

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5 MILLION AND IMPACT STATEMENTS

Montgomery County Projects

- a. **\$690,000 - Arcola WWPS & FM** - This project provides for the planning, design and construction of the modifications to the Arcola Wastewater Pumping Station (WWPS) and replacement of the Arcola Force Main (FM). The rehabilitation will replace both pumps, maintaining the 0.17 million gallons per day (MGD) capacity of the WWPS. The existing 1,300 linear feet of 4" FM will be replaced. In addition, replacement of all electrical and mechanical components, piping assets and the heating, ventilation and air conditioning (HVAC) system are included.

The existing WWPS and FM serve approximately 130 households in the Arcola area, just west of the Wheaton Regional Park in Montgomery County. They were constructed in 1961 and have reached the end of their useful lives. Replacement of the existing FM is in accordance with an initiative to prioritize replacing FMs that have reached their anticipated life expectancy. This upgrade work was recommended as part of WSSC Water's Asset Management Program.

Due to budgetary constraints, this project will be deferred for one year. The delay could lead to failure of the WWPS or FM before the work is completed. Failure of the WWPS will cause a release of raw sewage into the park. Failure of the FM will cause a release of raw sewage onto the travelled roadways along its alignment and repairs will cause construction nuisances to the travelling public.

- b. **\$275,000 - Reddy Branch WWPS & FM** - This project provides for the planning, design and construction of the modifications to the Reddy Branch WWPS and replacement of the Reddy Branch FM. The work will maintain the 3.04 MGD capacity of the WWPS. The existing 12,774 linear feet of 16" FM will be replaced.

The existing WWPS and pre-stressed concrete cylinder pipe (PCCP) FM serve approximately 5,650 households in the Brookeville and Olney areas within Montgomery County. They were built in 1971 and have reached the end of their useful lives. Additionally, the existing site is immediately adjacent to Reddy Branch, which is experiencing streambank erosion that could soon encroach upon the facility. The WWPS is subject to flooding and there are safety concerns with equipment operation. Replacement of the existing FM is in accordance with an initiative to prioritize replacing FMs that have reached their anticipated life expectancy. This upgrade work was recommended as part of WSSC Water's Asset Management Program.

Due to budgetary constraints, this project will be deferred for one year. The delay could lead to failure of the WWPS or FM before the work is completed. Failure of the WWPS will cause a release of raw sewage into Reddy Branch. Much of the existing FM, which is prone to failure, is located within parkland and environmentally sensitive areas that would be impacted by the release of raw sewage in the event of failure of the FM.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5
MILLION AND IMPACT STATEMENTS (Continued)

- c. **\$173,000 - Sam Rice Manor WWPS & FM** - This project provides for the planning, design and construction of the relocated Sam Rice Manor WWPS and replacement of the Sam Rice Manor FM. The capacity of the relocated WWPS will be 0.12 MGD. A new 3,521 linear foot FM will be constructed.

The relocated WWPS and FM will serve approximately 135 households in the Sam Rice Manor community near Ashton in Montgomery County. The existing WWPS and FM were originally installed in 1977 and have reached the end of their useful lives. The WWPS does not meet current standards and is in jeopardy from encroaching streambank erosion. Replacement of the existing FM is in accordance with an initiative to prioritize replacing FMs that have reached their expected life expectancy. This upgrade work was recommended as part of WSSC Water's Asset Management Program.

Due to budgetary constraints, this project will be deferred for one year. The delay could lead to failure of the WWPS or FM before the work is completed. Failure of the WWPS will cause a release of raw sewage into some tributaries to the Patuxent River. The existing FM, which is prone to failure, is within the backyards of numerous residences that would be impacted by the release of raw sewage in the event of failure of the FM, causing health hazards and nuisances to the property owners.

- d. **\$132,000 - Spring Gardens WWPS Replacement** - This project provides for the planning, design and construction of a new Spring Gardens WWPS and replacement of the Spring Gardens FM. The capacity of the new WWPS will be 1.30 MGD in order to accommodate build-out of the service area. A new 7,500 linear foot FM will be constructed. Additionally, 900 linear feet of gravity sewer will also be built.

