

County of Henrico, Virginia
Capital Improvement Program
FY 2017-18 through FY 2021-22

Public Utilities - Sewer

Fund 51 Enterprise Fund - W&S

Project/Work Phase	Priority	Request FY 17-18	Request FY18-19	Request FY 19-20	Request FY 20-21	Request FY 21-22	Total Five Year
00782 New Sewer Connections	1	150,000	150,000	150,000	150,000	150,000	750,000
00772 Sewer Line Extensions	2	500,000	500,000	500,000	500,000	500,000	2,500,000
00732 Sewer Line Rehabilitation	3	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	15,000,000
00743 Sewer Pump Station Improvements	4	900,000	1,400,000	100,000	250,000	250,000	2,900,000
00737 Sewer Reloc., Adjustments & Crossings	5	200,000	200,000	200,000	200,000	200,000	1,000,000
00725 Plan Review and Inspection	6	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	8,500,000
06492 Roof Replacement	7	50,000	50,000	50,000	50,000	50,000	250,000
08172 Water Reclamation Facility Improvements	8	500,000	500,000	500,000	500,000	500,000	2,500,000
00735 Water Reclamation Facility Expansion	9	92,000,000	1,275,000	0	0	0	93,275,000
07024 Tuckahoe Creek 27" Sewer Replacement	10	1,500,000	0	0	0	0	1,500,000
06154 North Run Trunk Sewer	11	2,500,000	0	0	0	0	2,500,000
06723 Gambles Mill FM Improvements	12	2,100,000	0	0	0	0	2,100,000
06152 Gambles Mill SPS FEB Modification	1	0	5,500,000	0	0	10,000,000	15,500,000
06569 Upham Brook Storage Facilities	1	0	0	7,000,000	0	20,000,000	27,000,000
06838 Allens and Rooty Branch Force Main Upgrade	2	0	0	1,500,000	0	7,150,000	8,650,000
01076 Strawberry Hill Basin Sewer Rehab	1	0	0	0	3,000,000	11,000,000	14,000,000
06666 Horsepen Br Sew - Broad Street to Rte 33	2	0	0	0	5,750,000	0	5,750,000
06131 Gambles Mill Basin Sewer Rehabilitation	1	0	0	0	0	1,150,000	1,150,000
06449 White Oak SPS Improvements	2	0	0	0	0	800,000	800,000
06667 Tuckahoe Creek Trunk Sewer Rehab	3	0	0	0	0	5,000,000	5,000,000
07029 Gillies Creek SPS FEB	3	0	0	0	0	1,200,000	1,200,000
07026 Rooty Branch SPS Replacement	4	0	0	0	0	3,000,000	3,000,000
07027 Rooty Branch Sewers	5	0	0	0	0	1,500,000	1,500,000
Total		105,100,000	14,275,000	14,700,000	15,100,000	67,150,000	216,325,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 00782	Project Name: New Sewer Connections
Department: Public Utilities - Sewer	Department Priority: 1
Project Type: Sewer	Fiscal Year: 2018
District: Countywide	Revenue Source: Enterprise Fund

Description and Scope

Design and construct sewer service connections to serve new customers requesting service connections to existing sewer mains.

Purpose and Need

Installation of sewer service connections for owner occupied homes on existing parcels is a service provided by Public Utilities as described in the County Code.

History and Current Status

Ongoing project. Funding request increased to \$150,000 per year to reflect current demands.

Location

Countywide

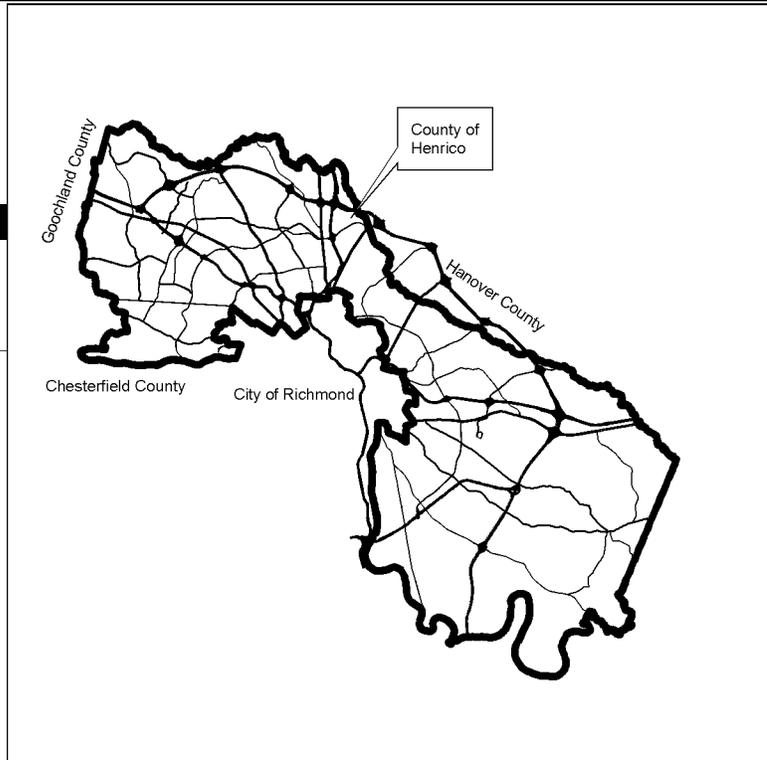
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	0	0	0	0	0
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	150,000	150,000	150,000	150,000	150,000
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year: Year 1
Prior Request Priority: 1
Prior Request Amount: \$100,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 00772	Project Name: Sewer Line Extensions
Department: Public Utilities - Sewer	Department Priority: 2
Project Type: Sewer	Fiscal Year: 2018
District: Countywide	Revenue Source: Enterprise Fund

