

# Project Summary

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Project Number: **53-120**  
 Project Title: **Automated Meter Reading Equipment and Software**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Funded  
 Start Date: 7/1/2020 Region:  
 Est. Completion Date: 6/30/2025

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## Description:

This project will provide for the replacement of the current meter reading equipment and software used to record customer meter readings and initiate billing. This project will involve new technologies and will require retrofitting current water meters.

## Justification:

The current equipment requires manual reading of over 64,000 meters bi-monthly through antiquated hardware and means. Replacement is needed to ensure Public Utilities maintains the capability to generate timely and accurate customer invoices and will significantly improve customer service by allowing monthly billing. This project allows for remote control of water meters and better detection of water leaks. It improves department productivity since meter readers will not have to manually read meters. Finally, the automated system will allow for monthly billing so that billing and customer payments are more regular. This project is cost neutral.

## Comments:

The testing of two different systems is complete. Public Utilities is implementing a small system roll out in the Municipal complex area for the system that the department anticipates installing City-wide.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2021	4,000,000	4,000,000	0
	<b>4,000,000</b>	<b>4,000,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	1,399,624		4,000,000	8,600,000	<b>13,999,624</b>
<b>Total Revenue</b>		<b>1,399,624</b>		<b>4,000,000</b>	<b>8,600,000</b>	<b>13,999,624</b>
<b>Expense</b>						
	Equipment	1,399,624		4,000,000	8,600,000	<b>13,999,624</b>
<b>Total Expense</b>		<b>1,399,624</b>		<b>4,000,000</b>	<b>8,600,000</b>	<b>13,999,624</b>
<b>Obligated to Date:</b>						<b>51,198</b>
						<b>0.37 %</b>

## 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: 2017  
 Year Identified: 2008  
 Start Date: 7/1/2017      Project Status: Funded  
 Est. Completion Date: 1/1/2018      Region:

## Description:

This project will install approximately 7,700 linear feet of 16" Water Main from Centerville Turnpike from Butts Station Road or Elbow Road to Mount Pleasant Road, crossing the Chesapeake and Albemarle Canal.

## Justification:

This project will 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. This 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 is located in the City's Pleasant Grove and Butts Station Borough.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2018	500,000	500,000	0
2019	7,074,617	7,074,617	0
	<b>7,574,617</b>	<b>7,574,617</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund			7,574,617		7,574,617
<b>Total Revenue</b>				<b>7,574,617</b>		<b>7,574,617</b>
<b>Expense</b>						
	Design & Engineering			500,000		500,000
	Construction			7,074,617		7,074,617
<b>Total Expense</b>				<b>7,574,617</b>		<b>7,574,617</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2019	4,906	0.0
2020	4,906	0.0
2021	4,906	0.0

# Project Summary

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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: **2017**  
 Year Identified: **2010**  
 Start Date: **6/1/2011**      Project Status: **Funded**  
 Est. Completion Date:      Region:

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## 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:

Design completed in January 2012 and construction is scheduled to occur in FY 2016.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2021			0
	0	0	0

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	232,127			1,878,123	2,110,250
<b>Total Revenue</b>		<b>232,127</b>			<b>1,878,123</b>	<b>2,110,250</b>
<b>Expense</b>						
	Design & Engineering	232,127				232,127
	Construction				1,110,836	1,110,836
	Equipment				767,287	767,287
<b>Total Expense</b>		<b>232,127</b>			<b>1,878,123</b>	<b>2,110,250</b>
<b>Obligated to Date:</b>						<b>210,127</b>
						<b>9.96 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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: 2017  
 Year Identified: 2016 Project Status: Funded  
 Start Date: 7/1/2015 Region:  
 Est. Completion Date: 6/30/2018

## Description:

This project will renew and replace 4,926 linear feet of 4" and 12" force main between Pump Station No. 110 and 142. This project may include directional drill under Interstates 64 and 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:

New project 10/2014. A portion of this project's construction funding will be pushed out to FY 2018 to allow acceleration of the South Norfolk project (#42-170 - Sewer Renewal: Westwood Ave. and Redstart Ave.).

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	2,000,000	2,000,000	0
2018	2,238,700	2,238,700	0
	<b>4,238,700</b>	<b>4,238,700</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	1,000,000	2,000,000	2,238,700		<b>5,238,700</b>
<b>Total Revenue</b>		<b>1,000,000</b>	<b>2,000,000</b>	<b>2,238,700</b>		<b>5,238,700</b>
<b>Expense</b>						
	Design & Engineering	683,000				<b>683,000</b>
	Construction	317,000	2,000,000	2,238,700		<b>4,555,700</b>
<b>Total Expense</b>		<b>1,000,000</b>	<b>2,000,000</b>	<b>2,238,700</b>		<b>5,238,700</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2019	5,365	0.0
2020	5,365	0.0
2021	5,365	0.0

# Project Summary

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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: 2017  
 Year Identified: 2013  
 Start Date: 7/1/2021 Project Status: Funded  
 Est. Completion Date: 12/1/2023 Region:

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## 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:

The 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. We expect this project will need to be funded in FY 2022 and FY 2023.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017			0
	0	0	0

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities				5,000,000	5,000,000
<b>Total Revenue</b>					5,000,000	5,000,000
<b>Expense</b>						
	Construction				5,000,000	5,000,000
<b>Total Expense</b>					5,000,000	5,000,000
<b>Obligated to Date:</b>						0
						0.00 %

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2009 Project Status: Funded  
 Start Date: 7/2/2012 Region:  
 Est. Completion Date: 6/2/2021

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## 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:

Installation of replacement modules for a complete membrane change-out for the Lake Gaston Water Treatment Plant was completed in late FY 2014. The full-scale plant evaluation of aluminum chlorohydrate was begun in early FY 2015. Performance thus far remains very good.

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.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2020	2,200,000	2,200,000	0
	<b>2,200,000</b>	<b>2,200,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	1,758,385		2,200,000		<b>3,958,385</b>
	<b>Total Revenue</b>	<b>1,758,385</b>		<b>2,200,000</b>		<b>3,958,385</b>
<b>Expense</b>						
	Equipment	1,758,385		2,200,000		<b>3,958,385</b>
	<b>Total Expense</b>	<b>1,758,385</b>		<b>2,200,000</b>		<b>3,958,385</b>
<b>Obligated to Date:</b>						<b>1,725,904</b>
						<b>43.60 %</b>

## 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: **2017**  
 Year Identified: **2016**  
 Start Date:      Project Status: **Funded**  
 Est. Completion Date:      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:

The Lake Gaston Water Treatment Plant was placed in operation in March 2006 and is at a point that some equipment requires refurbishment or replacement.

## Comments:

Plans for FY 2015 and FY 2016 include replacing chemical feed pumps (\$620,000), re-coating the finished water tank (\$40,000), and replacing the chemical storage tanks (\$1.34 million). Enclosure of membranes, basin covers, and enclosure over finished water pumps are under consideration. Further analysis will determine future projects and funding requirements.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	620,000	620,000	0
2018	500,000	500,000	0
2019	500,000	500,000	0
2020	500,000	500,000	0
	<b>2,120,000</b>	<b>2,120,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	1,750,000	620,000	1,500,000		<b>3,870,000</b>
<b>Total Revenue</b>		<b>1,750,000</b>	<b>620,000</b>	<b>1,500,000</b>		<b>3,870,000</b>
<b>Expense</b>						
	Design & Engineering	175,000	50,000	150,000		<b>375,000</b>
	Construction	550,000	275,000	675,000		<b>1,500,000</b>
	Equipment	1,025,000	295,000	675,000		<b>1,995,000</b>
<b>Total Expense</b>		<b>1,750,000</b>	<b>620,000</b>	<b>1,500,000</b>		<b>3,870,000</b>
<b>Obligated to Date:</b>						<b>424,020</b>
						<b>10.96 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2016 Project Status: Funded  
 Start Date: 7/2/2015 Region:  
 Est. Completion Date: 7/1/2023

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## 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
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	1,000,000			20,000,000	<b>21,000,000</b>
<b>Total Revenue</b>		<b>1,000,000</b>			<b>20,000,000</b>	<b>21,000,000</b>
<b>Expense</b>						
	Design & Engineering	1,000,000			4,000,000	<b>5,000,000</b>
	Construction				16,000,000	<b>16,000,000</b>
<b>Total Expense</b>		<b>1,000,000</b>			<b>20,000,000</b>	<b>21,000,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

Project Number: **38-120**  
 Project Title: **Military Hwy. - 36" Water Main**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Funded  
 Start Date: 7/1/2010 Region:  
 Est. Completion Date: 6/30/2017

## Description:

This project consists of installing approximately 4,305 linear feet of 36" ductile iron water main along Military Highway from Enterprise Circle to Galberry Road. This will extend the 36" water main installed with the Lake Gaston Water Treatment Plant project and improve system hydraulics in this area of the city.

