4.5 billion gallons Thornton Transitional Reservoir for additional storage of floodwater from Thorn Creek through 2022.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD & NRCS	**Estimated Projected Completion Date:** Short-term	**Hazard(s) Mitigated:** Flooding
Year Initiated		2014			
Applicable Jurisdiction		MWRD			
Applicable Goal		2			
Applicable Objective		1, 9			
Cost Analysis (Low, Medium, High)		Low			
Priority and Level of Importance (Low, Medium, High)		Medium			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium			

Action/Implementation Plan and Project Description:	MWRD's agreement with Hanson Material Service Corporation for the lease to use for flood storage runs until 12/31/22.
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed	O

Action #19

Mitigation Action #19: Address repetitive losses to properties in high flood-risk areas throughout the District's jurisdictional boundaries through our voluntary flood-prone property acquisition program.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:** Municipalities, Townships, and Cook County	**Estimated Cost:** Medium	**Potential Funding Source:** MWRD, Municipalities, Townships, Cook County, FEMA's HMPG, and FEMA's PDM	**Estimated Projected Completion Date:** Ongoing	**Hazard(s) Mitigated:** Flooding
Year Initiated		2019			
Applicable Jurisdiction		MWRD			
Applicable Goal		1,2			
Applicable Objective		1, 2, 3, 4, 7, 12			
Cost Analysis (Low, Medium, High)		Medium—The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		High—Project will provide an immediate reduction of risk exposure for life and property.			
Action/Implementation Plan and Project Description:		MWRD's Stormwater Management Program Annual Reports provide yearly updates on the Flood-Prone Property Acquisition program. The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports. More information on the Flood-Prone Property Acquisition program is available at https://mwrd.org/stormwater/fppa.			
Actual Completion Date or Ongoing Indefinite					

Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed	O

Action #20

Mitigation Action #20: Reduce flooding by developing stormwater master plans for subwatersheds, sewer-sheds, or municipalities.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD	**Estimated Projected Completion Date:** Long-term	**Hazard(s) Mitigated:** Flooding
Year Initiated		2019			
Applicable Jurisdiction		MWRD			
Applicable Goal		1,2,3,4,5,6			
Applicable Objective		1, 2, 3, 4, 8, 9, 10, 12			
Cost Analysis (Low, Medium, High)		Low—The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.			
Priority and Level of Importance (Low, Medium, High)		High			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium—Project will have a long-term impact on the reduction of risk exposure for life and property, or project will provide an immediate reduction in the risk exposure for property.			
Action/Implementation Plan and Project Description:		MWRD's Stormwater Management Program Annual Reports provide yearly updates on Stormwater Master Planning. The Stormwater Management Program Annual Reports can be found at https://mwrd.org/stormwater/plans-reports. More information on the planning is posted at https://mwrd.org/stormwater/planning.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #21

Mitigation Action #21: Reduce flooding by distributing low-cost rain barrels to residents of Cook County.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD	**Estimated Projected Completion Date:** Ongoing	**Hazard(s) Mitigated:** Flooding
Year Initiated		2019			
Applicable Jurisdiction		MWRD			
Applicable Goal		2			
Applicable Objective		12, 13			
Cost Analysis (Low, Medium, High)		Low—The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.			
Priority and Level of Importance (Low, Medium, High)		Low			
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)		Medium—Project will have a long-term impact on the reduction of risk exposure for life and property, or project will provide an immediate reduction in the risk exposure for property.			
Action/Implementation Plan and Project Description:		MWRD continues to distribute low-cost rain barrels to residents of Cook County. More information on this program can be found at https://mwrd.org/community-action/rain-barrels.			
Actual Completion Date or Ongoing Indefinite					
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed		O			

Action #22

Mitigation Action #22: Reduce flooding by distributing free tree saplings to residents of Cook County.					
Lead Agency/Department Organization: MWRD	**Supporting Agencies/ Organizations:**	**Estimated Cost:** Low	**Potential Funding Source:** MWRD	**Estimated Projected Completion Date:** Ongoing	**Hazard(s) Mitigated:** Flooding
Year Initiated		2019			

