

Project Summary

Project Number: **53-120**
 Project Title: **Automated Meter Reading Equipment and Software**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2007 Project Status: Funded
 Start Date: 7/1/2007 Region:
 Est. Completion Date: 6/1/2020

Description:

This project replaces the current meter reading equipment and software used to record customer meter readings and initiate billing. The project will involve new technologies and requires retrofitting current water meters.

Justification:

The current equipment is obsolete and will not be supported by the vendor. Replacement is needed to ensure Public Utilities maintains the capability to generate timely and accurate customer invoices.

Comments:

The project allows for remote control of water meters and better detection of water leaks. It improves department productivity since meter readers will not manually read meters. Finally, the automated system will allow for monthly billing so that billing and customer payments are more regular.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities	1,399,624			12,000,000	13,399,624
Total Revenue		1,399,624			12,000,000	13,399,624
Expense						
	Equipment	1,399,624			12,000,000	13,399,624
Total Expense		1,399,624			12,000,000	13,399,624
Obligated to Date:						49,073
						0.37 %

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: 2016
 Year Identified: 2013
 Start Date: 7/1/2017 Project Status: Funded
 Est. Completion Date: 12/1/2018 Region:

Description:

This project will install approximately 7,700 feet of 16" water main from Mt. Pleasant Road to Elbow Road.

Justification:

This project that will provide an additional water main loop in this area and improve system hydraulics, reliability, and fire protection in this area of the city.

Comments:

Funding pushed out to FY 2018

Project Forecast

Year	Total Expense	Total Revenue	Difference
2017			0
2018	500,000	500,000	0
2019	2,586,749	2,586,749	0
	3,086,749	3,086,749	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund			3,086,749		3,086,749
Total Revenue				3,086,749		3,086,749
Expense						
	Design & Engineering			913,135		913,135
	Construction			1,801,412		1,801,412
	Other			372,202		372,202
Total Expense				3,086,749		3,086,749
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **20-140**
 Project Title: **Deep Creek Pump Station Upgrade**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2016**
 Year Identified: **2011**
 Start Date: **6/1/2011** Project Status: **Funded**
 Est. Completion Date: **6/1/2017** Region:

Description:

Install New Pumps, 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
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Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities	232,127			1,878,123	2,110,250
Total Revenue		232,127			1,878,123	2,110,250
Expense						
	Design & Engineering	232,127				232,127
	Construction				1,110,836	1,110,836
	Equipment				767,287	767,287
Total Expense		232,127			1,878,123	2,110,250
Obligated to Date:						210,127
						9.96 %

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: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: 7/1/2015 Region:
 Est. Completion Date: 6/30/2017

Description:

Renew and replace 4,926 linear feet of 4 inch and 12 inch force main between Pump Station No.110 and 142. The 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.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	1,000,000	1,000,000	0
2017	4,238,700	4,238,700	0
	5,238,700	5,238,700	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		1,000,000	4,238,700		5,238,700
Total Revenue			1,000,000	4,238,700		5,238,700
Expense						
	Design & Engineering		683,000			683,000
	Construction		317,000	4,238,700		4,555,700
Total Expense			1,000,000	4,238,700		5,238,700
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **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: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: 7/2/2018 Region:
 Est. Completion Date: 6/1/2020

Description:

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 sewer facilities.

Comments:

The project is being delayed until US Environmental Agency issues final consent decree to HRSD (anticipated in October 2017).
 Project to be funded in FY2019 and FY2020

Project Forecast

Year	Total Expense	Total Revenue	Difference
2017			0
	0	0	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund				5,000,000	5,000,000
Total Revenue					5,000,000	5,000,000
Expense						
	Construction				5,000,000	5,000,000
Total Expense					5,000,000	5,000,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **06-100**
 Project Title: **Greenbrier Pkwy. - Force Main Upgrade**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2009 Project Status: Funded
 Start Date: 7/2/2009 Region:
 Est. Completion Date: 6/1/2016

Description:

The project is for the construction of a new force main along Greenbrier Parkway between Eden Way North and Volvo Parkway. The new force main will connect to the existing force mains at these two locations.