The existing WWPS and FM serve approximately 620 households in the King Valley, King Valley Manor, and Kingstead Knoll communities near Damascus in Montgomery County. They were constructed in 1977 and have reached the end of their useful lives. Replacement of the existing FM is in accordance with an initiative to prioritize replacing FMs that have reached their anticipated life expectancy. This upgrade work was recommended as part of WSSC Water's Asset Management Program.

Due to budgetary constraints, this project will be deferred for one year. The delay could lead to failure of the WWPS or FM before the work is completed. Failure of the WWPS will cause a release of raw sewage into Little Bennett Creek and environmentally sensitive areas. The existing FM, which is prone to failure, follows the Little Bennett Creek streambed. Failure of the FM will cause a release of raw sewage into the creek.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5 MILLION AND IMPACT STATEMENTS (Continued)

Prince George's County Projects

- a. **\$345,000 - Carsondale WWPS & FM** - This project provides for the planning, design and construction of the modifications to the Carsondale WWPS and replacement of the Carsondale FM. The rehabilitation will replace both pumps, maintaining the 0.60 MGD capacity of the WWPS. The existing 3,000 linear feet of 8" FM will be replaced. In addition, replacement of all electrical components, including the generator, replacement of the HVAC system, general upgrade to the WWPS building and grounds as needed and the addition of a restroom are included.

The existing WWPS and FM serve the Carsondale community southeast of the I-95 and Route 50 interchange near Lanham in Prince George's County. The WWPS is located adjacent to the local community park. The WWPS and FM were constructed in 1960 and have reached the end of their useful lives. Replacement of the existing FM is in accordance with an initiative to prioritize replacing FMs that have reached their anticipated life expectancy. This upgrade work was recommended as part of WSSC Water's Asset Management Program.

Due to budgetary constraints, this project will be deferred for one year. The delay could lead to failure of the WWPS or FM before the work is completed. Failure of the WWPS will cause a release of raw sewage into the local community park. Failure of the FM will cause a release of raw sewage onto the travelled roadways along its alignment and repairs will cause construction nuisances to the travelling public.

- b. **\$173,000 - Colmar Manor WWPS & FM** - This project provides for the planning, design and construction of the relocated Colmar Manor WWPS and replacement of the Colmar Manor FM. The capacity of the relocated WWPS will be 0.80 MGD. A new 726 linear foot FM will be constructed.

The relocated WWPS and FM will serve approximately 240 households in the Colmar Manor community in Prince George's County. The existing WWPS and FM were originally installed in 1956 and have reached the end of their useful lives. The WWPS is outdated and could be considered "piece-meal" due to a number of in-house modifications through the decades. Replacement of the existing FM is in accordance with an initiative to prioritize replacing FMs that have reached their expected life expectancy. This upgrade work was recommended as part of WSSC Water's Asset Management Program.

Due to budgetary constraints, this project will be deferred for one year. The delay could lead to failure of the WWPS or FM before the work is completed. The WWPS is located adjacent to the Anacostia River tributary and greenway. Failure of the WWPS or FM will cause a release of raw sewage into the tributary and greenway.

**FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5
MILLION AND IMPACT STATEMENTS (Continued)**

- c. **\$173,000 - Forest Heights WWPS & FM** - This project provides for the planning, design and construction of the modifications to the Forest Heights WWPS and replacement of the Forest Heights FM. The work will maintain the 2.28 MGD capacity of the WWPS. The existing 1,940 linear feet of 14" FM will be replaced.

The existing WWPS and FM serve approximately 1,200 households in the Forest Heights community in Prince George's County. They were built in 1946 and have reached the end of their useful lives. Additionally, replacement parts are unavailable since the equipment is obsolete. The WWPS is located adjacent to the Forest Heights Elementary School ballfields and Oxon Run stream. Replacement of the existing FM is in accordance with an initiative to prioritize replacing FMs that have reached their expected life expectancy. This upgrade work was recommended as part of WSSC Water's Asset Management Program.

