

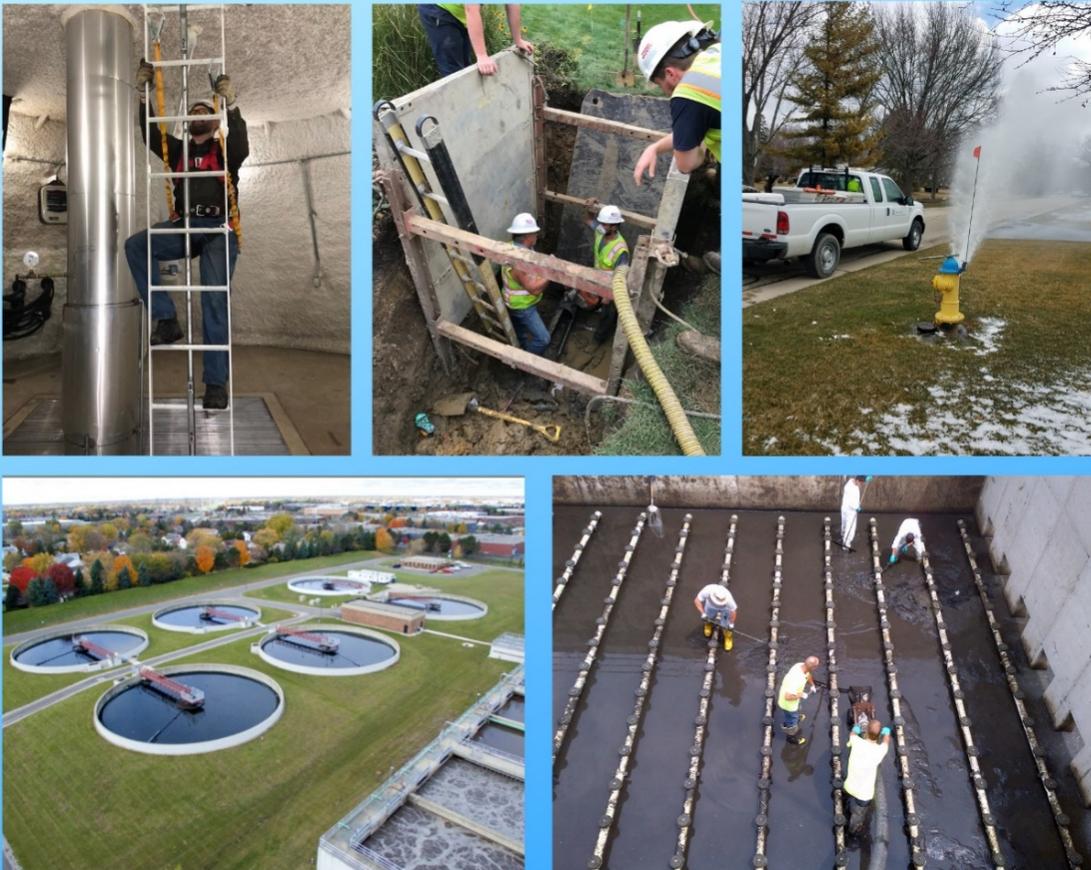
CAPITAL IMPROVEMENT PROGRAM 2020-2025

AUSTIN MCFARLANE
INTERIM DIRECTOR

JOEL SENSENIG, P.E.
ASSISTANT DIRECTOR

BRITTANY ALBRECHT SLOAN, P.E.
ENGINEERING SUPERVISOR

PREPARED BY:
EMILY KARRY, P.E.
CAPITAL IMPROVEMENT
PROGRAM MANAGER



PUBLIC WORKS
650 W. WINCHESTER ROAD
LIBERTYVILLE, IL 60048
847.377.7500
publicworks@lakecountyl.gov
lakecountyl.gov/publicworks

Lake County's Mission is to deliver exceptional, financially and environmentally responsive/responsible services that promote a safe, affordable, healthy, and resilient community.

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Capital Improvement Program 2020-2025
for the Department of Public Works
endorsed by the Public Works, Planning and
Transportation Committee of the Lake County Board

Bill Durkin, Chair

Linda Pedersen, Vice-Chair

Jennifer Clark

Diane Hewitt

Ann Maine

Craig Taylor

Jessica Vealitzek

John Wasik

Terry Wilke

August 26, 2020

Additional Capital Improvement Program Team Members

Joshua Casper, Maintenance Supervisor

Michael Grinnell, Central Plant Supervisor

David Landshof, Southeast Plant Supervisor

Andrea Norwood, Manager of Budget & Finance

Kelly Osborne, Life Cycle Manager

Jay Rangel, North Plant Supervisor

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Lake County Public Works Maintenance Crews repairing a water main break

Department Overview

The Department of Public Works was created by a Lake County Board Resolution on October 9, 1962 under the provisions of the State of Illinois Water Supply, Drainage and Flood Control Act, more commonly known as the County Public Works Act of July 22, 1959 (55 ILCS 5/5-15003). Lake County's goal was to address rapid growth and development in Lake County following World War II. Prior to that time, water and sewer service in unincorporated areas was provided by small, unregulated treatment facilities with limited quality control. The Lake County Board was concerned about pollution, reliable utility service for the growing population, and a long-range plan for orderly growth and development.

The mission of Lake County Public Works (LCPW) is to deliver exceptional, financially sustainable, reliable, drinking water and wastewater services in a safe manner, ensuring quality service, public health and environmental stewardship. As a department, we are an industry leader in environmental stewardship with a financially sustainable, resilient system delivering quality drinking water and wastewater services in a safe manner. LCPW's 96 dedicated employees carry out this mission.

We strive to accomplish our mission and continue to realize our vision by following LCPW's guiding principles:

- Professionalism in all we do - always maintaining full public trust
- Compliance - meet or exceed all water and wastewater regulatory requirements
- Customer focus - providing friendly, responsive, high quality services
- Fiscal responsibility to long term financial actions with transparency
- Sustainability focused, economically feasible environmental stewardship
- A great place to work - diverse recruitment and retention of a well-trained, safely operating workforce recognized and rewarded for outstanding public service



Lake County Public Works laboratory equipment

The main responsibility of LCPW is to provide water and sanitary sewer service to widely distributed portions of the county. Our service areas are primarily unincorporated areas of Lake County; however, we provide service within some municipalities.

LCPW also conducts testing, performs inspections and regulates permits that pertain to water and sanitary sewer issues. Our water and sewer inspection services ensure that residential, commercial and industrial customers are in compliance with public health and environmental safety standards. The department provides water and sanitary sewer services to about 40% of Lake County's population by way of over 30,000 direct retail customers and 300,000 wholesale customers.



A view of the North Libertyville Estates Levee



Lake County Public Works vector truck

In addition to providing water and sanitary sewer services, Lake County Public Works performs other government services to protect consumers and the environment. An example of this is our involvement with the North Libertyville Estates Levee which is maintained by LCPW. The U.S. Army Corps of Engineers designed and constructed the North Libertyville Estates Levee in 1997 to protect the subdivision from Des Plaines River flooding. We also have more than 20 municipal service support agreements where LCPW performs maintenance on various water and sewer assets for municipalities as a shared service. Throughout the years, LCPW has grown, but our responsibilities remain the same. We continue to provide quality water and sanitary sewer service while protecting our natural resources and planning for the future.

Policy Guidance

The policy that guides LCPW is set by goals within the [Lake County Board Strategic Plan](#). Two broad strategic goals and initiatives from this plan that directly impact public works are **to Improve Infrastructure** and **to Promote a Sustainable Environment**. We continue to implement improvements to our infrastructure that consist of new technologies and business practices in the management of our water and wastewater treatment facilities. LCPW continues to be committed to upgrading and expanding our Supervisory Control and Data Acquisition (SCADA) network. Upgrading our various facilities to include SCADA equipment allows department staff to monitor the system remotely and can help reduce the need for Public Works staff to drive around to various sites, therefore providing an environmental benefit as well.

We also continue to promote a sustainable environment in several ways. We are embracing a "One Water" management strategy to holistically approach challenges throughout the entire water cycle. We are working to develop programs to promote water conservation by employing a tiered rate structure. We are also migrating from wells to Lake Michigan water as a more sustainable

source for our water systems. We are improving the sanitary sewer system and reducing pollutants in all water sources through a sustained program to replace aging infrastructure that collects and treats sanitary waste. LCPW remains ahead of environmental discharge standards for wastewater reclamation facilities and we are working to enhance the reuse of biological solids as class A fertilizers.

