

Project Summary

Project Number: **53-120**
 Project Title: **Automated Meter Reading Equipment and Software**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2008 Project Status: Funded
 Start Date: 7/1/2019 Region:
 Est. Completion Date: 6/30/2025

Description:

This project will replace the current meter reading equipment with new automated meter reading equipment and software that will be used to record customer meter readings and initiate billing. This project will involve new technologies that require retrofitting the current water meters.

Justification:

The current equipment requires bi-monthly, manual reading of over 64,000 meters through antiquated hardware and means. Replacement is needed to ensure Public Utilities maintains the capability to generate timely and accurate customer invoices. This project will allow for remote control of water meters and better detection of water leaks. It will also improve productivity since meter readers will not have to manually read meters. The automated system will also allow for monthly billing. Billings and customer payments will be smaller and more frequent.

Comments:

The testing of three different systems is ongoing, including a small system roll out in the City's municipal complex area.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2021	4,000,000	4,000,000	0
2022	4,000,000	4,000,000	0
2023	4,000,000	4,000,000	0
	12,000,000	12,000,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	1,399,624		12,000,000	4,000,000	17,399,624
	Total Revenue	1,399,624		12,000,000	4,000,000	17,399,624
Expense						
	Equipment	1,399,624		12,000,000	4,000,000	17,399,624
	Total Expense	1,399,624		12,000,000	4,000,000	17,399,624
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **19-220**
 Project Title: **Cavalier Elevated and Ground Storage Tanks Rehabilitation**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2018**
 Start Date: **7/1/2021** Project Status: **Funded**
 Est. Completion Date: **6/30/2022** Region:

Description:

This project will provide for painting and rehabilitation of the Cavalier elevated and ground storage tanks. Project work will include interior and exterior painting of the 0.1 million gallon ground storage tank and the 1.0 million gallon elevated storage tank at the Cavalier Industrial Park. This project may also include minor structural modifications to the storage tanks, as needed.

Justification:

The paint systems of steel water storage tanks have a variable life expectancy of 15-20 years. Maintenance of the coating system is important for structural and aesthetic purposes to maximize the life expectancy of the asset, which will be accomplished by this project.

Comments:

The Cavalier Elevated Tank was placed in service in 1998. Although the existing 3-coat paint system continues to provide protection to the underlying steel structure, the tanks need to be recoated to prevent structural damage.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2022	1,595,000	1,595,000	0
	1,595,000	1,595,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities			1,595,000		1,595,000
Total Revenue				1,595,000		1,595,000
Expense						
	Design & Engineering			395,000		395,000
	Construction			1,200,000		1,200,000
Total Expense				1,595,000		1,595,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **43-120**
 Project Title: **Centerville Turnpike Loop 3**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2019
 Year Identified: 2008
 Start Date: 7/1/2017 Project Status: Funded
 Est. Completion Date: 6/30/2022 Region:

Description:

This project will install approximately 7,700 linear feet of 16" water main from Mount Pleasant Road north to Elbow Road, crossing the Chesapeake and Albemarle Canal.

Justification:

This project is needed to provide an essential loop between the water mains south of the Chesapeake and Albemarle Canal to the water lines on Butts Station and Elbow Roads. This loop will provide a second transmission line to the City's Greenbrier area, which will significantly increase system reliability and fire protection to the area around Butts Station and Elbow Roads. Installation of the new water main will result in a nominal increase to the annual operation and maintenance costs.

Comments:

This project will include approximately 700 linear feet of horizontal directional drilling underneath the canal. Additional design details will be determined during the full project design.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	3,575,000	3,575,000	0
2020	5,180,000	5,180,000	0
	8,755,000	8,755,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	500,000	3,575,000	5,180,000		9,255,000
Total Revenue		500,000	3,575,000	5,180,000		9,255,000
Expense						
	Design & Engineering	500,000				500,000
	Construction		3,575,000	5,180,000		8,755,000
Total Expense		500,000	3,575,000	5,180,000		9,255,000

Obligated to Date: 0
 0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2022	4,900	0.0

Project Summary

Project Number: **20-230**
 Project Title: **Chesapeake Connector Water Pipeline**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2019
 Year Identified: 2019
 Start Date: 7/1/2020 Project Status: Funded
 Est. Completion Date: 6/30/2022 Region:

Description:

This project will provide for the construction of a pipeline to convey water from Norfolk's Western Branch Reservoir pumping station to Chesapeake's Red Top water tank.

Justification:

The pipeline is required to convey the City of Chesapeake's one sixth share of raw water from Lake Gaston (ten million gallons per day) to the Lake Gaston Water Treatment Plant.

Comments:

This project is part of existing Settlement Agreement dated October 16, 1997 between the cities of Virginia Beach, Norfolk, Suffolk, and Chesapeake. Per part of the agreement, each city will contribute a specified share of the total project cost. The City of Norfolk will construct the pipeline, and then the City of Virginia Beach, City of Suffolk, and City of Chesapeake will each pay the agreed upon share of the project cost once the project is complete.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2021	2,000,000	2,000,000	0
	2,000,000	2,000,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities			2,000,000		2,000,000
Total Revenue				2,000,000		2,000,000
Expense						
	Design & Engineering			655,000		655,000
	Construction			165,000		165,000
	Other			1,180,000		1,180,000
Total Expense				2,000,000		2,000,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2023	7,000	0.1

Project Summary

Project Number: **20-140**
 Project Title: **Deep Creek Pump Station Upgrade**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2010**
 Start Date: **6/1/2011** Project Status: **Funded**
 Est. Completion Date: **6/30/2026** Region:

Description:

This project will install new pumps and will upgrade telemetry, controls, and equipment.

Justification:

The Deep Creek Pump Station was placed in service in 1987. Equipment upgrades and replacements are required to provide optimum reliability.

Comments:

On September 13, 2016, City Council approved an amendment to the FY 2017 Capital Budget to appropriate lapsed funding and transfer \$39,500 in cash funding from this project to the Unserved Areas project (as outlined in Agenda Item 21).

Design was completed in FY 2013. Construction will begin in future years. This project will also need additional funding in future years.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2021			0
	0	0	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	192,627			1,878,123	2,070,750
Total Revenue		192,627			1,878,123	2,070,750
Expense						
	Design & Engineering	192,627				192,627
	Construction				1,110,836	1,110,836
	Equipment				767,287	767,287
Total Expense		192,627			1,878,123	2,070,750
Obligated to Date:						192,627
						9.30 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **16-170**
 Project Title: **Gravity Sewer Renewal: Bainbridge Blvd. Basin (HRSD Project Area)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2013
 Start Date: 7/1/2021 Project Status: Funded
 Est. Completion Date: 12/30/2023 Region:

Description:

This project will repair and/or replace City sewer facilities in the area of HRSD projects in the Bainbridge Boulevard basin.

Justification:

The nature of the HRSD projects will require adjustment, relocation, repair or replacement of the City's sewer facilities.

Comments:

This project is being delayed until the US Environmental Agency issues the final consent decree to HRSD (anticipated in October 2019), and the prioritization of this area in HRSD's Regional Wet Weather Management Plan. It is anticipated that this project will need to be funded in FY 2022 and FY 2023.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2022			0
2023			0
	0	0	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities				5,000,000	5,000,000
Total Revenue						5,000,000
Expense						
	Construction				5,000,000	5,000,000
Total Expense						5,000,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **21-230**
 Project Title: **Great Bridge Force Main Redundancy Study**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Study Budget Year: 2019
 Year Identified: 2019 Project Status: Funded
 Start Date: 7/1/2022 Region:
 Est. Completion Date: 6/30/2024

Description:

This project will provide for a study to evaluate the need for a second sewer connection in Great Bridge to the Hampton Roads Sanitation District (HRSD) sewer lines. The options that will be investigated include a redundancy connection to HRSD along Cedar Road, or along Hanbury Road, or other locations to evaluate whether the existing pump stations can handle pressures at those points and evaluate whether HRSD's system can handle the City's flow at those points.

Justification:

This study is needed to determine a viable second connection to HRSD lines in order to prevent a series of pump stations from being down and requiring pumping and hauling of wastewater if there is only one force main connection to HRSD.

Comments:

Currently when HRSD restricts the City's wastewater from coming into their system in Great Bridge, it requires pumping and hauling of sewage from multiple City pump stations due to the City's current system structure.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2023	300,000	300,000	0
	300,000	300,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities			300,000		300,000
Total Revenue				300,000		300,000
Expense						
	Design & Engineering			300,000		300,000
Total Expense				300,000		300,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **06-100**
 Project Title: **Greenbrier Pkwy. - Force Main Upgrade**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2006 Project Status: Funded
 Start Date: 7/2/2009 Region:
 Est. Completion Date: 7/30/2019

Description:

This project will provide for the construction of 2,210 linear feet of a new 12" sewer force main along the east side of Greenbrier Parkway between Eden Way North and Volvo Parkway. The new force main will connect the two existing force mains.

Justification:

This project will interconnect two separate City force main systems and reduce pressures in the Greenbrier sewer force main system.

Comments:

This project has been identified for many years. The project plans and design are complete. Awaiting resolution of plats to begin easement acquisition. Due to time delays, the price of ductile iron pipe has increased which increased anticipated construction costs.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	1,400,000	1,400,000	0
	1,400,000	1,400,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	1,000,000				1,000,000
	Cash - Utilities	300,389	1,400,000			1,700,389
	Total Revenue	1,300,389	1,400,000			2,700,389
Expense						
	Design & Engineering	45,000				45,000
	Construction	1,255,389	1,400,000			2,655,389
	Total Expense	1,300,389	1,400,000			2,700,389
					Obligated to Date:	0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2020	4,300	0.0

Project Summary

Project Number: **22-230**
 Project Title: **Lake Gaston Pipeline - Capital Cost Sharing with Virginia Beach**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2019**
 Start Date: **7/1/2018** Project Status: **Funded**
 Est. Completion Date: **6/30/2023** Region:

Description:

This project will provide for the City of Chesapeake's share of capital improvements to the Lake Gaston Pipeline per the contract with the City of Virginia Beach.

Justification:

An ongoing program of capital improvements is necessary to ensure the long-term reliability of the of the Lake Gaston water supply to Hampton Roads. The City of Chesapeake is a one-sixth owner of the City of Virginia Beach's Lake Gaston Pipeline project. Under contractual obligation, the City of Chesapeake will fund its proportional share of both the capital and operating costs required to maintain the pipeline.