Description and Scope

Design and construct sewer main extensions from the existing system to serve owner occupied single family residences.

Purpose and Need

Installation of sewer main extensions for owner occupied homes is a service provided by Public Utilities as described in the County Code.

History and Current Status

Ongoing project. Funding request remains at \$500,000 annually to reflect current demand.

Location

Countywide

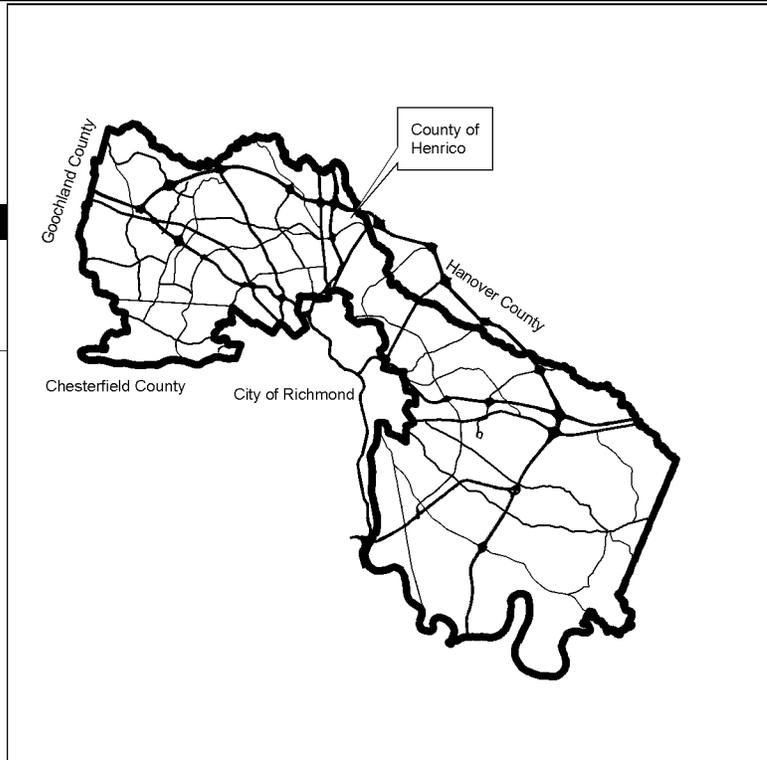
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	0	0	0	0	0
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	500,000	500,000	500,000	500,000	500,000
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year: Year 1
Prior Request Priority: 2
Prior Request Amount: \$500,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 00732	Project Name: Sewer Line Rehabilitation
Department: Public Utilities - Sewer	Department Priority: 3
Project Type: Sewer	Fiscal Year: 2018
District: Countywide	Revenue Source: Enterprise Fund

Description and Scope

Rehabilitate or replace deteriorated sewer mains. Rehabilitation includes the use of trenchless technology including sliplined, fold and formed and cured in place techniques.

Purpose and Need

The needs for these individual projects are determined through the Department's asset management system, wet weather flow program, TV inspection program, sewer main cleaning program and work orders. The priority for each project is based on analysis of the above factors.

History and Current Status

This is an ongoing project for each year of the approved CIP. Schedule submitted in prior year CIP: FY2017 - \$4,500,000; FY2018 - \$3,000,000; FY2019 - \$3,000,000; FY2020 - \$3,000,000; FY2021 - \$3,000,000. Funding reflects current project schedules and estimates.

