

SECTION V

CAPITAL BUDGET

The Capital Improvement Program is the District's plan for the construction, rehabilitation, and modernization of District-owned and operated infrastructure. It includes plans to protect Lake Michigan from pollution, to clean up approximately 532 miles of rivers and streams within the District's jurisdiction to meet federal and state standards, and to reduce the level of flooding which has persistently plagued many municipalities within the District's jurisdiction.

The Capital Budget includes the Construction Fund and the Capital Improvements Bond Fund. To understand the Capital Budget, it is necessary to visualize existing facilities as well as the program for the next year and the long-term plan.

The type of funding for each fund corresponds to the estimated useful life of the project and statutory restrictions on bond sales. The Tax Cap Law imposes restrictions on the non-referendum bonding authority of the District. There are exceptions in the Tax Cap Law to allow non-referendum bonds to be sold to finance certain District projects. Bonds or long-term debt are only utilized to finance projects with useful lives beyond 20 years. Capital projects not eligible for bond financing, or with shorter useful lives, are funded on a pay-as-you-go basis and financed primarily by property taxes. The Capital Improvements Bond Fund receives most of its resources from bond sales, State Revolving Fund loans, and federal and state grants. It provides for major plant and sewer construction, flood control facilities, and land acquisition. The Construction Fund is financed primarily through a property tax levy and provides for much of the District's infrastructure rehabilitation and modernization.

The narrative discussion of the District's 2020 Capital Improvement Program places the 2020 program within the context of our long-range plan. Information is provided on the levels of funding in 2020 and in the future. The graphs, charts, figures, and descriptions of the Construction Fund and Capital Improvements Bond Fund Program within this section aid the reader in understanding this component of the Budget. The impact on operating costs associated with capital projects scheduled for award in 2020 is presented in the Capital Improvement Program narrative.

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Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET

CHICAGO, ILLINOIS 60611-3154

312.751.5600

September 10, 2019

Mr. Brian A. Perkovich
Executive Director
OFFICE

Dear Sir:

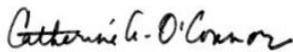
Subject: 2020 Program for the Capital Funds

The Capital Funds' program for 2020, as prepared in detail, is transmitted herewith. The budget presentation supports the request for funding of the District's 2020 Capital Plan initiatives in alignment with and in support of the Strategic Business Plan. The budget requests include all amendments as directed by you during the Executive Director Budget Hearings in August of this year.

The narrative by fund provides a summary of the 2020 major initiatives and challenges and 2019 accomplishments. Supporting schedules of objectives and performance present three years of detailed budgetary information.

Thank you for the opportunity to present the proposed Capital Funds budget for 2020.

Respectfully submitted,



Catherine A. O'Connor
Director of Engineering

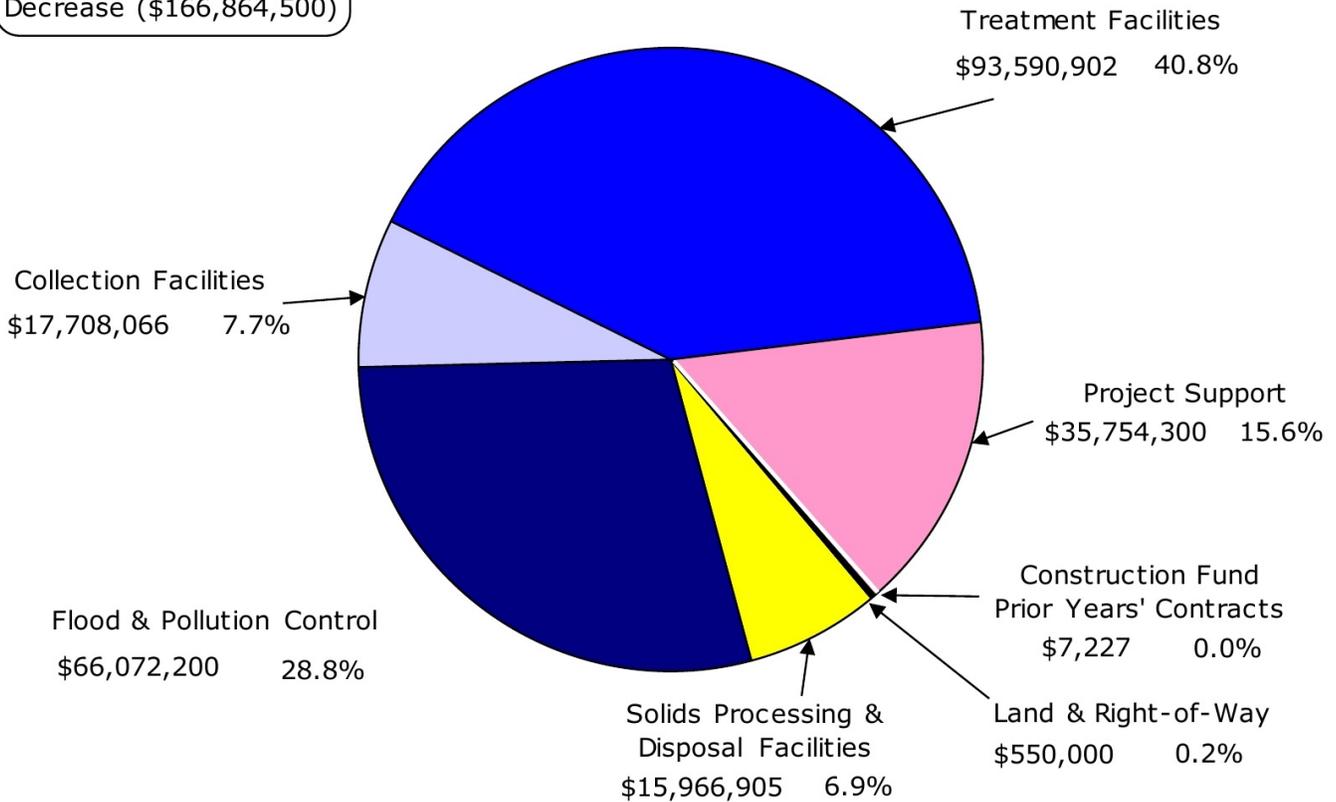
John P. Murray
Director of Maintenance & Operations

Edward W. Podczewinski
Director of Monitoring & Research

CAPITAL IMPROVEMENT PROGRAM CONSTRUCTION AND CAPITAL IMPROVEMENTS BOND FUNDS

2020	\$229,649,600
2019	\$396,514,100
Decrease	(\$166,864,500)

FUNCTIONS



A comprehensive Capital Improvement Program narrative appears on the following pages. The District utilizes the Construction and Capital Improvements Bond Funds for the Capital Improvement Program. Capital improvements comprise all new facilities and projects that preserve the useful life of District facilities or increase the capacity or efficiency of these facilities. The project support activities of the Construction and Capital Improvements Bond Funds consist of planning, designing, and constructing District infrastructure, acting as a liaison to the United States Environmental Protection Agency and the Illinois Environmental Protection Agency, and pursuing funding for capital projects from the Army Corps of Engineers.

Budget Highlights

The 2020 appropriation for the Capital Improvement Program (Construction and Capital Improvements Bond Funds) is \$229,649,600, a decrease of \$166,864,500, or 42.1 percent, from 2019. The decrease is to meet budget constraints in 2020. A total of 111 projects funded by the Construction or Capital Improvements Bond Funds will be under planning, design, or construction in 2020. There is one streambank stabilization project, one channel improvement project, and one levee construction project that are planned for award in 2020 under the Stormwater Management Program. There are no staff positions budgeted in the Construction and Capital Improvements Bond Funds.

The mission of the Capital Improvement Program is to plan, develop, and implement projects for new facilities, preserve the useful life of facilities, or increase the capacity or efficiency of facilities to ensure that the District complies with our statutory responsibilities in the areas of sewage treatment and pollution control.

Capital Improvement Program Policy

The District's Capital Improvement Program consists of those projects identified as necessary to ensure safe and uninterrupted operation of our facilities, meet existing and new statutory and regulatory requirements, and maintain efficiency in a cost-effective manner. Projects are identified based on asset management audits, Governmental Accounting Standards Board Statement 34 inspections, and need, such as regulatory requirements or long-term strategic planning. Following identification, projects must be justified and vetted by an interdepartmental review panel. Projects are prioritized using an evaluation and scoring system that values preservation of infrastructure, improvements to environmental quality, and commitment to community. Projects are added to the Capital Improvement Program and scheduled for award according to priority and resource availability after they have been through the review panel.

Governmental Accounting Standards Board Statement 34 became effective in 2003. By adopting the modified approach for reporting infrastructure assets, the District agrees to perform condition assessments of our facilities, establish service levels for our infrastructure, and appropriate funds to maintain these high standards, thus protecting the environment and avoiding the detrimental impacts of deferred maintenance. The results of these assessments are reported in the Comprehensive Annual Financial Report.

Beneficial Impacts of Capital Projects

Through proper operation, maintenance, rehabilitation, and replacement of equipment and facilities, the District ensures continuous efficient and reliable service, protects our investment and infrastructure, and meets National Pollutant Discharge Elimination System permit requirements. The Capital Improvement Program identifies and prioritizes projects to upgrade and modernize obsolete equipment and facilities.

Program Funding

Sources of funding for the Capital Improvement Program consist of capital improvement bond sales, general property tax revenues, State Revolving Fund loans, and federal and state grants.

Construction Fund

The Construction Fund is a property tax supported fund authorized by State Statute. Section 12 of "An act to create sanitary districts and to remove obstructions in the Des Plaines and Illinois Rivers," approved May 29, 1889, as amended, provides that the Board of Commissioners of the District can levy and collect taxes for construction purposes (which means the replacement, remodeling, completion, alteration, construction, and enlargement, which will add appreciably to the value, utility, or useful life of sewage treatment works or flood control facilities, and additions thereto, pumping stations, tunnels, conduits, and intercepting sewers connecting therewith, and outlet sewers together with the equipment and appurtenances necessary thereto, and for the acquisition of the sites and rights of way necessary thereto, and for engineering expenses of designing and supervising construction of the work above described) for the year 1985 and each year thereafter, which shall be at a rate not to exceed 0.10 percent of the assessed valuation of all taxable property within the District as equalized and determined for state and local taxes.

In 2020, the Construction Fund has seven projects scheduled for award and 13 projects under construction.

Capital Improvements Bond Fund

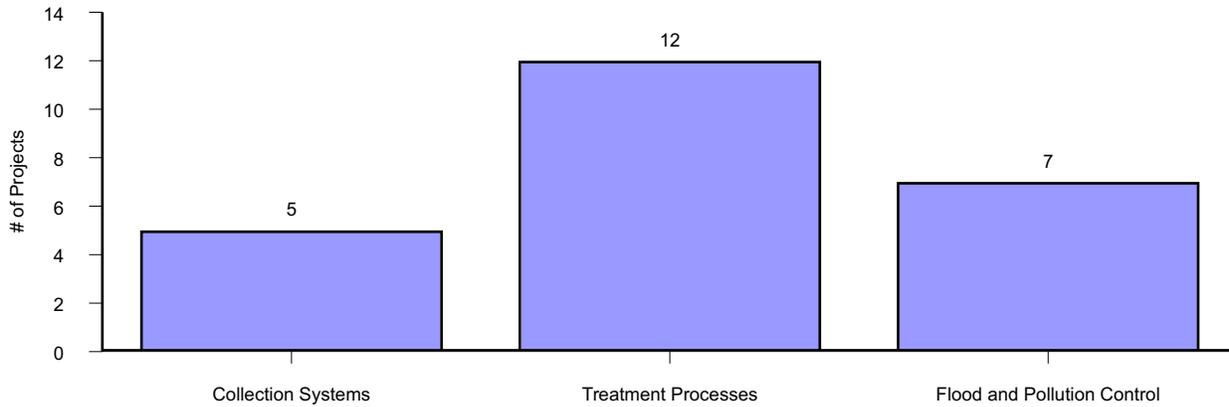
Section 9.6(a) of "An act to create sanitary districts and to remove obstructions in the Des Plaines and Illinois Rivers," approved May 29, 1889, as amended, provides that the Board of Commissioners of the District is authorized to issue bonds for District purposes. The District issues bonds to provide funds to replace, remodel, complete, alter, construct, and enlarge sewage treatment or flood control facilities, to acquire air pollution control equipment, and to build or acquire sewers. The total allowable bond debt at any given time cannot exceed 3.35 percent of the last known equalized assessed valuation of all taxable property within the District. The ordinance authorizing the issuance of the bonds provides for the levy of a tax on all taxable property within the District adequate to pay principal and interest on the bonds when due, including a provision for loss in the collection of taxes.

Tax Cap laws enacted in Illinois have a significant impact on the funding of the District's Capital Improvement Program through bond sales. Under Public Act 89-1, the District's non-referendum bond authority is restricted to fund only projects initiated prior to October 1, 1991, which generally covers only Tunnel and Reservoir Plan (TARP) projects. However, Public Act 89-385 provided additional non-referendum authority to the District by authorizing the issuance of "limited bonds." These "limited bonds" allow the District to issue non-referendum debt for projects initiated after October 1, 1991. "Limited bonds" can be issued up to the debt service extension base established by the Act. This "limited bond" authority was expanded for the District by passage of Public Act 90-485 in the 1997 legislative session. This Act excludes debt associated with the TARP program from the "limited bond"

limitation. The use of “limited bonds,” in conjunction with the “unlimited bonds” authorized for TARP-related projects, positions the District’s capital funding on firm ground.

In 2020, there are 24 projects scheduled for award in the Capital Improvements Bond Fund. In the exhibit below, the breakdown by program is displayed.

Capital Improvements Bond Fund Projects Scheduled for 2020 Award



State Revolving Fund

The United States Environmental Protection Agency implemented the State Revolving Fund (SRF) to ensure that each state’s program is designed and operated to continue to provide capital funding assistance for water pollution control activities in perpetuity, but preserves a high degree of flexibility for operating revolving funds in accordance with each state’s unique needs and circumstances.

Funds in the SRF shall not be used to provide grants. SRF balances must be available in perpetuity and must be used solely to provide loans and other authorized forms of financial assistance:

- a. For municipalities, intermunicipal, interstate, or state agencies for the construction of publicly owned wastewater treatment works;
- b. For implementation of a new point source pollution control management program;
- c. For development and implementation of a conservation and management plan.

For many years, the major sources of funding for District projects were federal grants and the Build Illinois Compliance Grants, both of which were discontinued. Under the grant program, the District received approximately \$1.9 billion between 1973 and 1993, leaving 25 percent of the project cost to be borne by the District. The District continues to aggressively pursue federal and state funding to minimize the impact on our constituency. Low-interest SRF loans are an integral part of the District’s capital improvements financing. SRF revenues are based on the award and construction schedule of specific projects. It is estimated the District will receive approximately \$100 million annually in SRF loans for the next several years.

Operating Cost Impacts of Capital Improvement Projects

The annual maintenance and/or operating costs associated with new capital projects provide an important part of the decision-making process for the selection of capital projects. The operating cost impacts of proposed capital projects are analyzed by design personnel, as well as operating staff, in order to implement a Capital Improvement Program that meets operating needs in the most cost-effective manner.

An example of increased energy efficiency is Mainstream TARP Pump Rehabilitation, Stickney WRP (Project 18-144-3M). This project includes the rehabilitation of Mainstream TARP Pumps 1, 3 and 5, initially placed into service in 1985, and rehabilitation of motors and the discharge valve/actuator. This contract follows the work, completed in 2018 to rehabilitate TARP Pump 8 which became 25 percent more efficient, resulting in lower energy costs.

Operating impacts for each project are further discussed on the project fact sheets.

Overall Capital Improvement Program Costs

The District's 2020 Capital Improvement Program includes 2020 project awards, program support, and projects under construction at award value with total estimated cost of approximately \$839.7 million. A breakdown of these projects (in millions of dollars) is as follows:

2020 project awards	\$ 186.9
2020 program support (project support and land)	36.3
Projects currently under construction (award value)	<u>616.5</u>
Total	\$ 839.7

- ◆ A breakdown of projects scheduled for 2020 award by fund is as follows:

Construction Fund projects	\$ 5.6
Capital Improvements Bond Fund projects	<u>181.3</u>
Total	\$ 186.9

- ◆ A breakdown of projects under construction (award value) by fund is as follows:

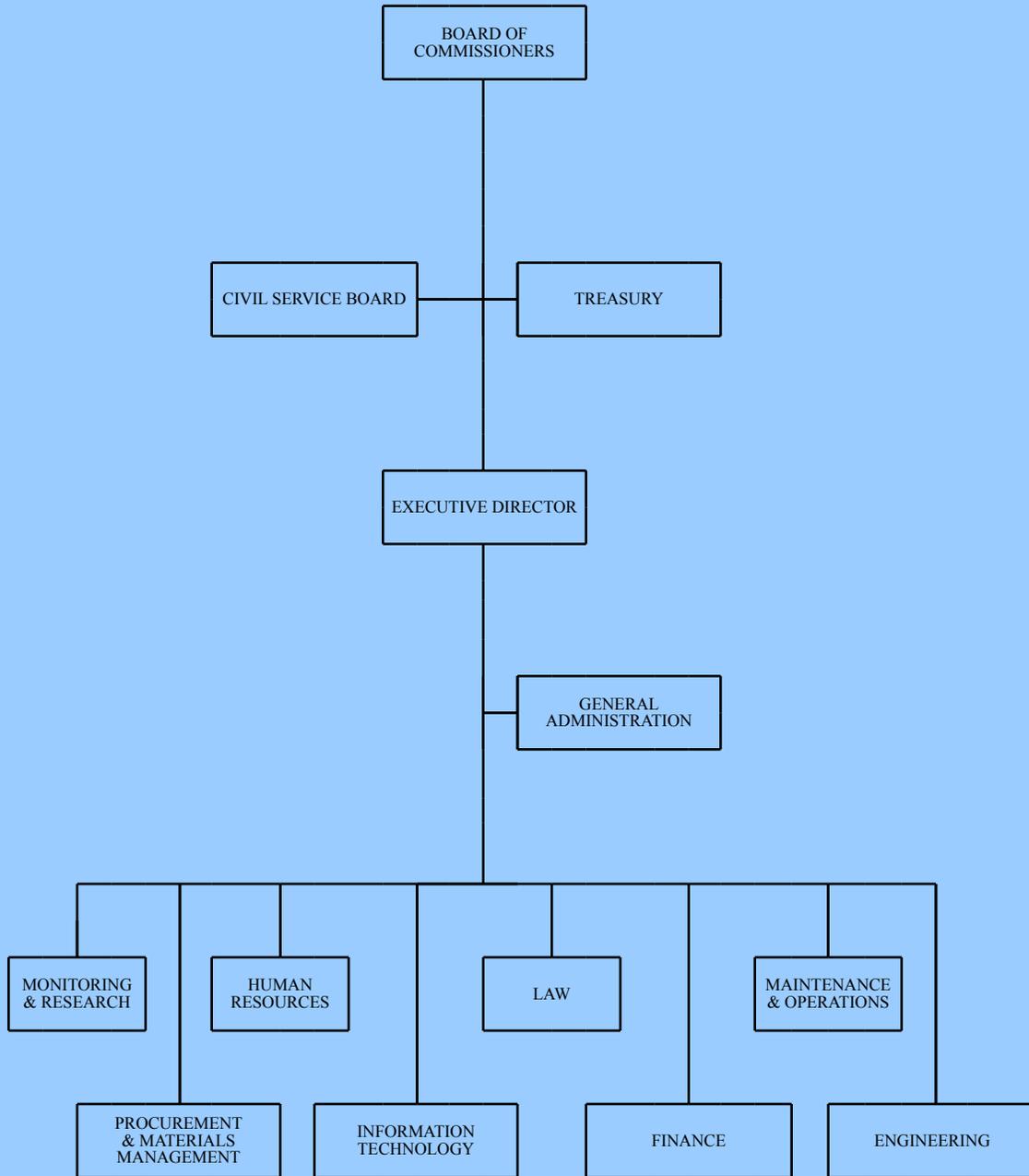
Construction Fund projects	\$ 12.9
Capital Improvements Bond Fund projects	<u>603.6</u>
Total	\$ 616.5

**10-YEAR CAPITAL IMPROVEMENT PROGRAM SUMMARY
2015 - 2024 CAPITAL PROJECT CONSTRUCTION COST**

	ACTUAL CASH DISBURSEMENTS					ESTIMATED CASH DISBURSEMENTS					TOTAL
	2015	2016	2017	2018	2019*	2020	2021	2022	2023	2024	2015-2024
<u>BY CATEGORY</u>											
Water Reclamation Plants and Solids Management	\$144.40	\$107.01	\$104.26	\$34.17	\$19.19	\$43.84	\$53.75	\$17.86	\$17.31	\$22.05	\$563.84
Replacement of Facilities	26.65	36.98	43.22	14.48	17.32	47.94	46.72	66.33	42.70	21.48	\$363.82
Collection Facilities	14.94	25.51	10.52	16.58	14.26	15.83	18.61	19.53	50.18	14.28	\$200.24
Stormwater Management	5.85	7.49	5.69	26.23	51.51	66.04	104.49	73.99	23.52	37.60	\$402.42
Tunnel and Reservoir Plan	75.18	47.68	55.79	45.84	9.17	19.82	18.47	12.82	20.66	6.28	\$311.72
TOTAL	\$267.02	\$224.67	\$219.48	\$137.30	\$111.45	\$193.47	\$242.04	\$190.53	\$154.37	\$101.69	\$1,842.03
<u>BY FUND</u>											
Stormwater Management Fund	\$5.00	\$6.34	\$0.96	\$6.59	\$22.36	\$36.73	\$69.09	\$59.26	\$22.61	\$36.92	\$265.86
Construction Fund	13.34	13.47	8.83	6.82	8.91	8.08	8.06	7.97	8.04	8.04	\$91.55
Capital Improvements Bond Fund	248.68	204.86	209.69	123.89	80.18	148.66	164.89	123.31	123.73	56.73	\$1,484.62
TOTAL	\$267.02	\$224.67	\$219.48	\$137.30	\$111.45	\$193.47	\$242.04	\$190.53	\$154.37	\$101.69	\$1,842.03

- Notes: 1. All project costs are in millions of dollars.
 2. Information regarding the distribution of funds between the sub-items in the Construction and Capital Improvements Bond Funds can be found in the Five-Year Financial Forecast.
 3. Amounts are rounded.

* PROJECTED CASH DISBURSEMENTS



CONSTRUCTION FUND

Fund Summary

The Construction Fund provides for the acquisition of infrastructure assets or the rehabilitation of existing structures that increase the efficiency or extend the useful life of the structure. The useful life of the improvement is at least 15 years and the values are generally less than \$2 million. The Construction Fund is a pay-as-you-go capital fund and is funded primarily by property taxes.

Summary of 2019 Accomplishments

These projects and initiatives are consistent with the Strategic Business Plan (SBP) values of innovation and excellence, which urge resourcefulness, process improvement, and a mindset that sees challenges as opportunities:

- Completed pilot tests of mainstream shortcut biological nitrogen removal, coupled with biological phosphorus removal, at the O'Brien Water Reclamation Plant (WRP) to see if low-energy nitrogen removal is technically feasible;
- Completed the phosphorus removal feasibility studies at the Stickney, O'Brien, and Calumet WRPs;
- Finalized the seven-year collaborative research project with Argonne National Laboratory to use microbial source tracking tools, methodologies, and assessments for the reaches of the Chicago Area Waterway System that have been designated for primary contact recreation use by the Illinois Pollution Control Board;
- Began a project, the scope of which includes odor dispersion modeling and preliminary design of odor control facilities at the Stickney WRP.

Guided by the SBP, these projects and initiatives were undertaken with the purpose of minimizing future maintenance costs, increasing system reliability, and achieving excellence:

- Implemented a solution to upgrade the programmable logic controller human machine interface at the Calumet WRP. The integration of a human machine interface and programmable logic controller provides an automation solution designed to boost process efficiencies;
- Replaced obsolete life-safety equipment with new programmable fire alarm panels and network components at the Calumet WRP. This project is consistent with the SBP, which underscores the need to integrate safety in all operations;
- Completed several capital improvement projects at the Main Office Building Complex, including: roof life extension, elevator modernization, air handling unit installation, and replacement of chillers. These projects were designed with the purpose of providing valuable equipment redundancies, preventing system failures, improving operating reliability, and increasing energy efficiencies;
- Updated aging infrastructure throughout the District, including the roof at the Lockport Powerhouse. The powerhouse's clay tile roof was approximately 110 years old and in need of restoration. Preserving the building is essential as it houses critical components used to control the water level of the Sanitary and Ship Canal and generate hydroelectricity;
- Began a large-scale project to improve the railroad assets at the Stickney WRP. The railroad is used to convey biosolids material to solids management areas. The biosolids program is a cornerstone of the SBP's recover resources plan;
- Began work on the installation of a shaftless screw conveyor in an aerated grit tank at the Calumet WRP, which will improve system reliability, reduce odors, and generate annual maintenance savings of approximately \$3,000 for parts and labor and 184 hours of in-house trades labor;
- Began work on the installation of a scum screw conveyor at the Stickney WRP, which will result in annual maintenance savings of approximately \$18,000 for parts and labor and 350 hours of in-house trades labor;
- Pursued energy efficiency projects, including the installation of LED fixtures in the storeroom at the Egan WRP. The project was approved based on the anticipated reduction in energy consumption based on the high-efficiency value of the new lamps;
- Acquired capital equipment for the biosolids beneficial reuse operation, which supports the SBP strategy of establishing a sustainable commercial biosolids market within the District's service area;
- Installed new actuators on the seven ultraviolet channel inlet gates at the O'Brien WRP. Ultraviolet technology, introduced at the WRP in 2016, is used as the final step in the treatment process to reduce pathogenic bacteria in the water being released from the plant into the North Shore Channel;
- Began the first phase of an extensive District-wide heating, ventilation, and air conditioning improvement project. The improvements are expected to improve indoor air quality and protect and preserve valuable assets, such as those contained in laboratories and data centers. The equipment specified for this project was chosen based on its performance properties. For instance, the new coils are expected to last three to five times longer than the existing coils, extending the useful life from four years to as much as twenty years.

Budget Highlights

The 2020 appropriation for the Construction Fund is \$15,343,400, a decrease of \$2,996,900, or 16.3 percent, from 2019. There are no staff positions budgeted in the Construction Fund. The 2020 value of the Construction Fund Program includes \$7,227,000 for projects under construction and \$4,136,000 for projects scheduled for award in 2020. An additional \$3,980,400 is appropriated for purposes not specifically associated with listed project costs, including \$2,980,400 for professional engineering services in connection with initiatives sponsored by the Engineering and Monitoring & Research Departments and \$1,000,000 for capital project assessments for the DuPage River Salt Creek Workgroup.