Comments:

Phased capital improvements to the Lake Gaston Pipeline are established by the City of Virginia Beach, and include improvements to the raw water intake structure at Lake Gaston, pressure reducing facilities, stream crossings, and the pipeline itself.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	205,000	205,000	0
2020	320,000	320,000	0
2021	305,000	305,000	0
2022	310,000	310,000	0
2023	325,000	325,000	0
	1,465,000	1,465,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities		205,000	1,260,000		1,465,000
Total Revenue			205,000	1,260,000		1,465,000
Expense						
	Construction		205,000	1,260,000		1,465,000
Total Expense			205,000	1,260,000		1,465,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **21-130**
 Project Title: **Lake Gaston WTP - Membrane Replacement - Phase II**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2009 Project Status: Funded
 Start Date: 7/2/2012 Region:
 Est. Completion Date: 6/30/2023

Description:

This project will provide for the replacement of membranes used in the Lake Gaston Water Treatment Plant.

Justification:

This project serves as a funding source for ultra-filtration membrane elements at the Lake Gaston Water Treatment Plant.

Comments:

On September 13, 2016, City Council approved an amendment to the FY 2017 Capital Budget to transfer \$32,481 in cash funding from this project to the Unserved Areas project (as outlined in Agenda Item 21), which reduced this project's prior year funding from \$1,757,385 to \$1,725,904.

On April 28, 2015, Council approved the department's request to close Phase I (project # 52-120) and transfer the remaining \$13,384.73 to this project to continue Phase II.

The installation of replacement modules for a complete membrane change-out for the Lake Gaston Water Treatment Plant was completed in FY 2014. The full-scale plant evaluation of aluminum chlorohydrate began in FY 2015. Performance thus far remains very good, which will allow the anticipated replacement to be moved from FY 2020 to FY 2022.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2020			0
2022	2,200,000	2,200,000	0
	2,200,000	2,200,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	1,725,904		2,200,000		3,925,904
	Total Revenue	1,725,904		2,200,000		3,925,904
Expense						
	Equipment	1,725,904		2,200,000		3,925,904
	Total Expense	1,725,904		2,200,000		3,925,904
					Obligated to Date:	1,725,904
						43.96 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **37-200**
 Project Title: **Lake Gaston WTP - Miscellaneous Modifications**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2015**
 Start Date: **7/1/2015** Project Status: **Funded**
 Est. Completion Date: **6/30/2026** Region:

Description:

This project will provide for the ongoing needs to replace and rehabilitate aging equipment in order to safely and effectively operate the water treatment plant.

Justification:

This project addresses the life-cycle needs of the water treatment plant equipment with the goal of minimizing downtime and ensuring a continuous supply of high quality drinking water. The need for equipment replacement is driven not only by normal wear and tear, it also occurs when replacement parts become unavailable or when support is no longer provided (e.g., proprietary software systems).

Comments:

The Lake Gaston Water Treatment Plant was placed in service in 2006. Since startup, operational methods and equipment have been refined, upgraded or replaced to maximize reliability and produce the highest possible water quality at the lowest cost.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	500,000	500,000	0
2020	500,000	500,000	0
2022	500,000	500,000	0
2023	2,700,000	2,700,000	0
	4,200,000	4,200,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	2,870,000	500,000	3,700,000	500,000	7,570,000
Total Revenue		2,870,000	500,000	3,700,000	500,000	7,570,000
Expense						
	Design & Engineering	275,000	50,000	250,000		575,000
	Construction	1,050,000	225,000	3,000,000	500,000	4,775,000
	Equipment	1,545,000	225,000	450,000		2,220,000
Total Expense		2,870,000	500,000	3,700,000	500,000	7,570,000
Obligated to Date:						770,616
						10.18 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **38-200**
 Project Title: **Lake Gaston WTP - Strategic Treatment and Facility Development Plan**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Study Budget Year: 2019
 Year Identified: 2016 Project Status: Funded
 Start Date: 7/2/2015 Region:
 Est. Completion Date: 6/30/2026

Description:

This project involves the evaluation and development of treatment processes which can be utilized at the Lake Gaston Water Treatment Plant to improve plant reliability by reducing reliance on a single treatment technology (ultra-filtration membranes). The project will also identify the timing of required plant modifications to meet future demand resulting from the expiration of the Portsmouth bulk water purchase contract, the availability of raw water from the Lake Gaston Pipeline, growth, and to meet demands when Portsmouth and Norfolk water are not available.

Justification:

Water can be produced at the Lake Gaston Water Treatment Plant at a lower cost than buying bulk finished water from Portsmouth and Norfolk. It is necessary to initiate engineering design of modifications to the treatment plant to provide a reliable supply of drinking water for the customers currently receiving water purchased from Portsmouth and Norfolk.

Comments:

The City entered into a contract with Portsmouth in May 1996 to extend the term of an existing bulk water purchase through December 2026. A preliminary design report is required in order to apply for necessary federal and state permits.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2022			0
2023			0
	0	0	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	1,000,000			20,000,000	21,000,000
Total Revenue		1,000,000			20,000,000	21,000,000
Expense						
	Design & Engineering	1,000,000			4,000,000	5,000,000
	Construction				16,000,000	16,000,000
Total Expense		1,000,000			20,000,000	21,000,000
Obligated to Date:						119,808
						0.57 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **28-200**
 Project Title: **Norfolk Highlands Elevated Tank Rehabilitation**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Renovation or Rehabilitation Budget Year: 2019
 Year Identified: 2016
 Start Date: 7/1/2018 Project Status: Funded
 Est. Completion Date: 6/30/2024 Region:

Description:

This project will provide for rehabilitation of the Norfolk Highlands elevated water tank, which will include painting the interior and exterior surfaces, making minor structural repairs, installing a mixing system, upgrading safety devices, and installing water quality monitoring equipment. It is also necessary to increase the height of the tank to make better use of its available storage volume.

Justification:

Routine painting of a steel water storage tank is necessary to maximize the useful life of the structure. In addition to periodic blasting and painting, it has been determined that the height of the Norfolk Highlands elevated tank needs to be increased to allow better use of its storage capacity.

Comments:

The Norfolk Highlands elevated water tank is a 0.25 million gallon reservoir that provides water storage for the Norfolk Highlands and Indian River areas of Chesapeake. The tank is an important part of the water resource infrastructure in the area of the City served with bulk water purchased from the City of Norfolk.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2022			0
2023	1,500,000	1,500,000	0
	1,500,000	1,500,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities			1,500,000		1,500,000
Total Revenue				1,500,000		1,500,000
Expense						
	Design & Engineering			165,000		165,000
	Construction			1,335,000		1,335,000
Total Expense				1,500,000		1,500,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **19-130**
 Project Title: **Northwest River WTP - Miscellaneous Modifications**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2009**
 Start Date: **2/2/2008** Project Status: **Funded**
 Est. Completion Date: **6/30/2024** Region:

Description:

This project will provide for the replacement or rehabilitation of aging equipment to safely and effectively operate the water treatment plant.

Justification:

This project addresses the life-cycle needs of the water treatment plant equipment with the goal of minimizing downtime and ensuring a continuous supply of high quality drinking water. The need for equipment replacement occurs due to normal wear and tear, and it also occurs when replacement parts become unavailable or when support is no longer provided for software systems or equipment.

Comments:

The Northwest River Water Treatment Plant was placed in service in 1980. Operational methods and equipment have since been refined, upgraded or replaced to maximize reliability and produce the highest water quality possible at the lowest cost. Major improvements under prior appropriations to this project have included: a finished water storage tank; replacement of centrifuges, well piping, chemical storage tanks, fish screens, chemical feed pumps, and mixers; and preliminary design services to replace the plant's switch-gear equipment.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$734,740.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	500,000	500,000	0
2020	500,000	500,000	0
2021			0
2022	500,000	500,000	0
2023	3,200,000	3,200,000	0
	4,700,000	4,700,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	4,997,555				4,997,555
	Cash - Utilities	3,177,445	500,000	4,200,000		7,877,445
	Total Revenue	8,175,000	500,000	4,200,000		12,875,000
Expense						
	Design & Engineering	175,000		200,000		375,000
	Construction	7,000,000		3,000,000		10,000,000
	Equipment	1,000,000	500,000	1,000,000		2,500,000
	Total Expense	8,175,000	500,000	4,200,000		12,875,000

Obligated to Date: 6,491,104
50.42 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **29-200**
 Project Title: **Northwest River WTP - Replace Ground Storage Tank**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2016 Project Status: Funded
 Start Date: 7/1/2020 Region:
 Est. Completion Date: 6/30/2023

Description:

This project will provide for the replacement of one of the existing two-million gallon water storage tanks.

Justification:

The existing water storage tank was constructed in 1979 and is currently out of service because the domed roof is sagging and not weather tight. A second storage tank is still in good condition, but does not have the capacity to allow optimal operations of the water treatment plant. Since the sagging dome could collapse, the demolition of this tank is proposed to be performed in FY 2017 ahead of the construction of the new tank in FY 2021.

Comments:

This project is located in the City's Southern Chesapeake Borough.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2021	2,000,000	2,000,000	0
2022			0
	2,000,000	2,000,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund			2,000,000		2,000,000
Total Revenue				2,000,000		2,000,000
Expense						
	Design & Engineering			50,000		50,000
	Construction			1,950,000		1,950,000
Total Expense				2,000,000		2,000,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **36-200**
 Project Title: **Northwest River WTP - Riverbank Filtration System**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Study Budget Year: 2019
 Year Identified: 2016 Project Status: Funded
 Start Date: 7/1/2021 Region:
 Est. Completion Date: 6/30/2025

Description:

This project will initially evaluate the feasibility of placing a riverbank filtration system at the Northwest River Water Treatment Plant. The study would determine whether available technology is suitable for conditions existing at Northwest River.

Justification:

The water from the Northwest River has a high organic content that is processed through the surface water reverse osmosis system at the treatment plant. While the reverse osmosis system is highly effective in lowering salinity and naturally occurring organic content, a riverbank filtration system could lower the organic content and lower water treatment costs. It is possible that riverbank filtration could also decrease the amount of water requiring treatment with reverse osmosis and lower overall costs of producing water.

