



Columbus City Utilities

2021 Annual Report



Columbus City Utilities
has over **\$51 million**
in capital projects
planned over
the **next 3 years**



Executive Director Letter

The year 2021 will be a year remembered positively on the Columbus City Utilities historical timeline.

As the community and stakeholders recognized the need to replace aging infrastructure, action was taken to ensure significant capital improvement projects take place in our city and provide quality services for decades to come.

Delivering essential water and wastewater services means we are part of our customers' and stakeholders' lives in the most basic, vital, and meaningful ways. Collecting and treating wastewater in a responsible manner and providing access to affordable drinking water is key to how we succeed as a community partner.

Additionally, with regulatory guidelines constantly evolving and the priority of keeping rates affordable, it is a challenge to meet all our goals.

I am proud to report that our staff has once again overcome these challenges for both residential and commercial customers.

The year continued to present challenges that began in March 2020 and was a year like no other for our staff, community and stakeholders. As the pandemic continued, it affected our workforce and resource availability and changed many of the ways we typically deliver services to our customers. Columbus City Utilities continued to take steps to maintain services and protect employees. Personal protective equipment and preventative practices were just a few of the steps taken to protect our workforce and the public. These steps provided the additional flexibility needed to help ensure we maintained capacity and perform the services expected by our customers.

I would like to thank the staff of Columbus City Utilities for their commitment and dedication demonstrated over the last year as well as the community for their continued support.

Sincerely,

Roger D. Kelso, P.E.
Executive Director



A handwritten signature in black ink, appearing to read 'Roger D. Kelso'.

Roger Kelso
Executive Director

Business Report

Columbus City Utilities (CCU) was successful in implementing a rate increase for water and sewer rates. This was the first rate increase in over 27 years for water customers and 12 years for sewer customers. The recently approved water and sewer rate increases will be implemented in three phases. Phase I went into effect August 1, 2021, with Phase II effective on January 1, 2023, and Phase III effective on January 1, 2024.

The increase in rates will be used to fund several water and sewer infrastructure improvement projects identified in the Columbus City Utilities Master Plan. Details of these projects may be found in the Engineering section of this report.

Other 2021 accomplishments include:

- \$3.72M Sewage Works Bond Anticipation Note (BAN) was issued to pay the cost of a portion of improvement relating to the sewage works system.
- Demo and installation of two air handlers was completed at Service Center. These air handlers were original to the building and had been in use since 1987.
- Upgrade of SCADA software was completed to allow for continuous monitoring of plants by CCU staff.
- Technology and equipment upgrades, including a new LCD television for the CCU administrative office conference room, and a large format printer/copier for the engineering department.
- Redesign of the CCU website, to include options for online sign up, transfer, stop service, bill payment assistance information and signup due to the ongoing COVID pandemic, and CCU's new utility standards and specs for potential client of CCU.
- The Field Representative was responsible for completing 5,902 work assignments in 2021. This is equivalent to 492 per month; an average of 23 per day.



A handwritten signature in black ink that reads "Arron O'Neal".

Arron O'Neal

*Manager of Finance /
Business Operations*

Finance / Operations: 2022 goals

- New Utility billing and financial software to improve credit card processing
- Formalizing an Asset Management Plan (AMP) and implementing new software
- Installation of second fiber optic connection
- Issuance of water and sewer bonds and pay off Water and Sewer BANs



In 2021, CCU sent
225,583 bills
to customers,
collecting **\$17.8M**
in water and sewer
revenues

Engineering Report

Columbus City Utilities has over \$51 million in capital projects planned over the next 3 years, made possible by the 2021 water and sewer rate increases.

Over \$30 million will go towards improving the City's wastewater infrastructure by replacing infrastructure past the end of its useful life, upgrading capacity to serve existing and future growth, and extending service to Strategic Growth Areas within the City. The following includes a brief description of the upcoming wastewater capital projects.

Mill Race Sewer Abandonment: This project will abandon an old 36-inch sewer located in the river bank that is in poor condition by re-routing sewer flow to a newer 66-inch sewer.

- Approximately 3,300 feet of new pipe will be installed.
- The 66-inch sewer serves most of our customers between the East Fork White River and Haw Creek.

Bakalar North, 35th Street, and Gropp's Lift Station Improvements: This project will replace three lift stations that are past the end of their useful lives and in poor condition.

