



Metropolitan Water Reclamation District of Greater Chicago

Capital Improvement Program

Board of Commissioner Study Session
October 15, 2020

Catherine A. O'Connor, Director of Engineering



Development of the Capital Improvement Program

- **Mission Critical** - Improvement to Environmental Quality
- **Preservation of Infrastructure** - Replacement to Maintain Acceptable Service Levels
- **Commitment to Community** - Return on Investment
- **Collection Asset Management Plan (CAMP)**
 - Intercepting sewers
 - TARP tunnels
 - Connecting structures
 - Sludge lines, force mains



2020 Contract Completions

Preservation of Infrastructure

- Contract 17-080-3E Switchgear & Motor Control Center Replacement, OWRP - \$3.6M

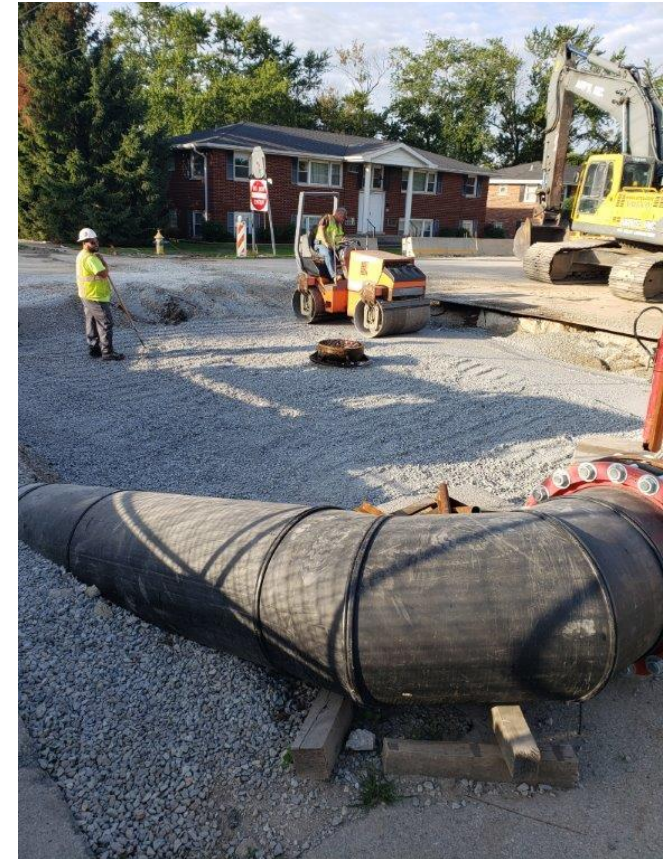
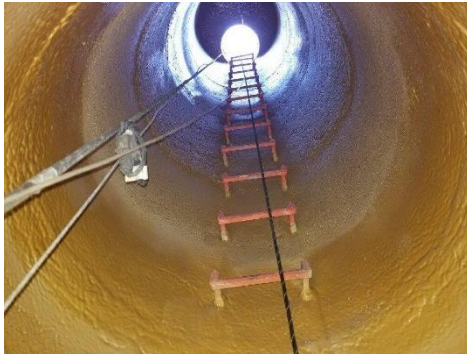




2020 Contract Completions

Preservation of Infrastructure

- Contract 11-239-3S Calumet Intercepting 19F Rehabilitation, CSA - \$14.4M





2020 Contract Completions

Commitment to Community

- Contract 13-370-3F
Buffalo Creek
Reservoir Expansion
- \$9.6M





2020 Contract Completions

Preservation of Infrastructure

- Contract 17-845-3P Heavy Equipment Storage Building Site Improvements, Bulk Material Storage Building, CWRP, OWRP - \$2.0M
- Contract 15-118-3M Main Sewage Pump Seal Water System Modifications, MSPS, Hodgkins, IL - \$1.1M