## Justification:

This is part of a multi-phase project to bring a large transmission main from the Lake Gaston Water Treatment Plant to South Norfolk. This significantly improves overall water system reliability and flexibility. Installation of a new water main will result in a nominal increase to the annual operation and maintenance costs.

## Comments:

Project is at 100% design, awaiting additional construction funding July 1, 2016.

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 \$254,623.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	1,323,000	1,323,000	0
	<b>1,323,000</b>	<b>1,323,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	2,372,377				<b>2,372,377</b>
	Cash - Utilities	254,623	1,323,000			<b>1,577,623</b>
	<b>Total Revenue</b>	<b>2,627,000</b>	<b>1,323,000</b>			<b>3,950,000</b>
<b>Expense</b>						
	Design & Engineering	350,000				<b>350,000</b>
	Construction	2,027,000	1,323,000			<b>3,350,000</b>
	Other	250,000				<b>250,000</b>
	<b>Total Expense</b>	<b>2,627,000</b>	<b>1,323,000</b>			<b>3,950,000</b>
					<b>Obligated to Date:</b>	<b>400,653</b>
						<b>10.14 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2018	2,755	0.0
2019	2,755	0.0
2020	2,755	0.0

# Project Summary

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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: 2017  
 Year Identified: 2016  
 Start Date: 7/1/2018      Project Status: Funded  
 Est. Completion Date: 6/30/2019      Region:

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## 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.

## Justification:

Repairs identified during periodic inspection of tanks.

## Comments:

The paint coating systems use on water storage tanks fade with age and eventually expose the underlying steel to corrosion. Periodic re-coating and repairs will extend the useful life of the tank.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities				925,000	<b>925,000</b>
<b>Total Revenue</b>					<b>925,000</b>	<b>925,000</b>
<b>Expense</b>						
	Design & Engineering				125,000	<b>125,000</b>
	Construction				800,000	<b>800,000</b>
<b>Total Expense</b>					<b>925,000</b>	<b>925,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **01-090**  
 Project Title: **Northwest River WTP - Membrane Replacement - Phase III**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2005 Project Status: Funded  
 Start Date: 7/2/2010 Region:  
 Est. Completion Date: 6/2/2021

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## Description:

This project will replace membranes used in the Northwest River Water Treatment Plant (NW River WTP).

## Justification:

Surface water membranes have an expected service life of seven years. Ground water membranes have an expected useful life of three years. Replacement costs are \$1,050,000 and \$309,000, respectively.

## Comments:

Plans for replacing surface water elements are underway.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2020	1,625,000	1,625,000	0
	<b>1,625,000</b>	<b>1,625,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	400,000		1,625,000		<b>2,025,000</b>
<b>Total Revenue</b>		<b>400,000</b>		<b>1,625,000</b>		<b>2,025,000</b>
<b>Expense</b>						
	Equipment	400,000		1,625,000		<b>2,025,000</b>
<b>Total Expense</b>		<b>400,000</b>		<b>1,625,000</b>		<b>2,025,000</b>
<b>Obligated to Date:</b>						<b>160,721</b>
						<b>7.94 %</b>

## 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: Study Budget Year: 2017  
 Year Identified: 2009  
 Start Date: 2/2/2008 Project Status: Funded  
 Est. Completion Date: 6/2/2017 Region:

## Description:

This project will provide for an engineering study to identify, prioritize, and perform a variety of improvements to the Northwest River Water Treatment Plant. This project will also provide for the replacement and rehabilitation of aging equipment to ensure safe and effective operations of the water treatment plant. Assessments are conducted periodically to identify critical tasks.

## Justification:

The Northwest River Water Treatment Plant has been in operation for over 30 years and components regularly require replacement.

## Comments:

Tasks completed with previous appropriations include: replacement of centrifuges, chemical feed pumps, and flocculators in the treatment plant along with supply pipes at the brackish groundwater well pump station. The following tasks are planned for FY 2016 through FY 2018: (1) replacement of traveling water screens at the water intake - \$380,000, (2) replacement of hypochlorite tanks - \$306,000, and (3) replacement of switch gears and motor control centers - \$1.55 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 \$734,740.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2018	1,000,000	1,000,000	0
2019	500,000	500,000	0
2020	500,000	500,000	0
2021			0
	<b>2,000,000</b>	<b>2,000,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	4,997,555				<b>4,997,555</b>
	Cash - Utilities	2,177,445		2,000,000	1,750,000	<b>5,927,445</b>
	<b>Total Revenue</b>	<b>7,175,000</b>		<b>2,000,000</b>	<b>1,750,000</b>	<b>10,925,000</b>
<b>Expense</b>						
	Design & Engineering	175,000				<b>175,000</b>
	Construction	7,000,000				<b>7,000,000</b>
	Equipment			2,000,000	1,750,000	<b>3,750,000</b>
	<b>Total Expense</b>	<b>7,175,000</b>		<b>2,000,000</b>	<b>1,750,000</b>	<b>10,925,000</b>
					<b>Obligated to Date:</b>	<b>6,188,248</b>
						<b>56.64 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2016  
 Start Date: 7/1/2015 Project Status: Funded  
 Est. Completion Date: 6/30/2017 Region:

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## 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
2017	900,000	900,000	0
	<b>900,000</b>	<b>900,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	300,000				<b>300,000</b>
	Cash - Utilities		900,000			<b>900,000</b>
	<b>Total Revenue</b>	<b>300,000</b>	<b>900,000</b>			<b>1,200,000</b>
<b>Expense</b>						
	Design & Engineering	300,000				<b>300,000</b>
	Construction		900,000			<b>900,000</b>
	<b>Total Expense</b>	<b>300,000</b>	<b>900,000</b>			<b>1,200,000</b>
					<b>Obligated to Date:</b>	<b>0</b>
						<b>0.00 %</b>

## 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: 2017  
 Year Identified: 2016  
 Start Date: 7/1/2020 Project Status: Funded  
 Est. Completion Date: 6/30/2021 Region:

## 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
	<b>2,000,000</b>	<b>2,000,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund			2,000,000		2,000,000
<b>Total Revenue</b>				<b>2,000,000</b>		<b>2,000,000</b>
<b>Expense</b>						
	Design & Engineering			50,000		50,000
	Construction			1,950,000		1,950,000
<b>Total Expense</b>				<b>2,000,000</b>		<b>2,000,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **36-200**  
 Project Title: **Northwest River WTP - Riverbank Filtration System**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Study Budget Year: 2017  
 Year Identified: 2016  
 Start Date: 7/1/2021 Project Status: Funded  
 Est. Completion Date: 6/30/2025 Region:

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## 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
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities				175,000	175,000
<b>Total Revenue</b>						<b>175,000</b>
<b>Expense</b>						
	Design & Engineering				175,000	175,000
<b>Total Expense</b>						<b>175,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2017  
 Start Date: 3/1/2018      Project Status: Funded  
 Est. Completion Date:      Region:

---

## Description:

This project will upgrade the current Public Utility CIS billing system for the City of Chesapeake, which was implemented in October 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 Department of Public Utilities to manage and bill all water and sewer accounts for residential, commercial, fire, irrigation, and backflow devices. The projected version upgrade will be Microsoft Great Plains Dynamics 2015.

## Comments:

This system was upgraded in September 2015. Microsoft Great Plains Dynamics 2013 is the product core with customizations developed by Cogsdale which is the Customer System Management (CSM) module 12.34.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2018	100,000	100,000	0
	<b>100,000</b>	<b>100,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities			100,000		100,000
<b>Total Revenue</b>				<b>100,000</b>		<b>100,000</b>
<b>Expense</b>						
	Software			100,000		100,000
<b>Total Expense</b>				<b>100,000</b>		<b>100,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2019	10,000	0.0
2020	10,000	0.0
2021	10,000	0.0

# 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: 2017  
 Year Identified: 2008  
 Start Date: 2/2/2009      Project Status: Funded  
 Est. Completion Date: 10/1/2019      Region:

## 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 was negotiated is ready for execution. The project will require an additional \$7 million to complete design and construction. Most of the increased cost is related to cost inflation that occurred after the original estimates (1990s).