- The three lift stations serve over 1,200 customers.

Annual Sewer and Manhole Rehabilitation: The 2022 rehabilitation project includes trenchless rehabilitation of over 12,000 feet of sewers primarily in some of the oldest parts of the City.

Southeast Sanitary Sewer Improvements: This project will alleviate capacity constraints and update aging infrastructure in the southeast portion of the collection system.

- The project serves over 70 customers, including Ceraland and Rock Creek Elementary (490 EDUs total).

Walesboro and Woodside Sewer Improvements: This project will address existing hydraulic constraints and create additional capacity for continued growth in the industrial area.

- The project includes over 5,800 feet of new sewer and serves several large industrial customers.

Terrace Lake and 200 South Lift Station Consolidation: This project will address existing hydraulic capacity issues and eliminate a lift station, which reduces maintenance requirements.

- The lift stations serve approximately 200 customers.

Westside Interceptor and Southside Lift Station: This project will address an existing hydraulic constraint, replace aging infrastructure, and allow for future growth in the city west of State Road 11.

- The project will serve all customers west of the West Fork White River.
- The project includes approximately 13,000 feet of 42-inch sewer.



A handwritten signature in black ink that reads "Ashley Getz".

Ashley Getz, P.E.
Utilities Engineer

Royalview and 275 East Sewer and Lift Station Improvements: This project will address existing infiltration and inflow issues in the collection system.

- The projects will serve approximately 450 customers.

Over \$21 million will go towards improving the City's drinking water infrastructure by replacing aging water mains, eliminating lead goosenecks in water service lines, increasing capacity to serve future growth, and creating additional aerial storage. The following includes a brief description of the upcoming water capital projects.

Water Main Replacements: The capital program includes implementing a water main replacement program to replace aging mains prone to leaks, mains with lead service goosenecks, and undersized mains. The program will replace water mains on 1st Street, 4th Street, and Inwood Drive in 2022 and continue with additional main replacement in the downtown area and airport area.

- Inwood - 3,675 ft main replacement
- International Dr - 1,500 feet main replacement
- 1st Street - 1,100 feet main replacement
- 4th Street - 2,000 feet main replacement

Eastern Zone Water Storage Tank: This project will increase the water storage capacity of the system which will improve operation of the water treatment plants.

- Adds 2 million gallons of water storage; impacts 2/3 of water system.

Wellfield Improvements: This project will add four new groundwater wells in existing wellfields to keep up with current and future demands.

- Adds 3,250 feet of raw water main.
- New wells will be capable of producing a total of 4,000 gallons per minute of raw water.

New Deaver Road Booster Station and New Tank: The new booster station will replace existing equipment that is undersized and past its useful life. The project will improve water supply in the industrial park area and allow for growth.

- Serves Walesboro airport area and Woodside Industrial Park.
- Adds 1 million gallons of finished water storage.

New Carr Hill Road Booster Station and I-65 Crossing: The new booster station will replace existing equipment that is undersized and past its useful life. The additional I-65 crossing will provide additional redundancy and reinforce the water system.

- Serves western portion of water system (west of I-65).



Photo Gallery

Columbus City Utilities infrastructure is a part of the area landscape. Here's a quick look behind the scenes at just some of the facilities, equipment and people you may see around town.



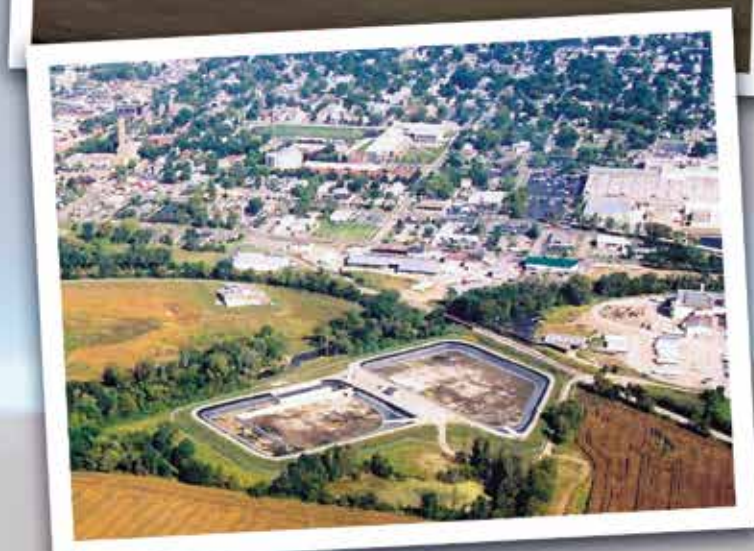
Columbus Wastewater Treatment Plant

The Columbus Wastewater Treatment Plant (WWTP) was placed in service during May of 2011. The design flow of the WWTP is 13.9 MGD average daily flow and 39.0 MGD peak flow. The treatment process is extended aeration with Biological Nutrient Removal.