Applicable Jurisdiction	MWRD
Applicable Goal	2,4,6
Applicable Objective	12, 13
Cost Analysis (Low, Medium, High)	Low—The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.
Priority and Level of Importance (Low, Medium, High)	Low
Benefits of the Mitigation Project (Loss Avoided or Issue Being Mitigated)	Medium—Project will have a long-term impact on the reduction of risk exposure for life and property, or project will provide an immediate reduction in the risk exposure for property. Helps reduce flooding by allowing trees to absorb rain water
Action/Implementation Plan and Project Description:	MWRD continues to distribute free tree samplings. More information on this program can be found at https://mwrd.org/community-action/native-landscaping/restore-canopy.
Actual Completion Date or Ongoing Indefinite	
Project Status & Changes in Priority **Completion status legend:** **N** = New; **I** = In Progress Toward Completion; **O** = Ongoing Indefinitely; **C** = Project Completed; **R** = Want Removed from Annex; **X** = No Action Taken/Delayed	O

Completed Actions

Completed Mitigation Actions - An archive of all identified and completed projects, including completed actions since 2014.

Completed Action Items
Reduce flooding and improve Chicagoland's water quality by completing the Tunnel and Reservoir Plan. The completion of Thornton Reservoir will provided 4.8 billion gallons of storage for combined sewers, and an additional 3.1 Billion Gallons for flood relief from the Thornton River. When complete, the Thornton Reservoir will provide 7.9 billion gallons of storage. The Thornton Reservoir is planned to be completed in 2015.
Reduce flooding and improve Chicagoland's water quality by completing the Tunnel and Reservoir Plan. The completion of Phase I of McCook Reservoir will provide 3.5 billion gallons of storage for combined sewers. Stage I of the McCook Reservoir is planned to be completed in 2017.

Future Needs to Better Understand Risk/Vulnerability

None at this time.

Additional Comments

No additional comments at this time.

Hazard Mapping

Figure 1: Cook County and Metropolitan Water Reclamation District of Greater Chicago