Justification:

Allows flows from Greenbrier pump stations to pump to HRSD at either Military Hwy or Kempsville Road.

Comments:

Project plans are complete. Greenbrier TIF (Streetscape project) has completed acquisitions on east side of Greenbrier Parkway, now allowing this project to move forward with easement acquisition. H & F will send plats for review & acquisition of needed easements. Project needs an additional \$1m to fund construction. This project will allow redirection of flows from the Volvo Parkway force main, allowing for replacement of a portion of the Volvo Parkway SFM.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	1,000,000	1,000,000	0
	1,000,000	1,000,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		1,000,000			1,000,000
	Cash - Utilities	300,389				300,389
Total Revenue		300,389	1,000,000			1,300,389
Expense						
	Design & Engineering	45,000				45,000
	Construction	255,389	1,000,000			1,255,389
Total Expense		300,389	1,000,000			1,300,389
					Obligated to Date:	86,100
						6.62 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **38-200**
 Project Title: **Lake Gaston WTP - Expansion**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/2/2015 Project Status: Funded
 Est. Completion Date: 7/1/2023 Region:

Description:

This project increases the capacity of the Lake Gaston Water Treatment Plant in order to improve reliability and reduce the City's reliance on expensive water provided by neighboring cities.

Justification:

Water can be provided from the Lake Gaston Water Treatment Plant at a lower cost than buying bulk finished water from Portsmouth. It is necessary to initiate engineering design of the plant expansion so the plant can provide water currently purchased under the bulk water contract with Portsmouth.

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. The final design is expected to begin in July 2018 and will take two years. Construction could start as early as mid 2020.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	1,000,000	1,000,000	0
	1,000,000	1,000,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		1,000,000		59,000,000	60,000,000
Total Revenue			1,000,000		59,000,000	60,000,000
Expense						
	Design & Engineering		1,000,000		4,000,000	5,000,000
	Construction				55,000,000	55,000,000
Total Expense			1,000,000		59,000,000	60,000,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **21-130**
 Project Title: **Lake Gaston WTP - Membrane Replacement - Phase II**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2012
 Start Date: 7/2/2012 Project Status: Funded
 Est. Completion Date: 6/2/2021 Region:

Description:

This project will replace 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. Each funding "Phase" is a cycle comprised of five separate appropriations of \$345,000. Following the fifth appropriation, a new funding cycle (phase) is begun. Phase I was completed in spring FY 2014-15. This project is Phase II.

Comments:

Installation of replacement modules for a complete membrane change-out for the Lake Gaston Water Treatment Plant was completed in late FY 2013-14. The full-scale plant evaluation of Aluminum Chlorhydrate was begun in early FY 2014-15. Performance thus far remains very good. On April 28, 2015, Council approved the department's request to close Phase I (CIB# 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
	2,200,000	2,200,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities	1,758,385		2,200,000		3,958,385
Total Revenue		1,758,385		2,200,000		3,958,385
Expense						
	Equipment	1,758,385		2,200,000		3,958,385
Total Expense		1,758,385		2,200,000		3,958,385
Obligated to Date:						1,725,904
						43.60 %

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: Budget Year: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: Region:
 Est. Completion Date:

Description:

This project addresses the need to continuously 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 2016 include replacing chemical feed pumps (\$620,000), recoating 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
2016	1,750,000	1,750,000	0
2017	620,000	620,000	0
2018	500,000	500,000	0
2019	500,000	500,000	0
2020	500,000	500,000	0
	3,870,000	3,870,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities		1,750,000	2,120,000		3,870,000
Total Revenue			1,750,000	2,120,000		3,870,000
Expense						
	Design & Engineering		175,000	200,000		375,000
	Construction		550,000	950,000		1,500,000
	Equipment		1,025,000	970,000		1,995,000
Total Expense			1,750,000	2,120,000		3,870,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **38-120**
 Project Title: **Military Hwy. - 36" Water Main**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2010 Project Status: Funded
 Start Date: 7/1/2010 Region:
 Est. Completion Date: 6/1/2018

Description:

Install approximately 4,200 feet of 36" water main from Enterprise Circle at the terminus of the Lake Gaston 36" water main to Galberry Road.