Haw Creek Headworks

The Haw Creek Pump Station is located at Water Street and Lafayette Street. It is the main pump station delivering flow to the wastewater treatment plant. It has the pumping capability to deliver 32.0 MGD to the WWTP during dry weather and during wet weather events, can pump at a rate of 240 MGD.



Mariah Excess Flow Basins

The Mariah Excess Flow Basins are used during some wet weather events. The basins have a combined total of 20.0 million gallons of storage with the capability of disinfection and discharging into the Haw Creek or returning the flow back to the wastewater treatment plant for processing with other wastewater flows.



Well Field

Well #9 was placed in service during 1993. It has a pumping capacity of 1.4 MGD and is located in the southern well field near the Bartholomew County Fairgrounds. There are a total of 15 wells in the southern well field.



Booster Station

Carr Hill Booster Station was placed in service during 1984 to provide water to elevated tank #4. It has a pumping capacity of 0.8 MDG and is located on the west side of Columbus on Carr Hill Road.



Elevated Tank

Elevated Tank #1 was placed in service during 1972 and rehabilitated during 1993. It has a storage capacity of 0.500 million gallons and is located on 19th Street at Elm Street.



Damaged Sewer

Sewer damage caused by contractor boring through a sewer for installation of conduits. Repair was made with the assistance of vacuum excavation.



Sewer Repair

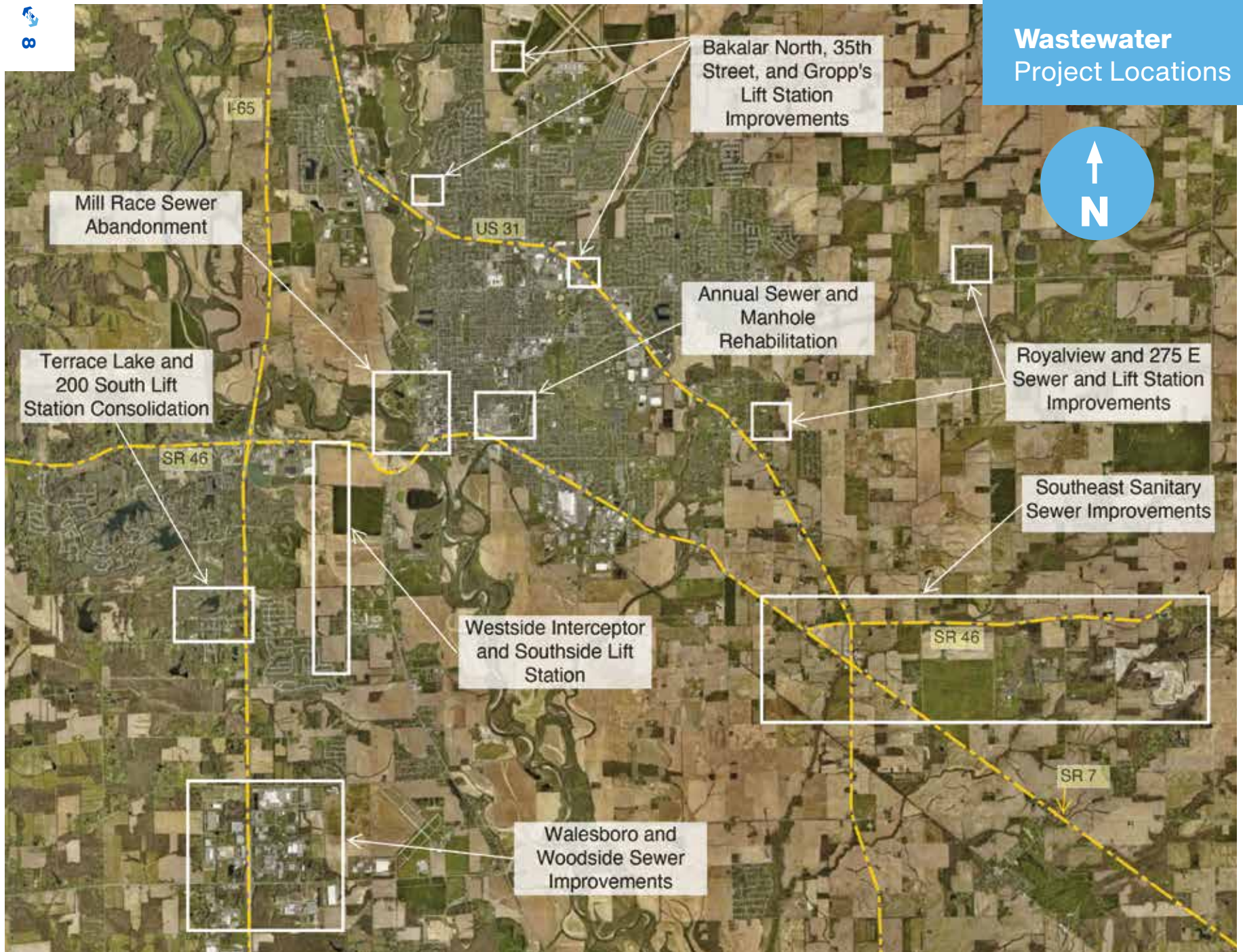
Sewer repair where sewer and manhole were replaced with the assistance of vacuum excavation.