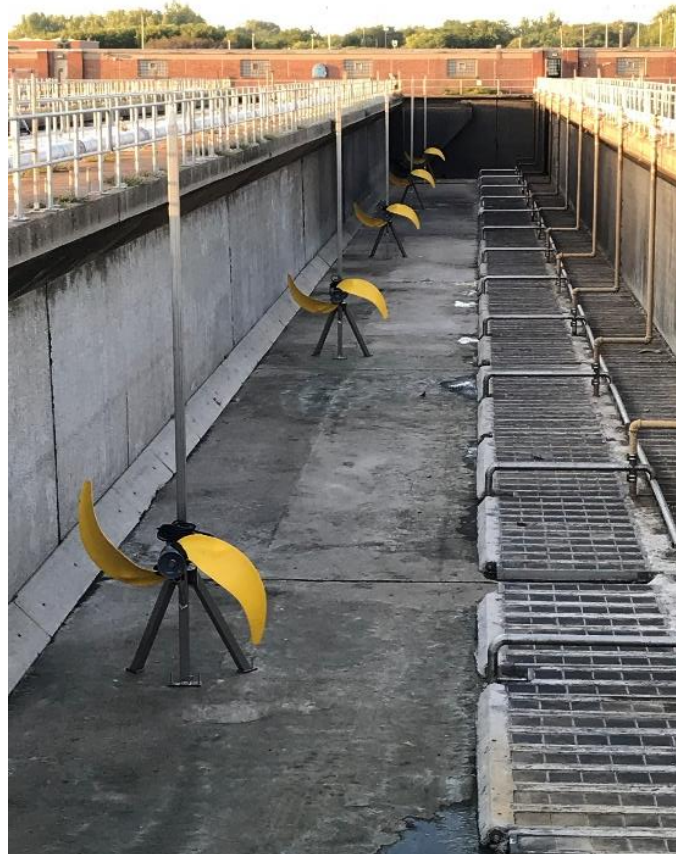




2020 Construction in Progress

Mission Critical

- Contract 18-248-3P Sidestream Enhanced Biological Phosphorus Removal Pilot Study, CWRP - \$1.9M





2020 Construction in Progress

Preservation of Infrastructure

- Contract 17-276-3D Structural Repairs and Roofing Replacement at 95th Street Pumping Station - \$4.6M





2020 Construction in Progress

Preservation of Infrastructure

- Contract 16-079-3D Rehabilitation of North Branch Pumping Station, North Service Area - \$5.4M





2020 Construction in Progress

Preservation of Infrastructure

- Contract 15-830-3D Replacement of Tailrace Stop Logs, Equipment, and Head Gates at the Lockport Powerhouse - \$12.2M

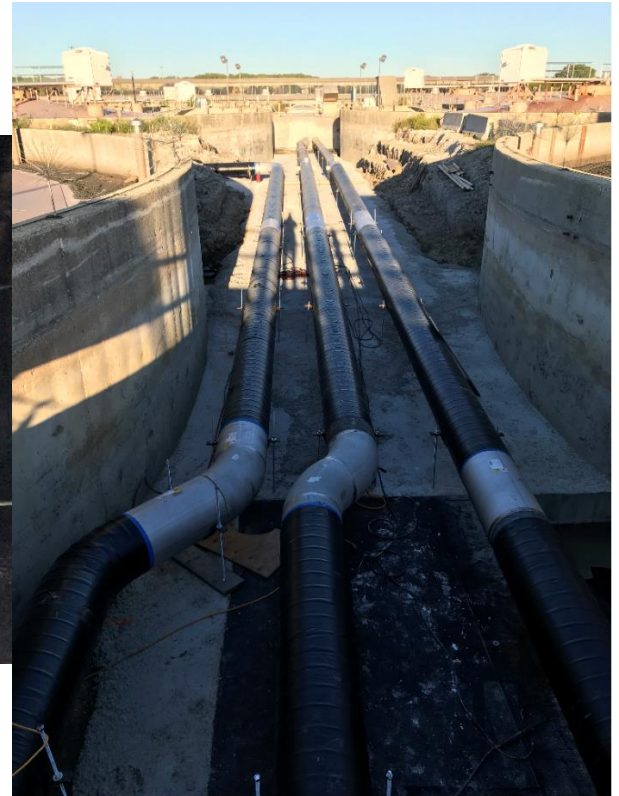




2020 Construction in Progress

Preservation of Infrastructure

- Contract 17-140-3P Digester Rehab and Gas Piping Replacement SWRP - \$13.7M





2020 Construction in Progress

Preservation of Infrastructure

- Contract 18-277-3M Digester Sludge Heating System Upgrades and Boiler Removal, CWRP - \$25.6M