Justification:

To extend the 36-inch water main installed with the Lake Gaston Water Treatment Plant project and improve system hydraulics in this area of the City.

Comments:

Final plans sent in Aug 29, 2013 for signature. Revisions pending for the Director. Change order #1 under review.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2017	1,000,000	1,000,000	0
	1,000,000	1,000,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	2,627,000		1,000,000		3,627,000
Total Revenue		2,627,000		1,000,000		3,627,000
Expense						
	Design & Engineering	350,000				350,000
	Construction	2,027,000		1,000,000		3,027,000
	Other	250,000				250,000
Total Expense		2,627,000		1,000,000		3,627,000
Obligated to Date:						365,423
						10.08 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **28-200**
 Project Title: **Norfolk Highlands Elevated Tank Rehabilitation**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Renovation or Rehabilitation Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/1/2018 Project Status: Funded
 Est. Completion Date: 6/30/2019 Region:

Description:

Paint interior and exterior surfaces of the Norfolk Highlands elevated water tank and provide minor structural repairs. The project also includes minor structural repairs, installation of a mixing system, upgrading safety devices, and installing water quality monitoring equipment.

Justification:

Repairs identified on periodic inspection of tanks.

Comments:

The paint coating systems on water storage tanks fade with age and eventually expose the underlying steel to corrosion. Periodic recoating and repair extends the useful life of the tank.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities				925,000	925,000
Total Revenue					925,000	925,000
Expense						
	Design & Engineering				125,000	125,000
	Construction				800,000	800,000
Total Expense					925,000	925,000
					Obligated to Date:	0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **54-120**
 Project Title: **Northwest River WTP - 30" Raw Water Main**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2009 Project Status: Funded
 Start Date: 7/5/2009 Region:
 Est. Completion Date: 11/3/2015

Description:

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.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	759,877	759,877	0
	759,877	759,877	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	2,546,709	759,877			3,306,586
	Cash - Utilities	1,519,802				1,519,802
Total Revenue		4,066,511	759,877			4,826,388
Expense						
	Design & Engineering	466,500				466,500
	Construction	2,295,761	759,877			3,055,638
	Equipment	1,304,250				1,304,250
Total Expense		4,066,511	759,877			4,826,388
					Obligated to Date:	641,507
						13.29 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

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: 2016
 Year Identified: 2010 Project Status: Funded
 Start Date: 7/2/2010 Region:
 Est. Completion Date: 6/2/2021

Description:

This project will replace membranes use in the NW River water treatment plant.

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
	1,625,000	1,625,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities	400,000		1,625,000		2,025,000
Total Revenue		400,000		1,625,000		2,025,000
Expense						
	Equipment	400,000		1,625,000		2,025,000
Total Expense		400,000		1,625,000		2,025,000
Obligated to Date:						160,721
						7.94 %

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: 2016
 Year Identified: 2008 Project Status: Funded
 Start Date: 2/2/2008 Region:
 Est. Completion Date: 6/2/2015

Description:

This project includes replacing and rehabilitation aging equipment in order to ensure safe and effective operations of the water treatment plant. Assessments are conducted periodically to identify critical tasks.

Justification:

The NW River 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) replace traveling water screens at the water intake - \$380,000, (2) replace hypochlorite tanks - \$306,000, and (3) replace switch gears and motor control centers - \$1.55 million.

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
	2,000,000	2,000,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	5,732,295				5,732,295
	Cash - Utilities	1,442,705		2,000,000	1,750,000	5,192,705
	Total Revenue	7,175,000		2,000,000	1,750,000	10,925,000
Expense						
	Design & Engineering	175,000				175,000
	Construction	7,000,000				7,000,000
	Equipment			2,000,000	1,750,000	3,750,000
	Total Expense	7,175,000		2,000,000	1,750,000	10,925,000
					Obligated to Date:	4,934,467
						45.17 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

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: 2016
 Year Identified: 2014
 Start Date: 7/1/2015 Project Status: Funded
 Est. Completion Date: 6/30/2017 Region:

Description:

Remove, dispose of, and replace chemical storage tanks at the 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
2016	300,000	300,000	0
2017	900,000	900,000	0
	1,200,000	1,200,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		300,000	900,000		1,200,000
Total Revenue			300,000	900,000		1,200,000
Expense						
	Design & Engineering		300,000			300,000
	Construction			900,000		900,000
Total Expense			300,000	900,000		1,200,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **29-200**
 Project Title: **Northwest River WTP - Replace Ground Storage Tank**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Budget Year: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: Region:
 Est. Completion Date:

Description:

Demolish and then replace 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 is not weather tight. A second storage tank is still in good condition, but does not have the capacity to allow optimal operation of the water treatment plant. Because the damaged tank's walls and roof system were tied together during the construction process, it does not appear possible to simply replace the roof without undermining the structural integrity of the tank walls.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities				3,200,000	3,200,000
Total Revenue					3,200,000	3,200,000
Expense						
	Design & Engineering				320,000	320,000
	Construction				2,880,000	2,880,000
Total Expense					3,200,000	3,200,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **36-200**
 Project Title: **Northwest River WTP - Riverbank Filtration System**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/1/2015 Project Status: Funded
 Est. Completion Date: 6/30/2018 Region:

Description:

Initially this project will evaluate the feasibility of placing a riverbank filtration system at the NW River water treatment plant. The study would determine whether available technology is suitable for conditions existing at NW 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 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 natural filtration of surrounding soils, water from the river would seep into the reservoir; the natural buffer between the two would result in fresh water from the brackish river. If the study indicates riverbank filtration is cost effective, additional funding will be required to construct the system.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities				175,000	175,000
Total Revenue						175,000
Expense						
	Design & Engineering				175,000	175,000
Total Expense						175,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **39-120**
 Project Title: **Raw Water Transmission Main**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2016
 Year Identified: 2009
 Start Date: 2/2/2009 Project Status: Funded
 Est. Completion Date: 10/1/2016 Region:

Description:

This project provides for installation of approximately 9 miles of 36-inch 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 ensure that the City is able to draw it's 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 requires an additional \$7 million to complete design and construction. Much of the increased cost is related to cost inflation that occurred after the original estimates (1990s).

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
	7,000,000	7,000,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	6,000,000		7,000,000		13,000,000
	Cash - Utilities	9,575,000				9,575,000
	Total Revenue	15,575,000		7,000,000		22,575,000
Expense						
	Design & Engineering	1,200,000				1,200,000
	Construction	14,375,000		7,000,000		21,375,000
	Total Expense	15,575,000		7,000,000		22,575,000

Obligated to Date: 15,534,621
 68.81 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **23-170**
 Project Title: **Sewer and Water Renewal: Elbyrne Dr.**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: 7/2/2018 Region:
 Est. Completion Date: 6/3/2019

Description:

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 to begin in July 2018.

Project Forecast

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

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund			2,155,000		2,155,000
Total Revenue				2,155,000		2,155,000
Expense						
	Construction			2,155,000		2,155,000
Total Expense				2,155,000		2,155,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **35-170**
 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: 2016
 Year Identified: 2013
 Start Date: 7/1/2013 Project Status: Funded
 Est. Completion Date: 6/30/2019 Region:

Description:

This project provides improvements to the existing gravity sewer system in the Indian River area, including improvements to Pump Station 3.

Justification:

The Sanitary Sewer Evaluation Study (SSES) required by DEQ revealed deficiencies in the sewer system in the Indian River area. The DEQ consent order requires that the City 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 FY2016 has been appropriated for this project.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	2,000,000	2,000,000	0
	2,000,000	2,000,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		2,000,000			2,000,000
	Cash - Utilities	2,672,978				2,672,978
Total Revenue		2,672,978	2,000,000			4,672,978
Expense						
	Construction	2,672,978	2,000,000			4,672,978
Total Expense		2,672,978	2,000,000			4,672,978
					Obligated to Date:	156,702
						3.35 %

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: 2016
 Year Identified: 2013
 Start Date: 7/1/2013 Project Status: Funded
 Est. Completion Date: 6/1/2021 Region:

Description:

Replace 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 consent order issued by DEQ. This project addresses compliance with the consent order.

Comments:

Potential projects are being evaluated based on annual MOM audit. Per the annual MOM audit, a gravity connection to Winnie Drive is currently under way.