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
2017			0
2018	3,500,000	3,500,000	0
2019	3,500,000	3,500,000	0
	<b>7,000,000</b>	<b>7,000,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund			7,000,000		7,000,000
	Cash - Utilities	15,575,000				15,575,000
<b>Total Revenue</b>		<b>15,575,000</b>		<b>7,000,000</b>		<b>22,575,000</b>
<b>Expense</b>						
	Design & Engineering	1,200,000				1,200,000
	Construction	14,375,000		7,000,000		21,375,000
<b>Total Expense</b>		<b>15,575,000</b>		<b>7,000,000</b>		<b>22,575,000</b>
					<b>Obligated to Date:</b>	<b>15,057,066</b>
						<b>66.70 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **31-210**  
 Project Title: **Sanitary Force Main: Volvo Parkway**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2017  
 Start Date: 1/1/2022 Project Status: Funded  
 Est. Completion Date: Region:

---

## Description:

This project will provide for the replacement of 550 linear feet of 16" DIP Sanitary Force Main along Volvo Parkway near Rellen Street. The force main connection to the HRSD Interceptor main will also need to be renewed. The purpose of this project is to prevent sanitary sewer over flows by improving the capability of the City's sewer pump station force main systems.

## Justification:

This project will prevent sewer over flows in the City's sewer force main system and improve capability.

## Comments:

Project and engineering investigation will be required. The project area is located in the City's Washington Borough.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities				400,000	400,000
<b>Total Revenue</b>						<b>400,000</b>
<b>Expense</b>						
	Design & Engineering				400,000	400,000
<b>Total Expense</b>						<b>400,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **23-170**  
 Project Title: **Sewer and Water Renewal: Elbyrne Dr.**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2013 Project Status: Funded  
 Start Date: 7/2/2018 Region:  
 Est. Completion Date: 6/3/2019

---

## 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:

Project is scheduled to begin in July 2018.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2019	2,155,000	2,155,000	0
	<b>2,155,000</b>	<b>2,155,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities			2,155,000		<b>2,155,000</b>
<b>Total Revenue</b>				<b>2,155,000</b>		<b>2,155,000</b>
<b>Expense</b>						
	Construction			2,155,000		<b>2,155,000</b>
<b>Total Expense</b>				<b>2,155,000</b>		<b>2,155,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

Project Number: **13-160**  
 Project Title: **Sewer Management Operations & Maintenance**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2012 Project Status: Funded  
 Start Date: 7/1/2013 Region:  
 Est. Completion Date: 6/1/2022

## Description:

This project will provide for replacement of the failing components necessary in the management, operations, and maintenance (MOM) of the sanitary sewer system. This project will prevent sanitary sewer overflows by improving the capability of the City's sewer force main and gravity piping systems (including manholes) along with upgrades to pump station facilities.

## Justification:

Deficiencies were identified in the Sanitary Sewer Evaluation Study (SSES), project # 27-12, required by the Consent Order issued by the Department of Environmental Quality (DEQ). This project addresses compliance with the Consent Order.

## Comments:

Potential projects are being evaluated based on the annual management, operations, and maintenance (MOM) audit. Per the annual MOM audit, a gravity connection to Winnie Drive is currently 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 \$501,901.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	1,000,000	1,000,000	0
2018	1,000,000	1,000,000	0
2019	1,500,000	1,500,000	0
2020	1,500,000	1,500,000	0
2021	2,000,000	2,000,000	0
	<b>7,000,000</b>	<b>7,000,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	2,000,000	1,000,000	6,000,000	25,000,000	<b>34,000,000</b>
<b>Total Revenue</b>		<b>2,000,000</b>	<b>1,000,000</b>	<b>6,000,000</b>	<b>25,000,000</b>	<b>34,000,000</b>
<b>Expense</b>						
	Design & Engineering	300,000	150,000	900,000		<b>1,350,000</b>
	Construction	1,700,000	850,000	5,100,000	25,000,000	<b>32,650,000</b>
<b>Total Expense</b>		<b>2,000,000</b>	<b>1,000,000</b>	<b>6,000,000</b>	<b>25,000,000</b>	<b>34,000,000</b>
<b>Obligated to Date:</b>						<b>858,569</b>
						<b>2.53 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2019	4,769	0.0

# 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: **2017**  
 Year Identified: **2016**  
 Start Date: **7/1/2015** Project Status: **Funded**  
 Est. Completion Date: **6/30/2021** Region:

## Description:

This project will replace structural components at pump stations that have deteriorated and pose safety risks to maintenance personnel.

## Justification:

This project will replace fixed ladders, platforms, and various hardware that are subjected to corrosive environments. There are 272 pump stations throughout the City.

## Comments:

This project was funded in the FY 2016 CIP Budget for \$500,000 with proposed future annual amounts of \$500,000.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	500,000	500,000	0
2018	500,000	500,000	0
2019	500,000	500,000	0
2020	500,000	500,000	0
2021	500,000	500,000	0
	<b>2,500,000</b>	<b>2,500,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	500,000	500,000	2,000,000		<b>3,000,000</b>
<b>Total Revenue</b>		<b>500,000</b>	<b>500,000</b>	<b>2,000,000</b>		<b>3,000,000</b>
<b>Expense</b>						
	Design & Engineering	50,000	50,000	200,000		<b>300,000</b>
	Construction	450,000	450,000	1,800,000		<b>2,700,000</b>
<b>Total Expense</b>		<b>500,000</b>	<b>500,000</b>	<b>2,000,000</b>		<b>3,000,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## 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: 2017  
 Year Identified: 2014  
 Start Date: 7/1/2015 Project Status: Funded  
 Est. Completion Date: 6/2/2021 Region:

## Description:

This project will fund sewer projects that are required in order to comply with regional Consent Order issued by the Virginia Department of Environmental Quality (DEQ). The work will be performed in designated sewer basins based on the priority approved by the DEQ as part of 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:

Projects for FY 2016 have been identified as follows: (a) Decatur Street Sewer Renewal for replacement of 3,760 feet of gravity sewer mains between Guerrier St. and Holly Ave. (\$1.55 million), and (b) Quail and Partridge Avenues Sewer Renewal for replacement of 2,800 feet of gravity sewer mains on Quail between Berkley and Landsworth and on Partridge between Berkley and Wade (\$1.51 million). The next two priority sewer projects will be the PS 910-D area and PS 910-E area from the Greeley & Hansen report. FY 2017 funds have been updated to cover both project areas.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	1,200,000	1,200,000	0
2018	2,000,000	2,000,000	0
2019	4,000,000	4,000,000	0
2020	4,000,000	4,000,000	0
2021	5,000,000	5,000,000	0
	<b>16,200,000</b>	<b>16,200,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	3,000,000			263,000,000	<b>266,000,000</b>
	Cash - Utilities	61,609	1,200,000	15,000,000		<b>16,261,609</b>
	<b>Total Revenue</b>	<b>3,061,609</b>	<b>1,200,000</b>	<b>15,000,000</b>	<b>263,000,000</b>	<b>282,261,609</b>
<b>Expense</b>						
	Construction	3,061,609	1,200,000	15,000,000	263,000,000	<b>282,261,609</b>
	<b>Total Expense</b>	<b>3,061,609</b>	<b>1,200,000</b>	<b>15,000,000</b>	<b>263,000,000</b>	<b>282,261,609</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2017	4,769	0.0

# Project Summary

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: 2017  
 Year Identified: 2013  
 Start Date: 7/2/2016 Project Status: Funded  
 Est. Completion Date: 6/1/2018 Region:

## Description:

This project will provide for the renewal or replacement of 3,100 feet of gravity sewer main and appurtenances on Liberty Street, from Collingswood Avenue to 18th Street, with a branch to 22nd Street and 20th 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 is scheduled to begin in July 2016. This project will need additional funding for abandoning the existing sewer gravity main that is running along the southern end of Wilson Road before it intersects with Liberty Street. (Borough: South Norfolk)

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	129,867	129,867	0
	<b>129,867</b>	<b>129,867</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	1,389,259				1,389,259
	Cash - Utilities		129,867			129,867
<b>Total Revenue</b>		<b>1,389,259</b>	<b>129,867</b>			<b>1,519,126</b>
<b>Expense</b>						
	Construction	1,389,259	129,867			1,519,126
<b>Total Expense</b>		<b>1,389,259</b>	<b>129,867</b>			<b>1,519,126</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2018	(2,800)	0.0
2019	(2,800)	0.0
2020	(2,800)	0.0
2021	(2,800)	0.0

# 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: 2017  
 Year Identified: 2013 Project Status: Funded  
 Start Date: 7/1/2019 Region:  
 Est. Completion Date: 6/30/2021

## 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 the Pump Station 7 basin as priorities 108, 133, 144, 191, and 221).