Comments:

A riverbank filtration systems involves placing a water collection system or reservoir adjacent to the river. Using the natural filtration of surrounding soils, water from the river would seep into the reservoir. The natural buffer would result in fresh water from the brackish river. If this study finds riverbank filtration is cost effective, then additional funding will be required in future years to construct the system.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2022			0
	0	0	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities				175,000	175,000
Total Revenue						175,000
Expense						
	Design & Engineering				175,000	175,000
Total Expense						175,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **20-220**
 Project Title: **Northwest River WTP - Switchgear Replacement**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2018**
 Start Date: **7/1/2021** Project Status: **Funded**
 Est. Completion Date: **6/30/2023** Region:

Description:

This project will provide for replacement of the electrical switchgear and motor control centers at the Northwest River Water Treatment Plant.

Justification:

Major components of the existing switchgear are either no longer supported or are difficult to locate. To avoid potentially serious impacts to plant operations, it is necessary to replace the legacy system with modern equipment that is fully supported.

Comments:

The existing electrical switchgear at the Northwest River Water Treatment Plant is the original from 1979. It has provided a long service life and is currently functioning as designed. The equipment underwent major preventive maintenance in June 2017. The total project cost has also been revised down to reflect the most current estimates.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2022	5,982,000	5,982,000	0
	5,982,000	5,982,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund			5,982,000		5,982,000
Total Revenue				5,982,000		5,982,000
Expense						
	Design & Engineering			375,000		375,000
	Construction			5,607,000		5,607,000
Total Expense				5,982,000		5,982,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number:	39-120		
Project Title:	Raw Water Transmission Main		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	Addition or Expansion	Budget Year:	2019
Year Identified:	2008	Project Status:	Funded
Start Date:	2/2/2009	Region:	
Est. Completion Date:	7/30/2020		

Description:

This project will provide for installation of approximately nine miles of 36" raw water pipeline and transmission facilities from Red Top in Suffolk to the Lake Gaston Water Treatment Plant.

Justification:

The Lake Gaston treatment plant currently treats water provided from excess capacity drawn from Norfolk's raw water resources. The new pipeline and transmission facilities will ensure that the City is able to draw its one-sixth allocation from the Lake Gaston under terms of a contract with the City of Virginia Beach.

Comments:

Approximately 80% of the project is complete. The major components remaining are construction of the pump station and water storage tank. An agreement with the railroad has been negotiated. Funding estimates were revised in FY 2017, which determined an additional \$7 million was needed to complete the project. Most of the increase was related to inflation that occurred after the original 1990s costs estimates. The additional \$7 million to complete the design and construction was funded across two years (\$3.5 million each in FY 2018 and FY 2019).

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$9,830,224.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	3,500,000	3,500,000	0
	3,500,000	3,500,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	3,500,000	3,500,000			7,000,000
	Cash - Utilities	15,575,000				15,575,000
Total Revenue		19,075,000	3,500,000			22,575,000
Expense						
	Design & Engineering	1,200,000				1,200,000
	Construction	17,875,000	3,500,000			21,375,000
Total Expense		19,075,000	3,500,000			22,575,000
					Obligated to Date:	15,420,837
						68.31 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **24-230**
 Project Title: **Replacement of Lead Service Lines**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2019 Project Status: Funded
 Start Date: 7/1/2018 Region:
 Est. Completion Date: 6/30/2025

Description:

This project will provide for the replacement of water service lines and associated fittings which contain levels of lead and copper above action levels recently established by the Environmental Protection Agency (EPA). It is anticipated the City of Chesapeake will have to remove service lines installed prior to 1950.

Justification:

The EPA published a white paper in October 2016 on Lead and Copper Rule Revisions. If adopted into law, localities will be required to remove infrastructure containing lead at a mandated rate (currently under review). In a November 2016 survey, City's Department of Public Utilities estimated roughly 1,000 lead service lines within the City, not including any appurtenances that may contain traces of lead/copper.

Comments:

Public Utilities currently follows the Lead and Copper Rule established in 1991 under the Safe Drinking Water Act. After the EPA's October 2016 white paper, Public Utilities conducted water sampling in areas of the City where service lines were installed prior to 1950. Public Utilities is currently working on a Sampling Plan to identify and track locations in the City that have older water systems, which may require evaluation under the new rule. If the new rule is adopted, future annual funding will be required.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	100,000	100,000	0
2023	500,000	500,000	0
	600,000	600,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities		100,000	500,000	2,500,000	3,100,000
Total Revenue			100,000	500,000	2,500,000	3,100,000
Expense						
	Construction		100,000	500,000	2,500,000	3,100,000
Total Expense			100,000	500,000	2,500,000	3,100,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **23-170**
 Project Title: **Sewer and Water Renewal: Elbyrne Dr.**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2013 Project Status: Funded
 Start Date: 7/2/2018 Region:
 Est. Completion Date: 7/30/2020

Description:

This project will renew or replace approximately 2,160 feet of the existing 8" sewer main along Elbyrne Drive between its intersection with Wingfield Avenue and its intersection with Pond Lane in South Norfolk.

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

This project is scheduled to begin in FY 2019.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	2,155,000	2,155,000	0
	2,155,000	2,155,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities		2,155,000			2,155,000
Total Revenue			2,155,000			2,155,000
Expense						
	Construction		2,155,000			2,155,000
Total Expense			2,155,000			2,155,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **35-200**
 Project Title: **Sewer Pump Station Safety Improvements**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2016**
 Start Date: **7/1/2015** Project Status: **Funded**
 Est. Completion Date: **6/30/2024** Region:

Description:

This project will replace structural components at pump stations that have deteriorated and pose safety risks to maintenance personnel. The components will include fixed ladders, platforms, and various hardware that are subjected to corrosive environments. There are 274 pump stations throughout the City.

Justification:

This project is needed to replace structural components that have deteriorated at the City's sewer pump stations in order to ensure safe and effective operations. Since there are 274 pump stations throughout the City, this project will address the needs annually by a phased approach.

Comments:

This project will replace fixed ladders, platforms, and various hardware that are subjected to corrosive environments. This project was first funded in the FY 2016-20 CIP with \$500,000 for FY 2016 with annual investments of \$500,000 through FY 2023 to continue ongoing repairs and maintenance of the City's sewer pump stations. For the FY 2019-21 CIP, funding was removed for FY 2019 and FY 2020 because the project's current appropriation was sufficient to complete repairs through FY 2020. The annual investments will resume for FY 2021 - FY 2023. Two contractors have been contracted for numerous safety improvement projects. Safety Improvements are currently underway or planned for Pump Stations #33, #201, #86, #25, #37, #197, #14, #79, #54, #158, and #227.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019			0
2020			0
2021	500,000	500,000	0
2022	500,000	500,000	0
2023	500,000	500,000	0
	1,500,000	1,500,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	1,500,000		1,500,000	500,000	3,500,000
Total Revenue		1,500,000		1,500,000	500,000	3,500,000
Expense						
	Design & Engineering	150,000				150,000
	Construction	1,350,000		1,500,000	500,000	3,350,000
Total Expense		1,500,000		1,500,000	500,000	3,500,000
Obligated to Date:						558,592
						15.96 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **21-220**
 Project Title: **Sewer Pump Station: Replacement and Rehabilitation**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2018**
 Start Date: **7/1/2021** Project Status: **Funded**
 Est. Completion Date: **6/30/2026** Region:

Description:

This project will provide for critical repairs, replacement, and rehabilitation of pump stations to ensure efficient and effective sewer system operations. Funding is intended to address deferred maintenance of critical and aged pump stations throughout the City. This project will be the main project, and sub-projects will be identified for specific pump station repair projects within the scope of this main project.

Justification:

These improvements are necessary to minimize sewer overflows, which can be caused by insufficient pressure head to discharge into the Hampton Roads Sanitation District (HRSD) System, insufficient wet well capacity, and aged pumps. This will ensure continued compliance with the Regional Consent Order with Virginia Dept. of Environmental Quality/HRSD, which requires localities to reduce sanitary sewer overflows.

Comments:

This project was initially approved in the FY 2018-22 CIP with first year funding beginning in FY 2022 for the replacement and rehabilitation work on Pump Stations #60 and #61. Additional funding was added for FY 2023 in the FY 2019-23 CIP. Future funding will also be needed. Future project plans include work on Pump Stations #34, #50, #1, #86, #9, #39 and #115.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2022	2,700,000	2,700,000	0
2023	3,000,000	3,000,000	0
	5,700,000	5,700,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities			5,700,000	3,000,000	8,700,000
Total Revenue				5,700,000	3,000,000	8,700,000
Expense						
	Construction			4,500,000	3,000,000	7,500,000
	Land Acquisition			1,200,000		1,200,000
Total Expense				5,700,000	3,000,000	8,700,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **15-170**
 Project Title: **Sewer Renewal: 18th Street**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2013
 Start Date: 7/2/2016 Project Status: Funded
 Est. Completion Date: 7/30/2021 Region:

Description:

This project will provide for the renewal or replacement of approximately 1,250 of the existing 8" and 12" sewer mains along 18th Street between its intersection with "D" Street and its intersection with Seaboard Avenue in South Norfolk.

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

Additional funding of \$388,000 was added for FY 2019 to fully fund the project because the revised cost estimate with the most up to date quantities and pricing came in higher than the original estimate. Design began in FY 2018 and is in progress.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	388,000	388,000	0
	388,000	388,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	580,738				580,738
	Cash - Utilities	155,532	388,000			543,532
	Total Revenue	736,270	388,000			1,124,270
Expense						
	Design & Engineering		188,000			188,000
	Construction	736,270	200,000			936,270
	Total Expense	736,270	388,000			1,124,270
					Obligated to Date:	144,570
						12.86 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number:	05-180		
Project Title:	Sewer Renewal: Additional Consent Order Capital Requirement		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	Renovation or Rehabilitation	Budget Year:	2019
Year Identified:	2014		
Start Date:	7/1/2015	Project Status:	Funded
Est. Completion Date:	6/30/2026	Region:	

Description:

This project will fund sewer projects required to comply with the regional Consent Order issued by the Virginia Department of Environmental Quality (VDEQ), which will be performed in designated sewer basins based on the priority approved by the VDEQ in the Rehabilitation Plan.