Departmental strategic goals also help shape the work we do. Our departmental goals include maintaining a quality workforce, responsiveness and system resilience, reducing water infiltration into our wastewater collection system and focusing on sustainability and community partnership. These goals are woven into the work we do and are visible through the actions of our team.



Aerial view of LCPW Mill Creek Wastewater Reclamation Facility located in Old Mill Creek, Illinois

Our Systems

LCPW operates and maintains 11 public water distribution systems and 7 wastewater collection systems comprised of:

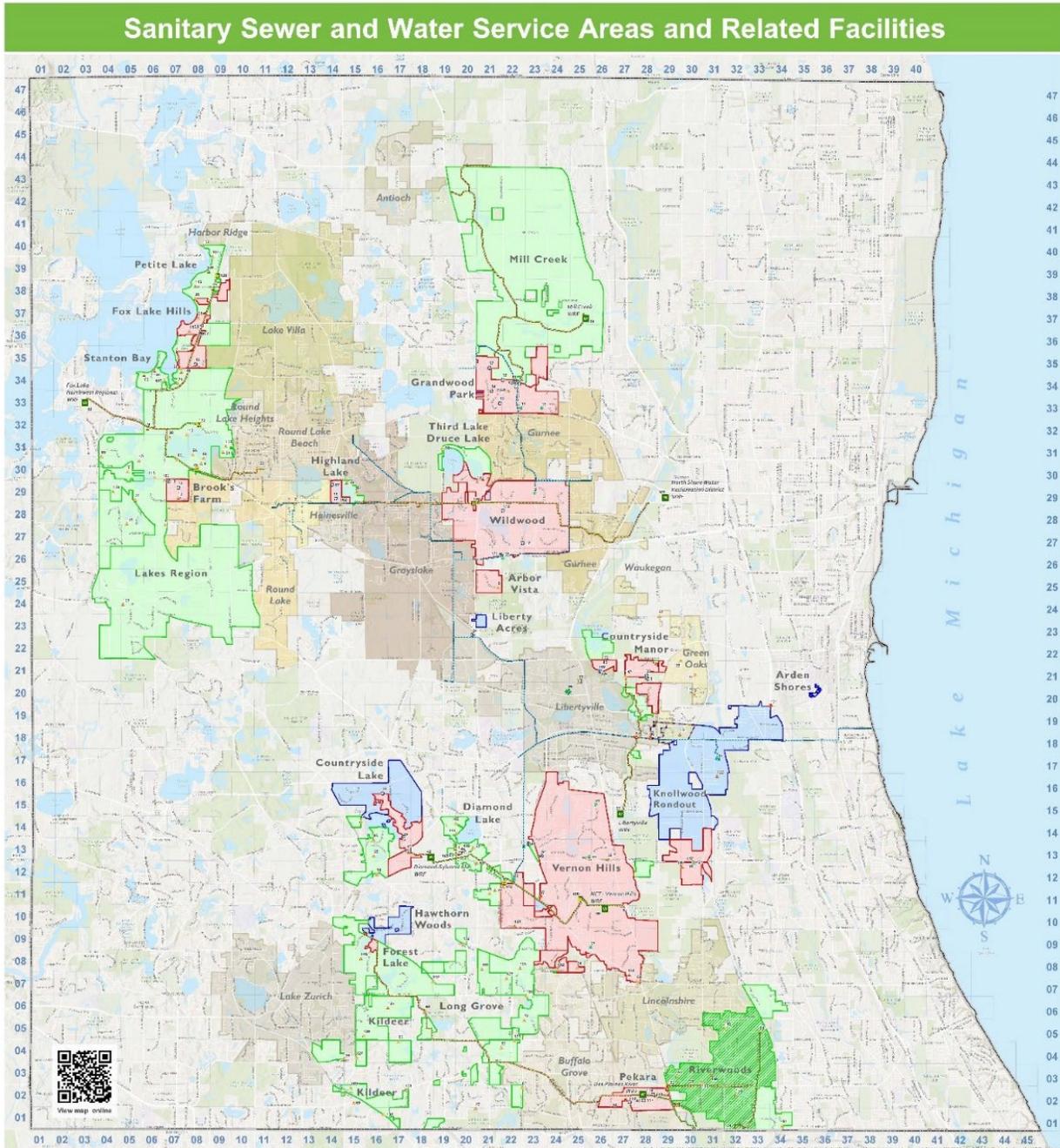
- 3 wastewater reclamation facilities
- over 470 miles of sanitary sewer pipe
- over 290 miles of water main
- 107 lift stations
- 24 wells
- 10 water reservoirs
- 8 water towers
- 5 regional interceptor sewers and pump stations
- 1 excess flow facility



LCPW Administration Building located in Libertyville, Illinois

Overall Lake County Public Works System Map

The map below shows the areas served by Lake County Public Works facilities.



Map of Lake County Public Works Service Areas

Our Wastewater Systems

Lake County provides both retail and wholesale wastewater service involving an array of infrastructure such as local collector mains, interceptors, force mains, pump stations and treatment plants. Through our three wastewater reclamation facilities, we process the wastewater of approximately 25,000 direct customers and more than 100,000 contractual customers by agreement with various Lake County municipalities.



Inside the Lake County Public Works East Main Pump Station



Lake County Public Works wastewater lift station

As with our water service, depending on location some sewer customers receive sewer service solely through reliance on Lake County infrastructure, while others receive sewer service by relying on a combination of infrastructure owned by Lake County and other regional providers. Our wastewater systems include:

Northeast - Serving parts of unincorporated Antioch, Newport, and Warren Townships, as well as portions of the Villages of Antioch, Old Mill Creek and Gurnee.

Northeast Central - Serving parts of unincorporated Avon and Warren Townships, as well as portions of the Villages of Grayslake and Third Lake.

Northwest - Serving parts of unincorporated Antioch, Grant and Lake Villa Townships, as well as portions of the Village of Fox Lake.

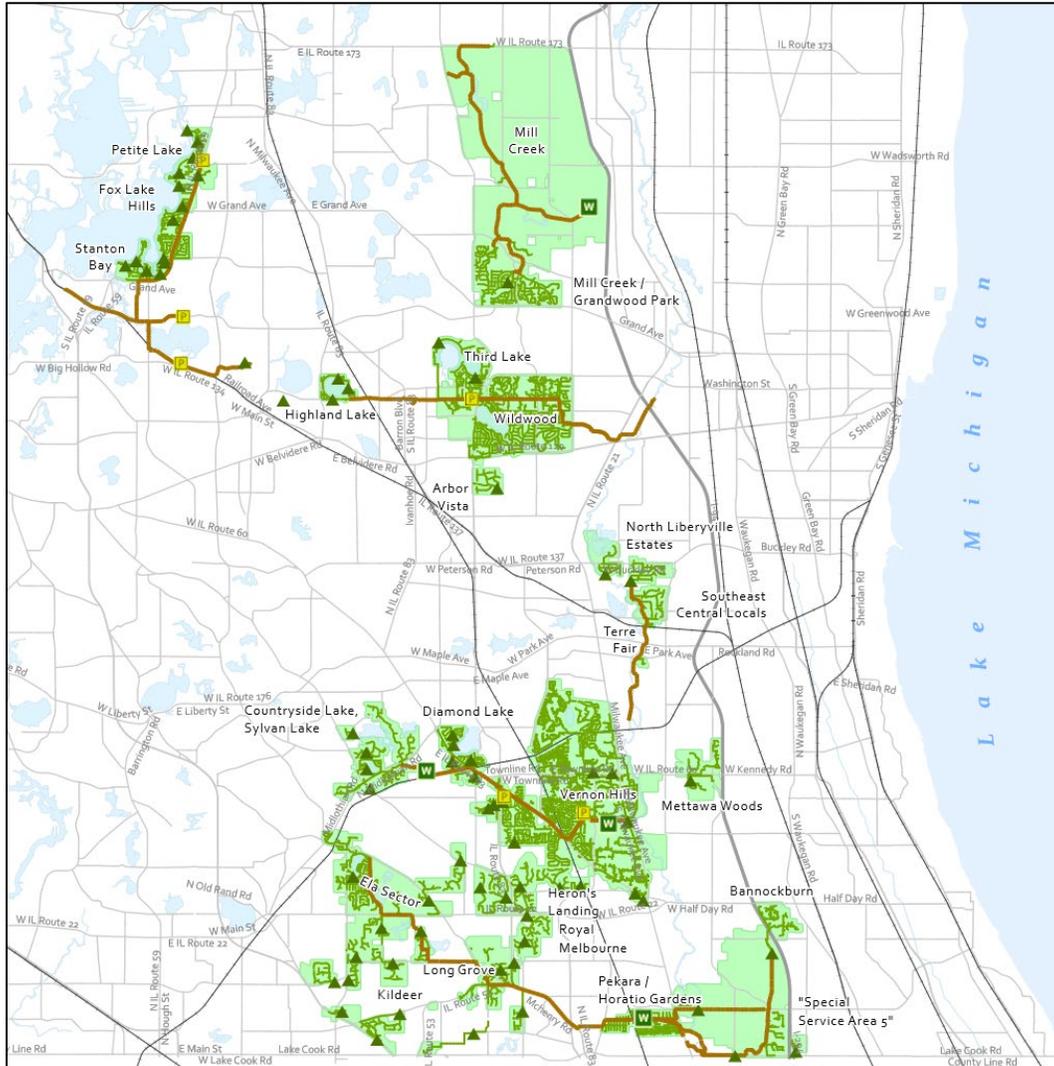
Lakes Region Sanitary District – Located in the northwest system and serving parts of unincorporated Avon, Fremont, Grant, Lake Villa and Wauconda Townships, as well as portions of the Villages of Fox Lake, Lake Villa, Round Lake, Round Lake Beach, Round Lake Heights and Volo. The functions and operations of the Lakes Region Sanitary District are in the process of being consolidated with the Lake County Public Works Department. LCPW has taken billing, maintenance and operation responsibility for the Lakes Region Sanitary District. The district will be fully dissolved, and Lake County will acquire all of the assets and responsibilities of the district once the district's debt is retired.