## Comments:

This project was identified in FY 2014 with anticipated start date of July 1, 2017 (FY 2018) and completion date of June 30, 2019 (FY 2019). To align with the priority ranking in the Greeley & Hansen report, this project will be pushed out to start on July 1, 2019 (FY 2020). Funding and project work will be phased over two years: year one for Design/Engineering and year two for Construction. Estimated costs have been rounded up (Design/Engineering costs to \$600,000 from \$555,489.88, and Construction costs to \$3.8 M from \$3,703,265.88).

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2018			0
2020	600,000	600,000	0
2021	3,800,000	3,800,000	0
	<b>4,400,000</b>	<b>4,400,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities			4,400,000		<b>4,400,000</b>
<b>Total Revenue</b>				<b>4,400,000</b>		<b>4,400,000</b>
<b>Expense</b>						
	Design & Engineering			600,000		<b>600,000</b>
	Construction			3,800,000		<b>3,800,000</b>
<b>Total Expense</b>				<b>4,400,000</b>		<b>4,400,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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: 2017  
 Year Identified: 2013  
 Start Date: 7/1/2016 Project Status: Funded  
 Est. Completion Date: 12/1/2017 Region:

## 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:

Project is scheduled to begin July 2016. 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
2017	1,106,000	1,106,000	0
2018			0
	<b>1,106,000</b>	<b>1,106,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities		1,106,000			1,106,000
<b>Total Revenue</b>			<b>1,106,000</b>			<b>1,106,000</b>
<b>Expense</b>						
	Construction		1,106,000			1,106,000
<b>Total Expense</b>			<b>1,106,000</b>			<b>1,106,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2018	(1,806)	0.0
2019	(1,806)	0.0
2020	(1,806)	0.0
2021	(1,806)	0.0

# Project Summary

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Project Number: **31-170**  
 Project Title: **Sewer Replacement: Orville Ave. Alleyway (Bainbridge to Seaboard)**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2013 Project Status: Funded  
 Start Date: 7/1/2017 Region:  
 Est. Completion Date: 7/2/2018

---

## Description:

This project will provide for the replacement of approximately 1,900 feet of gravity sewer along the full length of the Orville Avenue alleyway.

## Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

## Comments:

Project to begin in July 2017.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2018	1,351,000	1,351,000	0
	<b>1,351,000</b>	<b>1,351,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities			1,351,000		1,351,000
<b>Total Revenue</b>				<b>1,351,000</b>		<b>1,351,000</b>
<b>Expense</b>						
	Construction			1,351,000		1,351,000
<b>Total Expense</b>				<b>1,351,000</b>		<b>1,351,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## 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: 2017  
 Year Identified: 2016  
 Start Date: 7/1/2015      Project Status: Funded  
 Est. Completion Date:      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:

Funding is provided from the Enterprise Fund Balance with an expectation of replenishment from assessments and surcharges paid by new customers over twenty-five years. Projects anticipated in the next several years 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
2017	1,483,300	1,483,300	0
2018	85,500	85,500	0
2019	769,500	769,500	0
	<b>2,338,300</b>	<b>2,338,300</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	164,900	1,483,300	855,000		<b>2,503,200</b>
<b>Total Revenue</b>		<b>164,900</b>	<b>1,483,300</b>	<b>855,000</b>		<b>2,503,200</b>
<b>Expense</b>						
	Design & Engineering	164,900		85,500		<b>250,400</b>
	Construction		1,483,300	769,500		<b>2,252,800</b>
<b>Total Expense</b>		<b>164,900</b>	<b>1,483,300</b>	<b>855,000</b>		<b>2,503,200</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2017  
 Start Date: 7/1/2016      Project Status: Funded  
 Est. Completion Date: 6/30/2017      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.

## Comments:

This project is on the Unfunded Project List that is critical to fund within 5 years. Region: N/A

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	400,000	400,000	0
	<b>400,000</b>	<b>400,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities		400,000			<b>400,000</b>
<b>Total Revenue</b>			<b>400,000</b>			<b>400,000</b>
<b>Expense</b>						
	Equipment		400,000			<b>400,000</b>
<b>Total Expense</b>			<b>400,000</b>			<b>400,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **26-200**  
 Project Title: **Water Control Laboratory - Upgrade HVAC**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2016  
 Start Date: 7/1/2015 Project Status: Funded  
 Est. Completion Date: 9/30/2016 Region:

---

**Description:**

Upgrade and replace components of the HVAC and boiler system for the Water Quality Laboratory.

**Justification:**

Climate control is required for the stability of analytical instrumentation in the Water Quality Laboratory. The laboratory experiences unacceptable temperature variations and excessive humidity. The conditions are potentially damaging to analytical equipment and detrimental to the accuracy of water quality test results.

**Comments:**

**Project Forecast**

Year	Total Expense	Total Revenue	Difference
2017	480,000	480,000	0
	<b>480,000</b>	<b>480,000</b>	<b>0</b>

**Project Details 2017**

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities		480,000			<b>480,000</b>
<b>Total Revenue</b>			<b>480,000</b>			<b>480,000</b>
<b>Expense</b>						
	Design & Engineering		100,000			<b>100,000</b>
	Construction		60,000			<b>60,000</b>
	Equipment		320,000			<b>320,000</b>
<b>Total Expense</b>			<b>480,000</b>			<b>480,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

**Related Projects**

**Operating Budget Impact**

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **31-200**  
 Project Title: **Water Production Security System Upgrades**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Equipment Budget Year: 2017  
 Year Identified: 2016 Project Status: Funded  
 Start Date: 7/1/2017 Region:  
 Est. Completion Date: 6/30/2018

---

## 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.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities				200,000	200,000
<b>Total Revenue</b>						<b>200,000</b>
<b>Expense</b>						
	Design & Engineering				200,000	200,000
<b>Total Expense</b>						<b>200,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## 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: 2017  
 Year Identified: 2012 Project Status: Funded  
 Start Date: 7/1/2014 Region:  
 Est. Completion Date: 7/1/2021

## 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
2018	750,000	750,000	0
2019	1,000,000	1,000,000	0
2020	1,000,000	1,000,000	0
2021			0
	<b>2,750,000</b>	<b>2,750,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund			2,250,000	2,500,000	<b>4,750,000</b>
	Cash - Utilities	1,500,000		500,000	3,250,000	<b>5,250,000</b>
	<b>Total Revenue</b>	<b>1,500,000</b>		<b>2,750,000</b>	<b>5,750,000</b>	<b>10,000,000</b>
<b>Expense</b>						
	Construction	1,500,000		2,750,000	5,750,000	<b>10,000,000</b>
	<b>Total Expense</b>	<b>1,500,000</b>		<b>2,750,000</b>	<b>5,750,000</b>	<b>10,000,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **32-200**  
 Project Title: **Water Residuals Disposal**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Study Budget Year: 2017  
 Year Identified: 2016 Project Status: Funded  
 Start Date: 7/1/2018 Region:  
 Est. Completion Date: 6/30/2019

---

## 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 WTP, 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. The disposal of residuals currently occurs in trenches at the disposal site. 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 budget for FY 2019 includes only evaluation. 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
	<b>320,000</b>	<b>320,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities			320,000		<b>320,000</b>
	<b>Total Revenue</b>			<b>320,000</b>		<b>320,000</b>
<b>Expense</b>						
	Design & Engineering			320,000		<b>320,000</b>
	<b>Total Expense</b>			<b>320,000</b>		<b>320,000</b>
				<b>Obligated to Date:</b>		<b>0</b>
						<b>0.00 %</b>

