

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 2018 Capital Improvement Program places the 2018 program within the context of our long-range plan. Information is provided on the levels of funding in 2018 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 2018 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 12, 2017

Mr. David St. Pierre
Executive Director
OFFICE

Dear Sir:

Subject: 2018 Program for the Capital Funds

The Capital Funds' program for 2018, as prepared in detail, is transmitted herewith. The budget presentation supports the request for funding of the District's 2018 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 narratives by fund provide a summary of the 2018 major initiatives and challenges and 2017 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 2018.

Respectfully submitted,



Catherine A. O'Connor
Director of Engineering



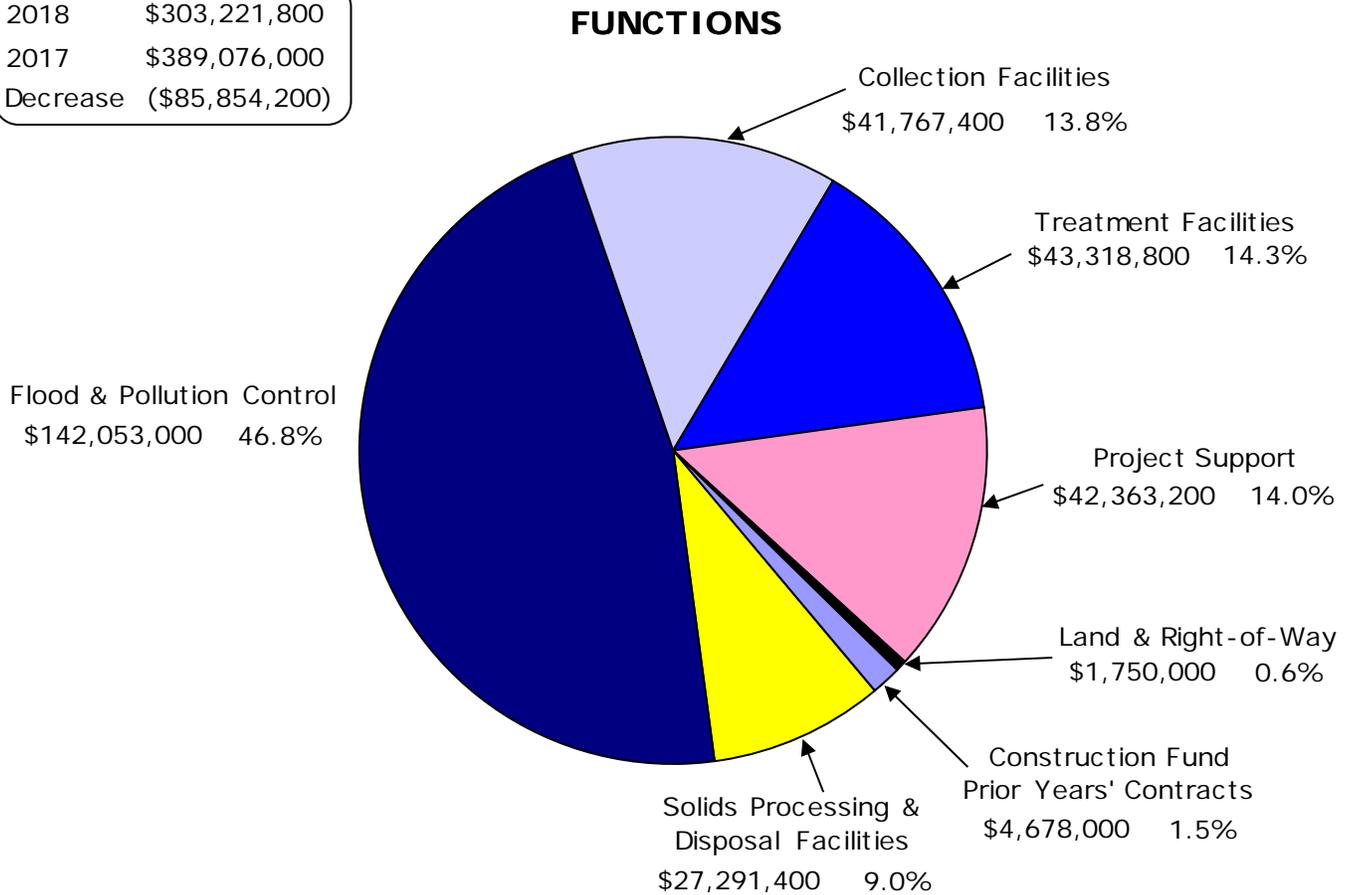
John P. Murray
Director of Maintenance & Operations



Edward W. Podczerwinski
Acting Director of Monitoring & Research

CAPITAL IMPROVEMENT PROGRAM CONSTRUCTION AND CAPITAL IMPROVEMENTS BOND FUNDS

| | |
|----------|----------------|
| 2018 | \$303,221,800 |
| 2017 | \$389,076,000 |
| Decrease | (\$85,854,200) |



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 2018 Capital Improvement Program (Construction and Capital Improvements Bond Funds) totals \$303,221,800, a decrease of \$85,854,200, or 22.1 percent, from 2017. The decrease is primarily due to the decrease in the total value of capital projects budgeted in 2018. A total of 133 projects funded by the Construction or Capital Improvements Bond Funds will be under planning, design, or construction in 2018. There are two reservoir projects and three streambank stabilization projects planned for award in 2018 under the Stormwater Management Program.

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. Projects are then added to the Capital Improvement Program and scheduled for award according to priority and resource availability.

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, repair, and replacement of equipment and facilities, the District ensures continued 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

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.

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.

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 between \$50 to \$200 million annually in SRF loans through 2022.

Operating Cost Impacts of Capital Improvement Projects

The annual maintenance and/or operating costs associated with new capital projects are an important part of the decision-making process for the selection of capital projects. In many cases, the District must build new or modify existing facilities to meet regulatory requirements, and increases in operating costs cannot be avoided. In other cases, operating costs can be significantly reduced based on the replacement of aging infrastructure or equipment. In all cases, 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. For example, the aeration tanks air valves automation in batteries at the Stickney Water Reclamation Plant are cost effective improvements. Finer tune automation is required to enhance the biological phosphorus removal process. Implementation of finer tune automation also reduces air demand by 5.0 to 7.0 percent, saving approximately \$600,000 in electrical energy annually.

Specific tables are provided later in the narrative to show the estimated cost impacts on the operating budget of capital improvement projects under construction, scheduled for award, and under development.

The operating cost impact tables are designed to give a range of cost impacts on the most significant cost elements, specifically, manpower, energy, and chemicals. The cost impact ranges are defined as no impact, minor impact, or major impact. These estimated cost impacts are reviewed once the specific projects are completed to guide in the preparation of operating budgets and to evaluate if planned efficiencies are realized.

Included in the operating cost impact tables is a categorization of the justification for a particular capital project. As previously discussed, projects must be built to meet regulatory requirements, but they may also be built to obtain operating efficiencies, provide a safer operating environment, or to extend useful life. The specific categories used are capacity needs, useful life, economic benefit, and safety/regulatory. Projects are often justified by more than one criterion.

Overall Capital Improvement Program Costs

The District’s 2018 overall Capital Improvement Program includes 2018 project awards, program support, and projects under construction, with a total estimated construction cost of approximately \$873.8 million. A breakdown of these projects (in millions of dollars) is as follows:

| | |
|---|--------------|
| 2018 project awards | \$ 250.2 |
| 2018 program support (project support and land) | 44.1 |
| Projects currently under construction | <u>579.5</u> |
| Total | \$ 873.8 |

◆ A breakdown of projects scheduled for 2018 award by fund is as follows:

| | |
|---|--------------|
| Construction Fund projects | \$ 12.8 |
| Capital Improvements Bond Fund projects | <u>237.4</u> |
| Total | \$ 250.2 |

◆ A breakdown of projects under construction by fund is as follows:

| | |
|---|--------------|
| Construction Fund projects | \$ 11.4 |
| Capital Improvements Bond Fund projects | <u>568.1</u> |
| Total | \$ 579.5 |

10-YEAR CAPITAL IMPROVEMENT PROGRAM SUMMARY

2013 - 2022 CAPITAL PROJECT CONSTRUCTION COST

| | ACTUAL CASH DISBURSEMENTS | | | | | ESTIMATED CASH DISBURSEMENTS | | | | | TOTAL |
|--|---------------------------|-----------------|-----------------|-----------------|-----------------|------------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| | 2013 | 2014 | 2015 | 2016 | 2017* | 2018 | 2019 | 2020 | 2021 | 2022 | DISBURSE- |
| | | | | | | | | | | | MENTS |
| | | | | | | | | | | | 2013-2022 |
| <u>BY CATEGORY</u> | | | | | | | | | | | |
| Water Reclamation Plants and Solids Management | \$51.54 | \$65.99 | \$144.40 | \$107.01 | \$67.65 | \$69.61 | \$51.79 | \$61.74 | \$51.95 | \$55.16 | \$726.84 |
| Replacement of Facilities | 31.77 | 40.17 | 26.65 | 36.98 | 53.61 | 37.39 | 33.19 | 38.97 | 20.89 | 31.02 | \$350.64 |
| Collection Facilities | 32.32 | 44.66 | 14.94 | 25.51 | 11.34 | 4.08 | 7.89 | 6.75 | 14.30 | 9.65 | \$171.44 |
| Stormwater Management | 19.37 | 5.27 | 5.85 | 7.49 | 20.06 | 31.29 | 100.09 | 99.76 | 18.08 | 72.64 | \$379.90 |
| Tunnel and Reservoir Plan | 35.99 | 37.49 | 75.18 | 47.68 | 51.46 | 27.85 | 23.63 | 20.65 | 103.60 | 49.29 | \$472.82 |
| TOTAL | \$170.99 | \$193.58 | \$267.02 | \$224.67 | \$204.12 | \$170.22 | \$216.59 | \$227.87 | \$208.82 | \$217.76 | \$2,101.64 |
| <u>BY FUND</u> | | | | | | | | | | | |
| Stormwater Management Fund | \$19.37 | \$5.27 | \$5.00 | \$6.34 | \$10.99 | \$31.29 | \$100.09 | \$99.76 | \$18.09 | \$72.65 | \$368.85 |
| Construction Fund | 10.78 | 16.57 | 13.34 | 13.47 | 6.69 | 9.60 | 6.18 | 2.14 | 0.61 | 2.98 | \$82.36 |
| Capital Improvements Bond Fund | 140.84 | 171.74 | 248.68 | 204.86 | 186.44 | 129.33 | 110.32 | 125.97 | 190.12 | 142.14 | \$1,650.44 |
| TOTAL | \$170.99 | \$193.58 | \$267.02 | \$224.67 | \$204.12 | \$170.22 | \$216.59 | \$227.87 | \$208.82 | \$217.76 | \$2,101.64 |

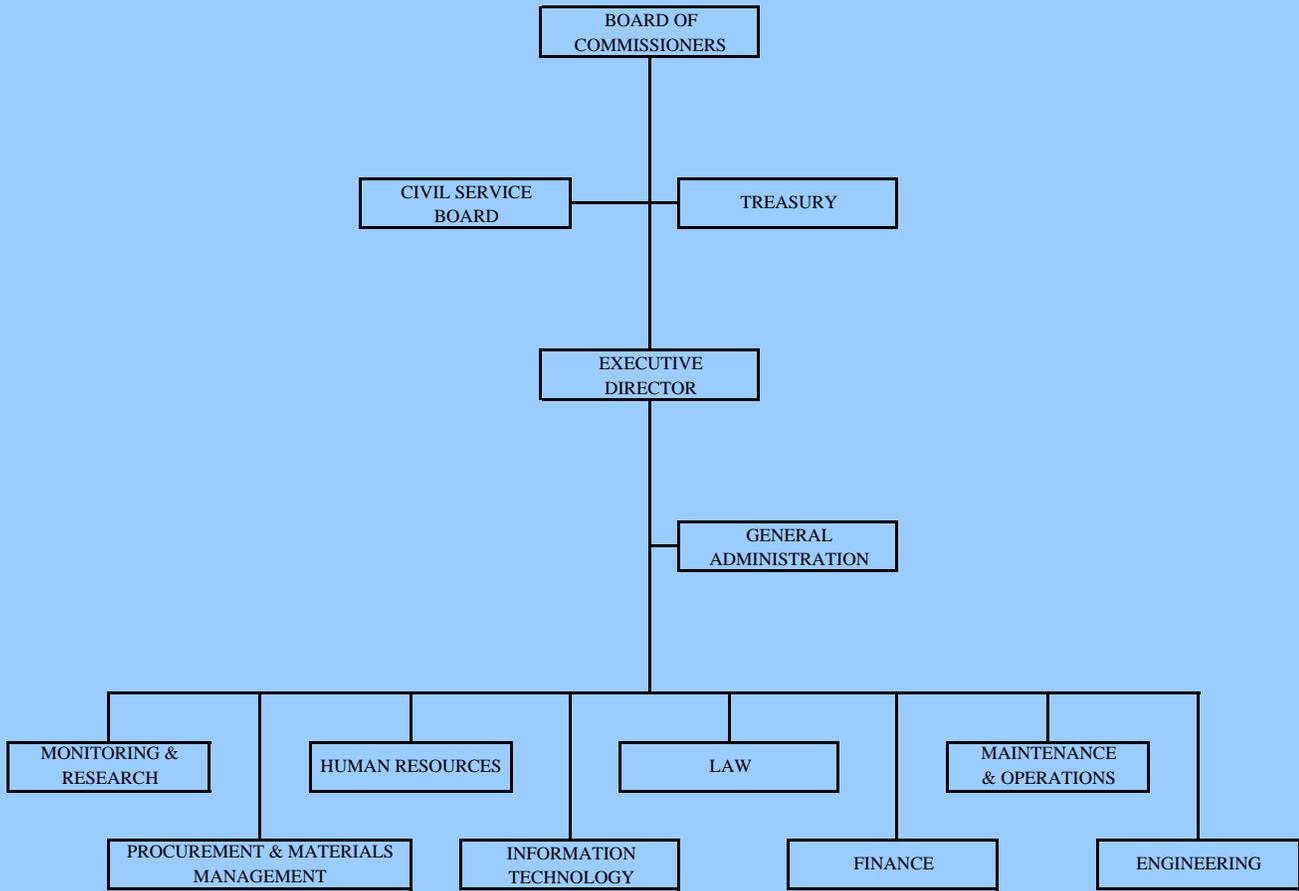
Notes: 1. All project costs are in millions of dollars.

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. Final year estimate is based upon the average of the previous three years.

* PROJECTED CASH DISBURSEMENTS

NOTE PAGE



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 asset generally will be less than five years and the cost of the project typically does not exceed \$500,000. The Construction Fund is a pay-as-you-go capital fund and is funded primarily by property taxes.

Summary of 2017 Accomplishments

Significant accomplishments include:

- Completed the upgrade of the Foxboro input/output modules for the distributed control system at the Calumet Water Reclamation Plant (WRP). The system is an integral component of the wastewater treatment process in the Calumet Service Area;
- Installed and tested a pilot fine screen at the Kirie WRP with the purpose of finding a suitable replacement for the aging fine screens and improving secondary treatment. Based on the successful results, additional fine screens of this type will be installed in the future;
- Purchased a small dedicated blower to operate two aeration tank air lifts at the Egan WRP, which will lower the operating air pressure of the large blowers and reduce annual operating costs by \$44,000;
- Replaced a storm pump at the Deerfield Reservoir to ensure the reservoir has maximum dewatering capabilities and to reduce the risk of flooding;
- Applied grant funding of \$153,600 to the energy conservation project to install a turbo blower at the Hanover Park WRP. The turbo blower has variable frequency drive motor controls that accurately control the speed based on the air flow, resulting in energy savings;
- Replaced the damaged handrails at the Lockport Powerhouse to ensure workplace safety;
- Installed a high-speed turbo blower at the Lemont WRP with an anticipated 25 percent reduction in electrical costs;
- Procured a desktop fermenter system for the Monitoring & Research Department, which can be used for the conceptual design and implementation of critical processes such as enhanced biological phosphorus removal;
- Installed an upgraded coarse screen conveyor system at the North Branch Pumping Station, important for the protection and preservation of the raw sewage pumps;
- Completed the energy conservation project for the installation of new boilers at the 125th Street Pumping Station in the Calumet Service Area;
- Completed the renovation of the existing parking lot at the Egan WRP with a new permeable parking lot. The permeable pavement will provide several green benefits, including improved water quality, ground water recharge, and delayed discharge of stormwater into the receiving waterway;
- Awarded contracts to perform phosphorus removal feasibility studies at the Kirie, Egan, Hanover Park, and Lemont WRPs;
- Acquired a replacement gearbox for Sidestream Elevated Pool Aeration Station #4 to provide sufficient capacity to meet more stringent permit requirements for dissolved oxygen levels;
- Awarded a contract to evaluate odor control strategies for various process areas at the Egan and O'Brien WRPs;
- Upgraded outdated network equipment at the Main Office Building Complex for improved performance related to volume, speed, and security;
- Completed the database consolidation project to combine standalone databases into a central database server, which allows the Information Technology Department to focus its support efforts on a single standardized database platform.

Budget Highlights

The 2018 appropriation for the Construction Fund is \$24,794,100, a decrease of \$9,656,300, or 28.0 percent, from 2017. The 2018 value of the Construction Fund Program includes \$4,678,000 for projects under construction, \$11,285,000 for projects scheduled for award in 2018, and \$2,150,000 for projects under development. An additional \$6,681,100 is appropriated for purposes not specifically associated with listed project costs, including \$5,129,000 for professional engineering services in connection with initiatives sponsored by the Engineering and Monitoring & Research Departments, \$900,000 for replacement fleet vehicles, \$402,100 for contract contingencies, \$200,000 for the purchase of capital machinery and equipment, and \$50,000 for service fees associated with pilot test programs for odor monitoring.

2018 Initiatives in Support of the Strategic Business Plan Include the Following:

• Add Value

- Implement the Strategic Business Plan (SBP) strategy of adhering to project time frames 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;
- Use the District's real estate holdings, a strategy identified in the SBP, to explore opportunities to revitalize the environment. In 2018, two drainage water management systems and three denitrifying bioreactor systems, covering 82 acres of farmland at the District's Prairie Plan Site in Fulton County, Illinois will be installed. The systems are part of a demonstration project for recapture of nutrient runoff to enhance watershed health;
- Continue to implement the District's Odor Reduction Strategy through the evaluation of the various technologies available for wastewater odor control and through the purchase of odor monitoring equipment.

• Excellence

- Adhere to an asset maintenance schedule with the goal of reducing emergency sewer collapses and sludge line breaks and the high costs associated with them;
- Continue to prioritize projects to ensure the best use of current spending. In 2018, 42 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's newly formed Asset Management Section has identified 30 Construction Fund projects for 2018 related to collection, treatment, flood and pollution control, and solids disposal, which are the core programs and functions of the department;
- Manage resources to ensure financial stability. In 2018, \$5,800,000 of subsidy revenue from Build America Bonds will be recorded in the Construction Fund for pay-as-you-go projects. The American Resource and Recovery Act of 2009 created the Build America Bonds to provide liquidity to the municipal bond markets and to encourage the infrastructure investments that are typically financed by these markets;
- Continue to pursue research programs focused on addressing impending or anticipated future regulatory actions, achieving energy neutrality and resource recovery, or generating cost savings.

• Resource Recovery

The Capital Improvement Program is essential to achieving the goals of the SBP. This is especially true for Resource Recovery with its broad vision and reliance, in many cases, on new processes and equipment. In 2018, a variety of projects related to Resource Recovery – water, energy, phosphorus, and biosolids – are included in the Construction Fund.

- Complete the rehabilitation of the digester gas turbine at the Stickney WRP. Digester gas will be consumed in the combustor of a three-megawatt electric generator, and the generated electricity will be delivered back to the grid and distributed throughout the plant, resulting in reduced electrical demand;
- Continue research project utilizing algae technology for the recovery of phosphorus and nitrogen from wastewater, which includes the installation of a flow-through reactor with augmented artificial light sources;
- Continue phosphorus removal feasibility studies for the Egan, Hanover Park, Lemont, and Kirie WRPs;
- Improve and expand the biosolids composting operation by acquiring composting equipment, including one screener for the Calumet Area Solids Management Area and one wheel loader for the Lawndale Avenue Solids Management Area, and installing a bulk storage dome at the Harlem Avenue Solids Management Area to protect ready-to-ship compost. Projects like these are directly aligned with the SBP strategy of establishing a sustainable commercial biosolids market within the District's service area;
- Install a pilot wastewater liquid treatment process to perform comprehensive analyses of new and evolving processes. These new methods may provide reductions in energy use, manpower, and/or chemical consumption while providing improved treatment.

• 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 Calumet, 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.

- **Technology**

The technology projects that appear in the 2018 Construction Fund support the SBP goal of delivering data and information that is reliable and useful and that can be used to make sound decisions and navigate toward successful outcomes.

- Upgrade the voicemail hardware in the Calumet, North, and Stickney Service Areas into a consolidated virtual environment, which will generate cost savings in terms of reduced maintenance and equipment replacement, improve management flexibility and scalability, and execute the SBP strategy of providing reliable system services to every user;
- Develop plans to construct and operate a pilot unit of the MicroNiche™ technology, which is a suite of products that target specific pollutants for removal by way of biocatalysts that are self-contained stable communities of mature organisms. The unit will be located at the O'Brien WRP, where the operating conditions can provide a rigorous test of the technology. The project will be undertaken with the goals of achieving effluent standards with respect to the future O'Brien WRP National Pollutant Discharge Elimination System permit, quantifying anticipated reductions in operating costs and solids production, and establishing parameters to assess the feasibility and economics of a full-scale application. This project reflects the SBP concept of embracing new technology as a means of advancing the District's mission.

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 and projects for 2018 award.

**STICKNEY
SERVICE
AREA (SSA)**



Stickney Water Reclamation Plant (SWRP)

Projects Under Construction (with estimated completion dates)

| | | Estimated Construction Cost |
|-----------|--|------------------------------------|
| 13-806-2S | Television Inspection and Recording of Sewers and Manholes, District-wide (10/2020) | \$ 1,944,000 |
| 15-913-21 | Rehabilitate the Digester Gas Turbine, SWRP (3/2018) | 2,038,000 |
| 16-RFP-02 | Applicant Management and Tracking, Onboarding, and Performance Management Systems (4/2018) | 147,000 |
| 17-602-21 | F&D Programmable Logic Controllers, Chicago River Controlling Works (3/2018) | 90,000 |
| 17-RFP-22 | Automated CAFR and Budget Solution (2/2018) | 25,000 |
| | Total | \$ 4,244,000 |

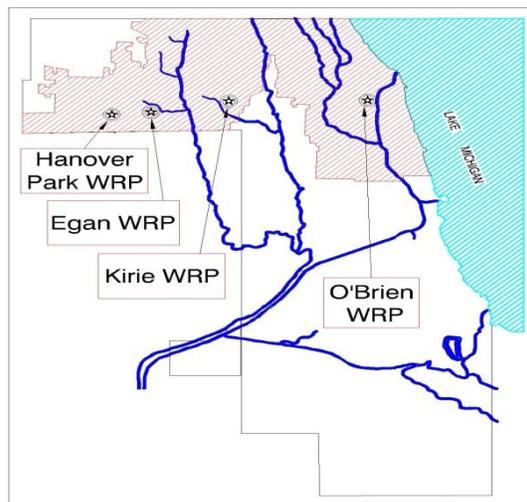
Projects for 2018 Award

| | | |
|-----------|---|------------|
| 17-901-21 | F&D Interoperable Distributed Control System Workstations and TARP Controllers, Various Locations | \$ 125,000 |
| 17-RFP-37 | Employee Benefits Software | 75,000 |
| 18-602-21 | F&D Rubber Tire Excavator/Backhoe, LASMA | 225,000 |
| 18-604-21 | FD&I Fire Detection Systems, Various Locations | 560,000 |
| 18-605-21 | F&D Station Batteries, Various Locations | 250,000 |
| 18-607-21 | F&D Wheel Loader, LASMA | 350,000 |
| 18-609-21 | FD&I Storage Dome for Biosolids, HASMA | 350,000 |
| 18-610-21 | Rehabilitate Raw Sewage Pump Rotating Assemblies, Various Locations | 625,000 |
| 18-901-21 | F&D Motor Excitation Control Equipment, SWRP | 245,000 |
| 18-902-21 | F&D Four Scum Pumps, SWRP | 100,000 |
| 18-903-21 | F&D Fire Alarm System Fiber Optic Cable, SWRP | 25,000 |
| 18-904-21 | F&D Stainless Steel Tandem Tanker Trailer, SWRP | 70,000 |
| 18-905-21 | F&D Submersible Slurry Gate Pumping System, SWRP | 75,000 |
| 18-906-21 | Rehabilitation of the Overhead Bridge Crane, SSA | 240,000 |
| 18-910-21 | Replace Media in Cooling Towers, SWRP | 110,000 |
| 18-911-21 | FD&I Louvers for TARP Drop Shafts, SSA | 500,000 |
| 18-912-21 | Skylight Replacement, SWRP | 400,000 |
| 18-913-21 | Replacement of Railroad Grade Crossings, SSA | 475,000 |
| 18-914-21 | Recondition Circuit Breakers, SSA | 200,000 |

Stickney Water Reclamation Plant (SWRP)**Projects for 2018 Award (continued)**

| | | Estimated Construction Cost |
|-----------------------------------|-----------------------------------|------------------------------------|
| J15090-054 | Rehabilitation of Elevators, MOB | \$ 400,000 |
| J15090-064 | Roof Life Extension, MOB | 250,000 |
| J15090-068 | Paint and Carpet Replacement, MOB | 425,000 |
| J15090-069 | Renovate Bathroom Stalls, MOBC | 190,000 |
| MWD0000003FI | Enhancements to WorkForce System | 50,000 |
| MWD0000007HR | Performance Management Software | 25,000 |
| MWD0000013IT | Avaya Telecom Project | 164,000 |
| MWD0000015IT | Network Communication Switches | 406,000 |
| Total | | \$ 6,910,000 |
| Stickney Service Area Grand Total | | \$ 11,154,000 |

NORTH SERVICE AREA (NSA)



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

Projects Under Construction (with estimated completion dates)

| | | |
|--------------|--|-------------------|
| 17-703-21 | F&D Stake Body Truck and Dump Truck, NSA (3/2018) | \$ 265,000 |
| 17-705-21 | Rehabilitate One Raw Sewage Pump Rotating Assembly, OWRP (12/2018) | 200,000 |
| Total | | \$ 465,000 |

Project for 2018 Award

| | | |
|--------------|---------------|-------------------|
| 18-180-21 | Microvi Pilot | \$ 250,000 |
| Total | | \$ 250,000 |

John E. Egan Water Reclamation Plant (EWRP)

Project for 2018 Award

| | | |
|--------------|--------------------------------------|------------------|
| 18-703-21 | F&D Hydraulic Submersible Pump, EWRP | \$ 50,000 |
| Total | | \$ 50,000 |

James C. Kirie Water Reclamation Plant (KWRP)

Projects Under Construction (with estimated completion dates)

| | | |
|--------------|--|-------------------|
| 16-704-21 | FD&I Upgraded Coarse Screen Conveyor System at the North Branch Pumping Station, NSA (12/2018) | \$ 201,000 |
| 17-609-21 | F&D Enhanced Bio-P Control Equipment, NSA (4/2018) | 240,000 |
| 17-710-21 | Recondition Raw Sewage Pump Motor No. 3, KWRP (5/2018) | 127,000 |
| Total | | \$ 568,000 |

Projects for 2018 Award

| | | |
|--------------|---|---------------------|
| 16-708-21 | Rehabilitate Gloria Alitto Majewski Reservoir, KWRP | \$ 600,000 |
| 18-603-21 | FD&I Spring-Loaded Covers, NSA | 75,000 |
| 18-701-21 | F&D Two Debris Baskets, KWRP | 200,000 |
| 18-702-21 | F&D Bio-P Control Equipment, NSA | 70,000 |
| 18-704-21 | Recondition Raw Sewage Pump Motor No. 1, KWRP | 180,000 |
| 18-706-21 | FD&I Three Bar Screens, KWRP | 750,000 |
| Total | | \$ 1,875,000 |

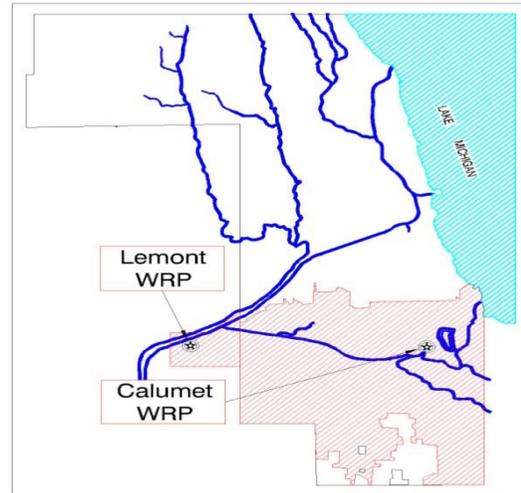
Hanover Park Water Reclamation Plant (HPWRP)

Projects for 2018 Award

| | | |
|--------------|--|---------------------|
| 18-608-21 | F&D Fine Screens, Grit Classifier, and Screw Conveyors, HPWRP and SWRP | \$ 580,000 |
| 18-705-21 | F&D Turbo Blower for Process Air, HPWRP | 185,000 |
| 18-707-21 | Roof Replacement, HPWRP | 490,000 |
| Total | | \$ 1,255,000 |

North Service Area Grand Total \$ 4,463,000

CALUMET SERVICE AREA (CSA)



Calumet Water Reclamation Plant (CWRP)

Projects Under Construction (with estimated completion dates)

Estimated Construction Cost

| | | |
|-----------|--|---------------------|
| 15-802-21 | Rehabilitation of Hydraulic Operator at TARP Gate Structure 1, CSA (3/2018) | \$ 1,324,000 |
| 16-268-2V | Industrial Waste Division and Construction Office Renovation, CWRP (7/2018) | 2,546,000 |
| 16-605-21 | Installation of Drain Tile and Bioreactors, Fulton County (12/2018) | 150,000 |
| 16-803-21 | FD&I HVAC Systems, CWRP (8/2018) | 380,000 |
| 16-805-21 | FD&I Boiler for Equipment Garage, CWRP (8/2018) | 240,000 |
| 16-806-21 | FD&I Upgraded Vacuum System at the 95th Street Pumping Station, CSA (6/2018) | 286,000 |
| 16-810-21 | F&D Six Grit Pumps, CWRP (5/2018) | 96,000 |
| Total | | \$ 5,022,000 |

Projects for 2018 Award

| | | |
|-----------|---|---------------------|
| 18-601-21 | F&D Submersible Pump, CSA | \$ 200,000 |
| 18-606-21 | F&D Screener, CALSMA | 400,000 |
| 18-611-21 | HVAC Equipment Replacement, Various Locations | 990,000 |
| 18-612-21 | F&D Protective Relays, CWRP and KWRP | 125,000 |
| 18-802-21 | FD&I Grit Screw Conveyor, CWRP | 300,000 |
| 18-803-21 | Rehabilitation of Blower No. 9, CWRP | 450,000 |
| Total | | \$ 2,465,000 |

Lemont Water Reclamation Plant (LWRP)

Project Under Construction (with estimated completion date)

| | | |
|-----------|-------------------------------------|---------------------|
| 14-806-21 | FD&I New Tank Drives, LWRP (5/2018) | \$ 1,132,000 |
| Total | | \$ 1,132,000 |