Justification:

Sewer improvements are necessary in order to comply with the regional Consent Order. Specific projects are determined based on TV inspection and sewer maintenance records indicating excessive repairs.

Comments:

On June 12, 2018, City Council approved an amendment to the FY 2018 Capital Budget that transferred \$1,400,000 for FY 2018 to project # 51-129 "Unserved Areas: Battlewood Meadows" from this project # 05-180 "Sewer Renewal: Additional Consent Order Requirement". The additional funding was required to complete project # 51-129 to provide sewer service to the Battlefield Meadows area. See also City Manager Agenda Item 9-B (Docket Item CM-9).

Currently, Public Utilities has identified over \$60 million in sanitary sewer projects that are needed to replace and/or rehabilitate dilapidated sewer lines throughout the City. Continued funding will be needed with annual investments of \$6 million beginning in FY 2024.

In the FY 2018-22 CIP, Public Utilities combined three related active capital projects into this capital project that now serves as a master project in order to provide greater project management efficiency and flexibility for the required Consent Order improvements. The projects combined into this one project included: (1) project # 13-160 "Sewer Management Operations & Maintenance", (2) project # 31-210 "Sanitary Force Main: Volvo Parkway", and (3) project # 31-170 "Sewer Replacement: Orville Ave. Alleyway (Bainbridge to Seaboard)". Prior appropriations approved for those projects were transferred to this master project # 05-180 "Sewer Renewal: Additional Consent Order Capital Requirement" effective FY 2018, and additional funding was approved for this project in FY 2022.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	5,500,000	5,500,000	0
2020	4,150,000	4,150,000	0
2021	6,000,000	6,000,000	0
2022	8,500,000	8,500,000	0
2023	7,500,000	7,500,000	0
	31,650,000	31,650,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	3,000,000	5,500,000	26,150,000	186,000,000	220,650,000
	Cash - Utilities	2,861,609				2,861,609
Total Revenue		5,861,609	5,500,000	26,150,000	186,000,000	223,511,609
Expense						
	Construction	5,861,609	5,500,000	26,150,000	186,000,000	223,511,609
Total Expense		5,861,609	5,500,000	26,150,000	186,000,000	223,511,609

Operating Budget Impact

		Obligated to Date:	27,055
Budget Year	Exp (Rev)	FTE Impact	0.01 %

Project Summary

Project Number: **33-170**
 Project Title: **Sewer Renewal: Raleigh Place (Pump Station #7 Basin)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2014 Project Status: Funded
 Start Date: 7/1/2019 Region:
 Est. Completion Date: 6/30/2024

Description:

This project will provide for renewal or replacement of approximately 8,000 linear feet of gravity sanitary sewer main (between 8" to 12") and appurtenances in the Raleigh Place Subdivision in the City's South Norfolk area, from Rosemont Avenue to the intersection of Burrow Avenue and Bainbridge Boulevard. (Pump Station #7 basin).

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement. This is one of 99 Pump Station areas investigated by Greeley & Hansen as part of Wastewater Reliability Assessment Program. The report ranked Pump Station #7 basin as priorities 108, 133, 144, 191, and 221.

Comments:

This project was initiated in the FY 2014-18 CIP with an anticipated start date in FY 2018 and end date in FY 2019. However, this project's schedule has been pushed back in order to align with the priority ranking in the report. This project is now planned to start in FY 2020 and end in FY 2021. The funding and project work remain phased over two years with design in year one and construction in year two.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2020	600,000	600,000	0
2021	3,800,000	3,800,000	0
2023			0
	4,400,000	4,400,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities			4,400,000		4,400,000
Total Revenue				4,400,000		4,400,000
Expense						
	Design & Engineering			600,000		600,000
	Construction			3,800,000		3,800,000
Total Expense				4,400,000		4,400,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **25-200**
 Project Title: **Unserved Areas/Cost Participation - Phase II**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2019
 Year Identified: 2016
 Start Date: 7/1/2015 Project Status: Funded
 Est. Completion Date: 6/30/2022 Region:

Description:

This project will provide for installation of water and/or sanitary sewer services to areas not currently served.

Justification:

Numerous pockets of developed areas exist that historically relied on private water, sewer, or septic systems. Unserved areas generally were developed when the City was more rural and public water and sewer services were not available. Since then, adjacent areas have been developed with municipal water and sewage services. This project provides funding to provide public infrastructure to older neighborhoods with failing water/sewer systems. It does not cover the cost of connecting residences to the public systems.

Comments:

On September 13, 2016, City Council approved an amendment to the FY 2017 Capital Budget to change the funding source for \$1,398,200 of this project's budget from debt to cash, and then transfer that \$1,398,200 cash funding from this project to the other Unserved Areas project.

This project is funded by the enterprise fund balance with an expectation of replenishment from assessments and surcharges paid by new customers over twenty-five years. Anticipated project work over the next several years will include: West Cedar and Grassfield, South Willow Lakes (Lake Shore Drive and Lake Shore Court), and Peek Trail.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019			0
2020	1,398,200	1,398,200	0
	1,398,200	1,398,200	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	250,000				250,000
	Cash - Utilities			1,398,200		1,398,200
Total Revenue		250,000		1,398,200		1,648,200
Expense						
	Design & Engineering	164,900		80,000		244,900
	Construction	85,100		1,318,200		1,403,300
Total Expense		250,000		1,398,200		1,648,200
					Obligated to Date:	0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **52-230**
 Project Title: **Water Franchise Acquisition & System Renewals**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: System Acquisition or Upgrade Budget Year: 2019
 Year Identified: 2019
 Start Date: 7/1/2018 Project Status: Funded
 Est. Completion Date: 6/30/2023 Region:

Description:

This project will provide for the acquisition of a water franchise and system renewals.

Comments:

On June 12, 2018, City Council approved an amendment to the FY 2019-23 CIP to add this as a new project for FY 2019. The City is negotiating with a private water provider for the acquisition of its franchise and anticipate an offer in the near future. The estimated cost to acquire the franchise and bring the system to appropriate standards is \$6 million. The franchise acquisition would likely follow conclusion of negotiations and the system improvements would take several years.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	6,000,000	6,000,000	0
	6,000,000	6,000,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities		6,000,000			6,000,000
Total Revenue			6,000,000			6,000,000
Expense						
	Construction		6,000,000			6,000,000
Total Expense			6,000,000			6,000,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number:	24-200		
Project Title:	Water Renewal: Buchanan St. Area		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	Replacement	Budget Year:	2019
Year Identified:	2016	Project Status:	Funded
Start Date:	7/2/2016	Region:	
Est. Completion Date:	6/30/2022		

Description:

This project will replace approximately 7,700 linear feet of existing antiquated and undersized water main on Buchanan Street with a minimum 8" water main. This project will also include water renewals on Bainbridge Boulevard (north of Porter Street to the City line), Grady Street, Stewart Street (north of Poindexter Street), Butt Street, D Street, and part of Decatur Street to restore fire protection in this area.

Justification:

Water main improvements are needed to improve the water distribution system on Buchanan Street and restore functional service to existing customers. Fire flows in the area are unreliable and below standard. Customers experience poor pressure and discoloration issues. Water mains in this area were installed in the 1930's and 1940's, and are unlined cast iron resulting in severe issues within the pipes. The Fire Marshall's Office has voiced concerns over fire flow for nearby highly-concentrated residential areas. Replacing only the galvanized 2" water mains would not restore the fire protection in the area to adequate flows.

Comments:

For the FY 2019-23 CIP, the project scope was expanded and additional funding was provided in FY 2019 and FY 2020. This project was originally scoped to replace the existing water main on Buchanan Street. The department identified the need to expand the project scope beginning in FY 2019 to include the additional streets identified in 2009 where water mains have progressively deteriorated over the years and now result in reduced fire flows to the area.

Fire flows in the area are below standard and are unreliable. Customers experience poor pressure and discoloration issues. Design was completed for the initial project scope for Buchanan Street only, which revealed renewing this limited are was not sufficient to improve fire flow to the overall area. The expanded scope of renewals will ensure fire flows in the area are improved.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	2,000,000	2,000,000	0
2020	1,050,000	1,050,000	0
	3,050,000	3,050,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	256,870	2,000,000	1,050,000		3,306,870
Total Revenue		256,870	2,000,000	1,050,000		3,306,870
Expense						
	Design & Engineering	59,278	440,722			500,000
	Construction	197,592	1,559,278	1,050,000		2,806,870
Total Expense		256,870	2,000,000	1,050,000		3,306,870

Obligated to Date: 0
0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **14-160**
 Project Title: **Water Renewals: Waterline Upgrades - Phase II**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2012 Project Status: Funded
 Start Date: 7/1/2014 Region:
 Est. Completion Date: 6/30/2026

Description:

This project will provide for engineering design, construction, and inspection for the renewal of existing water mains throughout the City.

Justification:

These improvements are necessary to replace water mains and appurtenances to provide fire protection and increase flows and pressures creating reliable flow patterns in the system to meet peak demands.

Comments:

There are approximately 1,900 miles of water mains in the City of Chesapeake. The replacement cost is approximately \$1 million/mile (\$200/foot). The goal is funding the replacement over a 200 year cycle.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	1,000,000	1,000,000	0
2020			0
2021			0
2022	1,000,000	1,000,000	0
2023	2,000,000	2,000,000	0
	4,000,000	4,000,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	750,000				750,000
	Cash - Utilities	1,500,000	1,000,000	3,000,000	5,000,000	10,500,000
	Total Revenue	2,250,000	1,000,000	3,000,000	5,000,000	11,250,000
Expense						
	Construction	2,250,000	1,000,000	3,000,000	5,000,000	11,250,000
	Total Expense	2,250,000	1,000,000	3,000,000	5,000,000	11,250,000
					Obligated to Date:	283,261
						2.52 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **32-200**
 Project Title: **Water Residuals Disposal**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Study Budget Year: 2019
 Year Identified: 2016 Project Status: Funded
 Start Date: 7/1/2018 Region:
 Est. Completion Date: 6/30/2021

Description:

This project will provide for a long-term solution for the disposal of residuals (byproducts) resulting from water treatment.