2020 Initiatives in Support of the Strategic Business Plan Include the Following:

• Add Value

- Implement the SBP strategy of adhering to project timeframes by taking maximum advantage of the skills and talents of the District's in-house trades;
- Satisfy customer expectations, a core principle of the SBP, by using the Construction Fund to rehabilitate and improve facilities to ensure the long-term viability of assets;
- Continue the preliminary design work for odor control facilities at the Stickney WRP's southwest preliminary tank and aerated grit facilities.

• Excellence

- Adhere to an asset maintenance schedule with the goal of reducing emergency work;
- Continue to prioritize projects to ensure the best use of available resources. In 2020, seven new projects have been added to the Construction Fund project schedule based on their alignment with the SBP. The projects are vetted and approved using criteria specified in the SBP, including the ability to produce results, deliver services, and demonstrate financial soundness;
- Operate with the sense of urgency described in the SBP by establishing excellence in maintenance and operations. The Maintenance & Operations Department will be overseeing five new and 13 existing Construction Fund projects in 2020 related to collection, treatment, flood and pollution control, and solids processing, which are the core programs and functions of the department;
- Continue to pursue research programs focused on addressing impending or anticipated future regulatory actions, achieving energy savings and resource recovery, or generating cost savings;
- Allocate resources to ensure the required productive or operating capacity of the District's assets is met and maintained.

• Recover Resources

The Capital Improvement Program is essential to achieving the goals of the SBP. This is especially true for the Recover Resources goal with its broad vision and reliance, in many cases, on new processes and equipment. In 2020, a variety of projects to recover resources - water, energy, phosphorus, and biosolids - are included in the Construction Fund.

- Continue research projects utilizing algae technology for the recovery of phosphorus and nitrogen from wastewater;
- Evaluate advanced combined phosphorus and nitrogen recovery at the Stickney WRP. Present phosphorus recovery technologies mainly involve phosphorus recovery from centrate, sludge liquor, or sludge. These types of technologies are suitable for WRPs with enhanced biological phosphorus removal, digestion, and stripping. Recovery of phosphorus from these streams will help meet future stringent National Pollutant Discharge Elimination System limits. However, few phosphorus recovery technologies also focus on ammonium recovery. For instance, traditional struvite (a phosphate mineral) phosphorus recovery technologies only recover 10 to 20 percent of the ammonium from the treated stream. Increasing ammonium recovery can reduce the recycle loading to a WRP, thereby reducing plant energy and aeration demands. An advanced technology to maximize phosphorus and ammonium recovery will be tested.

• Leading Partnerships

- Under an Intergovernmental Agreement with the United States Geological Survey, operate a "multi-parameter, water-quality superstation" for real-time monitoring and data transmission of water conditions at Route 53 in the Des Plaines River, near Joliet. The data will be used by the Chicago Area Waterway System Nutrient Oversight Committee to develop and inform nutrient implementation plans, as described in the National Pollutant Discharge Elimination System permits for the Stickney, O'Brien, and Calumet WRPs. The station will be operated and maintained through federal fiscal year 2021. Agreements like this one support the SBP, which encourages the development of strategic relationships and the promotion of the District as an influential leader in the water industry;
- Act as an influential and leading member of the DuPage River Salt Creek Workgroup (DRSCW). In November 2018, the District elected to renew its membership in the DRSCW, an action which underscores the District's commitment to leading partnerships. The DRSCW is a non-profit organization that was formed in 2005 by a group of local communities, WRPs, and environmental organizations to address water quality concerns and implement targeted watershed projects in the Salt Creek and the East and West Branch DuPage River Watersheds. In addition to establishing valuable partnerships, membership in the DRSCW affords other benefits. For instance, it allows the District's Egan and Hanover Park WRPs an extended period, as long as 11 years from the date of permit issuance, to implement a total phosphorus effluent limit while priority instream projects are completed in the watersheds. If the District did not participate in the DRSCW, those WRPs would be required to meet the same total phosphorus limit in 36 to 54 months from the date of permit issuance, at a significant cost and with little or no benefit to aquatic life. As a member, the District provides funding for capital projects that are targeted to have the most significant positive impact on aquatic life in the Salt Creek and the West Branch of the DuPage River. The capital project contributions for the five-year period beginning in 2020 and ending in 2024 are \$1,000,000 for years one through three, \$485,000 for year four, and \$480,071 for year five.

Construction Fund Program

Projects Under Construction						
Project Name	Project Number	Est. Construction Cost	2020 Appropriation	Duration (days)	Est. Award Date	
HVAC Improvements, Various Locations	18-611-23	\$ 1,851	\$ 270	540	Oct 2018	
Rehabilitate Raw Sewage Pump Rotating Assemblies, Various Locations	18-610-21	867	24	731	Nov 2018	
Furnish, Deliver, and Install Four Sacrificial Deep Anode Ground Beds for the Cathodic Protection System, CSA	19-804-21	705	510	395	Aug 2019	
Furnish, Deliver, and Install a Shaftless Screw Conveyor in an Aerated Grit Tank, CWRP	18-802-22	415	374	300	Sep 2019	
Discharge Valve Rehabilitation, Main Sewage Pump No. 5, SWRP	19-905-21	1,088	500	806	Oct 2019	
Rehabilitate Gloria Alitto Majewski Reservoir, KWRP	16-708-21	1,200	1,100	420	Nov 2019	
Railroad Track Improvements, SSA	18-913-21	1,615	1,295	420	Nov 2019	
Furnish and Deliver Excitation Control Equipment, NBPS and RAPS	19-603-21	680	650	406	Nov 2019	
Replace HVAC Coils, Various Locations	19-608-21	78	50	180	Nov 2019	
HVAC System Replacements, Various Locations	19-613-21	2,900	1,100	1,136	Nov 2019	
Rehabilitate Main Sewage Pump No. 2 Motor, SWRP	19-925-21	450	400	420	Nov 2019	
Rebuild Gate Houses and Sludge Concentration Building, OWRP	19-707-21	155	104	305	Dec 2019	
Furnish, Deliver, and Install an Upgraded Operator for TARP Gate I, OWRP	19-717-22	850	850	378	Dec 2019	
Total Projects Under Construction		\$ 12,854	\$ 7,227			

Awards in 2020						
Project Name	Project Number	Est. Construction Cost	2020 Appropriation	Duration (days)	Est. Award Date	
Furnish, Deliver, and Install Effluent Pipe Liner, HPWRP	20-701-21	\$ 300	\$ 300	287	Mar 2020	
Furnish, Deliver, and Install Dewatering Screw Conveyor, EWRP	20-702-21	500	250	652	Mar 2020	
Advanced Combined Phosphorus and Nitrogen Recovery Pilot, SWRP	20-1XX-21	100	100	213	Jun 2020	
Furnish, Deliver, and Install Shaftless Screw Conveyor Systems at the Aerated Grit Facility, CWRP	20-802-21	3,000	1,786	578	Jun 2020	
Remove and Replace Two Boilers, MOB	J15090-076	1,200	1,200	122	Jun 2020	
Furnish, Deliver, and Install 480V Power Feeds to Aeration Batteries A, B, and C, CWRP	J68823-001.A	250	250	213	Jun 2020	
Furnish, Deliver, and Install Automatic Transfer Switches, LWRP	J68823-002.A	250	250	213	Jun 2020	
Total 2020 Awards		<u>\$ 5,600</u>	<u>\$ 4,136</u>			
Cumulative Projects Under Construction and 2020 Awards		<u>\$ 18,454</u>	<u>\$ 11,363</u>			

Note: All cost figures are in thousands of dollars.

CAPITAL PROJECTS LISTED BY SERVICE AREA - CONSTRUCTION FUND

The following is a list of capital projects within the District’s three major service areas. They are presented by their association with a water reclamation plant (WRP) and by their completion status: projects under construction or for 2020 award.

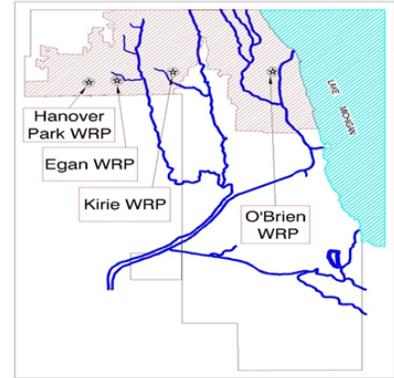
**STICKNEY
SERVICE
AREA (SSA)**



Stickney Water Reclamation Plant (SWRP)

		Estimated Substantial Completion Date	Estimated Construction Cost
Projects Under Construction			
18-610-21	Rehabilitate Raw Sewage Pump Rotating Assemblies, Various Locations	11/20	\$ 867,000
18-913-21	Railroad Track Improvements, SSA	12/20	1,615,000
19-608-21	Replace HVAC Coils, Various Locations	5/20	78,000
19-613-21	HVAC System Replacements, Various Locations	12/22	2,900,000
19-905-21	Discharge Valve Rehabilitation, Main Sewage Pump No. 5, SWRP	12/21	1,088,000
19-925-21	Rehabilitate Main Sewage Pump No. 2 Motor, SWRP	12/20	450,000
		Total	\$ 6,998,000
Projects for 2020 Award			
20-1XX-21	Advanced Combined Phosphorus and Nitrogen Recovery Pilot, SWRP		\$ 100,000
J15090-076	Remove and Replace Two Boilers, MOB		1,200,000
		Total	\$ 1,300,000
		Stickney Service Area Grand Total	\$ 8,298,000

**NORTH
SERVICE
AREA (NSA)**



Terrence J. O'Brien Water Reclamation Plant (OWRP)

Projects Under Construction		Estimated Substantial Completion Date	Estimated Construction Cost
19-603-21	Furnish and Deliver Excitation Control Equipment, NBPS and RAPS	12/20	\$ 680,000
19-707-21	Rebuild Gate Houses and Sludge Concentration Building, OWRP	10/20	155,000
19-717-22	Furnish, Deliver, and Install an Upgraded Operator for TARP Gate I, OWRP	12/20	850,000
		Total	\$ 1,685,000

John E. Egan Water Reclamation Plant (EWRP)

Project for 2020 Award

20-702-21	Furnish, Deliver, and Install Dewatering Screw Conveyor, EWRP		\$ 500,000
		Total	\$ 500,000

James C. Kirie Water Reclamation Plant (KWRP)

Project Under Construction

16-708-21	Rehabilitate Gloria Alitto Majewski Reservoir, KWRP	12/20	\$ 1,200,000
		Total	\$ 1,200,000

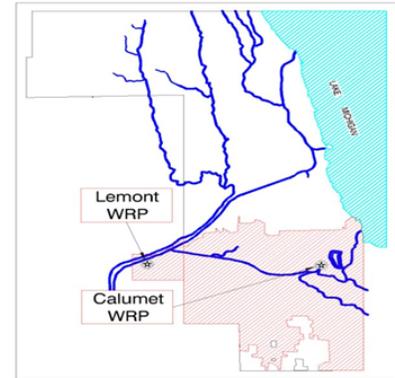
Hanover Park Water Reclamation Plant (HPWRP)

Project for 2020 Award

20-701-21	Furnish, Deliver, and Install Effluent Pipe Liner, HPWRP		\$ 300,000
		Total	\$ 300,000

North Service Area Grand Total **\$ 3,685,000**

**CALUMET
SERVICE
AREA (CSA)**



Calumet Water Reclamation Plant (CWRP)

		Estimated Substantial Completion Date	Estimated Construction Cost
Projects Under Construction			
18-611-23	HVAC Improvements, Various Locations	4/20	\$ 1,851,000
18-802-22	Furnish, Deliver, and Install a Shaftless Screw Conveyor in an Aerated Grit Tank, CWRP	7/20	415,000
19-804-21	Furnish, Deliver, and Install Four Sacrificial Deep Anode Ground Beds for the Cathodic Protection System, CSA	9/20	705,000
	Total		\$ 2,971,000
Projects for 2020 Award			
20-802-21	Furnish, Deliver, and Install Shaftless Screw Conveyor Systems at the Aerated Grit Facility, CWRP		\$ 3,000,000
J68823-001.A	Furnish, Deliver, and Install 480V Power Feeds to Aeration Batteries A, B, and C, CWRP		250,000
	Total		\$ 3,250,000
Lemont Water Reclamation Plant (LWRP)			
Project for 2020 Award			
J68823-002.A	Furnish, Deliver, and Install Automatic Transfer Switches, LWRP		\$ 250,000
			\$ 250,000
Calumet Service Area Grand Total			\$ 6,471,000
Capital Projects Grand Total - All Service Areas			\$ 18,454,000

Rehabilitate Gloria Alitto Majewski Reservoir, KWRP

Project Number 16-708-21

Service Area North

Location Kirie WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$1,200,000

Contract Award Date November 2019

Substantial Completion Date December 2020



Project Description Rehabilitation of the Gloria Alitto Majewski Reservoir, which includes the installation of a process water cleaning system.

Project Justification This water reuse project/initiative will greatly assist with cleaning the reservoir after fill events. In 2011, the Army Corps of Engineers' reservoir inspection identified many deficiencies with the geomembrane liner and underdrain system. The Engineering Department's Contract 06-363-3D implemented improvements based on the 2011 inspection, and the improvements were completed in 2013. In 2015, a follow-up inspection by the District's Engineering Department determined that the drainage underliner south of the intake structure, the liner connection, concrete toe block, and roller compacted concrete are all in need of rehabilitation.

Project Status Design

Rehabilitate Raw Sewage Pump Rotating Assemblies, Various Locations

Project Number	18-610-21
Service Area	North and Stickney
Location	O'Brien and Stickney WRPs
Engineering Consultant	In-house design
Engineering Contractor	Xylem Water Solutions USA, Inc.
Estimated Construction Cost	\$867,000
Contract Award Date	November 2018
Substantial Completion Date	November 2020



Project Description This project will include a complete rebuild of one main raw sewage pump rotating assembly for the O'Brien WRP and four main raw sewage pump rotating assemblies for the Stickney WRP. Rehabilitation work includes sandblasting, inspecting, machining, and welding rehabilitation of the impellers as well as fabricating new components to replace typical wear items. This would include new pump shafts, casing rings, impeller rings, and shaft sleeves for the rotating assemblies. In addition, the contract work will require the reassembly and the balancing of the rotating assemblies to International Organization for Standardization balance quality grade G6.3.

Project Justification The O'Brien WRP has six main raw sewage pumps with various flow capabilities. During a rain event, five main raw sewage pumps are required to be in service to reach the maximum plant flow. The Stickney WRP has 13 main raw sewage pumps with various flow capabilities, seven at the West Side Pumping Station and six at the Southwest Pump and Blower House. During a rain event, various combinations of the main raw sewage pumps are utilized to reach the maximum plant flow. In some instances, 10 of the 13 main raw sewage pumps are required. Centrifugal pumps, like those in service, are designed to allow for sacrificial wear rings to thin over time and protect the costly impellers from damage. As the rings wear, the gap between the wear rings and the casing rings increases, allowing additional recirculation within the pump casing. As a result, the flow generated by the pump and the overall efficiency of the pump are decreased. This contract will rebuild one worn rotating assembly at the O'Brien WRP and four worn rotating assemblies at the Stickney WRP, one at the West Side Pumping Station and three at the Southwest Pump and Blower House. Having spare rotating assemblies on hand significantly reduces the downtime required to replace a main raw sewage pump rotating assembly in case of failure.

Project Status Construction

HVAC Improvements, Various Locations

Project Number	18-611-23
Service Area	Calumet and North
Location	Calumet, Egan, and O'Brien WRPs
Engineering Consultant	In-house design
Engineering Contractor	Autumn Construction Services, Inc.
Estimated Construction Cost	\$1,851,000
Contract Award Date	October 2018
Substantial Completion Date	April 2020



Project Description At the Calumet WRP, the heating, ventilation, and air conditioning systems will be replaced in the computer and control rooms in the Administration Building, the digester control room, the Tunnel and Reservoir Plan control room, and the high-level pumping station. Additional replacements include the air handling units in the concentration facility, penthouse air handling and condensing units in the Administration Building, and reciprocating chillers in the Process Control Building. At the O'Brien WRP, the rooftop units for the Administration Building will be replaced, and at the Egan WRP, the condensation control for the condenser water in the pump room will be replaced.

Project Justification The need for replacement is based on age, life expectancy, and reliability. The equipment being replaced has experienced numerous failures due to equipment corrosion and leaking coils and piping. This project will minimize future maintenance costs and ensure increased reliability to protect the District's assets.

Project Status Construction

Furnish, Deliver, and Install a Shaftless Screw Conveyor in an Aerated Grit Tank, CWRP

Project Number	18-802-22
Service Area	Calumet
Location	Calumet WRP
Engineering Consultant	In-house design
Engineering Contractor	IHC Construction Companies, Inc.
Estimated Construction Cost	\$415,000
Contract Award Date	September 2019
Substantial Completion Date	July 2020



Project Description Furnish, deliver, and install one shaftless screw conveyor in an aerated grit tank in the Calumet WRP's grit facility.

Project Justification The grit facility has eight traveling bridge grit tanks that were installed more than six years ago. There have been seven bridge misalignment problems since the installation. The bridges' festoon rollers have been replaced at a cost of approximately \$4,500 per grit tank. There have also been numerous problems with the proximity and limit switches. District staff investigated putting the bridges on rails to eliminate misalignments, but the cost of the parts alone was approximately \$180,000. Screw conveyors are less complex than traveling bridges because they have fewer moving parts. Additionally, electrical components on traveling bridges are prone to failure due to hydrogen sulfide exposure. Unlike the traveling bridges, the new conveyors will be controlled via distributed control systems that will limit electrical component exposure to hydrogen sulfide.

Project Status Construction

Railroad Track Improvements, SSA

Project Number 18-913-21

Service Area Stickney

Location Stickney, IL

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$1,615,000

Contract Award Date November 2019

Substantial Completion Date December 2020



Project Description This project will replace four railroad grade crossings, remove one crossing, provide for track drainage improvements at 11 locations, and rehabilitate dilapidated retaining walls at six locations. One crossing within the Stickney WRP that intersects "D Street" and is connected to an abandoned track to the West Side Plant will be removed and replaced with roadway. A second crossing within the Stickney WRP, which intersects "D Street" and leads to the locomotive terminal, will be replaced. Two crossings outside and to the west of the Stickney WRP will be removed and replaced. A third crossing outside and to the west of the Stickney WRP, on the main line to Lawndale Avenue Solids Management Area and located under Interstate 55, will be removed and replaced.

Project Justification The railroad grade crossings have developed large gaps between the rails and adjacent roadway, which have caused undesirable impact forces on the rail, ties, and ballast. There are numerous locations along the track system where poor track drainage causes the track ballast to become fouled with dirt and sediments. In addition, the retaining walls that abut the ends of the tunnel walls are in various stages of disrepair. Improvements to the railroad track are necessary to maintain track gauge, prevent derailments, restore track integrity, and ensure safe operating conditions.

Project Status Design

Furnish and Deliver Excitation Control Equipment, NBPS and RAPS

Project Number	19-603-21
Service Area	North and Stickney
Location	North Branch and Racine Avenue Pumping Stations
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$680,000
Contract Award Date	November 2019
Substantial Completion Date	December 2020



Project Description Furnish and deliver replacement excitation control equipment for the North Branch Pumping Station (NBPS) and Racine Avenue Pumping Station (RAPS) main sewage pump synchronous motors. Four new pump motor exciter control systems will be installed at both the NBPS and the RAPS. Installation will be performed by District trades under the direction of an excitation control manufacturer representative and the resident engineer.

Project Justification The existing synchronous motor power factor controllers and voltage regulators controlling the excitation of the NBPS and the RAPS main sewage pumps are obsolete and no longer manufactured or supported. These analog excitation controllers are more than 30 years old and are prone to malfunction, which negatively impacts sewage conveyance. Excitation controls are required for making an induction motor synchronous and are critical for pump availability and operation. There are currently no spare parts and the new replacement parts do not work without modifications from the manufacturer. Since the controllers are obsolete and no longer manufactured or supported, rehabilitation work take longer and are costlier due to the specialized use of parts and labor.

Project Status Design

Replace HVAC Coils, Various Locations

Project Number 19-608-21

Service Area Calumet, North, and Stickney

Location Calumet, Kirie, and Stickney WRPs

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$78,000

Contract Award Date November 2019

Substantial Completion Date May 2020

Project Description This project will replace deteriorated and leaking air handling coils used in the process facility air handling system at the Calumet, Kirie, and Stickney WRPs.

Project Justification The existing air handling coils have deteriorated and corroded due to age and hydrogen sulfide exposure. New air handling coils will restore heating capacity at the process facility building.

Project Status Design



HVAC System Replacements, Various Locations

Project Number	19-613-21
Service Area	Calumet, North, and Stickney
Location	Stickney, Calumet, Egan, Kirie, and Hanover Park WRPs and the North Branch Pumping Station
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$2,900,000
Contract Award Date	November 2019
Substantial Completion Date	December 2022



Project Description This project includes the replacement and improvement of heating, ventilation, and air conditioning systems at various locations. At the Stickney WRP, the air handling units in the Monitoring and Research Building and the air conditioning unit and condenser in the Information Technology Department's data room will be replaced. At the Calumet WRP, ventilation improvements will be made in the battery room, two explosion-proof dehumidifiers will be replaced in the Tunnel and Reservoir Plan pumping station, and system balancing will be performed in the Administration Building. At the Egan WRP, the controls will be upgraded in the Administration Building and two digester gas systems with appurtenances will be replaced at the Digester Complex. At the Kirie WRP, ventilation improvements will be made in the influent pumping station. At the Hanover Park WRP, ventilation improvements will be made and controls will be upgraded in the pump and blower building. At the North Branch Pumping Station, ventilation improvements will also be made.

Project Justification The need for replacement is based on age, life expectancy, and reliability. The equipment being replaced has experienced chronic failures due to equipment corrosion and leaking coils and piping. The project will minimize future maintenance costs and ensure increased reliability to protect District assets, improve air quality, and provide a safe working environment.

Project Status Design

Rebuild Gate Houses and Sludge Concentration Building, OWRP

Project Number 19-707-21

Service Area North

Location O'Brien WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$155,000

Contract Award Date December 2019

Substantial Completion Date October 2020



Project Description At gate houses No. 1 and 2, perform tuckpointing, restore the glass block and parapet, and remove and replace the roof. Similar restoration work must also be performed at the sludge concentration building.

Project Justification The two gate houses have not been restored or tuckpointed since they were built in 1926. The sludge concentration building has not had tuckpointing performed in the last 30 years and needs to have this work done in order to preserve its useful life.

Project Status Planning

Furnish, Deliver, and Install an Upgraded Operator for TARP Gate I, OWRP

Project Number	19-717-22
Service Area	North
Location	O'Brien WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$850,000
Contract Award Date	December 2019
Substantial Completion Date	December 2020



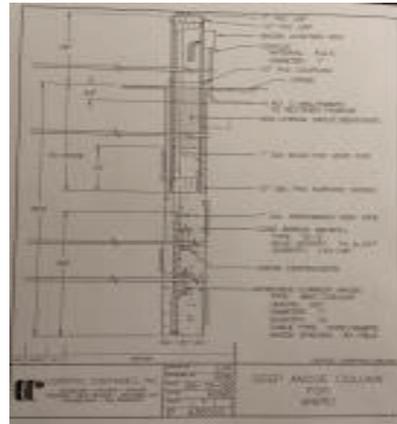
Project Description This project entails removing the existing hydraulic operator and accumulator assembly for Tunnel and Reservoir Plan Gate I at the O'Brien WRP and installing an electric actuator in its place. Five redundant hydraulic sluice gates will also be blocked open and decommissioned.

Project Justification The existing gate operator is beyond its useful life. It requires frequent rehabilitation work and the proprietary parts for which are becoming increasingly scarce as they are no longer being supplied by the original equipment manufacturer. The replacement actuator will result in improved reliability and reduced equipment maintenance and downtime.

Project Status Design

Furnish, Deliver, and Install Four Sacrificial Deep Anode Ground Beds for the Cathodic Protection System, CSA

Project Number	19-804-21
Service Area	Calumet
Location	Tunnel and Reservoir Plan (TARP) East and West Pumping Stations
Engineering Consultant	In-house design
Engineering Contractor	Industria, Inc.
Estimated Construction Cost	\$705,000
Contract Award Date	August 2019
Substantial Completion Date	September 2020



Project Description Drill four 10-inch diameter holes by approximately 400 feet. Furnish, deliver and install 14 mixed metal oxide sacrificial anodes in the four holes. Fill the remainder of the holes with coke breeze and bentonite. Install new junction boxes. Connect new wires to the existing rectifier system. Install reference cells for the new deep anode ground bed cathodic protection system in the east and west TARP pumping stations. Replace conduit and cables as needed.

Project Justification The purpose of the contract is to replace four deep anode ground beds (DAGBs) which are no longer functional and do not protect underground equipment. The DAGBs are a part of the cathodic protection system responsible for protection of the underground piping infrastructure, mainly suction and discharge pipe sleeves. Based on the annual cathodic protection maintenance report received in 2017, the DAGBs' cathodic protection system located at the east and west TARP pumping stations is no longer functional. The anodes inside each of the deep anode columns have completely disintegrated, and they are no longer protecting the underground piping. Installation of a new DAGB system will restore protection for the existing and new underground equipment.

Project Status Construction

Discharge Valve Rehabilitation, Main Sewage Pump No. 5, SWRP

Project Number	19-905-21
Service Area	Stickney
Location	Stickney WRP
Engineering Consultant	In-house design
Engineering Contractor	Pumping Solutions, Inc. D/B/A Proflow Pumping Solutions
Estimated Construction Cost	\$1,088,000
Contract Award Date	October 2019
Substantial Completion Date	December 2021



Project Description This project entails the rehabilitation of a 66-inch discharge valve assembly on main raw sewage pump No. 5 at the Southwest Pumping Station at the Stickney WRP. In-house trades will perform the removal of the valve and its installation following a full rehabilitation. The rehabilitation work will include welding rehabilitation and machining of the gate discs, fabrication and replacement of the valve stem, stem nut, disc nut, wedges, disc and valve body seats, hooks, and the hardware for the discharge valve assembly. The scope of work also includes hydraulic leak testing of the valve assembly to the American Water Works Association C500-93 standard and the preparation of drawings.