Location

Countywide

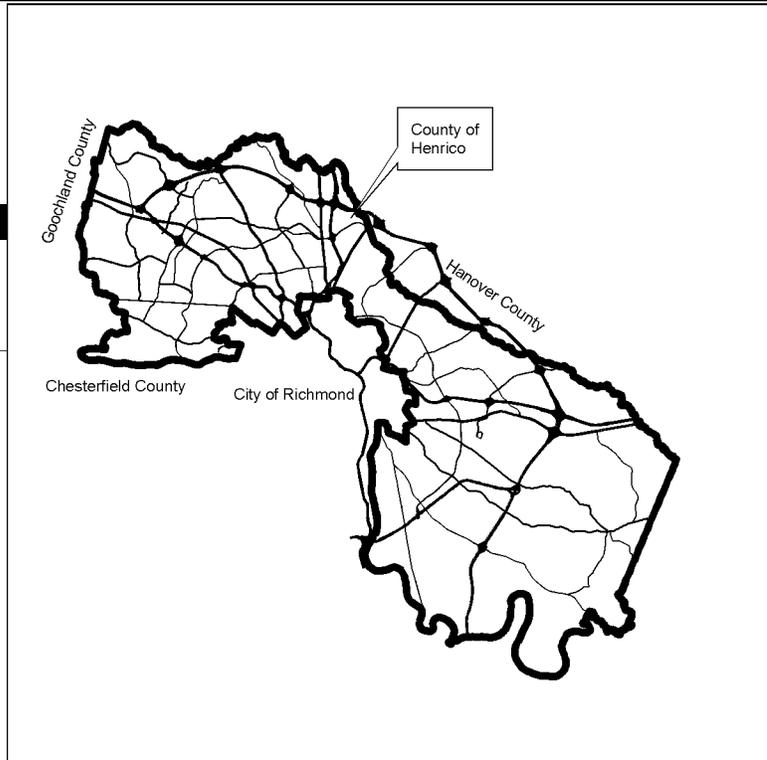
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	600,000	500,000	500,000	500,000	500,000
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	2,400,000	2,500,000	2,500,000	2,500,000	2,500,000
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year: Year 1
Prior Request Priority: 3
Prior Request Amount: \$4,500,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 00743	Project Name: Sewer Pump Station Improvements
Department: Public Utilities - Sewer	Department Priority: 4
Project Type: Sewer	Fiscal Year: 2018
District: Countywide	Revenue Source: Enterprise Fund

Description and Scope

Design and construct improvements and major repairs at 26 existing sewage pumping stations.

Purpose and Need

The need for upgrades and repairs to pumping stations is determined from our asset management system, on-going maintenance programs and facility assessments.

History and Current Status

Ongoing project. Schedule submitted in prior year: FY2017 - \$1,600,000; FY2018 - \$900,000; FY2019 - \$1,400,000; FY2020 - \$100,000; FY2021 - \$250,000. Funding in FY2018 is for fuel tank replacements. FY2019 is for upgrades at two pump stations.

Location

Countywide

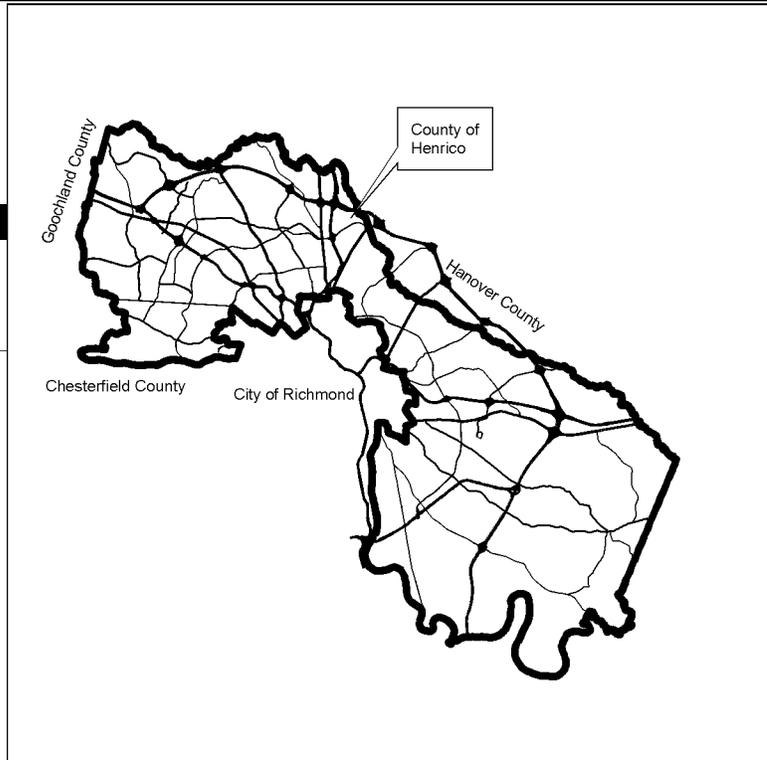
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	100,000	100,000	20,000	25,000	25,000
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	800,000	1,300,000	80,000	225,000	225,000
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$900,000	\$1,400,000	\$100,000	\$250,000	\$250,000

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year:	Year 1
Prior Request Priority:	4
Prior Request Amount:	\$1,600,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 00737	Project Name: Sewer Reloc., Adjustments & Crossings
Department: Public Utilities - Sewer	Department Priority: 5
Project Type: Sewer	Fiscal Year: 2018
District: Countywide	Revenue Source: Enterprise Fund

Description and Scope

Design and construct adjustments to existing sewer lines and extend new sewer lines necessary for coordination with road and drainage projects.