Calumet Service Area Grand Total **\$ 8,619,000**

Capital Projects Grand Total - All Service Areas **\$ 24,236,000**

Construction Fund Program

| <u>Projects Under Construction</u> | | | Est. | MWRD | | Award |
|---|--|----------------|---------------------------|---------------------------|-------------------------|-------------------------|
| # | Project Name | Project Number | Construc- tion Cost | 2018 Appro- piation | Dura- tion (days) | / Est. Award Date |
| 1 | FD&I New Tank Drives, LWRP | 14-806-21 | \$ 1,132 | \$ 160 | 1,365 | Sep-14 |
| 2 | Rehabilitation of Hydraulic Operator at TARP Gate Structure 1, CSA | 15-802-21 | 1,324 | 290 | 877 | Nov-15 |
| 3 | Rehabilitate the Digester Gas Turbine, SWRP | 15-913-21 | 2,038 | 293 | 695 | May-16 |
| 4 | F&D Six Grit Pumps, CWRP | 16-810-21 | 96 | 96 | 572 | Oct-16 |
| 5 | Industrial Waste Division and Construction Office Renovation, CWRP | 16-268-2V | 2,546 | 1,269 | 621 | Nov-16 |
| 6 | Applicant Management and Tracking, Onboarding, and Performance Management Systems | 16-RFP-02 | 147 | 56 | 529 | Nov-16 |
| 7 | FD&I Upgraded Vacuum System at the 95th Street Pumping Station, CSA | 16-806-21 | 286 | 86 | 407 | Apr-17 |
| 8 | F&D Stake Body Truck and Dump Truck, NSA | 17-703-21 | 265 | 164 | 288 | Jun-17 |
| 9 | Recondition Raw Sewage Pump Motor No. 3, KWRP | 17-710-21 | 127 | 90 | 243 | Aug-17 |
| 10 | Automated CAFR and Budget Solution | 17-RFP-22 | 25 | 10 | 167 | Sep-17 |
| 11 | Television Inspection and Recording of Sewers and Manholes, District-wide | 13-806-2S | 1,944 | 800 | 1,078 | Oct-17 |
| 12 | Installation of Drain Tile and Bioreactors, Fulton County | 16-605-21 | 150 | 150 | 438 | Oct-17 |
| 13 | FD&I Upgraded Coarse Screen Conveyor System at the North Branch Pumping Station, NSA | 16-704-21 | 201 | 184 | 444 | Oct-17 |
| 14 | FD&I Boiler for Equipment Garage, CWRP | 16-805-21 | 240 | 240 | 286 | Oct-17 |
| 15 | F&D Programmable Logic Controllers, Chicago River Controlling Works | 17-602-21 | 90 | 90 | 133 | Oct-17 |
| 16 | F&D Enhanced Bio-P Control Equipment, NSA | 17-609-21 | 240 | 120 | 164 | Oct-17 |
| 17 | Rehabilitate One Raw Sewage Pump Rotating Assembly, OWRP | 17-705-21 | 200 | 200 | 438 | Oct-17 |
| 18 | FD&I HVAC Systems, CWRP | 16-803-21 | 380 | 380 | 287 | Nov-17 |
| Total Projects Under Construction | | | \$ 11,431 | \$ 4,678 | | |
| <u>Awards in 2018</u> | | | Est. | MWRD | | Est. |
| # | Project Name | Project Number | Construc- tion Cost | 2018 Appro- piation | Dura- tion (days) | Award Date |
| 1 | Employee Benefits Software | 17-RFP-37 | \$ 75 | \$ 75 | 364 | Jan-18 |
| 2 | Rehabilitation of Blower No. 9, CWRP | 18-803-21 | 450 | 450 | 364 | Jan-18 |
| 3 | Paint and Carpet Replacement, MOB | J15090-068 | 425 | 425 | 119 | Jan-18 |
| 4 | Enhancements to WorkForce System | MWD0000003FI | 50 | 50 | 88 | Jan-18 |
| 5 | FD&I Fire Detection Systems, Various Locations | 18-604-21 | 560 | 560 | 333 | Feb-18 |
| 6 | F&D Fine Screens, Grit Classifier, and Screw Conveyors, HPWRP and SWRP | 18-608-21 | 580 | 580 | 272 | Feb-18 |
| 7 | HVAC Equipment Replacement, Various Locations | 18-611-21 | 990 | 475 | 698 | Feb-18 |
| 8 | F&D Protective Relays, CWRP and KWRP | 18-612-21 | 125 | 125 | 180 | Feb-18 |
| 9 | F&D Bio-P Control Equipment, NSA | 18-702-21 | 70 | 70 | 333 | Feb-18 |
| 10 | F&D Turbo Blower for Process Air, HPWRP | 18-705-21 | 185 | 185 | 211 | Feb-18 |
| 11 | FD&I Grit Screw Conveyor, CWRP | 18-802-21 | 300 | 300 | 241 | Feb-18 |
| 12 | Recondition Circuit Breakers, SSA | 18-914-21 | 200 | 200 | 272 | Feb-18 |
| 13 | Rehabilitate Gloria Alitto Majewski Reservoir, KWRP | 16-708-21 | 600 | 600 | 305 | Mar-18 |

| <u>Awards in 2018 (continued)</u> | | | Est. | MWRD | | Est. |
|---|--|----------------|---------------------------|----------------------------|-------------------------|---------------|
| # | Project Name | Project Number | Construc- tion Cost | 2018 Appro- priation | Dura- tion (days) | Award Date |
| 14 | Microvi Pilot | 18-180-21 | \$ 250 | \$ 250 | 305 | Mar-18 |
| 15 | F&D Submersible Pump, CSA | 18-601-21 | 200 | 200 | 91 | Mar-18 |
| 16 | F&D Hydraulic Submersible Pump, EWRP | 18-703-21 | 50 | 50 | 152 | Mar-18 |
| 17 | F&D Motor Excitation Control Equipment, SWRP | 18-901-21 | 245 | 245 | 305 | Mar-18 |
| 18 | Rehabilitation of Elevators, MOB | J15090-054 | 400 | 400 | 152 | Mar-18 |
| 19 | Performance Management Software | MWD0000007HR | 25 | 25 | 213 | Mar-18 |
| 20 | Network Communication Switches | MWD0000015IT | 406 | 406 | 305 | Mar-18 |
| 21 | Rehabilitate Raw Sewage Pump Rotating Assemblies, Various Locations | 18-610-21 | 625 | 200 | 730 | Apr-18 |
| 22 | Roof Replacement, HPWRP | 18-707-21 | 490 | 490 | 274 | Apr-18 |
| 23 | F&D Four Scum Pumps, SWRP | 18-902-21 | 100 | 100 | 152 | Apr-18 |
| 24 | F&D Stainless Steel Tandem Tanker Trailer, SWRP | 18-904-21 | 70 | 70 | 274 | Apr-18 |
| 25 | F&D Submersible Slurry Gate Pumping System, SWRP | 18-905-21 | 75 | 75 | 274 | Apr-18 |
| 26 | Replace Media in Cooling Towers, SWRP | 18-910-21 | 110 | 110 | 213 | Apr-18 |
| 27 | FD&I Louvers for TARP Drop Shafts, SSA | 18-911-21 | 500 | 500 | 213 | Apr-18 |
| 28 | Skylight Replacement, SWRP | 18-912-21 | 400 | 400 | 274 | Apr-18 |
| 29 | Roof Life Extension, MOB | J15090-064 | 250 | 250 | 121 | Apr-18 |
| 30 | Avaya Telecom Project | MWD0000013IT | 164 | 164 | 274 | Apr-18 |
| 31 | F&D Interoperable Distributed Control System Workstations and TARP Controllers, Various Locations | 17-901-21 | 125 | 125 | 244 | May-18 |
| 32 | F&D Station Batteries, Various Locations | 18-605-21 | 250 | 250 | 244 | May-18 |
| 33 | Rehabilitation of the Overhead Bridge Crane, SSA | 18-906-21 | 240 | 240 | 244 | May-18 |
| 34 | Renovate Bathroom Stalls, MOBC | J15090-069 | 190 | 190 | 152 | May-18 |
| 35 | F&D Rubber Tire Excavator/Backhoe, LASMA | 18-602-21 | 225 | 225 | 213 | Jun-18 |
| 36 | FD&I Spring-Loaded Covers, NSA | 18-603-21 | 75 | 75 | 152 | Jun-18 |
| 37 | F&D Screener, CALSMA | 18-606-21 | 400 | 400 | 213 | Jun-18 |
| 38 | F&D Wheel Loader, LASMA | 18-607-21 | 350 | 350 | 213 | Jun-18 |
| 39 | FD&I Storage Dome for Biosolids, HASMA | 18-609-21 | 350 | 350 | 213 | Jun-18 |
| 40 | Replacement of Railroad Grade Crossings, SSA | 18-913-21 | 475 | 475 | 213 | Jun-18 |
| 41 | F&D Two Debris Baskets, KWRP | 18-701-21 | 200 | 200 | 183 | Jul-18 |
| 42 | Recondition Raw Sewage Pump Motor No. 1, KWRP | 18-704-21 | 180 | 100 | 548 | Jul-18 |
| 43 | FD&I Three Bar Screens, KWRP | 18-706-21 | 750 | 250 | 548 | Jul-18 |
| 44 | F&D Fire Alarm System Fiber Optic Cable, SWRP | 18-903-21 | 25 | 25 | 183 | Jul-18 |
| Total 2018 Awards | | | \$ 12,805 | \$ 11,285 | | |
| Total Projects Under Construction and 2018 Awards | | | \$ 24,236 | \$ 15,963 | | |

| <u>Projects Under Development</u> | | | Est. |
|---|-----------------------------------|------------------|---------------------------|
| # | Project Name | Project Number | Construc- tion Cost |
| 45 | Agriculture Pilot Projects | To be determined | \$ 2,000 |
| 46 | Alternate Digestion Pilot Program | To be determined | 75 |
| 47 | Phosphorus Recovery Pilot Program | To be determined | 75 |
| Total Future Awards | | | \$ 2,150 |
| Cumulative Projects Under Construction, 2018 Awards, and Future Awards | | | \$ 26,386 |

Note: All cost figures are in thousands of dollars.

Construction Fund Program Operating Impacts

| # | Project Name | Project Number | Justification | | | | Impact | | |
|------------------------------------|--|----------------|----------------|-------------|------------------|-------------------|----------|--------|----------|
| | | | Capacity Needs | Useful Life | Economic Benefit | Safety/Regulatory | Manpower | Energy | Chemical |
| Projects Under Construction | | | | | | | | | |
| 1 | FD&I New Tank Drives, LWRP | 14-806-21 | | x | | x | = | + | = |
| 2 | Rehabilitation of Hydraulic Operator at TARP Gate Structure 1, CSA | 15-802-21 | | x | | x | = | = | = |
| 3 | Rehabilitate the Digester Gas Turbine, SWRP | 15-913-21 | | | x | | = | ++ | = |
| 4 | F&D Six Grit Pumps, CWRP | 16-810-21 | | x | | | + | = | = |
| 5 | Industrial Waste Division and Construction Office Renovation, CWRP | 16-268-2V | x | | | x | = | = | = |
| 6 | Applicant Management and Tracking, Onboarding, and Performance Management Systems | 16-RFP-02 | | | x | | = | = | = |
| 7 | FD&I Upgraded Vacuum System at the 95th Street Pumping Station, CSA | 16-806-21 | | x | | | = | = | = |
| 8 | F&D Stake Body Truck and Dump Truck, NSA | 17-703-21 | | x | | | = | = | = |
| 9 | Recondition Raw Sewage Pump Motor No. 3, KWRP | 17-710-21 | | x | | x | = | = | = |
| 10 | Automated CAFR and Budget Solution | 17-RFP-22 | | | x | | = | = | = |
| 11 | Television Inspection and Recording of Sewers and Manholes, District-wide | 13-806-2S | | x | | x | = | = | = |
| 12 | Installation of Drain Tile and Bioreactors, Fulton County | 16-605-21 | | | | x | = | = | = |
| 13 | FD&I Upgraded Coarse Screen Conveyor System at the North Branch Pumping Station, NSA | 16-704-21 | | x | | | = | = | = |
| 14 | FD&I Boiler for Equipment Garage, CWRP | 16-805-21 | | x | | | = | = | = |
| 15 | F&D Programmable Logic Controllers, Chicago River Controlling Works | 17-602-21 | | x | | | = | = | = |
| 16 | F&D Enhanced Bio-P Control Equipment, NSA | 17-609-21 | | | | x | - | - | - |
| 17 | Rehabilitate One Raw Sewage Pump Rotating Assembly, OWRP | 17-705-21 | | x | | x | = | = | = |
| 18 | FD&I HVAC Systems, CWRP | 16-803-21 | | x | | | = | = | = |
| Awards in 2018 | | | | | | | | | |
| 1 | Employee Benefits Software | 17-RFP-37 | x | | | x | = | = | = |
| 2 | Rehabilitation of Blower No. 9, CWRP | 18-803-21 | x | | | | = | + | = |
| 3 | Paint and Carpet Replacement, MOB | J15090-068 | | x | | | = | = | = |
| 4 | Enhancements to WorkForce System | MWD0000003FI | | | x | | ++ | = | = |
| 5 | FD&I Fire Detection Systems, Various Locations | 18-604-21 | | x | | x | = | = | = |
| 6 | F&D Fine Screens, Grit Classifier, and Screw Conveyors, HPWRP and SWRP | 18-608-21 | | x | | | + | = | = |
| 7 | HVAC Equipment Replacement, Various Locations | 18-611-21 | | x | | | + | = | = |
| 8 | F&D Protective Relays, CWRP and KWRP | 18-612-21 | | x | x | | - | = | = |
| 9 | F&D Bio-P Control Equipment, NSA | 18-702-21 | | | | x | - | - | - |
| 10 | F&D Turbo Blower for Process Air, HPWRP | 18-705-21 | | x | x | | + | - | - |
| 11 | FD&I Grit Screw Conveyor, CWRP | 18-802-21 | | x | x | | ++ | = | = |
| 12 | Recondition Circuit Breakers, SSA | 18-914-21 | | x | | | + | = | = |
| 13 | Rehabilitate Gloria Alitto Majewski Reservoir, KWRP | 16-708-21 | | x | x | x | + | - | - |
| 14 | Microvi Pilot | 18-180-21 | x | x | x | x | = | ++ | + |
| 15 | F&D Submersible Pump, CSA | 18-601-21 | x | | | x | = | = | = |
| 16 | F&D Hydraulic Submersible Pump, EWRP | 18-703-21 | x | | | x | + | = | = |
| 17 | F&D Motor Excitation Control Equipment, SWRP | 18-901-21 | | x | | | = | = | = |
| 18 | Rehabilitation of Elevators, MOB | J15090-054 | | x | | x | = | = | = |

| Construction Fund Operating Impacts for Awards in 2018 (continued) | | Justification | | | | Impact | | | |
|---|---|-----------------------|--------------------|-------------------------|--------------------------|-----------------|---------------|-----------------|----|
| | | <i>Capacity Needs</i> | <i>Useful Life</i> | <i>Economic Benefit</i> | <i>Safety/Regulatory</i> | <i>Manpower</i> | <i>Energy</i> | <i>Chemical</i> | |
| # | Project Name | Project Number | | | | | | | |
| 19 | Performance Management Software | MWD0000007HR | | | x | | = | = | = |
| 20 | Network Communication Switches | MWD0000015IT | x | x | x | | = | = | = |
| 21 | Rehabilitate Raw Sewage Pump Rotating Assemblies, Various Locations | 18-610-21 | | x | | x | = | = | = |
| 22 | Roof Replacement, HPWRP | 18-707-21 | | x | | | + | + | + |
| 23 | F&D Four Scum Pumps, SWRP | 18-902-21 | x | | | | + | = | = |
| 24 | F&D Stainless Steel Tandem Tanker Trailer, SWRP | 18-904-21 | | x | | | = | = | = |
| 25 | F&D Submersible Slurry Gate Pumping System, SWRP | 18-905-21 | x | | x | | + | = | = |
| 26 | Replace Media in Cooling Towers, SWRP | 18-910-21 | | x | | | = | = | + |
| 27 | FD&I Louvers for TARP Drop Shafts, SSA | 18-911-21 | | | | x | = | = | = |
| 28 | Skylight Replacement, SWRP | 18-912-21 | | x | | x | = | = | = |
| 29 | Roof Life Extension, MOB | J15090-064 | | x | | x | = | = | = |
| 30 | Avaya Telecom Project | MWD0000013IT | | x | x | | = | = | = |
| 31 | F&D Interoperable Distributed Control System Workstations and TARP Controllers, Various Locations | 17-901-21 | | x | | | = | = | = |
| 32 | F&D Station Batteries, Various Locations | 18-605-21 | | | x | | = | + | = |
| 33 | Rehabilitation of the Overhead Bridge Crane, SSA | 18-906-21 | | x | | | + | = | = |
| 34 | Renovate Bathroom Stalls, MOBC | J15090-069 | | x | | | = | = | = |
| 35 | F&D Rubber Tire Excavator/Backhoe, LASMA | 18-602-21 | | x | | x | = | = | = |
| 36 | FD&I Spring-Loaded Covers, NSA | 18-603-21 | | | | x | = | = | = |
| 37 | F&D Screener, CALSMA | 18-606-21 | | | x | | = | = | = |
| 38 | F&D Wheel Loader, LASMA | 18-607-21 | x | x | | | = | = | = |
| 39 | FD&I Storage Dome for Biosolids, HASMA | 18-609-21 | | | x | | = | = | = |
| 40 | Replacement of Railroad Grade Crossings, SSA | 18-913-21 | | | | x | + | = | = |
| 41 | F&D Two Debris Baskets, KWRP | 18-701-21 | | x | x | | + | - | - |
| 42 | Recondition Raw Sewage Pump Motor No. 1, KWRP | 18-704-21 | | x | | x | = | = | = |
| 43 | FD&I Three Bar Screens, KWRP | 18-706-21 | x | | x | x | = | + | = |
| 44 | F&D Fire Alarm System Fiber Optic Cable, SWRP | 18-903-21 | | | | x | = | = | = |
| Projects Under Development | | | | | | | | | |
| 45 | Agriculture Pilot Projects | To be determined | | | x | | = | = | = |
| 46 | Alternate Digestion Pilot Program | To be determined | | | x | | = | ++ | = |
| 47 | Phosphorus Recovery Pilot Program | To be determined | | | x | x | = | - | -- |

| LEGEND | | |
|--|-------------------------------|---|
| Under " Justification ," the marked columns note the categories of benefits expected from each project. | | |
| Manpower | | |
| + or - Labor savings (+) or increases (-) expected to result in redirecting existing manpower away from or toward facility or process to other tasks with no net change in total position costs. | ++ or -- | Labor impact significant enough to ultimately result in reduction (++) or increase (--) in personnel. See additional cost details contained in the Project Fact Sheets. |
| Energy | | |
| + or - Minor energy savings (+) or costs (-) having a negligible impact on the District's overall energy budget. | ++ or -- | Major energy savings (++) or costs (--) expected to result in significant revisions to a facility's energy budget. See additional cost details contained in the Project Fact Sheets. |
| Chemical | | |
| + or - Chemical savings (+) or costs (-) having a negligible impact on the District's overall chemical costs. | ++ or -- | Major chemical savings (++) or costs (--) expected to result in significant revisions to the budgeted chemical expenditures for the associated process. See additional cost details contained in the Project Fact Sheets. |
| = | No budgetary impact expected. | |

Television Inspection and Recording of Sewers and Manholes, District-wide

Project Number: 13-806-2S

Service Area: North, Calumet, and Stickney

Location: District-wide

Engineering Consultant: In-house design

General Contractor: National Power Rodding Corporation

Estimated Construction Cost: \$1,944,000

Contract Award Date: October 2017

Substantial Completion Date: October 2020*



Project Description: Provide the District with sewer inspection services of varying methods, including video inspection, water jetter system television inspection, zoom camera inspection, laser profiling, multi-sensor inspection, and manhole and Tunnel and Reservoir Plan drop shaft inspection. The contractor will also be responsible for cleaning, disposal, and hourly video inspection services.

Project Justification: The purpose of this contract is to determine and monitor the state of the District's existing collection systems infrastructure.

Project Status: This project is in progress.

*Information shown is estimated.

Furnish, Deliver, and Install New Tank Drives, LWRP

Project Number: 14-806-21

Service Area: Calumet

Location: Lemont WRP

Engineering Consultant: In-house design

General Contractor: Independent Mechanical Industries, Inc.

Estimated Construction Cost: \$1,132,000

Contract Award Date: September 2014

Substantial Completion Date: May 2018*



Project Description: Furnish, deliver, and install new clarifier drives on four final tanks and new mixers on one digester and one concentration tank. Refurbish and paint the structural steel members of six tanks. Refurbish two tanks per year.

Project Justification: The original tank drives are in poor condition and require excessive maintenance. The structural steel also requires replacement of miscellaneous members due to rust. Replacement of the tank drives will ensure the tanks are available to meet the operational needs of the plant.

Project Status: This project is in progress.

*Information shown is estimated.

Rehabilitation of Hydraulic Operator at TARP Gate Structure 1, CSA

Project Number: 15-802-21

Service Area: Calumet

Location: TARP Gate Structure 1

Engineering Consultant: In-house design

General Contractor: Ornelas Construction Company

Estimated Construction Cost: \$1,324,000

Contract Award Date: November 2015

Substantial Completion Date: March 2018*



Project Description: This project will include the removal, rehabilitation, and installation of the hydraulic operator on the Tunnel and Reservoir Plan (TARP) Gate Structure 1 (GS-1) in the Calumet Service Area.

Project Justification: TARP GS-1 is a critical roller gate in the Calumet Service Area that isolates the Torrence Avenue leg of the Calumet TARP System, protecting the service area from localized flooding events and providing a buffer to prevent combined sewer overflows into Lake Michigan. The roller gate is 16' x 25' and is located 300 feet underground.

The hydraulic operator, installed in 2003, controls the operation of the roller gate. Corrosion of the rod on TARP GS-1 has damaged the packing, causing a hydraulic oil leak in the cylinder that cannot be repaired in the field. As a result, the roller gate could fail in the closed position, preventing the Torrence Avenue leg of the Calumet TARP System from being dewatered after a fill event. The rehabilitation of the hydraulic operator will include an upgraded rod designed to withstand the highly corrosive environment in the drop shaft.

Project Status: This project is in progress.

*Information shown is estimated.

Rehabilitate the Digester Gas Turbine, SWRP

Project Number: 15-913-21

Service Area: Stickney

Location: Central Heat Facility

Engineering Consultant: In-house design

General Contractor: Electrical Systems, Inc.

Estimated Construction Cost: \$2,038,000

Contract Award Date: May 2016

Substantial Completion Date: March 2018*



Project Description: Furnish, deliver, and install all equipment, materials, and appurtenances necessary to rehabilitate the three-megawatt digester gas turbine at the Stickney WRP's central heat facility.

Project Justification: The purpose of the project is to rehabilitate the dormant digester gas turbine, as well as to install facility hazardous gas and fire detection systems. This project will contribute to the District's strategic goal of Resource Recovery to achieve energy neutrality by 2023 and help the District to become more environmentally friendly by converting unused digester gas into useful energy.

Project Status: This project is in progress.

*Information shown is estimated.

Industrial Waste Division and Construction Office Renovation, CWRP

Project Number: 16-268-2V

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: In-house design

General Contractor: Path Construction Company, Inc.

Estimated Construction Cost: \$2,546,000

Contract Award Date: November 2016

Substantial Completion Date: July 2018*



Project Description: The purpose of this contract is to remodel the north half of the first floor of the General Administration Building to accommodate the needs of the Monitoring & Research Department's Industrial Waste Division and the Engineering Department's Construction Division. A section of a basement storeroom will be used by the Construction Division to accommodate its Troxler Electronic Laboratories, Inc. equipment. The existing roof on the entire building has reached its useful life and will be replaced.

Six existing trailers with associated accessories will be physically removed because they have reached the end of their useful lives. Utilities to these trailers will be terminated upon their removal.

Existing fume hood exhaust valves will be replaced in the Monitoring & Research Department's Laboratory Building.

Project Justification: Industrial Waste Division and Construction Division staff require updated spaces. The abandoned laboratory areas are to be repurposed for other uses.

Project Status: This project is in progress.

*Information shown is estimated.

Installation of Drain Tile and Bioreactors, Fulton County

Project Number: 16-605-21

Service Area: Calumet

Location: Prairie Plan Site, Fulton County

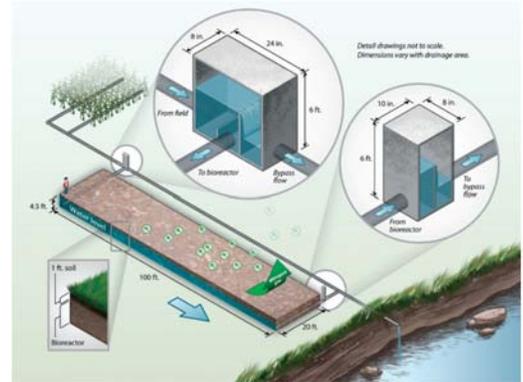
Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$150,000

Contract Award Date: October 2017*

Substantial Completion Date: December 2018*



Project Description: During the non-growing season, patterned drain tile of the recommended size and depth will be installed throughout Fulton County's Field 106, which is approximately 80 acres in size. Bioreactors will also be installed to remove the nutrients in the runoff.

Project Justification: Bioreactors are a best management practice for reducing nitrogen runoff into surface waters. Bioreactors allow anaerobic conditions to develop, which in turn allows naturally occurring denitrifiers to flourish. This project supports the District's strategic goal to Add Value by leveraging our real estate and utilizing Fulton County property for nutrient-control technology. It is expected that additional projects of this type will be planned for the Fulton County property, potentially on a watershed basis.

The project will also benefit the agricultural use of the District's Fulton County land. Increased drainage will allow fields to be planted earlier in wet springs and will assist in modeling agricultural methods in the Mississippi River Basin. Fulton County staff ranked the fields based on which agricultural land would most benefit from the installation of drainage tiles. Information was collected from our tenants, resulting in Field 106 being deemed the highest priority.

Project Status: This project is pending award.

*Information shown is estimated.

Furnish, Deliver, and Install Upgraded Coarse Screen Conveyor System at the North Branch Pumping Station, NSA

Project Number: 16-704-21

Service Area: North

Location: North Branch Pumping Station

Engineering Consultant: In-house design

General Contractor: Brieser Construction Company

Estimated Construction Cost: \$201,000

Contract Award Date: October 2017

Substantial Completion Date: December 2018*



Project Description: This project includes work to furnish, deliver, and install an upgraded coarse screen conveyor system at the North Branch Pumping Station in the North Service Area.

Project Justification: The North Branch Pumping Station's coarse screens remove debris from the incoming sewers to protect critical raw sewage pumps. The coarse screens utilize a conveyor system that was installed approximately 15 years ago to move the screenings to a dumpster. During severe rain events, the existing conveyor system becomes overloaded with debris. This condition, which has led to two drive failures in the past year, results in a build-up of debris, interferes with the operation of the coarse screens, and presents safety concerns as the screenings spill on the floor.

Project Status: This project is in progress.

*Information shown is estimated.

Rehabilitate Gloria Alitto Majewski Reservoir, KWRP

Project Number: 16-708-21

Service Area: North

Location: Gloria Alitto Majewski Reservoir

Engineering Consultant: In-house design and MWH Americas, Inc.

General Contractor: To be determined

Estimated Construction Cost: \$600,000

Contract Award Date: March 2018*

Substantial Completion Date: December 2018*



Project Description: Installation of a process water cleaning system and miscellaneous repairs and rehabilitation of Gloria Alitto Majewski Reservoir.

Project Justification: This is a water reuse project/initiative that will greatly assist with cleaning the reservoir after fill events. In 2011, the Army Corps of Engineers' reservoir inspection identified many deficiencies with the geo-membrane liner and under drainage system. Engineering Contract 06-363-3D implemented repairs based on the 2011 inspection, and the repairs were completed in 2013. In 2015, a follow-up inspection by the District's Engineering Department identified the need for additional repairs: the drainage under liner, south of intake structure, appears defective and the liner connection, concrete toe block, and roller compacted concrete are all deficient to some degree.

Project Status: The project is being developed.

*Information shown is estimated.

Furnish, Deliver, and Install HVAC Systems, CWRP

Project Number: 16-803-21

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$380,000

Contract Award Date: November 2017*

Substantial Completion Date: August 2018*



Project Description: Demolish and remove five air conditioning systems and furnish, deliver, and install replacement systems. These include the administration building's computer room HVAC and supplemental cooling system, the administration building's control room cooling system, the digester control room's cooling system, and the Tunnel and Reservoir Plan control room's cooling system.

Project Justification: The five air conditioning units control the air temperature for the computer and control rooms, which protect electrical equipment from overheating and equipment failure. The electrical equipment in these rooms consists of process monitors, distributed control system computers, phone systems, information technology networks, HVAC controls, computer workstations, and control cabinet input/output modules. These systems have been in service for over 20 years and various repairs have been made over the past several years, including compressor replacements, coil leak repairs, repair and replacement of condenser fans and fan motors, repair and replacement of solenoid expansion valves, and pneumatic control repairs. The corrective maintenance on these units is extensive, and reliability has become progressively worse over the past few years. Due to the corrosive gases and harsh environment, the evaporator coils, condenser coils, steam coils, compressors, fan drive components, refrigerant piping, and controls have experienced significant deterioration. The cooling system for the digester control room is no longer functional, and it is not economically feasible to repair it. Furthermore, the Tunnel and Reservoir Plan control room does not have backup cooling, so unit reliability is vital to ensure reliability of the electrical equipment in the area.

The project will minimize future maintenance costs and ensure increased reliability to protect District assets.

Project Status: This project is under review.

*Information shown is estimated.

Furnish, Deliver, and Install Boiler for Equipment Garage, CWRP

Project Number: 16-805-21

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$240,000

Contract Award Date: October 2017*

Substantial Completion Date: August 2018*



Project Description: Furnish, deliver, and install a hot water boiler for the heavy equipment garage at the Calumet WRP.

Project Justification: The new heavy equipment garage at the Calumet WRP houses District equipment such as snow plows, tractors, portable cranes, trailers, and excavators. The garage protects this equipment from inclement weather and freezing conditions, significantly increasing the longevity of the equipment and decreasing the maintenance costs. A boiler is needed to provide hot water for the radiant hydronic heat tubing incorporated into the building floor at the time of its construction.

The project will supply a cost-effective means to provide heating for the building and will allow for the control of air temperature and relative humidity to protect District assets, increase their useful life, and minimize future maintenance costs.

Project Status: This project is under review.

*Information shown is estimated.

Furnish, Deliver, and Install Upgraded Vacuum System at the 95th Street Pumping Station, CSA

Project Number: 16-806-21

Service Area: Calumet

Location: 95th Street Pumping Station

Engineering Consultant: In-house design

General Contractor: Ornelas Construction Company

Estimated Construction Cost: \$286,000

Contract Award Date: April 2017

Substantial Completion Date: June 2018*



Project Description: Replace problematic equipment and install modern technology to ensure increased dependability of the vacuum priming systems at the 95th Street Pumping Station and reduce the risk of flooding during rain events.

Project Justification: The wet-weather and dry-weather centrifugal pumps at the 95th Street Pumping Station require a functional vacuum system to raise the level of the wet well in order to initiate operation. The District has consistently followed the manufacturer's recommended maintenance schedule for the electrical equipment, motors, vacuum pumps, and control valves. Recently, however, the reliability of the vacuum systems has diminished and has caused significant operational difficulties during rain events.

Project Status: This project is in progress.

*Information shown is estimated.

Furnish and Deliver Six Grit Pumps, CWRP

Project Number: 16-810-21

Service Area: Calumet

Location: Calumet Grit Building

Engineering Consultant: In-house design

General Contractor: Atlas & Associates, Inc.

Estimated Construction Cost: \$96,000

Contract Award Date: October 2016

Substantial Completion Date: May 2018*



Project Description: Furnish and deliver six submersible grit pumps for the Calumet WRP.

Project Justification: There are eight submersible aerated grit tanks, each of which use submersible grit pumps for removing grit. The existing submersible grit pumps are prone to clogging. The existing submersible grit pumps are rated at 300 gallons per minute, at 14 feet total dynamic head. Other submersible grit pumps rated at 362 gallons per minute, at 17 feet total dynamic head, have been installed in grit tanks 1 and 6 with no signs of clogging. Under this project, the remaining small submersible grit pumps will be replaced with the higher performing submersible grit pumps.

Project Status: This project is in progress.

*Information shown is estimated.

Applicant Management and Tracking, Onboarding, and Performance Management Systems

Project Number: 16-RFP-02

Service Area: North, Calumet, and Stickney

Location: MOBA

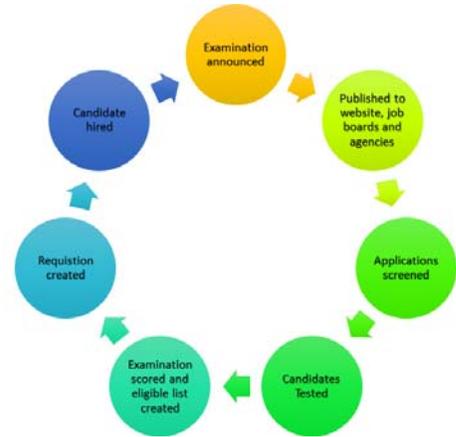
Engineering Consultant: In-house design

General Contractor: JobAps, Inc.

Estimated Construction Cost: \$147,000

Contract Award Date: November 2016

Substantial Completion Date: April 2018*



Project Description: Applicant tracking software is used to track and manage all activity related to the District’s recruitment, examination, eligible list certification and requisition processes for employee hiring. Job applicants use the system to view open jobs, create, update, and submit applications, and receive automatic email notices when a job opens in their desired job class. The system is also used to score examinations, create eligible lists, communicate with applicants, and manage the eligible list certification process.

Project Justification: The District’s current applicant tracking system is antiquated; the replacement software solution is compatible with current technologies. In addition to the functionality described above, employment applications will display well on multiple platforms, including smartphones and tablets. The system will facilitate posting job information to social media platforms and will automate the employment requisition, certification and appointment process.

Project Status: This project is in progress.

*Information shown is estimated.

Furnish and Deliver Programmable Logic Controllers, Chicago River Controlling Works

Project Number: 17-602-21

Service Area: Stickney

Location: Waterways

Engineering Consultant: In-house design

General Contractor: Emerson Process Management Power & Water Solutions

Estimated Construction Cost: \$90,000

Contract Award Date: October 2017*

Substantial Completion Date: March 2018*



Project Description: Furnish and deliver programmable logic controllers for the Chicago River Controlling Works.

Project Justification: Furnish and deliver three new Emerson-Bristol ControlWave programmable logic controllers with local operator interface to replace the existing and outdated equipment. The Maintenance & Operations Department's distributed control system (DCS) group will provide all labor to perform the design/programming/integration of the existing logic controllers into the new system and connect these units to the existing Waterways Control Section's Emerson DCS. District trades will perform the installation and the DCS group will perform the testing.

Project Status: This project is under review.

*Information shown is estimated.

Furnish and Deliver Enhanced Bio-P Control Equipment, NSA

Project Number: 17-609-21

Service Area: North

Location: Kirie and O'Brien WRPs

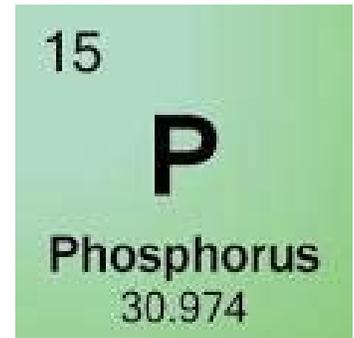
Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$240,000

Contract Award Date: October 2017*

Substantial Completion Date: April 2018*



Project Description: Furnish and deliver new phosphorus, ammonia, dissolved oxygen, and oxidation reduction potential instrumentation probes and analyzers, as well as non-stock electrical material for installation by District trades.

Project Justification: The purpose of this contract is to procure phosphorus, ammonia, dissolved oxygen, and oxidation reduction potential instrumentation and appurtenances for use at the Kirie and O'Brien WRPs. The equipment and materials are needed as part of the automation of phosphorus recovery. This project will advance the District's strategic goal of Resource Recovery.

Project Status: This project is under review.

*Information shown is estimated.

Furnish and Deliver Stake Body Truck and Dump Truck, NSA

Project Number: 17-703-21

Service Area: North

Location: Egan and O'Brien WRPs

Engineering Consultant: In-house design

General Contractor: Rush Truck Centers of Illinois

Estimated Construction Cost: \$265,000

Contract Award Date: June 2017

Substantial Completion Date: March 2018*



Project Description: Furnish and deliver one stake body truck with a lift gate to the Egan WRP and one dump truck with a snow plow and salt spreader to the O'Brien WRP.

Project Justification: This project provides for the replacement of the stake body truck at the Egan WRP and the dump truck at the O'Brien WRP. There are only two large stake body trucks and one dump truck in the North Service Area. The trucks provide in-plant and inter-plant transportation of equipment and material for all four North Service Area plants.

Current total maintenance costs are \$60,540, but these costs are anticipated to increase significantly due to the age of the vehicles.

Project Status: This project is in progress.

*Information shown is estimated.

Rehabilitate One Raw Sewage Pump Rotating Assembly, OWRP

Project Number: 17-705-21

Service Area: North

Location: O'Brien WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$200,000

Contract Award Date: October 2017*

Substantial Completion Date: December 2018*



Project Description: This project will include the complete rebuild of one 65 millions of gallons per day (MGD) main raw sewage pump (RSP) rotating assembly at the O'Brien WRP. Rehabilitation work includes sandblasting, inspection, machining, and weld repair of the impeller, as well as fabrication of new components to replace typical wear items. Typical wear items include a pump shaft, casing rings, impeller rings, and shaft sleeves. In addition, the work will require the reassembly and the balancing of the rotating assembly to International Standard Organization Standard G6.3.

Project Justification: The O'Brien WRP has six main RSPs with various flow capabilities. RSP No. 1 and RSP No. 2 can each pump 97 MGD, RSP No. 3 and RSP No. 4 can each pump 65 MGD, and RSP No. 5 and RSP No. 6 can each pump 130 MGD. During a rain event, five main raw sewage pumps are required to be in service to reach the maximum plant flow. Currently, the O'Brien WRP has no spare stainless steel rotating assembly for the 65 MGD pumps.

Centrifugal pumps 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 project will rehabilitate one worn rotating assembly, which has been removed from a 65 MGD main raw sewage pump at the O'Brien WRP. Having a spare rotating assembly on hand significantly reduces the downtime required to replace a main raw sewage pump rotating assembly in case of failure.

Project Status: This project is under review.

*Information shown is estimated.

Recondition Raw Sewage Pump Motor No. 3, KWRP

Project Number: 17-710-21

Service Area: North

Location: Kirie WRP

Engineering Consultant: In-house design

General Contractor: Omni Drive Holdings, LLC

Estimated Construction Cost: \$127,000

Contract Award Date: August 2017

Substantial Completion Date: May 2018*



Project Description: Recondition the motor and magnetic drive for raw sewage pump motor no. 3 at the Kirie WRP.

Project Justification: In 2016, vibration analysis testing of raw sewage pump motor no. 3 showed excessive vibration on the motor/clutch assembly, beyond the acceptable industry standards. The reliability and safe operation of raw sewage pump motor no. 3 are impacted due to the significant wear of its motor/clutch components. The raw sewage pump has been in service for 38 years and is due for an overhaul.

Project Status: This project is in progress.

*Information shown is estimated.