Project Justification The Stickney WRP has six main raw sewage pumps at the Southwest Pumping Station with a 66-inch discharge valve on each pump. The discharge valves on main sewage pumps No. 1 through 4 were originally installed in 1938 and rehabilitated in 2008 through 2010. The discharge valves on raw sewage pumps No. 5 and 6 were originally installed in 1958. During recent maintenance work, severe wear and damage were observed on the components of the discharge valve assembly on main sewage pump No. 5. Rehabilitation of the discharge valve is needed to avoid any catastrophic failure. Failure of the discharge valve could result in the pump being unavailable for operation, which would reduce the pumping capacity of the station. A leaking valve could also cause the sewage discharge to flow back into the wet well, necessitating the need to operate more pumps and increase electrical energy consumption.

Project Status Construction

Rehabilitate Main Sewage Pump No. 2 Motor, SWRP

Project Number 19-925-21

Service Area Stickney

Location Stickney WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$450,000

Contract Award Date November 2019

Substantial Completion Date December 2020



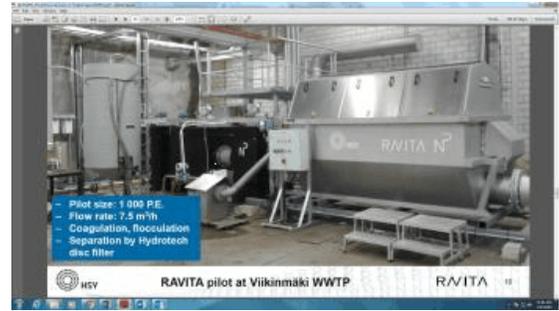
Project Description This project will rewind the motor stator and refurbish the rotor and exciter windings on main sewage pump motor No. 2 at the Stickney WRP.

Project Justification On May 13, 2019 main sewage pump motor No. 2 tripped while in service. District staff tested the motor and found the stator winding had shorted to ground. To restore the pump to operation, the motor stator must be rewound and new temperature monitoring devices must be installed. The rotor will be tested and refurbished.

Project Status Design

Advanced Combined Phosphorus and Nitrogen Recovery Pilot, SWRP

Project Number	20-1XX-21
Service Area	Stickney
Location	Stickney WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$100,000
Contract Award Date	June 2020
Substantial Completion Date	December 2020



Project Description Present phosphorus recovery technologies mainly involve phosphorus recovery from centrate, sludge liquor, or sludge. These types of technologies are suitable for water reclamation plants (WRP) with enhanced biological phosphorus removal, digestion, and stripping. Recovery of phosphorus from these streams will help meet future stringent National Pollutant Discharge Elimination System limits. However, few phosphorus recovery technologies also focus on ammonium recovery, e.g. traditional struvite phosphorus recovery technologies only recover 10-20 percent of the ammonium from the treated stream. Increasing ammonium recovery can reduce the recycle loading to a WRP and thus plant energy and aeration demands. An advanced technology to maximize phosphorus and ammonium recovery will be tested.

Project Justification The Stickney WRP employs an enhanced biological phosphorus removal process and has both sludge and sludge liquor streams for phosphorus and ammonium recovery pilot testing that may help the plant in the future (and other District plants) meet both phosphorus and ammonia-nitrogen National Pollutant Discharge Elimination System permit limits, as well as reduce aeration demand.

Project Status Planning

Furnish, Deliver, and Install Effluent Pipe Liner, HPWRP

Project Number 20-701-21

Service Area North

Location Hanover Park WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$300,000

Contract Award Date March 2020

Substantial Completion Date December 2020



Project Description This project entails the cured-in-place lining of the tertiary building effluent piping, including effluent channel access hatches for filter beds and discharge lines.

Project Justification The Hanover Park WRP has three effluent conduits for the tertiary building (filter beds 3/4, 5/6, and 7/8). The conduits are cast iron with couplings which have begun to leak. The conduits are partially buried in concrete and cannot be easily rehabilitated or replaced. This contract will install cured-in-place pipe liners in each conduit to seal the leaks.

Project Status Planning

Furnish, Deliver, and Install Dewatering Screw Conveyor, EWRP

Project Number 20-702-21

Service Area North

Location Egan WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$500,000

Contract Award Date March 2020

Substantial Completion Date December 2021



Project Description This project will replace the existing post-digestion centrifuge and sludge dewatering shafted screw conveyor with a longer shaft-less conveyor, relocate the existing Schwing Bio-Set piston pump, and install two on-hand centrifuge slide gates as well as an incline screw conveyor and hopper for the piston pump.

Project Justification Retrofitting a different type of screw for the existing conveyor and reconfiguring the pump location will increase the reliability of this process-critical solids handling system.

Project Status Planning

Furnish, Deliver, and Install Shaftless Screw Conveyor Systems at the Aerated Grit Facility, CWRP

Project Number	20-802-21
Service Area	Calumet
Location	Calumet WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$3,000,000
Contract Award Date	June 2020
Substantial Completion Date	December 2021



Project Description The scope of work includes the installation of seven aerated grit tank screw conveyor systems, the replacement of eight tank covers, and the demolition of eight bridge assemblies in the grit facility at the Calumet WRP.

Project Justification The grit facility has eight traveling bridge grit tanks that were installed more than six years ago. There have been seven bridge misalignment problems since the installation. The bridges' festoon rollers have been replaced at a cost of approximately \$4,500 per grit tank. There have also been numerous problems with the proximity and limit switches. District staff investigated putting the bridges on rails to eliminate misalignments, but the cost of the parts alone was approximately \$180,000 per tank. Screw conveyors are less complex than traveling bridges because they have fewer moving parts. Additionally, electrical components on traveling bridges are prone to failure due to hydrogen sulfide exposure. Unlike the traveling bridges, the new conveyors will be controlled via distributed control systems that will limit electrical component exposure to hydrogen sulfide.

Project Status Planning

Remove and Replace Two Boilers, MOB

Project Number J15090-076

Service Area Stickney

Location Main Office Building

Engineering Consultant In-house design

Engineering Contractor McDonagh Demolition, Inc.

Estimated Construction Cost \$1,200,000

Contract Award Date June 2020

Substantial Completion Date October 2020



Project Description This project will remove and replace two boiler units at the Main Office Building. The new units must be energy efficient.

Project Justification There have been several projects to re-tube the boilers, which have resulted in significant maintenance costs. The boilers are original to the building, which was constructed in 1955. According to the standards of the American Society of Heating, Refrigerating, and Air Conditioning Engineers, the useful life of cast iron boilers is 35 years. These have now been operational for 64 years. Failure of either of the existing boilers could have adverse effects on the working conditions of all employees in the Main Office Building due to the inability to regulate temperature during the cooler months.

Project Status Planning

Furnish, Deliver, and Install 480V Power Feeds to Aeration Batteries A, B, and C, CWRP

Project Number J68823-001.A

Service Area Calumet

Location Calumet WRP

Engineering Consultant In-house design

Engineering Contractor McDonagh Demolition, Inc.

Estimated Construction Cost \$250,000

Contract Award Date June 2020

Substantial Completion Date December 2020

Project Description Furnish, deliver, and install two 480V power feeds to aeration batteries A, B, and C at the Calumet WRP.

Project Justification By design, the power feeds to aeration batteries A, B, and C share the same raceway or cable trough. The trough is integral to an adjacent tank that leaks, submerging the cables and splices, and creating a potential ground fault condition. This project will remedy that hazard.

Project Status Planning



Furnish, Deliver, and Install Automatic Transfer Switches, LWRP

Project Number J68823-002.A

Service Area Calumet

Location Lemont WRP

Engineering Consultant In-house design

Engineering Contractor McDonagh Demolition, Inc.

Estimated Construction Cost \$250,000

Contract Award Date June 2020

Substantial Completion Date December 2020



Project Description Furnish, deliver, and install automatic transfer switches at the Lemont WRP.

Project Justification The Lemont WRP's power is sourced by two Commonwealth Edison feeds. As this plant is unmanned after hours, maintaining power to the plant is process critical. In the event power is lost to one feed, the automatic transfer switch will sense the loss and transfer to the available source. Recently, the existing automatic transfer switch failed, resulting in loss of sewage conveyance. This project will replace and upgrade the automatic transfer switch.

Project Status Planning

50000 CONSTRUCTION FUND

OBJECTIVES AND PROGRAM SUMMARY

OBJECTIVES BY PRIORITY:	Cost	Percent
1. COLLECTION FACILITIES: Award projects, such as the rehabilitation of a main sewage pump motor at the Stickney WRP, which will reduce operation and maintenance costs and/or provide facility improvements.	\$ 3,363,066	21.9%
2. TREATMENT FACILITIES: Award projects, such as the replacement of heating, ventilation, and air conditioning systems, District-wide and the installation of new conveyor systems at the Calumet and Egan WRPs, which will reduce operation and maintenance costs and/or provide facility improvements.	\$ 4,929,202	32.1%
3. SOLIDS PROCESSING AND DISPOSAL FACILITIES: Award projects, such as railroad track improvements in the Stickney Service Area used to transport biosolids to the solids management areas, which will reduce costs and/or provide facility improvements.	\$ 1,640,005	10.7%
4. FLOOD AND POLLUTION CONTROL: Provide funding for construction projects addressing flood control.	\$ 2,098,900	13.7%
5. CONSTRUCTION FUND PROJECT COST: Provide funding for contracts awarded prior to 2020.	\$ 7,227	0.1%
6. PROJECT SUPPORT: Development, design, and administration of current and future contracts, funding support, construction materials, and utility support services.	\$ 3,305,000	21.5%
Totals	\$ 15,343,400	100.0%

MEASURABLE GOAL:	2018	2019	2020
	Actual	Estimated	Proposed
Award contracts for the continued implementation of the District's Capital Improvement Program.			
Number of projects proposed	51	29	7
Number of contracts awarded	51	29	7
Number of plans available for award	51	29	7
The projects proposed for each year are based upon the requirements dictated by the Capital Improvement Program. The number of actual projects awarded may not, on face value, quantify performance. There are several factors that could either increase or decrease the number of projects awarded. Some of these factors are project size, project complexity, project schedules, Intergovernmental Agreements lead times, and unforeseen obstacles. The numbers are provided only as a general indicator of performance.			

50000 CONSTRUCTION FUND

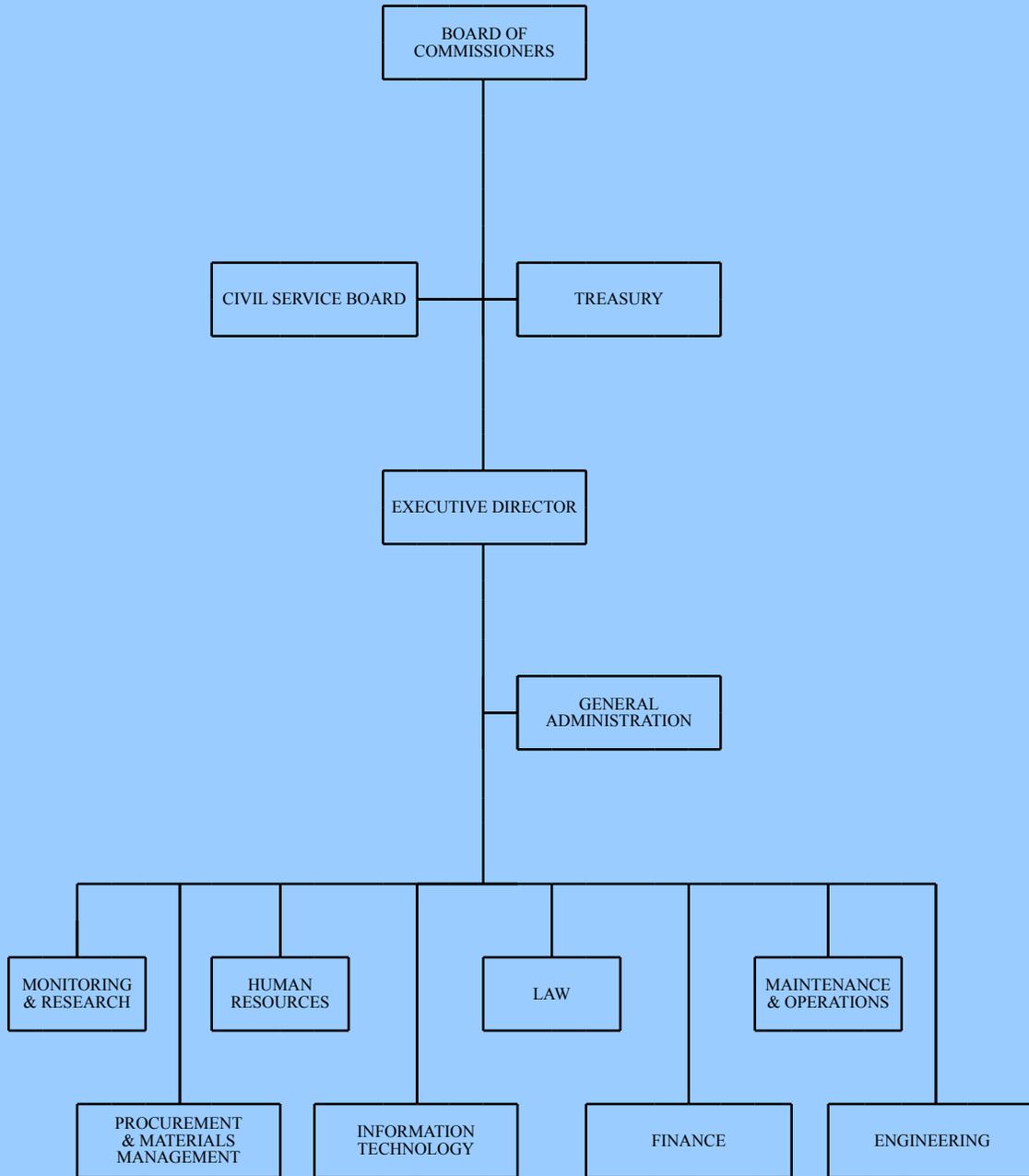
OBJECTIVES AND PROGRAM SUMMARY

PROGRAMS BY PRIORITY:		2018	Budgeted		Change	
Number	Name	Actuals	Positions	Dollars	Dollars	Percent
1110	Interceptor Systems	\$ 619,381	2020	— \$ 432,000	\$ (489,000)	(53.1)
			2019	— \$ 921,000		
1800	Collection Construction	\$ 2,086,480	2020	— \$ 2,934,000	\$ (502,000)	(14.6)
			2019	— \$ 3,436,000		
2800	Treatment Construction	\$ 6,248,147	2020	— \$ 4,848,100	\$ (607,200)	(11.1)
			2019	— \$ 5,455,300		
2900	Treatment Processes	\$ —	2020	— \$ 83,000	\$ (80,000)	(49.1)
			2019	— \$ 163,000		
3700	Solids Processing Design	\$ 258,323	2020	— \$ —	\$ —	—
			2019	— \$ —		
3800	Solids Processing Construction	\$ 247,273	2020	— \$ 346,500	\$ (215,800)	(38.4)
			2019	— \$ 562,300		
4600	Monitoring	\$ 2,300,477	2020	— \$ 2,105,000	\$ 155,300	8.0
			2019	— \$ 1,949,700		
4800	Flood and Pollution Control Construction	\$ 40,000	2020	— \$ 2,100,000	\$ 50,000	2.4
			2019	— \$ 2,050,000		
5800	Solids Disposal Construction	\$ 1,274,509	2020	— \$ 1,294,800	\$ (270,200)	(17.3)
			2019	— \$ 1,565,000		
7284	Store Operations and Issue	\$ 80,961	2020	— \$ —	\$ (50,000)	(100.0)
			2019	— \$ 50,000		
7290	Examinations and Employment Activities	\$ 142,637	2020	— \$ —	\$ (45,000)	(100.0)
			2019	— \$ 45,000		
7367	Real Estate Asset Management	\$ 76,051	2020	— \$ —	\$ —	—
			2019	— \$ —		
7380	Information Technology and Telecommunications	\$ 536,577	2020	— \$ —	\$ (150,000)	(100.0)
			2019	— \$ 150,000		
7390	Accounting and Auditing	\$ 27,409	2020	— \$ —	\$ —	—
			2019	— \$ —		
7460	Main Office Complex Building Services	\$ 466,311	2020	— \$ 1,200,000	\$ (613,000)	(33.8)
			2019	— \$ 1,813,000		
7491	Automotive Fleet Procurement	\$ 605,204	2020	— \$ —	\$ (180,000)	(100.0)
			2019	— \$ 180,000		
7801	Information Technology Services - General Administration	\$ 17,667	2020	— \$ —	\$ —	—
			2019	— \$ —		
Totals		\$15,027,407	2020	— \$15,343,400	\$ (2,996,900)	(16.3)%
			2019	— \$18,340,300		

Projects budgeted in the Construction Fund, a pay-as-you-go capital fund, are prioritized based on operational needs, design time frames, and available funding. Year-over-year variances in program area budgets are the result of project timing within the five-year capital planning cycle.

201 50000	Fund: Construction Department: Engineering	LINE ITEM ANALYSIS						
		2018	2019			2020		
Account Number	Account Name	Expenditure	Original Appropriation	Adjusted Appropriation 09/30/19	Expenditure (Committed Budget plus Disbursement) 09/30/19	Estimated Expenditure 12/31/19	Proposed by Executive Director	Recommended by Committee on Budget and Employment
612240	Testing and Inspection Services	\$ 661,739	\$ 1,303,000	\$ 1,321,500	\$ 1,321,345	\$ 1,125,000	\$ 892,700	\$ —
612400	Intergovernmental Agreements	64,280	1,068,500	1,068,500	1,068,500	1,068,400	1,065,000	—
612430	Payments for Professional Services	2,394,499	1,131,200	1,112,700	845,185	794,900	1,900,000	—
612440	Preliminary Engineering Reports and Studies	25,810	213,000	213,000	204,089	204,200	123,000	—
612450	Professional Engineering Services for Construction Projects	11,875	—	—	—	—	—	—
612490	Contractual Services, N.O.C.	—	50,000	50,000	—	—	—	—
200	TOTAL CONTRACTUAL SERVICES	3,158,203	3,765,700	3,765,700	3,439,119	3,192,500	3,980,700	—
634600	Equipment for Collection Facilities	292,783	641,000	641,000	209,717	209,800	—	—
634620	Equipment for Waterway Facilities	55,882	17,000	104,000	100,837	100,900	—	—
634650	Equipment for Process Facilities	1,278,950	1,297,000	1,187,000	953,759	1,032,500	50,000	—
634760	Material Handling and Farming Equipment	2,083,630	740,000	653,000	646,651	646,700	—	—
634810	Computer Equipment	403,906	—	—	—	—	—	—
634820	Computer Software	44,140	45,000	45,000	—	—	—	—
634840	Communications Equipment (Includes Software)	40,888	150,000	150,000	—	—	—	—
634860	Vehicle Equipment	845,413	180,000	290,000	286,195	286,200	—	—
400	TOTAL MACHINERY AND EQUIPMENT	5,045,591	3,070,000	3,070,000	2,197,159	2,276,100	50,000	—
645600	Collection Facilities Structures	851,884	300,000	300,000	208,828	213,900	—	—
645650	Process Facilities Structures	1,017,290	1,209,000	959,600	764,150	607,700	473,500	—
645680	Buildings	1,956,127	3,061,000	3,948,500	2,552,272	3,290,300	1,470,000	—
645690	Capital Projects, N.O.C.	138,500	1,388,000	563,000	562,450	562,500	—	—
645700	Preservation of Collection Facility Structures	—	2,540,000	2,892,400	2,052,051	1,506,800	4,034,000	—
645720	Preservation of Waterway Facility Structures	446,215	300,000	300,000	75,000	75,000	—	—
645750	Preservation of Process Facility Structures	293,966	1,414,800	564,800	329,478	457,000	2,836,400	—
645780	Preservation of Buildings	2,089,656	1,238,200	1,293,200	1,059,432	1,095,800	1,204,000	—
645790	Preservation of Capital Projects, N.O.C.	29,976	53,600	683,100	384,576	170,000	1,294,800	—
500	TOTAL CAPITAL PROJECTS	6,823,613	11,504,600	11,504,600	7,988,237	7,979,000	11,312,700	—
TOTAL CONSTRUCTION FUND		\$ 15,027,407	\$ 18,340,300	\$ 18,340,300	\$ 13,624,515	\$ 13,447,600	\$ 15,343,400	\$ —

NOTES: 1. Amounts may not add up due to rounding.
 2. Estimated Expenditure may either exceed Adjusted Appropriation when transfers of funds are anticipated or be less than Expenditure (Committed Budget plus Disbursement) when not all commitments are anticipated to be completed by year-end.



CAPITAL IMPROVEMENTS BOND FUND

Fund Summary

The Capital Improvements Bond Fund is used when acquiring an asset that meets the definition of a capital asset: the cost typically exceeds \$500,000 and generally, the useful life will be at least 20 years. Capital projects pursued by the Engineering Department are: (a) preservation/rehabilitation of existing infrastructure to maintain service levels, (b) improvement of environmental quality, or (c) commitment to community through process optimization. The Capital Improvements Bond Fund is funded by the sale of bonds and receipt of loans from the Illinois Environmental Protection Agency and State Revolving Loan Fund. The use of these funds is governed by state statutes and federal guidelines.

Summary of 2019 Accomplishments

The District's Capital Improvements Bond Fund is grouped into three categories: preservation of infrastructure, improvement of environmental quality, and commitment to community.

Preservation of Infrastructure

- Completed the replacement of electrical infrastructure at the Stickney Water Reclamation Plant (WRP), Devon Aeration Station, and the Wilmette Pumping Station. These projects replaced outdated equipment and enhanced reliability of these facilities;
- Awarded construction contracts to rehabilitate Drop Shaft 5 and made several improvements to the collection system, rehabilitated the North Branch Pumping Station, replaced the roof at the 95th Street Pumping Station, and replaced switchgear and the Motor Control Center at the O'Brien WRP.

Improvement of Environmental Quality

- Initiated design work for installation of mechanical mixers at the Stickney WRP to improve the effectiveness of the biological phosphorus removal process, which will facilitate compliance with the phosphorus limits contained in the operating permit for the Stickney WRP. By removing phosphorus from effluent, the District reduces phosphorus discharged to the receiving stream and mitigates conditions that have created a dead zone in the Gulf of Mexico;
- Completed construction of baffle plates to facilitate settling of solids in the final settling tanks. This will improve effluent quality at the O'Brien WRP.

Commitment to Community

- Awarded a contract to install odor control systems at the Thornton Reservoir Construction and Gate Shafts;
- Awarded contracts to install odor control systems at the Calumet, Stickney, Kirie, and Hanover WRPs;
- Completed the conversion of the two gravity concentration tanks to primary sludge fermenters at the Stickney WRP, which will improve the effectiveness of the biological phosphorus removal process.

Budget Highlights

The 2020 appropriation for the Capital Improvements Bond Fund is \$214,306,200, a decrease of \$163,867,600, or 43.3 percent, from 2019. There are no staff positions budgeted in the Capital Improvements Bond Fund. The 2019 appropriation includes construction costs for capital projects to be awarded in 2020 in the amount of \$181,306,900 including funding for stormwater management capital projects. The remaining \$32,999,300 includes funding for acquisition of easements, bond issuance costs, allowances for contract change orders, and legal and other support services relating to capital projects.

Significant features of the 2020 Budget are:

Preservation of Infrastructure

- Continue Phase II rehabilitation of the service and connecting tunnels at the Stickney WRP;
- Continue construction to replace electrical switchgear at the Stickney WRP;
- Award contracts to rehabilitate the digester and replace gas piping at the Stickney WRP, upgrade the digester sludge heating system and remove a boiler at the Calumet WRP, rehabilitate Tunnel and Reservoir Plan pumps at the Mainstream Pumping Station, rehabilitate the pump and blower house at the O'Brien WRP, rehabilitate central boiler facility and perform electrical upgrades at the Hanover Park WRP, replace Section 1 of the North Side Sludge Pipeline, rehabilitate the North Shore 1 Intercepting Sewer, rehabilitate the Upper Des Plaines 14B Intercepting Sewer, and rehabilitate pumps and replace the diverter gate at the Egan WRP.

Improvement of Environmental Quality

- Continue construction of the Des Plaines Inflow Tunnel at the McCook Reservoir, which is required to provide adequate conveyance of flow from the Des Plaines tunnel to the reservoir;
- Award a contract to stabilize rock walls and install instrumentation for Stage 2 of the McCook Reservoir;
- Begin construction of a Sidestream Enhanced Biological Phosphorus Removal pilot study at the Calumet WRP. This will allow the District to evaluate a method for removing phosphorus from wastewater, that avoids the need for importing chemicals or undertaking major infrastructure modifications.

Commitment to Community

- Continue construction of odor control systems at the Thornton Reservoir Gate and Construction Shafts;
- Three projects were awarded and began construction in 2019 to accomplish the goal of improving the quality of life for many individuals. One such project will be implemented at the Hanover Park WRP. The coarse screen building exhaust, gravity belt thickener exhaust, aerated grit tanks, and pre-treatment building are odorous areas at the plant, which is located in a residential neighborhood and adjacent to an elementary school. Odor compounds, concentrations, and associated air flows were collected and evaluated to determine the best available strategy to address the odor emissions. A bio-trickling filter and carbon polisher unit will be constructed to effectively treat the odor emissions.

2020 Initiatives in Support of the Strategic Business Plan Include the Following:

• Add Value

The recent completion of the Thornton Composite Reservoir and Stage 1 of the McCook Reservoir, Tunnel and Reservoir Plan has been effective in reducing pollution and flooding throughout the District's combined sewer service area. In fact, Stage 1 of the McCook Reservoir, which was completed in late 2018, provides 3.5 billion gallons of storage capacity, and has already prevented more than 40 billion gallons of combined sewage pollution from entering waterways and basements. Stage 2 of the McCook Reservoir is currently being excavated and, when completed, will add 6.5 billion gallons of storage to capture additional combined sewer overflow from 37 communities in Cook County.

In 2019, the Army Corps of Engineers and the District completed a Project Partnership Agreement to implement a pilot program to fund the completion of Stage 2 of the reservoir. The pilot program grants the District \$33.8 million to complete the Stage 2 design and construction work. This lump sum payment to the District came as a result of the Water Resources Development Act of 2014, which evaluates cost-effectiveness and project delivery efficiency of allowing non-federal interests to carry out construction of projects for flood risk management.