## 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: System Acquisition or Upgrade      Budget Year: 2017  
 Year Identified: 2017  
 Start Date: 7/1/2017      Project Status: Funded  
 Est. Completion Date: 6/30/2021      Region:

## Description:

This project will provide for master planning of Chesapeake's water distribution system to 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 existing aged water distribution system is in need of water main renewals/replacements, and contains multiple dead end mains in various locations that limits the capability to provide water services to citizens in case of a water main break and/or failure. There are also many unserved areas requiring extension of existing water mains through the cost participation program.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	400,000	400,000	0
2018	250,000	250,000	0
2019	250,000	250,000	0
2020	250,000	250,000	0
2021	250,000	250,000	0
	<b>1,400,000</b>	<b>1,400,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities		400,000	1,000,000		<b>1,400,000</b>
<b>Total Revenue</b>			<b>400,000</b>	<b>1,000,000</b>		<b>1,400,000</b>
<b>Expense</b>						
	Other		400,000	1,000,000		<b>1,400,000</b>
<b>Total Expense</b>			<b>400,000</b>	<b>1,000,000</b>		<b>1,400,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2016  
 Start Date: 7/1/2015      Project Status: Funded  
 Est. Completion Date: 6/30/2016      Region:

---

## Description:

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

## Justification:

The existing control (SCADA) systems at each treatment plant are in need of an upgrade. This project will enhance plant reliability and includes the conversion from the Unix system to a Microsoft Windows compatible system which is easily serviceable. The upgrade also ensures that replacement parts and equipment are available for maintenance.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	820,000	820,000	0
	<b>820,000</b>	<b>820,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities		820,000			<b>820,000</b>
<b>Total Revenue</b>			<b>820,000</b>			<b>820,000</b>
<b>Expense</b>						
	Design & Engineering		75,000			<b>75,000</b>
	Equipment		745,000			<b>745,000</b>
<b>Total Expense</b>			<b>820,000</b>			<b>820,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: **2017**  
 Year Identified: **2016**  
 Start Date: **7/1/2017** Project Status: **Funded**  
 Est. Completion Date: **6/30/2018** 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
	<b>1,200,000</b>	<b>1,200,000</b>	<b>0</b>

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities			1,200,000		<b>1,200,000</b>
	<b>Total Revenue</b>			<b>1,200,000</b>		<b>1,200,000</b>
<b>Expense</b>						
	Design & Engineering			120,000		<b>120,000</b>
	Construction			1,080,000		<b>1,080,000</b>
	<b>Total Expense</b>			<b>1,200,000</b>		<b>1,200,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **24-130**  
 Project Title: **Asset Management System**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2009 Project Status: Fully Funded  
 Start Date: 7/1/2008 Region:  
 Est. Completion Date: 12/1/2016

---

## Description:

This project will establish an asset management system for compliance for the regional consent order and internal auditors.

## Justification:

This project is needed for compliance with requirements of the regional consent order and internal auditors.

## 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 \$2,232.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	847,768				847,768
	Cash - Utilities	2,232				2,232
<b>Total Revenue</b>		<b>850,000</b>				<b>850,000</b>
<b>Expense</b>						
	Other	850,000				850,000
<b>Total Expense</b>		<b>850,000</b>				<b>850,000</b>
<b>Obligated to Date:</b>						<b>661,344</b>
						<b>77.81 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2012  
 Start Date: 7/2/2015      Project Status: Fully Funded  
 Est. Completion Date: 10/2/2016      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:

Engineering design is 90% complete. Upon receipt of the 100% plans, the project will be placed for bid. On April 28, 2015, Council approved a transfer of \$125,000 to this project to cover additional costs from project # 35-120 "NW River WTP Storm Hardening" project (now closed).

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Other City Funds	125,000				<b>125,000</b>
	Fund Balance - Utilities	1,074,997				<b>1,074,997</b>
<b>Total Revenue</b>		<b>1,199,997</b>				<b>1,199,997</b>
<b>Expense</b>						
	Design & Engineering	127,000				<b>127,000</b>
	Construction	1,072,997				<b>1,072,997</b>
<b>Total Expense</b>		<b>1,199,997</b>				<b>1,199,997</b>
					<b>Obligated to Date:</b>	<b>1,150,029</b>
						<b>95.84 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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: 2017  
 Year Identified: 2010  
 Start Date: 7/5/2009      Project Status: Fully Funded  
 Est. Completion Date: 7/3/2021      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:

Plans are currently under design and the City is acquiring necessary easements. Construction is planned to begin in FY 2016.

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. Installation of the new water main will result in a nominal increase to the annual operation and maintenance 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities		5,205,689			5,205,689
<b>Total Revenue</b>			<b>5,205,689</b>			<b>5,205,689</b>
<b>Expense</b>						
	Design & Engineering		1,100,000			1,100,000
	Construction		4,105,689			4,105,689
<b>Total Expense</b>			<b>5,205,689</b>			<b>5,205,689</b>
<b>Obligated to Date:</b>						<b>541,822</b>
						<b>10.41 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2019	3,797	0.0
2020	3,797	0.0
2021	3,797	0.0

# Project Summary

Project Number:	<b>22-140</b>		
Project Title:	<b>Battlefield to Centerville Water Main - Phase II</b>		
Asset Type:			
Division:	<b>Public Utilities Capital Projects</b>		
Project Type:	Addition or Expansion	Budget Year:	2017
Year Identified:	2010	Project Status:	Fully Funded
Start Date:	7/6/2009	Region:	
Est. Completion Date:	9/1/2017		

## 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:

The project is currently under design and the City is acquiring necessary easements. Construction is planned to begin in FY 2016.

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. Installation of the new water main will result in a nominal increase to the annual operation and maintenance costs. This project is located within the Pleasant Grove 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 \$3,500.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	460,500				460,500
	Cash - Utilities	3,703,500				3,703,500
<b>Total Revenue</b>		<b>4,164,000</b>				<b>4,164,000</b>
<b>Expense</b>						
	Design & Engineering	664,000				664,000
	Construction	3,500,000				3,500,000
<b>Total Expense</b>		<b>4,164,000</b>				<b>4,164,000</b>
					<b>Obligated to Date:</b>	<b>450,759</b>
						<b>10.83 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2019	4,838	0.0

# Project Summary

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Project Number: **19-170**  
 Project Title: **Crestwood Sewer - Phase I (Pump Station #931)**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2013 Project Status: Fully Funded  
 Start Date: 7/2/2013 Region:  
 Est. Completion Date: 5/2/2017

---

## Description:

This project will renew approximately 6,090 linear feet of sanitary sewer main and appurtenances in the Crestwood Subdivision that flows to the Gregg Street alleyway.

## Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement. This project includes alleyways between Jones/Great Bridge Boulevard, Grant/Gregg, Outlaw/Grant, Bainbridge Boulevard/Tuskegee and the sewers on Lincoln Road/Outlaw.

## Comments:

This project has been awarded to Gaston Brothers for construction. Notice to Proceed was issued during the pre-construction meeting, NTP 9-11-14. Approximately \$313,005 from the South Norfolk Waterline Renewal will be used for the waterline improvements. Change Order for DIP Protect 401 forthcoming.

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 \$2,138,334.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	325,422				325,422
	Cash - Utilities	2,138,334				2,138,334
<b>Total Revenue</b>		<b>2,463,756</b>				<b>2,463,756</b>
<b>Expense</b>						
	Construction	2,463,756				2,463,756
<b>Total Expense</b>		<b>2,463,756</b>				<b>2,463,756</b>
					<b>Obligated to Date:</b>	<b>2,138,334</b>
						<b>86.79 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2013 Project Status: Fully Funded  
 Start Date: 7/1/2014 Region:  
 Est. Completion Date: 6/1/2017

---

## 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:

Design to AECOM. 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	2,831,535				2,831,535
<b>Total Revenue</b>		<b>2,831,535</b>				<b>2,831,535</b>
<b>Expense</b>						
	Construction	2,831,535				2,831,535
<b>Total Expense</b>		<b>2,831,535</b>				<b>2,831,535</b>
<b>Obligated to Date:</b>						<b>272,450</b>
						<b>9.62 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2013 Project Status: Fully Funded  
 Start Date: 7/2/2015 Region:  
 Est. Completion Date: 6/1/2017

---

## 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:

Design to URS (may change pending company merger). 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	1,600,364				<b>1,600,364</b>
<b>Total Revenue</b>		<b>1,600,364</b>				<b>1,600,364</b>
<b>Expense</b>						
	Construction	1,600,364				<b>1,600,364</b>
<b>Total Expense</b>		<b>1,600,364</b>				<b>1,600,364</b>
<b>Obligated to Date:</b>						<b>181,633</b>
						<b>11.35 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

Project Number: **34-120**  
 Project Title: **Customer Service & Billing Software**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/2/2007 Region:  
 Est. Completion Date: 6/1/2017

## 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:

Proposals were received November 2010, and interviews were held in January 2011. Project scope was identified and agreed to with the vendor in March 2011. Contract language negotiations were completed in June 2011. Negotiations on contract modifications were completed in July 2011. The CIS software was implemented for phase I on May 28, 2013. Several custom modifications are in development and testing as part of phase II. Updated projected expenses to account for extension of temps as well as account for possible change order with BI Dashboard and continued PM expenses.