Purpose and Need

Road projects by DPW and VDOT require that existing sewer mains be adjusted or relocated to coordinate with project requirements. Sewer mains are extended with construction of new roads in accordance with the utility master plan. Project requirements are determined using the overall master utility plan. Construction with the DPW and VDOT road projects will minimize future impacts on the roadway.

History and Current Status

Ongoing project. Funding remains at \$200,000 per year.

Location

Countywide

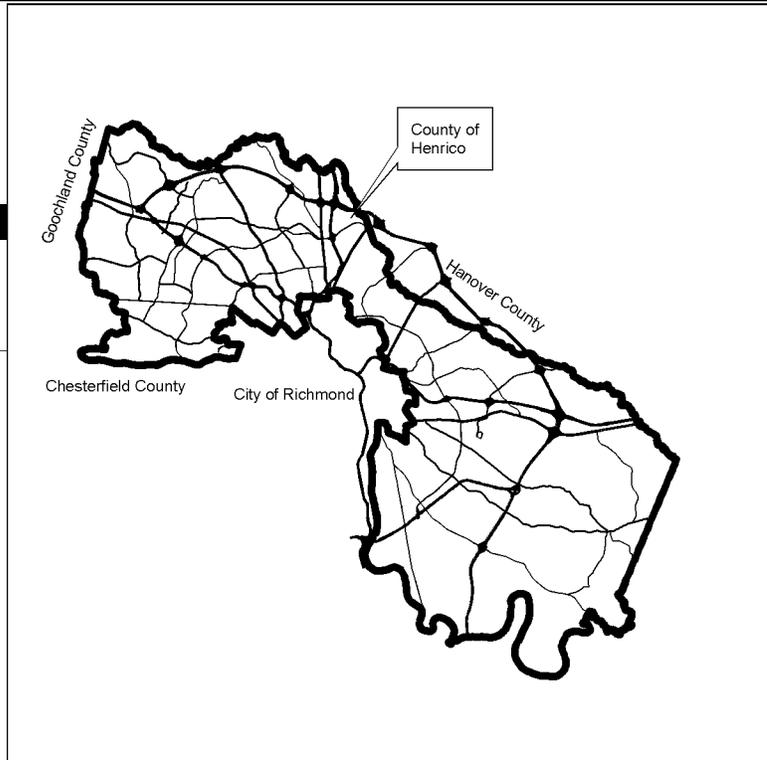
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	50,000	0	0	0	0
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	150,000	200,000	200,000	200,000	200,000
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year: Year 1
Prior Request Priority: 5
Prior Request Amount: \$200,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 00725	Project Name: Plan Review and Inspection
Department: Public Utilities - Sewer	Department Priority: 6
Project Type: Sewer	Fiscal Year: 2018
District: Countywide	Revenue Source: Enterprise Fund

Description and Scope

Engineering plan review and construction inspection by DPU for installation of water and sewer mains by private developers.

Purpose and Need

This project captures County engineering and construction inspection costs associated with private development and assigns these values to the total costs of donated water and sewer assets.

History and Current Status

Ongoing project. Funding is increased to \$1,700,000 to reflect current anticipated costs.