• Excellence

Given the critical nature of services provided by the District and its recognition of the age of infrastructure needed to provide these services, the Engineering Department excels at developing projects to rehabilitate facilities and provide new infrastructure. Approximately 70 percent of the dollar value of Capital Improvements Bond Fund contracts awarded in 2019 were related to the preservation of infrastructure. Out of all the projects to be awarded in 2020, approximately 70 percent are focused on preservation of infrastructure.

• Recover Resources

Four of the District's WRPs produce digester gas, also known as "biogas," which is a byproduct of the anaerobic digestion process. Biogas is used as a fuel source in boilers at the four WRPs to produce steam or hot water which is used to heat the digesters and plant buildings. However, not all of the biogas is fully utilized throughout the year. The District will evaluate technologies and opportunities for utilizing 100 percent of the biogas production at each of the WRPs to increase the quantity of resources recovered, reduce dependence on purchased energy, and reduce the District's carbon footprint. The District will also investigate pre-digestion treatment technologies and processes which may increase biogas production. An analysis of options will include a review of financial return on investment, carbon offsets, and market risks.

Water is an extremely valuable resource and the District's effluent is of exceptionally high quality. The Engineering Department is pursuing opportunities for water reuse by entities external to the District. In 2018 and 2019, the District sold reclaimed wastewater to Intren, LLC, a Women-owned Business Enterprise and innovative utility solutions partner of the energy industry. While the amount sold was relatively small, it was an important step to promote conservation and recycling and demonstrate the feasibility and benefits of water reuse. Additionally, Koppers, Inc., a global manufacturer and distributor located near the Stickney WRP, continues to express interest in pursuing reuse water at their plant and the District continues to look for other opportunities to supply reclaimed water.

In order to optimize aeration processes and reduce energy consumption, the Engineering Department has worked with the Monitoring & Research and Maintenance & Operations Departments to implement an ammonia control system. To realize savings from these control strategies, the existing large blowers at the Stickney WRP must be evaluated for optimized operation. Currently, the Engineering Department is evaluating the complex piping configuration to determine the improvements required to reliably provide the reduced air flow equally to all four aeration batteries. Also, the Engineering Department is evaluating the turn-down capacity of the existing large blowers in order to determine if air reduction from a new blower control system can be realized.

Specifications are in place for every Engineering Department Capital Improvement Program project that includes administrative and procedural requirements for the recycling and disposing of non-hazardous construction and demolition waste. The waste includes building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or rehabilitation operations, including packaging materials. Under this specification, the contractor is required to develop a Waste Management Plan that results in a recycling rate of 60 percent by weight of total waste generated by the work. This plan must include how the weights of each type of debris will be calculated and documented. The District's goal is to recycle as much non-hazardous construction and demolition waste as possible.

Capital Improvements Bond Fund Program

Awards in 2020					
Project Name	Project Number	Est. Construction Cost	Duration (days)	Est. Award Date	
Odor Control Systems at Two TARP Shafts and Decommissioning the Thornton Transitional Reservoir, CSA	15-266-4H	\$ 15,366	502	Jan 2020	
Sidestream Enhanced Biological Phosphorus Removal Pilot Study, CWRP	18-248-3P	1,400	252	Jan 2020	
Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP	15-069-3D	10,000	903	Feb 2020	
Upper Des Plaines Intercepting Sewer 14B Rehabilitation, NSA	06-360-3S	7,000	313	Mar 2020	
Furnish, Deliver, and Install Disc Filters, EWRP	18-702-31	4,000	730	Mar 2020	
Furnish, Deliver, and Install Three Bar Screens, KWRP	18-703-31	1,800	720	Mar 2020	
Central Boiler Facility and Electrical Updates, HPWRP	19-542-3M	14,000	712	Mar 2020	
Furnish, Deliver, and Install Replacement Gearboxes for SEPA(s) 2 & 5, CWRP	20-801-31	1,200	666	Mar 2020	
Furnish, Deliver, and Install Coarse Screens, SWRP	20-903-31	6,000	1,622	Mar 2020	
Roof Replacement of the Lue-Hing M&R Complex, SWRP	17-135-3V	6,500	553	Apr 2020	
Furnish, Deliver, and Install Telemetry Replacement for SCADA Control, Various Locations	17-606-31	545	335	Apr 2020	
Rehabilitation of Elevator Shafts, MSPS	18-142-3H	1,500	382	Apr 2020	
Phosphorus Removal Liquid Facilities at the Fox River Water Reclamation District	18-IGA-36	9,762	706	Apr 2020	
Installation of Mechanical Mixers, SWRP	19-157-3P	11,500	300	Apr 2020	
North Side Sludge Pipeline Replacement - Section 1, NSA	07-027-3S	14,327	922	May 2020	
A/B and C/D Service Tunnel Rehabilitation - Phase III, SWRP	16-127-3D	17,000	1,047	May 2020	
Battery A Final Settling Tanks, Rehabilitation of Concrete, SWRP	08-174-3D	7,700	322	Jun 2020	
Stickney Effluent Reuse Line, SSA	14-107-3S	800	193	Jun 2020	
Utility Tunnel Cracks and Expansion Joints Rehabilitation, OWRP, KWRP, EWRP, HPWRP	17-843-3D	3,000	682	Jul 2020	
McCook Reservoir Stage 2 Rock Wall Stabilization and Instrumentation, SWRP	17-131-4F	17,268	1,230	Aug 2020	
6th Street Construction and Utility Tunnel Rehabilitation, CWRP	19-257-3D	2,000	322	Dec 2020	
Total 2020 Awards		\$ 152,668			

Projects Under Development

Project Name	Project Number	Est. Construction Cost	Duration (days)	Est. Award Date
North Shore 1 Rehabilitation, NSA	10-047-3S	\$ 22,750	1,000	Jan 2021
Waste Activated and Primary Sludge Pump Upgrades, SWRP	20-901-31	1,100	720	Jan 2021
Rehabilitation of Locomotive Terminal Building, SWRP	18-143-3D	2,750	592	Feb 2021
Digester Rehabilitation and Gas Piping Replacement Phase II, SWRP	18-148-3P	11,500	742	Mar 2021
Chemical Phosphorus Removal Facility, CWRP	18-254-3P	14,000	312	Mar 2021
Furnish, Deliver, and Install Elevator Upgrades, NSA	21-701-31	900	660	Mar 2021
Rehabilitation of the Overhead Bridge Crane in the Discharge Valve Chamber, MSPS	21-901-31	1,100	300	May 2021
Roof Replacement & Restoration at Various Locations, SWRP	21-602-31	12,500	1,645	Jun 2021
Lockport Turbine Generator Rehabilitation, SSA	21-601-31	1,100	300	Jul 2021
Final Settling Tank Effluent Conduit Rehabilitation and Ultraviolet Facility Upgrades, OWRP	19-084-3P	2,000	512	Aug 2021
39th Street Conduit Rehabilitation - Phase II, SSA	01-103-AS	24,700	749	Jan 2022
Gate Control Equipment Upgrade at TARP Control Structures, NSA	06-358-3M	2,200	552	Jan 2022
Upper Des Plaines Intercepting Sewer 11D, Ext. C Rehabilitation, NSA	11-404-3S	5,500	462	Jan 2022
Boilers 3-5 and Motor Control Center Replacement, SWRP	19-155-3M	13,000	732	Jan 2022
Digester Rehabilitation, HPWRP	19-541-3P	6,000	572	Jan 2022
TARP Control System Replacement, SSA, CSA, NSA	19-856-3E	25,000	412	Feb 2022
Switchgear and Motor Control Center Replacement, CWRP	19-258-3E	23,000	512	Apr 2022
Photovoltaic Solar Plant, CWRP	19-259-3H	5,000	700	Jul 2022
Upper Des Plaines Intercepting Sewer 11D Rehabilitation, NSA	12-369-3S	5,500	462	Nov 2022
Battery D Final Settling Tanks, Rehabilitation of Concrete, SWRP	16-130-3D	3,000	512	Jan 2023
Low Voltage Switchgear Replacement, MSPS	19-154-3E	9,000	512	Jan 2023
Low Voltage Pump and Blower Switchgear and Aerated Grit Motor Control Center Replacement, SWRP	19-156-3E	6,750	552	Jan 2023
Rehabilitation of Pump and Blower House, CWRP	19-255-3D	4,000	562	Jan 2023
Battery C Final Settling Tanks, Rehabilitation of Concrete, SWRP	16-129-3D	3,000	512	Feb 2023
Post-Digestion Dewatering System, CWRP	17-275-3P	15,000	552	Feb 2023
Digester Rehabilitation and Gas Piping Replacement, CWRP	18-253-3P	15,000	842	Feb 2023
Battery B Final Settling Tanks, Rehabilitation of Concrete, SWRP	16-128-3D	5,000	512	Mar 2023
Upgrade Wilmette Lift Station, NSA	19-083-3P	1,500	382	Jun 2023
Southwest Coarse Screen Replacement, SWRP	19-153-3P	15,000	712	Jun 2023
Phosphorus Removal, KWRP	19-375-3P	6,500	512	Jun 2023
Lockport Powerhouse and Waterways Control System Replacement, SSA	19-855-3E	3,000	452	Sep 2023
Decommissioning of Battery B & C Imhoff Tanks and Skimming Tanks 9-16, SWRP	19-152-3P	10,000	572	Jun 2024
Digester Gas Utilization Facilities, SWRP	11-189-3P	60,000	743	Jan 2025
Phosphorus Recovery System, CWRP	12-245-3P	31,000	912	Jan 2025
Phosphorus Removal, EWRP	19-415-3P	30,000	512	Jan 2025
Palos Hills Pumping Station Force Main, CSA	11-242-3S	6,700	632	Mar 2025
Digester Rehabilitation and Gas Piping Replacement Phase II, CWRP	19-256-3P	10,000	732	Apr 2025
Deammonification System, SWRP	13-101-3P	30,000	563	May 2025

Projects Under Development (continued)

Project Name	Project Number	Est. Construction Cost	Duration (days)	Est. Award Date
Additional Grit Removal Tank, Chemical Phosphorus Removal Facility, and Construction of New Plant Entrance, LWRP	19-717-3P	6,000	612	May 2025
Plant Improvements, HPWRP	18-540-3P	20,000	742	Nov 2025
McCook Reservoir Stage 2 Final Reservoir Prep, SSA	17-132-4F	24,796	542	Jul 2028
Total Future Awards		\$ 494,846		
Cumulative 2020 and Future Awards		\$ 647,514		

Note: All cost figures are in thousands of dollars; inflation factor is 0 percent.

Bold type indicates projects to be financed by "Unlimited Tax Bonds."

	Method of Financing			
	State Revolving Fund Loans	General Obligation Bonds	Army Corps of Engineers	Total
Tunnel and Reservoir Plan		\$ 17,566	\$ 42,064	\$ 59,630
Water Reclamation Plant	197,992	161,747	—	359,739
Expansion and Improvements	—	—	—	—
Solids Management	62,500	39,100	—	101,600
Collection Facilities	66,657	57,138	—	123,795
Replacement of Facilities	—	2,750	—	2,750
Other	—	—	—	—
	\$ 327,149	\$ 278,301	\$ 42,064	\$ 647,514

Projects Under Construction

Projects under construction in the Capital Improvements Bond Fund were appropriated in prior years using the full encumbrance (obligation) method of budgetary accounting. The construction contract award amount and the anticipated completion date are provided in this table.

Project Name	Project Number	Est. Construction Cost	Award Date	Est. Substantial Completion Date
Thornton Composite Reservoir Mining, Land, and Corp Costs, CSA	77-235-2F	\$ 52,806	Jun 1998	Dec 2020
McCook Reservoir Stages 1 & 2, SSA	73-161-2H	137,500	May 1999	Dec 2029
150 DT/Day Biosolids Processing Facility, SWRP	01-101-1M	83,123	Jun 2010	Nov 2029
McCook Reservoir Des Plaines Inflow Tunnel, SSA	13-106-4F	107,831	Jun 2016	Feb 2021
Furnish, Deliver, and Install Boiler Controls, SWRP	16-901-31	1,327	Sep 2017	Dec 2021
Installation of Shaftless Screw Conveyors for Aerated Grit Tanks, SWRP	17-902-31	2,595	Dec 2017	Jan 2021
North Branch Dam Removal and River Riparian Connectivity, NSA	16-IGA-22	2,500	Sep 2017	Aug 2022
Switchgear & Motor Control Center Replacement, OWRP	17-080-3E	3,577	Sep 2018	Jul 2020
Structural Rehabilitation and Roofing Replacement at 95th Street Pumping Station, CSA	17-276-3D	4,559	Nov 2018	Nov 2020
Furnish and Install Odor Control System, CWRP, HPWRP, and KWRP	17-844-3P	4,099	Feb 2019	Jun 2020
Energy Efficiency Improvements, SWRP	19-901-31	5,413	Apr 2019	Dec 2020
Replacement of Tailrace Stop Logs, Headrace Gates, and Equipment at Lockport Powerhouse, SSA	15-830-3D	12,075	Jun 2019	Oct 2021
Installation and Removal of Cofferdam at Sluice Gate No. 2, Lockport Powerhouse Controlling Works, SSA	18-607-31	335	Jun 2019	Jun 2020
Phosphorus Removal Struvite Facilities at the Fox River Water Reclamation District	18-IGA-35	2,639	Aug 2019	Dec 2020
Odor Control Facilities at Sludge Concentration, Southwest Coarse Screen, Overhead Weir, and Post-Centrifuge Building, SWRP	17-134-3MR	17,250	Sep 2019	Apr 2021
Modifications to TARP Control Structures & Drop Shafts, CSA and SSA	17-842-3H	2,100	Sep 2019	Oct 2020
Drop Shaft 5 Inspection and Miscellaneous Collection System Work, NSA	14-372-3SR	4,000	Sep 2019	Sep 2020
Digester Rehabilitation and Gas Piping Replacement, SWRP	17-140-3P	15,000	Oct 2019	Oct 2021
Digester Sludge Heating System Upgrades and Boiler Removal, CWRP	18-277-3M	28,500	Nov 2019	Sep 2022
Pump Rehabilitation and Diverter Gate Installation, EWRP	16-412-3M	550	Nov 2019	Dec 2020
Rehabilitation of TARP Pumps, MSPS	18-144-3M	20,509	Dec 2019	Mar 2024
Rehabilitation of Gravity Concentration Tank, CWRP	18-803-32	2,295	Mar 2020	Dec 2021
Furnish, Deliver, and Install Disc Filters for Filters 3 and 4, HPWRP	19-701-31	1,700	Mar 2020	Jun 2021
Total Projects Under Construction		\$ 512,283		

Note: All cost figures are in thousands of dollars; inflation factor is 0 percent.

Bold type indicates projects to be financed by "Unlimited Tax Bonds."

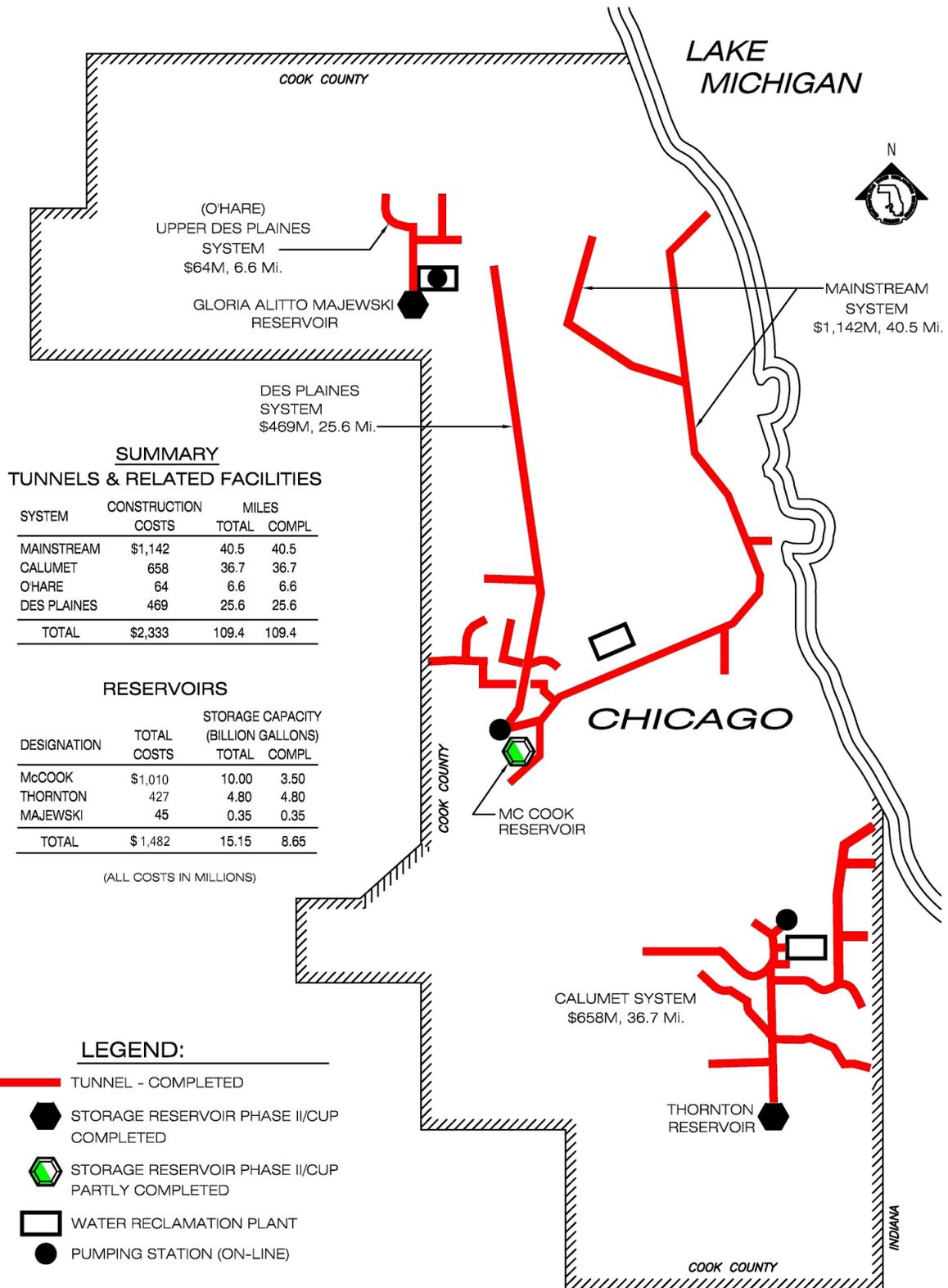
TARP PHASE II PROJECT COSTS

Phase I of TARP was completed in 2006 and two of the Phase II reservoirs, Majewski and Thornton, are now fully operational. Stage 1 of the McCook Reservoir became operational in December 2017 and Stage 2 will continue to be mined with completion scheduled for 2029. Though only partially complete, TARP has already been effective in reducing pollution and flooding. The Phase II Reservoir project costs are shown in the table below.

Project Name	Project Number	Design/Construction Status	Project Costs (4)	Funded by Army Corps of Engineers
Majewski Reservoir				
I - Army Corps of Engineers Contracts	73-315-2S	Construction completed in 1998	\$40,818,858	75%
II - Betterments (1)	93-339-2F	Construction completed in 1998	\$3,991,694	No
Thornton Reservoir				
I - Vincennes Avenue Relocation	77-235-AF	Construction completed in 2001	\$4,398,000	See Note (3)
II - Transitional Reservoir GW Monitoring Wells	77-235-CF	Construction completed in 2002	\$529,000	
III - Transitional Reservoir (2)	77-235-BF	Construction completed in 2003	\$54,707,000	
IV - Mining, Land, and Corps Costs	77-235-2F	Mining completed in 2013	\$65,210,000	
V - Tollway Dam and Grout Curtain	04-201-4F	Construction completed in 2015	\$80,750,000	
VI - TARP Inlet/Outlet Tunnels and Gates	04-202-4F	Construction completed in 2015	\$147,000,000	
VII - Final Reservoir Preparation	04-203-4F	Construction completed in 2015	\$63,479,000	
VIII - Surface Aeration	04-203-AF	Construction completed in 2017	\$1,921,000	
IX - Odor Control Systems and Decommissioning TTR	15-266-44R	Construction to be completed in 2021	\$9,069,000	
McCook Reservoir				
I - Stages 1 and 2 - Army Corps of Engineers Contracts	73-161-2H	Reservoir constructed under several contracts	\$618,391,000	75%
II - Site Preparation, Lagoons 1-10	73-161-BH	Construction completed in 2000	\$889,000	\$307,000 Credited
III - 73rd Street Tunnel Relocation	97-156-2H	Construction completed in 2002	\$15,132,000	Credited
IV - Willow Springs Berm	96-249-2P	Construction completed in 2002	\$3,593,000	No
V - Vulcan Primary Crusher Furnish and Deliver	PO3030920	Crusher purchased in 2005	\$1,626,000	No
VI - Conveyance Tunnel	73-161-AH	Construction completed in 2006	\$5,428,000	No
VII - Vulcan Mining Trucks and Loaders	73-161-HH	Vehicles delivered in 2007	\$11,105,000	No
VIII - Vulcan Miscellaneous Mining Vehicles	73-161-GH	Vehicles delivered in 2007 and 2008	\$4,989,000	No
IX - Conveyance System and Maintenance Facilities	73-161-FH	Construction completed in 2008	\$32,381,000	\$1.84M Credited
X - LASMA Overburden Removal	73-161-CH	Construction completed in 2010	\$66,316,000	No
XI - Vulcan Rock Mining Hard Costs Less Royalty	73-161-EH	Mining underway	\$61,695,000	No
XII - Stage 2 Miscellaneous Overburden Removal	73-161-JH	Construction completed in 2012	\$6,510,000	No
XIII - Expanded Stage 2 Overburden Removal	73-161-DH	Construction completed in 2016	\$18,743,000	No
XIV - Des Plaines Inflow Tunnel	13-106-4F	Construction underway in 2016	\$112,237,000	No
XV - Expanded Stage 2 Slope Stabilization	16-125-4F	Completed	\$8,765,000	No
XVI - McCook Reservoir Stage 2 Rock Wall Stabilization and Instrumentation	17-131-4F	Under construction	\$17,300,000	53%
XVII - McCook Reservoir Stage 2 Final Reservoir Prep	17-132-4F	Future	\$24,800,000	69%
Total Project Cost			\$1,481,773,552	

Notes:

- (1) Betterment includes a control building, reservoir outflow control gates, and monitoring system.
- (2) Cost shown is total cost of Transitional Reservoir. Facilities that will be re-used for the Thornton Composite Reservoir account for \$30,337,000 of the cost.
- (3) The District designed and constructed the Thornton Composite Reservoir in anticipation of receiving reimbursement or credits from the Army Corps of Engineers.
- (4) Includes land, engineering, and construction costs.



TUNNEL and RESERVOIR PLAN PROJECT STATUS

CAPITAL PROJECTS LISTED BY SERVICE AREA - CAPITAL IMPROVEMENTS BOND FUND

The following is a list of capital projects within the District’s three major service areas. They are presented by their association with a water reclamation plant (WRP) and by their completion status: projects under construction, for 2020 award, or under development.

Bold type indicates projects to be financed by "Unlimited Tax Bonds."