Furnish and Deliver Interoperable Distributed Control System Workstations and TARP Controllers, Various Locations

Project Number: 17-901-21

Service Area: Stickney

Location: Mainstream and Racine Avenue Pumping Stations

Engineering Consultant: In-house design

General Contractor: Emerson Process Management Power & Water Solutions

Estimated Construction Cost: \$125,000

Contract Award Date: May 2018*

Substantial Completion Date: December 2018*



Project Description: This project will furnish and deliver two distributed control system workstations for the control rooms at the Mainstream and Racine Avenue Pumping Stations. District trades will install all equipment associated with the project. One mobile single channel autonomous trunking unit will also be provided for each pumping station to enable control of the Stickney Service Area Tunnel and Reservoir Plan structures should the control room lose function.

Project Justification: Concerns were raised in 2015 over the lack of alternate site control over each plant. These concerns led to an internal study of the interoperability of major District plants and pumping stations, particularly for a scenario where the loss of local control room facilities/functionality would require remote control from an alternate location. The addition of two workstations at each pumping station will enable interoperable control of the alternate pumping station or control of the Stickney WRP in the event of a catastrophic failure at a remote control room.

Project Status: This project is in development.

*Information shown is estimated.

Automated CAFR and Budget Solution

Project Number: 17-RFP-22

Service Area: Stickney

Location: Main Office Building

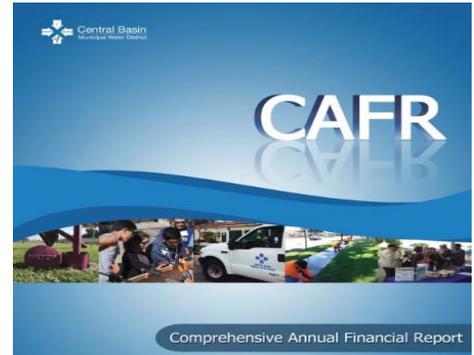
Engineering Consultant: In-house design

General Contractor: OpenGov, Inc.

Estimated Construction Cost: \$25,000

Contract Award Date: September 2017

Substantial Completion Date: February 2018*



Project Description: The scope of the project is to procure a fully hosted web application to compile and publish two Comprehensive Annual Financial Reports, one for the Other Postemployment Benefit Trust and one for the District, and the budget document for the District. The solution will integrate to the enterprise resource management system (SAP) in order to automatically link financial data to the final published document and will use workflow so documents can be requested and submitted electronically between departments.

Project Justification: Currently, financial schedules and a variety of documents are requested and compiled either using Microsoft Word, Microsoft Excel, In-Design, or the Public Budget Formulation software. There have been significant improvements in publishing tools that will substantially automate the current manual processes of requesting, editing, and compiling documents and figures, and ultimately decrease the turnaround time to produce a final published document.

Project Status: This project is in progress.

*Information shown is estimated.

Employee Benefits Software

Project Number: 17-RFP-37

Service Area: North, Calumet, and Stickney

Location: District-wide

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$75,000

Contract Award Date: January 2018*

Substantial Completion Date: December 2018*



Project Description: To provide a single source of information for employees in selecting their benefits and improve the functionality and user experience for existing employees and new hires. The software platform will serve as the employee-facing portal for employees to manage their benefits, provide human resources staff with a benefits administration portal, serve as a conduit for the exchange of information between the District and its insurance carriers, and provide reporting related to District benefit programs.

Project Justification: This software platform will improve communication of benefit programs, reduce the need for paper mailings to employees, streamline the process for collecting benefits information from employees, and provide a more efficient exchange of information with benefit providers.

Project Status: This project is pending award.

*Information shown is estimated.

Microvi Pilot

Project Number: 18-180-21

Service Area: North

Location: O'Brien WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$250,000

Contract Award Date: March 2018*

Substantial Completion Date: December 2018*



Project Description: The Monitoring & Research Department plans to begin construction and operation of a pilot unit of the MicroNiche™ technology at the O'Brien WRP. The MicroNiche™ technology is a suite of products that target specific pollutants for removal by way of biocatalysts that are self-contained stable communities of mature organisms. The MicroNiche™ technology can be used to remove Biochemical Oxygen Demand (BOD), ammonia (NH₃), and phosphorus (P) in a manner that provides numerous benefits over the traditional activated sludge and enhanced biological phosphorus removal processes. For example, MicroNiche™ can accomplish BOD, NH₃, and P removal in a tank volume less than that required for activated sludge. This could be a benefit if applied at the O'Brien WRP, which does not seem to have sufficient aeration tank capacity to create an anaerobic zone required for enhanced biological phosphorus removal, without negatively affecting nitrification. In addition, MicroNiche™ operates at a much lower mixed liquor suspended solids concentration than activated sludge. Therefore BOD and NH₃ removal can be accomplished in a smaller tank volume and with less air requirements, leading to a potential 35 percent reduction in energy costs. MicroNiche™ operates with 95 percent less secondary solids production than activated sludge, which could have multiple benefits if applied at the O'Brien WRP, including lower solids loading on the final clarifiers during stress periods, less impact on the aging sludge force main, and a significant savings in solids processing costs at the Stickney WRP. All this can be accomplished through repurposing the existing aeration tanks with a modest amount of modifications.

The goals of the project are as follows: 1) Achieve effluent requirements relative to the future O'Brien WRP National Pollutant Discharge Elimination System (NPDES) permit with respect to total suspended solids, Carbonaceous Biochemical Demand, ammonia-nitrogen, and phosphorus; 2) Quantify reduction in operating costs and solids production; 3) Assess ease of operation of the system; and 4) Establish design and economic parameters required for the Monitoring & Research Planning Section to prepare a life cycle analysis of the feasibility and economics of full-scale application at the O'Brien WRP.

This project works to address the following Strategic Business Plans:

Goal 1: Add value by reducing mainstream operation costs and sludge production.

Goal 2: Deliver excellence in terms of developing an approach that will meet future NPDES permit effluent discharge limits without the need for construction of additional tank capacity.

Goal 3: The potential of helping the District to achieve the resource recovery goal through producing a phosphorus-rich stream for recovery and reducing energy requirements.

Goal 6: Accelerate the adoption of a disruptive technology that could potentially change the approach to wastewater treatment at other District water reclamation plants.

Project Justification: The O'Brien WRP has limited aeration capacity to meet its current NPDES permits for BOD, NH₃, and P removal. This biocatalyst technology has the potential to replace activated sludge, be retrofitted into the current tank infrastructure, reduce sludge to Stickney, meet the NPDES permits, and reduce operational and capital expenditure costs.

Project Status: This project is in the design phase.

*Information shown is estimated.

Furnish and Deliver Submersible Pump, CSA

Project Number: 18-601-21

Service Area: Calumet

Location: Sidestream Elevated Pool Aeration Station 1

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$200,000

Contract Award Date: March 2018*

Substantial Completion Date: May 2018*



Project Description: Furnish and deliver submersible pump and components for Sidestream Elevated Pool Aeration Station (SEPA) 1.

Project Justification: SEPA 1 is required to operate under the Calumet National Pollutant Discharge Elimination System Permit to maintain water quality standards in the waterways. The SEPA station originally had four pumps when the station was built in 1994. Historically, one pump has been needed to maintain the dissolved oxygen limit in the waterway. There will be one new pump available for the 2017 season, but the other three pumps are not functioning and are beyond repair. The additional pump will act as a backup when the new pump is down for maintenance or repair.

Additionally, this SEPA station is surrounded by open lands that are visited by bird watchers and outdoor enthusiasts. The City of Chicago plans to install a trail for more public access on the adjacent property and is encouraging people to visit the area. As such, there is a potential for more people to visit the SEPA station and enjoy the flowing pools.

Project Status: This project is in development.

*Information shown is estimated.

Furnish and Deliver Rubber Tire Excavator/Backhoe, LASMA

Project Number: 18-602-21

Service Area: Stickney

Location: Lawndale Avenue Solids Management Area (LASMA)

Engineering Consultant: In-House Design

General Contractor: To be determined

Estimated Construction Cost: \$225,000

Contract Award Date: June 2018*

Substantial Completion Date: December 2018*



Project Description: Furnish and deliver one rubber tire excavator/backhoe to LASMA.

Project Justification: The excavator is needed to assist with unloading the centrifuge cake from the train cars and to clear the ditches to improve the drainage at the drying sites.

Project Status: This project is in development.

*Information shown is estimated.

Furnish, Deliver, and Install Spring-Loaded Covers, NSA

Project Number: 18-603-21

Service Area: North

Location: North Branch Tunnel and Reservoir Plan (TARP)

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$75,000

Contract Award Date: June 2018*

Substantial Completion Date: October 2018*



Project Description: Install spring-loaded covers in four North Branch TARP control structures.

Project Justification: The access hatches to four TARP control structures have been damaged and repaired several times after rapid fill events. Once McCook Reservoir Phase I comes online, the rapid fill events and resultant damage to the access covers should not reoccur.

Project Status: This project is in development.

*Information shown is estimated.

Furnish, Deliver, and Install Fire Detection Systems, Various Locations

Project Number: 18-604-21

Service Area: Calumet and Stickney

Location: Calumet and Stickney WRPs and Lockport Powerhouse

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$560,000

Contract Award Date: February 2018*

Substantial Completion Date: December 2018*



Project Description: Remove obsolete life-safety equipment, deliver and install new programmable fire alarm panels and network components at the Calumet WRP, Mainstream Pumping Station, and Lockport Powerhouse.

Project Justification: The fire panels have been in service since 1992 and the manufacturer will stop providing parts in 2018. The lack of replacement parts jeopardizes our ability to maintain this life-safety equipment to an acceptable standard. Specifically, only the obsolete fire control panels will be replaced as the hundreds of sensors connected to them, despite their vintage, can still be maintained and will be able to communicate with the replacement panels.

Upgrading the obsolete fire panels to newer models will improve our ability to properly maintain the entire life-safety systems at these locations.

Project Status: This project is being designed.

*Information shown is estimated.

Furnish And Deliver Station Batteries, Various Locations

Project Number: 18-605-21

Service Area: Calumet and Stickney

Location: Lockport Powerhouse, Calumet, and Stickney WRPs

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$250,000

Contract Award Date: May 2018*

Substantial Completion Date: December 2018*



Project Description: The purpose of the project is to furnish and deliver station batteries to various locations in the Calumet and Stickney Water Reclamation Plants. The batteries will be replaced by District trades.

Project Justification: The station batteries at the various service areas need to be replaced as they have started to deteriorate. The batteries are needed for the switchgear circuit breaker controls and for emergency loads. The existing batteries are in a poor state and the cells, jars, and specific gravities are all becoming less reliable. At the Lockport Power House, for instance, the jars have started to leak and the specific gravities have started to decrease, which may limit the charging capacities of the battery lineups. The Lockport Powerhouse generates electricity and transfers it to Commonwealth Edison's power grid for which the District receives substantial energy credit.

Project Status: This project is in development.

*Information shown is estimated.

Furnish and Deliver Screener, CALSMA

Project Number: 18-606-21

Service Area: Calumet

Location: Calumet Solids Management Area (CALSMA)

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$400,000

Contract Award Date: June 2018*

Substantial Completion Date: December 2018*



Project Description: Furnish and deliver one screener to CALSMA.

Project Justification: The screener is needed to expand and improve the composting operation. The overall goal is to create a sustainable commercial market for the District's biosolids and to create products tailored to the needs of the customer.

Project Status: The project is in development.

*Information shown is estimated.

Furnish and Deliver Wheel Loader, LASMA

Project Number: 18-607-21

Service Area: Stickney

Location: Lawndale Avenue Solids Management Area (LASMA)

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$350,000

Contract Award Date: June 2018*

Substantial Completion Date: December 2018*



Project Description: Furnish and deliver one wheel loader to LASMA using the State of Illinois Contract.

Project Justification: The wheel loader is needed to create compost piles and to handle vegetative materials. The overall goal is to create a sustainable commercial market for the District's biosolids and to create products tailored to the needs to the customer.

Project Status: The project is in development.

*Information shown is estimated.

Furnish and Deliver Fine Screens, Grit Classifier, and Screw Conveyors, HPWRP and SWRP

Project Number: 18-608-21

Service Area: North and Stickney

Location: Hanover Park and Stickney WRPs

Engineering Consultant: In-house design

General Contractor: District trades

Estimated Construction Cost: \$580,000

Contract Award Date: February 2018*

Substantial Completion Date: October 2018*



Project Description: At the Hanover Park WRP, replace the grit classifier, two catenary fine screens with traveling bar rake screens, and the flat belt conveyor with an enclosed shaftless screw conveyor. At the Stickney WRP, replace two shafted screw conveyors for scum concentration.

Project Justification: Hanover Park WRP: The 35-year-old screens and conveyor frames are corroding. The bar screens and beach plate are in need of replacement, and the grit classifier trough, which has been repaired numerous times, is beginning to wear through. Switching to enclosed equipment will reduce odors.

Stickney WRP: The existing shafted screw conveyors move scum from the scum concentration tanks to the dumpster. The bearing supports have been repaired frequently, and the auger is worn and is in need of replacement. The support bearings trap debris causing the conveyor to overflow. The shaftless screw conveyor rides on the trough, so there are no supports for debris to get caught on. Maintenance costs have risen drastically in the past five years. The conveyors will be installed by District trades.

Project Status: The project is under review.

*Information shown is estimated.

Furnish, Deliver, and Install Storage Dome for Biosolids, HASMA

Project Number: 18-609-21

Service Area: Stickney

Location: Harlem Avenue Solids Management Area (HASMA)

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$350,000

Contract Award Date: June 2018*

Substantial Completion Date: December 2018*



Project Description: Install a bulk storage dome for composted biosolids at HASMA.

Project Justification: The storage dome is needed to protect ready-to-ship compost from precipitation. It will also help to reduce odors. This project supports the Strategic Business Plan strategies of creating a sustainable commercial market for the District's biosolids and adopting an approach that strives to deliver products and services that satisfy our customers.

Project Status: This project is in development.

*Information shown is estimated.

Rehabilitate Raw Sewage Pump Rotating Assemblies, Various Locations

Project Number: 18-610-21

Service Area: Stickney

Location: O'Brien and Stickney WRPs

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$625,000

Contract Award Date: April 2018*

Substantial Completion Date: March 2020*



Project Description: This project will include a complete rebuild of one main raw sewage pump rotating assembly for the O'Brien WRP and three main raw sewage pump rotating assemblies for the Stickney WRP. Rehabilitation work includes sandblasting, inspection, machining, and weld repair of the impellers as well as fabrication of new components to replace typical wear items. This would include new pump shafts, casing rings, impeller rings, shaft sleeves, etc. for the rotating assemblies. In addition, the Contract work will require the reassembly and the balancing of the rotating assemblies to ISO Standard G6.3.

Project Justification: The O'Brien WRP has six main raw sewage pumps (RSP) with various flow capabilities. RSP No. 1 and No. 2 can each generate 97 millions of gallons per day (MGD), RSP No. 3 and No. 4 can produce 65 MGD each while RSP No. 5 and No. 6 can each pump 130 MGD. 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 seven main raw sewage pumps in the West Side Pumping Station. RSP No. 1 and No. 2 can each generate 65 MGD. RSP No. 3 through RSP No. 7 can each generate 130 MGD. In addition, the Stickney WRP has six main raw sewage pumps for the Southwest Side in the Pump & Blower House. RSP No. 1 through RSP No. 4 can each generate 200 MGD. RSP No. 5 and No. 6 can each generate 240 MGD. During a rain event, various combinations of main raw sewage pumps are utilized to reach the maximum plant flow. In some instances, ten of the twelve main raw sewage pumps are required.

Centrifugal pumps 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 increase, 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 65 MGD rotating assembly removed from RSP No. 4 at the O'Brien WRP as well as three rotating assemblies at the Stickney WRP. This includes one 130 MGD rotating assembly removed from West Side RSP No. 3, one 200 MGD rotating assembly removed from Southwest RSP No. 3 and one 240 MGD rotating assembly removed from Southwest RSP No. 5. Note that 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: This project is in development.

*Information shown is estimated.

HVAC Equipment Replacement, Various Locations

Project Number: 18-611-21

Service Area: North and Calumet

Location: O'Brien and Calumet WRPs

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$990,000

Contract Award Date: February 2018*

Substantial Completion Date: December 2019*



Project Description: This project includes the replacement of the following equipment: Make-up air units for concentration at the Calumet WRP, Penthouse air handling units and condensing units for the Administration Building at the Calumet WRP, reciprocating chillers in the Process Control Building at the Calumet WRP, and rooftop units for the Administration Building at the O'Brien WRP.

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.

Project Status: This project is being designed.

*Information shown is estimated.

Furnish and Deliver Protective Relays, CWRP and KWRP

Project Number: 18-612-21

Service Area: North and Calumet

Location: Calumet and Kirie WRPs

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$125,000

Contract Award Date: February 2018*

Substantial Completion Date: July 2018*



Project Description: Replace existing feeder protection relays at the Calumet and Kirie WRPs.

Project Justification: The Calumet WRP has 50 Eaton FP5000 feeder protection relays in service. There are 16 in the main switchgear, 20 in the Tunnel and Reservoir Plan switchgear, 10 in the High Level Influent Pumping Station, and four at the 125th Street Pumping Station. The Kirie WRP has four feeder protection relays for the incoming feeders at the main substation. These feeder protection relays have been failing for the past several years and obtaining repair services has become increasingly difficult due to the non-availability of repair parts from the manufacturer, Eaton. The replacement cost of the FP5000 relay is \$7,695 with long lead times, whereas the cost of the new Schweitzer Engineering Laboratories relay with the same functionality is approximately \$2,500 and is readily available with a 10-year warranty. The District's Engineering Department has standardized on Schweitzer Engineering Laboratories relays for all new projects.

Project Status: This project is in the design phase.

*Information shown is estimated.

Furnish and Deliver Two Debris Baskets, KWRP

Project Number: 18-701-21

Service Area: North

Location: Kirie WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$200,000

Contract Award Date: July 2018*

Substantial Completion Date: December 2018*



Project Description: Furnish and deliver two new debris baskets to the Kirie WRP.

Project Justification: The debris baskets are currently positioned approximately 200 feet underground and screen the incoming flow prior to the coarse screens. The debris baskets capture any large objects that can significantly damage the coarse screens and the raw sewage pumps. The debris baskets are original to the plant (1980) and have only been modified (in-house) once in 38 years. The debris baskets have to be raised and manually cleaned. The debris baskets are corroded, which increases the chance of them being significantly damaged. Also, the corrosion poses a safety issue while cleaning because the baskets need to be suspended at the top during cleaning.

Project Status: This project is in development.

*Information shown is estimated.

Furnish and Deliver Bio-P Control Equipment, NSA

Project Number: 18-702-21

Service Area: North

Location: Kirie and O'Brien WRPs

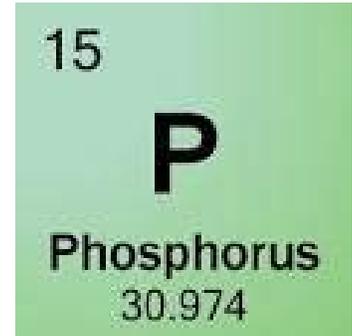
Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$70,000

Contract Award Date: February 2018*

Substantial Completion Date: December 2018*



Project Description: The contractor shall furnish and deliver new phosphorus probes and analyzers to the Kirie and O'Brien WRPs.

Project Justification: The purpose of this contract is to procure phosphorus instrumentation and appurtenances for nutrient removal. The probes are needed as part of the automation of the phosphorus recovery process. This project will advance the District's strategic goal of Resource Recovery.

Project Status: This project is under review.

*Information shown is estimated.

Furnish and Deliver Hydraulic Submersible Pump, EWRP

Project Number: 18-703-21

Service Area: North

Location: Egan WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$50,000

Contract Award Date: March 2018*

Substantial Completion Date: July 2018*



Project Description: Procure a four-inch hydraulic submersible pump with diesel power pack for the Egan WRP.

Project Justification: This pump will provide the ability to pump out tanks, tunnels, and siphons that are more than 60 feet below ground. The current diesel pump can only pump down to 25 feet below ground because it is a self-priming model. Another drawback of the self-priming pump is that it has to be in close proximity to the media being pumped. A hydraulic submersible pump is attached to the power pack by hydraulic hoses. The power pack can be more than a 100 feet from the pump, which allows the pump to be placed in tight spaces and inside buildings without the worry of generating carbon monoxide fumes from the diesel engine. The pump can also be operated safely in a hazardous environment and fits in a 19-inch diameter manhole.

Project Status: This project is in the preliminary planning stage.

*Information shown is estimated.

Recondition Raw Sewage Pump Motor No. 1, KWRP

Project Number: 18-704-21

Service Area: North

Location: Kirie WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$180,000

Contract Award Date: July 2018*

Substantial Completion Date: December 2019*



Project Description: Recondition motor and magnetic drive for raw sewage pump no. 1 at the Kirie WRP.

Project Justification: In 2016, the vibration analysis testing of raw sewage pump no. 1 showed excessive vibration on the motor/clutch assembly beyond the acceptable industry standards. The reliability and safe operation of raw sewage pump no. 1 are impacted due to the significant wear of its motor/clutch components. Raw sewage pump no. 1 has been in service for 36 years and is due for an overhaul.

Project Status: This project is in development.

*Information shown is estimated.

Furnish and Deliver Turbo Blower for Process Air, HPWRP

Project Number: 18-705-21

Service Area: North

Location: Hanover Park WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$185,000

Contract Award Date: February 2018*

Substantial Completion Date: August 2018*



Project Description: Furnish and deliver one high-speed turbo blower and electrical and mechanical accessories for the process air blowers at the Hanover Park WRP.

Project Justification: The project entails replacing two existing process air blowers with one high-speed turbo blower at the Hanover Park WRP, using District trades for the installation. The contractor will furnish and deliver the turbo blower assembly and all electrical and mechanical accessories needed to replace the blowers. The turbo blower uses non-friction air or magnetic bearings instead of the ball bearings used in a conventional blower, which makes the turbo blower more energy efficient.

The existing multi-stage blowers have no variable frequency drive motor controls. The air demand is controlled by throttling the air-inlet valve, which always operates at full speed, irrespective of air flow. The turbo blower has variable frequency drive motor controls, which will accurately control the speed based on the air flow, resulting in additional energy savings. Furthermore, due to the turbo blower's low-operating sound levels, the noise pollution will be reduced significantly.

Project Status: This project is in the design phase.

*Information shown is estimated.

Furnish, Deliver, and Install Three Bar Screens, KWRP

Project Number: 18-706-21

Service Area: North

Location: Kirie WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$750,000

Contract Award Date: July 2018*

Substantial Completion Date: December 2019*



Project Description: Install three bar screens at the Kirie WRP.

Project Justification: The 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 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: This project is in development.

*Information shown is estimated.

Roof Replacement, HPWRP

Project Number: 18-707-21

Service Area: North

Location: Hanover Park WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$490,000

Contract Award Date: April 2018*

Substantial Completion Date: December 2018*



Project Description: Removal and replacement of the roofing system at the tertiary building.

Project Justification: The tertiary building roofing system is 17 years beyond its warranty expiration date. The inspection performed in 2016 by K2N Crest indicated that the roof is in “poor” condition. Moisture content test results indicated that 80 percent of the roof insulation is saturated. The report further indicated that some spray on roofing materials were gone and delamination was noted around the skylights.

Project Status: The project is in the preliminary design stage.

*Information shown is estimated.

Furnish, Deliver, and Install Grit Screw Conveyor, CWRP

Project Number: 18-802-21

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$300,000

Contract Award Date: February 2018*

Substantial Completion Date: September 2018*



Project Description: Furnish, deliver, and install one screw conveyor in a grit tank in the grit building at the Calumet WRP.

Project Justification: The grit building has eight traveling bridge grit tanks that were installed four years ago. There have been seven bridge misalignment problems in four years. The festoon rollers have been replaced at a cost of approximately \$4,500 per tank. There have also been numerous problems with proximity and limit switches. Staff investigated putting the bridges on rails to eliminate misalignments, but the cost of parts alone is \$177,880. The estimated cost for installing a screw conveyor is \$300,000. Screw conveyors are less complex than traveling bridges because they have fewer moving parts. Electrical components on traveling bridges are prone to failure due to hydrogen sulfide. The screw conveyor will be controlled through distributed control systems that will result in fewer electrical components being exposed to hydrogen sulfide.

Project Status: The project is under review.

*Information shown is estimated.

Rehabilitation of Blower No. 9, CWRP

Project Number: 18-803-21

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: Howden Roots, LLC

General Contractor: Howden Roots, LLC

Estimated Construction Cost: \$450,000

Contract Award Date: January 2018*

Substantial Completion Date: December 2018*



Project Description: Sole source service to rehabilitate the damaged diffuser ring and rotating assembly on Blower No. 9.

Project Justification: Blower No. 9 is one of two 75,000 CFM blowers. It is needed for the aeration process in the Calumet WRP's secondary treatment facilities. The blower diffuser ring and rotating assembly were damaged during operation. If this blower is not available, a larger blower may have to be used, which would increase energy costs unnecessarily.

Project Status: This project is being designed based on an inspection report from Howden Roots, LLC.

*Information shown is estimated.

Furnish and Deliver Motor Excitation Control Equipment, SWRP

Project Number: 18-901-21

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$245,000

Contract Award Date: March 2018*

Substantial Completion Date: December 2018*



Project Description: Furnish and deliver replacement Basler motor excitation control equipment for the southwest and west side main raw sewage pump synchronous motors. Installation will be performed by District trades.

Project Justification: The existing synchronous motor power factor controllers and voltage regulators that control the excitation of the southwest and west side main raw sewage pumps are obsolete and no longer manufactured or supported. Because the analog controllers are unable to hold a setting, they negatively affect sewage conveyance.

Project Status: This project is being designed.

*Information shown is estimated.

Furnish and Deliver Four Scum Pumps, SWRP

Project Number: 18-902-21

Service Area: Stickney

Location: Battery D

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$100,000

Contract Award Date: April 2018*

Substantial Completion Date: August 2018*



Project Description: Furnish and deliver four scum pumps for the Battery D ejector houses.

Project Justification: The scum troughs in the 24 Battery D final tanks flow out by gravity to a single scum pump in the D-1 ejector house, which is located in the northeast corner of the battery. There is no pit for the scum to flow into and the pump is on a timer. This arrangement prevents the piping system from draining completely, which in turn prevents the full and equal removal of the scum from the final tanks, resulting in backups. Under this project, scum pumps for four ejector houses will be procured. Each pump will take flow from either four or eight final tanks. By installing these pumps, there will be a more even removal of scum from each final tank to eliminate backups. The installation will be performed by District trades.

Project Status: This project is in development.

*Information shown is estimated.

Furnish and Deliver Fire Alarm System Fiber Optic Cable, SWRP

Project Number: 18-903-21

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$25,000

Contract Award Date: July 2018*

Substantial Completion Date: December 2018*



Project Description: Furnish and deliver a fiber optic network for the fire alarm system at the Stickney WRP.

Project Justification: An independent fiber optic network will make full use of the proprietary communication protocols of the fire alarm system, while avoiding scheduled and unplanned network outages associated with the Stickney WRP's distributed control system. The current fire alarm system uses the distributed control system to pass alarm active/inactive status to the main Fire Alarm Control Panel. The fiber optic network will allow communication of all available status and alarm information from field panels to the main Fire Alarm Control Panel and the annunciator located outside of the main control room. Installation will be performed by District trades.

Project Status: This project is in development.

*Information shown is estimated.

Furnish and Deliver Stainless Steel Tandem Tanker Trailer, SWRP

Project Number: 18-904-21

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$70,000

Contract Award Date: April 2018*

Substantial Completion Date: December 2018*



Project Description: Furnish and deliver an 8,000 gallon stainless steel tandem tanker trailer to replace an existing failing unit at the Stickney WRP.

Project Justification: The acquisition of a replacement tanker trailer is needed to move sludge, water, effluent, high-strength waste and other liquids throughout the Stickney Service Area. The current tank trailer has numerous leaks and a rotting frame that limits its use.

Project Status: This project is in the preliminary design phase.

*Information shown is estimated.

Furnish and Deliver Submersible Slurry Gate Pumping System, SWRP

Project Number: 18-905-21

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$75,000

Contract Award Date: April 2018*

Substantial Completion Date: December 2018*



Project Description: Furnish and deliver a six-inch hydraulic submersible slurry gate pumping system to the Stickney WRP.

Project Justification: This pumping system will enable District trades to pump out digester tanks for cleaning and repairs, as well as other process areas containing thick sludge and/or grit not removable by existing drainage systems.

Project Status: This project is in the preliminary design phase.

*Information shown is estimated.

Rehabilitation of the Overhead Bridge Crane, SSA

Project Number: 18-906-21

Service Area: Stickney

Location: Mainstream Pumping Station

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$240,000

Contract Award Date: May 2018*

Substantial Completion Date: December 2018*



Project Description: This project will rehabilitate the existing overhead bridge crane located in the discharge valve chamber at the Mainstream Pumping Station.

Project Justification: The existing 40-ton overhead bridge crane has sustained corrosion to both end trucks, as well as to the rail clips and fasteners on both bridge rails. These issues have resulted in the crane being removed from service. In its current condition, the asset cannot perform the intended function and corrective measures are needed to restore its integrity.

Project Status: This project is in development.

*Information shown is estimated.

Replace Media in Cooling Towers, SWRP

Project Number: 18-910-21

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$110,000

Contract Award Date: April 2018*

Substantial Completion Date: October 2018*



Project Description: This project will replace the deteriorated cooling tower media used for the office shop and storage facility air conditioning system at the Stickney WRP.

Project Justification: The existing corrugated panels have deteriorated and distorted with age and exposure. New cooling tower media will restore the water distribution, which is critical to maximizing evaporation and subsequent cooling.

Project Status: This project is in the preliminary design stage.

*Information shown is estimated.

Furnish, Deliver, and Install Louvers for TARP Drop Shafts, SSA

Project Number: 18-911-21

Service Area: Stickney

Location: Mainstream TARP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$500,000

Contract Award Date: April 2018*

Substantial Completion Date: October 2018*



Project Description: Furnish, deliver, and install louvers at Mainstream Drop Shaft 44, Mainstream Drop Shaft 45, and Construction Drop Shaft 4 to alleviate odors.

Project Justification: The purpose of this project is to alleviate odors emanating from TARP drop shafts. There are plans to develop the area in which the shafts are located and the installation of the louvers will reduce odors.

Project Status: This project is in development.

*Information shown is estimated.

Skylight Replacement, SWRP

Project Number: 18-912-21

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$400,000

Contract Award Date: April 2018*

Substantial Completion Date: December 2018*



Project Description: Removal and replacement of 146 engineered fiberglass skylight panels at the West-Side Pumping Station at the Stickney WRP.

Project Justification: The material, which is over 40 years old, has so degraded that fiberglass is falling to the floor. Falling debris could injure personnel and damage the building and equipment.

Project Status: The project is being developed.

*Information shown is estimated.

Replacement of Railroad Grade Crossings, SSA

Project Number: 18-913-21

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$475,000

Contract Award Date: June 2018*

Substantial Completion Date: December 2018*



Project Description: This project will replace two railroad grade crossings and remove one crossing. The existing crossing outside the Stickney WRP, on the main line to LASMA and located under I-55, will be replaced. In addition, one crossing within the Stickney WRP, which intersects "D Street" and leads to the railroad terminal building, will be replaced. One other crossing within the Stickney WRP that intersects "D Street" will be removed and replaced with roadway.

Project Justification: The existing grade crossing under I-55 has degraded appreciably over the past year. Portions of the center panels have buckled, causing them to become elevated with respect to the surrounding road elevation. The buckling creates gaps in the roadway and interferes with the underside of the locomotives. In addition to problems with the center panels, several side panels no longer interlock with the track, causing them to become elevated and loose, and to create additional gaps in the roadway.

Both intraplant crossings on "D Street" have developed large gaps between the rails and adjacent roadway, which disrupts traffic along "D Street" due to their size and depth.

Project Status: The project is in the preliminary design stage.

*Information shown is estimated.

Recondition Circuit Breakers, SSA

Project Number: 18-914-21

Service Area: Stickney

Location: Lockport Powerhouse and Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$200,000

Contract Award Date: February 2018*

Substantial Completion Date: October 2018*



Project Description: Recondition circuit breakers at locations in the Stickney Service Area.

Project Justification: The purpose of the project is to recondition and warranty various circuit breakers in the Stickney Service Area to extend the useful life of the distribution equipment. The reconditioned breakers will ensure the safety and reliability of electrical equipment during normal and fault operating conditions. The reconditioned breakers will meet the original manufacturer specifications.

Project Status: This project is in development.

*Information shown is estimated.

Rehabilitation of Elevators, MOB

Project Number: J15090-054

Service Area: Stickney

Location: Main Office Building

Engineering Consultant: In-house design

General Contractor: Meccor Industries, Ltd.

Estimated Construction Cost: \$400,000

Contract Award Date: March 2018*

Substantial Completion Date: July 2018*



Project Description: Modernize two Main Office Building (MOB) elevators by replacing direct current motors on two machines with alternating current motors with variable frequency drives (VFDs) to ensure better, more reliable performance while achieving energy savings.

Project Justification: Elevator entrapments result in lost employee productivity, potentially leading to an increase in the number of Workers' Compensation claims. Modernization of the MOB elevators will address this risk by providing a more reliable vertical transportation system for District employees and visitors at the MOB. Visitors will have a better impression of the MOB while experiencing a smoother elevator ride. This is in line with the "Excellence" goal of the District, as related to the operations of the MOB Complex facilities. Additionally, the parts obsolescence issue will be addressed. Energy savings due to installation of load-modulating VFDs are expected.

Project Status: This project is under review.

*Information shown is estimated.

Roof Life Extension, MOB

Project Number: J15090-064

Service Area: Stickney

Location: Main Office Building

Engineering Consultant: In-house design

General Contractor: Meccor Industries, Inc.

Estimated Construction Cost: \$250,000

Contract Award Date: April 2018*

Substantial Completion Date: July 2018*



Project Description: Rehabilitate the existing 21-year-old Main Office Building roof, which is showing signs of wear, in order to extend its service life at least five years.

Project Justification: The 21-year-old Main Office Building roof is no longer under warranty. Rehabilitating the roof now will extend the life of the roof by five to 10 years.

Project Status: This project is under review.

*Information shown is estimated.

Paint and Carpet Replacement, MOB

Project Number: J15090-068

Service Area: Stickney

Location: Main Office Building

Engineering Consultant: In-house design

General Contractor: Meccor Industries, Ltd.

Estimated Construction Cost: \$425,000

Contract Award Date: January 2018*

Substantial Completion Date: April 2018*



Project Description: Replace old carpet and wall-coverings on the second floor of the Main Office Building (MOB) utilizing "green" practices, such as recycling the existing carpet, applying zero volatile organic compound paint, and installing the Carpet and Rug Institute's Green Label Plus certified carpet tiles with aquatic (water-based) adhesive.

Project Justification: The MOB was last remodeled in 1985. Since then, only partial repairs to floor and wall coverings have been made on the second floor and below. The carpet throughout the second floor and below is worn, painted areas are fading, and wallpaper is deteriorating. The project will provide an appealing, clean work area for employees and visitors.

Project Status: The project scope is being developed.

*Information shown is estimated.

Renovate Bathroom Stalls, MOBC

Project Number: J15090-069

Service Area: Stickney

Location: Main Office Building

Engineering Consultant: In-house design

General Contractor: Meccor Industries, Ltd.

Estimated Construction Cost: \$190,000

Contract Award Date: May 2018*

Substantial Completion Date: September 2018*



Project Description: Replace 31 restroom partitions and doors and five swinging doors in the Main Office Building and 28 restroom partitions and doors in the Main Office Building Annex. Existing partitions will be demolished and new hardware and anchoring points (if necessary) will also be installed. Painting and patching of any unused anchoring points will be done after the partitions are installed.