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
	5,000,000	5,000,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund			5,000,000	1,000,000	6,000,000
	Cash - Utilities	2,000,000				2,000,000
	Total Revenue	2,000,000		5,000,000	1,000,000	8,000,000
Expense						
	Design & Engineering	300,000		400,000	100,000	800,000
	Construction	1,700,000		4,600,000	900,000	7,200,000
	Total Expense	2,000,000		5,000,000	1,000,000	8,000,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **35-200**
 Project Title: **Sewer Pump Station Safety Improvements**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2016**
 Year Identified: **2014**
 Start Date: **7/1/2015** Project Status: **Funded**
 Est. Completion Date: Region:

Description:

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

Justification:

Project will replace fixed ladders, platforms and various hardware that are subjected to corrosive environments. There are 270 pump stations throughout the City.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	500,000	500,000	0
2017	500,000	500,000	0
2018	500,000	500,000	0
2019	500,000	500,000	0
2020	500,000	500,000	0
	2,500,000	2,500,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities		500,000	2,000,000		2,500,000
Total Revenue			500,000	2,000,000		2,500,000
Expense						
	Design & Engineering		50,000	200,000		250,000
	Construction		450,000	1,800,000		2,250,000
Total Expense			500,000	2,000,000		2,500,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **15-170**
 Project Title: **Sewer Renewal: 18th Street**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/2/2016 Project Status: Funded
 Est. Completion Date: 6/2/2018 Region:

Description:

Renew or replace 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:

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
2016	736,270	736,270	0
	736,270	736,270	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		580,738			580,738
	Cash - Utilities		155,532			155,532
Total Revenue			736,270			736,270
Expense						
	Construction		736,270			736,270
Total Expense			736,270			736,270
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **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: 2016
 Year Identified: 2013
 Start Date: 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). Work to be performed in designated sewer basins based on priority approved by 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:
 (a) Decatur Street Sewer Renewal for replacement of 3,760 feet of gravity sewer mains between Guerrier Street and Holly Avenue (\$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).

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	3,061,609	3,061,609	0
2017	1,000,000	1,000,000	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
	14,061,609	14,061,609	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		3,000,000	11,000,000	263,000,000	277,000,000
	Cash - Utilities		61,609			61,609
Total Revenue			3,061,609	11,000,000	263,000,000	277,061,609
Expense						
	Construction		3,061,609	11,000,000	263,000,000	277,061,609
Total Expense			3,061,609	11,000,000	263,000,000	277,061,609
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **18-170**
 Project Title: **Sewer Renewal: Chesapeake Ave. (Guerriere to Ohio Sewer)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/2/2016 Project Status: Funded
 Est. Completion Date: 6/1/2018 Region:

Description:

Replace approximately 510 linear feet of 8-inch gravity sanitary sewer main between Guerriere and Ohio Streets.

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

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

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	288,823	288,823	0
	288,823	288,823	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		214,000			214,000
	Cash - Utilities		74,823			74,823
Total Revenue			288,823			288,823
Expense						
	Construction		288,823			288,823
Total Expense			288,823			288,823
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **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: 2016
 Year Identified: 2014
 Start Date: 7/2/2016 Project Status: Funded
 Est. Completion Date: 6/1/2018 Region:

Description:

Renew or replace 3100 feet of gravity sewer main and appurtenances on Liberty St. from Collingswood Ave. to 18th St., with a branch to 22nd St and 20th St. This will include one railroad crossing.

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

Project to begin in July 2016.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	1,389,259	1,389,259	0
	1,389,259	1,389,259	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		1,389,259			1,389,259
Total Revenue			1,389,259			1,389,259
Expense						
	Construction		1,389,259			1,389,259
Total Expense			1,389,259			1,389,259

Obligated to Date: 0
 0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **33-170**
 Project Title: **Sewer Renewal: Raleigh Place (Pump Station #7 Basin)**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/2/2017 Project Status: Funded
 Est. Completion Date: 7/1/2019 Region:

Description:

Renew approximately 7,864 linear feet of gravity sanitary sewer main (between 8" and 10") and appurtenances in the Raleigh Place Subdivision in South Norfolk from Rosemont Ave. to the intersection of Burrow Ave. and Bainbridge Blvd.