Due to budgetary constraints, this project will be deferred for one year. The delay could lead to failure of the WWPS or FM before the work is completed. Failure of the WWPS will cause a release of raw sewage onto the elementary school ballfields, into Oxon Run stream, and into other environmentally sensitive areas. The existing FM, which is prone to failure, is within the backyards of numerous residences that would be impacted by the release of raw sewage in the event of failure of the FM, causing health hazards and nuisances to the property owners.

- d. **\$14,410,000 - Prince George's County 450A Zone Water Main** - This project provides for a capacity and alignment study, design and construction of approximately 3.8 miles of new 48" diameter redundant transmission main for Prince George's high pressure zone HG450A. Portions of the transmission main that currently serve the HG450A and HG290B pressure zones will be out of service almost every year to meet the goals of the PCCP inspection program. When portions of the existing main are out of service, the remaining mains lack sufficient capacity and pumping against these restrictions can cause high pressure that may result in pipe failure. A redundant transmission main is required to continue to provide service to our customers while the existing transmission main is planned to be out of service and to provide service in case the existing main fails.

The new transmission main may parallel or replace existing mains as determined by modeling. The new main should be a minimum of 30" diameter, will start where the existing 54" diameter main inside the Beltway connects to an existing 30" diameter main just north of Pennsylvania Avenue and tie in to the new 30" diameter main to be constructed under the Old Branch Avenue Water Main project. This project benefits a large water pressure zone that includes the areas of Hillcrest Heights, Suitland, Forestville, District Heights, Andrews Air Force Base and Camp Springs.

Due to budgetary constraints, this project will be deferred for one year. This delay will continue concerns with lack of redundancy within this area of the water system. Failure of the existing main will create water outages for 90,000 customers. The delay will also impact the ability to adequately inspect the PCCP transmission mains in the water system, which are critical pipes that transmit high quantities of water and are prone to failure without adequate inspections that identify and remedy defects in a timely manner.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5
MILLION AND IMPACT STATEMENTS (Continued)

- e. **\$22,552,000 - South Potomac Supply Improvement, Phase 2** - This project provides for the design and construction of 4.4 miles of 42" diameter ductile iron transmission main, 6.0 miles of distribution mains (diameters ranging from 10" to 16") and a new flow control valve and vault. The project will replace 3.5 miles of existing 42" diameter PCCP transmission main located within the Henson Creek corridor and will replace parallel aged distribution infrastructure located along the project limits.

During design of the 42" PCCP transmission main replacement under the South Potomac Supply Improvement, Phase I project, WSSC Water and the Maryland Department of the Environment discussed extensive requirements for stream restoration of Henson Creek. At that time, WSSC Water staff identified up to 3.5 miles of pipe south of the project area that is exposed along eroding stretches of Henson Creek. An alignment study began under this project to evaluate possible relocation of the existing 42" PCCP main between Rosecroft Drive and Indian Head Highway. The 3.5 miles of PCCP main will be relocated out of Henson Creek and into a roadway alignment between Temple Hills Road and Indian Head Highway, for a total of 4.4 miles of new 42" ductile iron pipe. The transmission main will be relocated out of the 290B pressure zone and into the 450A pressure zone. Phase 2 includes the installation of a flow control valve between pressure zones 450A and 290B. This project primarily benefits the National Harbor area in Prince George's County.

Due to budgetary constraints, this project will be deferred for one year. This delay will continue concerns of a transmission main failure. Failure of the existing main would impact 13,500 customers in the National Harbor area.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5 MILLION AND IMPACT STATEMENTS (Continued)

Bi-County/Information Only Projects

- a. **\$1,314,000 - Anacostia Depot Reconfiguration** - This project provides for the planning, design and construction of a reconfiguration of the Anacostia Depot to improve the efficiency of operations; to update to current building codes, regulations and Americans with Disabilities Act (ADA) requirements; to improve the energy efficiency of the facilities; to address floodplain vulnerabilities due to climate change; and to replace assets that are at or beyond their useful lives.