Central - Serving parts of unincorporated southwest Fremont Township and northeast Ela Township, as well as portions of the Villages of Hawthorn Woods and Long Grove in the areas around Countryside Lake, Diamond Lake and Sylvan Lake.

South Central - Serving parts of Libertyville and Vernon Townships, as well as portions of the Villages of Vernon Hills, Mundelein, Mettawa, Indian Creek and Long Grove.

Southeast Central - Serving parts of Libertyville Township, as well as portions of the Village of Green Oaks.

Southeast - Serving parts of Ela, Vernon, and West Deerfield Townships, as well as, portions of the Villages of Bannockburn, Hawthorn Woods, Kildeer, Lake Zurich, Long Grove, Riverwoods and Deerfield.



Map of Lake County Wastewater Systems

Our Public Water Systems

LCPW owns and operates 11 public water supply distribution systems. Employees that maintain these water systems are certified under the Illinois Environmental Protection Agency (IEPA) Drinking Water Operator Certification Program. Water quality is monitored and samples are tested in accordance with strict United States Environmental Protection Agency (USEPA) technical review criteria.



Inside the LCPW Bridlewood Water Reservoir



Upward view of the LCPW Grandwood Park Water Tower

Lake County provides retail water service utilizing water supply from Lake County or Aqua Illinois groundwater wells and treatment infrastructure or from water supply provided by the Central Lake County Joint Action Water Agency (CLCJAWA) from Lake Michigan. CLCJAWA is an inter-governmental cooperative formed by the communities it serves. CLCJAWA water is pumped from Lake Michigan and treated by CLCJAWA at the Paul M. Neal Water Treatment Facility in Lake Bluff. Other water facilities involved in the delivery of water service include storage tanks, pump stations, and transmission and distribution mains. Our public water systems include:

Arden Shores - The Arden Shores system receives its water supply from the City of North Chicago. The water is pumped from Lake Michigan and treated at the North Chicago Water Plant. The Arden Shores distribution system includes about one mile of water main.

Brooks Farm - The Brooks Farm system is served by two wells and an iron removal treatment facility located on Brooks Farm Road at Needlegrass Dr. Both wells are drilled into a water bearing sand and gravel aquifer located 130 feet below ground. Water treatment is provided to remove excess natural iron concentrations. The water main distribution system includes five miles of pipe interconnecting the wells and an elevated tower that provides 400,000 gallons of water storage capacity.

Countryside Lake - Four wells serve the Countryside Lake system. One is located on Thorntree Road, a second is on Lakeview Pkwy. at Countryside Lake Dr., and the remainder are south of Midlothian Road at Countryside Lake Dr. Three of the four wells reach into water bearing aquifers of limestone or sand and gravel formations 250-350 feet below ground. The other is drilled into a sandstone aquifer over 800 feet deep. The distribution system includes over 10 miles of water mains that interconnect the well sites with an elevated tower that provides 250,000 gallons of water storage capacity.

Forest Lake - This system receives its water supply from Aqua Illinois, Inc. The Aqua Illinois water system, located at the intersection of Midlothian and Old McHenry Roads, includes two groundwater wells, an ion exchange system to treat the water supply, and a 370,000-gallon water storage reservoir. The water distribution system that serves the subdivision includes about one mile of water main pipe interconnecting the Aqua water supply and Lake County water customers.

Fox Lake Hills - Water for this distribution system comes from Lake Michigan and is purchased by Lake County from CLCJAWA. The delivery system includes more than 10 miles of water main and one elevated tower holding 150,000 gallons of water storage capacity.

Grandwood Park - Water for this distribution system comes from Lake Michigan and is purchased by Lake County from CLCJAWA. The delivery system includes more than 20 miles of water main and two reservoirs and one elevated tower holding 835,000 gallons of water storage capacity.

Hawthorn Woods - This system receives its water supply from Aqua Illinois, Inc. The distribution system includes five miles of water main that interconnects the Aqua water supply and Lake County water customers.

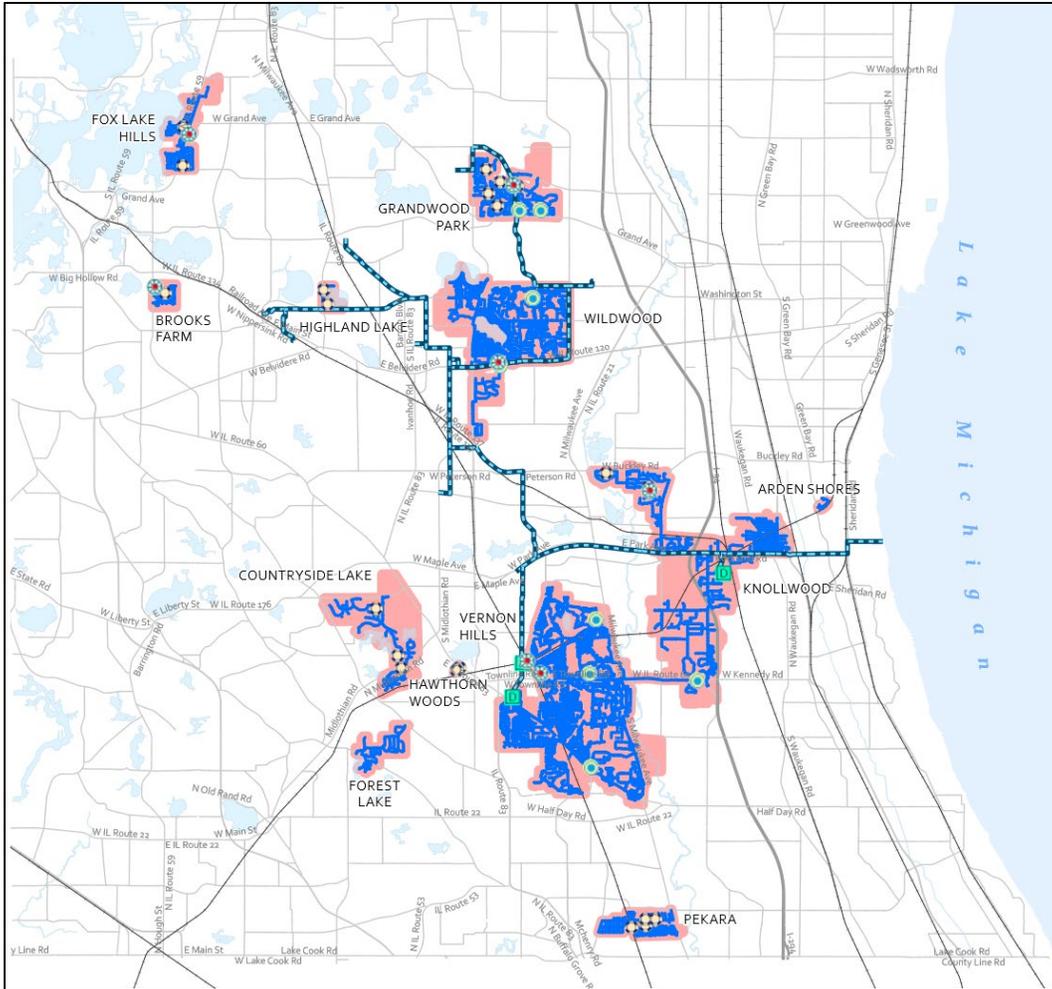
Highland Lake - Two wells serve the Highland Lake system. One is located on North Circle Dr. and the other on South Circle Dr. The wells are drilled into a water bearing limestone aquifer 250-350 feet below ground. The distribution system includes over a mile of water main, which interconnects the two wells and two storage tanks that provide 13,000 gallons of water storage capacity.