**STICKNEY
SERVICE
AREA (SSA)**



Stickney Water Reclamation Plant (SWRP)

Projects Under Construction		Estimated Substantial Completion Date	Estimated Construction Cost
73-161-2H	Thornton Composite Reservoir Mining, Land and Corp Costs, SSA	12/29	\$ 137,500,000
11-186-3F	^ Addison Creek Reservoir, SSA	02/22	63,280,000
13-106-4F	McCook Reservoir Des Plaines Inflow Tunnel, SSA	02/21	107,830,897
14-263-3F	^ Melvina Ditch Reservoir Improvements, SSA	09/20	14,717,000
15-830-3D	Replacement of Tailrace Stop Logs, Headrace Gates, and Equipment at Lockport Powerhouse, SSA	10/21	12,075,000
16-901-31	Furnish, Deliver, and Install Boiler Controls, SWRP	12/21	1,327,290
16-IGA-13	^ Acquisition of Flood Prone Properties Franklin Park (32 homes)	08/20	4,681,000
17-134-3MR	Odor Control Facilities at Sludge Concentration, Southwest Coarse Screen, Overhead Weir, and Post-Centrifuge Building, SWRP	04/21	17,250,000
17-140-3P	Digester Rehabilitation and Gas Piping Replacement, SWRP	10/21	15,000,000
17-842-3H	Modifications to TARP Control Structures & Drop Shafts, CSA and SSA	10/20	2,100,000
17-902-31	Installation of Shaftless Screw Conveyors for Aerated Grit Tanks, SWRP	01/21	2,595,000
18-144-3M	Rehabilitation of TARP Pumps, MSPS	03/24	20,509,000
18-607-31	Installation and Removal of Cofferdam at Sluice Gate No. 2, Lockport Powerhouse Controlling Works, SSA	06/20	334,500
19-901-31	Energy Efficiency Improvements, SWRP	12/20	5,412,680
		Total	\$ 404,612,367

Stickney Water Reclamation Plant (SWRP)

		Estimated Construction Cost
Projects for 2020 Award		
08-174-3D	Battery A Final Settling Tanks, Rehabilitation of Concrete, SWRP	\$ 7,700,000
11-187-3F	* Addison Creek Channel Improvements, SWRP	21,350,000
14-107-3S	Stickney Effluent Reuse Line, SSA	800,000
16-127-3D	A/B and C/D Service Tunnel Rehabilitation - Phase III, SWRP	17,000,000
17-131-4F	McCook Reservoir Stage 2 Rock Wall Stabilization and Instrumentation, SWRP	17,268,000
17-135-3V	Roof Replacement of the Lue-Hing M&R Complex, SWRP	6,500,000
17-606-31	Furnish, Deliver, and Install Telemetry Replacement for SCADA Control, Various Locations	545,000
18-142-3H	Rehabilitation of Elevator Shafts, MSPS	1,500,000
19-157-3P	Installation of Mechanical Mixers, SWRP	11,500,000
20-903-31	Furnish, Deliver, and Install Coarse Screens, SWRP	6,000,000
	Total	\$ 90,163,000

Projects Under Development

01-103-AS	39th Street Conduit Rehabilitation - Phase II, SSA	\$ 24,700,000
11-189-3P	Digester Gas Utilization Facilities, SWRP	60,000,000
13-101-3P	Deammonification System, SWRP	30,000,000
16-128-3D	Battery B Final Settling Tanks, Rehabilitation of Concrete, SWRP	5,000,000
16-129-3D	Battery C Final Settling Tanks, Rehabilitation of Concrete, SWRP	3,000,000
16-130-3D	Battery D Final Settling Tanks, Rehabilitation of Concrete, SWRP	3,000,000
17-132-4F	McCook Reservoir Stage 2 Final Reservoir Prep, SSA	24,796,200
18-143-3D	Rehabilitation of Locomotive Terminal Building, SWRP	2,750,000
18-148-3P	Digester Rehabilitation and Gas Piping Replacement Phase II, SWRP	11,500,000
19-152-3P	Decommissioning of Battery B & C Imhoff Tanks and Skimming Tanks 9-16, SWRP	10,000,000
19-153-3P	Southwest Coarse Screen Replacement, SWRP	15,000,000
19-154-3E	Low Voltage Switchgear Replacement, MSPS	9,000,000
19-155-3M	Boilers 3-5 and Motor Control Center Replacement, SWRP	13,000,000
19-156-3E	Low Voltage Pump and Blower Switchgear and Aerated Grit Motor Control Center Replacement, SWRP	6,750,000
19-855-3E	Lockport Powerhouse and Waterways Control System Replacement, SSA	3,000,000
19-856-3E	TARP Control System Replacement, SSA, CSA, NSA	25,000,000
20-901-31	Waste Activated and Primary Sludge Pump Upgrades, SWRP	1,100,000
21-601-31	Lockport Turbine Generator Rehabilitation, SSA	1,100,000
21-901-31	Rehabilitation of the Overhead Bridge Crane in the Discharge Valve Chamber, MSPS	1,100,000
	Total	\$ 249,796,200
	Stickney Service Area Grand Total	\$ 744,571,567

**NORTH
SERVICE
AREA (NSA)**



Terrence J. O'Brien Water Reclamation Plant (OWRP)

		Estimated Substantial Completion Date	Estimated Construction Cost
Projects Under Construction			
16-IGA-22	North Branch Dam Removal and River Riparian Connectivity, NSA	08/22	\$ 2,500,000
17-080-3E	Switchgear & Motor Control Center Replacement, OWRP	07/20	3,577,000
18-IGA-35	Phosphorus Removal Struvite Facilities at the Fox River Water Reclamation District	12/20	2,639,337
		Total	\$ 8,716,337
Projects for 2020 Award			
07-027-3S	North Side Sludge Pipeline Replacement - Section 1, NSA		\$ 14,326,850
15-069-3D	Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP		10,000,000
17-843-3D	Utility Tunnel Cracks and Expansion Joints Rehabilitation, OWRP, KWRP, EWRP, HPWRP		3,000,000
18-IGA-36	Phosphorus Removal Liquid Facilities at the Fox River Water Reclamation District		9,761,692
		Total	\$ 37,088,542
Projects Under Development			
10-047-3S	North Shore 1 Rehabilitation, NSA		\$ 22,750,000
19-083-3P	Upgrade Wilmette Lift Station, NSA		1,500,000
19-084-3P	Final Settling Tank Effluent Conduit Rehab and Ultraviolet Facility Upgrades, OWRP		2,000,000
21-701-31	Furnish, Deliver, and Install Elevator Upgrades, NSA		900,000
		Total	\$ 27,150,000

John E. Egan Water Reclamation Plant (EWRP)

		Estimated Substantial Completion Date	Estimated Construction Cost
Project Under Construction			
16-412-3M	Pump Rehabilitation and Diverter Gate Installation, EWRP	12/20	\$ 550,000
		Total	\$ 550,000
Project for 2020 Award			
18-702-31	Furnish, Deliver, and Install Disc Filters, EWRP		\$ 4,000,000
		Total	\$ 4,000,000
Projects Under Development			
11-404-3S	Upper Des Plaines Intercepting Sewer 11D, Ext. C Rehabilitation, NSA		\$ 5,500,000
19-415-3P	Phosphorus Removal, EWRP		30,000,000
		Total	\$ 35,500,000

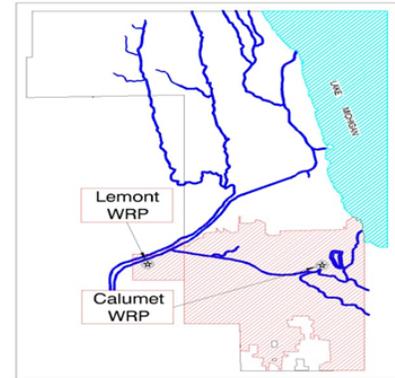
James C. Kirie Water Reclamation Plant (KWRP)

Projects Under Construction			
13-370-3F	^* Buffalo Creek Reservoir Expansion, NSA	03/20	\$ 8,840,707
14-372-3SR	Drop Shaft 5 Inspection and Miscellaneous Collection System Work, NSA	09/20	4,000,000
		Total	\$ 12,840,707
Projects for 2020 Award			
06-360-3S	Upper Des Plaines Intercepting Sewer 14B Rehabilitation, NSA		\$ 7,000,000
18-703-31	Furnish, Deliver, and Install Three Bar Screens, KWRP		1,800,000
		Total	\$ 8,800,000
Projects Under Development			
06-358-3M	Gate Control Equipment Upgrade at TARP Control Structures, KWRP, NSA		\$ 2,200,000
12-369-3S	Upper Des Plaines Intercepting Sewer 11D Rehabilitation, NSA		5,500,000
19-375-3P	Phosphorus Removal, KWRP		6,500,000
		Total	\$ 14,200,000

Hanover Park Water Reclamation Plant (HPWRP)

Project Under Construction (with estimated completion dates)			
19-701-31	Furnish, Deliver, and Install Disc Filters for Filters 3 and 4, HPWRP	6/21	\$ 1,700,000
		Total	\$ 1,700,000
Project for 2020 Award			
19-542-3M	Central Boiler Facility and Electrical Updates, HPWRP		\$ 14,000,000
		Total	\$ 14,000,000
Projects Under Development			
18-540-3P	Plant Improvements, HPWRP		\$ 20,000,000
19-541-3P	Digester Rehabilitation, HPWRP		6,000,000
		Total	\$ 26,000,000
			North Service Area Grand Total
			\$ 190,545,586

**CALUMET
SERVICE
AREA (CSA)**



Calumet Water Reclamation Plant (CWRP)

		Estimated Substantial Completion Date	Estimated Construction Cost
Projects Under Construction			
77-235-2F	Thornton Composite Reservoir Mining, Land, and Corp Costs, CSA	12/21	\$ 52,805,539
17-276-3D	Structural Rehabilitation and Roofing Replacement at 95th Street Pumping Station, CSA	11/20	4,559,000
17-844-3P	Furnish and Install Odor Control System, CWRP, HPWRP, and KWRP	06/20	4,099,896
18-277-3M	Digester Sludge Heating System Upgrades and Boiler Removal, CWRP	09/22	28,500,000
18-803-32	Rehabilitation of Gravity Concentration Tank, CWRP	12/21	2,295,000
		Total	\$ 92,259,435
Projects for 2020 Award			
10-882-AF	^ Streambank Stabilization Project on Tinley Creek, CSA		\$ 3,806,000
15-266-4H	Odor Control Systems at Two TARP Shafts and Decommissioning the Thornton Transitional Reservoir, CSA		15,366,250
15-IGA-14	^* Construction of a Levee along Thorn Creek at Arquilla Park, in Glenwood, CSA		3,483,000
18-248-3P	Sidestream Enhanced Biological Phosphorus Removal Pilot Study, CWRP		1,400,000
19-257-3D	6th Street Construction and Utility Tunnel Rehabilitation, CWRP		2,000,000
20-801-31	Furnish, Deliver, and Install Replacement Gearboxes for SEPA(s) 2 & 5, CWRP		1,200,000
		Total	\$ 27,255,250

Projects Under Development		Estimated Construction Cost
11-242-3S	Palos Hills Pumping Station Force Main, CSA	\$ 6,700,000
12-245-3P	Phosphorus Recovery System, CWRP	31,000,000
17-275-3P	Post-Digestion Dewatering System, CWRP	15,000,000
18-253-3P	Digester Rehabilitation and Gas Piping Replacement, CWRP	15,000,000
18-254-3P	Chemical Phosphorus Removal Facility, Calumet WRP	14,000,000
19-255-3D	Rehabilitation of Pump and Blower House at Calumet WRP	4,000,000
19-256-3P	Digester Rehabilitation and Gas Piping Replacement Phase II, CWRP	10,000,000
19-258-3E	Switchgear and MCC Replacement, CWRP	23,000,000
19-259-3H	Photovoltaic Solar Plant, CWRP	5,000,000
19-717-3P	Additional Grit Removal Tank, Chemical Phosphorus Removal Facility, and Construction of New Plant Entrance, LWRP	6,000,000
	Total	<u>\$ 129,700,000</u>
	Calumet Service Area Grand Total	<u>\$ 249,214,685</u>
	Capital Projects Grand Total - All Service Areas	<u>\$ 1,184,331,838</u>

- ^ These projects are part of the Stormwater Management Program. Detailed information about this fund and these projects appears in Section VI of this budget document.
- * These projects are funded by the Capital Improvements Bond Fund and the Stormwater Management Fund.

McCook Reservoir Stages 1 & 2, SSA

Project Number	73-161-2H
Service Area	Stickney
Location	Lawndale Avenue Solids Management Area
Engineering Consultant	Army Corps of Engineers
Engineering Contractor	Army Corps of Engineers
Estimated Construction Cost	\$137,500,000
Contract Award Date	May 1999
Substantial Completion Date	December 2029



Project Description The Army Corps of Engineers is responsible for designing and constructing the reservoir features for this project. This work includes groundwater protection, soil and rock wall stabilization, aeration, connecting tunnels, associated gates, valves, shafts and controls, and other miscellaneous features.

The McCook Reservoir will provide 10 billion gallons of storage for combined sewer overflows located at the Lawndale Avenue Solids Management Area facility and will be built in two stages. As the local sponsor, the District will pay 25 percent of the total cost.

Project Justification The McCook Reservoir project is an essential part of the District's Tunnel and Reservoir Plan to prevent flooding and pollution from combined sewer overflows. The McCook Reservoir will provide \$143 million per year in benefits to 3.1 million people in 37 communities.

Project Status Construction

Thornton Composite Reservoir Mining, Land, and Corp Costs, CSA

Project Number 77-235-2F

Service Area Calumet

Location Thornton TARP

Engineering Consultant Not Applicable

Engineering Contractor Not Applicable

Estimated Construction Cost \$52,805,539

Contract Award Date June 1998

Substantial Completion Date December 2020



Project Description An agreement was entered into between the District and Material Service Corporation for the mining required for the Thornton Composite Reservoir. The terms of the agreement provide for reimbursement of the costs associated with acquisition of the north lobe of the Thornton Quarry and costs associated with the mining operation and use of the west lobe for the transitional reservoir.

Project Justification This project allows for the use of the Thornton Composite Reservoir to capture combined sewer overflows and for the Thornton Transitional Reservoir to capture flood waters from Thorn Creek.

Project Status Construction

Upper Des Plaines Intercepting Sewer 14B Rehabilitation, NSA

Project Number 06-360-3S

Service Area North

Location Wheeling, IL

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$7,000,000

Contract Award Date March 2020

Substantial Completion Date January 2021



Project Description This project consists of rehabilitating 2,902 feet of 48-inch diameter sewer and 11,902 feet of 69-inch diameter sewer by cured-in-place pipe lining and/or the slip lining method, rehabilitating 27 manholes/ structures and the abandonment of one offset manhole.

Project Justification The sewers were inspected by the Maintenance & Operations Department with a closed-circuit television inspection system. The video inspection tapes show cracks (circular and longitudinal), sewage solids deposits, sags, offset joints, root intrusion, infiltration, and concrete erosion. Physical inspection of the manholes revealed cracks and holes in the walls and bases of the manholes and in one offset manhole, which is part of a control structure, and 85 feet of 3.5-foot by 4.5-foot pipe.

Project Status Design

North Side Sludge Pipeline Replacement - Section 1, NSA

Project Number 07-027-3S

Service Area North

Location Skokie, Lincolnwood, and Chicago, IL

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$14,326,850

Contract Award Date May 2020

Substantial Completion Date November 2022

Project Description The purpose of this project is to replace Section 1 of the existing North Side Sludge Pipeline and rehabilitate 42 existing structures located in the Villages of Skokie and Lincolnwood and the City of Chicago.

Project Justification Due to external corrosion and damage caused by construction activities of others in the area, the pipeline developed a number of holes over the years resulting in sludge overflowing into the North Shore Channel. In order to increase the reliability of sludge conveyance, the pipeline needs to be rehabilitated and/or replaced. The structures were inspected by the Maintenance & Operations Department in January 2008 with a closed-circuit television inspection system and by physical inspection. The video inspection shows that the piping and valves inside the structures have corroded. Due to the importance of the North Side Sludge Pipeline, the piping and valves in the 42 structures will be removed and replaced. New automatic air release valves will be installed in the remaining existing structures to preserve the useful life of those structures.

Project Status Design



Battery A Final Settling Tanks, Rehabilitation of Concrete, SWRP

Project Number	08-174-3D
Service Area	Stickney
Location	Stickney WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$7,700,000
Contract Award Date	June 2020
Substantial Completion Date	April 2021



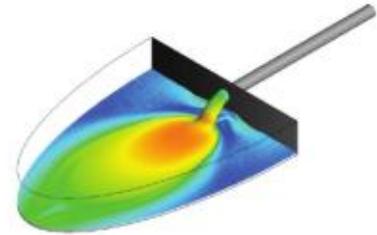
Project Description This project consists of concrete rehabilitation of Battery A final settling tanks at the Stickney WRP and rehabilitation of deteriorated and leaking roof deck and deteriorated concrete beams in the coarse screen room of the Racine Avenue Pumping Station (RAPS). This project will add steel railing and safety davit sleeves at final settling tanks and a permanent safety barrier along mixed liquor channel.

Project Justification The 80-year old concrete in Battery A final settling tanks is severely deteriorated in some locations. Concrete spalls and debris are falling into the tanks. Rehabilitation of deteriorated concrete will prolong the useful life of the tanks. The addition of railing around final settling tanks and a permanent safety barrier along mixed liquor channel will safeguard against employees, contractors, and/or visitors falling into the tanks and channels. Addition of safety davit sleeves around final settling tanks will allow for the installation of a portable davit hoist making any necessary emergency retrieval of injured person(s) from tanks safer and quicker. Rehabilitation of deteriorated and leaking roof deck and deteriorated concrete beams at RAPS will restore strength of the beams and deck and prolong the building's useful life.

Project Status Planning

McCook Reservoir Des Plaines Inflow Tunnel, SSA

Project Number	13-106-4F
Service Area	Stickney
Location	Lawndale Avenue Solids Management Area
Engineering Consultant	Black & Veatch Corporation, Inc.
Engineering Contractor	Walsh Construction Company II, LLC
Estimated Construction Cost	\$107,830,897
Contract Award Date	June 2016
Substantial Completion Date	February 2021



Project Description This project consists of the construction of an approximately 20-foot diameter tunnel that will connect the Des Plaines tunnel directly to the McCook Reservoir and includes a gate shaft, primary gate, backup gate, gate control building, temporary construction access shaft, tunnel portal and highwall stability measures, and an energy dissipation apron with baffle blocks. The project also includes the demolition of an existing concrete tunnel plug, making a live connection to the existing Des Plaines Tunnel System and future McCook Reservoir, installation of reservoir level and tunnel inflow instrumentation, installation of duct banks, conduits, wiring, lighting, and electrical equipment, installation of permanent perimeter fencing, and performance of other work.

Project Justification The McCook Reservoir project is an essential part of the District's Tunnel and Reservoir Plan to prevent flooding and pollution from combined sewer overflows. The tunnel is required to provide adequate conveyance of combined sewer overflows from the Des Plaines tunnel to the reservoir. The tunnel will improve upon the conveyance plan formulated by the Army Corps of Engineers, which includes undesirable flow restrictions.

Project Status Construction

Stickney Effluent Reuse Line, SSA

Project Number	14-107-3S
Service Area	Stickney
Location	Stickney, IL
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$800,000
Contract Award Date	June 2020
Substantial Completion Date	December 2020



Project Description This project consists of the installation of 2,000 linear feet of six-inch diameter pressure pipe by directional drilling and the installation of air relief, blow off, and clean-out structures.

This project will be used to design a force main between the Stickney WRP and Koppers Inc., a distiller of coal tar. The force main will deliver effluent water from the Stickney WRP to the Koppers plant. The District will receive payment for effluent water delivered to the Koppers plant to be used in their industrial processes as gray water. The rate will be determined.

Project Justification This project will represent the first of the effluent reuse opportunities and demonstrate the feasibility and benefits of water reuse in the immediate vicinity of the Stickney WRP. The construction of the effluent line will result in a increase to the labor operating budget.

Project Status Design

Drop Shaft 5 Inspection and Miscellaneous Collection System Work, NSA

Project Number	14-372-3S
Service Area	North
Location	Des Plaines, IL
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$4,000,000
Contract Award Date	September 2019
Substantial Completion Date	September 2020



Project Description The project consists of the following rehabilitation work at Drop Shaft No.5: Rehabilitate drop shaft by means of slip lining, rehabilitate 100 feet of 108-inch pipe by the cured-in-place lining process, rehabilitate 100 feet of the drop shaft exit conduit by spray-on lining, and the replacement of deteriorated appurtenances. Additionally, Drop Shaft No. 8 will have louvers and grating installed and Control Structure 10 will have Gate 11 removed and Gate 13 replaced along with the installation of a new actuator. The work also includes the installation of radar level measurement devices at three shafts on the Calumet tunnel system and the Thornton Composite Reservoir and the replacement of gates and stop logs on Drop Shaft DS-PI, which is part of the 39th Street Conduit. In addition, installation of a weir in the Upper Des Plaines Tunnel.

Project Justification Drop Shaft No. 5 was inspected visually by the Maintenance & Operations and Engineering Departments. The results of the visual inspection show concrete and metal deterioration due to hydrogen sulfide. In order to restore the structural integrity of the drop shaft and sewer, they need to be rehabilitated.

Drop Shaft No. 8 experiences large air displacement during Tunnel and Reservoir Plan fill events causing potential damage to the structure. Increasing the venting area will help in reducing this issue.

The gates within Control Structure 10 are non-operational. The Maintenance & Operations Department has requested the rehabilitation of one of the gates for diversion purposes and the removal of the other.

A bubbler instrumentation system was installed to measure and monitor water levels in the Tunnel and Reservoir Plan system. The District has found that the bubbler systems at these locations are unreliable and provide inaccurate data and need to be replaced.

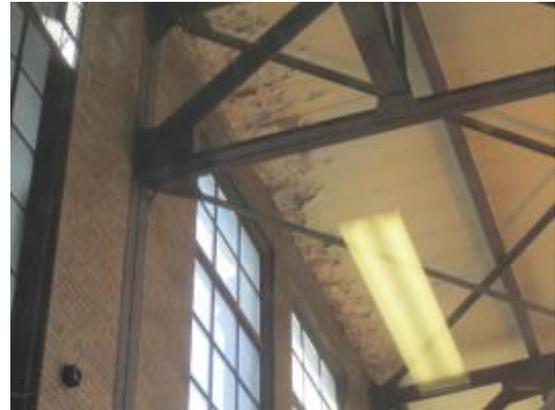
During storm events in 2014, the stop logs at DS-P1 dislodged and passed through the dual flap gate bulkhead. As a result, the bottom flap gates were severely damaged in a manner that prevents proper operation.

The installation of a radar level measurement device at the Thornton Composite Reservoir will monitor elevation in the reservoir. The installation of a weir in the Upper Des Plaines Tunnel will restrict the propagation of transient waves throughout this section of the tunnel and reduce the occurrences of geysering.

Project Status Construction

Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP

Project Number	15-069-3D
Service Area	North
Location	O'Brien WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$10,000,000
Contract Award Date	February 2020
Substantial Completion Date	August 2022



Project Description This project consists of rehabilitating the pump and blower house building roof and facade components at the O'Brien WRP. Besides protecting, rehabilitating, and structurally strengthening steel frame beams and columns embedded in the masonry wall, the scope of work includes localized roof deck rehabilitation including roof slope remediation, full roofing membrane and insulation replacement, full masonry and flashing rehabilitation at roof parapet walls, localized windows and exterior doors rehabilitation, localized tuckpointing, and other miscellaneous rehabilitation associated or incidental to facade/roof rehabilitation project. The District's Structural Architectural Section will be working with RME, Inc., a Chicago-based consulting company. District staff will manage the rehabilitation design process, review and approve all submitted rehabilitation documents, administer the contract, and oversee the construction. In addition, the District will manage the contract budget and payments. The project goal is to rehabilitate the pump and blower house roof and facade and extend the building life span for another 50 to 90 years.

Project Justification The pump and blower house building has not undergone major structural repair since it was built in 1926. During its 90 years of service, the building experienced maintenance repairs (reroofing, window repair, and tuckpointing). During south parapet wall repair in 2013, it was observed that several steel spandrel beams that frame the upper roof and support the pump and blower house south parapet wall were severely corroded. The roof steel beams that are part of the building vertical (gravity) and lateral (wind/seismic) loads resisting system appeared compromised. Additionally, corrosion of the steel can result in severe deterioration of the masonry, water infiltration, and a potential for bulging and failing masonry. The parapet wall distress, which collapsed in May 2013 during the repair, was directly related to the severely corroded steel beams supporting the wall.

Project Status Design

Odor Control Systems at Two TARP Shafts and Decommissioning the Thornton Transitional Reservoir, CSA

Project Number	15-266-4H
Service Area	Calumet
Location	Thornton, IL
Engineering Consultant	Black & Veatch Corporation, Inc.
Engineering Contractor	To be determined
Estimated Construction Cost	\$15,366,250
Contract Award Date	January 2020
Substantial Completion Date	May 2021



Project Description Work associated with decommissioning of the Thornton Transitional Reservoir includes excavation of existing rock plug in Thorn Creek Connection Tunnel, installation of east and west tunnel plugs in Thorn Creek Diversion Tunnel, placement of mass concrete fill between east tunnel plug and connection tunnel, installation of lining and contact grouting in portions of the connection tunnel and diversion tunnel, removal of concrete beams, rock support and rock in the vicinity of the existing Thornton Transitional Reservoir Portal, removal of sediment in the Thornton Transitional Reservoir, installation of reservoir level measurement equipment, decommissioning the Thornton Transitional Reservoir Dewatering Valve Chamber, construction shaft concrete rehabilitation (adjacent to the valve shaft chamber), installation of aggregate pathways at four monitoring wells, rehabilitation of rockfall netting at the Thornton Composite Reservoir north highwall access ramp, installation of carbon filter odor control systems for the construction and gate shafts and any appurtenant work associated with the items listed above.

Project Justification The District entered into an agreement with Hansen Material Service to extend the lease for use of the Thornton Transitional Reservoir, and the west lobe of the Thornton Quarry, through 2020. This allows the District to utilize the Thornton Transitional Reservoir for holding overbank floodwaters from Thorn Creek while learning to operate the Thornton Composite Reservoir during its initial years. This project finalizes the connection of the Thorn Creek Overflow Structure to the Thornton Composite Reservoir.

Project Status Design

Replacement of Tailrace Stop Logs, Headrace Gates, and Equipment at Lockport Powerhouse, SSA

Project Number	15-830-3D
Service Area	Stickney
Location	Lockport Powerhouse
Engineering Consultant	In-house design
Engineering Contractor	IHC Construction Companies, LLC
Estimated Construction Cost	\$12,075,000
Contract Award Date	June 2019
Substantial Completion Date	October 2021



Project Description This project will design, fabricate, and install tailrace stop logs for Bays 1 and 2. It will also replace headrace gates, tailrace stop logs, and associated hoist systems.

Project Justification Headrace gates in Bays 1 and 2 are not properly functioning. The tailrace stop logs are rusted and are not functional. The tailrace hoist system is not operational. Consequently, the chambers of Bays 1 and 2 cannot be drained, and turbines cannot be inspected and maintained. These issues have delayed maintenance for several years. Ideally, turbines and other accessories require annual inspection and maintenance to prolong their life span.

Project Status Construction

A/B and C/D Service Tunnel Rehabilitation - Phase III, SWRP

Project Number 16-127-3D

Service Area Stickney

Location Stickney WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$17,000,000

Contract Award Date May 2020

Substantial Completion Date March 2023



Project Description This project will rehabilitate approximately 1,000 feet of the A/B Service Tunnel north of column line 31 and approximately 1,000 feet of the C/D Service Tunnel north of column line 37. This project continues the scope of work from contracts 04-131-2D and 04-132-3D.

Project Justification Significant structural deterioration has occurred since the tunnels were constructed approximately 80 years ago. Rehabilitating the tunnels will restore capacity, extend their service life, and prevent further damage to the utilities inside the tunnels.

Project Status Design

Pump Rehabilitation and Diverter Gate Installation, EWRP

Project Number	16-412-3M
Service Area	North
Location	Egan WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$550,000
Contract Award Date	November 2019
Substantial Completion Date	December 2020



Project Description The purpose of this project is to rehabilitate Raw Sewage Pumps 1 and 2 at the Egan WRP. The work includes the replacement of the pump and motor bearings, seals, and related parts to restore the equipment to like-new condition. Also, two old-style centrifuge diverter gates will be replaced with slide gates furnished by the Maintenance & Operations Department. Hopper modifications will be made, as necessary, to allow for the installation of the diverter gates. A centrate valve will be electrically actuated to allow controlled diversion and increased operational control.

Project Justification This project is being performed to restore the raw sewage pumps to full capacity and increase the operational flexibility of the plant. The slide gates are being replaced to improve control over the sludge loading process.

Project Status Design

Furnish, Deliver, and Install Boiler Controls, SWRP

Project Number 16-901-31

Service Area Stickney

Location Stickney WRP

Engineering Consultant In-house design

Engineering Contractor M.G. Electric Service, Inc.

Estimated Construction Cost \$1,327,290

Contract Award Date September 2017

Substantial Completion Date December 2021

Project Description The project will furnish, deliver, and install controls, programming, and other required appurtenances to provide a co-fire implementation of Boilers 3, 4, 5, and 7 using natural gas and digester gas through existing gas trains. Use of co-fire logic and technology shall enable full utilization of available digester gas produced at the plant. Controls for Boilers 1 and 2 will be also be upgraded.

Project Justification The existing control system is obsolete and parts are no longer available from the manufacturer.