The Anacostia Depot is the largest of WSSC Water's four depots that support water and sewer field operations. The existing buildings were generally constructed in the 1970s. The depot houses several critical functions for WSSC Water, including the workshop and administrative space for the Facility Maintenance Division, the water meter testing and hydrant shop, the heavy equipment shop, the Fleet Services Division building and one of the fleet garages and the main warehouse. The depot is constrained by CSX railroad tracks that traverse the site, leading to operational inefficiencies when vehicles and staff must wait for trains to pass. The site also has floodplain vulnerabilities due to the effects of climate change.

A facility-wide condition assessment was undertaken in June 2019 to identify deficiencies in the existing facilities and provide a recommended course of action to remedy the issues. The study identified a significant number of deficiencies, including electrical, mechanical, accessibility and safety deficiencies. The study examined potential remedies, including renovation and new build scenarios. A facility master plan was subsequently commissioned to provide a more detailed analysis of the potential renovation and new build alternatives, which was finalized in June 2021.

Due to budgetary constraints, this project will be deferred for one year. This delay will impact addressing the electrical, mechanical, accessibility, safety and floodplain deficiencies of the facility. Many of the critical functions housed at the Anacostia Depot support system-wide operations. The beneficiaries of this project are all of WSSC Water's 1.9 million customers. Any disruptions to the Anacostia Depot due to flooding would be felt across the entire service area. The impacts would likely be most acutely felt in the areas serviced primarily by the Anacostia Depot. While the service areas differ depending on the function, the map on the next page shows the maintenance boundaries for the Anacostia Depot. As shown on the map, the Anacostia Depot maintenance service area encompasses the Beltsville, Bowie, College Park, Glenarden, Greenbelt, Hyattsville and Laurel communities in Prince George's County, among others.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5
MILLION AND IMPACT STATEMENTS (Continued)

- b. **\$12,959,000 - Septage Discharge Facility Planning & Implementation** - This project provides for the planning, design and construction of a new septage and fats, oils and grease (FOG) discharge facility at the abandoned Rock Creek Water Resource Recovery Facility (WRRF) and new septage discharge facilities at the Anacostia #2 WWPS and Piscataway WRRF. Currently, septage waste is collected at three locations: the Muddy Branch Road disposal site in Montgomery County and the Ritchie Road and Bladensburg disposal sites in Prince George's County. A fourth site on Temple Hills Road in Prince George's County was closed down on July 1, 2015. The types of waste collected are as follows: septic tank pump-out (sludge), waste holding tank discharge (gray water), grease trap pump-out (FOG), bus holding tank discharge (sewage and chemicals) and small food service providers (low volume FOG waste). FOG wastes should not be discharged to WSSC Water's sewerage system without treatment.

The design of the Rock Creek, Anacostia and Piscataway sites are complete. The construction of these facilities is currently on hold while a plan is developed to address final dispatch of FOG wastes. The Piscataway site will be coordinated with the construction schedule of other Piscataway facility projects.

Due to budgetary constraints, this project will be deferred for one year. While the construction of these facilities was already on hold, WSSC Water has been working with Montgomery County to address concerns with the traffic disruptions impacting the public at the existing Muddy Branch Road disposal site. The reductions will delay WSSC Water's ability to address these concerns.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5
MILLION AND IMPACT STATEMENTS (Continued)

- c. **\$27,725,000 - Water Reconstruction Program** - This program, which has been ongoing since 1979, renews and extends the useful life of water mains, house connections and large water services. Portions of the water system are more than 80 years old. Bare cast iron mains, installed generally before 1965, permit the build-up of tuberculation which can reduce flow and cause discoloration at the customer's tap. Selected replacement is necessary to supply water in sufficient quantity, quality and pressure for domestic use and firefighting. As the system ages, water main breaks are increasing. Selected mains are chronically breaking and other mains are undersized for the current flow standards. Replacement, rehabilitation via structural lining and the addition of cathodic protection to these mains provides added value to the customer. Galvanized, copper and cast iron water mains, as well as all other water main appurtenances including meter and pressure reducing valve vaults are replaced on an as needed basis when they have exceeded their useful life.