Location

Countywide

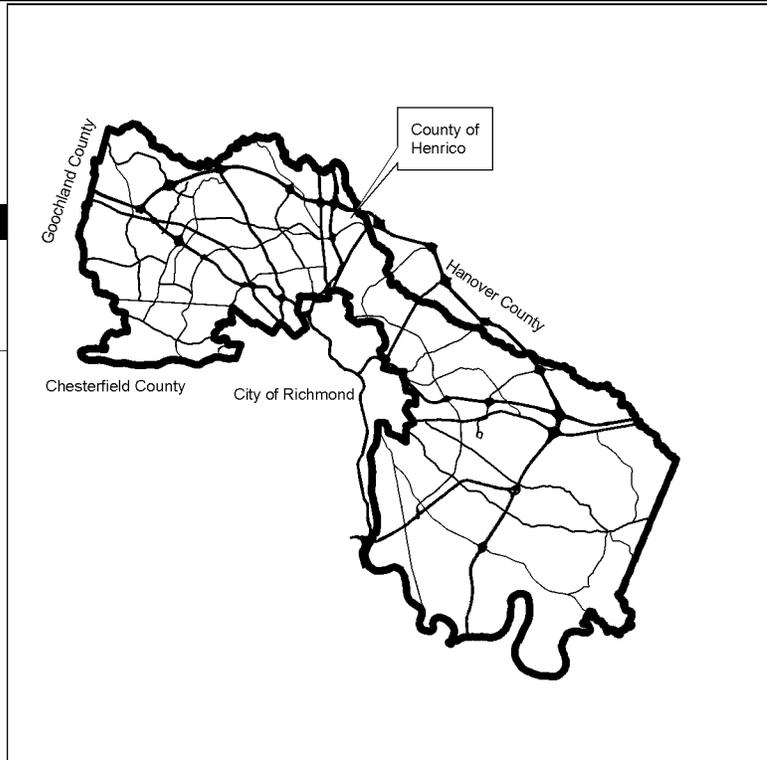
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	0	0	0	0	0
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$1,700,000	\$1,700,000	\$1,700,000	\$1,700,000	\$1,700,000

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year: Year 1
Prior Request Priority: 6
Prior Request Amount: \$1,600,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 06492	Project Name: Roof Replacement
Department: Public Utilities - Sewer	Department Priority: 7
Project Type: Sewer	Fiscal Year: 2018
District: Countywide	Revenue Source: Enterprise Fund

Description and Scope

Design and construction to allow for scheduled replacement of roofs for water and sewer facilities.

Purpose and Need

Roof replacement or refurbishment required at various facilities due to age and condition of roof.

History and Current Status

Ongoing project. Funding remains at \$50,000 annually.

Location

Countywide

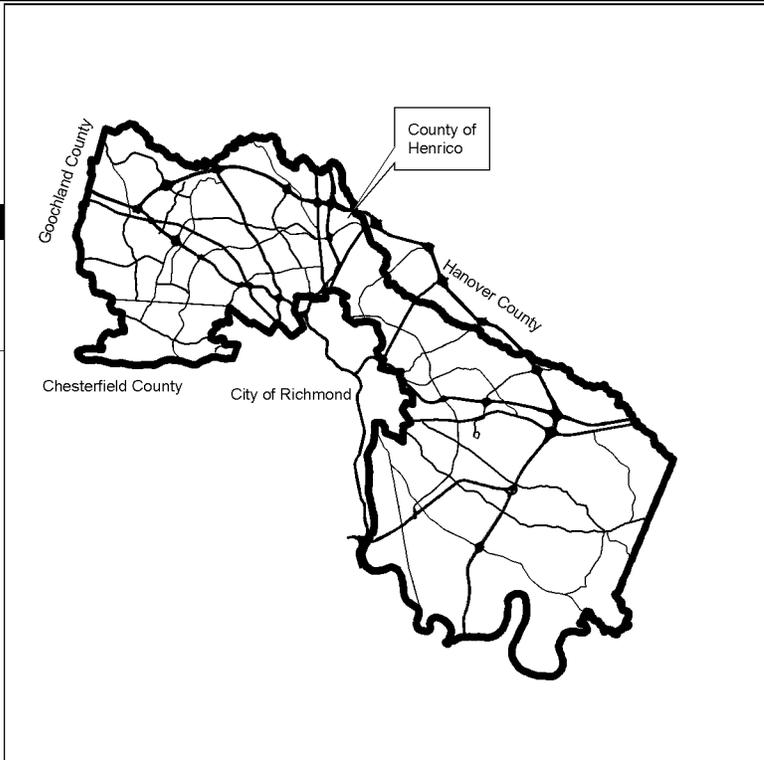
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	0	0	0	0	0
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	50,000	50,000	50,000	50,000	50,000
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year: Year 1
Prior Request Priority: 7
Prior Request Amount: \$50,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 08172	Project Name: Water Reclamation Facility Improvement
Department: Public Utilities - Sewer	Department Priority: 8
Project Type: Sewer	Fiscal Year: 2018
District: Varina	Revenue Source: Enterprise Fund

Description and Scope

Design and construct improvements and major repairs and replacements at the Water Reclamation Facility.

Purpose and Need

Facility improvements are based on condition assessments.

History and Current Status

Funding remains at \$500,000.