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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	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
<b>Total Revenue</b>		<b>5,900,000</b>				<b>5,900,000</b>
<b>Expense</b>						
	Other	5,900,000				5,900,000
<b>Total Expense</b>		<b>5,900,000</b>				<b>5,900,000</b>
					<b>Obligated to Date:</b>	<b>4,710,489</b>
						<b>79.84 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **25-130**  
 Project Title: **Generator Replacement Program**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Renovation or Rehabilitation      Budget Year: 2017  
 Year Identified: 2009  
 Start Date: 7/1/2008      Project Status: Fully Funded  
 Est. Completion Date: 6/1/2017      Region:

---

**Description:**

This project will provide for the replacement of generators that have reached the end of their useful life.

**Justification:**

Assure that sewer pump stations continue to meet Class I reliability requirements.

**Comments:**

Remaining funds of \$35,136 to be combined with capital portion of sewer operating budget in FY 2015.

**Project Forecast**

Year	Total Expense	Total Revenue	Difference
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**Project Details 2017**

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	375,000				<b>375,000</b>
<b>Total Revenue</b>		<b>375,000</b>				<b>375,000</b>
<b>Expense</b>						
	Equipment	375,000				<b>375,000</b>
<b>Total Expense</b>		<b>375,000</b>				<b>375,000</b>
<b>Obligated to Date:</b>						<b>347,215</b>
						<b>92.59 %</b>

**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: 2017  
 Year Identified: 2006 Project Status: Fully Funded  
 Start Date: 7/2/2009 Region:  
 Est. Completion Date: 6/30/2016

## 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. Installation of the new force main will result in a nominal increase to the annual operation and maintenance costs.

## Comments:

Project has been identified for many years. Project plans are complete. Design is 100%. Awaiting resolution of plats to begin easement acquisition.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
------	---------------	---------------	------------

## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	1,000,000				1,000,000
	Cash - Utilities	300,389				300,389
<b>Total Revenue</b>		<b>1,300,389</b>				<b>1,300,389</b>
<b>Expense</b>						
	Design & Engineering	45,000				45,000
	Construction	1,255,389				1,255,389
<b>Total Expense</b>		<b>1,300,389</b>				<b>1,300,389</b>
					<b>Obligated to Date:</b>	<b>86,100</b>
						<b>6.62 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
2018	4,292	0.0
2019	4,292	0.0
2020	4,292	0.0
2021	4,292	0.0

# Project Summary

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Project Number: **29-050**  
 Project Title: **Jolliff Rd. Waterline - Phase II**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2001 Project Status: Fully Funded  
 Start Date: 1/2/1999 Region:  
 Est. Completion Date: 6/1/2020

---

## Description:

This project will provide for the installation of a 12" and a 16" water main, which will improve system hydraulics and fire protection in this area of Western Branch. (Lowes Shopping Center).

## Justification:

This purpose of this project is to improve the City's water distribution system, reliability, and fire protection in this area of the City. A 16" water main has been extended approximately 3,100 feet starting from the existing 20" water main at Jolliff Road and Old Jolliff Road along Jolliff Road to Portsmouth Boulevard. Then a 12" water main continues approximately 3,000 feet on Jolliff Road to Jolliff Court.

## Comments:

This project is complete. Awaiting documented information to reimburse costs.

Footnote: Project work was performed by developer of the Lowes Shopping Center on Portsmouth Boulevard. The developer never presented appropriate invoices and documentation to be reimbursed. City attorney recommends that the project continues open until matter is resolved.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	653,800				653,800
<b>Total Revenue</b>		<b>653,800</b>				<b>653,800</b>
<b>Expense</b>						
	Other	653,800				653,800
<b>Total Expense</b>		<b>653,800</b>				<b>653,800</b>
<b>Obligated to Date:</b>						<b>19</b>
						<b>0.00 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **50-121**  
 Project Title: **Laboratory Equipment Replacement - Phase I**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2011 Project Status: Fully Funded  
 Start Date: 7/1/2011 Region:  
 Est. Completion Date: 7/1/2017

---

## Description:

This project will establish and maintain a designated reserve account to fund replacement of analytical laboratory equipment at the Northwest River Water Treatment Plant.

## Justification:

Sophisticated laboratory equipment periodically requires replacement to insure reliable test results and to maintain rigorous laboratory certification standards.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	213,851				213,851
<b>Total Revenue</b>		<b>213,851</b>				<b>213,851</b>
<b>Expense</b>						
	Equipment	213,851				213,851
<b>Total Expense</b>		<b>213,851</b>				<b>213,851</b>
<b>Obligated to Date:</b>						<b>212,514</b>
						<b>99.37 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **31-101**  
 Project Title: **Lake Gaston Water Protection**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: System Acquisition or Upgrade      Budget Year: 2017  
 Year Identified: 2005  
 Start Date:      Project Status: Fully Funded  
 Est. Completion Date: 7/1/2020      Region:

---

## Description:

This project will provide for the purchases of land in the North Landing Watershed.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
------	---------------	---------------	------------

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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	891,529				<b>891,529</b>
<b>Total Revenue</b>		<b>891,529</b>				<b>891,529</b>
<b>Expense</b>						
	Land Acquisition	891,529				<b>891,529</b>
<b>Total Expense</b>		<b>891,529</b>				<b>891,529</b>
					<b>Obligated to Date:</b>	<b>500,000</b>
						<b>56.08 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **18-150**  
 Project Title: **Maintenance & Operations Equipment Replacement**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Equipment Budget Year: 2017  
 Year Identified: 2011  
 Start Date: 7/1/2011 Project Status: Fully Funded  
 Est. Completion Date: 6/1/2017 Region:

---

**Description:**

This project will provide for the replacement of equipment for the Maintenance & Operations facility.

**Justification:**

Replace aging and non-replaced yard equipment at the Maintenance & Operations facility to optimize field operations.

**Comments:**

Remaining funds of \$77,516 to be combined with capital portion of sewer operating budget to purchase replacement vehicles.

**Project Forecast**

Year	Total Expense	Total Revenue	Difference
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**Project Details 2017**

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	1,550,000				1,550,000
<b>Total Revenue</b>		<b>1,550,000</b>				<b>1,550,000</b>
<b>Expense</b>						
	Equipment	1,550,000				1,550,000
<b>Total Expense</b>		<b>1,550,000</b>				<b>1,550,000</b>
<b>Obligated to Date:</b>						<b>1,550,000</b>
						<b>100.00 %</b>

**Related Projects**

**Operating Budget Impact**

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: **2017**  
 Year Identified: **2013**  
 Start Date: **7/1/2013**      Project Status: **Fully Funded**  
 Est. Completion Date: **6/1/2017**      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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	772,155				772,155
	Cash - Utilities	149,845				149,845
<b>Total Revenue</b>		<b>922,000</b>				<b>922,000</b>
<b>Expense</b>						
	Construction	922,000				922,000
<b>Total Expense</b>		<b>922,000</b>				<b>922,000</b>
					<b>Obligated to Date:</b>	<b>197,535</b>
						<b>21.42 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2009  
 Start Date: 7/1/2009      Project Status: Fully Funded  
 Est. Completion Date: 6/1/2017      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. Additionally, 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	6,000,000				<b>6,000,000</b>
<b>Total Revenue</b>		<b>6,000,000</b>				<b>6,000,000</b>
<b>Expense</b>						
	Design & Engineering	750,000				<b>750,000</b>
	Construction	4,650,000				<b>4,650,000</b>
	Land Acquisition	100,000				<b>100,000</b>
	Other	500,000				<b>500,000</b>
<b>Total Expense</b>		<b>6,000,000</b>				<b>6,000,000</b>
<b>Obligated to Date:</b>						<b>4,567,016</b>
						<b>76.12 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/5/2009 Region:  
 Est. Completion Date: 6/30/2017

## 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:

Design is complete, however, additional funding was needed to proceed with construction due to higher than anticipated costs for easement acquisitions, unit construction costs, and soil costs. 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.