Justification:

The existing residuals disposal site, adjacent to the Northwest River Water Treatment Plant, has a finite lifespan. It is necessary to identify and plan for a new disposal site to allow continued operation of the treatment plants and comply with regulatory requirements. Residuals currently disposed of in trenches at the disposal site, but there is a limited amount of space available for future trenches. A long-term solution is required.

Comments:

Residuals include organic matter and minerals removed from raw water during the treatment process. The FY 2019 funding provides for the evaluation only. Future plans will need to address the cost of the study's recommendations.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	320,000	320,000	0
	320,000	320,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities		320,000			320,000
Total Revenue			320,000			320,000
Expense						
	Design & Engineering		320,000			320,000
Total Expense			320,000			320,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **33-210**
 Project Title: **Water System Planning and Upgrades**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2017**
 Start Date: **7/1/2017** Project Status: **Funded**
 Est. Completion Date: **6/30/2026** Region:

Description:

This project will provide for master planning and upgrades for the City of Chesapeake's water distribution system, which will include hydraulic studies for determining system upgrades, extension of the existing water mains to unserved areas within and/or beyond the Public Utilities franchise area, and the addition of new water mains to form an interconnected looped water system.

Justification:

The existing water distribution system requires ongoing repairs and renewals as well as the addition of new water lines in order to meet the constant demand of water supply. The master water planning will determine the existing conditions of the water distribution system and establish citywide water projects that will result in a more reliable and enhanced water system. There will be a nominal change to annual operation and maintenance costs. The impact on operating costs will be calculated as each project is defined and proposed for approval.

Comments:

The current system still contains some dead end mains in various locations that limit the capability to provide water services to citizens in case of a water main break or failure. There are also many unserved areas requiring extension of existing water mains through the cost participation program. This project was initially funded in the FY 2017-21 CIP with \$400,000 budgeted for FY 2017 with proposed future investments of \$250,000 annually. The FY 2018-22 CIP continued this funding and included \$250,000 for FY 2022. The FY 2019-23 CIP continued this funding again and included \$400,000 for FY 2023. The need for future funding is still anticipated.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	250,000	250,000	0
2020	250,000	250,000	0
2021	250,000	250,000	0
2022	250,000	250,000	0
2023	400,000	400,000	0
	1,400,000	1,400,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	650,000	250,000	1,150,000	400,000	2,450,000
	Total Revenue	650,000	250,000	1,150,000	400,000	2,450,000
Expense						
	Construction		250,000	1,150,000	400,000	1,800,000
	Other	650,000				650,000
	Total Expense	650,000	250,000	1,150,000	400,000	2,450,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **33-200**
 Project Title: **Western Branch Elevated Tank Rehabilitation**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2016**
 Start Date: **7/1/2017** Project Status: **Funded**
 Est. Completion Date: **6/30/2020** Region:

Description:

This project will provide for rehabilitation of the Western Branch Elevated Tank, which will include re-coating interior and exterior surfaces, repairing the tank floor, installing a mixing system, upgrading safety devices, and installing water quality monitoring equipment.

Justification:

The paint coating on elevated water storage tanks fades with age and eventually exposes the underlying steel to corrosion. Periodic re-coating and repair extends the useful life of the tank.

Comments:

Each tank located in the water distribution system is inspected at five year intervals. During the inspections, tank condition is documented and improvements are recommended. Tanks are placed in a priority sequence for rehabilitation to ensure that the water quality is maintained throughout the distribution system.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2020	1,200,000	1,200,000	0
	1,200,000	1,200,000	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities			1,200,000		1,200,000
Total Revenue				1,200,000		1,200,000
Expense						
	Design & Engineering			120,000		120,000
	Construction			1,080,000		1,080,000
Total Expense				1,200,000		1,200,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **12-160**
 Project Title: **Bainbridge Blvd. Elevated Storage Tank Renovation**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Renovation or Rehabilitation Budget Year: 2019
 Year Identified: 2012
 Start Date: 7/2/2015 Project Status: Fully Funded
 Est. Completion Date: 6/30/2020 Region:

Description:

This project will provide for renovation of the Bainbridge Boulevard elevated water storage tank to include painting, cleaning, and repairing.

Justification:

This project is needed to extend the life of this water storage tank.

Comments:

Design is complete and construction is underway. On April 28, 2015, Council approved a transfer of \$125,000 to this project to cover additional costs from the "NW River WTP Storm Hardening" project # 35-120 (now closed).

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Other City Funds	125,000				125,000
	Fund Balance - Utilities	1,074,997				1,074,997
Total Revenue		1,199,997				1,199,997
Expense						
	Design & Engineering	127,000				127,000
	Construction	1,072,997				1,072,997
Total Expense		1,199,997				1,199,997
					Obligated to Date:	1,138,741
						94.90 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **21-140**
 Project Title: **Battlefield to Centerville Water Main - Phase I**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2019
 Year Identified: 2010
 Start Date: 7/5/2009 Project Status: Fully Funded
 Est. Completion Date: 7/30/2019 Region:

Description:

This project will improve the City's water distribution system, reliability, and fire protection via a transmission main on Etheridge Manor Boulevard from Battlefield Boulevard to Jule Drive.

Phase I will consist of 2,685 linear feet of HDD 30" HDPE pipe and 3,276 linear feet of 24" DIP water main. When combined with other transmission mains installed on Centerville Turnpike, this main will provide significantly increased reliability and fire protection to the southeast section of Greenbrier, north of the Chesapeake and Albemarle Canal near Butts Station and Elbow Roads.

Justification:

This is the first phase of a project that will improve system hydraulics, reliability, and fire protection in this area of the city.

Comments:

Design is complete and construction is underway.

On April 28, 2015, council appropriated \$8,455,689 from Public Utilities fund balance to fund construction to complete Phase I (\$4,755,689) and Phase II (\$3,700,000). See also project # 22-140 for Phase II. The installation of the new water main will result in a nominal increase to annual operating costs. This project is located in the City's Pleasant Grove Borough.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities		5,205,689			5,205,689
Total Revenue			5,205,689			5,205,689
Expense						
	Design & Engineering		1,100,000			1,100,000
	Construction		4,105,689			4,105,689
Total Expense			5,205,689			5,205,689
Obligated to Date:						5,018,393
						96.40 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2020	3,800	0.0

Project Summary

Fully Funded

Project Number: **22-140**
 Project Title: **Battlefield to Centerville Water Main - Phase II**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2019
 Year Identified: 2010
 Start Date: 7/6/2009 Project Status: Fully Funded
 Est. Completion Date: 7/30/2019 Region:

Description:

This project will improve the City's water distribution system, reliability, and fire protection by the installation of a transmission main in the Etheridge Manor Boulevard corridor from Jule Drive to Centerville Turnpike.

Phase II will consist of 7,600 linear feet of 24" DIP Water Main. When combined with other transmission mains installed on Centerville Turnpike, this main will provide significantly increased reliability and fire protection to the southeast section of Greenbrier, north of the Chesapeake and Albemarle Canal near Butts Station and Elbow Roads.

Justification:

This is the second phase of a project that will improve system hydraulics, reliability and fire protection in this area of the city. The new 24" water main will connect to an existing 16" water main located at the intersection of Etheridge Manor Boulevard and Centerville Turnpike and terminating at the intersection of Etheridge Manor Boulevard and Jule Drive.

Comments:

Design is complete and construction is underway.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$3,500.

On April 28, 2015, Council appropriated \$8,455,689 from Public Utilities fund balance to fund construction to complete Phase I (\$4,755,689) and Phase II (\$3,700,000). See also project # 21-140 for Phase I. The installation of the new water main will result in a nominal increase to annual operating costs. This project is located within the Pleasant Grove Borough.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	460,500				460,500
	Cash - Utilities	3,703,500				3,703,500
Total Revenue		4,164,000				4,164,000
Expense						
	Design & Engineering	664,000				664,000
	Construction	3,500,000				3,500,000
Total Expense		4,164,000				4,164,000
					Obligated to Date:	3,441,761
						82.66 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2020	4,800	0.0

Project Summary

Fully Funded

Project Number: **20-170**
 Project Title: **Crestwood Sewer - Phase II (Pump Station #931)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2013 Project Status: Fully Funded
 Start Date: 7/1/2014 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will renew or replace 6700 feet of 8" gravity sewer main and appurtenances for mains flowing to Lincoln Street. This will include Carver Street and alleys between the following streets: Dunn/Outlaw, Bainbridge/Tuskegee, Tuskegee/Ray, Ray/Pile, Pile/Durham, and Durham/Laura.

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$224,158.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	2,831,535				2,831,535
Total Revenue		2,831,535				2,831,535
Expense						
	Construction	2,831,535				2,831,535
Total Expense		2,831,535				2,831,535
Obligated to Date:						1,674,871
						59.15 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **21-170**
 Project Title: **Crestwood Sewer - Phase III (Pump Station #12)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2013 Project Status: Fully Funded
 Start Date: 7/2/2015 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will replace approximately 3,360 linear feet of 8" gravity sewer main and appurtenances along Booker Street, the alleyway north of Carver Street, and the alleyways on both sides of Charles Street to the interstate.

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$149,438.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	1,600,364				1,600,364
Total Revenue		1,600,364				1,600,364
Expense						
	Construction	1,600,364				1,600,364
Total Expense		1,600,364				1,600,364
Obligated to Date:						967,771
						60.47 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **34-120**
 Project Title: **Customer Service & Billing Software**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2008 Project Status: Fully Funded
 Start Date: 7/2/2007 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will provide for the replacement of Customer Service and Billing Software system used by Public Utilities.

Justification:

The current system is based upon aging mainframe architecture that limits the support of the application technically and functionally.

Comments:

This project is being completed in phases. The 1st phase is complete and the 2nd phase is in progress. Project timeline: Project proposals were received in fall 2010 and vendor interviews were held in winter 2011. The vendor was selected and the project scope was defined in spring 2011. Contract negotiations and modifications were completed in summer 2011. The 1st phase of the CIS software was implemented in spring 2013. The 2nd phase includes developing several custom modifications and testing.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$213,803.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	4,186,197				4,186,197
	Cash - Utilities	213,803				213,803
	Fund Balance - Utilities	1,500,000				1,500,000
Total Revenue		5,900,000				5,900,000
Expense						
	Other	5,900,000				5,900,000
Total Expense		5,900,000				5,900,000
					Obligated to Date:	5,053,028
						85.64 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **34-200**
 Project Title: **Force Main Replacement: Dominion Blvd. and I-64**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2016 Project Status: Fully Funded
 Start Date: 7/1/2015 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will renew and replace 4,926 linear feet of 4" and 12" force main between Pump Stations #110 and #142. This project may also need to include directional drilling under Interstate 64 and Interstate 464.