Knollwood/Vernon Hills – Water for this distribution system comes from Lake Michigan and is purchased by Lake County from CLCJAWA. The delivery system includes over 160 miles of water main with five water storage reservoirs and three elevated towers holding a total of over five million gallons of water storage capacity.

Pekara - There are five wells serving this system. They are located on Juneway Ave., Pekara Dr., Walnut Drive (2), Pekara Dr. at the reservoir, and north of Penguin Lane. Four of the five wells reach into water bearing limestone aquifers 140-280 feet below ground. The other is drilled into a sandstone aquifer, 900 feet deep. The distribution system includes more than 10 miles of water main that connects the five well sites with a water reservoir that provides 525,000 gallons of water storage capacity. The County is currently evaluating water treatment and alternative water supply options for the Pekara water system to ensure a long-term sustainable strategy for this system.

Wildwood - Water for this distribution system comes from Lake Michigan and is purchased by Lake County from CLCJAWA. The delivery system includes more than 55 miles of water main, one water tower, and two storage reservoirs holding 1.6 million gallons of water storage capacity. As added reliability, the former well water system and an interconnection to the Vernon Hills water system is available as a backup.

The following page provides a map of our of public water systems.



Map of Lake County Public Water Systems

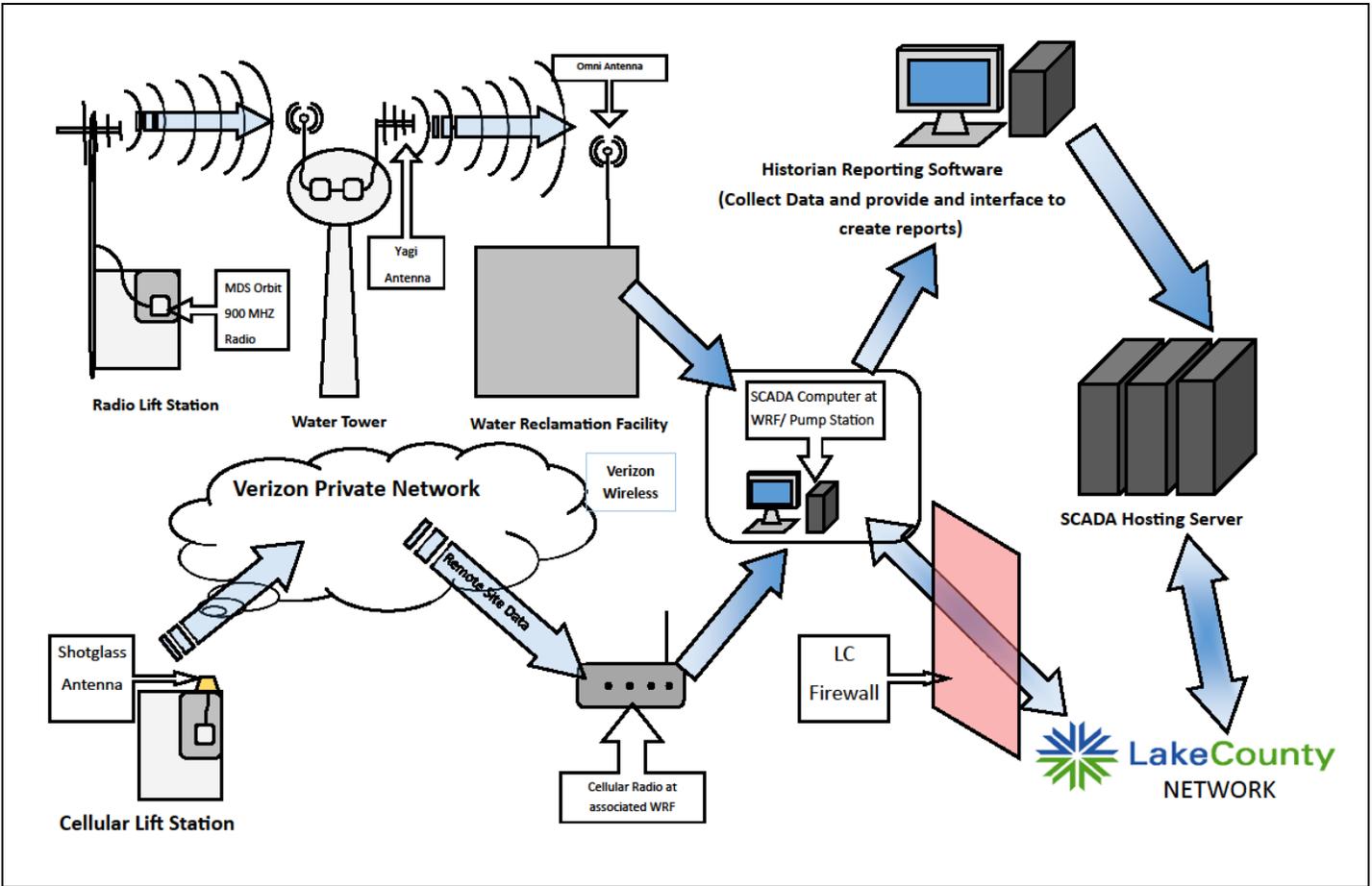
Our Supervisory Control and Data Acquisition (SCADA) Network

In 2009, the department developed a Master Plan for improvements and upgrades to its Supervisory Control and Data Acquisition (SCADA) system network. The SCADA system allows for wireless communication among sites and records collected data regarding the operation of various Lake County Public Works water and wastewater systems. The data repository is used to make data driven decisions on system functionality.

Over the past 10+ years, the County has implemented various phases of the plan to upgrade our facilities and improve remote monitoring and control of our various systems. In the summer of 2020, design of the third and final phase of the SCADA Master Plan began. This phase of SCADA will connect the southeast sewer system to the network and will also update the SCADA network of the former Lakes Region Sanitary District assets.

In addition to these large-scale SCADA implementations, department staff perform regular maintenance and modernization of the network. SCADA system enhancements are considered as part of facility capital improvement projects.

The following page provides a graphic illustration of the SCADA system as well as photographs of various SCADA antennae on Public Works facilities.



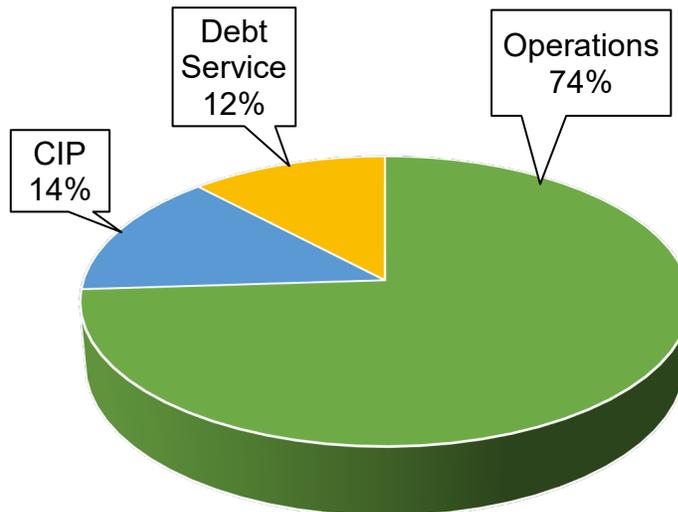
Graphic illustration of the LCPW SCADA system



LCPW SCADA system antennae at various locations

Department's Budget and Funding

LCPW's budget is governed in accordance with the Lake County Board's Adopted Budget Policies and Procedures. It is submitted and adopted as the County's sole enterprise fund within Lake County government's overall agency fiscal year and budget development process. The department is responsible for annually developing the budget for its operations and administration, capital construction, and any Special Service Areas (SSAs). Our Fiscal Year 2020 adopted budget was approximately \$52 million, with about 14% of the budget going toward the capital improvement program (CIP), 74% going toward operations and about 12% toward debt service.