2020 Construction in Progress

Tunnel and Reservoir Plan

- Contract 17-842-3S Modifications to TARP Control Structures and Drop Shafts - \$3.1M





2020 Construction in Progress

Tunnel and Reservoir Plan

- Contract 13-106-4F Des Plaines Inflow Tunnel - \$107.9M





2020 Construction in Progress

Commitment to Community

- Contract 17-844-3P Furnish and Install Odor Control Systems at CWRP, HWRP, and KWRP - \$4.2M





2020 Construction in Progress

Commitment to Community

- Contract 17-134-3MR Odor Control Facilities at SWRP - \$16.5M





2020 Construction in Progress

Commitment to Community

- Contract 11-186-3F Addison Creek Reservoir, Bellwood - \$75.7M





2020 Planned Contract Awards

Preservation of Infrastructure

- Contract 18-142-3H Six Access Shafts Infiltration Mitigation, MSPS - \$2.3M





2020 Planned Contract Awards

Preservation of Infrastructure

- Contract 19-542-3M Central Boiler Facility and Electrical Updates, HPWRP - \$14.0M

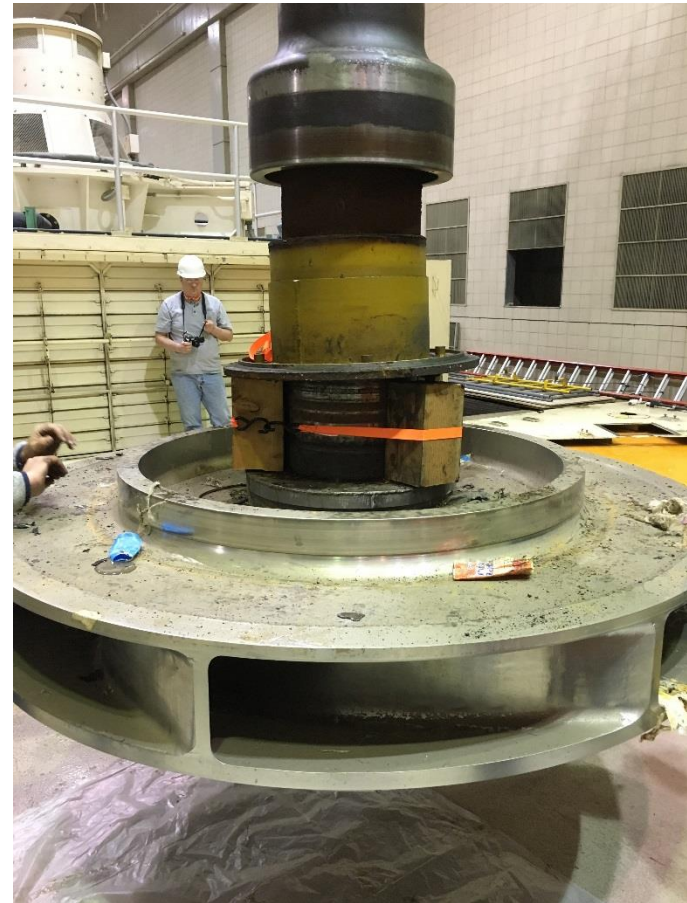




2020 Planned Contract Awards

Preservation of Infrastructure

- Contract 18-144-3M MSPS Pump No's 1,3, and 5 Rehabilitation - \$20.5M





2020 Planned Contract Awards

Preservation of Infrastructure

- Contract 19-157-3P Installation of Mechanical Mixers, SWRP - \$12.4M





2020 Planned Contract Awards

Preservation of Infrastructure

- Contract 07-027-3S North Side Sludge Pipeline Replacement Section 1 - \$16.3M





2021 Initiatives

Major Planned Contract Awards

- Contract 06-360-3S Upper Des Plaines 14B Rehabilitation - \$13.0M
- Contract 10-047-3S North Shore 1 Rehabilitation, NSA - \$22.7M
- Contract 20-859-3S Pumping Station Relief Sewers and Collection System Work - \$7.5M