Project Status Construction



North Branch Dam Removal and River Riparian Connectivity, NSA

Project Number	16-IGA-22
Service Area	North
Location	North Branch Chicago River
Engineering Consultant	Army Corps of Engineers
Engineering Contractor	Industria, Inc.
Estimated Construction Cost	\$2,500,000
Contract Award Date	September 2017
Substantial Completion Date	August 2022



Project Description Riparian connectivity for the North Branch Chicago River will be restored by removing the North Branch Dam and providing a riffled stream bed to allow for passage by fishes, mussels, and canoes. The concrete dam and the concrete stream bed to Albany Avenue will be removed, and concrete will be used to fill the scour hole downstream of the dam. The stream bed will be filled in with more natural materials, and riffles and pools will be constructed with boulders. The project also calls for bank stabilization and habitat restoration from Lawrence Avenue to Peterson Avenue. The Army Corps of Engineers (ACE) will design and construct the project with participation from the District and the Chicago Park District. The total project cost is expected to be \$14,539,000.

Project Justification Removal of the North Branch Dam will allow for a more natural stream environment and encourage aquatic movement and habitat. Streambank stabilization on District property leased by the Chicago Park District will improve usage opportunities at the parks and promote safety.

Project Status Cost Sharing Agreement

Switchgear & Motor Control Center Replacement, OWRP

Project Number 17-080-3E

Service Area North

Location O'Brien WRP

Engineering Consultant In-house design

Engineering Contractor Broadway Electric, Inc.

Estimated Construction Cost \$3,577,000

Contract Award Date September 2018

Substantial Completion Date July 2020

Project Description The purpose of this project is to replace the Process Control Building 480-volt switchgear, Aerated Grit Motor Control Center (MCC), Scum Concentration MCC, Battery D MCC, and Process Control MCC 19A and 19B. Building additions required for relocation of Aerated Grit MCC and Scum Concentration MCC.

Project Justification The risk evaluation performed for certain electrical equipment providing power to various process, mechanical, and electrical loads at the O'Brien WRP indicated replacement is needed to address deteriorating conditions and ongoing maintenance, operation, and safety issues. Any catastrophic failure of this electrical equipment will negatively affect the water treatment operation at the O'Brien WRP.

Project Status Construction



McCook Reservoir Stage 2 Rock Wall Stabilization and Instrumentation, SWRP

Project Number 17-131-4F

Service Area Stickney

Location McCook Reservoir

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$17,268,000

Contract Award Date August 2020

Substantial Completion Date January 2024



Project Description The scope of work consists of stabilizing the near-vertical excavated walls of the reservoir through the installation of rock bolts, rock dowels, cable bolts, chain link wire mesh, and shotcrete at locations where deemed necessary. Work will also include the installation of instrumentation and monitoring devices and related equipment.

Project Justification Preservation and stability of the Stage 2 McCook Reservoir.

Project Status Design

Odor Control Facilities at Sludge Concentration, Southwest Coarse Screen, Overhead Weir, and Post-Centrifuge Building, SWRP

Project Number 17-134-3MR

Service Area Stickney

Location Stickney WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$17,250,000

Contract Award Date September 2019

Substantial Completion Date April 2021



Project Description Three biofilter facilities will be constructed (one for sludge concentration and overhead weir, one for the southwest coarse screen, and one for the post-centrifuge building). The facilities will include new biofilters, heating, ventilation and air conditioning equipment, ductwork and other ancillary equipment.

Project Justification An odor control system was evaluated for the anticipated Waste Activated Sludge Stripping to Remove Internal Phosphorus (WASSTRIP®) process, existing sludge holding tanks, overhead weir, sludge screens, and coarse screens located at the Stickney WRP. Currently, odorous air from the sludge holding tanks, overhead weir, and sludge screens is collected but not effectively treated by an ozone odor control system. Odorous air from the coarse screens and adjacent dumpster rooms is collected but not effectively treated by a carbon adsorption system. The WASSTRIP® process is forthcoming but will use existing tanks near the sludge holding tanks. Addressing these odorous sources will help the surrounding community and improve working conditions for plant staff.

Project Status Construction

Roof Replacement of the Lue-Hing M&R Complex, SWRP

Project Number 17-135-3V

Service Area Stickney

Location Stickney WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$6,500,000

Contract Award Date April 2020

Substantial Completion Date August 2021

Project Description This project will replace roof areas 1, 2, 3, 5, and 6 of the Monitoring and Research (M&R) Department's laboratory at the Stickney WRP. Scope includes a complete tear off of the existing roof membrane in the specified areas, replacement of the roof top equipment that has exceeded its useful life, removal of obsolete roof top equipment, and miscellaneous work associated with the M&R Department's east addition at the Stickney WRP.

Project Justification The roof has reached the end of its useful life and needs to be replaced as well as the removal of old, disconnected, and no longer used equipment for safety considerations.

Project Status Design



Digester Rehabilitation and Gas Piping Replacement, SWRP

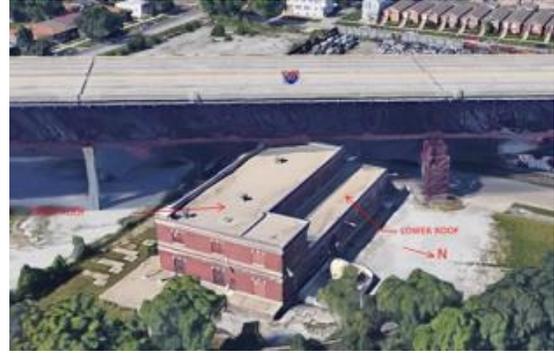
Project Number	17-140-3P
Service Area	Stickney
Location	Stickney WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$15,000,000
Contract Award Date	October 2019
Substantial Completion Date	October 2021



Project Description	The work will remove all inorganic heavy solids which have accumulated and are not removable through the sludge draw-off system. The work will include rehabilitation of the digester covers and tank walls. Digester gas piping will be rehabilitated or replaced as required and the mixing system components will be rehabilitated to a working condition in Digesters 1 through 12. Also, the digester gas waste gas burners will be rehabilitated.
Project Justification	Anaerobic digesters accumulate dense inorganic solids through the years of operation which reduces the usable volume of the digester and requires periodic draining and cleaning. Recent work by the Maintenance & Operations Department uncovered extensive fouling of the existing digester gas piping. Remediation is required to ensure the proper conveyance of the additional digester gas expended from the conversion of the Imhoff Tanks to primary settling tanks.
Project Status	Construction

Structural Rehabilitation and Roofing Replacement at 95th Street Pumping Station, CSA

Project Number	17-276-3D
Service Area	Calumet
Location	95th Street Pumping Station
Engineering Consultant	In-house design
Engineering Contractor	IHC Construction Companies, LLC
Estimated Construction Cost	\$4,559,000
Contract Award Date	November 2018
Substantial Completion Date	November 2020



Project Description This project will replace water-damaged gypsum roof panels and rehabilitate or reinforce corroded structural steel members at the upper and lower roof levels. It will replace the roof membrane and perform miscellaneous tuckpointing and masonry work to eliminate water infiltration.

Project Justification Roofing and roof drain pipes embedded in the masonry walls leak and defects in the exterior masonry walls have permitted water to collect in the masonry walls and pond between the roof membrane and the gypsum roof planks. This has softened the gypsum roof panels in multiple locations and promoted corrosion of some structural steel members supporting the upper and lower roofs. Thus far, one roof panel has completely collapsed and three additional areas were temporarily shored by trade staff in the Maintenance & Operations Department following structural inspections. JOC Contract 13-249-3J will reroute the roof drain discharge pipes outside the masonry walls to eliminate this source of water. Work under the proposed contract will eliminate the remaining sources of leakage and restore the lost structural capacities of corroded steel members. If the work is not performed, there will be additional roof panel failures and continued corrosion of the steel members will further reduce the safe load carrying capacity of the roof system.

Project Status Construction

Furnish, Deliver, and Install Telemetry Replacement for SCADA Control, Various Locations

Project Number	17-606-31
Service Area	Calumet, North, and Stickney
Location	District-wide
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$545,000
Contract Award Date	April 2020
Substantial Completion Date	December 2020



Project Description This project is to furnish, deliver, and install replacement communications equipment and services for the existing copper phone lines that provide visibility and control of various District remote sites from their respective supervisory plants. The equipment selected will provide secure, bidirectional, periodic commands and readings over cellular radio link to the telecommunications provider's network, as well as the ability to retrieve diagnostic data of the networking equipment itself. The contractor will provide turnkey installation from the Supervisory Control and Data Acquisition (SCADA) interface to the complete field installation.

Project Justification Existing point-to-point copper telemetry lines have been labeled as obsolete by AT&T, which is the District's current service provider. Although the District has entered into a two-year contract with AT&T that includes these copper services, continued telemetry service beyond the end of the current contract is not guaranteed. AT&T has been reluctant to continue long-term contractual relationships for these point-to-point services. Additionally, it is expected that the operating costs for a new communications system will realize actual savings of more than 30 percent.

Project Status Design

Modifications to TARP Control Structures & Drop Shafts, CSA and SSA

Project Number 17-842-3H

Service Area Calumet and Stickney

Location District-wide

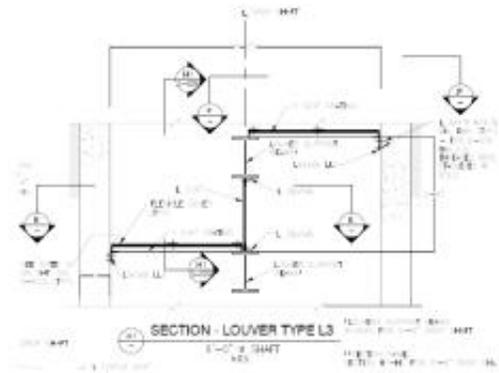
Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$2,100,000

Contract Award Date September 2019

Substantial Completion Date October 2020



Project Description Work consists of modifications to TARP control structures and dropshafts. This work includes modifications at control structures CDS-C1 and CDS-45 consisting of new permanent dry weather diversion bypass sewers and minor demolition and concrete work for removal of existing flumes. Work associated with Interceptor Chamber I-6 involves removal of a horizontal bulkhead. Work at drop shafts DS-M27, DS-M28, DS-M29, DS-M30, DS-M32, DS-M41, DS-M45, DS-M48, DS-M60 and CS-4 includes the addition of louvers and grating modifications, and performance of other work as specified in the Contract Documents and as shown on the Plans.

Project Justification Modifications at control structures CDS-C1 and CDS-45 are necessary in order to prevent the occurrences of combined sewer overflows at these sensitive outfalls. Work at drop shafts DS-M27, DS-M28, DS-M29, DS-M30, DS-M32, DS-M41, DS-M45, DS-M48, DS-M60, and CS-4 includes the addition of louvers are for the purpose of odor control.

Project Status Construction

Utility Tunnel Cracks and Expansion Joints Rehabilitation, OWRP, KWRP, EWRP, HPWRP

Project Number	17-843-3D
Service Area	North
Location	O'Brien, Kirie, Egan, and Hanover Park WRPs
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$3,000,000
Contract Award Date	July 2020
Substantial Completion Date	May 2022



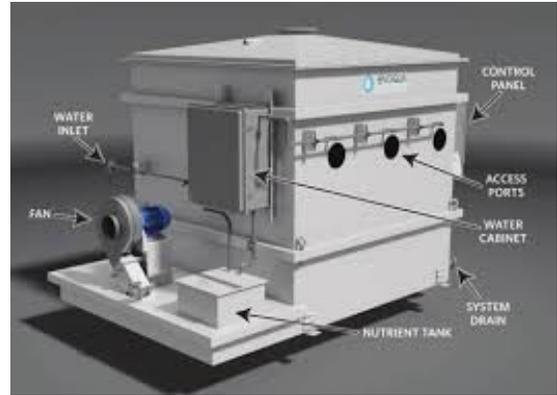
Project Description This project consists of rehabilitating leaking cracks and deteriorated expansion joints inside utility and service tunnels at O'Brien, Kirie, Egan, and Hanover Park WRPs.

Project Justification The service tunnels and operating galleries at the North Service Area WRPs (O'Brien, Kirie, Egan, and Hanover Park WRPs) are of varying ages ranging from approximately 50 to 90 years old. Many of these tunnels were built as a part of the original plant construction. Over time, several of the tunnel expansion joints have deteriorated and leaking cracks have developed in the tunnel walls and slabs. The tunnels/galleries and associated utilities are essential to each plant's functionality and need to remain operational indefinitely. Rehabilitating the deteriorated expansion joints and leaking cracks will extend their useful life and prevent further damage to the utilities inside the tunnels.

Project Status Design

Furnish and Install Odor Control System, CWRP, HPWRP, and KWRP

Project Number	17-844-3P
Service Area	Calumet and North
Location	Calumet, Hanover Park, and Kirie WRP's
Engineering Consultant	In-house design
Engineering Contractor	IHC Construction Companies, LLC
Estimated Construction Cost	\$4,099,896
Contract Award Date	February 2019
Substantial Completion Date	June 2020



Project Description The work at the Calumet WRP will replace the odor control unit at the high level influent pump station to more effectively treat the exhaust from the junction chamber. The existing unit could not effectively address the odor concentrations. The new odor control unit will reduce the labor required to change media by 80 hours per year and will reduce the cost of media by \$20,000 annually. The work at the Hanover Park WRP will install odor control units to treat the pretreatment building (including grit tanks), coarse screen exhaust, and gravity thickening belt exhaust. The work at the Kirie WRP will install an odor control unit to treat the north and south pump house exhaust. The project has the potential to reduce influent chlorination costs.

Project Justification The purpose of this project is to install new odor control systems at various existing facilities within the Calumet, Hanover Park, and Kirie WRPs. These existing facilities have been emitting odorous air that has been negatively affecting District staff and neighboring communities, including an elementary school adjacent to the Hanover Park WRP. Currently, the odorous facilities either do not have an existing odor control system, or they have a system that is not effective. This project will reduce the odor emissions that affect the District's staff and neighbors.

Project Status Construction

Installation of Shaftless Screw Conveyors for Aerated Grit Tanks, SWRP

Project Number	17-902-31
Service Area	Stickney
Location	Stickney WRP
Engineering Consultant	In-house design
Engineering Contractor	IHC Construction Companies, LLC
Estimated Construction Cost	\$2,595,000
Contract Award Date	December 2017
Substantial Completion Date	January 2021
Project Description	This project is to furnish, deliver, and install grit screw conveyors at the Stickney WRP.
Project Justification	The existing chain and flight collector system needs to be rebuilt every four to five years. The screw conveyor installed in the east end of Aerated Grit Tank #4 was initially converted in 1998 and replaced in 2008. The average annual maintenance cost for the chain and flight tanks since 1998 is \$30,530. By comparison, the average annual cost for the screw conveyor tank is estimated at \$22,800.
Project Status	Construction



Rehabilitation of Elevator Shafts, MSPS

Project Number 18-142-3H

Service Area Stickney

Location Mainstream Pumping Station

Engineering Consultant To be determined

Engineering Contractor To be determined

Estimated Construction Cost \$1,500,000

Contract Award Date April 2020

Substantial Completion Date March 2021



Project Description This project will rehabilitate six shafts at the Mainstream Pumping Station (the north elevator main and ventilation shafts, south elevator main and ventilation shafts, dewatering shaft, and discharge shaft) to address groundwater infiltration in the shafts.

Project Justification Groundwater infiltration currently enters the elevator shafts and causes damage to the elevator equipment necessitating costly rehabilitation and service shutdown.

Project Status Planning

Rehabilitation of TARP Pumps, MSPS

Project Number 18-144-3M

Service Area Stickney

Location Mainstream Pumping Station

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$20,509,000

Contract Award Date December 2019

Substantial Completion Date March 2024

Project Description The purpose of this project is to completely overhaul TARP Pumps 1 and 3 in the South Pump House and Pump 5 in the North Pump House of the Mainstream Pumping Station, including the associated motors and discharge cone valves and actuators, in order to restore capacity and reliability. The complete overhaul of the pump and motor involves the furnishing and installing of new parts, refurbishing existing salvageable parts, replacing motor exciter panels, and upgrading pump control components.

Project Justification The overhaul will reduce the maintenance labor required, allow for better pump and motor monitoring, and improve reliability. Once the overhaul is complete, there will be a reduction in the electrical energy usage to power pumps, as the pump will operate more efficiently by being able to pump more fluid in less time. The overhaul will also extend the useful life of the pumps and motors, which have been in service since May 1985.

Project Status Design



Sidestream Enhanced Biological Phosphorus Removal Pilot Study, CWRP

Project Number	18-248-3P
Service Area	Calumet
Location	Calumet WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$1,400,000
Contract Award Date	January 2020
Substantial Completion Date	October 2020



Project Description The Calumet WRP has attempted to remove phosphorus through enhanced biological phosphorus removal (EBPR). Due to the influent sewage characteristics, this has proven to be impossible without the addition of carbon to assist the process or major infrastructure changes. Before initiating major infrastructure changes at a plant of Calumet WRP's size, the Phosphorus Task Force would like to attempt Sidestream EBPR (S2EBPR), which uses Return Activated Sludge (RAS) fermentation, to assist with EBPR at a pilot scale level. This will entail isolating two tanks in Battery A, redirecting roughly 20 percent of RAS from Battery A into these two channels, allowing this RAS to ferment, and then reintroducing the fermented RAS to the mixed liquor flow. Pumps and mixers will be installed for the pilot test, which is expected to last for approximately one year.

Project Justification Per the District's 2019 update to the 2015-2020 Strategic Business Plan: Goal 2 - Excellence, the District will potentially identify an approach to reduce the amount of external carbon needed for biological phosphorus (Bio-P) test with this S2EBPR pilot. If the pilot is successful, this Bio-P approach could be used, rather than chemical phosphorus removal, to meet the current National Pollutant Discharge Elimination System permit. Chemical phosphorus removal would require the addition of ferric or alum to remove phosphorus, increasing operating costs by added chemical and from sludge processing.

By removing phosphorus from the Calumet WRP's effluent, the District will reduce phosphorus discharged to the receiving stream and mitigate eutrophication in the Gulf of Mexico, thus improving the environment.

Project Status Planning

Digester Sludge Heating System Upgrades and Boiler Removal, CWRP

Project Number 18-277-3M

Service Area Calumet

Location Calumet WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$28,500,000

Contract Award Date November 2019

Substantial Completion Date September 2022



Project Description Removal of sludge heating boiler systems and installation of steam-to-hot water heat exchanger systems at the Digester Complex. Installation of steam and condensate piping with supports for the new system. Replacement of sludge heat exchangers (total of 12) in Clusters 1, 2 and 3. Re-purposing of old compressor building for electrical equipment. Cleaning of 11 digester tanks (Tank No. 7 does not require cleaning). Replacement of internal digester gas draw-off and gas mixing piping, sandblasting and coating underside of covers in all 12 digester tanks.

Project Justification This work will reduce the demands on the Maintenance & Operations Department's personnel by replacing inefficient and maintenance-intensive equipment.

Project Status Design

Installation and Removal of Cofferdam at Sluice Gate No. 2, Lockport Powerhouse Controlling Works, SSA

Project Number	18-607-31
Service Area	Stickney
Location	Lockport Powerhouse Controlling Works
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$334,500
Contract Award Date	June 2019
Substantial Completion Date	June 2020



Project Description This project will install a cofferdam to allow in-house trades to rehabilitate Gate No. 2 at the Lockport Powerhouse Controlling Works.

Project Justification The purpose of this project is to provide a bulk head to isolate Gate No. 2 at the Lockport Powerhouse Controlling Works. The gate needs to be isolated for in-house trades to overhaul the gate guides which have deteriorated and prevent the gate from being operated. The controlling works sluice gates prevent the level of the Sanitary and Ship Canal from rising to flood levels.

Project Status Construction

Furnish, Deliver, and Install Disc Filters, EWRP

Project Number 18-702-31

Service Area North

Location Egan WRP

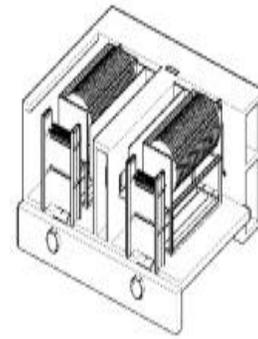
Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$4,000,000

Contract Award Date March 2020

Substantial Completion Date December 2021



Project Description This project will replace three pairs of tertiary filter beds with six disc filters.

Project Justification The designed maximum capacity of the secondary treatment is 60 million gallons per day (MGD). The maximum tertiary capacity is 44 MGD. During a backwash cycle the total tertiary capacity would drop to 34 MGD. The Egan WRP has six pairs of filter beds. Installing disc filters in Filter Beds 1, 2, and 6 can increase filtering capacity from 34 to 60 MGD with no loss in capacity during a backwash cycle. The disc filters will reduce the filter backwash from eight percent to less than five percent. The enclosed disc filters will reduce the midge flies in the filter building.

Project Status Planning

Furnish, Deliver, and Install Three Bar Screens, KWRP

Project Number 18-703-31

Service Area North

Location Kirie WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$1,800,000

Contract Award Date March 2020

Substantial Completion Date December 2021



Project Description This project is to furnish, deliver, and install three bar screens at the Kirie WRP.

Project Justification The current screens are 35 years old and their ability to capture debris has diminished significantly due to corrosion on the bars. Switching to a smaller screen opening will increase capture rates and reduce the amount of rags and debris in the return activated sludge channel. Because of the current screens' diminished performance, debris accumulates and prevents the return activated sludge butterfly valves from operating properly, which negatively impacts treatment operations and increases maintenance costs.

Project Status Design

Rehabilitation of Gravity Concentration Tank, CWRP

Project Number	18-803-32
Service Area	Calumet
Location	Calumet WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$2,295,000
Contract Award Date	March 2020
Substantial Completion Date	December 2021



Project Description The scope of this project is to provide all the necessary labor, material, and appurtenances to rehabilitate the Cluster 1 gravity concentration tanks at the Calumet WRP. Rehabilitation includes the replacement of the scum arms, scrapers, baffles, sludge inlet piping, rake arm assembly, column assembly, drive unit, and notch weirs, as well as the rehabilitation of the distribution and collection boxes and hardware. A torque limiting system will be included on each main drive unit, and an abandoned chemical tank and associated piping will be removed. All four tanks in this cluster will be out of service for the duration of the project, which will improve efficiencies by reducing ventilation needs and allowing similar work to be performed on all tanks simultaneously.

Project Justification Rake arm assemblies in Cluster 1 have rotted at the water line to the point where skimming is no longer functional, and a skimmer arm on one tank has collapsed due to long-term corrosion effects. In addition, the steel notch weirs and trough baffles in these tanks have deteriorated badly and are missing in many places, resulting in loss of flow control. This rehabilitation will utilize new corrosion resistant materials and coatings that will restore the proper operation of these tanks.

Project Status Design

Phosphorus Removal Struvite Facilities at the Fox River Water Reclamation District

Project Number	18-IGA-35
Service Area	North
Location	Fox River Water Reclamation District's Albin D. Pagorski Water Reclamation Facility
Engineering Consultant	Not Applicable
Engineering Contractor	IHC Construction Companies, LLC
Estimated Construction Cost	\$2,639,337
Contract Award Date	August 2019
Substantial Completion Date	December 2020
Project Description	Cost share project with Fox River Water Reclamation District to construct new facilities to remove phosphorus from sidestream solids processes.
Project Justification	Phosphorus removal is required for Fox River Water Reclamation District to meet new permit standards.
Project Status	Construction



Phosphorus Removal Liquid Facilities at the Fox River Water Reclamation District

Project Number	18-IGA-36
Service Area	North
Location	Fox River Water Reclamation District's Albin D. Pagorski Water Reclamation Facility
Engineering Consultant	Not Applicable
Engineering Contractor	To be determined
Estimated Construction Cost	\$9,761,692
Contract Award Date	April 2020
Substantial Completion Date	January 2022
Project Description	Cost share project with Fox River Water Reclamation District to construct new facilities to remove phosphorus from liquid stream (biological phosphorus removal) processes.
Project Justification	Process alteration and new facilities are needed to meet new National Pollutant Discharge Elimination System Permit standards.
Project Status	Planning



Installation of Mechanical Mixers, SWRP

Project Number 19-157-3P

Service Area Stickney

Location Stickney WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$11,500,000

Contract Award Date April 2020

Substantial Completion Date July 2021



Project Description This project consists of furnishing and installing mechanical mixers in the first pass of each aeration tank in Aeration Batteries A, B, C, and D. This includes all electrical equipment and infrastructure upgrades.

Project Justification This project is required to properly mix the anaerobic zones in the biological phosphorus removal process.

Project Status Planning

6th Street Construction and Utility Tunnel Rehabilitation, CWRP

Project Number 19-257-3D

Service Area Calumet

Location Calumet WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$2,000,000

Contract Award Date December 2020

Substantial Completion Date October 2021



Project Description The scope of this project is to rehabilitate the utility tunnel at 6th Street.

Project Justification The utility tunnel that serves Gravity Concentration is in poor condition. Spalling concrete, exposed rebar, failed expansion joints, and leaking cracks are noticeable throughout the service tunnel. A number of utilities, including sludge mains, potable and non-potable water mains, distributed control system conduits, and electrical conduits are at risk if the concrete continues to deteriorate. Infiltration from the road above has contributed to the ongoing failure of the tunnel walls and ceiling. The tunnel/gallery and associated utilities are essential to the plant's functionality and need to remain operational indefinitely. This project will extend the useful life of the facility and prevent future damage to the utilities inside the tunnel.

Project Status Planning

Central Boiler Facility and Electrical Updates, HPWRP

Project Number	19-542-3M
Service Area	North
Location	Hanover Park WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$14,000,000
Contract Award Date	March 2020
Substantial Completion Date	January 2022



Project Description This project will remove two natural gas boilers and provide five new boilers (two natural gas and three digester gas/natural gas) boilers in the Pump and Blower Building. Five digester gas/natural gas boilers will be removed from the Digester Complex. All associated mechanical piping, electrical, control, civil and structural work needed to provide hot water for process and building heating demands will be completed. Replace digester gas piping and remove and replace all electrical equipment, such as motor control center, motors, conduit, gas alarm system, fire alarm system, lighting, etc., with explosion proof equipment in the classified areas to meet National Fire Protection Association (NFPA) 820 requirements.

Project Justification The boilers in the Digester Complex are 10 to 20 years old and do not perform properly as the control systems are not reliable (due to hydrogen sulfide gas related corrosion) and need to be removed to comply with NFPA 820 requirements. Centralized boiler operation will maximize the use of available digester gas. Existing electrical equipment in the Digester Complex does not meet the NFPA 820 requirement and needs to be replaced with explosion-proof rated equipment or relocated to unclassified location. The natural gas boilers in the Pump and Blower Building are more than 35 years old, parts are no longer supported by the original equipment manufacturer and procuring the replacement parts has been increasingly difficult and costly. Also, the State of Illinois Boiler Inspector recommended the boilers be operated in low fire only, due to their poor conditions.