Justification:

The existing force main is operating, but will likely require continued repairs due to corrosive nature of soils. Recent failures of the force main have caused several sewer spills. Because the existing main is 17 feet below grade, repairs are extremely expensive. Replacement of the existing force main will improve reliability, prevent future sewer spills, and avoid costly repairs.

Comments:

This project was initiated in the FY 2015-19 CIP. In the FY 2018-22 CIP, a portion of this project's construction funding was moved to FY 2018 in order to accelerate the South Norfolk project # 42-170 "Sewer Renewal: Westwood Ave. and Redstart Ave.".

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	5,238,700				5,238,700
Total Revenue		5,238,700				5,238,700
Expense						
	Design & Engineering	683,000				683,000
	Construction	4,555,700				4,555,700
Total Expense		5,238,700				5,238,700
Obligated to Date:						72,826
						1.39 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2020	5,500	0.0

Project Summary

Fully Funded

Project Number: **28-170**
 Project Title: **Manhole Rehabilitation (1709 Vertical Feet)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Renovation or Rehabilitation Budget Year: 2019
 Year Identified: 2013
 Start Date: 7/1/2013 Project Status: Fully Funded
 Est. Completion Date: 6/30/2020 Region:

Description:

This project will provide funding for manhole rehabilitation projects.

Justification:

This project is needed to rehabilitate sanitary sewer manholes not currently identified that may be the cause of leaks, cave-ins, or other operational issues.

Comments:

One manhole on Willow Avenue and one manhole on Mooney Road have been replaced. Other manhole repairs are being identified and are currently underway. Appropriated funds will be continuously used to rehabilitate additional manholes throughout the City.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$149,845.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	772,155				772,155
	Cash - Utilities	149,845				149,845
Total Revenue		922,000				922,000
Expense						
	Construction	922,000				922,000
Total Expense		922,000				922,000
					Obligated to Date:	443,863
						48.14 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **40-130**
 Project Title: **Murray Dr. and Whittamore Rd. Water Project**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2019
 Year Identified: 2009
 Start Date: 7/1/2009 Project Status: Fully Funded
 Est. Completion Date: 6/30/2020 Region:

Description:

This project will provide design services and construction for water for neighborhoods in the vicinity of the Battlefield Golf Club. (Funded by Dominion Power). This project will consist of installation of a 16" water main along Centerville Turnpike from Etheridge Manor Boulevard to the existing 16" City water main near Albemarle Acres. Also, 8" and 10" water mains will be extended on Murray Drive and Whittamore Road.

Justification:

Due to concerns of the quality of the water from the wells in the vicinity of Battlefield Golf Club, this project will review all possible alternatives and recommend the most efficient method to provide potable water to the existing residences and businesses in this vicinity.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Fund Balance - Utilities	6,000,000				6,000,000
Total Revenue		6,000,000				6,000,000
Expense						
	Design & Engineering	750,000				750,000
	Construction	4,650,000				4,650,000
	Land Acquisition	100,000				100,000
	Other	500,000				500,000
Total Expense		6,000,000				6,000,000
Obligated to Date:						4,563,077
						76.05 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number:	54-120		
Project Title:	Northwest River WTP - 30" Raw Water Main		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	Replacement	Budget Year:	2019
Year Identified:	2008	Project Status:	Fully Funded
Start Date:	7/5/2009	Region:	
Est. Completion Date:	6/30/2021		

Description:

This project will install a ductile iron pipeline parallel to the existing fiberglass 30" raw water main serving the Northwest River Water Treatment Plant, which will enhance system reliability.

Justification:

The existing raw water main is made from fiberglass and is easily damaged. It has been in service for approximately 30 years. The parallel ductile iron pipeline will enhance system reliability.

Comments:

On September 13, 2016, City Council approved an amendment to the FY 2017 Capital Budget to change the funding source for \$337,156 of this project's budget from debt to cash, and then transfer that \$337,156 in cash funding from this project to the other Unserved Areas project.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$113,216.

On April 28, 2015, Council approved an additional \$991,510.64 for this project by transferring/appropriating available funding from six closed/lapsed Public Utilities capital projects. Design was complete, but, additional funding was needed to proceed with construction due to higher than anticipated costs for easement acquisitions, materials, and construction.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	2,856,214				2,856,214
	Cash - Utilities	1,633,018				1,633,018
	Total Revenue	4,489,232				4,489,232
Expense						
	Design & Engineering	466,500				466,500
	Construction	3,055,638				3,055,638
	Equipment	967,094				967,094
	Total Expense	4,489,232				4,489,232
					Obligated to Date:	2,751,366
						61.29 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **30-200**
 Project Title: **Northwest River WTP - Replace Bulk Chemical Storage Tanks**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2016 Project Status: Fully Funded
 Start Date: 7/1/2015 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will provide for the removal, disposal, and replacement of chemical storage tanks at the Northwest River Water Treatment Plant.

Justification:

The existing chemical storage tanks are approaching the end of their typical lifespan and are showing signs of deterioration. In order to ensure employee safety and regulatory compliance, the tanks must be replaced.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	300,000				300,000
	Cash - Utilities	900,000				900,000
Total Revenue		1,200,000				1,200,000
Expense						
	Design & Engineering	300,000				300,000
	Construction	900,000				900,000
Total Expense		1,200,000				1,200,000
					Obligated to Date:	245,532
						20.46 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **05-190**
 Project Title: **Oak Grove Elevated Tank Standpipe Replacement**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2015 Project Status: Fully Funded
 Start Date: 7/1/2014 Region:
 Est. Completion Date: 6/30/2020

Description:

Replace the main water pipe (standpipe) that runs from the bottom of the tank to the "bowl" at the top of the tank on the elevated water tower.

Justification:

The standpipe allows the tank to fill and empty and runs up through the "stem" of the water tower.

Comments:

When the tank was painted in 2009, the standpipe was observed to have deteriorated to the point that replacement was recommended. Although the standpipe is not in danger of imminent failure, replacement is recommended so it can be scheduled with the least impact on the system with regard to seasonal demand.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Fund Balance - Utilities	200,000				200,000
Total Revenue		200,000				200,000
Expense						
	Equipment	200,000				200,000
Total Expense		200,000				200,000
Obligated to Date:						76,935
						38.47 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **30-210**
 Project Title: **Public Utilities - CIS Upgrade**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: System Acquisition or Upgrade Budget Year: 2019
 Year Identified: 2017
 Start Date: 7/1/2017 Project Status: Fully Funded
 Est. Completion Date: 6/30/2020 Region:

Description:

This project will upgrade the current Public Utility CIS billing system for the City of Chesapeake, which was originally implemented in fall 2013. This system functions with primary integrations with HRSD, PeopleSoft, and the Treasurer.

Justification:

CIS is a necessity for the City and a vital tool for the Public Utilities Department to manage and bill all water and sewer accounts for residential, commercial, fire, irrigation, and backflow devices.

Comments:

This system was first upgraded in fall 2015.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	100,000				100,000
Total Revenue		100,000				100,000
Expense						
	Software	100,000				100,000
Total Expense		100,000				100,000
Obligated to Date:						15,924
						15.92 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2021	10,000	0.0

Project Summary

Fully Funded

Project Number: **17-140**
 Project Title: **Red Top Tank and Raw Water Pump Station**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2019
 Year Identified: 2010
 Start Date: 7/1/2013 Project Status: Fully Funded
 Est. Completion Date: 6/30/2020 Region:

Description:

This project will provide for installation of a raw water tank and pump station to allow utilization of Lake Gaston Water.

Justification:

This project will help the City meet future water demands.

Comments:

Project work is underway. Design is complete and construction is in progress. Coordination with Norfolk and Virginia Beach is also underway, and the Virginia Power Work Order has been submitted.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$1,210,920.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	4,160,450				4,160,450
	Cash - Utilities	1,210,920				1,210,920
Total Revenue		5,371,370				5,371,370
Expense						
	Construction	5,371,370				5,371,370
Total Expense		5,371,370				5,371,370
					Obligated to Date:	3,695,976
						68.81 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **27-120**
 Project Title: **Sanitary Sewer Evaluation Study**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Study Budget Year: 2019
 Year Identified: 2008 Project Status: Fully Funded
 Start Date: 7/1/2007 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will provide for the completion of a Sanitary Sewer Evaluation Study (SSES).

Justification:

This study and associated activities are required by proposed consent order from Virginia Department of Environmental Quality (DEQ).

Comments:

Per the Consent Order, ongoing studies of the sewer systems and pump stations are underway.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$834,874.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	7,655,606				7,655,606
	Cash - Utilities	834,874				834,874
	Fund Balance - Utilities	169,599				169,599
Total Revenue		8,660,079				8,660,079
Expense						
	Design & Engineering	6,404,708				6,404,708
	Construction	655,371				655,371
	Other	1,600,000				1,600,000
Total Expense		8,660,079				8,660,079
					Obligated to Date:	7,266,267
						83.91 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number:	35-170		
Project Title:	Sewer Improvements: Gravity Sewer System at Indian River Service Area - Phase I (Pump Station #3)		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	Replacement	Budget Year:	2019
Year Identified:	2013	Project Status:	Fully Funded
Start Date:	7/1/2013	Region:	
Est. Completion Date:	6/30/2021		

Description:

This project will provide for improvements to the existing gravity sewer system in the City's Indian River area, including improvements to Pump Station 3. This project will replace the all of the existing antiquated gravity sewer and will install approximately 15,026 feet of new gravity sewer within the service area of Pump Station 3, and will include new sewer within the Indian River Estates subdivision and adjacent parcels.

Justification:

The Sanitary Sewer Evaluation Study (SSES) required by Department of Environmental Quality (DEQ) revealed deficiencies in the sewer system in the Indian River area. The DEQ Consent Order requires the City to remediate deficiencies identified in the study. The study, along with City maintenance logs, indicates severe deterioration that require replacement. The existing gravity sewer is composed of antiquated clay pipe that has deteriorated over the years.