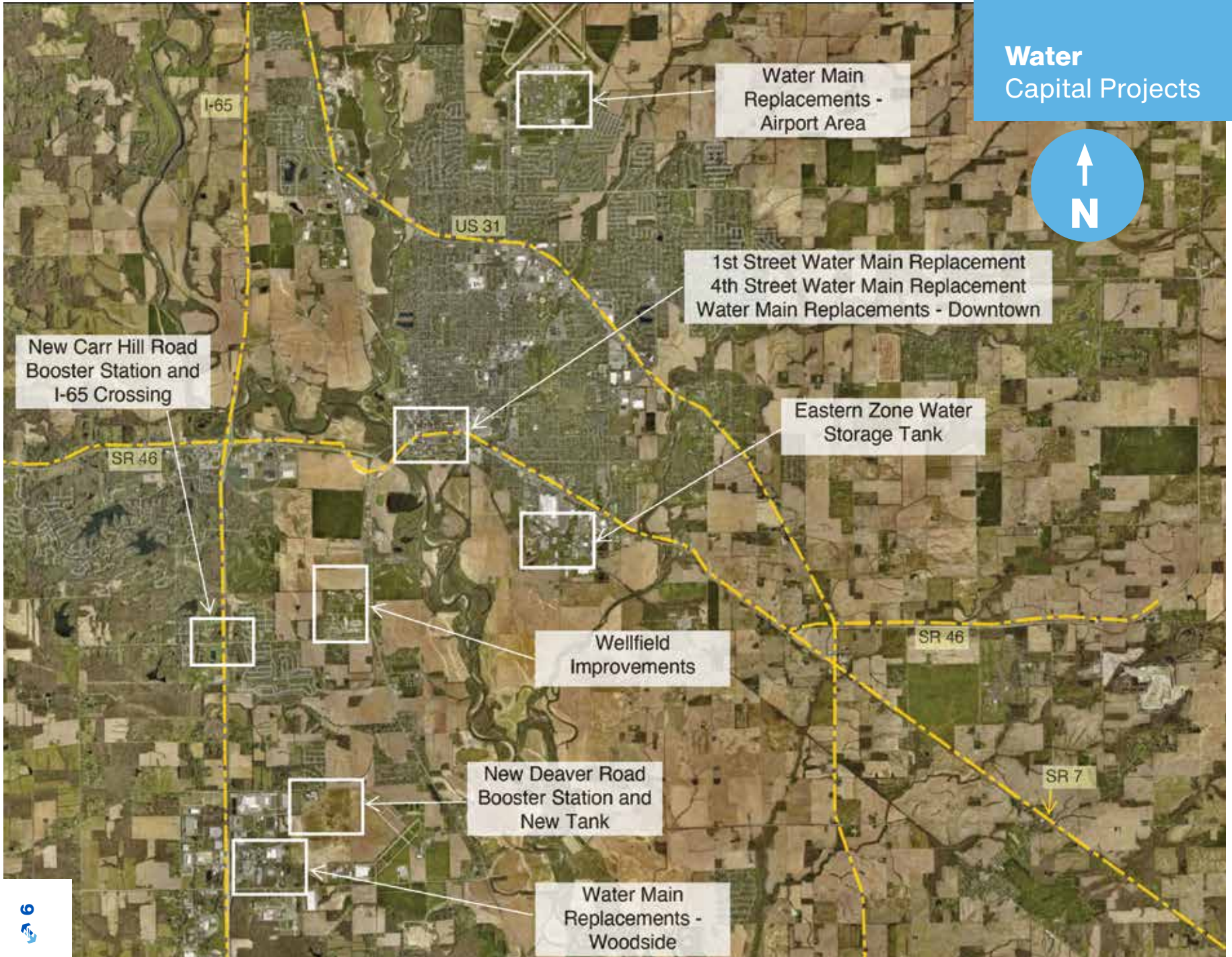
Repaired Sewer

This sewer repair was located at Southside Lift Station where a collapsed force main was replaced along with a new manhole installation.

Wastewater Project Locations



Water Capital Projects



Operations Report

Columbus City Utilities Operations Department is responsible for the operation and maintenance of all water treatment, wastewater treatment, sewer collection and laboratory services offered by the utility.

The Columbus Wastewater Treatment Plant (WWTP) was placed in operation during May of 2011. The design capacity of the WWTP is 13.9 million gallons per day (MGD) with an average daily flow and 39.0 MGD peak daily flow. The treatment type is an extended aeration treatment process with Biological Phosphorus Removal. There were no permit violations during 2021.

The WWTP is staffed with 1 superintendent, 1 maintenance supervisor, 4 operators, 1 truck driver and 7 maintenance personnel. The WWTP staff are also responsible for the preventive maintenance and repair of 82 wastewater lift stations, Haw Creek Headworks and Mariah Excess Flow Basins (see page 8 for a few photos).

There have been no permit violations since plant start-up in 2011.



A handwritten signature in black ink that reads "Randall Duckworth". The signature is fluid and cursive.

Randall Duckworth
Manager of Operations

Operations Data

Operations Influent Data

Average Flow: 6.5 MGD
Average BOD: 172 mg/L
Average NH₃-N: 21.0mg/L
Average Total P: 5.75

Operations Effluent Data

Average Flow: 6.0 MGD
Average BOD: 0.3 mg/L
Average NH₃-N: 0.2mg/L
Average Total P: 0.2mg/L

Collections System Department