FY2020 Adopted Budget

An enterprise fund is a self-sustaining government fund that is supported by user fees collected for goods and services provided by the government agency to the public. As an enterprise funded department, our funding is not from property taxes but consists of connection fees and fees collected from water and sewer use by property owners. Connection fees are one-time fees intended to recapture capital costs associated with providing adequate capacity in the system for new customers. Customer water and sewer rates are generally designed to recapture costs associated with providing water and sewer services and the recapitalization/replacement of the infrastructure needed to provide those services.

Higher construction costs and energy and labor expenses have increased the cost of providing water and sewer services to homes and businesses over time. Public Works also has underground piping that is more than 70 years old in some locations which should be planned for replacement. Assessments of our infrastructure and periodic reviews and changes to our connection fees and customer rates for water and sewer are required to implement necessary infrastructure replacement projects and maintain our high quality of service.

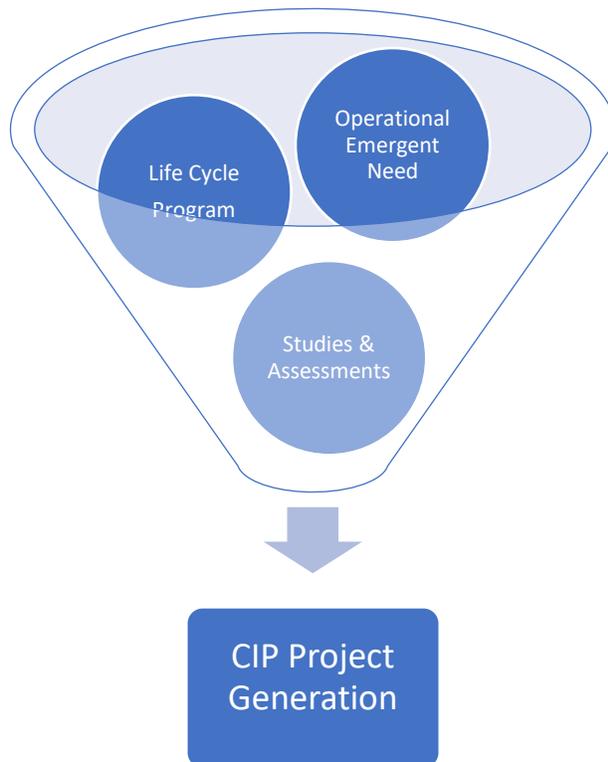
Capital Improvement Program Development

LCPW's Capital Improvement Program (CIP) identifies funding to plan, design and construct projects that are necessary to preserve, modernize and expand the water and wastewater systems under the jurisdiction of Lake County government. The CIP is funded through a combination of user fees, connection fees and reserve funds. The department can also apply for grants and IEPA low interest loans for capital investment in larger projects, but no such projects are currently identified in the 2020-2025 CIP at this time.

The overarching priorities of our Capital Improvement Program include:

- Meet regulatory requirements
- Maximize life of existing assets
- Recapitalize existing capacity
- Meet tomorrow's capacity demands

Considering the priorities described above, as well as project types and investment categories, the CIP is developed through a thoughtful and systematic process. During the initial Project Generation / Programming Phase, potential projects are identified for future inclusion into the 5-year capital program based on the strategic goals and priorities of the County Board and Public Works Department.



Staff also uses information from the Public Works Administration, Engineering, Maintenance and Operations departments as well as information from asset tracking, life-cycle analysis, functional studies, assessments on condition of water and sewer infrastructure, initial high-level cost estimates and schedules to help build the CIP.

This is an important part of the process as it's the funnel through which the projects are then developed and prioritized.

Consisting of a cross-section of department managers, engineers, maintainers and operators, our Capital Improvements Action Team then validates, evaluates and prioritizes the projects based on a variety of CIP scoring criteria.

After projects are scored, the next step in the process is prioritizing projects in scoring order, creating the proposed project list and then balancing budget constraints with the ability and sequencing to execute these projects. In addition, after scoring, the department works to balance the funding between investment categories and to identify where to fill gaps with remaining projects.

Capital Improvement Program Project Phases

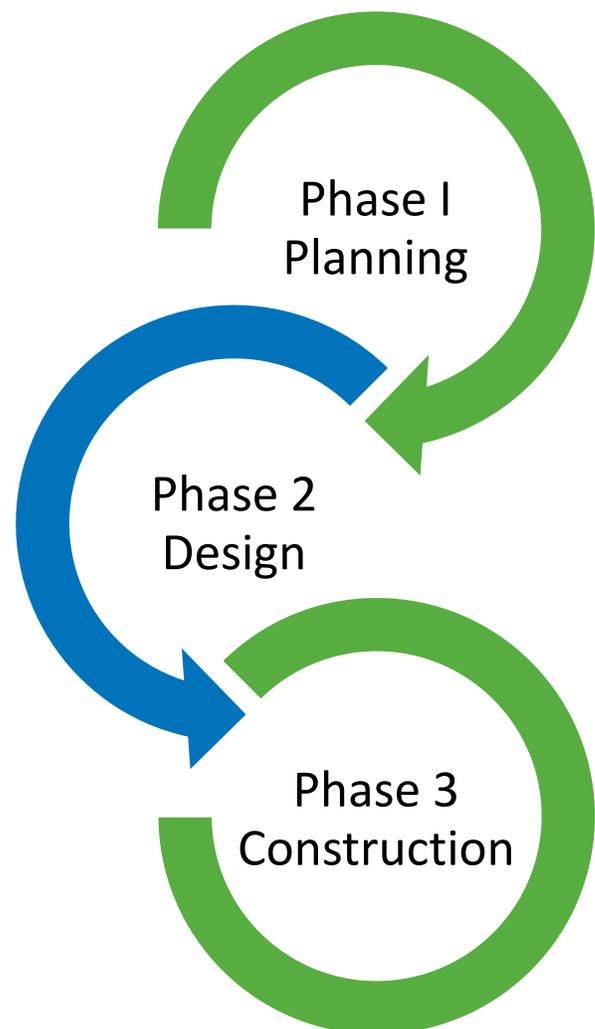
The various phases of capital improvement projects are included in the department's overall budget each year for approval by the County Board. Following budget approval, projects are initiated and begin the project development process which consists of three major phases:

Phase 1 / Planning Phase: In this phase, the scope of the project is fully developed, survey work and environmental investigation is underway, coordination with affected agencies and the public begins where appropriate, the need for any property acquisition/easements is reviewed, design alternatives are developed and refined, concept work is completed and the final alternative is selected, initial cost estimates are updated and a project schedule is developed.

Phase 2 / Design Phase: In this phase, the final design of the project is underway, construction plans, specifications and contract documents are prepared, easements and agreements are secured where necessary, appropriate permits are obtained, project cost estimates and the schedule are refined.

Phase 3 / Construction Phase: This phase consists of advertising for bids and the physical construction of the project. The construction contract is put out for bid and a contract is awarded to the lowest responsible bidder. The project is built and is inspected for compliance with the contract and standards while under construction.

Once capital projects are constructed, they become an asset that the department operates and maintains.



Capital Improvement Program Investment Categories

Capital improvement projects for the department are classified within five categories based on annual investment targets. The department adjusts annual investment targets as necessary if needs determine a different amount or that larger projects are critical at certain times.

Water Production and Storage - annual investment target is currently \$1.7 million based on historic project averages. Strategic initiatives related to this category include appropriate water storage and/or backup water source and the system age is within its useful life span. Examples of projects in this category include reservoir and water tower rehabilitation and improvements.



View of LCPW Grandwood Park Water Tower

Water Distribution - annual investment target is currently \$2.7 million based on a buried pipe infrastructure risk assessment and strategic initiative recommendation of replacing 1% of pipe infrastructure per year. Examples of projects in this category include water main replacement projects.



Water Main Pipe

Wastewater Collection - annual investment target is currently \$2.6 million based on a buried pipe infrastructure risk assessment and strategic initiative recommendation of replacing 1% of pipe infrastructure per year. Examples of projects in this category include lift station, force main and gravity sewer rehabilitation and replacement projects.



Sanitary Sewer Manhole Cover

Wastewater Reclamation Facilities - annual investment target is currently \$1.3 million based on historic project averages (excludes major plant upgrade projects). Strategic initiatives related to this category include to continue to stay ahead of regulation requirements. Preventative maintenance programs are in place to ensure the usefulness of this infrastructure is kept within the life span of the assets. Examples of projects in this category include replacement or upgrades of filtration systems dewatering process equipment, as well as bar screen replacements.