Comments:

This project will completely replace the existing gravity sewer system, including manholes and service laterals within the Indian River Estates subdivision. Previous funding of \$4.67 million was appropriated to this project, and additional funding of \$1.6 million was added for FY 2018 because the City will be expected to provide entire new roads to replace existing sub-standard roads within this subdivision.

Project work is in progress. Design is complete and construction is scheduled. The new system will result in a nominal increase to annual operating maintenance costs. (Location: Washington Borough).

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$201,481.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	1,798,519				1,798,519
	Cash - Utilities	4,474,459				4,474,459
Total Revenue		6,272,978				6,272,978
Expense						
	Construction	6,272,978				6,272,978
Total Expense		6,272,978				6,272,978
Obligated to Date:						680,479
						10.85 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2022	4,800	0.0

Project Summary

Fully Funded

Project Number: **18-170**
 Project Title: **Sewer Renewal: Chesapeake Ave. (Guerriere to Ohio Sewer)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2013
 Start Date: 7/2/2016 Project Status: Fully Funded
 Est. Completion Date: 6/30/2020 Region:

Description:

This project will replace approximately 1005 feet of gravity sewer mains and appurtenances on Chesapeake Avenue (between Ohio and Guerriere Streets), and a pipe segment on Ohio Street (between Jackson Avenue and Rodgers Street). This is a joint effort between the Departments of Public Utilities and Public Works. Public Works will lead the project management efforts for design and construction.

Justification:

Inspection and excessive maintenance indicate severe deterioration requiring replacement. This system could not be TV inspected. Due to extensive deterioration of the main lines, washing from manhole to manhole could not be accomplished.

Comments:

The initial project cost estimate was increased by \$75,000 in FY 2017 to reflect the most current quantities and pricing. The cost estimate was increased again by \$328,000 in FY 2018 to cover the cost of approximately 500 ft. of additional gravity sewer main work along Jackson Avenue and Ohio Street that was approved to be added to the initially defined project limits.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	214,000				214,000
	Cash - Utilities	402,797				402,797
Total Revenue		616,797				616,797
Expense						
	Construction	616,797				616,797
Total Expense		616,797				616,797
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **26-170**
 Project Title: **Sewer Renewal: Liberty St. (500 Block to Collingswood Ave.)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2013
 Start Date: 7/2/2016 Project Status: Fully Funded
 Est. Completion Date: 6/30/2020 Region:

Description:

This project will provide for the renewal or replacement of 3,600 ft. of gravity sewer main and appurtenances on Liberty Street, from Collingswood Avenue to 18th Street, with a branch to 22nd Street and 20th Street, and Latham Street. This will include one railroad crossing and the abandonment of existing gravity main along the south end of Wilson Road.

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

Project work began in FY 2017. The initial project cost estimate was increased by \$1.2 million in FY 2018 to cover the cost of approximately 500 ft. of additional gravity sewer main work on Latham Street that was approved to be added to the initially defined project limits. (Borough: South Norfolk)

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	1,389,259				1,389,259
	Cash - Utilities	1,364,643				1,364,643
Total Revenue		2,753,902				2,753,902
Expense						
	Construction	2,753,902				2,753,902
Total Expense		2,753,902				2,753,902
Obligated to Date:						310,928
						11.29 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2021	(2,800)	0.0

Project Summary

Fully Funded

Project Number: **32-120**
 Project Title: **Sewer Renewal: SSES Implementation - Phase I**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2008 Project Status: Fully Funded
 Start Date: 7/2/2010 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will provide for sewer renewal in two distinct service areas: Indian River and Rosemont Avenue. Plans will replace deficient sanitary sewer components identified as critical in the Sewer System Evaluation Survey (SSES). Phase I will improve the gravity sewer system for the Indian River service area by replacing pipes at Pump Station #3 located within the Indian River Estates subdivision and in swampy areas. It will also replace old sanitary sewer lines from Pump Station #7 north to Rosemont Avenue.

Justification:

TV inspection and excessive maintenance indicate severe deterioration requiring replacement.

Comments:

On September 13, 2016, City Council approved an amendment to the FY 2017 Capital Budget to transfer \$324 in cash funding from this project to the Unserved Areas project.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$353,745.

Indian River Estates Pump Station #3: Project is currently under construction. (Location: Washington Borough). Rosemont Avenue Pump Station #7: TV inspection and excessive maintenance indicates severe deterioration. (Location: South Norfolk Borough).

Since Public Utilities will be doing construction behind the South Norfolk Museum, along Godwin Avenue and Rosemont Avenue, the department will explore replacing the 12" force main behind the museum, an old 4" water main in the Godwin area, and an old 2" galvanized water line and loop it into the existing 6" water on Franklin Street. Public Utilities will also design and construct some storm drainage improvements in the area in cooperation with Public Works.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	1,633,044				1,633,044
	Cash - Utilities	2,882,668				2,882,668
Total Revenue		4,515,712				4,515,712
Expense						
	Design & Engineering	200,000				200,000
	Construction	4,315,712				4,315,712
Total Expense		4,515,712				4,515,712
					Obligated to Date:	3,294,394
						72.95 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number:	33-120		
Project Title:	Sewer Renewal: SSES Implementation - Phase II (Indian River/PS #107)		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	Replacement	Budget Year:	2019
Year Identified:	2008	Project Status:	Fully Funded
Start Date:	7/1/2011	Region:	
Est. Completion Date:	6/30/2020		

Description:

This project will provide for implementing the second phase of improvements necessary to address deficiencies identified in the Sewer System Evaluation Survey (SSES). Phase II will provide for an engineering assessment and recommendations for improving the existing Force Mains and Pump Station in the City's Indian River area. (See also project # 27-120 "Sewer System Evaluation Survey (SSES)" and project # 32-120 for details of Phase I). Based on the preliminary Engineering Study, this project will provide for the overhaul and complete replacement of the existing City pumping station #107 located on Providence Road, the replacement of 930 ft. of the existing force main, and installation of a gravity sewer line. (Location: Washington Borough).

Justification:

Due to the poor condition of Pump Station #107, a complete overhaul of the pump station, related force main, and gravity sewer is necessary. This project will prevent sanitary sewer overflows by improving the capability of the City's sewer pump station force main systems.

Comments:

The preliminary engineering report was performed to study the Indian River Area needs. The report recommended rebuilding Pump Station #107, extending the 10" force main by 930 feet upstream of Pump Station #107, and improving the gravity sewer. In the FY 2018-22 CIP, \$1.6 million in additional funding was added in FY 2018 as part to address the work outlined in the report.

Project work is progress. The report for the pump station configuration has been completed, and design is underway. The existing pump station site has been identified, and the wetlands boundaries have been identified and established.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$126,200.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	2,757,542				2,757,542
	Cash - Utilities	1,772,195				1,772,195
Total Revenue		4,529,737				4,529,737
Expense						
	Design & Engineering	202,000				202,000
	Construction	4,327,737				4,327,737
Total Expense		4,529,737				4,529,737
Obligated to Date:						685,573
						15.13 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2021	11,500	0.0

Project Summary

Fully Funded

Project Number: **42-170**
 Project Title: **Sewer Renewal: Westwood Ave. and Redstart Ave.**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2019
 Year Identified: 2013 Project Status: Fully Funded
 Start Date: 7/1/2016 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will provide for the renewal or replacement of 2,000 feet of 8" gravity sewer main and appurtenances on Restart Avenue and Westwood Avenue, and a branch to Bainbridge Boulevard. (Pump Station 919 basin).

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

This project was on the 2008 and 2012 CIP lists. The South Norfolk Civic League indicates concerns with sewer. In response, funding for this project has been moved up to FY 2017 from FY 2018. Funding for the "Force Main Replacement: Dominion/I-64 (from PS 110 to 142)" project # 34-200 was pushed back to allow this project to move up.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	1,106,000				1,106,000
Total Revenue		1,106,000				1,106,000
Expense						
	Construction	1,106,000				1,106,000
Total Expense		1,106,000				1,106,000
Obligated to Date:						179,932
						16.27 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2021	(1,800)	0.0

Project Summary

Fully Funded

Project Number: **22-220**
 Project Title: **Sewer System Redesign/Construction: Albemarle Dr.**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2019**
 Year Identified: **2018**
 Start Date: **7/1/2017** Project Status: **Fully Funded**
 Est. Completion Date: **6/30/2020** Region:

Description:

This project will provide for redesign and construction of a new main sewer gravity system on Albemarle Drive, and will include a new grinder system to effectively deal with the specialized waste stream from the Jail and Juvenile Services.

Justification:

This project is needed because the sewer vault in front of the Jail requires frequent cleaning to remove plastic/paper wrappers and other trash from the waste stream of the Jail/Juvenile Services (which is typical for correctional facilities). This is very labor-intensive and costly. The main sewer system along Albemarle Drive also has grade problems and needs to be redesigned to meet current requirements. The planned improvements for this project will address these needs.

Comments:

The Jail and Juvenile Services facilities impose special requirements on the main sewer system, which processes a very high volume and considerable amount of trash in the waste stream. The system was recently modified out by Albemarle Drive to resolve a grade problem. The existing grinder and grate system is not considered adequate, and the gravity system needs to be resigned for the anticipated load. Although this will require an additional part-time staff member (0.5 FTE), it is anticipated that this project will reduce other operating expenses for a net cost reduction overall.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	700,000				700,000
Total Revenue		700,000				700,000
Expense						
	Design & Engineering	100,000				100,000
	Construction	600,000				600,000
Total Expense		700,000				700,000
Obligated to Date:						21,971
						3.14 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2021	(24,000)	0.5

Project Summary

Fully Funded

Project Number:	45-120		
Project Title:	South Norfolk Improvements		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	Replacement	Budget Year:	2019
Year Identified:	2008	Project Status:	Fully Funded
Start Date:	7/1/2008	Region:	
Est. Completion Date:	6/30/2020		

Description:

This project will install new water mains and replace substandard water mains and appurtenances at various locations in South Norfolk.

Justification:

This project will improve the City's water supply and reliability considering recent and upcoming growth in South Norfolk. The project consists of improvements to the City's water distribution system to allow transfer of demand to the Northwest River/Lake Gaston supply. A master plan will be developed from hydraulic modeling of the City's system using the DHI Mike Urban software. Specific improvements will be designed and constructed in phases and will include upgrades to existing mains and new water main loops and interconnections in the South Norfolk and Washington Boroughs, which are presently supplied by Norfolk water.