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

Previous estimate has been revised by \$856,000 to reflect slightly larger replacement area, increased pipe size and updated pricing.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2018			0
	0	0	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund				4,258,756	4,258,756
Total Revenue					4,258,756	4,258,756
Expense						
	Construction				4,258,756	4,258,756
Total Expense					4,258,756	4,258,756
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **32-120**
 Project Title: **Sewer Renewal: SSES Implementation - Phase I**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2010 Project Status: Funded
 Start Date: 7/2/2010 Region:
 Est. Completion Date: 12/2/2017

Description:

This project will address two distinct service areas: Indian River and Rosemont Ave. Plans will replace deficient sanitary sewer components identified as critical in the Sewer System Evaluation Survey (SSES). The project will improve the gravity sewer system of the Indian River service area by replacing pipes at Pump Station #7 and those located in swampy areas. The project also includes improvements on Rosemont Ave. (South Norfolk).

Justification:

TV inspection and excessive maintenance indicates severe deterioration requiring replacement.

Comments:

This project was previously noted as fully funded, but only included design costs for the Rosemont Ave. portion. An additional \$500,000 is required for construction of improvements, wetland acquisition, and permanent sewer maintenance easements. Design of Rosemont Ave. improvements is nearing completion. Contract is currently under review. Change order #3 is pending.

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	500,000	500,000	0
	500,000	500,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund	1,986,789				1,986,789
	Cash - Utilities	2,029,247	500,000			2,529,247
	Total Revenue	4,016,036	500,000			4,516,036
Expense						
	Design & Engineering	200,000				200,000
	Construction	3,816,036	500,000			4,316,036
	Total Expense	4,016,036	500,000			4,516,036
					Obligated to Date:	1,608,271
						35.61 %

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: 2016
 Year Identified: 2008 Project Status: Funded
 Start Date: 7/1/2017 Region:
 Est. Completion Date: 12/1/2018

Description:

Renew or replace 2,000 feet of 8" gravity sewer main and appurtenances on Restart Ave. and Westwood Ave., and a branch to Bainbridge Blvd.

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	1,106,000	1,106,000	0
	1,106,000	1,106,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund			1,106,000		1,106,000
Total Revenue				1,106,000		1,106,000
Expense						
	Construction			1,106,000		1,106,000
Total Expense				1,106,000		1,106,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

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: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: 7/1/2017 Region:
 Est. Completion Date: 7/2/2018

Description:

Replace approximately 1,900 feet of gravity sewer along the full length of the Orville Ave. 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
	1,351,000	1,351,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund			1,351,000		1,351,000
Total Revenue				1,351,000		1,351,000
Expense						
	Construction			1,351,000		1,351,000
Total Expense				1,351,000		1,351,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **25-200**
 Project Title: **Unserved Areas/Cost Participation - Phase II**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Addition or Expansion Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/1/2015 Project Status: Funded
 Est. Completion Date: Region:

Description:

Provide 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: 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
2016	164,900	164,900	0
2017	1,483,300	1,483,300	0
2018	85,500	85,500	0
2019	769,500	769,500	0
	2,503,200	2,503,200	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund		164,900	2,338,300		2,503,200
Total Revenue			164,900	2,338,300		2,503,200
Expense						
	Design & Engineering		164,900	85,500		250,400
	Construction			2,252,800		2,252,800
Total Expense			164,900	2,338,300		2,503,200
					Obligated to Date:	0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **26-200**
 Project Title: **Water Control Laboratory - Upgrade HVAC**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: 7/1/2015 Region:
 Est. Completion Date: 6/30/2016

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
	480,000	480,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities			480,000		480,000
Total Revenue				480,000		480,000
Expense						
	Design & Engineering			100,000		100,000
	Construction			60,000		60,000
	Equipment			320,000		320,000
Total Expense				480,000		480,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **31-200**
 Project Title: **Water Production Security System Upgrades**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Equipment Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/1/2017 Project Status: Funded
 Est. Completion Date: 6/30/2018 Region:

Description:

Upgrade water treatment plant security systems based on evaluation of existing conditions.