2021 Initiatives

Major Planned Contract Awards

- Contract 20-415-3S Biogas Combined Heat and Power System, EWRP - \$2.0M
- Contract 17-131-4F McCook Reservoir Stage 2 Rock Wall Stabilization and Instrumentation - \$17.3M
- Contract 15-266-4H3 Odor Control Systems at Two Shafts and Decommissioning of Thornton Transitional Reservoir - \$20.0M





2021 Initiatives

Major Planned Contract Awards

- Contract 16-127-3D A/B and C/D Service Tunnel Rehabilitation - Phase III at SWRP - \$17.0M
- Contract 08-174-3D Battery A Final Settling Tanks, Rehabilitation of Concrete and Road Replacement, SWRP - \$7.7M
- Contract 15-069-3D Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP - \$10.0M





2021 Initiatives

Major Planned Contract Awards

- Contract 17-135-3V Roof Replacement of the Lue-Hing M&R Complex, SWRP - \$6.5M
- Contract 17-843-3D Utility Tunnel Cracks and Expansion Joints Rehabilitation, OWRP, KWRP, EWRP, HPWRP - \$4.1M
- Contract 19-155-3M Boilers 3, 4, 5 and MCC Replacement, SWRP - \$13.0M





Phosphorus Projects to 2030

Project	Location	Start	Complete	Budget
Install Mechanical Mixers	Stickney	Oct 2020	Jun 2021	\$ 8.4M
Chemical Back-up	Stickney	Mar 2021	Aug 2021	\$ 8.0M
Fermentation, Facilities for Bio Phosphorus	Calumet	Feb 2022	Jul 2023	\$31.0M
Chemical Phosphorus	Calumet	May 2022	Mar 2023	\$14.0M
Phosphorus Removal	Kirie	Jul 2023	Dec 2024	\$ 6.5M
Fermentation, Facilities for Bio Phosphorus (P1)	O'Brien	Sept 2023	April 2025	\$30.0M
Chemical Phosphorus	O'Brien	Apr 2024	May 2026	\$14.0M
Phosphorus Removal	Egan	Jan 2025	June 2026	\$30.0M
Phosphorus Removal	Lemont	Jun 2025	Feb 2027	\$ 6.0M
Fermentation, Facilities for Bio Phosphorus (P2)	O'Brien	Dec 2026	Feb 2028	\$30.0M
			Total	\$177.9M



Concrete Rehabilitation Planned

Project	Location	Start	Complete	Budget
Battery A Final Settling Tanks, Rehab of Concrete and Road Replacement	Stickney	May 2021	Jun 2022	\$ 7.7M
Battery C Final Settling Tanks, Rehab of Concrete and Road Replacement	Stickney	Nov 2023	Mar 2025	\$ 3.0M
Battery B Final Settling Tanks, Rehab of Concrete and Road Replacement	Stickney	Feb 2024	Jun 2025	\$ 5.0M
Aeration Battery A Rehabilitation of Concrete	Stickney	Nov 2024	Mar 2026	\$25.0M
Aeration Battery B Rehabilitation of Concrete	Stickney	May 2026	Jul 2028	\$25.0M
			Total	\$65.7M



Stormwater Management

Stormwater Program to-date

Program Component	Current Number of Projects	Structures Protected / Removed	Construction / Acquisition Cost (\$Millions)	MWRD Cost (\$Millions)
Regional Stormwater Projects (Phase I)	27	4,423	\$369	\$315
Local Stormwater Partnership Projects (Phase II)	62	>7,000	\$206	\$109
Green Infrastructure Projects	96*	3,293	\$100	\$27
Flood Prone Property Acquisitions	12	220	\$64	\$42
Totals	197	>14,000	\$739	\$493

*Includes all 34 Space to Grow projects to be completed by 2022. This does not include forthcoming recommendations for 2020 Call for GI Projects.