The collections system department is staffed by 1 supervisor, 2 equipment operators, 3 laborers and 1 crew chief. Staff maintain 275 miles of sanitary sewer and 50 miles of combined sewer using a vactor sewer maintenance truck, a jet sewer maintenance truck and a camera video truck.

During 2021 the collections system staff cleaned 126,600 feet of sewer and staff also recorded 81,000 feet of sewer on video. Staff reviews these videos to help determine the areas that require sewer rehabilitation.

Staff also responded to 214 sewer calls and implemented a pipe patch sewer repair program which allows the repair of some sewer main breaks without digging.

Quality Control Lab

Staffing at the Quality Control Lab (QC) includes 1 supervisor, 2 lab technicians and 1 pretreatment coordinator. The QC department is responsible for compliance testing for the drinking water plants and the wastewater treatment plant and industries.

During 2021 QC staff performed 5,123 tests on drinking water, 4,200 tests on wastewater, 1,339 tests on industrial samples and 8,129 quality control tests. All compliance test methods are approved by The Environmental Protection Agency (EPA) and by The Indiana Department of Environmental Management.

The pretreatment program includes routine collection and testing of samples to ensure compliance with local limits on pollutants, self-monitoring reporting by industries and inspection of industrial facilities.

Water Distribution

The water distribution department staff includes 1 supervisor, 3 crew chiefs, 3 laborers and 3 equipment operators. The water distribution crews maintain and repair 312 miles of water main, 2,105 water hydrants and 4,721 valves.

Distribution staff also administer a cross connection control program.

The water distribution staff repaired 40 water main breaks during 2021 and disconnected 86 old services.