Project Justification: Some existing partitions and hardware are original to each building. Replacement parts are becoming hard to locate given the date of original installation in some cases. A project to replace all partitions with standard equipment will help improve the aesthetics of the building and ensure privacy of employees and visitors.

Project Status: This project is in development.

*Information shown is estimated.

Enhancements to WorkForce System

Project Number: MWD0000003FI

Service Area: Stickney

Location: Main Office Building

Engineering Consultant: N/A

General Contractor: WorkForce Software LLC

Estimated Construction Cost: \$50,000

Contract Award Date: January 2018*

Substantial Completion Date: March 2018*



Project Description: This project will modify the District's WorkForce software to create a new acknowledgeable error exception level to occur when certain pay codes are used, create a new information level exception to fire when an error level exception has been acknowledged, add a new "reimbursement" column between the current "unpaid hours" and "exception" columns, modify the mobile timesheet approval layout linked to the new acknowledgeable exceptions, and deploy the configured changes upon the District's approval.

Project Justification: The modifications are the result of an auditor recommendation that the system be configured to alert supervisors, when approving time in WorkForce, that the employee timesheet contains reimbursement codes. The exception will ensure that all supervisors have examined reimbursements before approving them.

Project Status: This project is in development.

*Information shown is estimated.

Performance Management Software

Project Number: MWD0000007HR

Service Area: North, Calumet, and Stickney

Location: MOBA

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$25,000

Contract Award Date: March 2018*

Substantial Completion Date: September 2018*



Project Description: A configurable Performance Management solution is required that will enable goal setting based on District and departmental competencies that will be more objective to evaluate; evaluations that can flow through chain of command utilizing SAP organizational chart; provide the ability for quarterly reviews for updates; provide for evaluations that are different for probationary periods; provide structure for performance improvement plans; and easy reporting for departments and administration.

Project Justification: The District will see as a consequence of this project: more efficient use of the Human Resources Department's employees from administrative data entry to streamlined management, exception reporting and analysis; more objective and actionable performance measures supporting District and departmental goals; reduced data transcription; and more utilization of a performance management process to provide critical feedback and coaching for employees.

Project Status: This project is in development.

*Information shown is estimated.

Avaya Telecom Project

Project Number: MWD0000013IT

Service Area: North, Calumet, and Stickney

Location: Various

Engineering Consultant: In-house design

General Contractor: Avaya

Estimated Construction Cost: \$164,000

Contract Award Date: April 2018*

Substantial Completion Date: December 2018*



Project Description: The voicemail hardware at the North, Calumet, and Stickney Service areas will be upgraded with the purpose of creating a consolidated virtual environment District-wide. The hardware at the Main Office Building Complex was upgraded in 2017. The upgrade will result in cost savings in terms of both equipment replacement and overall maintenance, with the added benefits of management flexibility and scalability.

Project Justification: The District's voicemail and supporting telecommunications infrastructure is more than seven years old. The project will upgrade the old voicemail system and allow for the added benefit of more responsive redundancy in the design, a feature not available with a physical environment.

Project Status: This project is being designed.

*Information shown is estimated.

Network Communication Switches

Project Number: MWD0000015IT

Service Area: Stickney

Location: District-wide

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$406,000

Contract Award Date: March 2018*

Substantial Completion Date: December 2018*



Project Description: The network communication switches project is an initiative to procure new network switches to replace the aging switches currently in use. The scope of this project in 2018 is to upgrade network equipment (more than seven years old) in the network rooms at Stickney and other plant locations. The purchase includes Cisco Local Area Network equipment, layer 3, Power over Ethernet equipment, and also includes supporting cables, mounting equipment, and power supplies for the equipment. Each District location/site will need to be upgraded in the next two years.

Project Justification: Currently installed network switches are aging, which is slowing network communications District wide. Replacing the switches will ensure that the District's network will remain stable and speed up data transfer, allowing for better network speeds. Current Cisco network hardware is more than seven years old. The District requires access to core applications, files, and the Internet, require upgraded network equipment to handle the volume, speed, and security to support the need. The upgrade will provide 1) twice the speed of the current District and Internet, 2) a more secure and reliable network for new applications and systems dependent on the Internet and cloud based services, 3) a robust, sustainable network platform to support data analytics and metrics, 4) an enterprise network optimized to provide a strong foundation for volume (storage), system performance (bandwidth), and accessibility (business continuity), 5) a foundation to expand mobile, remote and wireless needs of District staff and guests, and 6) increased security network and reduction of old equipment maintenance costs.

Project Status: This project is in the initiation phase.

*Information shown is estimated.

50000 CONSTRUCTION FUND

OBJECTIVES AND PROGRAM SUMMARY

| OBJECTIVES BY PRIORITY: | Cost | Percent |
|--|----------------------|---------------|
| 1. TREATMENT FACILITIES: Award projects, such as the procurement of control equipment for the main sewage pumps at the Stickney Water Reclamation Plant, which will reduce operation and maintenance costs and/or provide facility improvements. | \$ 4,858,800 | 19.6% |
| 2. COLLECTION FACILITIES: Award projects, such as the rehabilitation of an overhead bridge crane located at the Mainstream Pumping Station, which will reduce operation and maintenance costs and/or provide facility improvements. | \$ 1,599,400 | 6.5% |
| 3. SOLIDS PROCESSING AND DISPOSAL FACILITIES: Award projects, such as the procurement of an excavator/backhoe for the Solids Management Section, which will reduce costs and/or provide facility improvements. | \$ 6,020,400 | 24.3% |
| 4. FLOOD AND POLLUTION CONTROL: Provide funding for construction projects addressing flood control. | \$ 1,160,000 | 4.7% |
| 5. CONSTRUCTION FUND PROJECT COST: Provide funding for contracts awarded prior to 2018. | \$ 4,678,000 | 18.8% |
| 6. PROJECT SUPPORT: Development, design, and administration of current and future contracts, funding support, construction materials, and utility support services. | \$ 6,477,500 | 26.1% |
| Total | <u>\$ 24,794,100</u> | <u>100.0%</u> |

| MEASURABLE GOAL: | 2016 Actual | 2017 Estimated | 2018 Proposed |
|---|----------------|-------------------|------------------|
| Award contracts for the continued implementation of the District's Capital Improvement Program. | | | |
| Number of projects proposed | 39 | 54 | 44 |
| Number of contracts awarded | 40 | 32 | 44 |
| Number of plans available for award | 40 | 32 | 44 |
| <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 CONSTRUCTION FUND

OBJECTIVES AND PROGRAM SUMMARY

| PROGRAMS BY PRIORITY: | | 2016 Actuals | Budgeted | | Change | | |
|-----------------------|--|-----------------|-----------|---------------|----------------|---------|----|
| Number | Name | | Positions | Dollars | Dollars | Percent | |
| 1110 | Interceptor Systems | \$ 770,352 | 2018 - | \$ 800,000 | \$ 42,600 | 5.6 | |
| | | | 2017 - | \$ 757,400 | | | |
| 1530 | Local Sewer Permit Activity | \$ - | 2018 - | \$ - | \$ (50,000) | (100.0) | a) |
| | | | 2017 - | \$ 50,000 | | | |
| 1700 | Collection System Design | \$ 80,703 | 2018 - | \$ - | \$ - | - | |
| | | | 2017 - | \$ - | | | |
| 1800 | Collection Construction | \$ 1,684,649 | 2018 - | \$ 2,249,400 | \$ (867,000) | (27.8) | b) |
| | | | 2017 - | \$ 3,116,400 | | | |
| 2700 | Treatment Design | \$ 14,848 | 2018 - | \$ - | \$ (400,000) | (100.0) | c) |
| | | | 2017 - | \$ 400,000 | | | |
| 2800 | Treatment Construction | \$ 11,002,124 | 2018 - | \$ 7,845,800 | \$ (8,288,000) | (51.4) | d) |
| | | | 2017 - | \$ 16,133,800 | | | |
| 2900 | Treatment Processes | \$ - | 2018 - | \$ 25,000 | \$ (75,000) | (75.0) | e) |
| | | | 2017 - | \$ 100,000 | | | |
| 3700 | Solids Processing Design | \$ 285,513 | 2018 - | \$ 1,995,400 | \$ 83,400 | 4.4 | |
| | | | 2017 - | \$ 1,912,000 | | | |
| 3800 | Solids Processing Construction | \$ 2,523,521 | 2018 - | \$ 225,000 | \$ (297,900) | (57.0) | f) |
| | | | 2017 - | \$ 522,900 | | | |
| 4600 | Monitoring | \$ 1,385,688 | 2018 - | \$ 3,567,600 | \$ (1,214,300) | (25.4) | g) |
| | | | 2017 - | \$ 4,781,900 | | | |
| 4800 | Flood and Pollution Control Construction | \$ 581,551 | 2018 - | \$ 1,160,000 | \$ (1,576,000) | (57.6) | h) |
| | | | 2017 - | \$ 2,736,000 | | | |

- a) Decrease is due to the 2017 completion of the project to integrate the Local Sewer System Section permit database with the geographic information system (\$50,000).
- b) Decrease is due to the 2017 completion of 16-902-21, Pavement Rehabilitation, District-wide (\$697,400) and 14-107-2J, Stickney Effluent Reuse Line, SSA (\$600,000) and the transfer of 17-902-21, FD&I Grit Screw Conveyors, SWRP from the Construction Fund to the Capital Improvements Bond Fund (\$600,000), offset by the addition of several new projects to the 2018 schedule, including 18-601-21, F&D Submersible Pump, CSA (\$200,000), 18-610-21, Rehabilitate Raw Sewage Pump Rotating Assemblies, Various Locations (\$200,000), 18-701-21, F&D Two Debris Baskets, KWRP (\$200,000), 18-914-21, Recondition Circuit Breakers, SSA (\$200,000), 18-612-21, F&D Protective Relays, CWRP and KWRP (\$125,000), 18-603-21, FD&I Spring-Loaded Covers, NSA (\$75,000), and increased funding for 16-704-21, FD&I Upgraded Coarse Screen Conveyor at the North Branch Pumping Station, NSA, the result of a revised cost estimate (\$34,000).
- c) Decrease is due to the 2017 completion of 17-534-2C, Procurement of Membrane Aerated Biofilm, HPWRP (\$400,000).
- d) Decrease is due to the 2017 completion of several projects, including the upgrade of the distributed control system at the Calumet WRP (\$2,913,800), 17-607-21, F&D Utility Vehicles to Various Locations (\$867,000), 15-711-21, Restoration of Process Control Building, OWRP (\$483,900), and 14-714-21, Parking Lot Replacement, EWRP (\$300,000), the transfer of several projects from the Construction Fund to the Capital Improvements Bond Fund, including 17-708-21, FD&I Disc Filters, HPWRP (\$1,200,000), 17-601-21, Painting of Final Tanks, District-wide (\$776,000), 16-901-21, FD&I Boiler Controls, SWRP (\$650,000), and the sole source agreement to install an odor monitoring system at the Stickney WRP (\$300,000), as well as the reduced request for 16-268-2V, IWD and Construction Office Renovation, CWRP as it nears completion (\$731,000).
- e) Decrease is due to the one-time 2017 request for a contribution to the DuPage County Stormwater Management for green infrastructure projects (\$100,000), offset by 18-903-21, F&D Fire Alarm System Fiber Optic Cable, SWRP (\$25,000).
- f) Decrease is due to the 2017 completion of 11-403-2P, Membrane Gas Holder Replacement and Digester Gas Cleaning, EWRP (\$472,900) and 16-412-2M, Pump Rehabilitation and Diverter Gate Installation, EWRP (\$50,000), offset by the planned 2018 award of an agreement for geotechnical analysis (\$150,000) and 18-905-21, F&D Submersible Slurry Gate Pumping System, SWRP (\$75,000).
- g) Decrease is due to the cancellation of the project to acquire a volute dewatering press (\$974,000) and reduced requests for equipment (\$304,000) and building improvement projects (\$250,000), offset by new requests for pilot projects related to treatment processes (\$250,000), digestion processes (\$75,000) and phosphorus recovery (\$75,000).
- h) Decrease is due to the transfer of 17-707-21, Re-pipe Devon Avenue Instream Aeration Station Air Main, OWRP (\$1,500,000) and 17-605-21, Cofferdam Services, LPH (\$375,000) from the Construction Fund to the Capital Improvements Bond Fund, the cancellation of 17-705-21, Touhy Avenue Reservoir Rehabilitation, NSA (\$283,000), and the 2017 completion of 16-815-21, F&D Replacement Gearbox for SEPA 4, CSA (\$225,000), offset by the addition of 18-911-21, FD&I Louvers for TARP Drop Shafts, SSA (\$500,000) and increased funding for 16-708-21, Rehabilitate Gloria Alitto Majewski Reservoir, KWRP, the result of an expanded scope of work (\$377,000).

50000 CONSTRUCTION FUND

OBJECTIVES AND PROGRAM SUMMARY

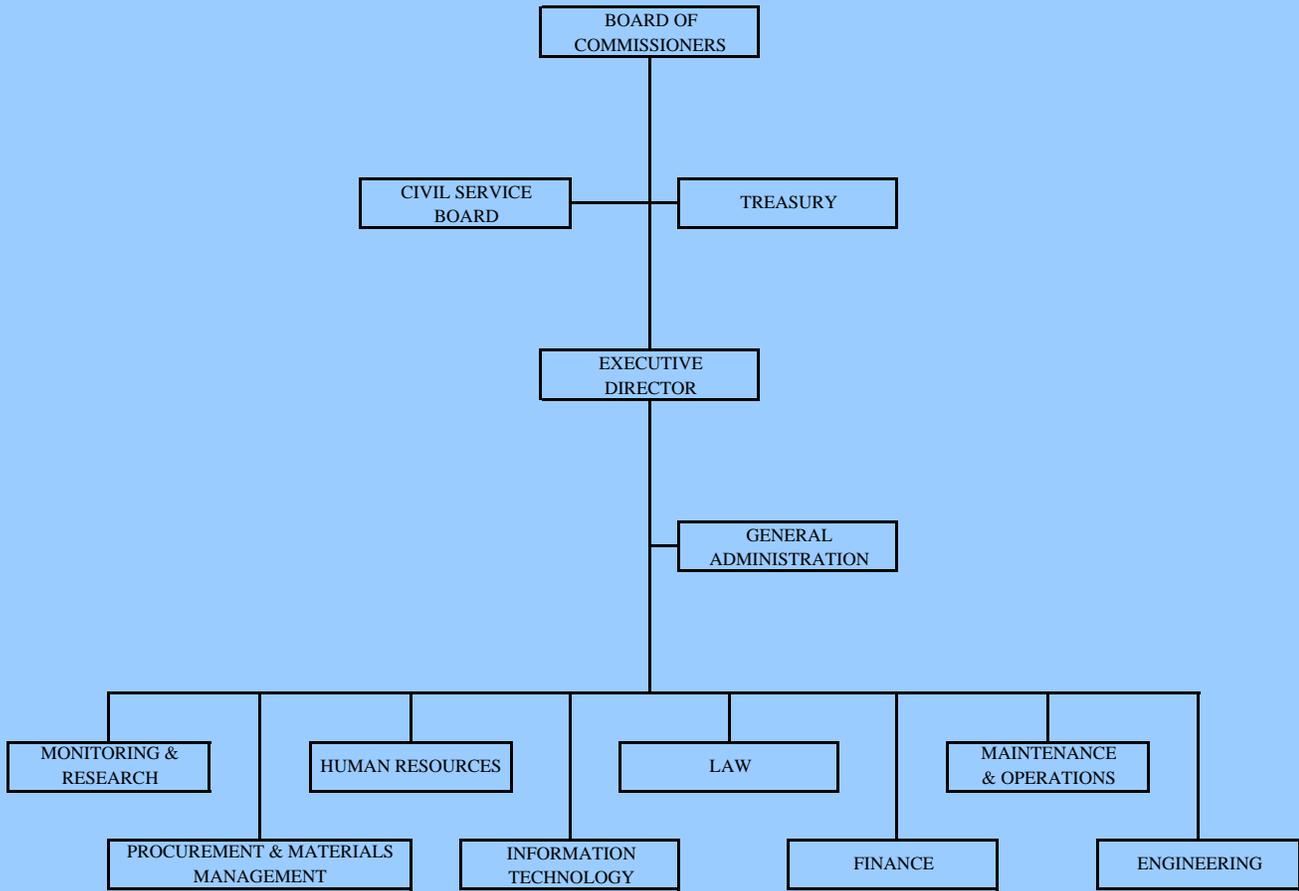
| PROGRAMS BY PRIORITY: | | 2016 Actuals | Budgeted | | Change | | |
|-----------------------|--|----------------------|-----------|----------------------|----------------------|----------------|----|
| Number | Name | | Positions | Dollars | Dollars | Percent | |
| 5800 | Solids Disposal Construction | \$ - | 2018 - | \$ 3,950,000 | \$ 3,150,000 | 393.8 | i) |
| | | | 2017 - | \$ 800,000 | | | |
| 7284 | Store Operations and Issue | \$ 155,464 | 2018 - | \$ - | \$ - | - | |
| | | | 2017 - | \$ - | | | |
| 7290 | Examinations and Employment Activities | \$ - | 2018 - | \$ 155,800 | \$ 9,300 | 6.3 | |
| | | | 2017 - | \$ 146,500 | | | |
| 7350 | General Legal Matters | \$ 500,000 | 2018 - | \$ - | \$ (100,000) | (100.0) | j) |
| | | | 2017 - | \$ 100,000 | | | |
| 7367 | Real Estate Asset Management | \$ 194,967 | 2018 - | \$ - | \$ - | - | |
| | | | 2017 - | \$ - | | | |
| 7380 | Information Technology and Telecommunications | \$ 675,881 | 2018 - | \$ 570,100 | \$ (272,400) | (32.3) | k) |
| | | | 2017 - | \$ 842,500 | | | |
| 7390 | Accounting and Auditing | \$ 48,125 | 2018 - | \$ 60,000 | \$ (65,000) | (52.0) | l) |
| | | | 2017 - | \$ 125,000 | | | |
| 7460 | Main Office Complex Building Services | \$ 526,250 | 2018 - | \$ 1,290,000 | \$ 470,000 | 57.3 | m) |
| | | | 2017 - | \$ 820,000 | | | |
| 7480 | Safety Program | \$ 127,853 | 2018 - | \$ - | \$ - | - | |
| | | | 2017 - | \$ - | | | |
| 7491 | Automotive Fleet Procurement | \$ 191,910 | 2018 - | \$ 900,000 | \$ - | - | |
| | | | 2017 - | \$ 900,000 | | | |
| 7745 | Utility Review | \$ - | 2018 - | \$ - | \$ (190,000) | (100.0) | n) |
| | | | 2017 - | \$ 190,000 | | | |
| 7801 | Information Technology Services - General Administration | \$ - | 2018 - | \$ - | \$ (16,000) | (100.0) | o) |
| | | | 2017 - | \$ 16,000 | | | |
| 7900 | Maintenance & Operations General Support Services | \$ 394,704 | 2018 - | \$ - | \$ - | - | |
| | | | 2017 - | \$ - | | | |
| Totals | | \$ 21,144,103 | 2018 - | \$ 24,794,100 | \$(9,656,300) | (28.0%) | |
| | | | 2017 - | \$ 34,450,400 | | | |

- i) Increase is due to the planned 2018 award of agriculture pilot projects (\$2,000,000), 18-913-21, Replacement of Railroad Grade Crossings, SSA (\$475,000) and 18-609-21, FD&I Storage Dome for Biosolids, HASMA (\$350,000) and a net increase in funding for heavy equipment for the biosolids composting program, a major element of the Strategic Business Plan (\$325,000).
- j) Decrease is due to the 2017 request for a contribution to the Chi-Cal Rivers Fund with no contribution planned for 2018 (\$100,000).
- k) Decrease is due to the 2017 completion of several information technology and telecommunication projects, including database consolidation (\$264,000), infrastructure upgrades at the Main Office Building Complex (\$162,600), SAP simplification (\$100,000), voice over internet protocol assessment (\$100,000), and document management system assessment (\$50,000), offset by the 2018 project to upgrade network communication switches (\$406,000).
- l) Decrease is due to the reduced request for the project related to the production of the Comprehensive Annual Financial Report as it nears completion (\$115,000), offset by the 2018 project to upgrade the WorkForce payroll system (\$50,000).
- m) Increase is due to the planned 2018 award of projects to paint and replace the carpeting (\$425,000) and renovate the bathroom stalls (\$190,000) in the Main Office Building Complex, offset by the reduced estimate to rehabilitate the elevators in the Main Office Building (\$150,000).
- n) Decrease is due to the one-time 2017 request for sewer relocation services (\$190,000).
- o) Decrease is due to the 2017 acquisition of a security camera for the Main Office Building Complex (\$16,000).

| 201 50000 | Fund: Construction Department: Engineering Division: | LINE ITEM ANALYSIS | | | | | | |
|--------------|---|--------------------|--------------|-------------|------------------------|---------------------------------|---|--------------------------------|
| | | 2016 | 2017 | | | | 2018 | |
| | | Account Number | Account Name | Expenditure | Original Appropriation | Adjusted Appropriation 09/30/17 | Expenditure (Committed Budget plus Disbursement) 09/30/17 | Estimated Expenditure 12/31/17 |
| 612240 | Testing and Inspection Services | \$ - | \$ 600,000 | \$ 350,000 | \$ 44,450 | \$ 78,000 | \$ 1,016,000 | \$ - |
| 612400 | Intergovernmental Agreements | - | 100,000 | 100,000 | 82,000 | 92,000 | 70,000 | - |
| 612430 | Payments for Professional Services | 1,438,423 | 3,624,900 | 3,724,900 | 3,558,124 | 2,270,000 | 3,239,400 | - |
| 612440 | Preliminary Engineering Reports and Studies | 14,848 | - | - | - | - | 50,000 | - |
| 612450 | Professional Engineering Services for Construction Projects | 225,625 | 1,859,000 | 1,859,000 | 1,834,375 | 788,800 | 1,834,400 | - |
| 612490 | Contractual Services, N.O.C. | 20,681 | 60,000 | 60,000 | 58,035 | 25,000 | 50,000 | - |
| 612600 | Repairs to Collection Facilities | 770,352 | 157,400 | 307,400 | 307,367 | 307,400 | - | - |
| 200 | TOTAL CONTRACTUAL SERVICES | 2,469,929 | 6,401,300 | 6,401,300 | 5,884,351 | 3,561,200 | 6,259,800 | - |
| 623570 | Laboratory Testing Supplies, Small Equipment, and Chemicals | 30,965 | - | - | - | - | - | - |
| 300 | TOTAL MATERIALS AND SUPPLIES | 30,965 | - | - | - | - | - | - |
| 634600 | Equipment for Collection Facilities | 80,703 | 340,000 | 340,000 | - | - | 745,000 | - |
| 634620 | Equipment for Waterway Facilities | 182,777 | 335,000 | 335,000 | 202,377 | 222,400 | 90,000 | - |
| 634650 | Equipment for Process Facilities | 990,257 | 1,996,000 | 1,996,000 | 691,950 | 457,500 | 1,711,000 | - |
| 634760 | Material Handling and Farming Equipment | - | - | - | - | - | 975,000 | - |
| 634780 | Safety and Medical Equipment | 28,680 | - | - | - | - | - | - |
| 634810 | Computer Equipment | 419,708 | 273,600 | 273,600 | 263,314 | 263,200 | 406,000 | - |
| 634820 | Computer Software | 102,529 | 131,500 | 131,500 | 35,000 | - | 35,000 | - |
| 634840 | Communications Equipment (Includes Software) | - | 70,900 | 70,900 | 67,459 | - | 64,100 | - |
| 634860 | Vehicle Equipment | 191,910 | 2,072,000 | 2,072,000 | 2,046,968 | 1,850,900 | 1,134,000 | - |
| 634990 | Machinery and Equipment, N.O.C. | 362,601 | 1,404,000 | 1,404,000 | 132,569 | 132,600 | - | - |
| 400 | TOTAL MACHINERY AND EQUIPMENT | 2,359,164 | 6,623,000 | 6,623,000 | 3,439,637 | 2,926,600 | 5,160,100 | - |
| 645600 | Collection Facilities Structures | 1,448,745 | 2,469,000 | 2,169,000 | 1,215,671 | 798,200 | 1,150,400 | - |
| 645620 | Waterway Facilities Structures | 922,081 | 349,000 | 349,000 | - | - | 75,000 | - |
| 645650 | Process Facilities Structures | 3,605,960 | 5,329,300 | 5,329,300 | 1,599,140 | 1,599,000 | 2,402,500 | - |
| 645680 | Buildings | 1,866,327 | 2,767,400 | 2,767,400 | 1,272,624 | 1,141,900 | 3,335,000 | - |
| 645690 | Capital Projects, N.O.C. | 2,272,093 | 3,737,700 | 3,737,700 | 3,098,126 | 2,980,300 | 2,625,000 | - |
| 645700 | Preservation of Collection Facility Structures | 1,173,190 | 1,500,000 | 1,500,000 | 2,000 | - | 940,000 | - |

| 201 50000 | Fund: Construction Department: Engineering Division: | LINE ITEM ANALYSIS | | | | | | |
|--------------------------------|--|--------------------|------------------------|---------------------------------|---|--------------------------------|--------------------------------|---|
| | | 2016 | 2017 | | | | 2018 | |
| Account Number | Account Name | Expenditure | Original Appropriation | Adjusted Appropriation 09/30/17 | Expenditure (Committed Budget plus Disbursement) 09/30/17 | Estimated Expenditure 12/31/17 | Proposed by Executive Director | Recommended by Committee on Budget and Employment |
| 645720 | Preservation of Waterway Facility Structures | 87,168 | 931,000 | 931,000 | 46,501 | 46,500 | 600,000 | - |
| 645750 | Preservation of Process Facility Structures | 3,322,189 | 1,485,600 | 1,913,600 | 1,153,982 | 1,115,500 | 450,000 | - |
| 645780 | Preservation of Buildings | 129,834 | 2,484,000 | 2,484,000 | 2,375,463 | 1,908,100 | 1,796,300 | - |
| 645790 | Preservation of Capital Projects, N.O.C. | 1,456,459 | 373,100 | 245,100 | 78,536 | 78,600 | - | - |
| 500 | TOTAL CAPITAL PROJECTS | 16,284,046 | 21,426,100 | 21,426,100 | 10,842,043 | 9,668,100 | 13,374,200 | - |
| TOTAL ENGINEERING CONSTRUCTION | | \$ 21,144,103 | \$ 34,450,400 | \$ 34,450,400 | \$ 20,166,031 | \$ 16,155,900 | \$ 24,794,100 | \$ - |

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 the useful life extends beyond five years. Capital projects pursued by the Engineering Department are: (a) mission critical, improve environmental quality, (b) preservation/rehabilitation of existing infrastructure to maintain service levels, 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 2017 Accomplishments

The District's Capital Improvements Bond Fund are grouped into three categories: mission critical, preservation of infrastructure, and commitment to community.

Mission Critical, Improve Environmental Quality

- Completed construction of Stage 1 of the McCook Reservoir, adding 3.5 billion gallons of combined sewer overflow storage capacity;
- Completed construction of an energy efficient nitrogen removal system for the Egan WRP centrate, allowing it to be recycled rather than conveyed to the O'Brien WRP.

Preservation of Infrastructure

- Began rehabilitation work on the Salt Creek Intercepting Sewer 2 and the Calumet Intercepting Sewer 19F;
- Awarded construction contracts to rehabilitate the Summit Conduit and corroded portions of the Upper Des Plaines Drop Shaft 5;
- Completed construction to replace the aging coarse screens and raw sewage pump slide gates at the Egan WRP;
- Completed construction to rehabilitate Pump 8 at the Mainstream Pumping Station.

Commitment to Community

- Began engineering design work for a digester gas cleaning facility at the Calumet WRP, which is essential to achieve energy neutrality;
- Entered into a partnership with the Army Corps of Engineers and the Chicago Park District to rehabilitate riparian areas and remove an aging dam at the North Branch of the Chicago River to improve diversity and habitat;
- Completed an engineering study on the feasibility of achieving energy neutrality at the Egan and Hanover Park WRPs;
- Awarded a construction contract for an organic waste receiving facility at the Calumet WRP, which is essential to achieve energy neutrality;
- Awarded a construction contract to provide a covered composting system to produce a high quality composted biosolids product at the Calumet WRP;
- Awarded a construction contract to convert two gravity concentration tanks into primary fermenters at the Stickney WRP to improve the Enhanced Biological Phosphorus Removal (EBPR) process;
- Awarded a construction contract to replace aging switchgear at the Devon Instream Aeration Station to improve the health of the waterway.

Budget Highlights

The Capital Improvements Bond Fund's 2018 appropriation is \$278,427,700, a decrease of \$76,197,900, or 21.5 percent, from 2017. There are no staff positions budgeted in the Capital Improvements Bond Fund. The 2018 appropriation includes construction costs for capital projects to be awarded in 2018 in the amount of \$237,352,000, including funding for stormwater management capital projects. The remaining \$41,075,700 includes funding for acquisition of easements, allowances for contract change orders, and legal and other support services relating to capital projects.

Significant features of the 2018 budget are:

Mission Critical, Improve Environmental Quality

- Continue construction of the Des Plaines Inflow Tunnel at the McCook Reservoir;
- Continue mining and construction Stage 2 of the McCook Reservoir;
- Continue work on the automation of air valves to allow better control of air usage for the EBPR process at the Stickney WRP;
- Continue construction of nine new primary settling tanks and aerated grit removal facilities at the Stickney WRP;
- Award a contract to provide baffle plates on final settling tanks to improve effluent quality at the O'Brien WRP;
- Award a contract to construct facilities to receive high-strength waste, assisting in the EBPR process at the Calumet WRP.

Preservation of Infrastructure

- Continue construction of pump rehabilitation and diverter gate installation at the Egan WRP;
- Continue Phase II rehabilitation of the service and connecting tunnels at the Stickney WRP;
- Continue construction to replace the medium voltage switchgear in the D799 substation at the Stickney WRP;
- Continue construction to replace the TARP pumps, motors, variable frequency drives, and screens at the Calumet WRP;
- Continue construction to replace the TARP pumping station screens, which require manual cleaning, with a fully automated self-cleaning screen system at the Calumet WRP;
- Continue to upgrade and improve the heating, ventilation, and air conditioning system for the Monitoring & Research Laboratory to meet the evolving needs of the Monitoring & Research personnel and regulatory compliance;
- Complete construction of the Salt Creek Intercepting Sewer 2 and the Calumet Intercepting Sewer 19F;
- Award switchgear and motor control central replacement at the O'Brien WRP;
- Award a construction contract to replace the North Side Sludge Line Section 1;
- Award a construction contract to rehabilitate Upper Des Plaines Intercepting Sewer 11D, extension C;
- Award a contract to replace the roof at the 95th Street Pumping Station at the Calumet Service Area;
- Award a contract to rehabilitate the North Branch Pumping Station in the North Service Area;
- Award a contract to rehabilitate the service tunnels at the O'Brien and Kirie WRPs;
- Award a contract to replace Tailrace Stop Logs, Headrace Gates, and Equipment at the Lockport Powerhouse.

Commitment to Community

- Award an engineering design contract for the development of a digester gas utilization facility at the Stickney WRP;
- Award odor control contracts at Stickney, Kirie, Calumet, and Kirie WRPs;
- Award a contract for the Fischer Farms Horticultural Center at the Hanover Park WRP;
- Award a contract for an effluent reuse line at the Stickney WRP.

2018 Initiatives in Support of the Strategic Business Plan Include the Following:

• Add Value

Though only partially complete, TARP has already been effective in reducing pollution and flooding throughout the District's combined sewer service area. The Engineering Department has continued working with the Army Corps of Engineers to complete the reservoir phase of that project, and at the end of 2017, Stage 1 of the McCook Reservoir was placed into service and will begin accepting flow in 2018. This will capture combined sewer overflows and flood water from 37 communities in southwest Cook County. This first stage of the reservoir will provide 3.5 billion gallons of storage and benefit the health and welfare of 3.1 million area residents.

The Engineering Department has worked with the Monitoring & Research and Maintenance & Operations Departments to develop odor control strategies at several of the WRPs to reduce the odor emissions that affect the District's neighbors and staff. Three projects are under design and will be awarded in 2018 to accomplish this goal, 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. The following technologies will be applied: a biotrickling filter unit will be installed to address odors from the gravity belt thickener exhaust, a separate biotrickling filter unit will be installed to address the odors from the pre-treatment building and the aerated grit tanks, and a carbon adsorption filter unit will be installed to address the coarse screen building exhaust. The project will also include the installation of covers over the aerated grit tanks.

The Engineering Department is pursuing a project to contain odors at the Calumet WRP in another, innovative way, which will also produce a Class A biosolids product while containing nuisance odors generated during the process. The scope of work for this project is to design a covered composting system to be located at the Calumet WRP's East Drying Cells 5 and 6. The design shall utilize the GORE® system, which requires a biosolids feedstock with 15 to 25 percent solids content and a bulking agent (e.g. wood chips, yard waste, or shredded paper) to be mixed with the biosolids. The GORE® system consists of three phases: Phase I—High Rate Composting, Phase II—Maturation, and Phase III—Finishing. Each phase occurs at its own location. A total of 15 bunkers are required for Phase I, and 12 bunkers are required for Phase II. No cover is needed in Phase III. Also included are conveyors to move material between phases, a receiving and mixing building, a biofilter system, blowers, and ancillary mechanical and electrical equipment.

- **Excellence**

In order to supplement carbon loading, which supports the EBPR process, at the Calumet WRP, the Engineering Department is pursuing a project that will allow for the addition of high-strength waste to the aeration tanks. The conversion of the primary tanks through this project will allow for the receiving, storage, and distribution of the high-strength waste. EBPR is a sustainable approach to removing phosphorus. Contrary to chemical phosphorus removal, there is no increase in sludge production, and it allows for the phosphorus captured in the biosolids to be recovered and reused. However, influent characteristics need to be favorable to encourage the microorganisms to uptake phosphorus, including sufficient usable carbon.

The Engineering Department strives to achieve best-in-class performance for budgeting and scheduling of all Capital Improvement Program projects and has implemented comprehensive metrics to keep track of performance. In addition, projects are reviewed after construction is complete to document best practices and foster continuous improvement. The Engineering Department's capital projects have consistently averaged at or below the best-in-class goal in cost of 105 percent of the award value. This is due to the quality assurances and control of both in-house and consultant designs. Additionally, the Department strives to meet or beat the industry standard of 120 percent of the originally scheduled contract time and has made consistent improvements in this arena. The improvement is reflected in the data that shows that recent close outs of projects started in 2009 had averaged over 200 percent of the original contract time, whereas those projects beginning in 2015 had averaged closer to 110 percent of the original contract time.

- **Resource Recovery**

Biogas, generated as a by-product of the anaerobic digestion process at the Calumet WRP, has value as a fuel. Currently, the biogas is used to produce steam in boilers for plant heating. There are periods of time in the year when the steam demand is low and not all of the biogas is fully utilized. The Engineering Department is pursuing a project that will permit the increase in biogas production by approximately 70 percent over the current volume by utilizing excess capacity in the digesters to take in organic waste material from outside sources. All of the biogas produced by plant solids and organic feedstock will then be fully utilized as an energy source, as the District steps towards energy neutrality. Liquid organic waste will be supplied by a single supply chain manager to provide consistency and certainty of volume. Organic wastes will include high-strength liquid waste from industrial sources such as food processing plants and fats, oils, and greases from traps and commercial waste. The liquid organics supply chain manager will be selected under a separate request for proposal process. The receiving station constructed under this project will handle up to 200,000 gallons of liquid organic wastes per day.