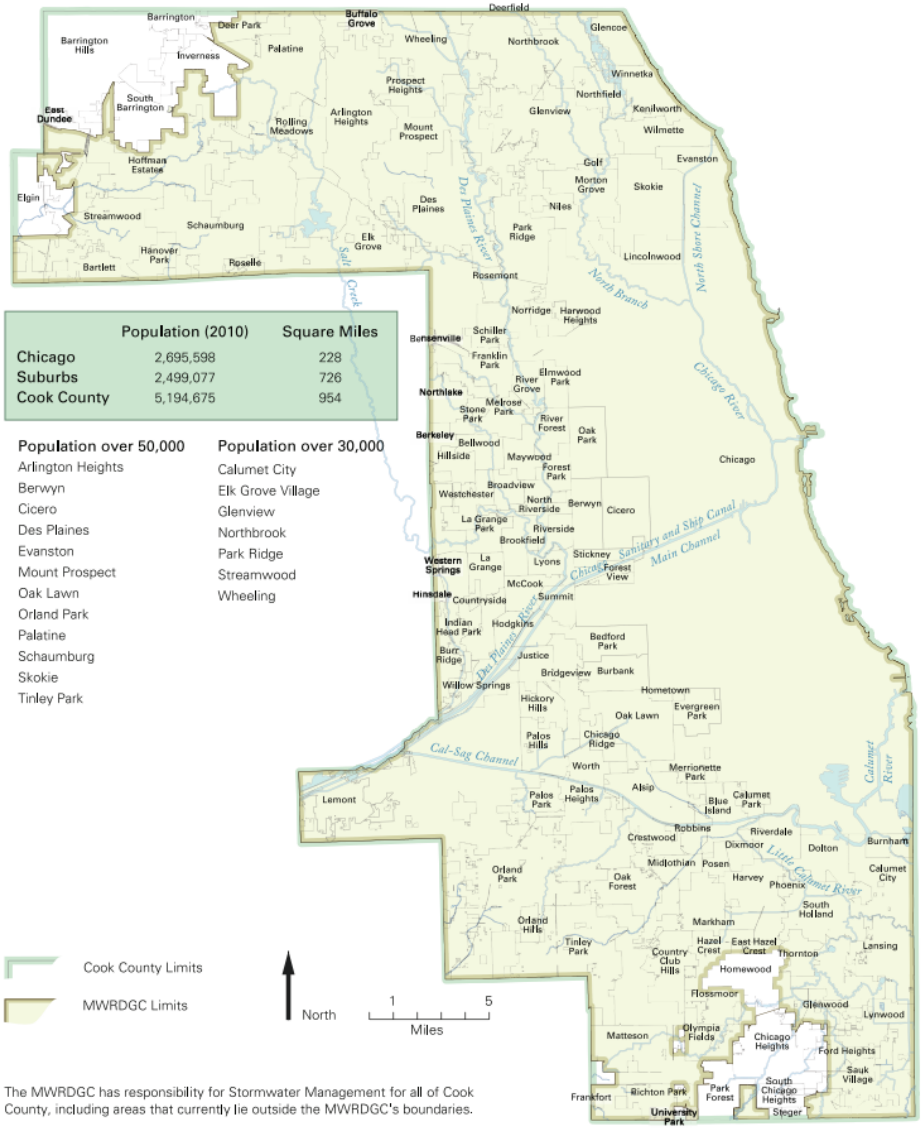

Figure 2: Tunnel and Reservoir Plan Project Status

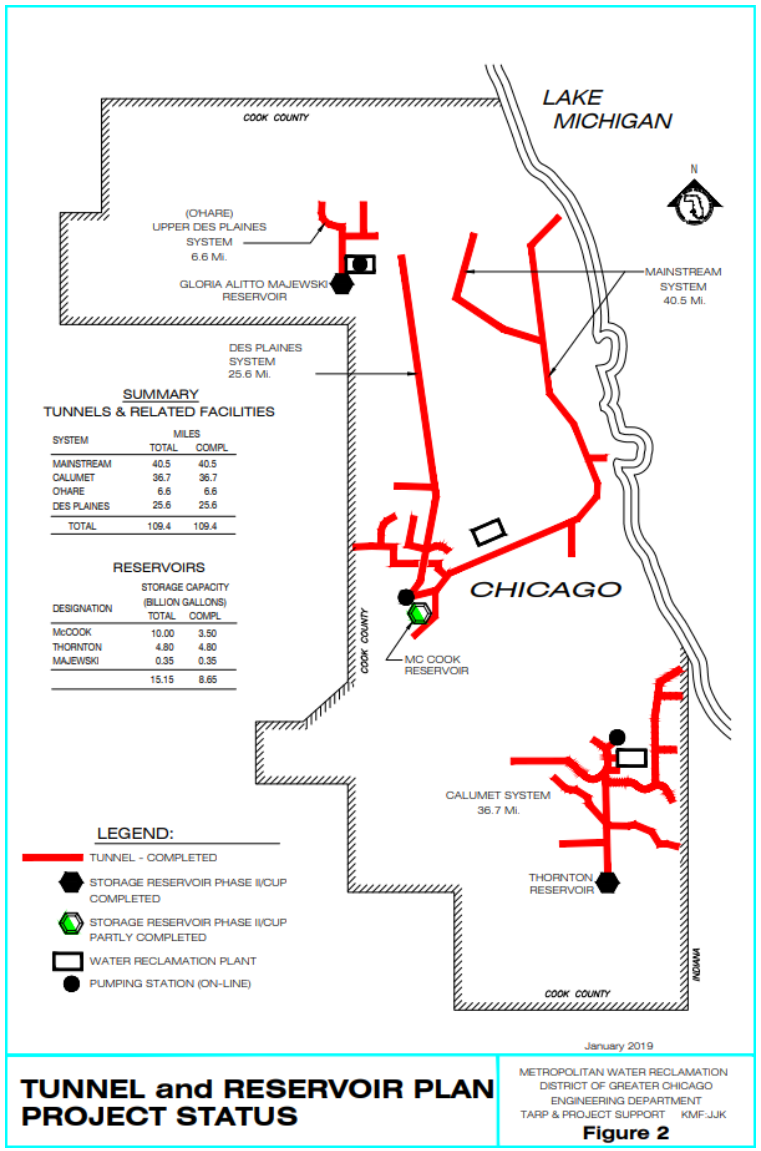

Figure 3: Cook County and Metropolitan Water Reclamation District of Greater Chicago