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.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	3,193,370				3,193,370
	Cash - Utilities	1,633,018				1,633,018
<b>Total Revenue</b>		<b>4,826,388</b>				<b>4,826,388</b>
<b>Expense</b>						
	Design & Engineering	466,500				466,500
	Construction	3,055,638				3,055,638
	Equipment	1,304,250				1,304,250
<b>Total Expense</b>		<b>4,826,388</b>				<b>4,826,388</b>
					<b>Obligated to Date:</b>	2,614,274
						54.17 %

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **40-120**  
 Project Title: **Northwest River WTP - Basin Cover Replacement**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/1/2008 Region:  
 Est. Completion Date:

---

## Description:

This project will replace the original settling basin and media filter protective covers at the Northwest River Water Treatment Plant.

## Justification:

Protective covers are required over the plant settling basins and media filters to limit algae growth which fouls RO membrane elements. The original covers were installed in 1998 and have a 10 year life expectancy.

## Comments:

Only project close-out remains to be completed.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	832,873				832,873
<b>Total Revenue</b>		<b>832,873</b>				<b>832,873</b>
<b>Expense</b>						
	Design & Engineering	35,000				35,000
	Construction	652,873				652,873
	Equipment	145,000				145,000
<b>Total Expense</b>		<b>832,873</b>				<b>832,873</b>
<b>Obligated to Date:</b>						<b>763,554</b>
						<b>91.68 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **05-190**  
 Project Title: **Oak Grove Elevated Tank Standpipe Replacement**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2015 Project Status: Fully Funded  
 Start Date: 7/1/2014 Region:  
 Est. Completion Date: 6/1/2017

---

## 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. The pipe is not in danger of imminent failure, but 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	200,000				<b>200,000</b>
<b>Total Revenue</b>		<b>200,000</b>				<b>200,000</b>
<b>Expense</b>						
	Equipment	200,000				<b>200,000</b>
<b>Total Expense</b>		<b>200,000</b>				<b>200,000</b>
<b>Obligated to Date:</b>						<b>55,000</b>
						<b>27.50 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **02-140**  
 Project Title: **Pump Station and Wet Well Upgrading - Phase IV**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2010 Project Status: Fully Funded  
 Start Date: 7/1/2012 Region:  
 Est. Completion Date: 6/1/2018

---

## Description:

This project will provide for the replacement of worn-out equipment to meet Department of Environmental Quality regulations.

## Justification:

Equipment in stations has a limited useful life. As a result it must be periodically replaced to ensure that the facilities remain in operation preventing sewer overflows. Structural repairs to buildings and structures are also periodically required.

## Comments:

Funds for this project have been combined with the capital portion of the sewer operating budget to replace pumps in FY 2015.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	300,000				300,000
<b>Total Revenue</b>		<b>300,000</b>				<b>300,000</b>
<b>Expense</b>						
	Equipment	300,000				300,000
<b>Total Expense</b>		<b>300,000</b>				<b>300,000</b>
<b>Obligated to Date:</b>						<b>299,676</b>
						<b>99.89 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2010  
 Start Date: 7/1/2013      Project Status: Fully Funded  
 Est. Completion Date: 1/1/2017      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:

Design is underway (90% complete). Task Order 3-N is routed for approval. This Task Order will complete design work and carry project through to construction. 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	4,160,450				4,160,450
	Cash - Utilities	1,210,920				1,210,920
<b>Total Revenue</b>		<b>5,371,370</b>				<b>5,371,370</b>
<b>Expense</b>						
	Construction	5,371,370				5,371,370
<b>Total Expense</b>		<b>5,371,370</b>				<b>5,371,370</b>
					<b>Obligated to Date:</b>	<b>3,798,154</b>
						<b>70.71 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number:	<b>27-120</b>		
Project Title:	<b>Sanitary Sewer Evaluation Study</b>		
Asset Type:			
Division:	<b>Public Utilities Capital Projects</b>		
Project Type:	Study	Budget Year:	2017
Year Identified:	2008		
Start Date:	7/1/2007	Project Status:	Fully Funded
Est. Completion Date:	7/1/2017	Region:	

---

## 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	7,655,606				7,655,606
	Cash - Utilities	834,874				834,874
	Fund Balance - Utilities	169,599				169,599
<b>Total Revenue</b>		<b>8,660,079</b>				<b>8,660,079</b>
<b>Expense</b>						
	Design & Engineering	6,404,708				6,404,708
	Construction	655,371				655,371
	Other	1,600,000				1,600,000
<b>Total Expense</b>		<b>8,660,079</b>				<b>8,660,079</b>
					<b>Obligated to Date:</b>	<b>7,164,993</b>
						<b>82.74 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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: 2017  
 Year Identified: 2013  
 Start Date: 7/1/2013 Project Status: Fully Funded  
 Est. Completion Date: 6/30/2019 Region:

## 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 install approximately 15,026 linear 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.

## Comments:

Funding of \$2,000,000 for FY 2016 has been appropriated for this project. This project is awaiting design and Notice to Proceed. The new system will result in a nominal increase to the annual operation and 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	1,798,519				1,798,519
	Cash - Utilities	2,874,459				2,874,459
<b>Total Revenue</b>		<b>4,672,978</b>				<b>4,672,978</b>
<b>Expense</b>						
	Construction	4,672,978				4,672,978
<b>Total Expense</b>		<b>4,672,978</b>				<b>4,672,978</b>
					<b>Obligated to Date:</b>	<b>610,648</b>
						<b>13.07 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **15-170**  
 Project Title: **Sewer Renewal: 18th Street**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2013  
 Start Date: 7/2/2016 Project Status: Fully Funded  
 Est. Completion Date: 6/2/2018 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:

The previous estimate has been revised to reflect most up to date quantities and pricing. Project to begin in July 2016.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	580,738				580,738
	Cash - Utilities	155,532				155,532
<b>Total Revenue</b>		<b>736,270</b>				<b>736,270</b>
<b>Expense</b>						
	Construction	736,270				736,270
<b>Total Expense</b>		<b>736,270</b>				<b>736,270</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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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: 2017  
 Year Identified: 2013 Project Status: Fully Funded  
 Start Date: 7/2/2016 Region:  
 Est. Completion Date: 6/1/2018

---

## Description:

This project will replace approximately 510 linear feet of 8" gravity sanitary sewer main between Guerriere and Ohio Streets.

## Justification:

TV inspection and excessive maintenance indicate severe deterioration requiring replacement.

## Comments:

The previous estimate has been increased (by approximately \$75,000) to reflect the most up to date quantities and pricing.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	214,000				214,000
	Cash - Utilities	74,823				74,823
<b>Total Revenue</b>		<b>288,823</b>				<b>288,823</b>
<b>Expense</b>						
	Construction	288,823				288,823
<b>Total Expense</b>		<b>288,823</b>				<b>288,823</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **29-170**  
 Project Title: **Sewer Renewal: Melton St.**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2013  
 Start Date: 7/2/2015 Project Status: Fully Funded  
 Est. Completion Date: 6/2/2018 Region:

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**Description:**

This project will provide for the replacement of approximately 480 feet of gravity sewer along the full length of Melton Street.

**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 \$29,844.

**Project Forecast**

Year	Total Expense	Total Revenue	Difference
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**Project Details 2017**

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	247,160				247,160
<b>Total Revenue</b>		<b>247,160</b>				<b>247,160</b>
<b>Expense</b>						
	Construction	247,160				247,160
<b>Total Expense</b>		<b>247,160</b>				<b>247,160</b>
<b>Obligated to Date:</b>						<b>58,017</b>
						<b>23.47 %</b>

**Related Projects**

**Operating Budget Impact**

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

Project Number: **32-120**  
 Project Title: **Sewer Renewal: SSES Implementation - Phase I**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/2/2010 Region:  
 Est. Completion Date: 6/30/2018

## 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:

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 the Public Works.