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. Recently, the District entered into a contract with American Water to pursue reuse opportunities in the Calumet Service Area's industrial corridor. Additionally, Koppers, Inc., a global manufacturer and distributor located near the Stickney WRP, has expressed interest in pursuing reuse water at their plant. The District has also received interest from Intren, LLC, a Women-owned Business Enterprise and innovative utility solutions partner of the energy industry, to purchase water directly from the District. This strategy in the business plan has a goal to promote conservation and recycling.

The District recognizes the value of phosphorus as a non-renewable resource. In addition, the National Pollutant Discharge Elimination System permit limit for phosphorus has been established at a monthly average of 1.0 milligram per liter, with the possibility of a future further reductions. In an effort to optimize the sustainable removal of phosphorus from its wastewater influents and the subsequent recovery of phosphorus in various forms suitable for use as an agronomic fertilizer, the District initiated the EBPR process and a phosphorus recovery strategy, Ostara's Pearl® nutrient recovery technology, to recover this valuable resource. As the largest nutrient recovery facility in the world, this signifies a fundamental shift in water resource management and water stewardship. The project began operation and recovery of phosphorus in a reusable form for the fertilizer industry.

In order to optimize aeration processes and reduce energy consumption, the Engineering Department contracted Donohue & Associates, Inc. to evaluate the aeration system at the Stickney WRP. The study indicates that reducing the dissolved oxygen concentration to 2.0 milligrams per liter, along with the existing dissolved oxygen control system, will provide a 22 percent reduction of air usage in the aeration batteries. Also discussed was additional air usage reduction by implementing an ammonia control system. The existing air reduction utilized in the biological phosphorus operation in the aeration tanks was not included in the report, but does provide additional reduction in air usage. 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 Capital Improvement Program project in the Engineering Department that includes administrative and procedural requirements for the recycling and disposing of non-hazardous construction and demolition waste. This includes building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair 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.

- **Develop Employees**

The Engineering Department encourages staff to attend professional development conferences and seminars that present the most state of the art technologies and provide information on the latest developments in engineering design and construction. Engineering staff includes numerous licensed professional engineers who are leaders in their respective field. Staff regularly attend, present papers, and act as chairs or moderators at national and international conferences, seminars, and society meetings, in their areas of expertise. Additionally, the Engineering Department rotates staff between the design and construction administration sections in order to gain perspective and understanding of all aspects of the contract development and execution. Further efforts will be made in 2018 to expand this program to more staff members.

- **Leading Partnerships**

Efforts are underway to work with local municipalities and engage local industries to explore the use of effluent water for commercial and industrial purposes that require clean, but not necessarily potable, water. Developing these partnerships will help reduce the local industry's dependence on water from Lake Michigan, provide economic development incentives for local municipalities, and further the District's goal of recovering water as a precious resource. As previously mentioned, the Engineering Department has pursued several partnerships with local and national business enterprises, including Koppers, Inc. and Intren, LLC, and will continue to seek and expand the District's plant effluent water reuse opportunities.

- **Technology**

An electronic project management system, e-Builder, has been implemented to manage all of the District's Capital Improvement Plan projects and report on the \$250 million in expenditures, as well as the various metrics used in the department. These include: tracking project design and construction schedules, forecasting award dates, cash flow projections for budgeting, and all construction contractor submittals and documentation. Use of this system will improve work flow and efficiency and allow for more accurate predictions of our project expenditures.

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 2018 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 (with estimated completion dates)

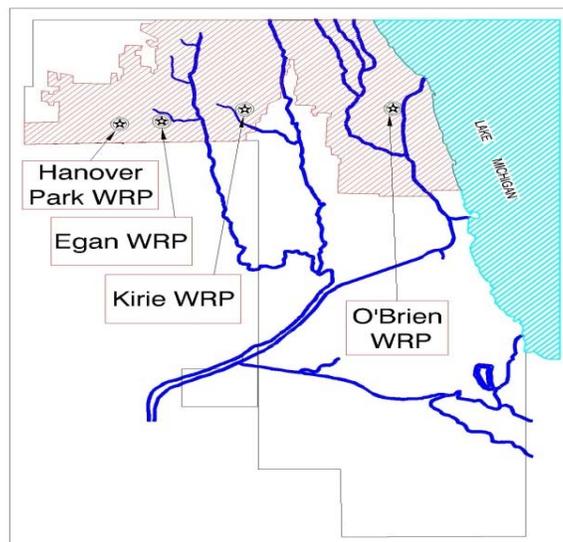
| | Estimated Construction Cost |
|---|------------------------------------|
| 04-128-3P West Side Primary Settling Tanks 1-9 and Aerated Grit Facility, SWRP (4/2018) | \$ 231,964,000 |
| 04-132-3D A/B and C/D Service Tunnel and Connecting Tunnel Rehabilitation - Phase II, SWRP (5/2019) | 20,615,000 |
| 06-155-3S Salt Creek Intercepting Sewer 2 Rehabilitation, SSA (11/2018) | 44,041,000 |
| 09-182-3E D799 Switchgear Replacement, SWRP (11/2019) | 12,752,000 |
| 13-106-4F McCook Reservoir Des Plaines Inflow Tunnel (1/2020) | 107,662,000 |
| 15-118-3M Main Sewage Pump Seal Water System Modification, MSPS (7/2018) | 1,121,000 |
| 15-122-3P Aeration Tanks Air Valves Automation in Batteries A, B, C, and D, SWRP (10/2018) | 6,654,000 |
| 15-124-3P Conversion of Two Gravity Concentration Tanks to Primary Sludge Fermenters, SWRP (5/2019) | 4,095,000 |
| 16-125-4F McCook Reservoir Expanded Stage 2 Slope Stabilization and Retaining Walls, SSA (4/2018) | 7,339,000 |
| Total | \$ 436,243,000 |

Projects for 2018 Award

| | |
|---|-----------------------|
| 01-103-AS 39th Street Conduit Rehabilitation - Phase II, SSA | \$ 24,700,000 |
| 11-186-3F^ Addison Creek Reservoir, SSA | 95,155,000 |
| 14-107-3S Stickney Effluent Reuse Line, SSA | 800,000 |
| 16-126-3S Summit Conduit Rehabilitation, SSA | 1,700,000 |
| 17-134-3M Odor Control Facilities at WASSTRIP®, Southwest Coarse Screen and Overhead Weir, and Post-Centrifuge Building, SWRP | 15,000,000 |
| 17-842-3H Modifications to TARP Structures, CSA and SSA | 2,500,000 |
| 18-904-3I Railroad Locomotive Terminal Restoration, SWRP | 1,440,000 |
| Total | \$ 141,295,000 |

| Projects Under Development | | Estimated Construction Cost |
|-----------------------------------|--|------------------------------------|
| 11-187-3F^ | Addison Creek Channel Improvements, SWRP | \$ 44,512,000 |
| 11-189-3P | Digester Gas Utilization Facilities, SWRP | 17,000,000 |
| 13-101-3P | Deammonification System, SWRP | 30,000,000 |
| 14-117-3P | Organic Waste Receiving Station, SWRP | 30,000,000 |
| 16-127-3D | A/B and C/D Service Tunnel Rehabilitation - Phase III, SWRP | 17,000,000 |
| 16-128-3D | Battery B Final Settling Tanks, Rehabilitation of Concrete, SWRP | 2,000,000 |
| 16-129-3D | Battery C Final Settling Tanks, Rehabilitation of Concrete, SWRP | 2,000,000 |
| 16-130-3D | Battery D Final Settling Tanks, Rehabilitation of Concrete, SWRP | 2,000,000 |
| 17-131-4F | McCook Reservoir Expanded Stage 2 Rock Wall Stabilization, SWRP | 5,000,000 |
| 17-135-3V | Roof Replacement of the Lue-Hing M&R Complex, SWRP | 6,500,000 |
| | | |
| | | Total |
| | | \$ 156,012,000 |
| | | |
| | | Stickney Service Area Grand Total |
| | | \$ 733,550,000 |

NORTH SERVICE AREA (NSA)



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

Projects Under Construction (with estimated completion dates)

| | Estimated Construction Cost |
|---|------------------------------------|
| 15-074-3D Installation of Baffle Plates in Final Settling Tanks, OWRP (12/2018) | \$ 1,600,000 |
| 16-077-3E Devon IAS Switchgear Replacement and Wilmette PS Conduit Replacement, NSA (10/2018) | 600,000 |
| 16-IGA-22 North Branch Dam Removal and River Riparian Connectivity (9/2020) | 2,500,000 |
| Total | \$ 4,700,000 |

Projects for 2018 Award

| | |
|---|----------------------|
| 07-027-3S North Side Sludge Pipeline Replacement - Section 1, NSA | \$ 12,831,000 |
| 15-069-3D Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP | 10,000,000 |
| 16-079-3D Rehabilitation of North Branch Pumping Station, NSA | 3,000,000 |
| 17-080-3E Switchgear and Motor Control Center Replacement, OWRP | 2,200,000 |
| 18-605-31 Pavement Rehabilitation, Various Locations | 1,100,000 |
| 18-704-31 Emerson Ovation Distributed Control System, NSA | 1,802,000 |
| 18-706-31 Guaranteed Energy Performance, Various Locations | 3,500,000 |
| Total | \$ 34,433,000 |

Projects Under Development

| | |
|---|----------------------|
| 10-047-3S North Shore 1 Rehabilitation, NSA | \$ 22,750,000 |
| Total | \$ 22,750,000 |

John E. Egan Water Reclamation Plant (EWRP)

Projects Under Construction (with estimated completion dates)

| | |
|---|-------------------|
| 16-412-3M Pump Rehabilitation and Diverter Gate Installation, EWRP (1/2018) | \$ 400,000 |
| Total | \$ 400,000 |

Projects for 2018 Award

| | |
|--|---------------------|
| 18-702-31 Furnish, Deliver, and Install Disc Filters, EWRP | \$ 3,200,000 |
| Total | \$ 3,200,000 |

| Project Under Development | | Estimated Construction Cost |
|----------------------------------|--|------------------------------------|
| 11-404-3S | Upper Des Plaines Intercepting Sewer 11D, Ext. C Rehabilitation, NSA | \$ 5,500,000 |
| 17-413-3P | Energy Neutrality Improvements, EWRP | 20,000,000 |
| Total | | \$ 25,500,000 |

James C. Kirie Water Reclamation Plant (KWRP)

Projects for 2018 Award

| | | |
|-------------|---|----------------------|
| 13-370-3F*^ | Buffalo Creek Reservoir Expansion, NSA [Capital Improvements Bond Fund = \$19,300,00; Stormwater Management Fund = \$2,350,000] | \$ 19,300,000 |
| 14-372-3S | Drop Shaft 5 Inspection and Rehabilitation, NSA | 2,700,000 |
| Total | | \$ 22,000,000 |

Projects Under Development

| | | |
|-----------|---|----------------------|
| 06-360-3S | Upper Des Plaines Intercepting Sewer 14B Rehabilitation, KWRP | \$ 6,700,000 |
| 12-369-3S | Upper Des Plaines Intercepting Sewer 11D Rehabilitation, NSA | 5,500,000 |
| Total | | \$ 12,200,000 |

Hanover Park Water Reclamation Plant (HPWRP)

Project for 2018 Award

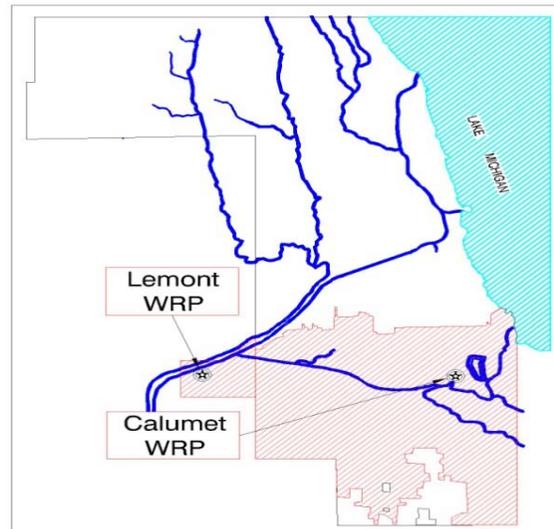
| | | |
|-----------|---|---------------------|
| 16-538-3V | Fischer Farms Horticultural Center, HPWRP | \$ 3,500,000 |
| Total | | \$ 3,500,000 |

Projects Under Development

| | | |
|-----------|---------------------------------------|----------------------|
| 17-539-3P | Energy Neutrality Improvements, HPWRP | \$ 15,000,000 |
| Total | | \$ 15,000,000 |

| | |
|--------------------------------|-----------------------|
| North Service Area Grand Total | \$ 143,683,000 |
|--------------------------------|-----------------------|

CALUMET SERVICE AREA (CSA)



Calumet Water Reclamation Plant (CWRP)

Projects Under Construction (with estimated completion dates)

| | | Estimated Construction Cost |
|-------------|--|-----------------------------|
| 06-212-3M | Calumet TARP Pumping Station Improvements, CWRP (5/2018) | \$ 35,746,000 |
| 10-237-3F ^ | Streambank Stabilization Project on Oak Lawn Creek, CSA (9/2018) | 3,035,000 |
| 10-883-AF^ | Flood Control/Streambank Stabilization Project on Tinley Creek, CSA (10/2019) | 7,359,000 |
| 10-883-CF*^ | Flood Control Project on the East Branch of Cherry Creek, Flossmoor, CSA (3/2021) [Capital Improvements Bond Fund = \$2,590,000; Stormwater Management Fund = \$715,000] | 2,590,000 |
| 11-239-3S | Calumet Intercepting Sewer 19F Rehabilitation, CSA (3/2018) | 12,396,000 |
| 11-240-3P | Organic Waste Receiving Facility and Digester Gas Flare Upgrade, CWRP (6/2018) | 8,426,000 |
| 13-246-3M | Calumet TARP Screens, CWRP (3/2019) | 12,754,000 |
| 14-263-3F^ | Melvina Ditch Reservoir Improvements, CSA (3/2020) | 20,500,000 |
| 16-270-3P | Covered Composting System, CWRP (12/2018) | 24,000,000 |
| Total | | \$ 126,806,000 |

Projects for 2018 Award

| | | |
|------------|--|----------------------|
| 10-882-AF^ | Streambank Stabilization Project on Tinley Creek, CSA | \$ 3,806,000 |
| 10-882-CF^ | Streambank Stabilization Project along Midlothian Creek, Tinley Park, CSA | 392,000 |
| 13-248-3F^ | Streambank Stabilization Project on Melvina Ditch in Oak Lawn and Chicago Ridge, CSA | 8,800,000 |
| 15-830-3D | Replacement of Tailrace Stop Logs, Headrace Gates, and Equipment, CWRP | 10,000,000 |
| 16-272-3P | Conversion of Primary Tanks to High Strength Waste Receiving and Distribution, CWRP | 3,500,000 |
| 17-276-3D | Structural Repairs and Roofing Replacement at the 95th Street Pumping Station, CSA | 1,866,000 |
| 17-844-3P | Furnish, Deliver, and Install Odor Control Systems, KWRP, HPWRP, and CWRP | 3,000,000 |
| 17-845-3P | Heavy Equipment Storage Building Site Improvements, Bulk Storage Building, CWRP and OWRP | 1,560,000 |
| Total | | \$ 32,924,000 |

| Projects Under Development | | Estimated Construction Cost |
|-----------------------------------|--|------------------------------------|
| 09-230-3M | Screens and Conveyor Improvements at the 125th Street Pumping Station, CSA | \$ 3,825,000 |
| 11-242-3S | Palos Hills Pumping Station Force Main, CSA | 6,700,000 |
| 12-245-3P | Phosphorus Recovery System, CWRP | 31,000,000 |
| 15-266-4H | Decommissioning of the Thornton Transitional Reservoir, CSA | 3,500,000 |
| 17-2XX-3P | Dewatering System, CWRP | 10,000,000 |
| | Total | \$ 55,025,000 |
| | Calumet Service Area Grand Total | \$ 214,755,000 |
| | Capital Projects Grand Total - All Service Areas | \$ 1,091,988,000 |

^ 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.

Capital Improvements Bond Fund Program

| Awards in 2018 | | | Est. Construc- tion Cost | Dura- tion (days) | Est. Award Date |
|-----------------------|---|-------------------|-----------------------------------|-------------------------|-----------------------|
| # | Project Name | Project Number | | | |
| 1 | Stickney Effluent Reuse Line, SSA | 14-107-3S | \$ 800 | 469 | Jan-18 |
| 2 | Drop Shaft 5 Inspection and Rehabilitation, NSA | 14-372-3S | 2,700 | 472 | Jan-18 |
| 3 | Summit Conduit Rehabilitation, SSA | 16-126-3S | 1,700 | 520 | Jan-18 |
| 4 | Furnish, Deliver, and Install Disc Filters, EWRP | 18-702-31 | 3,200 | 1,065 | Jan-18 |
| 5 | Emerson Ovation Distributed Control System, NSA | 18-704-31 | 1,802 | 364 | Jan-18 |
| 6 | North Side Sludge Pipeline Replacement - Section 1, NSA | 07-027-3S | 12,831 | 820 | Jan-18 |
| 7 | Conversion of Primary Tanks to High Strength Waste Receiving and Distribution, CWRP | 16-272-3P | 3,500 | 515 | Feb-18 |
| 8 | Heavy Equipment Storage Building Site Improvements, Bulk Storage Building, CWRP and OWRP | 17-845-3P | 1,560 | 304 | Feb-18 |
| 9 | Structural Repairs and Roofing Replacement at the 95th Street Pumping Station, CSA | 17-276-3D | 1,866 | 240 | Mar-18 |
| 10 | Fischer Farms Horticultural Center, HPWRP | 16-538-3V | 3,500 | 640 | Mar-18 |
| 11 | Guaranteed Energy Performance, Various Locations | 18-706-31 | 3,500 | 245 | Mar-18 |
| 12 | Pavement Rehabilitation, Various Locations | 18-605-31 | 1,100 | 656 | Mar-18 |
| 13 | Switchgear and Motor Control Center Replacement, OWRP | 17-080-3E | 2,200 | 760 | Apr-18 |
| 14 | Odor Control Facilities at WASSTRIP®, Southwest Coarse Screen and Overhead Weir, and Post-Centrifuge Building, SWRP | 17-134-3M | 15,000 | 720 | May-18 |
| 15 | Modifications to TARP Structures, CSA and SSA | 17-842-3H | 2,500 | 635 | May-18 |
| 16 | Rehabilitation of North Branch Pumping Station, NSA | 16-079-3D | 3,000 | 618 | Jun-18 |
| 17 | Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP | 15-069-3D | 10,000 | 822 | Sep-18 |
| 18 | Replacement of Tailrace Stop Logs, Headrace Gates, and Equipment, CWRP | 15-830-3D | 10,000 | 761 | Oct-18 |
| 19 | 39th Street Conduit Rehabilitation - Phase II, SSA | 01-103-AS | 24,700 | 770 | Oct-18 |
| 20 | Furnish, Deliver, and Install Odor Control Systems, KWRP, HPWRP, and CWRP | 17-844-3P | 3,000 | 425 | Nov-18 |
| 21 | Railroad Locomotive Terminal Restoration, SWRP | 18-904-31 | 1,440 | 457 | Nov-18 |
| Total 2018 Awards | | | \$ 109,899 | | |

Projects Under Development

| # | Project Name | Project Number | Est. Construction Cost | Duration (days) | Est. Award Date |
|-----------------------------------|--|----------------|------------------------|-----------------|-----------------|
| 22 | North Shore 1 Rehabilitation, NSA | 10-047-3S | \$ 22,750 | 920 | Jan-19 |
| 23 | Dewatering System, CWRP | 17-2XX-3P | 10,000 | 1,094 | Jan-19 |
| 24 | Energy Neutrality Improvements, EWRP | 17-413-3P | 20,000 | 720 | Jan-19 |
| 25 | Energy Neutrality Improvements, HPWRP | 17-539-3P | 15,000 | 720 | Jan-19 |
| 26 | Upper Des Plaines Intercepting Sewer 11D, Ext. C Rehabilitation, NSA | 11-404-3S | 5,500 | 720 | Feb-18 |
| 27 | Upper Des Plaines Intercepting Sewer 14B Rehabilitation, KWRP | 06-360-3S | 6,700 | 360 | Mar-19 |
| 28 | Decommissioning of the Thornton Transitional Reservoir, CSA | 15-266-4H | 3,500 | 660 | Mar-19 |
| 29 | Phosphorus Recovery System, CWRP | 12-245-3P | 31,000 | 1,095 | Jun-19 |
| 30 | Screens and Conveyor Improvements at the 125th Street Pumping Station, CSA | 09-230-3M | 3,825 | 720 | Jul-19 |
| 31 | Battery B Final Settling Tanks, Rehabilitation of Concrete, SWRP | 16-128-3D | 2,000 | 370 | Aug-19 |
| 32 | A/B and C/D Service Tunnel Rehabilitation - Phase III, SWRP | 16-127-3D | 17,000 | 1,095 | Oct-19 |
| 33 | Digester Gas Utilization Facilities, SWRP | 11-189-3P | 17,000 | 1,095 | Jan-20 |
| 34 | Upper Des Plaines Intercepting Sewer 11D Rehabilitation, NSA | 12-369-3S | 5,500 | 720 | Sep-20 |
| 35 | Palos Hills Pumping Station Force Main, CSA | 11-242-3S | 6,700 | 620 | Feb-21 |
| 36 | Roof Replacement of the Lue-Hing M&R Complex, SWRP | 17-135-3V | 6,500 | 730 | Mar-21 |
| 37 | Battery C Final Settling Tanks, Rehabilitation of Concrete, SWRP | 16-129-3D | 2,000 | 370 | Aug-21 |
| 38 | Battery D Final Settling Tanks, Rehabilitation of Concrete, SWRP | 16-130-3D | 2,000 | 370 | Aug-21 |
| 39 | Deammonification System, SWRP | 13-101-3P | 30,000 | 820 | Sep-21 |
| 40 | Organic Waste Receiving Station, SWRP | 14-117-3P | 30,000 | 530 | Sep-21 |
| 41 | McCook Reservoir Expanded Stage 2 Rock Wall Stabilization, SWRP | 17-131-4F | 5,000 | 1,278 | Feb-22 |
| Total Future Awards | | | <u>\$ 241,975</u> | | |
| Cumulative 2018 and Future Awards | | | <u>\$ 351,874</u> | | |

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 <u>Fund Loans</u> | General Obligation | |
| | | <u>Bonds</u> | <u>Total</u> |
| Tunnel and Reservoir Plan | \$ - | \$ - | \$ - |
| Water Reclamation Plant | - | 84,160 | 84,160 |
| Expansion and Improvements | - | - | - |
| Solids Management | 12,831 | 46,940 | 59,771 |
| Collection Facilities | 30,200 | 51,302 | 81,502 |
| Replacement of Facilities | 49,025 | 77,416 | 126,441 |
| Other | - | - | - |
| | <u>\$ 92,056</u> | <u>\$ 259,818</u> | <u>\$ 351,874</u> |

Capital Improvements Bond Fund Program Impacts

| # | Project Name | Project Number | Justification | | | | Impact | | |
|------------------------------|---|----------------|----------------|-------------|------------------|-------------------|----------|--------|----------|
| | | | Capacity Needs | Useful Life | Economic Benefit | Safety/Regulatory | Manpower | Energy | Chemical |
| <u>Awards in 2018</u> | | | | | | | | | |
| 1 | Stickney Effluent Reuse Line, SSA | 14-107-3S | | | x | | = | = | = |
| 2 | Drop Shaft 5 Inspection and Rehabilitation, NSA | 14-372-3S | | | | x | = | = | = |
| 3 | Summit Conduit Rehabilitation, SSA | 16-126-3S | | x | | | = | = | = |
| 4 | Furnish, Deliver, and Install Disc Filters, EWRP | 18-702-31 | x | | x | x | = | + | = |
| 5 | Emerson Ovation Distributed Control System, NSA | 18-704-31 | | x | | | = | = | = |
| 6 | North Side Sludge Pipeline Replacement - Section 1, NSA | 07-027-3S | | x | | | = | + | = |
| 7 | Conversion of Primary Tanks to High Strength Waste Receiving and Distribution, CWRP | 16-272-3P | x | | | x | - | - | = |
| 8 | Heavy Equipment Storage Building Site Improvements, Bulk Storage Building, CWRP and OWRP | 17-845-3P | | | | x | = | = | = |
| 9 | Structural Repairs and Roofing Replacement at the 95th Street Pumping Station, CSA | 17-276-3D | | x | | | = | = | = |
| 10 | Fischer Farms Horticultural Center, HPWRP | 16-538-3V | x | | | | = | = | = |
| 11 | Guaranteed Energy Performance, Various Locations | 18-706-31 | | | x | | = | + | = |
| 12 | Pavement Rehabilitation, Various Locations | 18-605-31 | | x | | x | = | = | = |
| 13 | Switchgear and Motor Control Center Replacement, OWRP | 17-080-3E | | x | | x | = | = | = |
| 14 | Odor Control Facilities at WASSTRIP®, Southwest Coarse Screen and Overhead Weir, and Post-Centrifuge Building, SWRP | 17-134-3M | | | | x | - | - | = |
| 15 | Modifications to TARP Structures, CSA and SSA | 17-842-3H | x | | | | = | = | = |
| 16 | Rehabilitation of North Branch Pumping Station, NSA | 16-079-3D | | | | x | = | = | = |
| 17 | Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP | 15-069-3D | x | x | | | = | = | = |
| 18 | Replacement of Tailrace Stop Logs, Headrace Gates, and Equipment, CWRP | 15-830-3D | | | | x | = | = | = |
| 19 | 39th Street Conduit Rehabilitation - Phase II, SSA | 01-103-AS | | x | | | = | = | = |
| 20 | Furnish, Deliver, and Install Odor Control Systems, KWRP, HPWRP, and CWRP | 17-844-3P | | x | x | | + | - | - |
| 21 | Railroad Locomotive Terminal Restoration, SWRP | 18-904-31 | | x | | | + | = | = |

| Capital Improvements Bond Fund Operating Impacts for Projects Under Development | | | Justification | | | | Impact | | |
|--|--|----------------|----------------|-------------|------------------|-------------------|----------|--------|----------|
| | | | Capacity Needs | Useful Life | Economic Benefit | Safety/Regulatory | Manpower | Energy | Chemical |
| # | Project Name | Project Number | | | | | | | |
| 22 | North Shore 1 Rehabilitation, NSA | 10-047-3S | | x | | | = | = | = |
| 23 | Dewatering System, CWRP | 17-2XX-3P | | | x | | = | = | = |
| 24 | Energy Neutrality Improvements, EWRP | 17-413-3P | | | x | | = | ++ | = |
| 25 | Energy Neutrality Improvements, HPWRP | 17-539-3P | | | x | | = | ++ | = |
| 26 | Upper Des Plaines Intercepting Sewer 11D, Ext. C Rehabilitation, NSA | 11-404-3S | | x | | | = | = | = |
| 27 | Upper Des Plaines Intercepting Sewer 14B Rehabilitation, KWRP | 06-360-3S | | x | | | = | = | = |
| 28 | Decommissioning of the Thornton Transitional Reservoir, CSA | 15-266-4H | | x | | | = | = | = |
| 29 | Phosphorus Recovery System, CWRP | 12-245-3P | | | | x | - | - | - |
| 30 | Screens and Conveyor Improvements at the 125th Street Pumping Station, CSA | 09-230-3M | | x | | | = | ++ | = |
| 31 | Battery B Final Settling Tanks, Rehabilitation of Concrete, SWRP | 16-128-3D | | x | | | = | = | = |
| 32 | A/B and C/D Service Tunnel Rehabilitation - Phase III, SWRP | 16-127-3D | | x | | | = | = | = |
| 33 | Digester Gas Utilization Facilities, SWRP | 11-189-3P | | | x | | - | ++ | = |
| 34 | Upper Des Plaines Intercepting Sewer 11D Rehabilitation, NSA | 12-369-3S | | x | x | | = | = | = |
| 35 | Palos Hills Pumping Station Force Main, CSA | 11-242-3S | | x | | | = | = | = |
| 36 | Roof Replacement of the Lue-Hing M&R Complex, SWRP | 17-135-3V | | x | | x | = | = | = |
| 37 | Battery C Final Settling Tanks, Rehabilitation of Concrete, SWRP | 16-129-3D | | x | | | = | = | = |
| 38 | Battery D Final Settling Tanks, Rehabilitation of Concrete, SWRP | 16-130-3D | | x | | | = | = | = |
| 39 | Deammonification System, SWRP | 13-101-3P | x | | | | = | - | = |
| 40 | Organic Waste Receiving Station, SWRP | 14-117-3P | | | x | | - | ++ | = |
| 41 | McCook Reservoir Expanded Stage 2 Rock Wall Stabilization, SWRP | 17-131-4F | | | x | | = | + | = |

LEGEND

Under "**Justification**," the marked columns note the categories of benefits expected from each project.

Manpower

+ or - Labor savings (+) or increases (-) expected to result in redirecting existing manpower away from or toward facility or process to other tasks with no net change in total position costs.

++ or -- Labor impact significant enough to ultimately result in reduction (++) or increase (--) in personnel. See additional cost details contained in the Project Fact Sheets.

Energy

+ or - Minor energy savings (+) or costs (-) having a negligible impact on the District's overall energy budget.

++ or -- Major energy savings (++) or costs (--) expected to result in significant revisions to a facility's energy budget. See additional cost details contained in the Project Fact Sheets.

Chemical

+ or - Chemical savings (+) or costs (-) having a negligible impact on the District's overall chemical costs.

++ or -- Major chemical savings (++) or costs (--) expected to result in significant revisions to the budgeted chemical expenditures for the associated process. See additional cost details contained in the Project Fact Sheets.

= No budgetary impact expected.

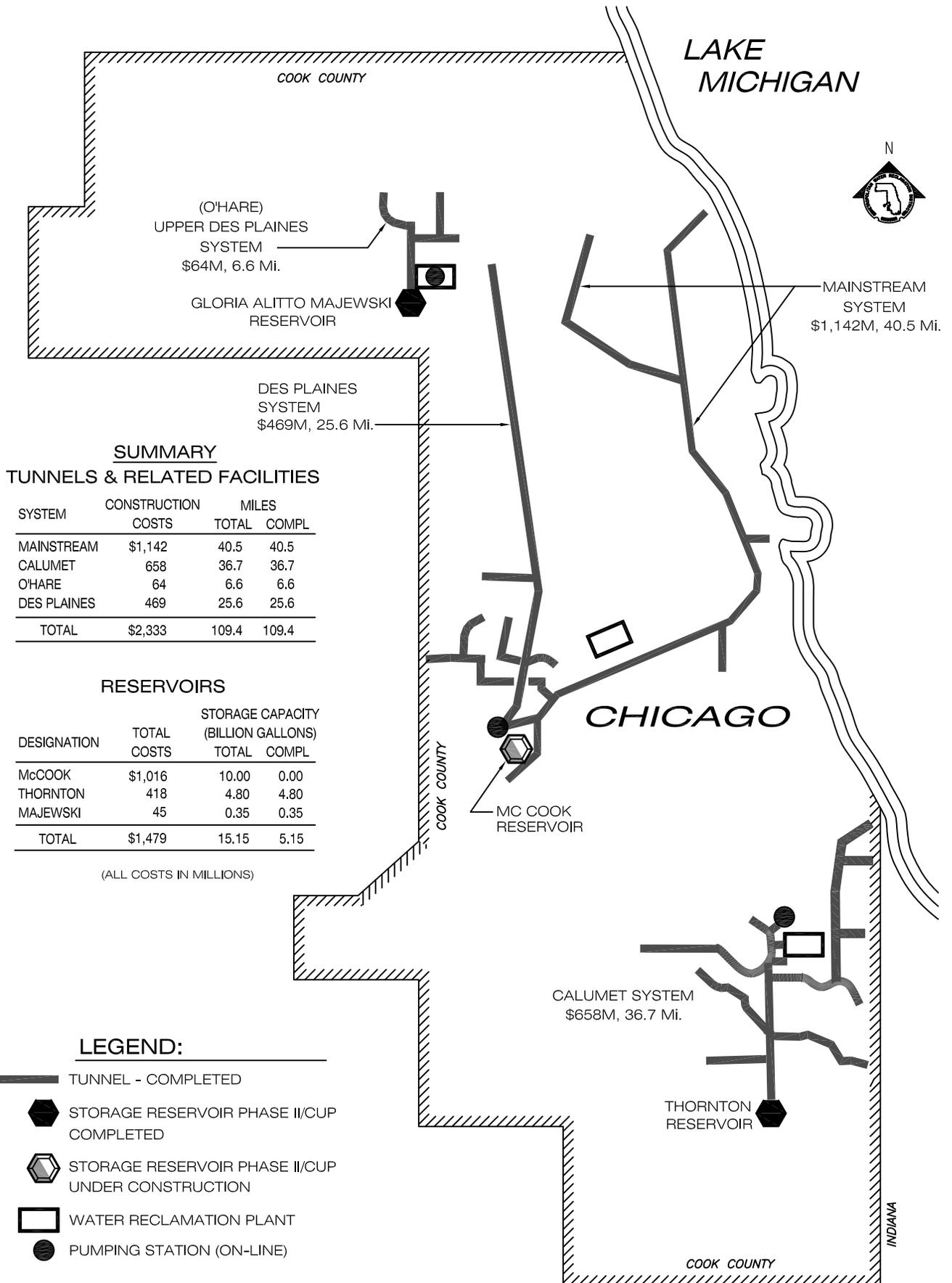
TARP PHASE II PROJECT COSTS

Phase I of TARP was completed in 2016 and two of the Phase II reservoirs, Majewski and Thornton, are now operational. Stage 1 of the McCook Reservoir is on schedule to become operational at the end of 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 | |
| McCook Reservoir | | | | |
| I - Stages 1 and 2 - Army Corps of Engineers Contracts | 73-161-2H | Reservoir to be constructed under several contracts | \$664,000,000 | 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 | \$58,717,000 | 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 | To be Awarded in 2017 | \$7,338,000 | No |
| XVI - Expanded Stage 2 Rock Wall Stabilization | 17-131-4F | Future | \$5,000,000 | No |
| XVII - Expanded Stage 2 Aeration and Floor Features | 17-132-4F | Future | \$2,000,000 | No |
| Total Project Cost | | | \$1,478,809,000 | |

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.



SUMMARY

TUNNELS & RELATED FACILITIES

| SYSTEM | CONSTRUCTION COSTS | MILES | |
|--------------|--------------------|--------------|--------------|
| | | TOTAL | COMPL |
| MAINSTREAM | \$1,142 | 40.5 | 40.5 |
| CALUMET | 658 | 36.7 | 36.7 |
| O'HARE | 64 | 6.6 | 6.6 |
| DES PLAINES | 469 | 25.6 | 25.6 |
| TOTAL | \$2,333 | 109.4 | 109.4 |

RESERVOIRS

| DESIGNATION | TOTAL COSTS | STORAGE CAPACITY (BILLION GALLONS) | |
|--------------|----------------|------------------------------------|-------------|
| | | TOTAL | COMPL |
| McCOOK | \$1,016 | 10.00 | 0.00 |
| THORNTON | 418 | 4.80 | 4.80 |
| MAJEWSKI | 45 | 0.35 | 0.35 |
| TOTAL | \$1,479 | 15.15 | 5.15 |

(ALL COSTS IN MILLIONS)

TUNNEL and RESERVOIR PLAN PROJECT STATUS

39th Street Conduit Rehabilitation - Phase II, SSA

Project Number: 01-103-AS

Service Area: Stickney

Location: Chicago

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$24,700,000

Contract Award Date: October 2018*

Substantial Completion Date: November 2020*



Project Description: The purpose of this project is to rehabilitate over 100-year-old conduit lying under 39th Street (Pershing Road), stretching from a former pumping station near Lake Michigan to its discharge at the Racine Avenue Pumping Station. The project includes rehabilitation of approximately 15,440 feet of 20-foot diameter brick-lined intercepting sewer and associated manholes and sewer connections.