Location

9101 WRVA Road

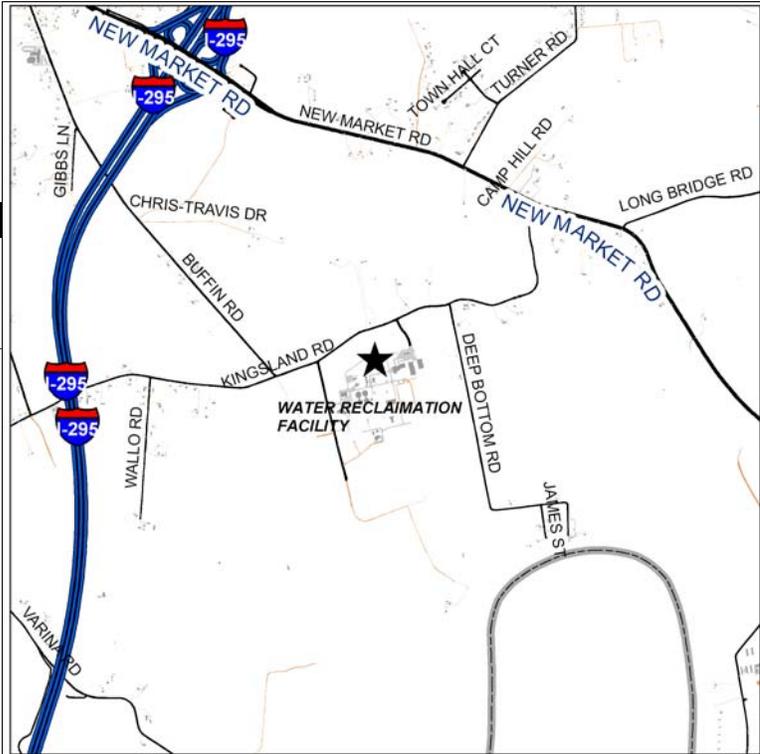
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	50,000	50,000	50,000	50,000	50,000
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	450,000	450,000	450,000	450,000	450,000
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year: Year 1
Prior Request Priority: 16
Prior Request Amount: \$500,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 00735	Project Name: Water Reclamation Facility Expansion
Department: Public Utilities - Sewer	Department Priority: 9
Project Type: Sewer	Fiscal Year: 2018
District: Varina	Revenue Source: Enterprise Fund

Description and Scope

Design and construct upgrades and/or improvements for facilities and/or treatment processes at the Water Reclamation Facility (WRF). The WRF operates under a permit from the Virginia Department of Environmental Quality (DEQ). DEQ will promulgate revisions to the current waste load allocations for nitrogen and phosphorous discharges for compliance with the Chesapeake Bay Program under yet to be released guidance from Environmental Protection Agency. The regulations could require completion of major modifications to the WRF by as early as 2023. The estimated cost for design and construction of the nutrient upgrades is \$90 million. The remaining funds are for replacement of the existing boilers and electrical/switchgear upgrades.

Purpose and Need

Facility improvements are based on our asset management system, condition assessments and preliminary facility master plan in June 2011.

History and Current Status

Schedule submitted in prior year CIP: FY2017 - \$8,500,000; FY2018 - \$525,000; FY2019 - \$1,275,000; FY2020 - \$0; FY2021 - \$26,750,000. Proposed funding reflects current project schedule. Funding in FY18 is for nutrient removal upgrades, electric switchgear and boiler replacement. Funding in FY2019 is for dystor cover replacement.

Location

WRVA Rd.

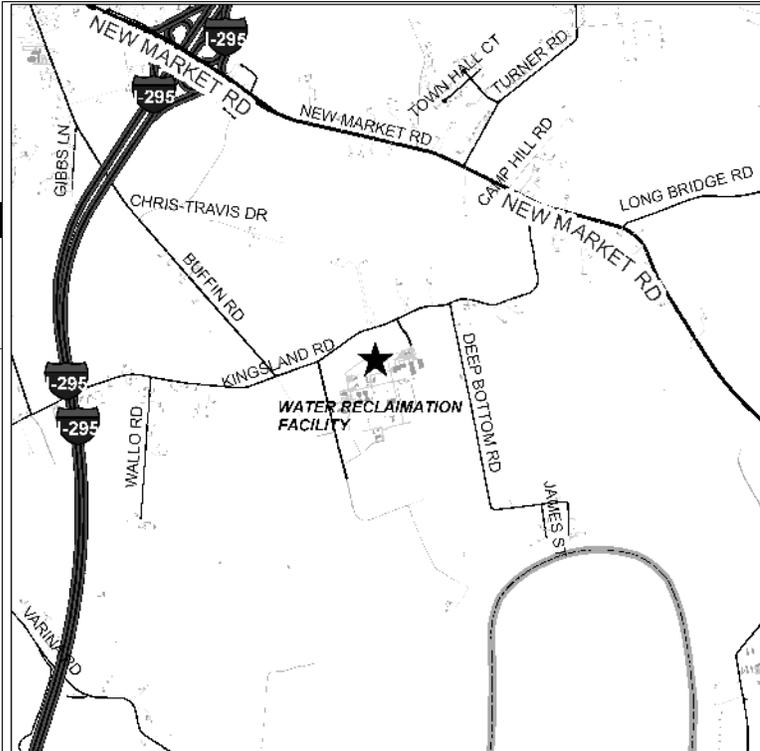
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	1,000,000	200,000	0	0	0
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	91,000,000	1,075,000	0	0	0
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$92,000,000	\$1,275,000	\$0	\$0	\$0