View of the aeration basins at the LCPW Des Plaines River Wastewater Reclamation Facility

Other Support Facilities and Equipment - annual investment target is currently \$900,000 based on historic project averages and the overall system age is within its useful life span. Examples of projects in this category include facility master plans, building maintenance/improvements, vehicle and generator replacements, and SCADA upgrades among others.



Lake County Public Works Vector Truck

If we find during our capital planning that investment amounts are not in line with the needs of maintaining assets and providing service, then we will reassess the investment in each category appropriately.

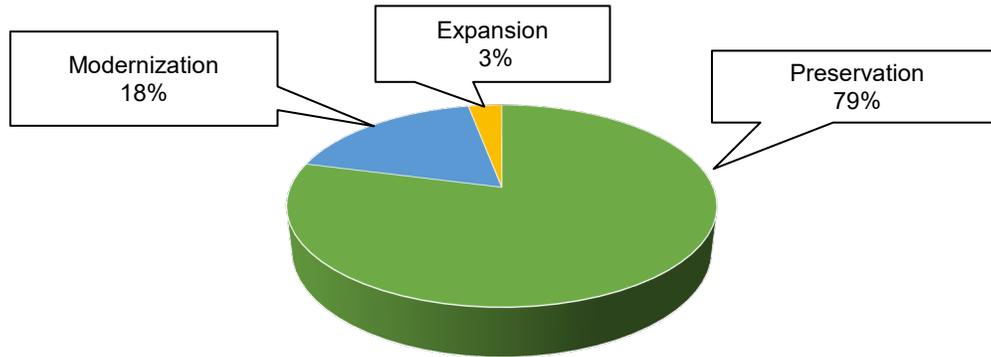


Aerial view of LCPW New Century Town Wastewater Reclamation Facility located in Vernon Hills, Illinois

Capital Improvement Program Project Types

The department also categorizes capital improvement projects under three project types: preservation, modernization and expansion.

Program Breakdown by Number of Projects



Preservation – projects in this category maintain the existing system and help keep our assets in good condition. Many of these projects are developed from inspections, reports, inventories, and life cycle analyses. Preservation projects are normally given a higher priority preference as we need to ensure we are maintaining our existing infrastructure. These projects are intended to maximize life of existing assets and include renewal of existing capacity. 79% of the projects in the CIP fall under preservation.



LCPW crews performing maintenance work

Modernization – projects in this category improve the existing system and help bring our assets in line with current technologies and industry practices and standards. Modernization projects are typically given a medium priority preference to balance our various infrastructure needs. We modernize our equipment and facilities to improve efficiency, reduce life cycle and maintenance costs and or to reduce environmental impacts. 18% of the projects in the CIP fall under modernization.



Inside of LCPW Hawthorn Center Reservoir prior to 2019-2021 modernization project

Expansion – projects in this category implement additional capacity and new assets in our system to keep up with growth and demand. Expansion projects are typically given a lower priority preference as we work to strike a balance between maintaining our existing assets and expanding our ability to better serve development within Lake County. Expansion of our system supports our ability to meet capacity demands. 3% of the projects in the CIP fall under expansion.



Inside of the new biosolids drying facility at the LCPW Des Plaines Wastewater Reclamation Facility

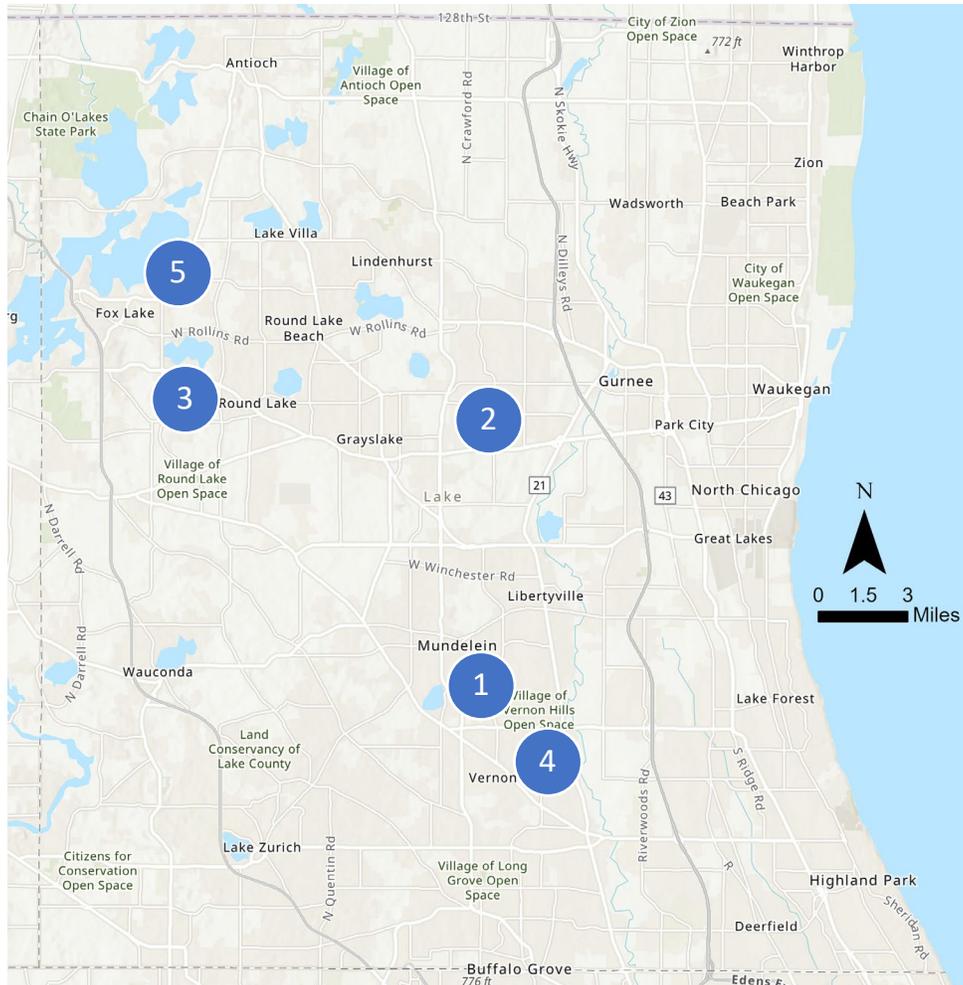


Aerial view of LCPW Des Plaines River Wastewater Reclamation Facility located near Buffalo Grove, Illinois

CIP Investment Category Project Maps and Tables

The following pages provide project information on the 2020-2025 Capital Improvement Program projects classified by investment category.