Due to budgetary constraints, the budget for this project in FY 2023 has been reduced by \$27.7 million. This reduction will lower the targeted design mileage from 30 miles down to 10 miles and lower the targeted construction mileage from 37 miles down to 25 miles. However, the mileage impacts will be much larger than the stipulated figures. This is an ongoing program and the commencement of new work is a continual process throughout the year. Additionally, the replacement projects typically span multiple fiscal years. Consequently, the projects currently under construction or out to bid already constitute the full allotment of 25 miles for construction in FY 2023. The program will therefore be required to stop issuing tasks for new work, which will slow the work of the program and lead to impacts that exceed the stipulated 12 mile reduction to the construction target and extend into future fiscal years.

Customers across WSSC Water's service area will be impacted by these reductions. The pipes replaced under this program are typically prone to failure. Failure of these pipes will cause temporary loss of water service to residences and businesses and repairs will cause construction nuisances to the travelling public. The heat map on the next page shows the historic location of water main breaks and leaks throughout the WSSC Water service area between January 2019 and January 2022. Generally speaking, the frequency of breaks and leaks has historically been highest in the communities closest to Washington D.C. The pipes in these areas are generally the oldest in the system and there is a higher concentration of pipes in these regions. The historic location of breaks and leaks is not necessarily a predictor of the location of future breaks and leaks, as water mains are replaced each year and other factors like soil conditions, transient pressures, and the temperature of the water in the pipes also impact the frequency and location of breaks and leaks.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5 MILLION AND IMPACT STATEMENTS (Continued)

- d. **\$18,641,000 - Large Diameter Water Pipe & Large Valve Rehabilitation Program** - This program plans, inspects, designs, and rehabilitates or replaces large diameter water transmission mains and large system valves that have reached the end of their useful lives. Condition assessment and/or corrosion monitoring is performed on metallic pipelines, including ductile iron, cast iron and steel, to identify lengths of pipe requiring replacement or rehabilitation and cathodic protection. The PCCP Inspection and Condition Assessment and Monitoring Program identifies individual pipe segments that require repair or replacement to assure the continued safe and reliable operation of the pipeline. The program also identifies extended lengths of pipe that require the replacement or rehabilitation of long segments of the pipeline or the entire pipeline. Rehabilitation or replacement of these mains provides value to the customer by minimizing the risk of failure and ensuring a safe and reliable water supply. The program includes installation of Acoustic Fiber Optic monitoring equipment in order to accomplish these goals in PCCP mains.

WSSC Water has approximately 1,031 miles of large diameter water main ranging from 16" to 96" in diameter. This includes 335 miles of cast iron, 326 miles of ductile iron, 35 miles of steel and 335 miles of PCCP. Internal inspection and condition assessment are performed on PCCP pipelines 36" and larger in diameter. Of the 335 miles of PCCP, 140 miles are 36" diameter and larger. The inspection program includes internal visual and sounding, sonic/ultrasonic testing and electromagnetic testing to establish the condition of each pipe section and determine if maintenance repairs, rehabilitation or replacement are needed.

In July 2013, WSSC Water's Acoustic Fiber Optic monitoring system identified breaking wires in a 54" diameter PCCP water transmission main in the Forestville area of Prince George's County. Upon attempting to close nearby valves to isolate the failing pipe for repair, WSSC Water crews encountered an inoperable valve with a broken gear, requiring the crew to drop back to the next available valve. This dropping back to another valve would block one of the major water mains serving Prince George's County, significantly enlarging the shutdown area and reducing our capacity to supply water to over 100,000 residents. In order to minimize the risk associated with inoperable large valves and possible water outages, the large valve inspection and repair program was initiated to systematically inspect, exercise, repair or replace any of the nearly 1,500 large diameter valves and vaults located throughout the system.