Estimated Operating Costs

	Map
FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year:	Year 1
Prior Request Priority:	8
Prior Request Amount:	\$8,500,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 07024	Project Name: Tuckahoe Creek 27" Sewer Replacement
Department: Public Utilities - Sewer	Department Priority: 10
Project Type: Sewer	Fiscal Year: 2018
District: Tuckahoe	Revenue Source: Enterprise Fund

Description and Scope

Replace 2,200' of existing 27" sewer with 42" gravity sewer.

Purpose and Need

Provide additional capacity for increasing growth demands and for wet weather induced flows. Recommended by the Greeley & Hansen Water & Sewer Facility Plan - July 2007.

History and Current Status

Schedule submitted in prior year CIP: FY2018 - \$1,200,000. Funding in FY2018 is for construction. Funding reflects current project scope.

Location

Along Tuckahoe Creek north of Ridgfield Parkway

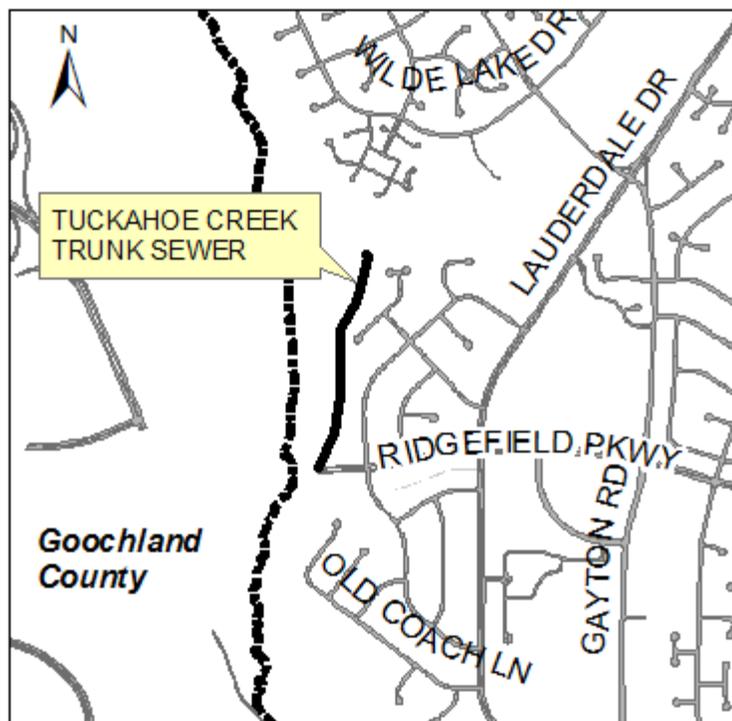
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	0	0	0	0	0
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	1,500,000	0	0	0	0
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$1,500,000	\$0	\$0	\$0	\$0

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year: Year 2
Prior Request Priority: 2
Prior Request Amount: \$1,200,000

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 06154	Project Name: North Run Trunk Sewer
Department: Public Utilities - Sewer	Department Priority: 11
Project Type: Sewer	Fiscal Year: 2018
District: B, F	Revenue Source: Enterprise Fund

Description and Scope

Design and construct 22,350 LF of 48" sewer main. Phase 1 is to replace approximately 1,000' of sewer around the Jefferson Lakeside Dam. This is a portion of a larger project for replacing the North Run Trunk sewer identified in the 2007 Greeley & Hansen Water & Sewer Facility Plan. The plan specified that this larger project will be needed in 2027. The existing sewer passes thru Jefferson Country Club dam that is currently in a partial failure mode. After assessing failure risks associated with its current location, it was determined that a portion of the project needs to be accelerated to next budget year. The remaining project cost of \$6.6 M will show up as an appropriation for Year 5 of the CIP in FY23 submittal.

Purpose and Need

Provide additional capacity for increasing growth demands and for wet weather induced flows. Recommended by the Greeley & Hansen Water & Sewer Facility Plan - July 2007.

History and Current Status

New project.

Location

From Lincoln Ridge Ln to Brook Rd south of Hilliard Rd.