Investment Category – Water Production and Storage – 2020 – 2025

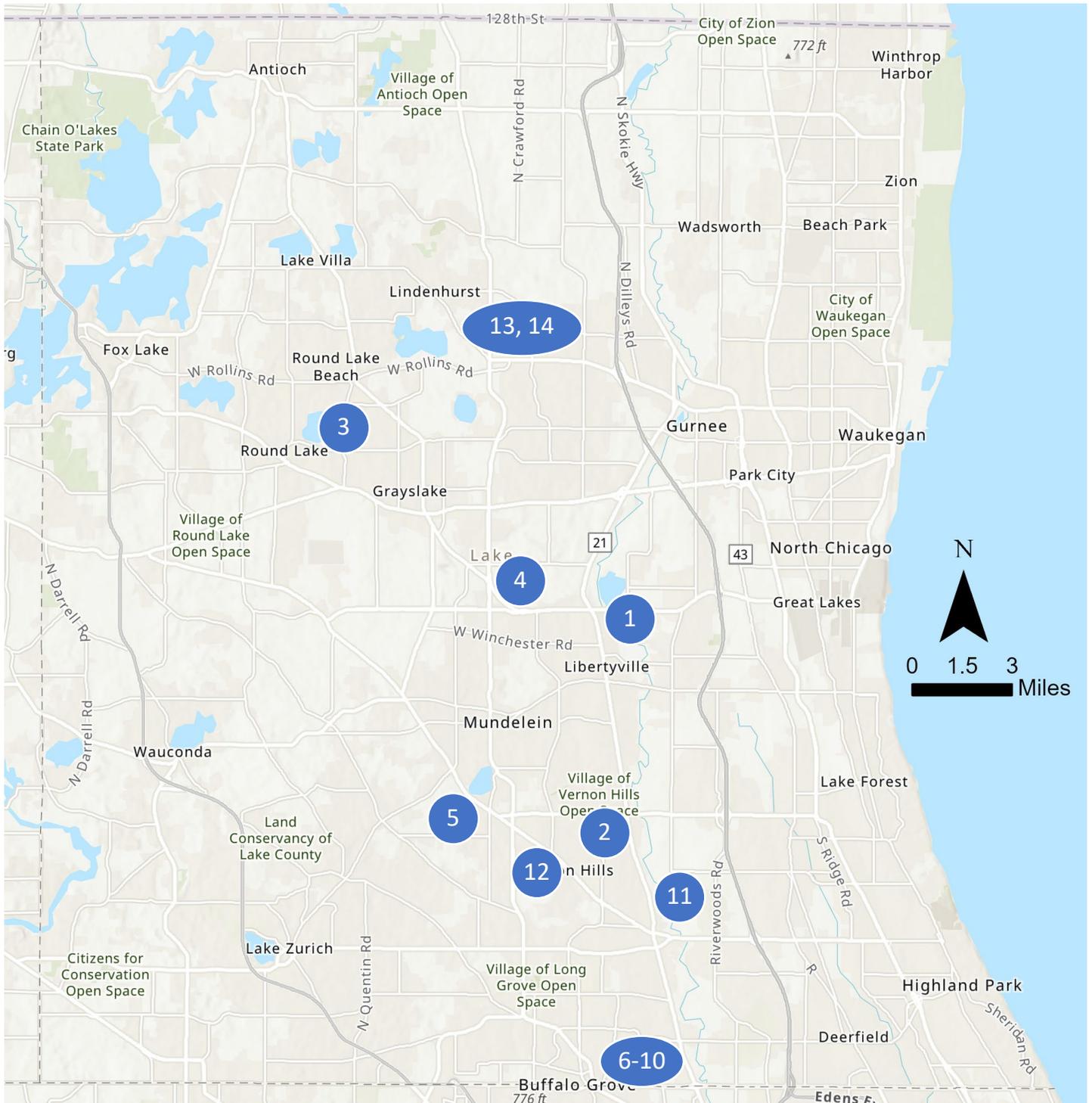


Map Key	Project Description	Project Type	Construction Year*	Programmed Cost (Engineering & Construction)
1	Hawthorn Water Tower Rehabilitation	Preservation	2020	<\$1M
2	Wildwood Water System Storage	Modernization	2022	\$1M - \$5M
3	Brooks Farm Water Tower Rehabilitation & Drainage Improvement	Preservation	2021	<\$1M
4	Vernon Hills Water System Reservoir	Expansion	2022	\$5M - \$10M
5	Fox Lake Hills Reservoir	Expansion	2023	\$1M - \$5M
6**	Annual Tower and Reservoir Maintenance Projects – Various Locations	Preservation	2020-2025	<\$1M

*Dependent upon project readiness and availability of funding.

**Annual Tower and Reservoir Maintenance Projects at various locations are not mapped.

Investment Category – Water Distribution – 2020 – 2025



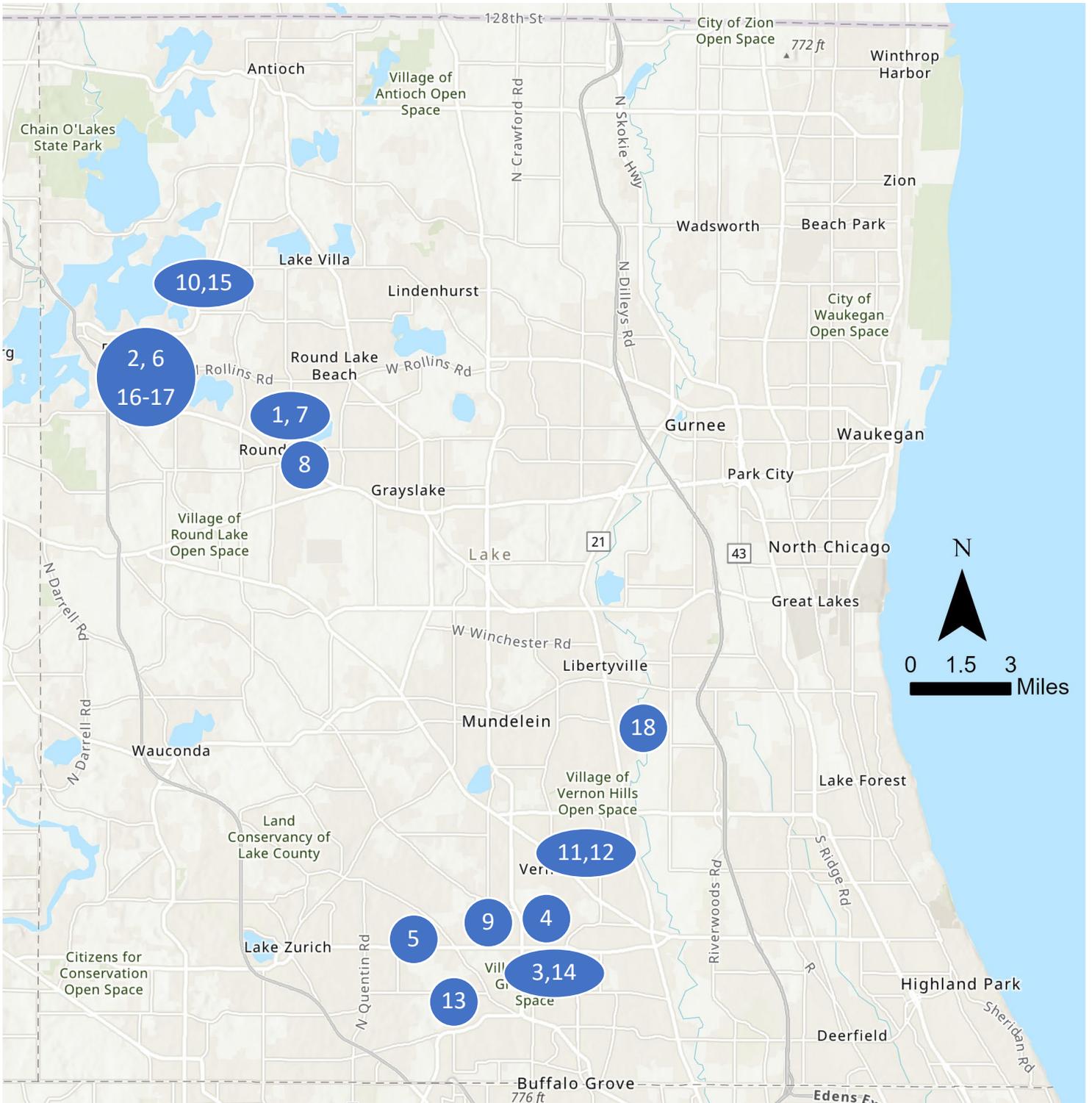
For project table please see next page

Investment Category – Water Distribution – 2020 – 2025 (continued)

Map Key	Project Description	Project Type	Approx. Pipe Length (FT)	Construction Year*	Programmed Cost (Engineering & Construction)
1	Countryside Manor Water Main Replacement	Preservation	7,800	2022	\$1M - \$5M
2	Hawthorn Fashion Square Watermain Replacement	Preservation	2,050	2021	\$1M - \$5M
3	Highland Lake – Lake Michigan Water Concept Study	Preservation & Modernization	TBD	TBD	<\$1M
4	Liberty Acres Rear Easement Water Main Replacement (Wildwood)	Preservation & Modernization	1,050	2023	<\$1M
5	Oak Terrace Water System Replacement	Preservation & Modernization	1,400	2021	\$1M - \$5M
6	Pekara Lake Michigan Water Connection	Modernization	TBD	2022	\$1M - \$5M
7	Pekara Water Main Replacement (Phase I)	Preservation	2,500	2021	<\$1M
8	Pekara Water Main Replacement (Phase II)	Preservation	5,550	2022	\$1M - \$5M
9	Pekara Water Main Replacement (Phase III)	Preservation	5,600	2024	\$1M - \$5M
10	Pekara Water Main Replacement (Phase IV)	Preservation	3,300	2024	\$1M - \$5M
11	Vernon Hills Water System Emergency Interconnect	Preservation	TBD	2021	<\$1M
12	Vernon Hills Water Main Replacement Near Oakwood	Preservation	4,200	2023	\$1M - \$5M
13	Grandwood Park Edgewood Dr.	Preservation	2,900	2025	<\$1M
14	Grandwood Park South Sector	Preservation	4,100	2025	\$1M - \$5M

*Dependent upon project readiness and availability of funding.