Comments:

Poindexter Streetscape Phase II Additional Work: Sewer renewal along Decatur Street is complete. Sewer renewal and water service line replacement along Chesapeake Avenue has started. The water main on Lincoln Street is being renewed through Crestwood Sewer - Phase I.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$98,362.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	2,751,638				2,751,638
	Cash - Utilities	98,362				98,362
Total Revenue		2,850,000				2,850,000
Expense						
	Design & Engineering	2,850,000				2,850,000
Total Expense		2,850,000				2,850,000
					Obligated to Date:	1,479,730
						51.92 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number:	51-129		
Project Title:	Unservd Areas: Battlewood Meadows Sewer Cost Participation		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	New Facility	Budget Year:	2019
Year Identified:	2014	Project Status:	Fully Funded
Start Date:	5/1/2015	Region:	
Est. Completion Date:	7/30/2020		

Description:

This project will install approximately 10,000 linear feet of gravity sewer and build a sanitary sewer pumping station to serve the Battlewood Meadows Subdivision as approved by the City Council as part of the Cost Participation Program.

Justification:

This project will provide a sewer system in this unserved area of the City as approved by the City Council as part of the Cost Participation Program.

Comments:

On June 12, 2018, City Council approved an amendment to the FY 2018 Capital Budget that transferred \$1,400,000 in utilities cash funding for FY 2018 to this project # 51-129 "Unservd Areas: Battlewood Meadows" from the larger sewer renewal project # 05-180 "Sewer Renewal: Additional Consent Order Requirement". The additional funding was required to complete this project to provide sewer service to Battlefield Meadows because project costs have increased due to the strong demand for utility service in this area, which has led to increased costs for contractors' bid pricing. Six bids for the Battlefield Meadows sewer project were opened May 1, 2018 and have been reviewed. Bids were 20% higher than available funding. Accordingly, this transfer increased the FY 2018 budget for this project by \$1,400,000 to complete the work in Battlefield Meadows, and decreased the FY 2018 budget for the larger sewer project # 05-180 by \$1,400,000. See also City Manager Agenda Item 9-B (Docket Item CM-9). Construction is expected begin in FY 2019.

On September 13, 2016, City Council approved an amendment to the FY 2017 Capital Budget that transferred \$2,203,000 in utilities cash funding from various projects to this project (as outlined in Item 21). This project requires additional funding due to the location of the land that was available to be purchased for the new sewer pump station and the deep gravity sewer line that will be required. Revised estimates anticipate the project will cost \$6.65 million.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to utilities cash in the amount of \$240,763.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	8,054,774				8,054,774
Total Revenue		8,054,774				8,054,774
Expense						
	Construction	8,054,774				8,054,774
Total Expense		8,054,774				8,054,774
Obligated to Date:						664,174
						8.25 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **51-128**
 Project Title: **Unserviced Areas: Wampler, Manning, Vico, Jolliff Sewer Cost Participation**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **New Facility** Budget Year: **2019**
 Year Identified: **2014**
 Start Date: **12/1/2015** Project Status: **Fully Funded**
 Est. Completion Date: **6/30/2020** Region:

Description:

This project will install approx. 3,360 linear feet of 8" gravity sewer on Jolliff Road, Manning Drive, Wampler Place, and Vico Court in the unserved area of the City as approved by City Council in the Cost Participation Program. This project may also need to install water mains in a portion of this area.

Justification:

This project will provide a sewer system in this unserved area of the City as approved by the City Council in the Cost Participation Program.

Comments:

Project work is underway, and construction is in progress.

On September 13, 2016, City Council approved an amendment to the FY 2017 Capital Budget to transfer \$782,000 in cash funding from various projects to this project (as outlined in Item 21). This project required additional funding due cost increases needed to address the size, alignment, and elevations of other utilities in Jolliff Road. The revised estimated total project cost is \$3.4 million.

On July 12, 2016, City Council approved a change of funding source for project expenses incurred through June 15, 2016 from future revenue bonds to cash in the amount of \$100,116.

This project was first identified in the FY 2015-19 CIP as a sub-project. The new gravity sanitary sewer system will result in a nominal increase to the annual operation and maintenance costs. (Location: Western Branch Borough.)

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	3,395,186				3,395,186
Total Revenue		3,395,186				3,395,186
Expense						
	Construction	3,395,186				3,395,186
Total Expense		3,395,186				3,395,186
Obligated to Date:						2,130,032
						62.74 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **32-210**
 Project Title: **Water & Sewer Pump Station Telemetry Installation and Upgrade**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: System Acquisition or Upgrade Budget Year: 2019
 Year Identified: 2017
 Start Date: 7/1/2016 Project Status: Fully Funded
 Est. Completion Date: 12/30/2019 Region:

Description:

This project will provide for the installation of wireless telemetry in finished water pump stations, and the upgrade of existing telemetry in sewer pump stations from analog to digital.

Justification:

Monitoring the status of water and sewer pump stations with digital technology increases operational data reliability and automation.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	400,000				400,000
Total Revenue		400,000				400,000
Expense						
	Equipment	400,000				400,000
Total Expense		400,000				400,000
Obligated to Date:						342,860
						85.71 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **31-200**
 Project Title: **Water Production Security System Upgrades**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Equipment Budget Year: 2019
 Year Identified: 2016 Project Status: Fully Funded
 Start Date: 7/1/2017 Region:
 Est. Completion Date: 6/30/2020

Description:

This project will upgrade the water treatment plant security systems based on evaluation of existing conditions.

Justification:

The existing security coverage of water production facilities is limited. Sites that are found to need security improvements will be provided with surveillance equipment and existing equipment will be upgraded.

Comments:

This project will include evaluation and design costs. The project budget has been increased to reflect the most current cost estimates. The timeline has also been moved up from FY 2022 to FY 2018 so that the work can begin on the necessary upgrades.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2022			0
	0	0	0

Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	400,000				400,000
Total Revenue		400,000				400,000
Expense						
	Design & Engineering	400,000				400,000
Total Expense		400,000				400,000
Obligated to Date:						202,271
						50.57 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number:	24-120		
Project Title:	Water System Renewal - Phase I		
Asset Type:			
Division:	Public Utilities Capital Projects		
Project Type:	Replacement	Budget Year:	2019
Year Identified:	2008		
Start Date:	7/1/2009	Project Status:	Fully Funded
Est. Completion Date:	12/30/2019	Region:	

Description:

This project will provide for replacement of small water lines and antiquated appurtenances not currently identified that may occur as the result of problems experienced with leaks or other operational issues.

Justification:

This project is needed to provide funding for small capital replacement of water lines which will include replacing the offset at creek crossing along Deep Creek Boulevard; replacing fire hydrants; upgrading six large meter vaults; replacing 2" galvanized water lines on Port Chambers Court, Collins Court and Vallejo Place; and transferring service from 6" water main to 12" water main on Stewart Street (from Park Avenue to Jefferson Street).

Comments:

The project has included the replacing the water main along Herrington Lane and completing curb and gutter work at Battlefield Boulevard and Oak Grove. Additional planned project work includes, replacing fire hydrants, water lines on Port Chambers Court, Collins Court, and Vallejo Place. (See also project # 21-150 for Phase II).

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Fund Balance - Utilities	893,000				893,000
Total Revenue		893,000				893,000
Expense						
	Construction	893,000				893,000
Total Expense		893,000				893,000
Obligated to Date:						667,848
						74.79 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **27-200**
 Project Title: **Water Treatment Plant Control System Upgrade**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: System Acquisition or Upgrade Budget Year: 2019
 Year Identified: 2016
 Start Date: 7/1/2015 Project Status: Fully Funded
 Est. Completion Date: 12/30/2019 Region:

Description:

This project will upgrade the Supervisory Control and Data Acquisition (SCADA) System components at both water treatment plants.

Justification:

The control systems at each water treatment plant need to be upgraded. This project will enhance plant reliability and includes a conversion to a compatible system that can be easily serviced. The upgrade will also ensure replacement parts and equipment are available for maintenance.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Cash - Utilities	820,000				820,000
Total Revenue		820,000				820,000
Expense						
	Design & Engineering	75,000				75,000
	Equipment	745,000				745,000
Total Expense		820,000				820,000
Obligated to Date:						663,696
						80.94 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Fully Funded

Project Number: **47-120**
 Project Title: **Western Branch Interconnect to Lake Gaston WTP**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2019
 Year Identified: 2008
 Start Date: 7/1/2008 Project Status: Fully Funded
 Est. Completion Date: 12/30/2020 Region:

Description:

This project will install water mains along Jolliff Road, which will bridge the gap between the existing mains and crossing I-664. This project will also connect the water mains of the Western Branch plant to the Cavalier Industrial Park and Deep Creek area of the City.

Justification:

This project will improve system hydraulics and reliability. It will offer the flexibility to use either the Portsmouth or Chesapeake systems to serve Western Branch. This connection will allow the Western Branch Elevated Water Tank and the Cavalier Elevated Water Tank to be able to support either system if either tank was offline.

Comments:

This project has two phases. Phase I will install 1,817 feet of 20" water main and 2,969 feet of a 16" water main along Jolliff Road in order to bridge the gap between the existing 12" water main adjacent to Jolliff Middle School and the existing 20" water main at the intersection of Jolliff Road and David's Mill Drive. The water main route will take it across I-664. Phase II will connect the Western Branch plant to the Cavalier Industrial Park and Deep Creek area of the City, and consists of approximately 6,000 feet of water main from near Cavalier Industrial Park to Jolliff Road at Airline Boulevard. The size of the water main will be determined by modeling the City's water system. Public Utilities has issued the Notice to Proceed for the hydraulic study, and Kimley-Horne will present the hydraulic modeling to Public Utilities.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2019

Account	Description	Prior Years	2019	2020 - 23	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	5,220,500				5,220,500
	Fund Balance - Utilities	3,077,500				3,077,500
Total Revenue		8,298,000				8,298,000
Expense						
	Construction	8,298,000				8,298,000
Total Expense		8,298,000				8,298,000
Obligated to Date:						2,296,283
						27.67 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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