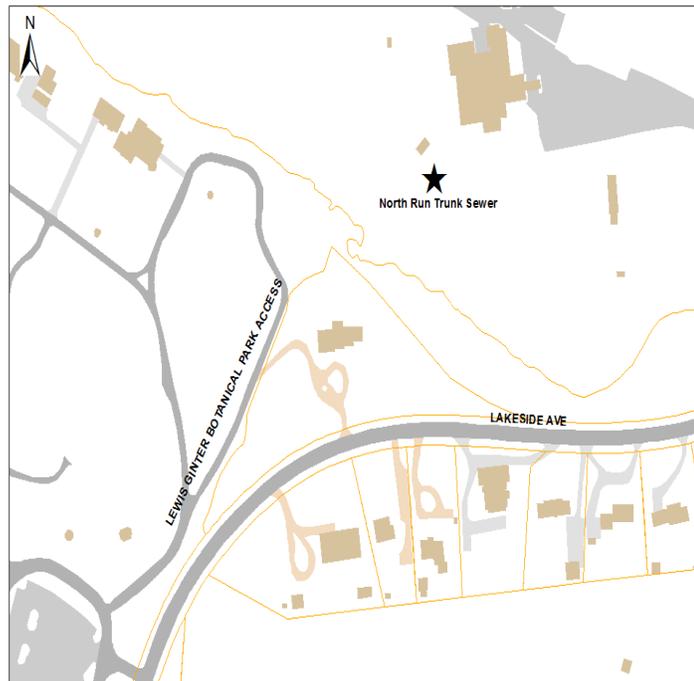
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	250,000	0	0	0	0
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	2,250,000	0	0	0	0
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$2,500,000	\$0	\$0	\$0	\$0

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year:	New
Prior Request Priority:	New
Prior Request Amount:	\$0

Capital Improvement Program

FY2017/18 - FY2021/22 - Fund -51 -Enterprise Fund - W&S

Project No: 06723	Project Name: Gambles Mill FM Improvements
Department: Public Utilities - Sewer	Department Priority: 12
Project Type: Sewer	Fiscal Year: 2018
District: Tuckahoe	Revenue Source: Enterprise Fund

Description and Scope

Design and construct 1,600' of 30" sewer force main.

Purpose and Need

Replace 1,600' of existing lined 24" force main to provide for additional capacity to handle wet weather induced flows. Recommended by the Greeley & Hansen Water & Sewer Facility Plan - July 2007.

History and Current Status

Schedule submitted in prior year CIP: FY2018 - \$2,100,000.

Location

River Road and Maple Avenue

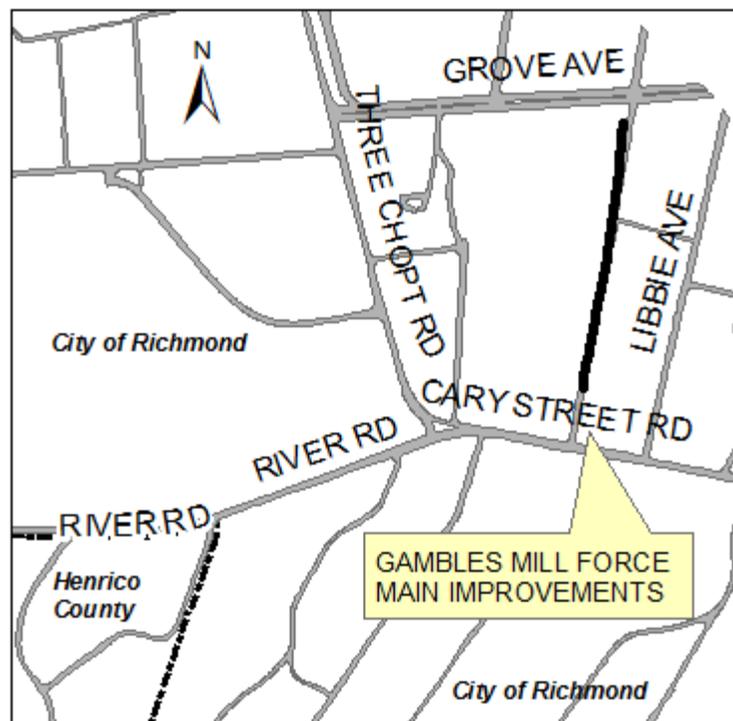
Capital Expenditures

	FY2018	FY2019	FY2020	FY2021	FY2022
Planning and Design	200,000	0	0	0	0
Land	0	0	0	0	0
Site Improvements	0	0	0	0	0
Construction	1,900,000	0	0	0	0
Direct Equipment	0	0	0	0	0
Vehicle Replacement	0	0	0	0	0
Other project Costs	0	0	0	0	0
Furniture and Fixtures	0	0	0	0	0
Total Request	\$2,100,000	\$0	\$0	\$0	\$0

Estimated Operating Costs

FY2018	\$0
FY2019	\$0
FY2020	\$0
FY2021	\$0
FY2022	\$0

Map



Notes

Prior Request Year:	Year 2
Prior Request Priority:	3
Prior Request Amount:	\$2,100,000