Investment Category – Wastewater Collection – 2020 – 2025



For project table please see next page

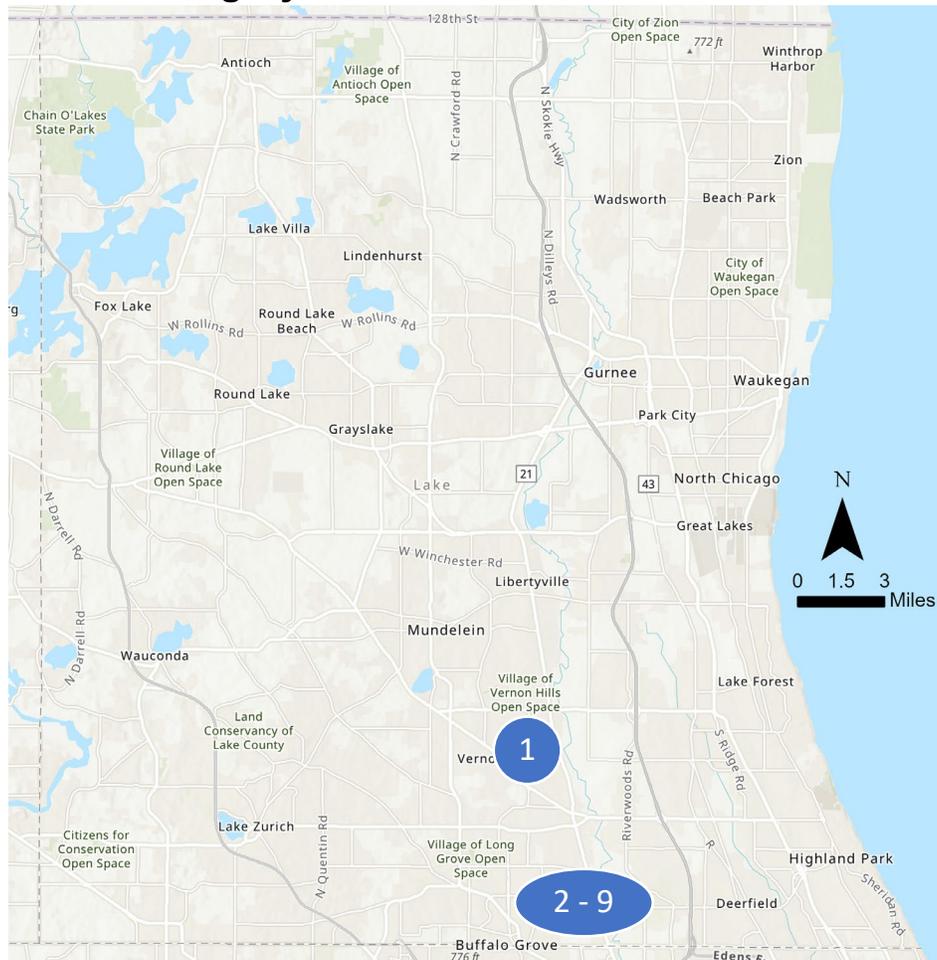
Investment Category – Wastewater Collection – 2020 – 2025 (continued)

Map Key	Project Description	Project Type	Approx. Pipe Length (FT)	Construction Year*	Programmed Cost (Engineering & Construction)
1	Midland Force Main Replacement Part 1	Preservation	4,500	2020	\$1M - \$5M
2	Wilson & Rollins Roads Sewer Lining	Preservation	850	2021	<\$1M
3	IL Route 83 Force Main Realignment	Preservation & Modernization	TBD	2021	<\$1M
4	Buffalo Grove Teal Lane Sanitary Sewer Interconnection	Modernization	TBD	2021	<\$1M
5	IL Route 22 utility relocation with IDOT improvement	Preservation	3,500	2021 (IDOT Dependent)	\$5M - \$10M
6	Wilson & Rollins Roads Drop Chamber Repair	Preservation	N/A	2021	\$1M - \$5M
7	Sunset Drive Gravity Sewer	Preservation	1,400	2021	<\$1M
8	Midland Force Main Replacement Part 2	Preservation	1,100	2022	<\$1M
9	Wellington Drive Force Main Rehabilitation	Preservation	480	2022	<\$1M
10	South Cedar Crest Drive Force Main Rehabilitation	Preservation	1,500	2022	<\$1M
11	Vernon Hills West Pumping Station Force Main Inspection & Pigging Station Construction	Preservation	6,200	2023	\$1M - \$5M
12	Vernon Hills West Pumping Station Force Main Rehabilitation	Preservation	6,200	2023	\$1M - \$5M
13	Three Lakes Dr. Force Main Rehabilitation	Preservation	1,260	2022	<\$1M
14	Hilltop Rd. Force Main Rehabilitation	Preservation	530	2024	<\$1M
15	Columbia Bay Rd. Force Main Rehabilitation	Preservation	1,925	2024	<\$1M
16	Rollins Rd Force Main Inspection & Pigging Station Construction	Preservation	3,800	2024	<\$1M
17	Rollins Rd Force Main Rehabilitation	Preservation	3,800	2025	<\$1M
18	SEC Siphon & Box Lining at Des Plaines River	Preservation	630	2021	<\$1M
19**	Lift Station Rehabilitation – Various Locations	Preservation	N/A	2020-2025	\$1M - \$5M

*Dependent upon project readiness and availability of funding.

**Lift Station Rehabilitation and Manhole Assessments at various locations are not mapped.

Investment Category – Wastewater Reclamation – 2020 – 2025



Map Key	Project Description	Project Type	Construction Year*	Programmed Cost (Engineering & Construction)
1	New Century Town Plant Bar Screens Replacement	Preservation	2022	\$1M - \$5M
2	Des Plaines River Plant Building 60 - Gas Monitoring Systems	Modernization	2021	<\$1M
3	Des Plaines River Plant Building 80 & 90 Upgrades (Press & Polymer Dewatering System)	Preservation	2022	\$1M - \$5M
4	Des Plaines River Plant Building 60 - Odor Control Systems - Part 1	Preservation	2021	<\$1M
5	Des Plaines River Plant Building 60 - Odor Control Systems - Part 2	Preservation	2022	<\$1M
6	Des Plaines River Plant Structure 40 – Clarifier Covers	Modernization	2023 TBD	TBD
7	Des Plaines River Plant Building 50 Rehab (Filters & CL2 tanks)	Preservation	2024 TBD	\$5M - \$10M
8	Des Plaines River Plant Upsize Denitrification Pumps in Tank 32	Modernization	2024 TBD	\$1M - \$5M
9	DPR Secondary & final injection point for alum at clarifying/aeration gates	Modernization	2025 TBD	TBD

*Dependent upon project readiness and availability of funding.

Investment Category – Other Support Facilities and Equipment* – 2020 – 2025

Map Key	Project Description	Project Type	Construction Year**	Programmed Cost (Engineering & Construction)
1	Facility Master Plan and Risk Analysis	Preservation	2020-2025	\$1M - \$5M
2	General Engineering Support	Preservation & Modernization	2020-2025	\$1M- \$5M
3	North Libertyville Estates Levee Drainage Improvement	Preservation	2021	<\$1M
4	SCADA Historian, Training & Reporting Services	Modernization	2020	<\$1M
5	SCADA Phase 3 Design-Build	Modernization	2021	\$1M - \$5M
6	Various maintenance projects, vehicle & generator replacements, building maintenance/improvements	Preservation	2020-2025	\$5M - \$10M

*These projects are not mapped due to the broad areas and varying locations that these projects entail.

**Dependent upon project readiness and availability of funding.

2020-2025 Anticipated Capital Improvement Program Summary

Current Total = \$88.5M

(Dependent upon project readiness and availability of funding)

Investment Category	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
Water Production and Storage	\$1.2M	\$0.9M	\$9.7M	\$2.9M	\$0.4M	\$0.4M
Water Distribution	\$0.9M	\$4.8M	\$5.8M	\$2.2M	\$3.6M	\$2.7M
Wastewater Collection	\$3.2M	\$9.6M	\$3.4M	\$3.6M	\$3.0M	\$2.3M
Wastewater Reclamation	\$0.1M	\$2.1M	\$3.8M TBD	\$0.6M TBD	\$7.7M TBD	TBD
Other Support Facilities and Equipment	\$2.5M	\$2.7M	\$2.1M	\$2.1M	\$2.1M	\$2.1M
Fiscal Year (FY) Totals	\$7.9M	\$20.1M	\$24.8M	\$11.4M	\$16.8M	\$7.5M



650 W. Winchester Rd.
Libertyville, IL 60048
Phone: (847) 377-7500
Email: PublicWorks@lakecountyil.gov
www.lakecountyil.gov/publicworks

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