Project Justification: The 39th Street conduit is approximately 110 years old. The conduit receives combined sewage from a service area of approximately nine square miles, on the southeast side of Chicago. Video inspection of this conduit indicates severe deterioration, including loss of bricks, infiltrating joints, and mineral deposits at a number of places, which could eventually lead to a collapse. Under Phase I of the project, a bypass tunnel was constructed to allow for the rehabilitation of the 39th Street conduit. Rehabilitation of the conduit will ensure long term drainage for over 145,000 people in its service area.

Project Status: The project is being designed.

*Information shown is estimated.

West Side Primary Settling Tanks 1-9 and Aerated Grit Facility, SWRP

Project Number: 04-128-3P

Service Area: Stickney

Location: Stickney WRP

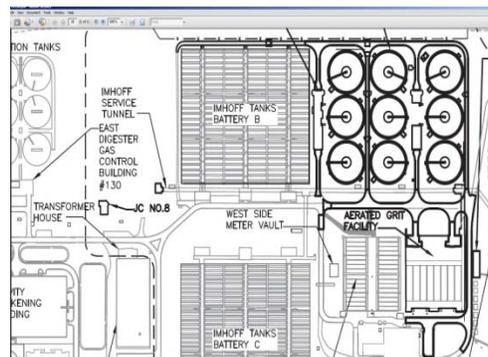
Engineering Consultant: Greeley and Hansen

General Contractor: IHC Construction Companies, LLC and F.H. Paschen, S.N. Nielsen Joint Venture

Estimated Construction Cost: \$231,964,000

Contract Award Date: December 2014

Substantial Completion Date: April 2018*



Project Description: Construction of nine 160-foot diameter primary settling tanks (PST) and six 132-foot long aerated grit tanks, associated support facilities, service tunnels, and conduits. The aerated grit facility will include shaftless-screw conveyors, centrifugal and airlift pumps for grit removal, grit classifiers, and a dumpster-loading system. Grit tanks will be covered for odor control. Process air for the grit tanks and PSTs will be provided by new turbo blowers. The PST area will have tunnel access pump stations containing scum pumps, sludge airlifts, an electrical substation, odor control vessels and fans, and associated equipment. PST effluent weirs and troughs will be covered for odor control. The ability to bypass six PSTs will be provided. Additionally, modifications to the existing Monitoring & Research building at the Stickney Water Reclamation Plant are included in this project. The work involves the installation of new air handling units, an absorption chiller, heat exchangers, pumps, and strobic fans. Replacement of associated controls, intake, supply, and exhaust ductwork, piping, conduit, and wiring at the Monitoring & Research building is also included. Equipment will be provided by the District, but installed by the contractor. Piping will be installed in Mechanical Room LC-118 to bypass and abandon leaking underground condenser water piping.

Project Justification: The West Side Imhoff tanks are being decommissioned and replaced with more modern and effective treatment equipment. Imhoff battery A and skimming tanks 1-8 have already been demolished in preparation for this project. The Imhoff tanks that have been in service since 1928 are labor-intensive to operate and provide inferior treatment to PSTs. Valves for sludge withdrawal are difficult to operate and have resulted in injuries to personnel. Skimming scum from Imhoff tanks requires personnel to walk narrow walkways above open sewage without fall protection. Certain areas of the structures have exhibited structural cracking and leakage from conduits. Maintenance and repair supplies are not readily available for antiquated systems. Sludge solids are digested in the lower anaerobic zone of the Imhoff tanks and the methane gas byproduct of digestion is impossible to capture and is emitted to the atmosphere. A significant increase in digester gas production will result from this project, allowing the District to proceed on the path to energy neutrality. The aerated grit facility will replace the existing West Side skimming tanks and provide superior grit removal, thus protecting downstream piping and equipment from damage due to scouring by grit. The existing skimming tanks and grit concentration utilize maintenance-intensive chain-and-flight mechanisms. In addition, the skimming tanks and existing grit concentration create a recycle load of up to 100 million gallons per day. There will be minimal recycling from the new facilities. The existing Imhoff and skimming tanks are significant generators of odor. Odors from new facilities will be captured and removed, in keeping with the District's good-neighbor policy. The central portion of the Monitoring & Research building was constructed in 1963 and much of the existing equipment in this area is original to the facility. The supply and exhaust ventilation can no longer meet the testing and ventilation needs of the facility staff. Increased maintenance needs and the increased risk of failure necessitate that it be replaced to ensure a reliable and safe environment for the employees.

Project Status: This project is under construction.

*Information shown is estimated.

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

Project Number: 04-132-3D

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design and Consultant, RME

General Contractor: IHC Construction Companies, LLC and F.H. Paschen, S.N. Nielsen Joint Venture

Estimated Construction Cost: \$20,615,000

Contract Award Date: May 2016

Substantial Completion Date: May 2019*



Project Description: This project will rehabilitate approximately 200 feet of the A/B service tunnel and 135 feet of the C/D service tunnel, and it will replace 150 feet of connecting tunnel between the A/B and C/D service tunnels.

Project Justification: The A/B and C/D service tunnels are approximately 70 to 80 years old, and significant deterioration has occurred since they were placed into service. Rehabilitating the tunnels will restore structural capacity, extend their service life, and prevent further damage to the utilities inside the tunnels.

Project Status: The project is under construction.

*Information shown is estimated.

Salt Creek Intercepting Sewer 2 Rehabilitation, SSA

Project Number: 06-155-3S

Service Area: Stickney

Location: Proviso Township and Lyons Township

Engineering Consultant: In-house design

General Contractor: Kenny Construction Company

Estimated Construction Cost: \$44,041,000

Contract Award Date: December 2015

Substantial Completion Date: November 2018*



Project Description: This project consists of rehabilitating approximately 32,800 feet of intercepting sewer with sizes ranging from 10" diameter to 7' x 7' semi-elliptic concrete pipe by using the cured-in-place pipe lining method, the Channeline lining method, and/or the spray-on geopolymer lining system. This project also includes rehabilitating 81 manholes and two junction chambers by the spray-on lining system and/or the fiber wrap system, rebuilding and raising 11 manholes, constructing one manhole, and making control structure modifications.

Project Justification: The sewers were inspected by the Maintenance & Operations Department in 2003 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 corrosion due to the action of hydrogen sulfide generated by the decomposition of settled solids. Physical inspection of the manholes revealed cracks and holes in the walls and on the bases of the manholes.

Project Status: The project is under construction.

*Information shown is estimated.

Calumet TARP Pumping Station Improvements, CWRP

Project Number: 06-212-3M

Service Area: Calumet

Location: Calumet WRP

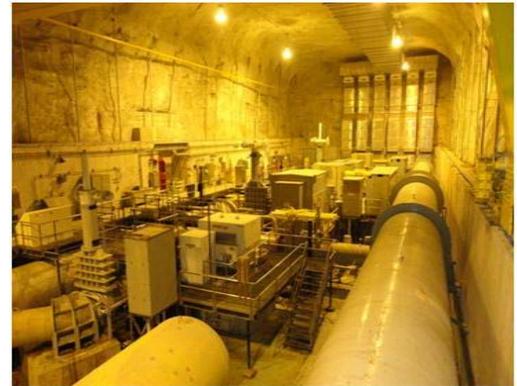
Engineering Consultant: AECOM

General Contractor: Sollitt/Sachi/Alworth Joint Venture

Estimated Construction Cost: \$35,746,000

Contract Award Date: May 2013

Substantial Completion Date: May 2018*



Project Description: The purpose of this project is to replace the existing East 1 and West 1 Tunnel and Reservoir Plan (TARP) pumps with larger capacity pumps, replace their motors, and install new 4.6 kilovolt variable frequency drives (VFDs) for the pumps. The suction and discharge piping will be modified to accommodate the new pumps. Also, the remaining four pumps, East 2 and 3 and West 2 and 3, will be replaced with new 72 million gallons per day pumps, along with new motors and four 4.6 kilovolt VFDs. The drives will be located on an elevated platform in each of the pump rooms. A low pressure steam line will be constructed from the high-level influent pumping station to TARP for heating needs. The grading, roads, and site work disturbed during construction will be completed and restored.

Project Justification: This project will increase the firm pumping capacity of each pump room to 150 million gallons per day while restoring the dependability of the equipment at the Calumet TARP Station. There will be some increase in maintenance costs due to the addition of VFDs in place of the constant speed motors for the existing small pumps. However, VFDs will allow better control of pumping and reduce energy costs by matching pump speed with flow needs.

Project Status: This project is under construction.

*Information shown is estimated.

North Side Sludge Pipeline Replacement - Section 1, NSA

Project Number: 07-027-3S

Service Area: North

Location: Villages of Skokie and Lincolnwood and City of Chicago

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$12,831,000

Contract Award Date: January 2018*

Substantial Completion Date: April 2020*



Project Description: The purpose of this project is to replace Section 1 of the existing Northside 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 shall be removed and replaced. New automatic air release valves shall be installed in the remaining existing structures to preserve the useful life of those structures.

Project Status: The project is being designed.

*Information shown is estimated.

D799 Switchgear Replacement, SWRP

Project Number: 09-182-3E

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: Electrical Systems, Inc.

Estimated Construction Cost: \$12,752,000

Contract Award Date: December 2015

Substantial Completion Date: November 2019*



Project Description: Replacement of the medium voltage (13.2kV) switchgear and medium voltage feeder cables in D799 at the Stickney WRP.

Project Justification: The medium voltage switchgear and cables are over 30 years old. Failure of a tie breaker in 2009 caused the Stickney WRP facility to be out of service. Replacement of the switchgear would improve reliability, reduce the risk of failure, provide enhanced safety features, and provide for future expansion (proposed new Monitoring & Research laboratory and disinfection facility). Due to the switchgear's condition, the increased risk of failure necessitates its replacement to ensure the appropriate level of service. Recent inspection and testing revealed the potential of an incipient failure of the cables. They should be replaced to avoid a catastrophic failure.

Project Status: The project is under construction.

*Information shown is estimated.

Calumet Intercepting Sewer 19F Rehabilitation, CSA

Project Number: 11-239-3S

Service Area: Calumet

Location: Bremen and Proviso Township

Engineering Consultant: In-house design

General Contractor: Insituform Technologies USA, LLC

Estimated Construction Cost: \$12,396,000

Contract Award Date: June 2016

Substantial Completion Date: March 2018*



Project Description: The project consists of rehabilitating approximately 14,051 linear feet of 60-inch sewer pipe, 252 feet of 20-inch circular sewer, 23 drop manholes, and one junction structure, removing an existing 48-inch cast-in-place structure, and abandoning of a 10-inch diameter pipe.

Project Justification: The sewers were inspected by the Maintenance & Operations Department with a closed-circuit television inspection system. The video shows infiltration and concrete/metal deterioration due to hydrogen sulfide. In order to restore the hydraulic and structural integrity of the sewers, they need to be rehabilitated. The manholes and structures exhibit similar signs of deterioration and need to be rehabilitated.

Project Status: The project is under construction.

*Information shown is estimated.

Organic Waste Receiving Facility and Digester Gas Flare Upgrade, CWRP

Project Number: 11-240-3P

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$8,426,000

Contract Award Date: January 2017

Substantial Completion Date: June 2018*



Project Description: The overall scope includes repurposing a decommissioned sludge screening building into an organic waste receiving and processing facility. Construction includes a receiving station for unloading two tanker trucks simultaneously, a receiving pit for high strength liquid waste and fats, oils, and greases, screens, transfer pumps, transfer piping, odor control, and site work for handling truck traffic. Due to the increase in digester gas production, two new digester gas flares must be added, and the existing flares in the flare house will be rebuilt.

Project Justification: Biogas, generated as a by-product of the anaerobic digestion process at the Calumet WRP, has value as a fuel. Currently, the biogas is used to produce steam in boilers for plant heating. There are periods of time in the year when the steam demand is low and not all of the biogas is fully utilized. This project will permit the increase in biogas production by approximately 70 percent over the current volume by utilizing excess capacity in the digesters to take in organic waste material from outside sources. All of the biogas produced by plant solids and organic feedstock will then be fully utilized as an energy source, as a step towards energy neutrality. The biogas utilization facilities will be constructed under a separate project. Liquid organic waste will be supplied by a single supply chain manager to provide consistency and certainty of volume. Organic wastes will include high strength liquid waste from industrial sources such as food processing plants, and fats, oils, and greases from grease traps and commercial waste. The liquid organics supply chain manager will be selected under a separate request for proposal process. The receiving station constructed under this project will handle up to 200,000 gallons of liquid organic wastes per day.

Project Status: This project is under construction.

*Information shown is estimated.

McCook Reservoir Des Plaines Inflow Tunnel

Project Number: 13-106-4F

Service Area: Stickney

Location: Mainstream Pumping Station

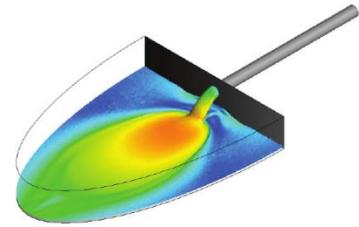
Engineering Consultant: Black & Veatch Corporation, Inc.

General Contractor: Walsh Construction Company II, LLC

Estimated Construction Cost: \$107,662,000

Contract Award Date: June 2016

Substantial Completion Date: January 2020*



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 ductbanks, 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: This project is under construction.

*Information shown is estimated.

Calumet TARP Screens, CWRP

Project Number: 13-246-3M

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: Rubinos & Mesia Engineers, Inc.

General Contractor: The George Sollitt Construction Company

Estimated Construction Cost: \$12,754,000

Contract Award Date: February 2015

Substantial Completion Date: March 2019*



Project Description: The purpose of this project is to replace the existing bar screens, which are located upstream of the Tunnel and Reservoir Plan (TARP) pumping station approximately 350 feet below ground, with new screens which will be mechanically cleaned. The cleaning mechanism will be rail mounted at ground level and have a gripper, which will travel down the shaft and remove the screenings from the bar screens, returning them to the surface for disposal. The work will be performed in conjunction with Contract 06-212-3M, Calumet TARP Pumping Station Improvements, CWRP.

Project Justification: This project will restore the dependability of the equipment at the Calumet TARP pumping station. With the addition of the screen cleaning mechanism, there will be a decrease in maintenance costs for the screens due to the elimination of the manual cleaning operation. However, there will be an increase in energy costs. The mechanism will provide more frequent cleanings and a safer operation, as workers will no longer need to be lowered into the wet shaft via a man basket in order to manually clean the screens.

Project Status: The project is under construction.

*Information shown is estimated.

Stickney Effluent Reuse Line, SSA

Project Number: 14-107-3S

Service Area: Stickney

Location: Stickney Township

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$800,000

Contract Award Date: January 2018*

Substantial Completion Date: April 2019*



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.

Project Justification: This project provides a source of treated effluent water for use in process applications in the immediate vicinity of the Stickney WRP and represents the first of the effluent water reuse opportunities to be constructed.

Project Status: The project is being designed.

*Information shown is estimated.

Drop Shaft 5 Inspection and Rehabilitation, NSA

Project Number: 14-372-3S

Service Area: North

Location: City of Des Plaines

Engineering Consultant: In-house design/Black & Veatch, Inc.

General Contractor: To be determined

Estimated Construction Cost: \$2,700,000

Contract Award Date: January 2018*

Substantial Completion Date: April 2019*



Project Description: The project consists of the rehabilitation of the following work at Drop Shaft No. 5: Drop shaft by means of slip lining, 100 feet of 108-inch pipe by the cured-in-place pipe lining process, 100 feet of the drop shaft exit conduit by spray-on lining, and 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 replacement of gates and stop logs on Drop Shaft DS-P1, which is part of the 39th Street Conduit.

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, 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.

Project Status: The design phase for the project is 60 percent complete.

*Information shown is estimated.

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: RME, Inc.

General Contractor: To be determined

Estimated Construction Cost: \$10,000,000

Contract Award Date: September 2018*

Substantial Completion Date: December 2020*



Project Description: Besides protecting, repairing, and structurally strengthening steel frame beams and columns embedded in the masonry wall, the scope of work includes localized roof deck repair including roof slope remediation, full roofing membrane and insulation replacement, full masonry and flashing repairs at roof parapet walls, localized windows and exterior doors repairs, localized tuckpointing, and other repairs associated or incidental to the facade and roof rehabilitation project. The Structural/Architectural Section will be working with RME, Inc., a Chicago-based consulting company. District staff will manage the repair design process, review and approve all submitted repair documents, administer the contract, and oversee the repair construction. The project goal is to rehabilitate pump and blower house roof and facade and to 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. For 90 years of service, the building experienced maintenance repairs (re-roofing, 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 walls were severely corroded. The roof steel beams that are part of the building vertical (gravity) and lateral (wind/seismic) loads resisting system appeared compromised. Corrosion of the steel can result in severe deterioration of the masonry and water infiltration. The parapet wall distress, which collapsed in May 2013 during the repair, was directly related to the severely corroded steel beams supporting the wall.

The building is in need of comprehensive structural rehabilitation that includes localized strengthening of steel frame beams. The objective is not only to provide protection to the embedded structural steel and masonry components but also extend life span of the building.

Project Status: The evaluation report for the project is 98 percent complete and includes preliminary repair design.

*Information shown is estimated.

Installation of Baffle Plates in Final Settling Tanks, OWRP

Project Number: 15-074-3D

Service Area: North

Location: O'Brien WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$1,600,000

Contract Award Date: July 2017

Substantial Completion Date: December 2018*



Project Description: The project will remove an existing steel and wood baffle plate in Final Settling Tank B-1. The contractor will also furnish and install circular, fiber reinforced plastic baffle plates and support framing under the bottoms of the influent wells in each of the converted final settling tanks.

Project Justification: A test baffle plate was installed in Final Settling Tank B-1 to see if the addition would improve the settling of solids in the tank. The test proved successful; therefore, installation of permanent baffle plates in the final settling tanks will improve the solids settling and removal process, which helps the District comply with its National Pollutant Discharge Elimination System limits.

Project Status: This project is under construction.

*Information shown is estimated.

Main Sewage Pump Seal Water System Modification, MSPS

Project Number: 15-118-3M

Service Area: Stickney

Location: Mainstream Pumping Station

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$1,121,000

Contract Award Date: January 2017

Substantial Completion Date: July 2018*



Project Description: Installation of three break tanks to provide a break between the city water and the service water systems. The service water system is used to feed the pump seals on the main pump floor at approximately 340 feet below grade. The project will install piping, valving, electrical conduits, and wiring for power and controls along with the tanks and pumping equipment required to provide an air gap separation for the North and South Pump Houses and in the Gate House Control Building.

Paint all piping that was previously city water and is now service water to identify the water system as non-potable. Insulation and pipe painting will be performed in accordance with District standards.

Install vacuum breaker on a slop sink at grade level just outside of the North Pump House receiving room.

Project Justification: This project will update the city water system to the latest Illinois plumbing code.

Project Status: The project is under construction.

*Information shown is estimated.

Aeration Tanks Air Valves Automation in Batteries A, B, C, and D, SWRP

Project Number: 15-122-3P

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$6,654,000

Contract Award Date: October 2016

Substantial Completion Date: October 2018*



Project Description: This project will replace the existing manually operated angle globe valves with automated valves on the first seven drop locations of pass one in each aeration tank. The associated air drop piping will also be modified as necessary. The work includes aeration tanks in batteries A, B, C, and D with the exception of tanks D-7 and D-8, which have been modified under a different contract.

Project Justification: The District has implemented enhanced biological phosphorus removal at the Stickney WRP. Better process control is needed in the first pass, which will include an anaerobic zone and a swing zone. Periodic mixing of the anaerobic zone is necessary for volatile fatty acid release from in-line fermentation. Automation of these air valves will allow for periodic mixing as well as adjusting the length of the anaerobic zone based on flow and other operating conditions.

Project Status: This project is under construction.

*Information shown is estimated.

Conversion of Two Gravity Concentration Tanks to Primary Sludge Fermenters, SWRP

Project Number: 15-124-3P

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$4,095,000

Contract Award Date: August 2017

Substantial Completion Date: May 2019*



Project Description: This project will convert two of the new gravity concentration tanks into fermenters and install a pumping station to pump the fermentate directly into the West Side primary effluent conduit feeding the secondary aeration batteries. This project will also install a gas detection system for the new gravity concentration tank building. Additional work was added to rehabilitated hydrogen sulfide removal system and chiller units for conditioning the digester gas.

Project Justification: The District is pursuing Enhanced Biological Phosphorus Removal at the Stickney WRP for the recovery of phosphorus and meeting a new regulatory limit for phosphorus in the effluent. The fermentation of primary solids will result in an additional production of volatile fatty acids which will be fed directly in secondary treatment. The additional volatile fatty acids will be utilized in the Enhanced Biological Phosphorus Removal process, resulting in a more stable and better performing process. Additionally, code requirements for an enclosed gravity concentration tank area requires the installation of a combustible gas detection system. Digester gas will be utilized in the operation of the gas turbine. Conditioning of this gas is necessary to ensure reliable operation of the turbine.

Project Status: The project is under construction.

*Information shown is estimated.

Replacement of Tailrace Stop Logs, Headrace Gates, and Equipment, CWRP

Project Number: 15-830-3D

Service Area: Calumet

Location: Lockport Power House

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$10,000,000

Contract Award Date: October 2018*

Substantial Completion Date: October 2020*



Project Description: Design, fabricate, and install headrace stop logs for Bays 1 and 2. Replace head gates, tailrace stop logs, and associated hoist systems.

Project Justification: Head gates in Bays 1 and 2 are not properly functioning. 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: The project is in the preliminary design stage.

*Information shown is estimated.

Devon IAS Switchgear Replacement and Wilmette PS Conduit Replacement, NSA

Project Number: 16-077-3E

Service Area: North

Location: Devon Instream Aeration Station and Wilmette Pumping Station

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$600,000

Contract Award Date: August 2017

Substantial Completion Date: October 2018*



Project Description: Replace electrical switchgear and motor control center at the Devon Instream Aeration Station. Replace conduit at the Wilmette Pumping Station.

Project Justification: For the Devon Instream Aeration Station: The electrical equipment is over 30 years old and is in poor condition. In order to avoid failure and to ensure the appropriate level of service, the equipment must be replaced. For the Wilmette Pumping Station: Due to flooding, the wires-to-gate actuators have been subjected to freezing/thawing conditions and therefore have become damaged. The underground conduit and wire will be replaced with above ground conduit and wire.

Project Status: The project is under construction.

*Information shown is estimated.

Rehabilitation of North Branch Pumping Station, NSA

Project Number: 16-079-3D

Service Area: North

Location: North Branch Pumping Station

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$3,000,000

Contract Award Date: June 2018*

Substantial Completion Date: February 2020*



Project Description: Provide grouted fiberglass fiber reinforced plastic jackets around the existing concrete columns to protect columns from erosion. Repair underwater deteriorated concrete of the east wall and under the deck wall. Repair deteriorated concrete stairs and concrete deck. Restore balustrade and deck lighting.

Project Justification: This pumping station has five 300 cubic feet per second discharge pumps that discharge excess storm water into the river. The pipe outlets are a few feet below river water facing downward. The high velocity discharged water has caused severe erosion around the columns at the river bottom. As a result, concrete column cross sections have eroded more than 20 percent and, in some cases, up to 50 percent of the original size. Restoration of concrete columns is essential for the safe serviceability of the building. Also, concrete deck and stairs have spalled areas that need to be repaired.

Project Status: The project is in the preliminary design stage.

*Information shown is estimated.

McCook Reservoir Expanded Stage 2 Slope Stabilization and Retaining Walls, SSA

Project Number: 16-125-4F

Service Area: Stickney

Location: Lawndale Avenue Solids Management Area

Engineering Consultant: In-house design

General Contractor: Schwartz Excavating, Inc.

Estimated Construction Cost: \$7,339,000

Contract Award Date: April 2017

Substantial Completion Date: April 2018*



Project Description: The scope of work consists of constructing approximately 2,000 linear feet of a soil nail retaining wall along the western and southern sides as well as slope stabilization work around the entire perimeter of Expanded Stage 2 of the McCook Reservoir.

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 retaining walls with correlating stabilization of the side slopes are required to provide sufficient mining reserves to achieve the intended capacity of ten billion gallons.

Project Status: This project is under construction.

*Information shown is estimated.

Summit Conduit Rehabilitation, SSA

Project Number: 16-126-3S

Service Area: Stickney

Location: Lyons Township

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$1,700,000

Contract Award Date: January 2018*

Substantial Completion Date: June 2019*



Project Description: This project consists of the rehabilitation of 810 feet of 6'x7' semi-elliptic cast-in-place concrete sewer and inlet/outlet structures. The Summit Conduit begins on the northwest side of the Des Plaines River and extends southeast under the Des Plaines River and the Stevenson Expressway to the northwest side of the Chicago Sanitary and Ship Canal.

Project Justification: The sewers were inspected by the Maintenance & Operations Department with a closed-circuit television inspection system. The video shows infiltration and concrete and metal deterioration due to hydrogen sulfide. In order to restore the hydraulic and structural integrity of the sewers, they need to be rehabilitated. The inlet/outlet structures show similar signs of deterioration and need to be rehabilitated.

Project Status: The design phase for the project is 98 percent complete.

*Information shown is estimated.

Covered Composting System, CWRP

Project Number: 16-270-3P

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: To be determined

General Contractor: To be determined

Estimated Construction Cost: \$24,000,000

Contract Award Date: December 2017*

Substantial Completion Date: December 2018*



Project Description: The scope of work for this project is to design a covered composting system to be located at the Calumet WRP's East Drying Cells 5 and 6. The design shall utilize the GORE® system sized for 62,500 wet tons of annual production. The GORE® system requires a biosolids feedstock with 15 to 25 percent solids content and a bulking agent (e.g. wood chips, yard waste, or shredded paper) to be mixed with the biosolids. The GORE® system consists of three phases: Phase I–High Rate Composting, Phase II–Maturation, and Phase III–Finishing. Each phase occurs at its own location. Phases I and II occur under a three-layer laminate cover in bunkers with four-foot high walls. The bunkers separate the compost piles and provide support for a cover winding system to easily install and remove the GORE® covers from the piles. No cover is needed in Phase III. A total of 15 bunkers are required for Phase I, and 12 bunkers are required for Phase II. Also included are conveyors to move material between phases, blowers, and ancillary mechanical and electrical equipment.

Project Justification: The purpose of this project is to provide facilities at the Calumet WRP for high quality composted biosolids product. The system will produce an exceptional quality, Class A biosolids product, while containing nuisance odors generated during the process.

Project Status: The project is being designed.

*Information shown is estimated.

Conversion of Primary Tanks to High Strength Waste Receiving and Distribution, CWRP

Project Number: 16-272-3P

Service Area: Calumet

Location: Calumet WRP

Engineering Consultant: Black & Veatch, Inc.

General Contractor: To be determined

Estimated Construction Cost: \$3,500,000

Contract Award Date: February 2018*

Substantial Completion Date: July 2019*



Project Description: The project will construct a receiving station for high strength waste to assist in enhanced biological phosphorus removal (EBPR) at the Calumet WRP. Two of the old primary tanks will be repurposed and utilized, including repair of the tanks, coating of the tanks, covers, odor control, mixers, pumps, and piping with the ability to feed either batteries A, B, and C and/or batteries E1 and E2.

Project Justification: The District has volunteered a 1.0 milligram per liter total phosphorus limit for the Calumet WRP's effluent permit. EBPR is a sustainable approach to removing phosphorus; contrary to chemical phosphorus removal, there is not an increase in sludge produced and it allows for the phosphorus captured in the biosolids to be recovered and reused. However, influent characteristics need to be favorable to encourage the microorganisms to uptake phosphorus, including sufficient usable carbon. At the Calumet WRP, studies have shown that there is not enough carbon in the wastewater to support EBPR. In order to supplement the carbon loading to the plant, the District is pursuing the addition of high strength wastes to the aeration tanks. The conversion of the primary tanks through this project allows for the receiving, storage, and distribution of the high strength waste.

Project Status: The project is in the design stage.

*Information shown is estimated.

Pump Rehabilitation and Diverter Gate Installation, EWRP

Project Number: 16-412-3M

Service Area: North

Location: Egan WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$400,000

Contract Award Date: November 2017*

Substantial Completion Date: January 2018*



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: The project is in the 98 percent design stage.

*Information shown is estimated.

Fischer Farms Horticultural Center, HPWRP

Project Number: 16-538-3V

Service Area: North

Location: Hanover Park WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$3,500,000

Contract Award Date: March 2018*

Substantial Completion Date: April 2019*



Project Description: Establish Fischer Farm, a native prairie landscape and tree farm nursery at the Hanover Park WRP, that will use the District's biosolids-based compost as a growing media. The plants and trees cultivated at the nursery will be used at District facilities and other properties in the area. As production matures, the beneficiaries of the program will expand to local communities and other government agencies. The facility will also be used for educating communities about the beneficial use of biosolids, a byproduct of the wastewater treatment process.

Project Justification: The metropolitan Chicago region's tree population has been decimated by the emerald ash borer beetle and other pests and diseases. This project will not only demonstrate the usefulness of biosolids-based compost as a growing media but will also increase public awareness of the need to restore the tree canopy in the region.

Under this project, volunteers will be recruited from the community to take an active role in growing the trees and shrubs from seed, as well as providing educational programs for adults and children. The nursery will serve as a model for other communities in demonstrating the value and viability of biosolids, a common wastewater treatment product.

The District is committed to sustainable practices encompassing the use of biosolids as a resource rather than a waste product. The use of biosolids as a fertilizer will save landfills and will benefit society as a whole.

Project Status: The project is being designed.

*Information shown is estimated.

North Branch Dam Removal and River Riparian Connectivity

Project Number: 16-IGA-22

Service Area: North

Location: North Branch Chicago River

Engineering Consultant: USACE

General Contractor: To be determined

Estimated Construction Cost: \$2,500,000

Contract Award Date: April 2017

Substantial Completion Date: September 2020*



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: A Project Participation Agreement between ACE, the Chicago Park District, and the District has been concluded, and a separate Intergovernmental Agreement between the Chicago Park District and the District is being negotiated. ACE has completed plans and is preparing final bid documents.

*Information shown is estimated.

Switchgear and Motor Control Center Replacement, OWRP

Project Number: 17-080-3E

Service Area: North

Location: O'Brien WRP

Engineering Consultant: In-house design

General Contractor: To be Determined

Estimated Construction Cost: \$2,200,000

Contract Award Date: April 2018*

Substantial Completion Date: April 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 & 19B. Building additions are 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: The project is being designed.

*Information shown is estimated.

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

Project Number: 17-134-3M

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$15,000,000

Contract Award Date: May 2018*

Substantial Completion Date: March 2020*



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: This project will reduce the odor emissions that affect the District's neighbors and staff. The plant is located near a residential neighborhood.

Project Status: The project is being designed.

*Information shown is estimated.

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

Project Number: 17-276-3D

Service Area: Calumet

Location: 95th Street Pumping Station

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$1,866,000

Contract Award Date: March 2018*

Substantial Completion Date: December 2019*



Project Description: Furnish labor, material, and equipment required to replace water-damaged gypsum roof panels and repair or reinforce corroded structural steel members at the upper and lower roof levels. 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 staff in the Maintenance & Operations Department following structural inspections. Work under the proposed contract will eliminate the sources of leakage and restore the lost structural capacities of corroded steel members.

Project Status: The project is being designed.

*Information shown is estimated.

Modifications to TARP Structures, CSA and SSA

Project Number: 17-842-3H

Service Area: Calumet and Stickney

Location: Racine Avenue Pumping Station and South Holland

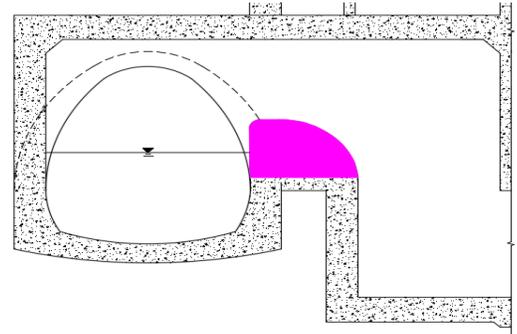
Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$2,500,000

Contract Award Date: May 2018*

Substantial Completion Date: January 2020*



Project Description: The project consists of weir wall modifications for control structures DS-M27, DS-M28, and DS-M29 located at the Racine Avenue Pumping Station. Primary work for these control structures consists of the demolition of existing weir walls, concrete placement, and temporary bypass for flow going into the Racine Avenue Pumping Station at these control structures. Work at control structures CDS-C1 and CDS-45 consists of new permanent dry weather diversion bypass sewers and minor demolition and concrete work for removal of existing flumes.

Project Justification: Modifications at control structures DS-M27, DS-M28, and DS-M29 are necessary to allow more flexibility of operations at the pumping station while diverting more flow into TARP during rain events, thereby reducing the potential for combined sewer overflows into the waterway. 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.

Project Status: The project is being designed.

*Information shown is estimated.

Furnish, Deliver, and Install Odor Control Systems, KWRP, HPWRP and CWRP

Project Number: 17-844-3P

Service Area: North and Calumet

Location: Kirie, Hanover Park, and Calumet WRPs

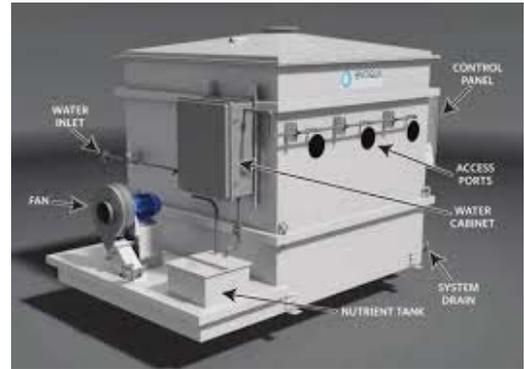
Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$3,000,000

Contract Award Date: November 2018*

Substantial Completion Date: December 2019*



Project Description: 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. The work at the Hanover Park WRP will install odor control units to treat the pretreatment building (including grit tanks), course screen exhaust, and gravity thickening belt exhaust. 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 labor required to change media by 80 hours per year and will reduce the cost of media by \$20,000 annually.

Project Justification: This project will reduce the odor emissions that affect the District's neighbors and staff.

Project Status: The project is being designed.

*Information shown is estimated.

Heavy Equipment Storage Building Site Improvements, Bulk Storage Building, CWRP and OWRP

Project Number: 17-845-3P

Service Area: North and Calumet

Location: Calumet and O'Brien WRPs

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$1,560,000

Contract Award Date: February 2018*

Substantial Completion Date: December 2018*



Project Description: The work proposed under this project consists of constructing a new concrete pavement area surrounding the heavy equipment storage building at the Calumet WRP, which is designed for vehicles entering and leaving the building and providing parking spaces for vehicle operators. Also included is the construction of a new bulk material storage building at the O'Brien WRP.

Project Justification: The Calumet WRP heavy equipment storage building is used to store snow removal equipment, tracked vehicles, and semi-trucks. Presently, the roof drains into the gravel surface, resulting in low spots. In addition, the gravel surface is not sufficient to support heavy vehicle use areas. There will be a designated parking area for vehicle operators. The site around the building will be engineered for equipment and heavy vehicle use, drainage, and storm water management. At the O'Brien WRP, the prior bulk storage building was removed due to the construction of the ultraviolet disinfection facility. The new bulk storage building will provide space for salt and deicing equipment storage.

Project Status: This project is being designed.

*Information shown is estimated.