Project Status Planning

Furnish, Deliver, and Install Disc Filters for Filters 3 and 4, HPWRP

Project Number	19-701-31
Service Area	North
Location	Hanover Park WRP
Engineering Consultant	In-house design
Engineering Contractor	To be determined
Estimated Construction Cost	\$1,700,000
Contract Award Date	March 2020
Substantial Completion Date	June 2021



Project Description This project is to furnish, deliver, and install disc filters at the Hanover Park WRP.

Project Justification Filter beds 3 and 4 have a current capacity of 3.4 million gallons per day (MGD) combined with a design capacity of 2.5 MGD each. The disc filters have a combined capacity of 12 MGD. The traveling bridge filters need to have their media replaced. The disc filters will reduce the filter backwash from eight percent to less than one percent. The enclosed disc filters will reduce the midge flies in the filter building.

Project Status Design

Energy Efficiency Improvements, SWRP

Project Number 19-901-31

Service Area Stickney

Location Stickney WRP

Engineering Consultant In-house design

Engineering Contractor Noresco, LLC

Estimated Construction Cost \$5,412,680

Contract Award Date April 2019

Substantial Completion Date December 2020



Project Description This project consists of performing energy conservation measures identified in the Noresco Investment Grade Audit for the Stickney WRP. The scope of work includes replacing fluorescent, high pressure sodium, and metal halide lighting with LED lighting.

Project Justification This project will remedy deficiencies identified in the Energy Efficiency Program Investment Grade Audit conducted by the Public Building Commission and Noresco, LLC.

Project Status Construction

Furnish, Deliver and Install Replacement Gearboxes for SEPA(s) 2 & 5, CWRP

Project Number 20-801-31

Service Area Calumet

Location SEPA(s) 2 & 5

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost \$1,200,000

Contract Award Date March 2020

Substantial Completion Date December 2021



Project Description This project will furnish and deliver a replacement gearbox for SEPA Stations #2 & #5 in the Calumet Service Area.

Project Justification Due to changes in the permit that required average dissolved oxygen levels to be increased, the SEPA Stations #2 & #5 screw pumps need to be operated more frequently.

The existing gearboxes at SEPA Stations #2 & #5 have been in service for over 20 years. Two of the four existing gearboxes have failed due to oil seal leaks within the last year.

Project Status Planning

Furnish, Deliver, and Install Coarse Screens, SWRP

Project Number 20-903-31

Service Area Stickney

Location Stickney WRP

Engineering Consultant In-house design

Engineering Contractor To be determined

Estimated Construction Cost 6,000,000

Contract Award Date March 2020

Substantial Completion Date December 2023

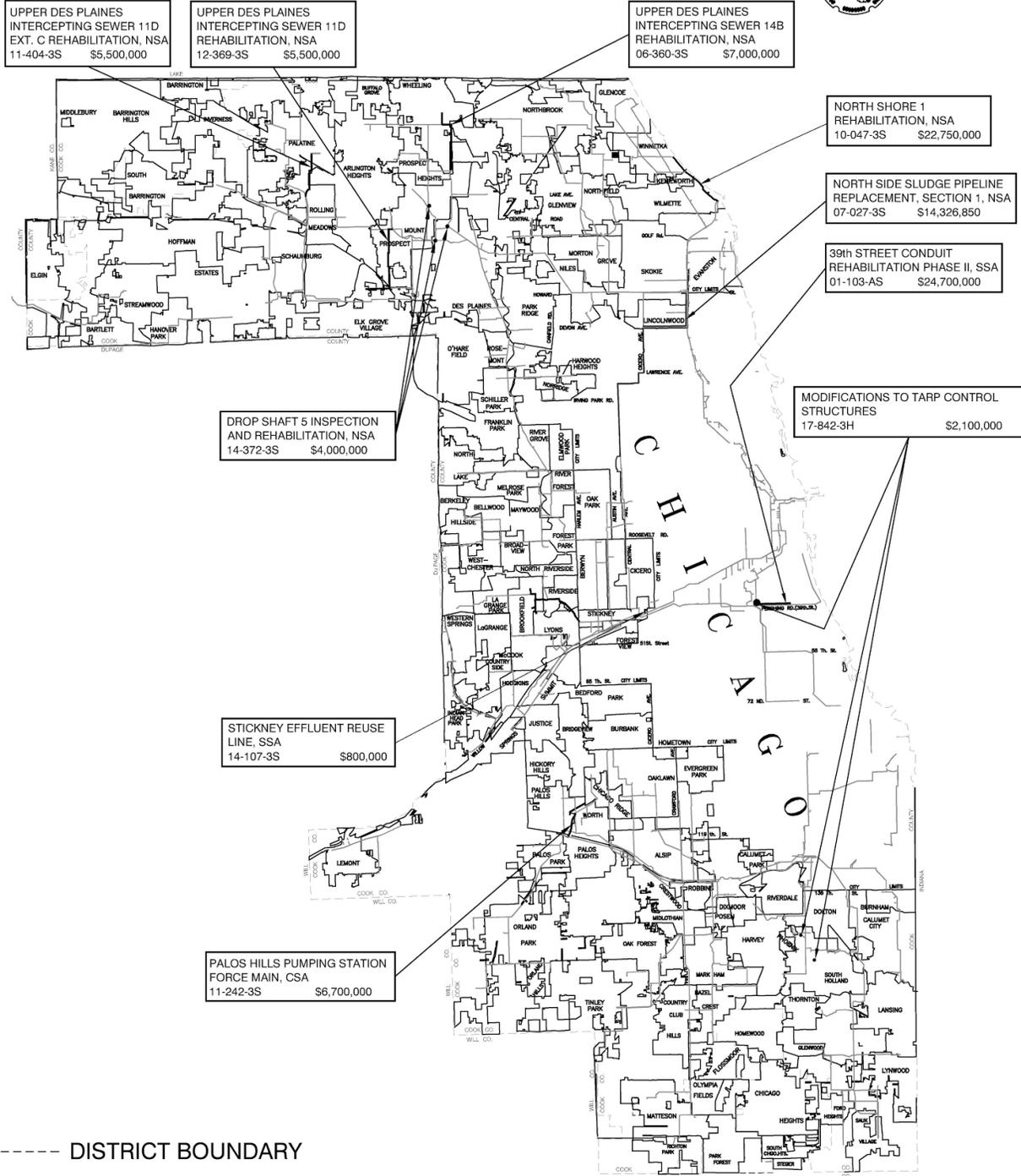


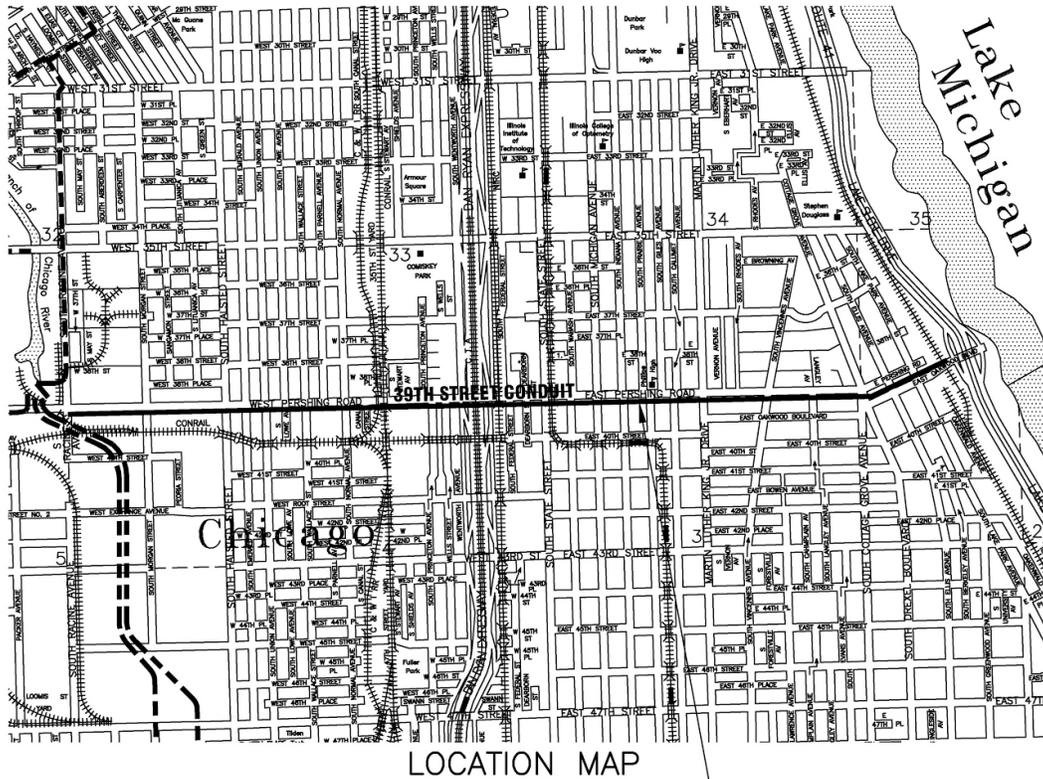
Project Description This project will include the removal of the existing climber-style southwest coarse screens at the Stickney WRP and furnishing, delivering, and installing new chain and sprocket-style coarse screens.

Project Justification The southwest coarse screens at the Stickney WRP protect the main sewage pumps in the Pump & Blower Building from debris in the influent flow. The current climber-style screens have a number of issues. The hydraulic systems for each coarse screen have caused frequent failures and the annual maintenance costs for the screens are exceedingly high. Also, the coarse screens see heavy debris and the bar screen spacing is too fine for this application. Because of this, the screens are frequently "blinded" due to the extended cycle time required for climber screens. This causes additional maintenance costs as well as issues with the operation of the main sewage pumps downstream of the screens. This project will replace the existing SW coarse screens with more heavy-duty, reliable, chain and sprocket-style screens and significantly reduce maintenance costs and operational issues caused by the current coarse screens.

Project Status Planning

SEWER DESIGN PROJECT MAP
2020





39th STREET CONDUIT REHABILITATION - PHASE II, SSA
 REHABILITATE 20-FOOT DIAMETER CONDUIT FROM LAKE SHORE DRIVE TO THE RACINE AVENUE PUMPING STATION
 COST: \$24,700,000

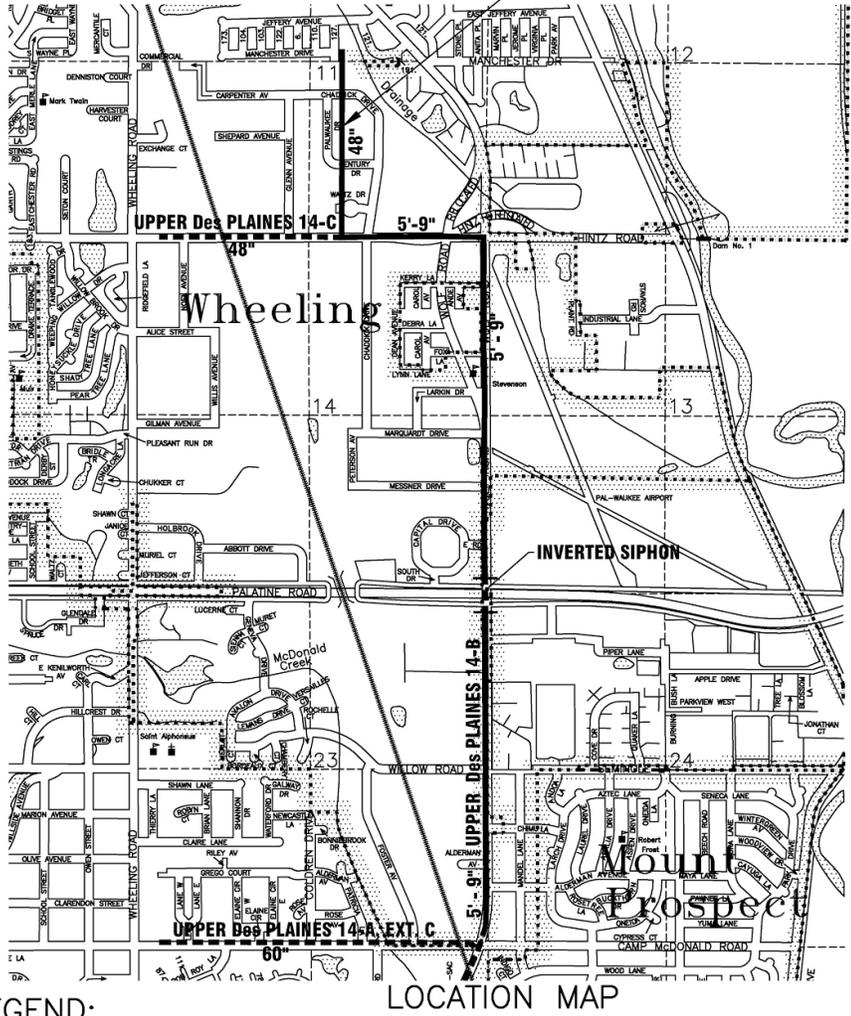
LEGEND:

- = SEWER TO BE REHABILITATED
- - - -** = EXISTING SEWER

**39th STREET CONDUIT REHABILITATION - PHASE II, SSA
 CONTRACT 01-103-AS**



UPPER DES PLAINES INTERCEPTING SEWER 14B
 REHABILITATION, NSA
 2,902 FEET OF 48-INCH SEWER
 11,902 FEET OF 69-INCH SEWER
 27 MANHOLES/STRUCTURES
 1 NEW MANHOLE
 COST: \$7,000,000



LEGEND:

- = SEWER TO BE REHABILITATED
-** = EXISTING SEWER

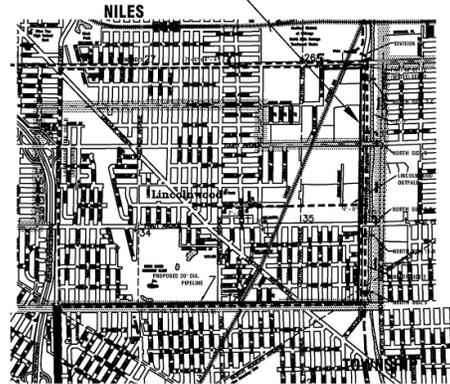
**UPPER DES PLAINES INTERCEPTING SEWER 14B REHABILITATION, NSA
 CONTRACT 06-360-3S**



N
 NORTH SIDE SLUDGE PIPELINE REPLACEMENT, SECTION 1, NSA
 19,000 FEET OF 20-INCH DIAMETER FORCE MAIN
 AIR RELIEF, BLOW OFF & CLEANOUT STRUCTURES
 REHABILITATION OF 43 STRUCTURES
 COST: \$14,326,850



LOCATION MAP

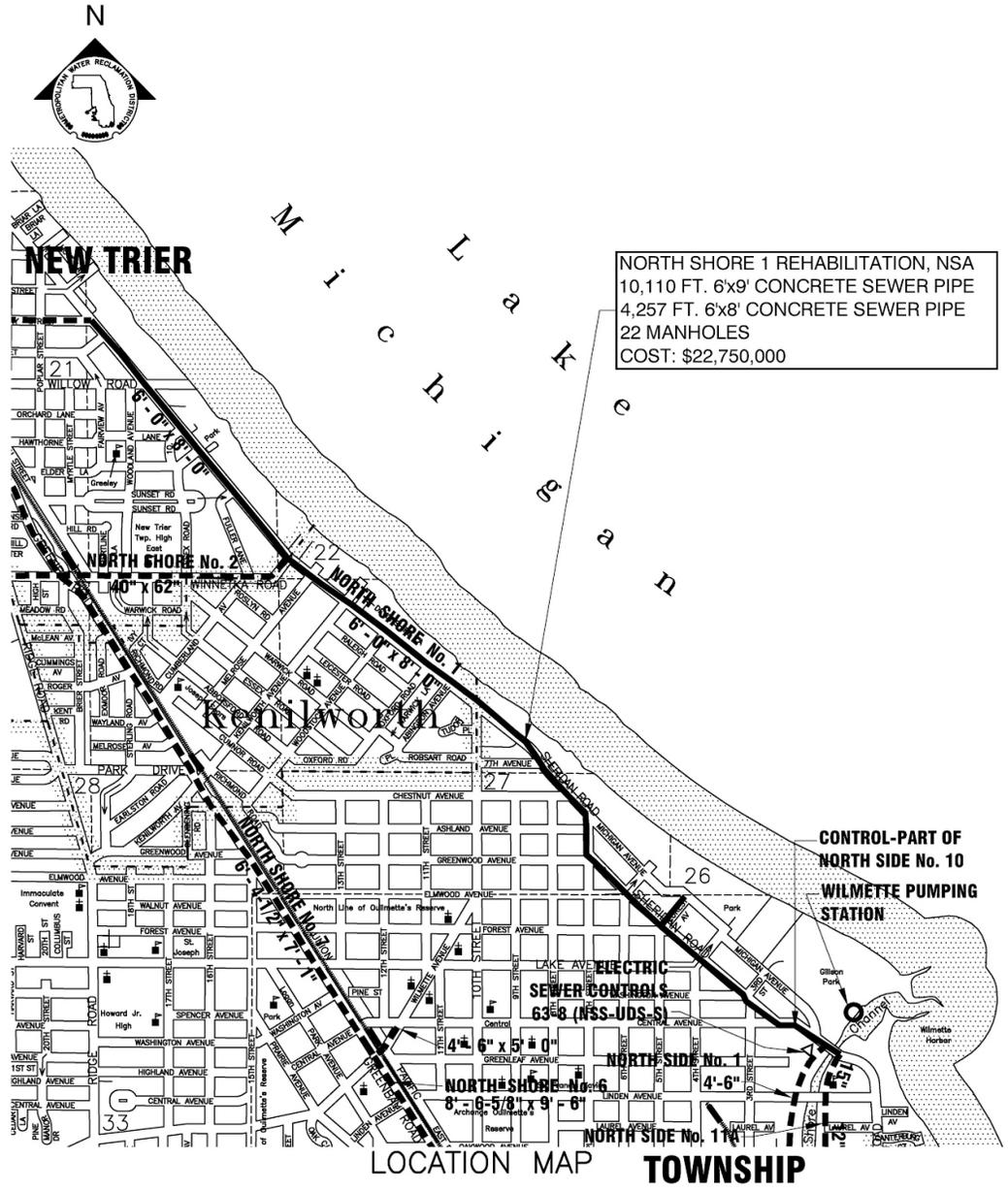


LOCATION MAP

LEGEND:

- = SEWER TO BE REHABILITATED
- = EXISTING SEWER

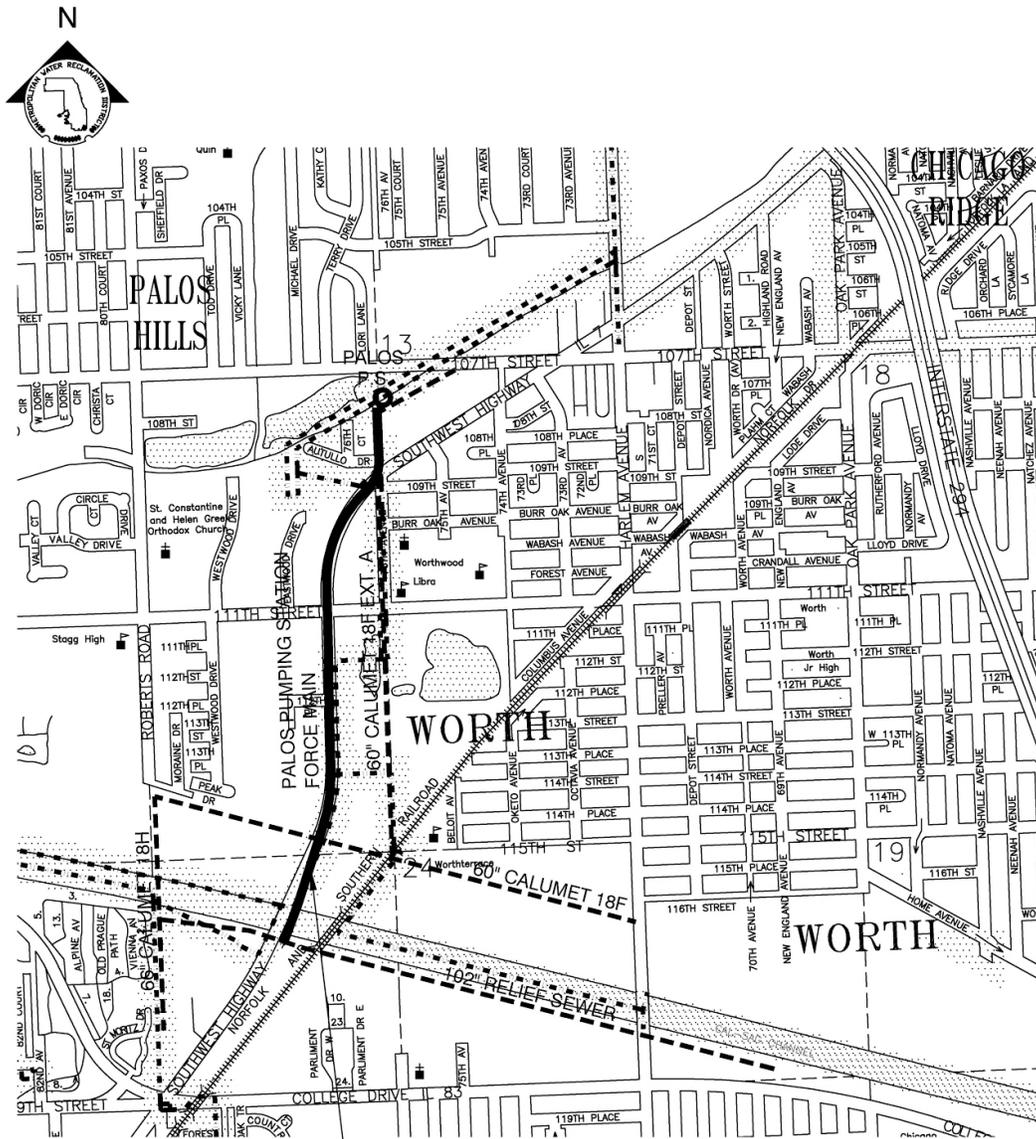
**NORTH SIDE SLUDGE PIPELINE REPLACEMENT, SECTION 1, NSA
 CONTRACT 07-027-3S**



LEGEND:

- = SEWER TO BE REHABILITATED
-** = EXISTING SEWER

**NORTH SHORE 1 REHABILITATION, NSA
CONTRACT 10-047-3S**



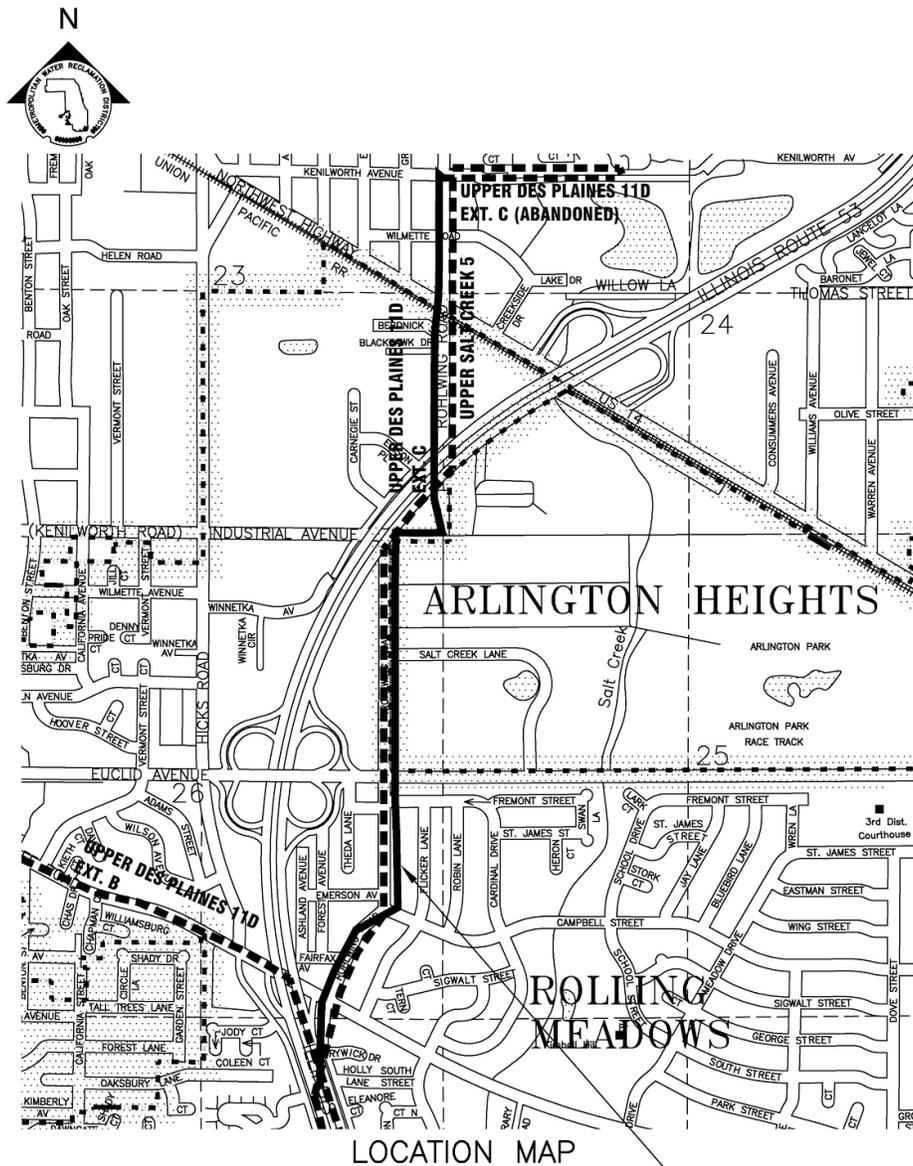
LOCATION MAP

PALOS HILLS PUMPING STATION FORCE MAIN, CSA
 6,500 FEET OF 24-INCH DIAMETER FORCE MAIN
 COST: \$6,700,000

LEGEND:

- = SEWER TO BE REHABILITATED
- - - -** = EXISTING SEWER

**PALOS HILLS PUMPING STATION FORCE MAIN, CSA
 CONTRACT 11-242-3S**



LOCATION MAP

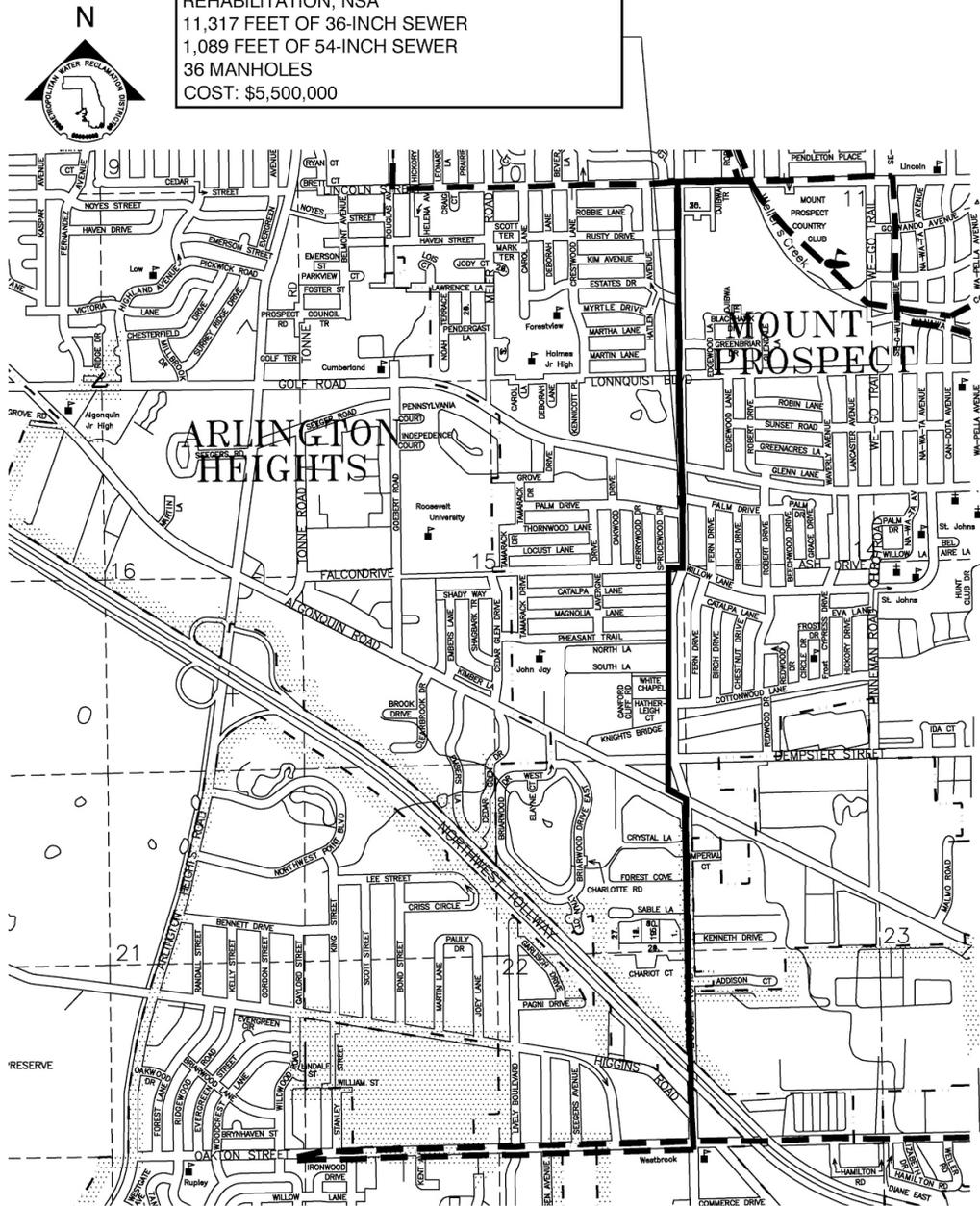
UPPER DES PLAINES INTERCEPTING
SEWER 11D EXT. C REHABILITATION, NSA
10,828 FEET OF 36-INCH DIAMETER SEWER
24 MANHOLES AND ONE CONNECTING
STRUCTURE
COST: \$5,500,000

LEGEND:

- = SEWER TO BE REHABILITATED
- - - -** = EXISTING SEWER

**UPPER DES PLAINES INTERCEPTING SEWER 11D EXT. C REHABILITATION, NSA
CONTRACT 11-404-3S**

UPPER DES PLAINES INTERCEPTING SEWER 11D
 REHABILITATION, NSA
 11,317 FEET OF 36-INCH SEWER
 1,089 FEET OF 54-INCH SEWER
 36 MANHOLES
 COST: \$5,500,000



LEGEND:

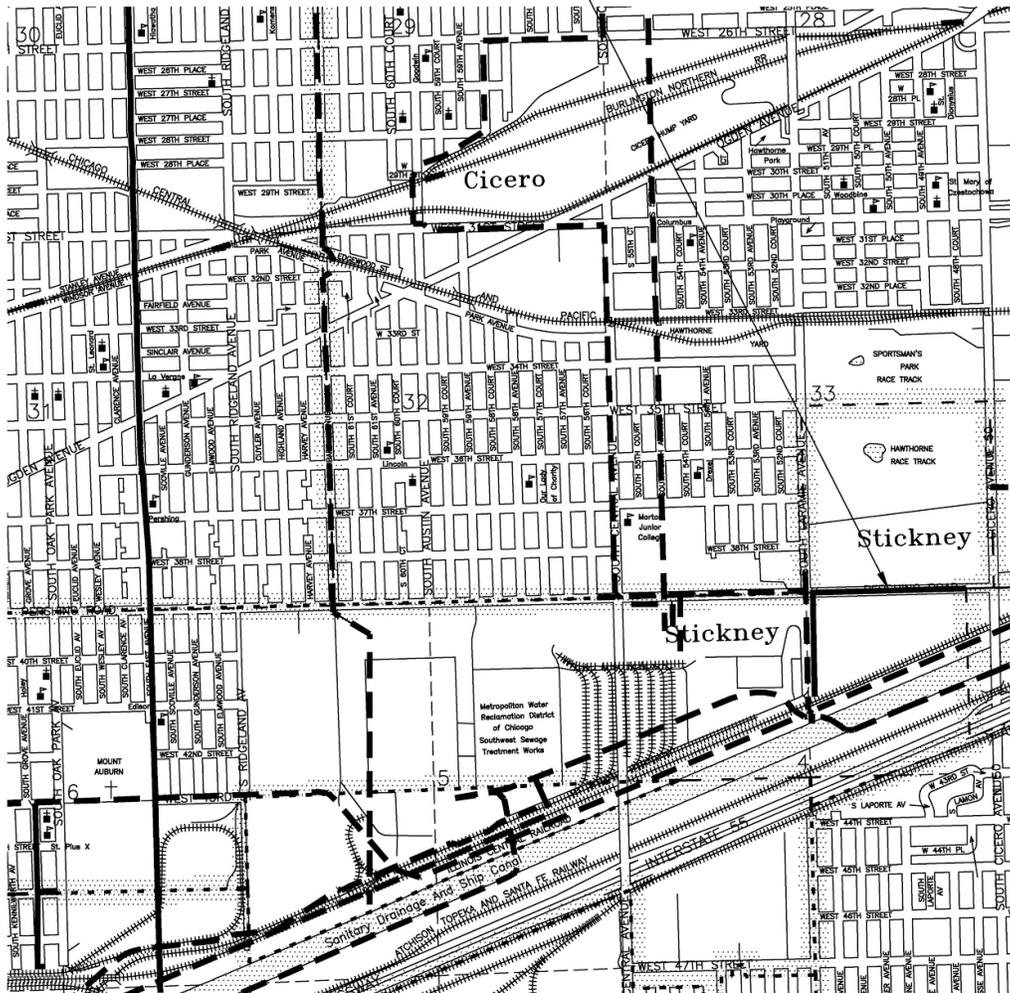
LOCATION MAP

- = SEWER TO BE REHABILITATED
- - - -** = EXISTING SEWER

**UPPER DES PLAINES INTERCEPTING SEWER 11D REHABILITATION, NSA
 CONTRACT 12-369-3S**



STICKNEY EFFLUENT REUSE LINE, SSA
 2,000 FEET OF 6-INCH DIAMETER FORCE MAIN
 COST: \$800,000

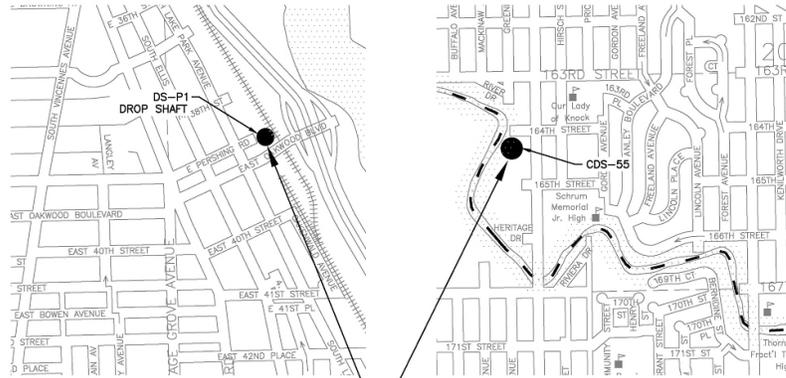


LOCATION MAP

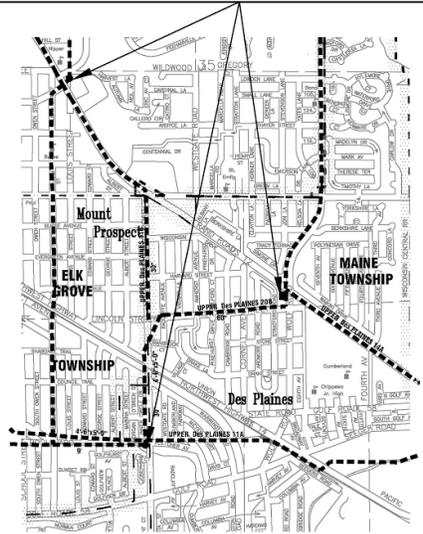
LEGEND:

- = SEWER TO BE REHABILITATED
- - -** = EXISTING SEWER
- *** = THIS PROJECT WILL BE FUNDED WITH PAY-AS-GO CAPITAL OUT OF THE CONSTRUCTION FUND

**STICKNEY EFFLUENT REUSE LINE, SSA
 CONTRACT 14-107-3S**



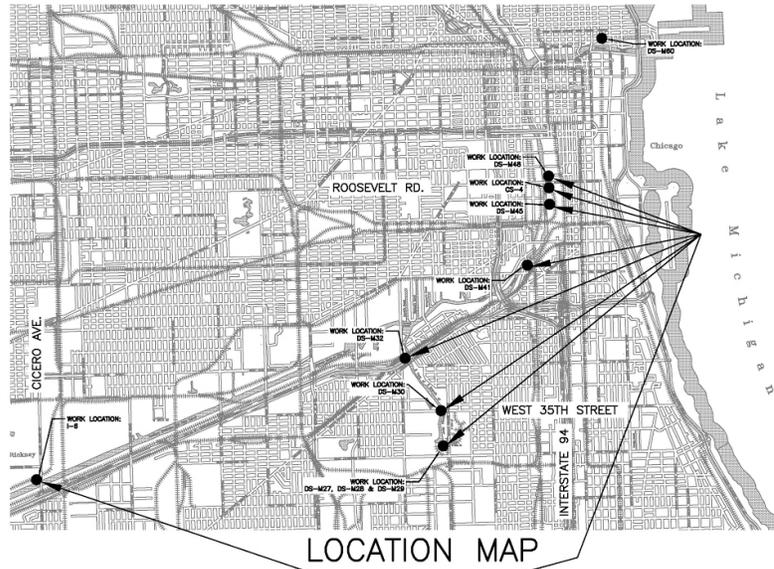
DROP SHAFT 5 INSPECTION AND REHABILITATION, NSA
 100 FEET OF 108" DIAMETER SEWER
 75 FEET OF 108" DIAMETER DROP SHAFT
 REPLACEMENT OF DETERIORATED METAL APPURTENANCES
 REPLACEMENT OF CONTROL GATE, STEM AND OTHER PARTS
 REPLACEMENT OF SLIDE GATE AND GROOVES
 INSTALLATION OF LOUVER SYSTEM AND GRATING
 INSTALLATION OF SUPPRESSION WEIR
 INSTALLATION OF RADAR LEVEL MEASUREMENT DEVICE
 REPLACEMENT OF GATE & STOP LOGS AT DS-P1
 COST: \$4,000,000



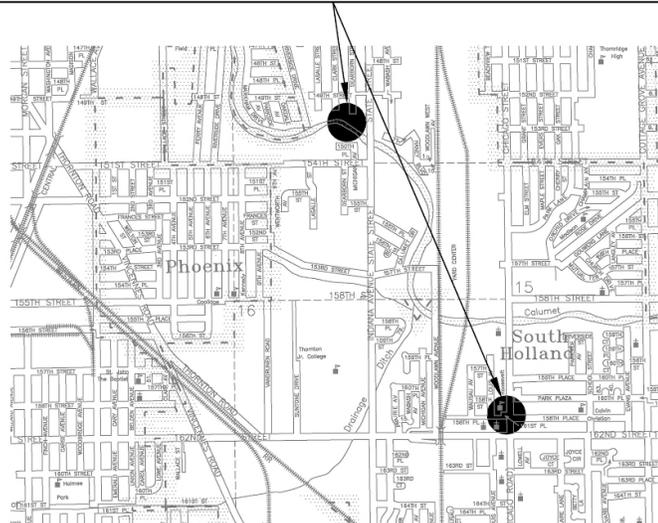
LEGEND:

- = MANHOLE TO BE REHABILITATED
- - - = EXISTING SEWER

**DROP SHAFT 5 INSPECTION AND REHABILITATION, NSA
 CONTRACT 14-372-3S**



MODIFICATIONS TO TARP CONTROL STRUCTURES AND DROP SHAFTS
 INSTALLATION OF DRY WEATHER DIVERSION BYPASS SEWERS AT
 CDS-C1 AND CDS-4. ADDITION OF LOUVERS AT DS-M27, DS-M28,
 DS-M29, DS-M30, DS-M32, DS-M41, DS-M45, DS-M48, DS-M60 & CS-4.
 REMOVAL OF BULKHEAD AT I-6
 COST: \$2,100,000



LEGEND:

- = SEWER TO BE REHABILITATED
- = EXISTING SEWER

**MODIFICATIONS TO TARP CONTROL STRUCTURES AND DROP SHAFTS
 CONTRACT 17-842-3H**

Stormwater Management Capital Improvements Bond Fund Program

Awards in 2020					
Project Name	Project Number	Est. Construction Cost	Duration (days)	Est. Award Date	
* Addison Creek Channel Improvements, SWRP	11-187-3F	\$ 21,350	743	Aug 2020	
* Construction of a Levee along Thorn Creek at Arquilla Park, in Glenwood, CSA	15-IGA-14	3,483	365	Sep 2020	
Streambank Stabilization Project on Tinley Creek, CSA	10-882-AF	3,806	1,472	Jul 2020	
Total 2020 Awards		\$ 28,639			

Refer to Section VI Stormwater Management Fund for more information about the Stormwater Management Capital Improvement Program.

Note: All cost figures are in thousands of dollars; inflation factor is 0 percent.

Method of Financing			
Alternate Bonds	Grants	Total	
\$ 28,639	\$ —	\$ 28,639	

Projects Under Construction					
Project Name	Project Number	Est. Construction Cost	Award Date	Est. Substantial Completion Date	
Melvina Ditch Reservoir Improvements, SSA	14-263-3F	\$ 14,717	Nov 2017	Sep 2020	
* Buffalo Creek Reservoir Expansion, NSA	13-370-3F	8,650	Feb 2018	Mar 2020	
Acquisition of Flood Prone Properties Franklin Park (32 homes)	16-IGA-13	4,681	Oct 2018	Aug 2020	
Addison Creek Reservoir, SSA	11-186-3F	63,280	Jan 2019	Feb 2022	
Total Projects Under Construction		\$ 91,328			

*This project is funded by the Capital Improvements Bond Fund and the Stormwater Management Fund.

Refer to Section VI Stormwater Management Fund for more information about the Stormwater Management Capital Improvement Program.

Note: All cost figures are in thousands of dollars; inflation factor is 0 percent.

50000 CAPITAL IMPROVEMENTS BOND FUND

OBJECTIVES AND PROGRAM SUMMARY

OBJECTIVES BY PRIORITY:	Cost	Percent
1. COLLECTION FACILITIES: Award four construction projects: Upper Des Plaines Intercepting Sewer 14B Rehabilitation, NSA and three other projects.	\$ 14,345,000	6.7%
2. TREATMENT FACILITIES: Award twelve construction projects: A/B and C/D Service Tunnel Rehabilitation - Phase III, SWRP, 6th Street Construction and Utility Tunnel Rehabilitation; CWRP, Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP, Roof Replacement of the Lue-Hing M&R Complex, SWRP, and eight other projects.	\$ 88,661,700	41.4%
3. SOLIDS PROCESSING AND DISPOSAL FACILITIES: Award one construction project: North Side Sludge Pipeline Replacement - Section 1, NSA.	\$ 14,326,900	6.7%
4. FLOOD AND POLLUTION CONTROL: Award seven construction projects: Addison Creek Channel Improvements, SWRP, McCook Reservoir Stage 2 Rock Wall Stabilization and Instrumentation, SWRP, Streambank Stabilization Project on Tinley Creek, CSA and four other projects.	\$ 63,973,300	29.8%
5. LAND AND RIGHT-OF-WAY ACQUISITION COSTS: Acquisition of land for the expansion of reservoir projects and payments for land easements.	\$ 550,000	0.3%
6. PROJECT SUPPORT: Administration, design, and construction inspection for current and future contracts, funding support, and construction services, such as concrete and soil testing.	\$ 32,449,300	15.1%
Totals	\$ 214,306,200	100.0%

MEASURABLE GOAL:	2018	2019	2020
	Actual	Estimated	Proposed
Award contracts for the continued implementation of the District's Capital Improvement Program.			
Number of projects proposed	16	33	23
Number of contracts awarded	10	16	23
<p>The projects proposed for each year are based upon the requirements dictated by the Capital Improvement Program. The number of actual projects awarded may not, on face value, quantify performance. There are several factors that could either increase or decrease the number of projects awarded. Some of these factors are project size, project complexity, and unforeseen obstacles. The numbers are provided only as a general indicator of performance.</p>			

50000 CAPITAL IMPROVEMENTS BOND FUND

OBJECTIVES AND PROGRAM SUMMARY

PROGRAMS BY PRIORITY:		2018	Budgeted		Change		
Number	Name	Actual	FTEs	Dollars	Dollars	Percent	
1700	Collection Design	\$ 314,485	2020	— \$	1,500,000	\$ 1,500,000	100.0
			2019	— \$	—		
1800	Collection Construction	\$ 14,573,624	2020	— \$	16,335,000	\$ (24,677,500)	(60.2)
			2019	— \$	41,012,500		
2700	Treatment Design	\$ 861,086	2020	— \$	3,000,000	\$ —	—
			2019	— \$	3,000,000		
2800	Treatment Construction	\$ 38,742,172	2020	— \$	98,216,700	\$ 25,530,600	35.1
			2019	— \$	72,686,100		
3700	Solids Processing Design	\$ 695,432	2020	— \$	—	\$ —	—
			2019	— \$	—		
3800	Solids Processing Construction	\$ 3,223,872	2020	— \$	16,026,800	\$ (25,816,500)	(61.7)
			2019	— \$	41,843,300		
4341	Flood Mitigation Projects Planning and Design	\$ 1,976,765	2020	— \$	5,306,000	\$ 136,000	2.6
			2019	— \$	5,170,000		
4343	Flood Mitigation Projects Construction	\$ 16,252,061	2020	— \$	22,607,800	\$ (137,956,100)	(85.9)
			2019	— \$	160,563,900		
4344	Flood Mitigation Projects Contracted with Other Governments	\$ 6,608,688	2020	— \$	3,483,000	\$ (370,000)	(9.6)
			2019	— \$	3,853,000		
4600	Monitoring	\$ 157,850	2020	— \$	1,317,400	\$ 1,317,400	100.0
			2019	— \$	—		
4700	Flood and Pollution Control Design	\$ 484,475	2020	— \$	3,524,400	\$ 1,524,400	76.2
			2019	— \$	2,000,000		
4800	Flood and Pollution Control Construction	\$ 38,702,795	2020	— \$	42,239,100	\$ (2,168,400)	(4.9)
			2019	— \$	44,407,500		
5800	Solids Disposal Construction	\$ 4,389,765	2020	— \$	500,000	\$ (2,887,500)	(85.2)
			2019	— \$	3,387,500		
7740	Land and Easements	\$ 435,126	2020	— \$	250,000	\$ —	—
			2019	— \$	250,000		
Totals		\$ 127,418,196	2020	— \$	214,306,200	\$ (163,867,600)	(43.3)%
			2019	— \$	378,173,800		

Projects budgeted in the Capital Improvements Bond Fund are prioritized based on operational needs, design time frames, and available funding. Year-over-year variances in program area budgets are the result of project timing within the five-year capital planning cycle. The Capital Improvements Bond Fund is budgeted on an obligation basis, meaning the projects are budgeted at their full value in the year they are awarded, whether the project expenditures occur in the same budget year or not.

Account Number	Account Name	LINE ITEM ANALYSIS						
		2018	2019				2020	
Account Number	Account Name	Expenditure	Original Appropriation *	Adjusted Appropriation 09/30/19 **	Expenditure (Committed Budget plus Disbursement) 09/30/19	Estimated Expenditure 12/31/19	Proposed by Executive Director	Recommended by Committee on Budget and Employment
401	Fund: Capital Improvements Bond							
50000	Department: Engineering							
612090	Reprographic Services	\$ —	\$ 10,000	\$ 20,000	\$ 10,000	\$ —	\$ 10,000	\$ —
612240	Testing and Inspection Services	81,823	—	2,762	2,762	—	—	—
612250	Court Reporting Services	5,499	25,000	42,001	42,001	7,700	31,000	—
612400	Intergovernmental Agreements	7,460,521	16,354,100	36,652,628	28,785,479	10,591,100	13,344,700	—
612430	Payments for Professional Services	704,874	400,000	1,932,526	1,232,524	180,300	1,402,400	—
612440	Preliminary Engineering Reports and Studies	—	2,820,000	2,820,000	165,000	—	250,000	—
612450	Professional Engineering Services for Construction Projects	3,831,313	7,500,000	9,611,405	3,885,755	2,907,200	9,274,400	—
612470	Personal Services for Post-Award Engineering for Construction Projects	1,096,594	—	6,286,615	6,286,615	813,200	—	—
612490	Contractual Services, N.O.C.	—	—	70,600	70,596	70,600	—	—
612780	Safety Repairs and Services	—	100,000	100,000	—	—	100,000	—
200	TOTAL CONTRACTUAL SERVICES	13,180,625	27,209,100	57,538,536	40,480,731	14,570,100	24,412,500	—
634620	Equipment for Waterway Facilities	8,151	—	—	—	—	1,200,000	—
400	TOTAL MACHINERY AND EQUIPMENT	8,151	—	—	—	—	1,200,000	—
645600	Collection Facilities Structures	3,768,218	5,015,000	12,924,451	11,048,922	1,054,600	1,340,000	—
645620	Waterway Facilities Structures	17,710,683	163,752,700	194,960,473	107,192,550	45,183,600	43,184,500	—
645630	Army Corps of Engineers Services	30,578,978	800,000	29,629,589	28,800,420	1,903,500	18,131,400	—
645650	Process Facilities Structures	24,908,968	32,562,500	54,184,005	48,025,794	6,485,600	33,245,000	—
645680	Buildings	1,795,640	6,320,000	13,508,975	12,604,724	4,008,100	500,000	—
645690	Capital Projects, N.O.C.	922,663	—	1,018,962	922,662	204,600	—	—
645700	Preservation of Collection Facility Structures	10,772,534	58,793,800	50,397,397	37,859,587	2,702,700	16,470,000	—
645720	Preservation of Waterway Facility Structures	4,075,647	13,903,800	15,922,971	15,921,874	1,835,600	4,227,000	—
645750	Preservation of Process Facility Structures	6,814,100	45,895,800	63,088,663	61,485,514	859,700	52,528,300	—
645780	Preservation of Buildings	7,143,916	20,212,500	32,637,627	12,613,728	2,072,400	17,625,000	—
500	TOTAL CAPITAL PROJECTS	108,491,347	347,256,100	468,273,113	336,475,774	66,310,400	187,251,200	—
656010	Land	1,078,309	1,664,700	1,664,700	786,051	626,800	300,000	—
600	TOTAL LAND	1,078,309	1,664,700	1,664,700	786,051	626,800	300,000	—
667340	Payments for Easements	270,000	2,043,900	2,043,900	14,052	14,100	250,000	—
727102	Principal Expense - Capital Lease	2,594,850	—	37,599,608	37,599,608	2,723,100	—	—
727112	Interest Expense - Capital Lease	1,794,914	—	10,594,602	10,594,602	1,667,700	—	—

401 50000	Fund: Capital Improvements Bond Department: Engineering	LINE ITEM ANALYSIS						
		2018	2019			2020		
Account Number	Account Name	Expenditure	Original Appropriation *	Adjusted Appropriation 09/30/19 **	Expenditure (Committed Budget plus Disbursement) 09/30/19	Estimated Expenditure 12/31/19	Proposed by Executive Director	Recommended by Committee on Budget and Employment
767300	Bond Issuance Costs	—	—	—	—	—	892,500	—
700	TOTAL FIXED AND OTHER CHARGES	4,659,765	2,043,900	50,238,109	48,208,261	4,404,900	1,142,500	—
TOTAL CAPITAL IMPROVEMENTS BOND FUND		\$127,418,196	\$ 378,173,800	\$ 577,714,459	\$ 425,950,817	\$ 85,912,200	\$214,306,200	\$ —
<p>* The Capital Improvements Bond Fund is budgeted and accounted for on an obligation basis.</p> <p>** The appropriation in the Capital Improvements Bond Fund is adjusted to carry forward open value of contracts from the prior year.</p> <p>NOTES: 1. Amounts may not add up due to rounding.</p> <p>2. Estimated Expenditure may exceed Adjusted Appropriation when transfers of funds are anticipated or be less than Expenditure (Committed Budget plus Disbursement) when not all commitments are anticipated to be completed by year-end.</p> <p>3. The Capital Improvements Bond Fund appropriation is controlled on the Summary Object level.</p>								

NOTE PAGE