Due to budgetary constraints, the budget for this project in FY 2023 has been reduced by \$18.6 million. This reduction will lower the targeted construction mileage from 6 miles to 5 miles, reduce the funding available for PCCP carbon fiber and planned and emergency replacement work by \$10.7 million and eliminate funding for the water redundancy program in FY 2023. The PCCP funding is used for planned and emergency interventions on PCCP transmission mains throughout the system that are identified as requiring repair or replacement through the Acoustic Fiber Optic monitoring program. The map on the next page shows the historic location of PCCP rehabilitation throughout the WSSC Water service area in FYs 2018 through 2022. The historic location of interventions is not necessarily a predictor of the location of needs. The water redundancy program provides for planning, design and construction of projects that improve the redundancy of the water system in order to improve service to customers when critical pipe segments are out of service. Projects are identified using a criticality analysis of WSSC Water's hydraulic model for the water system.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5 MILLION AND IMPACT STATEMENTS (Continued)

- e. **\$5,699,000 - Engineering Support Program** - This program represents a consolidation of a diverse group of projects whose unified purpose is to support the extensive water and sewer infrastructure and numerous support facilities that are owned, operated and maintained by WSSC Water. Engineering Support Program projects are identified primarily through WSSC Water's Asset Management Program. Engineering services are provided for planning, design and construction to meet a wide range of needs. As such, Engineering Support Program projects are diverse in scope and typically include work needed to upgrade operating efficiency, modify existing processes, satisfy regulatory requirements, improve safety and security or rehabilitate aging facilities. The program does not include proposed "major projects" which, by law, must be programmed in WSSC Water's Capital Improvements Program or projects to serve new development.

Due to budgetary constraints, the budget for this project in FY 2023 has been reduced by \$5.7 million. This reduction will impact the ability to execute projects through the program. Due to the diverse scope of projects implemented under this program, the impacts of the reduction will be felt by all of WSSC Water's 1.9 million customers. The following are some projects planned for execution under the Engineering Support Program that will be delayed due the budget reductions.

Northwest Branch Aerial Sewers Rehabilitation/Replacement Phase 2 - This project provides for the planning, design and construction to mitigate exposure to 5 aerial sewer pipelines and their supporting structures. Aerial sewers are elevated sewer pipelines supported by piers or pedestals that pass over geographical features such as streams and low-lying areas due to the inability or impracticability of burying the pipelines in that location. A condition assessment of the 5 aerial sewers identified existing or imminent risks posed by the site conditions, deterioration of the pipes and/or deterioration of the structural support systems. Failure of these pipes will cause a release of raw sewage into environmentally sensitive areas.

Village in the Woods Service Reliability Water Main Supply - During three planned shutdowns of the 42" PCCP transmission main along Brightseat Road in 2014, the Village in the Woods apartment complex was put out of water service for an extended period of time. Hydraulic analysis and a business case were performed to develop a long-term solution to this issue. The scope of work includes upsizing existing mains in the area, installing new mains and removing a dead-end by connecting it to another existing main. Delays to this work will extend the period of time that residents and businesses in the area are at risk of inadequate fire flow or loss of service in the event of a disruption to the 42" PCCP main.

Temple Hills Depot Renovation - A high portion of the assets at the Temple Hills Depot are in poor condition and there are safety concerns with the current condition of the facility. A renovation of the facility will: improve the efficiency of operations; address safety concerns; update the facility to current building codes, regulations and ADA requirements; and improve the energy efficiency of the facility. Delays to this work will extend of period of time that safety issues persist and lengthen the duration that the condition of the facility impairs efficient operations.

FY 2023 CAPITAL IMPROVEMENTS PROGRAM REDUCTIONS TOTALING \$110.5
MILLION AND IMPACT STATEMENTS (Continued)

- f. **\$5,229,000 - Other Capital Programs** - This program includes miscellaneous capital projects, programs and expenditures for common, non-CIP, enterprise-wide activities such as relocations, new water and sewer house connections, purchases of water meters, paving and general construction of local lines. The program summarizes capital expenditures and allocated costs that are not already included in the CIP or in other Information Only projects.

Due to budgetary constraints, the budget for this project in FY 2023 has been reduced by \$5.2 million. This is comprised of a reduction of \$10.0 million to paving, a reduction of \$3.8 million to purchases of water meters, and a net increase of \$8.6 million in allocated costs due to the reductions to other capital projects and programs and changes to the operating budget. Customers across WSSC Water's service area will be impacted by these reductions.