2020 Contract Completions

Commitment to Community

- Contract 14-108-5F Streambank Stabilization along Addison Creek in Northlake and North Riverside, \$1.7M
- Contract 18-IGA-30 Culvert Improvements in Elk Grove Village, \$3.5M (District contribution \$557K)
- 97 Flood-Prone Properties Acquired

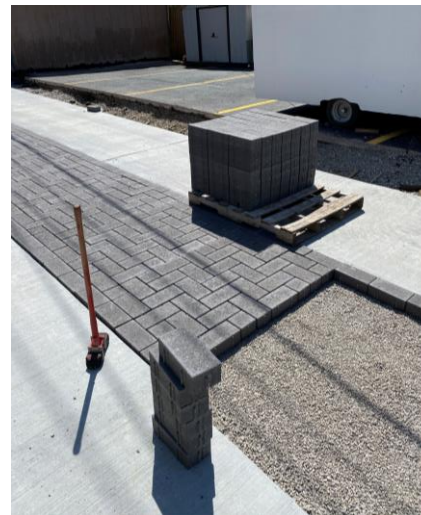




2020 Contract Completions

Commitment to Community

- Completion of Green Infrastructure (GI) partnership projects:
 - Cicero
 - Summit
 - UIC – Arthington Mall
 - City of Chicago
 - Thornton School District 154
 - Northlake
 - Maywood
 - River Grove
 - Broadview
 - Union Ridge School District 86





2020 Contract Completions

Commitment to Community

- Continued Space to Grow program partnership
 - Five schoolyard transformations to be completed in 2020
 - John Barry Elementary
 - Daniel Boone Elementary
 - Genevieve Melody Elementary
 - Jesse Sherwood Elementary
 - Harold Washington Elementary





2020 Construction in Progress

Commitment to Community

- Contract 14-263-3F Melvina Ditch Reservoir Expansion, Burbank - \$16.3M
- Contract 13-248-5F Melvina Ditch Streambank Stabilization, Chicago Ridge and Oak Lawn - \$9.8M
- Contract 14-252-5F Flood Control Project on Natalie Creek, Midlothian and Oak Forest - \$7.6M





Addison Creek Reservoir Construction (video)





2020 Stormwater Partnerships

Commitment to Community

- 2020 Solicitations for Green Infrastructure, Local Stormwater Partnership Program (formerly Phase II), and Flood-Prone Property Acquisition Projects
 - Received 32 Green Infrastructure Project Applications
 - Call for Local Stormwater Partnership Projects and Flood-Prone Property Acquisition Projects in 3rd/4th Quarter 2020



2021 Initiatives

Major Planned Stormwater Contract Awards

- Contract 11-187-3F Addison Creek Channel Improvements - \$42.7M
- Contract 14-253-AF Diversion Channel for Flood Control Project on Midlothian Creek in Robbins, Phase 1 - \$8.0M
- Contract 14-258-5C Flood Control Project in the Vicinity of 135th Street and Central Avenue in Crestwood - \$9.3M
- Contract 10-882-BF Streambank Stabilization along Calumet Union Drainage Ditch in Markham - \$2.5M
- Contract 14-253-5F Flood Control Project on Midlothian Creek in Robbins, Phase 2 - \$11.0M