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.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	1,633,044				1,633,044
	Cash - Utilities	2,882,992				2,882,992
<b>Total Revenue</b>		<b>4,516,036</b>				<b>4,516,036</b>
<b>Expense</b>						
	Design & Engineering	200,000				200,000
	Construction	4,316,036				4,316,036
<b>Total Expense</b>		<b>4,516,036</b>				<b>4,516,036</b>
					<b>Obligated to Date:</b>	<b>2,372,822</b>
						<b>52.54 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

Project Number: **33-120**  
 Project Title: **Sewer Renewal: SSES Implementation - Phase II**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/1/2011 Region:  
 Est. Completion Date: 12/1/2018

## 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).

## Justification:

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 has been completed and recommends rebuilding Pump Station #107 and improving 930 feet of 10" force main upstream of Pump Station #107. (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 \$126,200.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	2,757,542				2,757,542
	Cash - Utilities	126,200				126,200
<b>Total Revenue</b>		<b>2,883,742</b>				<b>2,883,742</b>
<b>Expense</b>						
	Design & Engineering	202,000				202,000
	Construction	2,681,742				2,681,742
<b>Total Expense</b>		<b>2,883,742</b>				<b>2,883,742</b>
					<b>Obligated to Date:</b>	<b>662,000</b>
						<b>22.96 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **31-120**  
 Project Title: **Sewer System Repairs - Phase I**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/21/2007 Region:  
 Est. Completion Date:

---

## Description:

This project will provide funding to complete minor unanticipated sewer line and manhole replacement.

## Justification:

This project will replace sewer lines not currently identified that may occur as the result of problems experienced with leaks, cave-ins, or other operational issues.

## Comments:

Ongoing annual repairs to the gravity sewer collection system is underway. The most recent repairs include: sewer replacement on Liberty, main line valve repair at Pump Station # 165, gravity sewer lining on Atlantic Avenue, and gravity sewer lining in Fernwood Farms. (See project # 04-140 for Phase II).

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	1,696,100				<b>1,696,100</b>
<b>Total Revenue</b>		<b>1,696,100</b>				<b>1,696,100</b>
<b>Expense</b>						
	Construction	1,696,100				<b>1,696,100</b>
<b>Total Expense</b>		<b>1,696,100</b>				<b>1,696,100</b>
<b>Obligated to Date:</b>						<b>1,695,900</b>
						<b>99.99 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **04-140**  
 Project Title: **Sewer System Repairs - Phase II**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2010 Project Status: Fully Funded  
 Start Date: 7/21/2012 Region:  
 Est. Completion Date: 7/1/2018

---

## Description:

This provide will provide funding for minor unanticipated sewer line and manhole replacement.

## Justification:

This project will replace sewer lines not currently identified that may occur as the result of problems experienced with leaks, cave-ins, or other operational issues.

## Comments:

Allocated funds will be used once Phase I is completed. (See project # 31-120 for Phase I).

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	250,000				<b>250,000</b>
<b>Total Revenue</b>		<b>250,000</b>				<b>250,000</b>
<b>Expense</b>						
	Construction	250,000				<b>250,000</b>
<b>Total Expense</b>		<b>250,000</b>				<b>250,000</b>
<b>Obligated to Date:</b>						<b>249,628</b>
						<b>99.85 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

Project Number: **45-120**  
 Project Title: **South Norfolk Improvements**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/1/2008 Region:  
 Est. Completion Date: 7/1/2019

## 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	2,751,638				2,751,638
	Cash - Utilities	98,362				98,362
<b>Total Revenue</b>		<b>2,850,000</b>				<b>2,850,000</b>
<b>Expense</b>						
	Design & Engineering	2,850,000				2,850,000
<b>Total Expense</b>		<b>2,850,000</b>				<b>2,850,000</b>
<b>Obligated to Date:</b>						<b>959,104</b>
						<b>33.65 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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: 2017  
 Year Identified: 2014  
 Start Date: 12/1/2015 Project Status: Fully Funded  
 Est. Completion Date: 6/30/2017 Region:

## Description:

This project will install approximately 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 the City Council as part of the Cost Participation Program. This project may also install water mains in a portion of the same area.

## 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:

Project was identified in the FY 2015 CIP as a sub-project. Project is awaiting project design and Notice to Proceed. New gravity sanitary sewer system will result in a nominal increase to the annual operation and maintenance costs. (Location: Western Branch 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 \$100,116.

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Cash - Utilities	2,613,186				2,613,186
<b>Total Revenue</b>		<b>2,613,186</b>				<b>2,613,186</b>
<b>Expense</b>						
	Construction	2,613,186				2,613,186
<b>Total Expense</b>		<b>2,613,186</b>				<b>2,613,186</b>
<b>Obligated to Date:</b>						<b>330,383</b>
						<b>12.64 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **71-120**  
 Project Title: **Water Renewals: Waterline Upgrades - Phase I**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/1/2009 Region:  
 Est. Completion Date: 7/1/2021

---

## Description:

This project will provide for replacement of water mains and appurtenances with adequate sizes and proper materials at various locations throughout the City.

## Justification:

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

## Comments:

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	2,030,558				<b>2,030,558</b>
<b>Total Revenue</b>		<b>2,030,558</b>				<b>2,030,558</b>
<b>Expense</b>						
	Construction	2,030,558				<b>2,030,558</b>
<b>Total Expense</b>		<b>2,030,558</b>				<b>2,030,558</b>
<b>Obligated to Date:</b>						<b>318,229</b>
						<b>15.67 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **24-120**  
 Project Title: **Water System Renewal - Phase I**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2008 Project Status: Fully Funded  
 Start Date: 7/1/2009 Region:  
 Est. Completion Date: 7/1/2018

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## 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:

Recently replaced water main along Herrington Lane and contracted curb&gutter work at Battlefield and Oak Grove. Additional projects are currently in the planning process. These projects will include 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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	893,000				<b>893,000</b>
<b>Total Revenue</b>		<b>893,000</b>				<b>893,000</b>
<b>Expense</b>						
	Construction	893,000				<b>893,000</b>
<b>Total Expense</b>		<b>893,000</b>				<b>893,000</b>
<b>Obligated to Date:</b>						<b>500,044</b>
						<b>56.00 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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Project Number: **21-150**  
 Project Title: **Water System Renewal - Phase II**  
 Asset Type:  
 Division: **Public Utilities Capital Projects**  
 Project Type: Replacement Budget Year: 2017  
 Year Identified: 2011  
 Start Date: 7/21/2012 Project Status: Fully Funded  
 Est. Completion Date: 7/1/2021 Region:

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## Description:

This project will provide funding for small capital replacement of water lines. Typically, these replacements are not anticipated.

## Justification:

This project is needed to replace small water lines and antiquated appurtenances not currently identified that may occur as the result of problems experienced with leaks or other operational issues. Replacement criteria includes excessive repairs of existing water line, low water pressure in area, age of the system, and type of pipe.

## Comments:

Allocated funds will be used once Phase I is completed. (See project # 24-120 for Phase I).

## Project Forecast

Year	Total Expense	Total Revenue	Difference
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## Project Details 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Fund Balance - Utilities	150,000				150,000
<b>Total Revenue</b>		<b>150,000</b>				<b>150,000</b>
<b>Expense</b>						
	Construction	150,000				150,000
<b>Total Expense</b>		<b>150,000</b>				<b>150,000</b>
<b>Obligated to Date:</b>						<b>0</b>
						<b>0.00 %</b>

## Related Projects

## Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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# Project Summary

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: 2017  
 Year Identified: 2008  
 Start Date: 7/1/2008      Project Status: Fully Funded  
 Est. Completion Date:      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 2017

Account	Description	Prior Years	2017	2018 - 21	Future Years	Total Amount
<b>Revenue</b>						
	Revenue Bonds - Utility Fund	5,220,500				5,220,500
	Fund Balance - Utilities	3,077,500				3,077,500
<b>Total Revenue</b>		<b>8,298,000</b>				<b>8,298,000</b>
<b>Expense</b>						
	Construction	8,298,000				8,298,000
<b>Total Expense</b>		<b>8,298,000</b>				<b>8,298,000</b>
<b>Obligated to Date:</b>						<b>2,296,283</b>
						<b>27.67 %</b>

## Related Projects

### Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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