Pavement Rehabilitation, Various Locations

Project Number: 18-605-31

Service Area: North, Calumet, and Stickney

Location: Stickney, Calumet, Kirie, O'Brien, and Egan WRPs, LASMA, and CALSMA

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$1,100,000

Contract Award Date: March 2018*

Substantial Completion Date: December 2019*



Project Description: Portland Cement Concrete pavement removal and replacement, Illinois Department of Transportation type B patch, curb and gutter removal and replacement, asphalt pavement resurfacing, and repair of collapsed inlets in the North, Stickney, and Calumet Service Areas.

Project Justification: Roadway and parking lot pavements as old as 35 years show signs of deterioration at the North, Stickney, and Calumet Service Areas. Cracks are as wide as six inches, and potholes are noted at numerous locations in various facilities. Asphalt cold patch has been applied every year in the past but will not last. Collapsed inlets are noted at each plant as well. The poor condition of pavement has a negative impact on District vehicles as well as employees' vehicles. This project will extend the useful life of the roadways and parking lots and provide safe driving conditions in the plants.

Project Status: The project is under review.

*Information shown is estimated.

Furnish, Deliver, and Install Disc Filters, EWRP

Project Number: 18-702-31

Service Area: North

Location: Egan WRP

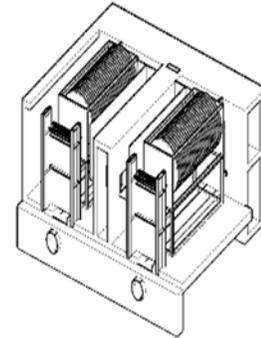
Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$3,200,000

Contract Award Date: January 2018*

Substantial Completion Date: December 2020*



Project Description: 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 backwash cycle. The disc filters will reduce the filter back wash from eight percent to less than five percent. The enclosed disc filters will reduce the midge flies in the filter building.

Project Status: The project is under review.

*Information shown is estimated.

Emerson Ovation Distributed Control System, NSA

Project Number: 18-704-31

Service Area: North

Location: Kirie, Egan, and Hanover Park WRPs

Engineering Consultant: In-house design

General Contractor: Emerson Process Management

Estimated Construction Cost: \$1,802,000

Contract Award Date: January 2018*

Substantial Completion Date: December 2018*



Project Description: Upgrade the Emerson Ovation Distributed Control System (DCS) at the Kirie, Egan, and Hanover Park WRPs.

Project Justification: Upgrade the DCS controls at the Kirie, Egan, and Hanover Park WRPs with an up-to-date technology that will provide the operators with information while incurring lower maintenance costs. The DCS provides controls and status of each plant's processes. The existing DCS controls have obsolete Ovation OCR161 controllers, Windows 2003 servers, Windows XP workstations, Cisco 2950 switches, power supplies, Ovation 3.0.4 software, and media converters. The upgraded system will utilize the existing wiring to reduce the installation cost and time by the District.

Project Status: The project is being developed.

*Information shown is estimated.

Guaranteed Energy Performance, Various Locations

Project Number: 18-706-31

Service Area: North

Location: O'Brien, Kirie, Egan, and Hanover Park WRPs

Engineering Consultant: Public Building Commission of Chicago

General Contractor: Noresco, LLC

Estimated Construction Cost: \$3,500,000

Contract Award Date: March 2018*

Substantial Completion Date: November 2018*



Project Description: Perform energy conservation measures identified in the Noresco Investment Grade Audit for all North Service Area facilities. Scope of work will include replacing lighting with light emitting diodes, installing steam blanket, and retrocommissioning Heating, Ventilation, and Air Conditioning equipment.

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: This project is in design phase.

*Information shown is estimated.

Railroad Locomotive Terminal Restoration, SWRP

Project Number: 18-904-31

Service Area: Stickney

Location: Stickney WRP

Engineering Consultant: In-house design

General Contractor: To be determined

Estimated Construction Cost: \$1,440,000

Contract Award Date: November 2018*

Substantial Completion Date: February 2020*



Project Description: Restore the building envelope on an 80-year-old essential building. Scope of work to include grind and repoint the entire exterior wall and interior wall where necessary, replace brick, if necessary, rebuild 10 course high section, grind and recaulk all capping stones, and reset or replace capstone, if necessary. Check all lintels and soldier course, replace lintels, if necessary, and seal around all doors and windows.

Project Justification: Missing grout and caulk noted at numerous areas allows moisture to penetrate and rust the steel components of the building. Rusting steel has caused masonry to be dislodged. Although localized repairs were done in the previous years, an extensive restoration is needed. Further delay will compromise the integrity of the building, which in turn, loses its function to protect the equipment and personnel in the building.

Project Status: The project is being initiated.

*Information shown is estimated.

SEWER DESIGN PROJECT MAP 2018



UPPER DES PLAINES
INTERCEPTING SEWER 11D
EXT. C REHABILITATION, NSA
11-404-3S \$5,500,000

UPPER DES PLAINES
INTERCEPTING SEWER 11D
REHABILITATION, NSA
12-369-3S \$5,500,000

UPPER DES PLAINES
INTERCEPTING SEWER 14B
REHABILITATION, NSA
06-360-3S \$6,700,000

NORTH SHORE 1
REHABILITATION, NSA
10-047-3S \$22,750,000

NORTHSIDE SLUDGE PIPELINE
REPLACEMENT, SECTION 1, NSA
07-027-3S \$12,831,000

39th STREET CONDUIT
REHABILITATION PHASE II, SSA
01-103-AS \$24,700,000

MODIFICATIONS TO TARP STRUCTURES
AT DS-M27, DS-M28, DS-M29, CDS-C1
AND CDS-45
17-842-3H \$2,500,000

DROP SHAFT 5 INSPECTION
AND REHABILITATION, NSA
14-372-3S \$2,700,000

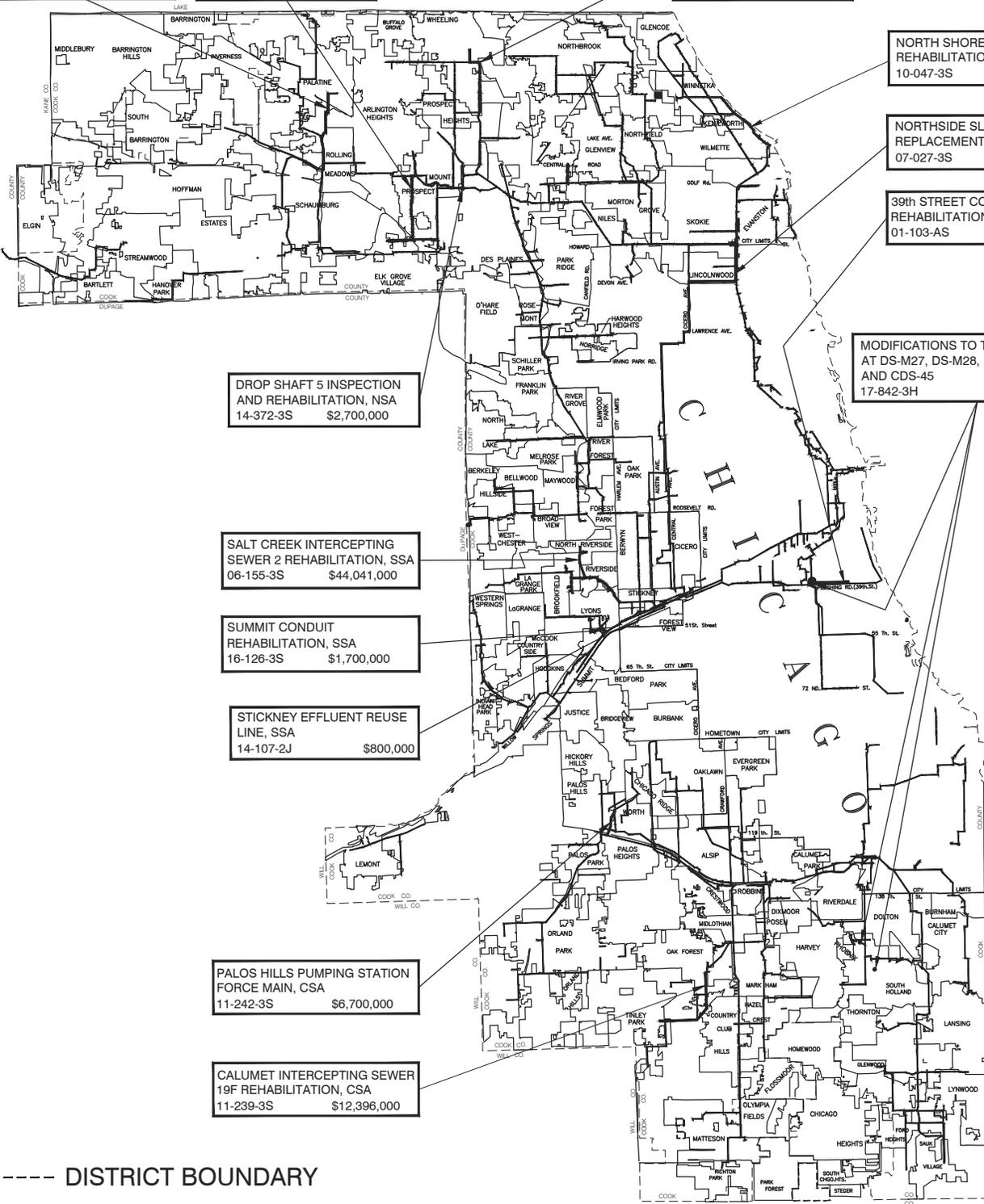
SALT CREEK INTERCEPTING
SEWER 2 REHABILITATION, SSA
06-155-3S \$44,041,000

SUMMIT CONDUIT
REHABILITATION, SSA
16-126-3S \$1,700,000

STICKNEY EFFLUENT REUSE
LINE, SSA
14-107-2J \$800,000

PALOS HILLS PUMPING STATION
FORCE MAIN, CSA
11-242-3S \$6,700,000

CALUMET INTERCEPTING SEWER
19F REHABILITATION, CSA
11-239-3S \$12,396,000



----- DISTRICT BOUNDARY



LOCATION MAP

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

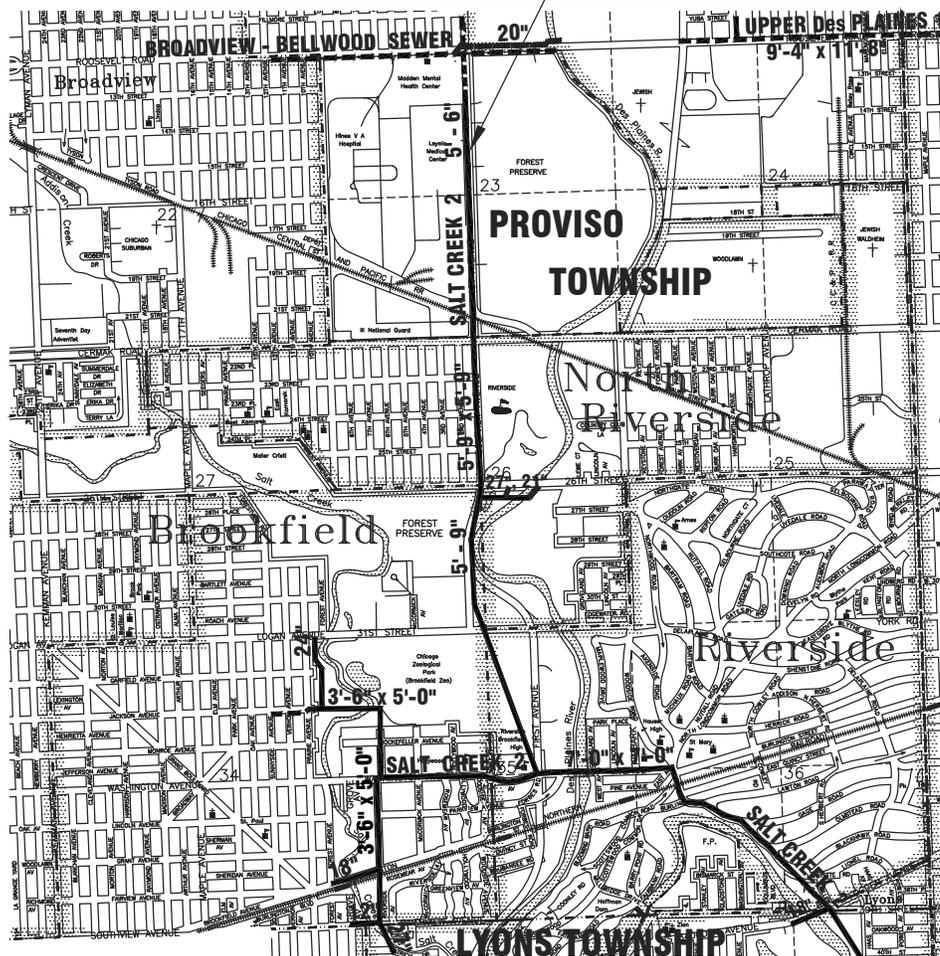
LEGEND:

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

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



SALT CREEK INTERCEPTING SEWER 2 REHABILITATION, SSA
 REHABILITATION OF:
 70 FEET OF 10-INCH DIAMETER PIPE
 300 FEET OF 12-INCH DIAMETER PIPE
 48 FEET OF 15-INCH DIAMETER PIPE
 1,330 FEET OF 18-INCH DIAMETER PIPE
 292 FEET OF 20-INCH DIAMETER PIPE
 278 FEET OF 21-INCH DIAMETER PIPE
 1,370 FEET OF 24-INCH DIAMETER PIPE
 634 FEET OF 27-INCH DIAMETER CLAY PIPE
 778 FEET OF 27-INCH DIAMETER CONCRETE PIPE
 7,857 FEET OF 3'6" x 5'0" SEMI-ELLIPTICAL PIPE
 12,442 FEET OF 5'9" x 5'9" SEMI-ELLIPTICAL PIPE
 7,400 FEET OF 7'0" x 7'0" SEMI-ELLIPTICAL PIPE
 REHABILITATION OF 81 MANHOLES
 REHABILITATION OF 2 JUNCTION CHAMBERS
 REBUILDING/RAISING OF 11 MANHOLES
 CONSTRUCTION OF 1 MANHOLE
 CONTROL STRUCTURE MODIFICATION
 COST: \$44,041,000



LEGEND:

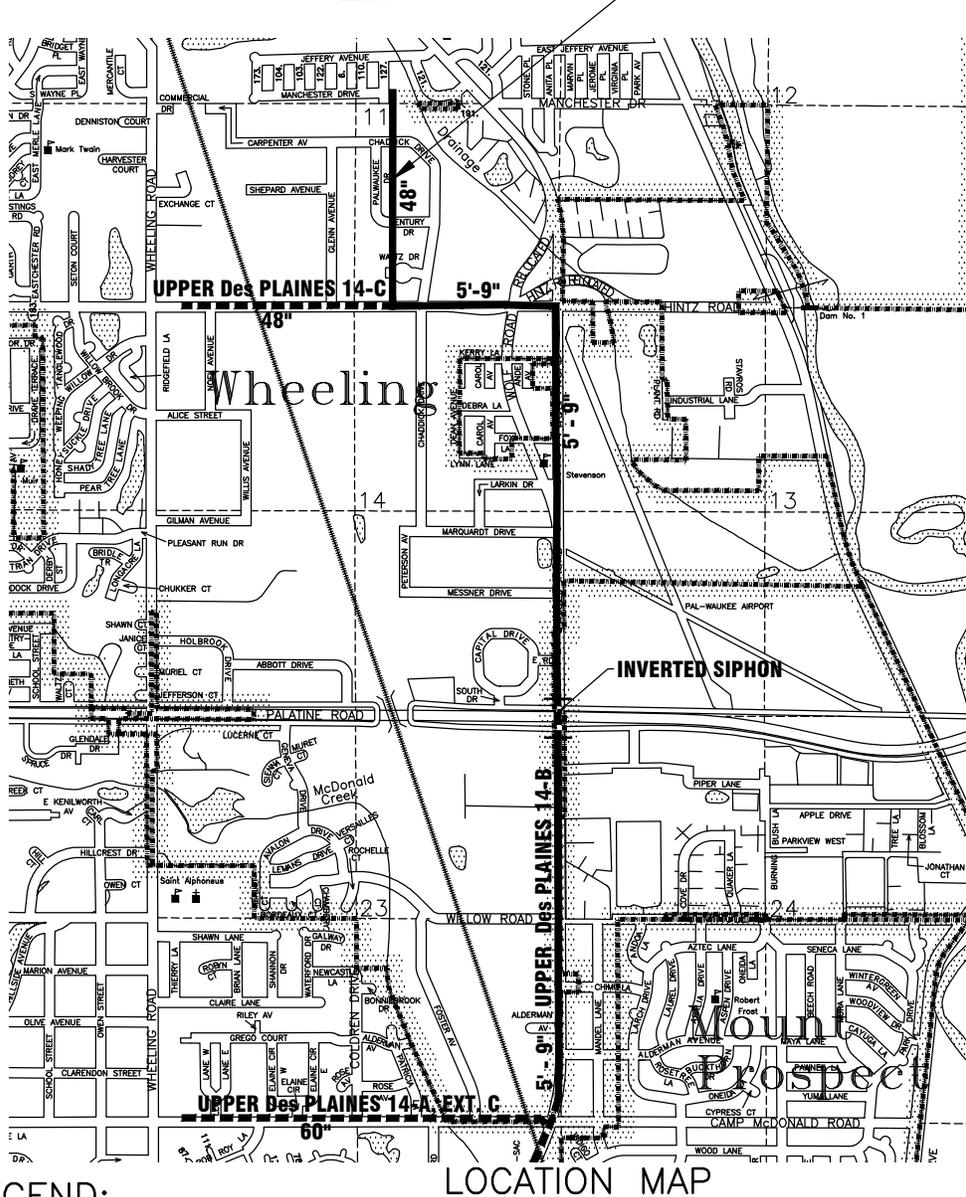
- = SEWER TO BE REHABILITATED
- - - - -** = EXISTING SEWER

LOCATION MAP

**SALT CREEK INTERCEPTING SEWER 2 REHABILITATION, SSA
 CONTRACT 06-155-3S**



UPPER DES PLAINES INTERCEPTING SEWER 14B
 REHABILITATION, NSA
 3,000 FEET OF 48-INCH SEWER
 11,000 FEET OF 69-INCH SEWER
 26 MANHOLES/STRUCTURES
 1 NEW MANHOLE
 COST: \$6,700,000



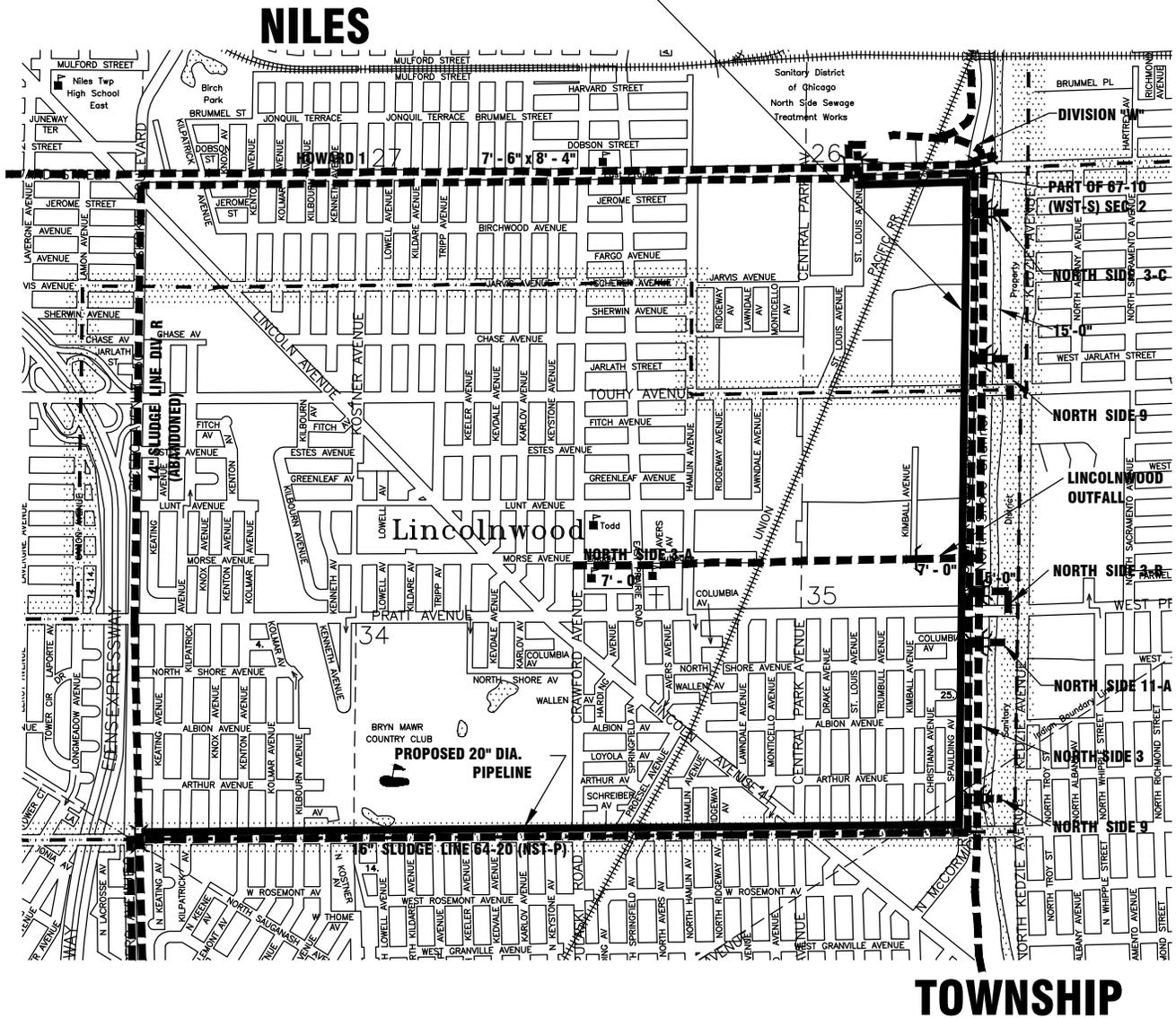
LEGEND:

- = SEWER TO BE REHABILITATED
- = EXISTING SEWER

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



NORTHSIDE SLUDGE PIPELINE REPLACEMENT, SECTION 1, NSA
 19,000 FEET OF 20-INCH DIAMETER FORCE MAIN
 AIR RELIEF, BLOW OFF & CLEANOUT STRUCTURES
 COST: \$12,831,000

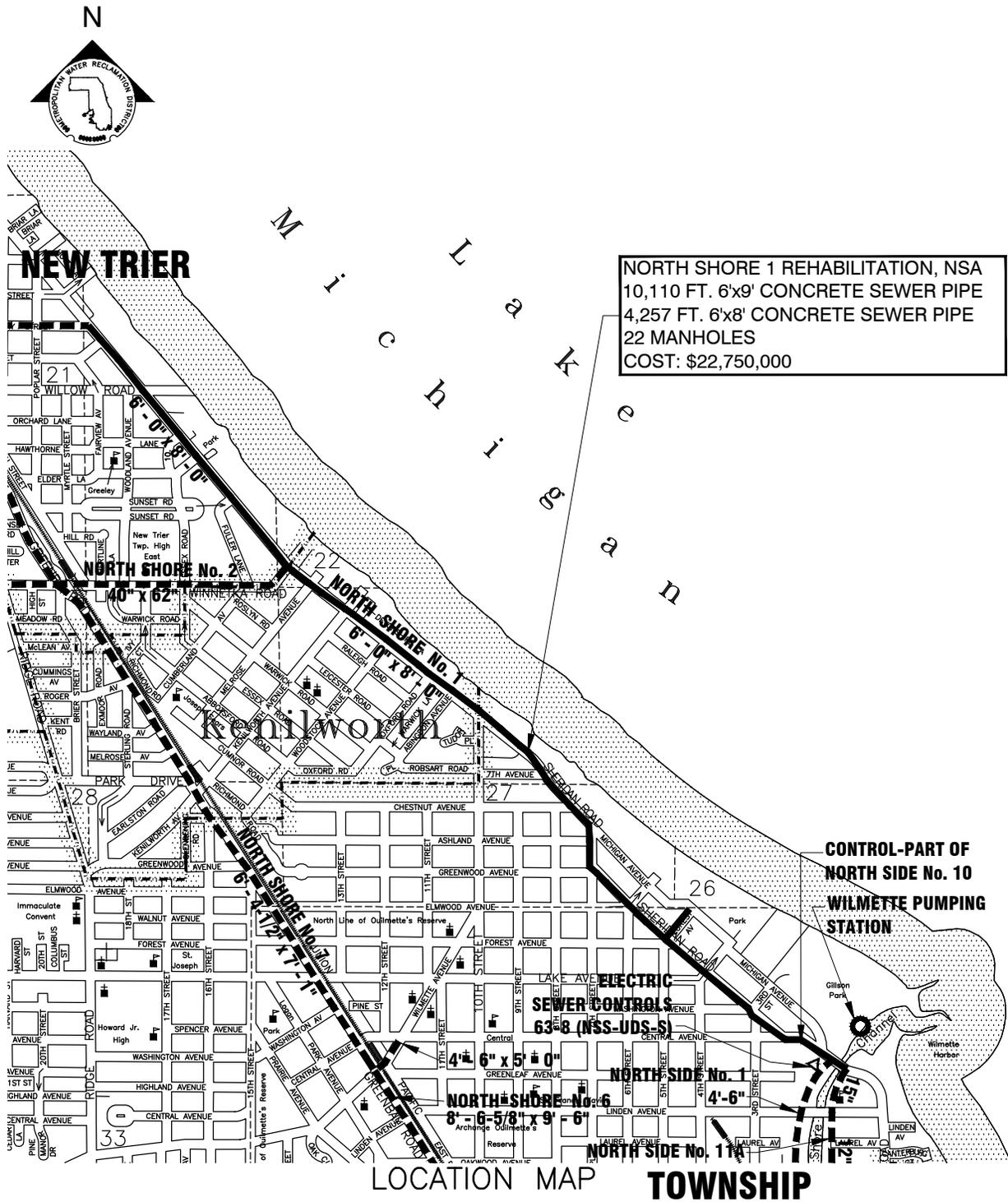


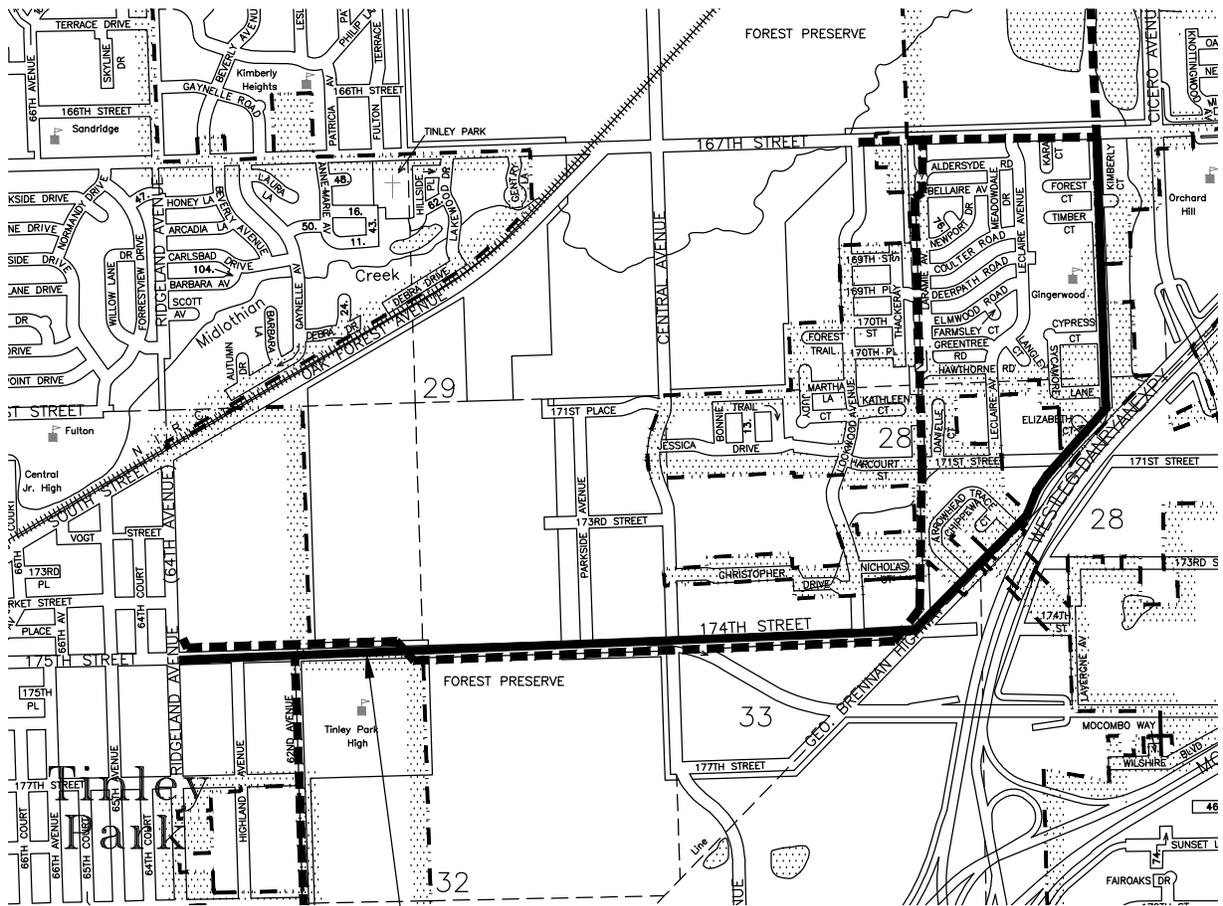
LOCATION MAP

LEGEND:

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

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





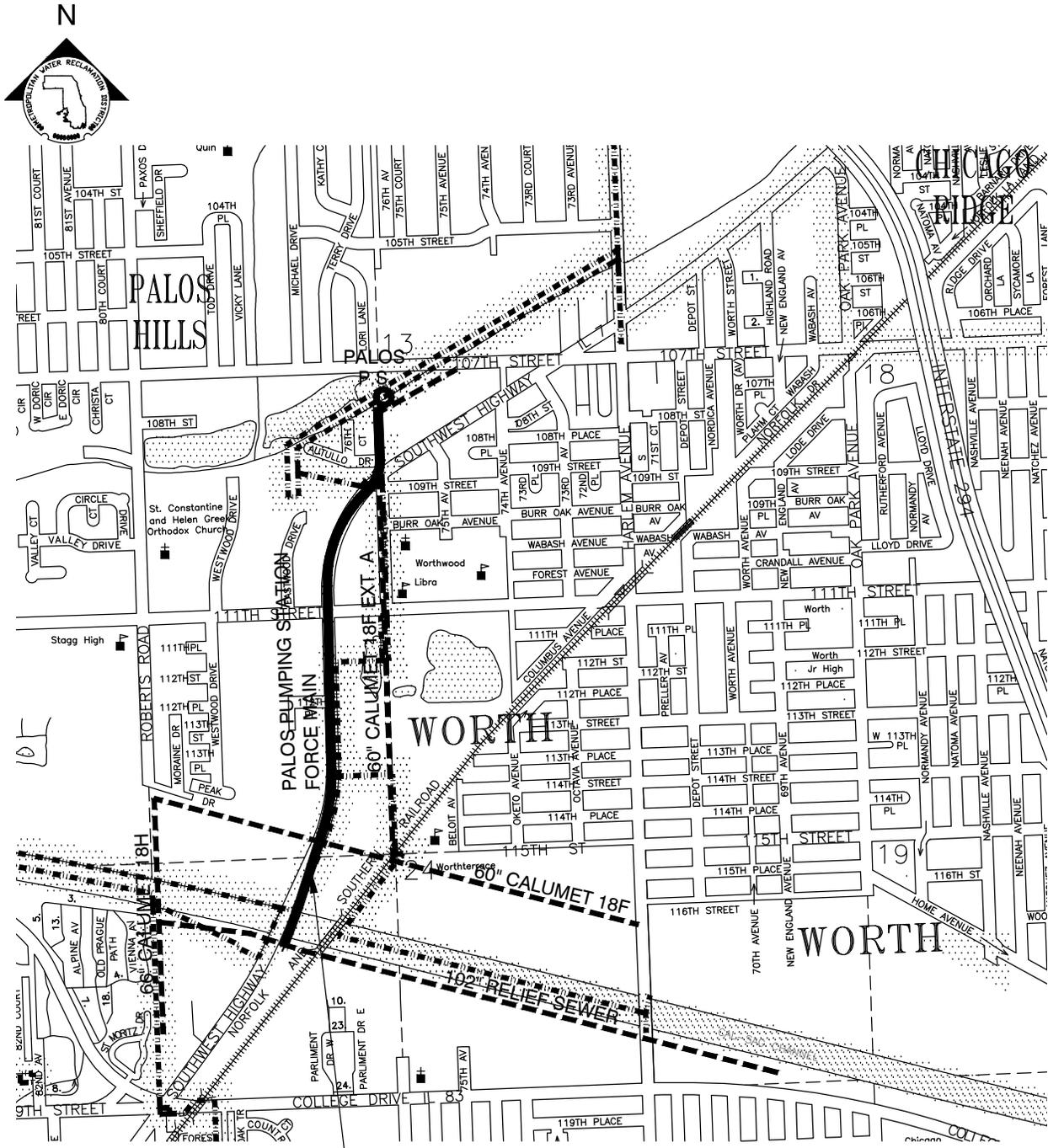
LOCATION MAP

CALUMET INTERCEPTING SEWER 19F
 REHABILITATION, CSA
 14,051 FEET OF 60-INCH DIAMETER
 SEWER
 23 MANHOLES AND 1 JUNCTION
 STRUCTURE
 COST: \$12,396,000

LEGEND:

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

**CALUMET INTERCEPTING SEWER 19F REHABILITATION, CSA
 CONTRACT 11-239-3S**



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

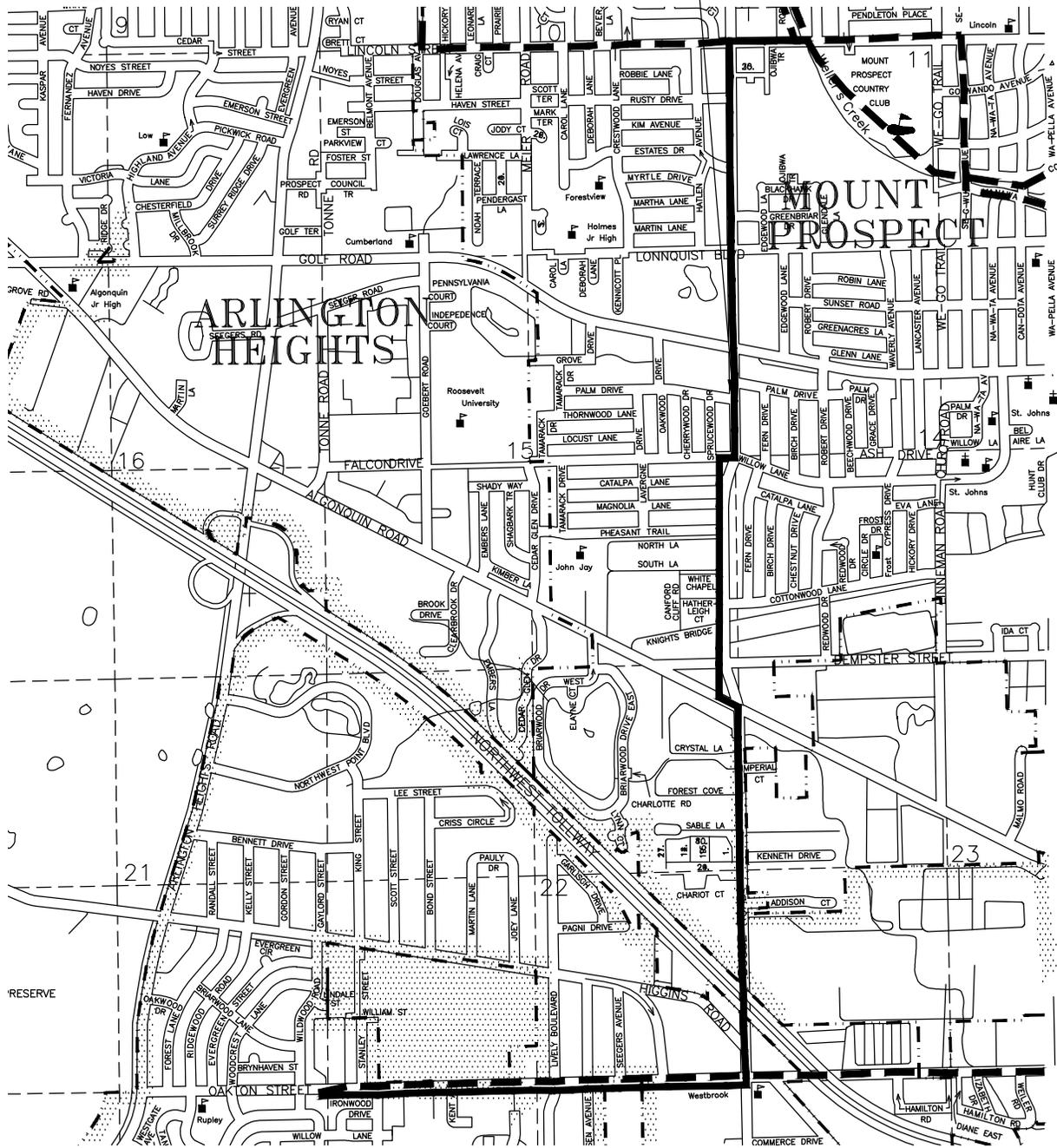
LEGEND:

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

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

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:

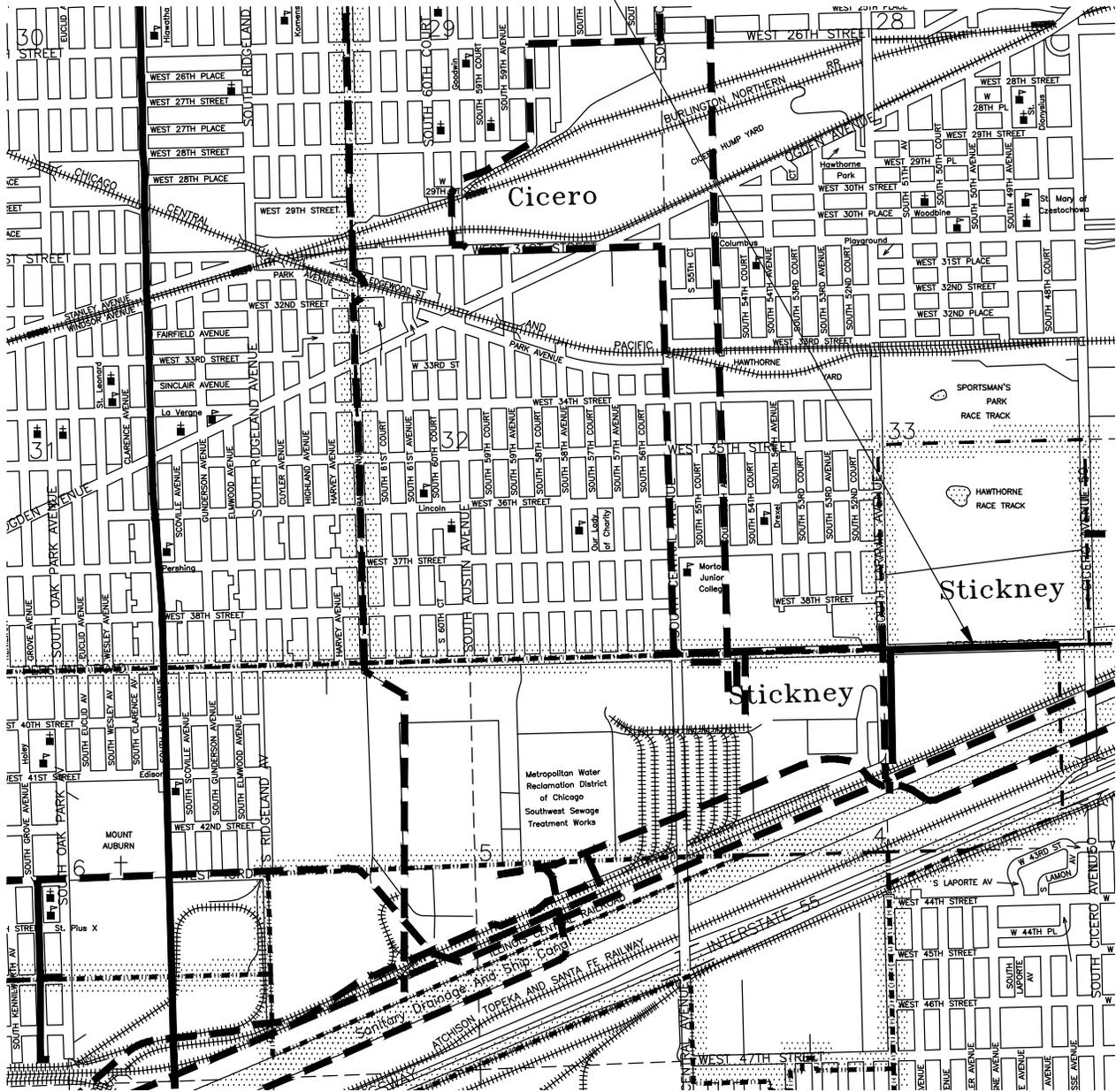
- = SEWER TO BE REHABILITATED
- - - -** = EXISTING SEWER

LOCATION MAP

**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

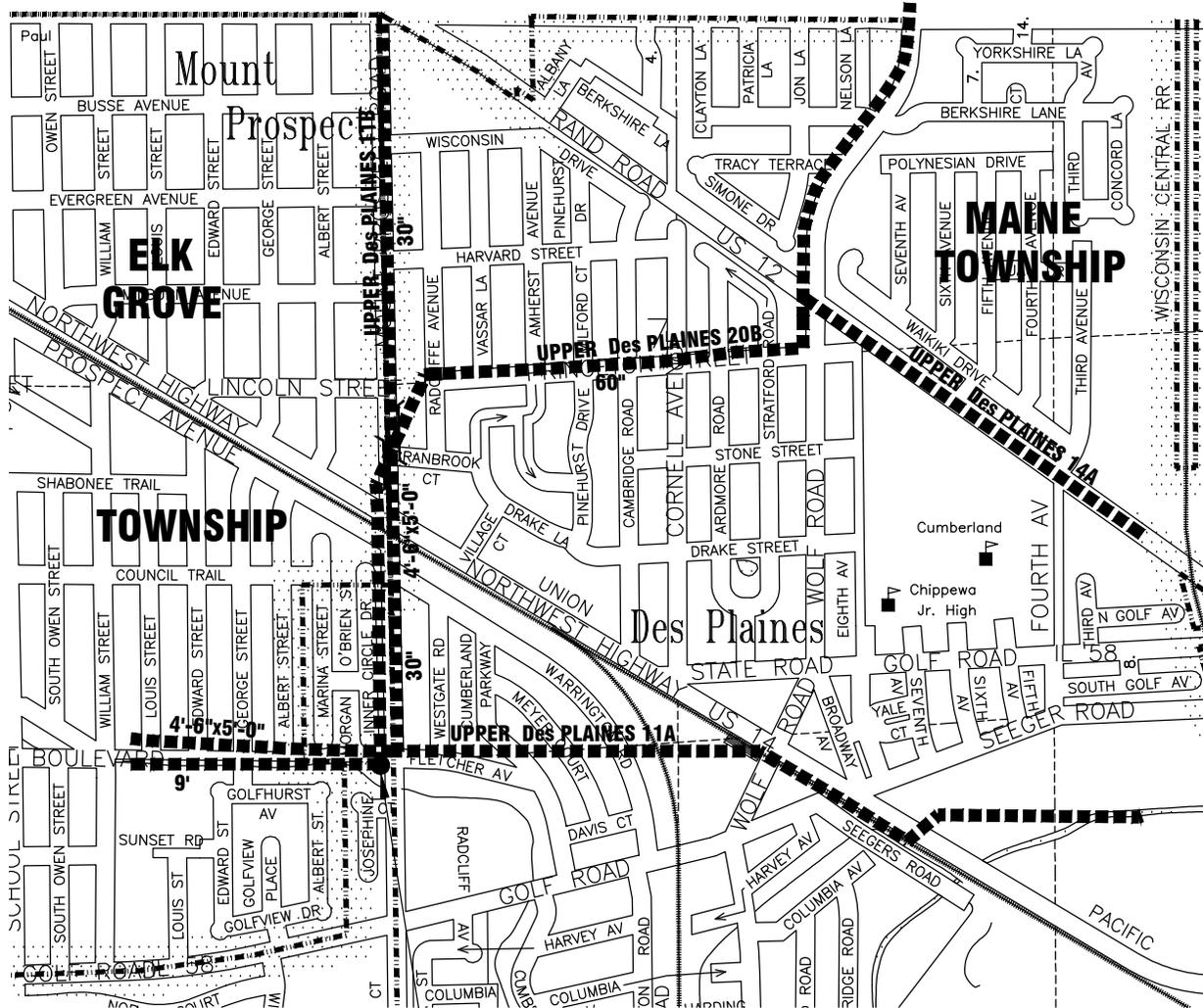


LOCATION MAP

LEGEND:

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

**STICKNEY EFFLUENT REUSE LINE, SSA
 CONTRACT 14-107-2J**



LOCATION MAP

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
 COST: \$2,700,000

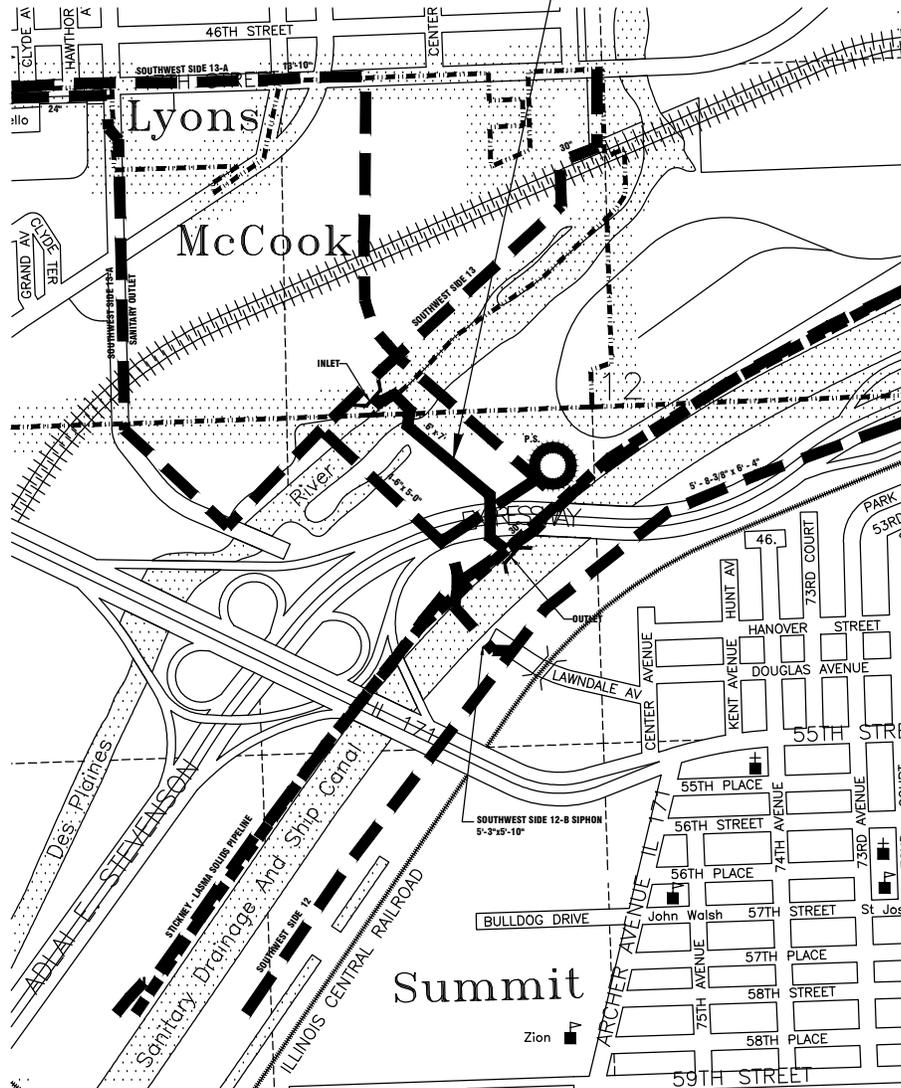
LEGEND:

- = MANHOLE TO BE REHABILITATED
- = EXISTING SEWER

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



SUMMIT CONDUIT REHABILITATION, SSA
 810 LINEAR FEET OF 6'x7' SEMI-ELLIPTICAL/OVOID SEWER
 INLET & OUTLET STRUCTURE REHABILITATION
 REPAIR OF PVC PIPE
 INJECTION GROUTING
 PVC LINEAR REMOVAL & REPAIR
 COST: \$1,700,000



LOCATION MAP

LEGEND:

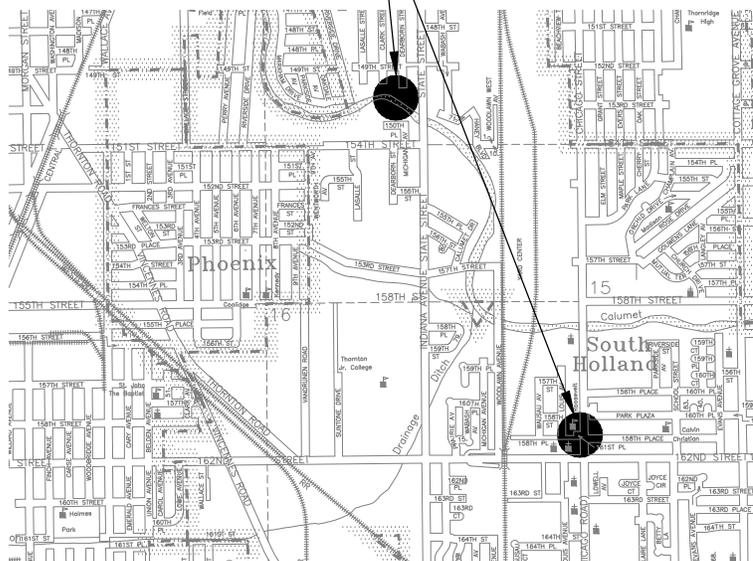
- = SEWER TO BE REHABILITATED
- = EXISTING SEWER

SUMMIT CONDUIT REHABILITATION, SSA
CONTRACT 16-126-3S



LOCATION MAP

WEIR WALL MODIFICATIONS WORK AT DS-M27, DS-M28 AND DS-M29. INSTALLATION OF DRY WEATHER DIVERSION BYPASS SEWERS AT CDS-C1 AND CDS-45
 COST: \$2,500,000



LOCATION MAP

LEGEND:

- = SEWER TO BE REHABILITATED
- = EXISTING SEWER

**MODIFICATIONS TO TARP STRUCTURES AT DS-M27, DS-M28, DS-M29, CDS-C1 AND CDS-45
 CONTRACT 17-842-3H**

Stormwater Management Capital Improvements Bond Fund Program

| <u>Awards in 2018</u> | | Project Number | Est. Construc- tion Cost | Dura- tion (days) | Est. Award Date |
|-----------------------|--|-------------------|-----------------------------------|-------------------------|-----------------------|
| 1 | Streambank Stabilization Project on Tinley Creek, CSA | 10-882-AF | \$ 3,806 | 577 | Jan-18 |
| 2 | Streambank Stabilization Project along Midlothian Creek, Tinley Park, CSA | 10-882-CF | 392 | 357 | Jan-18 |
| 3 | Streambank Stabilization Project on Melvina Ditch in Oak Lawn and Chicago Ridge, CSA | 13-248-3F | 8,800 | 730 | Jan-18 |
| 4 | * Buffalo Creek Reservoir Expansion, NSA | 13-370-3F | 19,300 | 546 | Jan-18 |
| 5 | Addison Creek Reservoir, SSA | 11-186-3F | 95,155 | 731 | Apr-18 |
| Total 2018 Awards | | | \$ 127,453 | | |

Projects Under Development

| # | Project Name | Project Number | Est. Construc- tion Cost | Dura- tion (days) | Est. Award Date |
|-----------------------------------|--|-------------------|-----------------------------------|-------------------------|-----------------------|
| 6 | Addison Creek Channel Improvements, SWRP | 11-187-3F | \$ 44,512 | 1095 | Nov-19 |
| Total Future Awards | | | \$ 44,512 | | |
| Cumulative 2018 and Future Awards | | | \$ 171,965 | | |

*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.

| Method of Financing | | | |
|--|---------------------------|---------------|--------------|
| State Revolving Fund <u>Loans</u> | Alternate <u>Bonds</u> | <u>Grants</u> | <u>Total</u> |
| \$ 148,859 | \$ 13,106 | \$ 10,000 | \$ 171,965 |

Stormwater Management Capital Improvements Bond Fund Program

Operating Impacts

| # | Project Name | Project Number | Justification | | | | | Impact | | |
|--|--|----------------|----------------|-------------|------------------|-------------------|---------------|----------|--------|----------|
| | | | Capacity Needs | Useful Life | Economic Benefit | Safety/Regulatory | Flood Control | Manpower | Energy | Chemical |
| <u>Awards in 2018</u> | | | | | | | | | | |
| 1 | Streambank Stabilization Project on Tinley Creek, CSA | 10-882-AF | | | | x | x | = | = | = |
| 2 | Streambank Stabilization Project along Midlothian Creek, Tinley Park, CSA | 10-882-CF | | | | x | x | = | = | = |
| 3 | Streambank Stabilization Project on Melvina Ditch in Oak Lawn and Chicago Ridge, CSA | 13-248-3F | x | | x | x | x | = | = | = |
| 4 | Buffalo Creek Reservoir Expansion, NSA | 13-370-3F | | | | x | x | = | = | = |
| 5 | Addison Creek Reservoir, SSA | 11-186-3F | | | | x | x | - | - | = |
| <u>Projects Under Development</u> | | | | | | | | | | |
| 6 | Addison Creek Channel Improvements, SWRP | 11-187-3F | | | | x | x | = | = | = |

| LEGEND | |
|--|--|
| Under " Justification ," the marked columns note the categories of benefits expected from each project. | |
| Manpower | |
| + or - Labor savings (+) or increases (-) expected to result in redirecting existing manpower away from or toward facility or process to other tasks with no net change in total position costs. | ++ or -- Labor impact significant enough to ultimately result in reduction (++) or increase (--) in personnel. See additional cost details contained in the Project Fact Sheets. |
| Energy | |
| + or - Minor energy savings (+) or costs (-) having a negligible impact on the District's overall energy budget. | ++ or -- Major energy savings (++) or costs (--) expected to result in significant revisions to a facility's energy budget. See additional cost details contained in the Project Fact Sheets. |
| Chemical | |
| + or - Chemical savings (+) or costs (-) having a negligible impact on the District's overall chemical costs. | ++ or -- Major chemical savings (++) or costs (--) expected to result in significant revisions to the budgeted chemical expenditures for the associated process. See additional cost details contained in the Project Fact Sheets. |
| = | No budgetary impact expected. |

50000 CAPITAL IMPROVEMENTS BOND FUND

OBJECTIVES AND PROGRAM SUMMARY

| OBJECTIVES BY PRIORITY: | Cost | Percent |
|--|-----------------------|---------------|
| 1. TREATMENT FACILITIES: Award seven construction projects: One odor control systems project at the Calumet, Hanover Park, and Calumet WRPs, one odor control facilities project at the Stickney WRP, and five other projects. | \$ 38,460,000 | 13.8% |
| 2. COLLECTION FACILITIES: Award nine construction projects: 39th Street Conduit Rehabilitation - Phase II, SSA, Rehabilitation of North Branch Pumping Station, NSA, and seven other projects. | \$ 40,168,000 | 14.5% |
| 3. SOLIDS PROCESSING AND DISPOSAL FACILITIES: Award three construction projects: North Side Sludge Pipeline Replacement, NSA, Fischer Farms Horticultural Center, HPWRP, and one other project. | \$ 21,271,000 | 7.6% |
| 4. FLOOD AND POLLUTION CONTROL: Award nine construction projects: Addison Creek Reservoir, three streambank stabilization projects, and five other projects. | \$ 140,893,000 | 50.6% |
| 5. LAND AND RIGHT-OF-WAY ACQUISITION COSTS: Acquisition of land for the expansion of reservoir projects and payments for land easements. | \$ 1,750,000 | 0.6% |
| 6. PROJECT SUPPORT: Administration, design, and construction inspection for current and future contracts, funding support, and construction services, such as concrete and soil testing. | \$ 35,885,700 | 12.9% |
| Total | \$ 278,427,700 | 100.0% |

| MEASURABLE GOAL: | 2016 Actual | 2017 Estimated | 2018 Proposed |
|---|----------------|-------------------|------------------|
| Award contracts for the continued implementation of the District's Capital Improvement Program. | | | |
| Number of projects proposed | 16 | 16 | 26 |
| Number of contracts awarded | 10 | 16 | 26 |
| <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. These numbers are provided only as a general indicator of performance.</p> | | | |

50000 CAPITAL IMPROVEMENTS BOND FUND

OBJECTIVES AND PROGRAM SUMMARY

| PROGRAMS BY PRIORITY: | | 2016 Actual | Budgeted | | Change | | |
|-----------------------|---|----------------|----------|----------------|-----------------|---------|----|
| Number | Name | | FTEs | Dollars | Dollars | Percent | |
| 1700 | Collection Design | \$ 84,553 | 2018 - | \$ - | \$ - | - | |
| | | | 2017 - | \$ - | \$ - | - | |
| 1800 | Collection Construction | \$ 35,195,739 | 2018 - | \$ 43,606,300 | \$ 33,911,300 | 349.8 | a) |
| | | | 2017 - | \$ 9,695,000 | | | |
| 2700 | Treatment Design | \$ 992,901 | 2018 - | \$ - | \$ - | - | |
| | | | 2017 - | \$ - | \$ - | - | |
| 2800 | Treatment Construction | \$ 102,400,169 | 2018 - | \$ 47,298,000 | \$ 28,973,000 | 158.1 | b) |
| | | | 2017 - | \$ 18,325,000 | | | |
| 3700 | Solids Processing Design | \$ 636,648 | 2018 - | \$ 3,000,000 | \$ (1,000,000) | (25.0) | c) |
| | | | 2017 - | \$ 4,000,000 | | | |
| 3800 | Solids Processing Construction | \$ 13,815,745 | 2018 - | \$ 18,687,600 | \$ (21,312,400) | (53.3) | d) |
| | | | 2017 - | \$ 40,000,000 | | | |
| 4341 | Flood Mitigation Projects Planning and Design | \$ 2,347,905 | 2018 - | \$ - | \$ (7,992,000) | (100.0) | e) |
| | | | 2017 - | \$ 7,992,000 | | | |
| 4343 | Flood Mitigation Projects Construction | \$ 1,707,828 | 2018 - | \$ 133,825,800 | \$ (79,236,500) | (37.2) | f) |
| | | | 2017 - | \$ 213,062,300 | | | |
| 4344 | Flood Mitigation Projects Contracted with Other Governments | \$ 10,580,622 | 2018 - | \$ - | \$ (7,900,000) | (100.0) | g) |
| | | | 2017 - | \$ 7,900,000 | | | |
| 4345 | Flood Mitigation Projects Land and Easements | \$ 12,440,061 | 2018 - | \$ - | \$ (16,088,400) | (100.0) | h) |
| | | | 2017 - | \$ 16,088,400 | | | |
| 4600 | Monitoring | \$ - | 2018 - | \$ - | \$ (500,000) | (100.0) | i) |
| | | | 2017 - | \$ 500,000 | | | |

- a) Increase is due to the expected award of 01-103-AS, 39th Street Conduit Rehabilitation - Phase II, SSA (\$25,935,000), 17-842-3H, Modifications to TARP Structures, CSA and SSA (\$2,625,000), 17-276-3D, Structural Repairs and Roofing Replacement at the 95th Street Pumping Station (\$1,959,300), and 18-704-31, Emerson Ovation Distribution Control System, NSA (\$1,802,000), an increase to 16-079-3D, Rehabilitation of North Branch Pumping Station (\$1,500,000), and the expected award of 18-605-31, Pavement Rehabilitation, Various Locations (\$1,100,000), offset by the reduction in the change order allowance for collection facilities (\$1,418,500).
- b) Increase is due to the expected award of 17-134-3M, Odor Control Facility at WASSTRIP®, Southwest Coarse Screen and Overhead Weir, and Post-Centrifuge Building, SWRP (\$15,750,000), 15-069-3D, Rehabilitation of Steel Spandrel Beams of Pump and Blower House, OWRP (\$10,500,000), 18-706-31, Guaranteed Energy Performance Projects, Various Locations (\$3,500,000), and 18-702-31, Furnish, Deliver, and Install Disc Filters, EWRP (\$3,200,000), offset by the reduction in the change order allowance for process facilities projects (\$4,480,000).
- c) Decrease is due to the 2017 award of 16-272-3P, Conversion of Primary Tanks to High Strength Waste Receiving and Distribution, CWRP (\$1,000,000).
- d) Decrease is due to the 2017 awards of 16-270-3P, Covered Composting System, CWRP (\$25,200,000) and 11-240-3P, Organic Waste Receiving Facility, and Digester Gas Flare Upgrade, CWRP (\$11,025,000), offset by the expected awards of 07-027-3S, North Side Sludge Pipeline Replacement - Section 1, NSA (\$13,472,600) and 18-904-31, Railroad Locomotive Terminal Restoration, SWRP (\$1,440,000).
- e) Decrease is due to the transfer of Stormwater Management design projects to the Stormwater Management Fund (\$7,992,000).
- f) Decrease is due to the transfer of Stormwater Management construction projects to the Stormwater Management Fund (\$40,929,100), the 2017 award of 14-263-3F, Melvina Ditch Reservoir Improvements (\$22,524,600), and the reduction in the anticipated award amount for 11-186-3F, Addison Creek Reservoir, SSA (\$15,106,700).
- g) Decrease is due to the transfer of Stormwater Management Phase II Intergovernmental Agreement projects to the Stormwater Management Fund (\$7,900,000).
- h) Decrease is due to the transfer of flood prone property acquisition projects to the Stormwater Management Fund (\$16,088,400).
- i) Decrease is due to the 2017 awards of the enhancement to the Laboratory Information Management Systems (\$300,000) and to the internet-based Publicly owned treatment works Administration and Compliance System (\$200,000).

50000 CAPITAL IMPROVEMENTS BOND FUND

OBJECTIVES AND PROGRAM SUMMARY

| PROGRAMS BY PRIORITY: | | 2016 Actual | Budgeted | | Change | | | |
|-----------------------|--|----------------|----------|---------|----------------|-----------------|---------|----|
| Number | Name | | FTEs | Dollars | Dollars | Percent | | |
| 4700 | Flood and Pollution Control Design | \$ 1,058,580 | 2018 | - | \$ 1,250,000 | \$ - | - | |
| | | | 2017 | - | \$ 1,250,000 | | | |
| 4800 | Flood and Pollution Control Construction | \$ 67,875,316 | 2018 | - | \$ 24,335,000 | \$ (4,587,000) | (15.9) | j) |
| | | | 2017 | - | \$ 28,922,000 | | | |
| 5800 | Solids Disposal Construction | \$ 4,389,765 | 2018 | - | \$ 4,675,000 | \$ - | - | |
| | | | 2017 | - | \$ 4,675,000 | | | |
| 7740 | Land and Easements | \$ 440,226 | 2018 | - | \$ 1,750,000 | \$ (465,900) | (21.0) | k) |
| | | | 2017 | - | \$ 2,215,900 | | | |
| Totals | | \$ 253,966,058 | 2018 | - | \$ 278,427,700 | \$ (76,197,900) | (21.5%) | |
| | | | 2017 | - | \$ 354,625,600 | | | |

j) Decrease is due to the 2017 award of 16-125-4F, McCook Reservoir Expanded Stage 2 Slope Stabilization and Retaining Walls, SSA (\$11,760,000) and the reduction in the change order allowance for waterway facilities projects (\$2,807,000), offset by the expected award of 15-830-3D, Replacement of Tailrace Stop Logs, Headrace Gates, and Equipment, CWRP (\$10,500,000).

k) Decrease is due to the anticipated reduction in payments for licenses (\$1,965,900), offset by the acquisition of easement for 11-187-3F, Addison Creek Channel Improvements, SWRP (\$1,500,000).

| 401 50000 | Fund: Capital Improvements Bond Department: Engineering Division: | LINE ITEM ANALYSIS | | | | | | |
|----------------|---|--------------------|-----------------------------|--|---|--------------------------------------|--------------------------------------|--|
| | | 2016 | 2017 | | | | 2018 | |
| Account Number | Account Name | Expenditure | Original * Appropriation | Adjusted ** Appropriation 09/30/17 | Expenditure (Committed Budget plus Disbursement) 09/30/17 | Estimated Expenditure 12/31/17 | Proposed by Executive Director | Recommended by Committee on Budget and Employment |
| 612090 | Reprographic Services | \$ - | \$ - | \$ 10,000 | \$ 10,000 | \$ - | \$ 10,000 | \$ - |
| 612240 | Testing and Inspection Services | 106,873 | - | 330,960 | 330,960 | 273,000 | - | - |
| 612250 | Court Reporting Services | - | 25,000 | 43,583 | 18,583 | - | 25,000 | - |
| 612380 | Soil and Rock Mechanics Investigation | 124,743 | - | - | - | - | - | - |
| 612400 | Intergovernmental Agreements | 10,580,622 | 13,988,400 | 58,538,632 | 48,569,374 | 26,400,000 | 150,000 | - |
| 612430 | Payments for Professional Services | 522,087 | 1,700,000 | 3,541,033 | 2,728,756 | 751,000 | 750,000 | - |
| 612440 | Preliminary Engineering Reports and Studies | 274,256 | 250,000 | 645,112 | 389,548 | 352,000 | 250,000 | - |
| 612450 | Professional Engineering Services for Construction Projects | 4,069,896 | 12,992,000 | 24,567,270 | 18,409,091 | 9,100,000 | 4,000,000 | - |
| 612470 | Personal Services for Post-Award Engineering for Construction Projects | 5,225,751 | - | 13,446,367 | 13,446,367 | 4,000,000 | - | - |
| 612490 | Contractual Services, N.O.C. | - | - | 408,100 | 58,058 | 58,100 | - | - |
| 612780 | Safety Repairs and Services | - | 100,000 | 100,000 | - | - | 100,000 | - |
| 200 | TOTAL CONTRACTUAL SERVICES | 20,904,229 | 29,055,400 | 101,631,057 | 83,960,736 | 40,934,100 | 5,285,000 | - |
| 634600 | Equipment for Collection Facilities | - | - | 645,000 | 645,000 | 215,000 | - | - |
| 634650 | Equipment for Process Facilities | - | - | 600,000 | 579,900 | 300,000 | - | - |
| 400 | TOTAL MACHINERY AND EQUIPMENT | - | - | 1,245,000 | 1,224,900 | 515,000 | - | - |
| 645600 | Collection Facilities Structures | 25,160,145 | 3,000,000 | 23,139,127 | 22,062,510 | 10,542,000 | 3,965,000 | - |
| 645620 | Waterway Facilities Structures | 26,345,644 | 204,977,300 | 225,213,461 | 73,044,879 | 8,200,000 | 125,177,400 | - |
| 645630 | Army Corps of Engineers Services | 23,264,764 | 18,740,000 | 115,377,064 | 111,051,375 | 49,770,400 | 7,500,000 | - |
| 645650 | Process Facilities Structures | 107,390,362 | 54,525,000 | 177,414,951 | 171,018,477 | 60,906,300 | 33,085,000 | - |
| 645680 | Buildings | 33,427 | 4,675,000 | 12,167,798 | 7,492,798 | 4,000,000 | 7,413,000 | - |
| 645690 | Capital Projects, N.O.C. | - | 1,000,000 | 1,000,000 | - | 150,000 | 5,302,000 | - |
| 645700 | Preservation of Collection Facility Structures | 26,646,085 | 5,120,000 | 48,182,804 | 44,823,424 | 24,562,200 | 31,555,000 | - |
| 645720 | Preservation of Waterway Facility Structures | 1,404,125 | 17,942,000 | 23,105,925 | 7,088,308 | 11,131,100 | 25,148,400 | - |
| 645750 | Preservation of Process Facility Structures | 5,429,709 | 500,000 | 20,320,828 | 19,857,328 | 11,192,300 | 13,972,600 | - |
| 645780 | Preservation of Buildings | - | 2,575,000 | 12,153,700 | 9,578,702 | 3,575,000 | 17,974,300 | - |
| 500 | TOTAL CAPITAL PROJECTS | 215,674,259 | 313,054,300 | 658,075,657 | 466,017,801 | 184,029,300 | 271,092,700 | - |
| 656010 | Land | 12,440,061 | 10,300,000 | 10,300,000 | 1,239,298 | 1,207,200 | 300,000 | - |
| 600 | TOTAL LAND | 12,440,061 | 10,300,000 | 10,300,000 | 1,239,298 | 1,207,200 | 300,000 | - |

| 401 50000 | Fund: Capital Improvements Bond Department: Engineering Division: | LINE ITEM ANALYSIS | | | | | | |
|--|---|----------------------|-----------------------------|--|---|--------------------------------------|--------------------------------------|--|
| | | 2016 | 2017 | | | | 2018 | |
| Account Number | Account Name | Expenditure | Original * Appropriation | Adjusted ** Appropriation 09/30/17 | Expenditure (Committed Budget plus Disbursement) 09/30/17 | Estimated Expenditure 12/31/17 | Proposed by Executive Director | Recommended by Committee on Budget and Employment |
| 667340 | Payments for Easements | 275,100 | 2,215,900 | 2,215,900 | 62,041 | 62,000 | 1,750,000 | - |
| 727102 | Principal Expense - Capital Lease | 2,357,787 | - | 42,667,938 | 42,667,938 | 2,300,300 | - | - |
| 727112 | Interest Expense - Capital Lease | 2,031,977 | - | 14,305,801 | 14,305,801 | 1,772,900 | - | - |
| 767300 | Bond Issuance Costs | 282,645 | - | - | - | - | - | - |
| 700 | TOTAL FIXED AND OTHER CHARGES | 4,947,509 | 2,215,900 | 59,189,638 | 57,035,779 | 4,135,200 | 1,750,000 | - |
| TOTAL CAPITAL IMPROVEMENTS BOND | | \$253,966,058 | \$354,625,600 | \$830,441,352 | \$609,478,514 | \$230,820,800 | \$278,427,700 | \$ - |

* The Capital Improvements Bond Fund is budgeted and accounted for on an obligation basis.

** The appropriation in the Capital Improvements Bond Fund is adjusted to carry forward open value of contracts from the prior year.

- NOTES: 1. Amounts may not add up due to rounding.
 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.
 3. The Capital Improvements Bond Fund appropriation is controlled on the Summary Object level.