During 2021 the distribution staff responded to 169 calls for suspected water leaks, and changed out 230 failed water meters. There were 188 new services installed during 2021 which consisted of 156 residential meters and 32 irrigation meters.

Water Treatment Plants

Water Plant 1 and Water Plant 2 share the same staff which includes 1 plant superintendent, 1 lead maintenance and 4 maintenance/operators. In addition to the operation and maintenance of two water treatment plants staff also maintain 5 elevated tanks, one standpipe and two water booster stations.

Water Plant 1

Water Plant 1 is located at Lincoln Park. The plant was placed in service during 1950 with a capacity of 8.0 MGD, the current daily water production is 3.5 MGD. WP1 is fully automated which allows staff some flexibility with operations.

Water Plant 1 has 2 clearwells with a total storage capacity of 1.6 MGD. The treatment process consists of pretreatment using chlorine to oxidize iron and manganese, the addition of fluoride for dental hygiene, Polyphosphate for corrosion control, gravity filtration for polishing and post chlorine for disinfection.



Water Plant 1: Water Quality Monthly Averages

2021	Water Plant #1 Raw Water	Water Plant #1 Finished Water
Iron	2.045	0.026
Manganese	0.2	0.021
Phosphosphate		0.88
Free Chlorine		0.98
Total Chlorine		1.02



Water Plant 2

Water Plant 2 is located by the The Bartholomew County Fairgrounds. The plant was placed in service during 1972 with a capacity of 20.0 MGD. The current daily water production is 6.0 MGD. This plant is fully automated which allows staff the same flexibility as WP1.

The treatment process consists of pretreatment using chlorine to oxidize iron and manganese, the addition of fluoride for dental hygiene, Polyphosphate for corrosion control, gravity filtration for polishing and post chlorine for disinfection.

Water Plant 2 receives raw water from the southern well field located in Garden City near the fairgrounds.



Water Plant 2: Water Quality Monthly Averages

2021	Water Plant #2 Raw Water	Water Plant #2 Finished Water
Iron	0.558	0.013
Manganese	1.626	0.023
Phosphosphate		0.84
Free Chlorine		1.31
Total Chlorine		1.49



Outstanding Performance

Columbus City Utilities Travis Calhoun Receives IWEA Operator Spotlight Award

The Indiana Water Environment Association (IWEA) awarded its first Operator Spotlight to Columbus City Utilities' own Travis Calhoun. The award was given in recognition of "extraordinary talent, enthusiasm, and commitment to the water environment industry".

Calhoun has served Columbus City Utilities for over 9 years and currently serves as a Maintenance/Operator. He is also in his fourth year as President of the Southern Indiana Operator's Association (SIOA), a not-for-profit organization providing education and networking to professionals in the wastewater recovery field.



In addition to hosting the IWEA 2021 Wastewater Challenge, Calhoun has participated in the event for the last 7 years. He has also served on the IWEA team at WEFTEC (Water Environment Federation Technical Exhibition & Conference) for two years. WEFTEC is the largest conference of its kind in North America and offers water quality professionals from around the world the best water quality education and training available. He is known by his colleagues as a hard worker, a fast learner, and someone dedicated to the industry. Columbus City Utilities is proud to have him on the team!

2021 Plant of the Year

Columbus City Utilities Wins SIOA Plant of the Year Honors

On December 8, 2021, Columbus City Utilities (CCU) was awarded the Plant of the Year honors by the Southern Indiana Operators Association (SIOA) at their annual meeting in Franklin, Indiana. The award was presented to CCU in recognition of the excellence displayed at its wastewater plant, located on South Jonesville Road in Columbus.

Columbus City Utilities was eligible to receive this award since they had hosted an SIOA event in 2021. A committee from SIOA inspected the plant earlier this year and rated it based on its appearance, operations, and efficiency. The group also interviewed Randy Duckworth, CCU Manager of Operations, and was interested in the amount of Biological Phosphorus removal completed at the plant.

Our team will continue funding various capital improvements and support the vitality of our infrastructure and community. We will continue to seek community involvement in infrastructure and utility matters.



Columbus City Utilities

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Cheryl McAvoy
Secretary

David Spear
Member

Patrick Andrews
Member



During 2021, Quality Control Laboratory staff performed **5,123 tests** on drinking water, **4,200 tests** on wastewater, **1,339 tests** on industrial samples and **8,129 quality control tests**



Columbus City Utilities

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