Justification:

Existing security coverage of Water Production facilities is limited. Sites lacking security will be provided with surveillance equipment and existing equipment will be upgraded.

Comments:

Includes evaluation and design costs.

Project Forecast

Year	Total Expense	Total Revenue	Difference
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Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities				200,000	200,000
Total Revenue						200,000
Expense						
	Design & Engineering				200,000	200,000
Total Expense						200,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **24-200**
 Project Title: **Water Renewal: Buchanan St.**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: 7/2/2016 Region:
 Est. Completion Date: 7/2/2017

Description:

Replace 1100 feet of existing antiquated and undersized water main on Buchanan Street with a minimum 8" watermain.

Justification:

Existing water main is antiquated and undersized; replacement is need to restore functional service to customers.

Comments:

New project

Project Forecast

Year	Total Expense	Total Revenue	Difference
2016	256,870	256,870	0
	256,870	256,870	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities		256,870			256,870
Total Revenue			256,870			256,870
Expense						
	Design & Engineering		59,278			59,278
	Construction		197,592			197,592
Total Expense			256,870			256,870
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **14-160**
 Project Title: **Water Renewals: Waterline Upgrading - Phase II**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Replacement Budget Year: 2016
 Year Identified: 2014 Project Status: Funded
 Start Date: 7/1/2014 Region:
 Est. Completion Date: 7/1/2021

Description:

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 Chesapeake; replacement cost is approximately \$200/foot (\$1 million/mile). The goal is funding 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
	2,750,000	2,750,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Revenue Bonds - Utility Fund			2,250,000	2,500,000	4,750,000
	Cash - Utilities	1,500,000		500,000	3,250,000	5,250,000
	Total Revenue	1,500,000		2,750,000	5,750,000	10,000,000
Expense						
	Construction	1,500,000		2,750,000	5,750,000	10,000,000
	Total Expense	1,500,000		2,750,000	5,750,000	10,000,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **32-200**
 Project Title: **Water Residuals Disposal**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: Study Budget Year: 2016
 Year Identified: 2014
 Start Date: 7/1/2018 Project Status: Funded
 Est. Completion Date: 6/30/2019 Region:

Description:

Long-term solution to the disposal of residual (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 to 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 and long-term solution is required.

Comments:

Residuals include organic matter and minerals removed from raw water during the treatment process. Budget for 2019 includes only evaluation; future plans will need to address cost of recommendations of the study.

Project Forecast

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

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities			320,000		320,000
Total Revenue				320,000		320,000
Expense						
	Design & Engineering			320,000		320,000
Total Expense				320,000		320,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **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: 2016
 Year Identified: 2014
 Start Date: 7/1/2015 Project Status: Funded
 Est. Completion Date: 7/1/2016 Region:

Description:

Upgrade 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 work 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
	820,000	820,000	0

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities			820,000		820,000
	Total Revenue			820,000		820,000
Expense						
	Design & Engineering			75,000		75,000
	Equipment			745,000		745,000
	Total Expense			820,000		820,000
				Obligated to Date:		0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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Project Summary

Project Number: **33-200**
 Project Title: **Western Branch Elevated Tank Rehabilitation**
 Asset Type:
 Division: **Public Utilities Capital Projects**
 Project Type: **Renovation or Rehabilitation** Budget Year: **2016**
 Year Identified: **2014**
 Start Date: **7/1/2017** Project Status: **Funded**
 Est. Completion Date: **6/30/2018** Region:

Description:

The project includes recoating interior and exterior surfaces, repairs to the tank floor, installation of 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 recoating and repair extends the useful life of the tank.

Comments:

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

Project Forecast

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

Project Details 2016

Account	Description	Prior Years	2016	2017 - 20	Future Years	Total Amount
Revenue						
	Cash - Utilities			1,200,000		1,200,000
	Total Revenue			1,200,000		1,200,000
Expense						
	Design & Engineering			120,000		120,000
	Construction			1,080,000		1,080,000
	Total Expense			1,200,000		1,200,000
Obligated to Date:						0
						0.00 %

Related Projects

Operating Budget Impact

Budget Year	Exp (Rev)	FTE Impact
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