Robbins Project Schedule

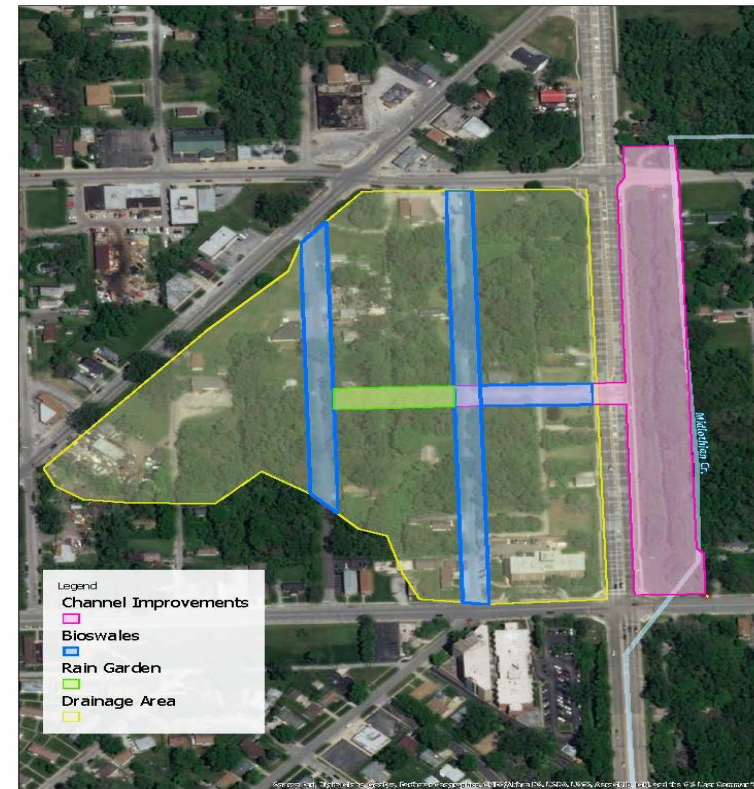
- Phase I - Construction of Diversion Channel to Cal-Sag Channel
Bid: October 2020
- Robbins Rain Garden and Riparian Restoration Project
(Section 319 Grant Project)
Bid: Spring 2021
- Phase II - Channel Improvements on Midlothian Creek and Construction of the Stormwater Detention Facility
Bid: Summer 2021





Robbins Project Grants Received

- FEMA Hazard Mitigation Grant Program: \$4.0M (submitted)
- CMAP Local Technical Assistance: \$250K
- CDBG-DR Funding: \$2.3M
- Chi-Cal Rivers Fund: \$300K
- IEPA Section 319 Funding: \$1.0M
- Estimated District project cost: \$14.0M



Project Component Areas

Robbins Rain Garden and Riparian Restoration Project

\\COBRA\stormwater\mg\grant Programs\OLR\Robbins\Robbins Riparian Restoration Project - SN 07/12/2019





Grant Application Results - \$14,634,064

Grant Request	Agency	Request	Award
Local Technical Assistance Grant	CMAP	\$500,000	\$500,000
Chi-Cal Rivers Fund	National Fish and Wildlife Fund	\$600,000 (two apps)	\$300,000
Innovative Readiness Training	Department of Defense	Non-monetary	\$0
Pre-Disaster Mitigation Grant	FEMA	\$30,000,000	\$0
Chicago Community Trust Grant		\$100,000	\$100,000
CDBG	Cook County	\$234,000	\$234,000
Water Reclamation Plant Energy Efficiency Grant	IEPA	\$1,907,956	\$1,500,000
Great Lakes Restoration Initiative	EPA/Partners	\$600,000	\$0



Grant Application Results - \$14,634,064 (cont.)

Grant Request	Agency	Request	Award
Hazard Mitigation Grant	FEMA	\$18,000,000	Pending
Section 319 Grant	IEPA	\$1,000,064	\$1,000,064
Capstone Project	UIC	Non-monetary	Awarded
Rebuild Illinois	IL Dept of Commerce	\$7,500,000	\$0
Building Resilient Infrastructure and Communities	FEMA	\$17,212,050	Pending
CDBG-DR	Cook County	\$11,000,000	\$11,000,000



Current Contract Statistics

(September 2020)

Project Phase	Number of Contracts	Percent of Original Budget	Percent of Original Contract Time
Construction	18	104.0%	123.2%
Contract Closeout	9	103.8%	142.6%
Substantially Complete	7	102.9%	123.1%
Overall	34	103.7%	127.8%



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