WATER PROGRAM

The Water Program is administered by the Water division of the Utilities Department. The program is designed to achieve five primary strategic objectives:

1) Replace and/or rehabilitate aging infrastructure;
2) Maintain or increase system reliability;
3) Improve system efficiency;
4) Address system growth; and
5) Regulatory compliance

The water utility continues to plan and invest in the future of the city by maximizing treatment capacity and ensuring facilities are in place to reliably provide water to current and future city residents. The Water Program is slated to improve and enhance the city's water supply, treatment and distribution systems, and provide for new construction and/or upgrades of the city's infrastructure such as pump stations, tanks, treatment facilities, and transmission and distribution water mains.

PRIOR YEAR ACCOMPLISHMENTS

24" Transmission Main Replacement (W-042)
Portions of upgraded 36" transmission main are being replaced along Route 28 and Vint Hill Road in conjunction with road improvements being performed by Prince William County.

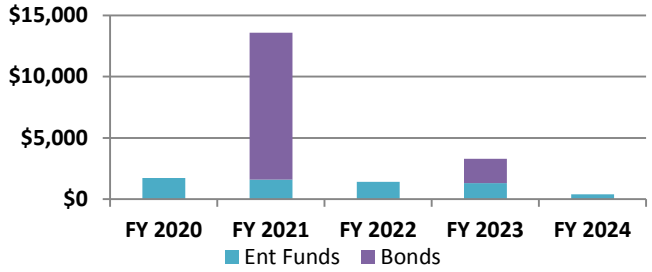
Finished Water Capacity Increases (W-047)
Completed upgrades at water treatment plant including replacements to HVAC, pumps, and compressor room.

Main Replacement/Looping (W-050)
Water mains were replaced on Richmond Street, Liberty Street, Windsor Lane, and Frank Marshall Lane

THE FIVE-YEAR PLAN (FY 2020 – FY 2024)

The FY 2020 Five-Year Capital Improvement Program (CIP) includes $6,435,000 in Enterprise Funds (Water Fund) and $14,000,000 in Bonds.

In FY 2020 funding consists of a $1,725,000 transfer from the Water Fund.



(Dollars in Thousands)

FY 2020 CAPITAL PROJECTS

24" Transmission Main Replacement (W-042)
Additional funding is programmed for the 24" Transmission Main Replacement. This project is estimated to be completed in FY 2025.

Main Replacement/Looping (W-050)
Replace undersized and aging/failing water mains and loop existing dead-ends on Peabody Street (Stonewall Road to Hazel Drive) and Hazel Drive (Peabody Street to Peabody Street)

Interconnecting Meter Vaults (W-069)
Upgrade or install three meter vaults that interconnect with the Service Authority. These connections will improve the City's ability to utilize emergency capacity

FY 2020 MAINTENANCE CAPITAL PROJECTS

There are no maintenance capital projects proposed for the Water Program.

NEW CAPITAL PROJECTS

Dean Storage Tank (W-071) - new in FY 2019

SUMMARY OF WATER CAPITAL PROJECTS

($ in Thousands)

Cost Estimates:	Prior Years	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Future	Total Project	5-Year CIP
Planning	2,305	60	60	60	60	60	665	3,270	300
Land	-	-	-	-	-	-	-	-	-
Construction	32,665	1,665	13,535	1,355	3,240	340	6,235	59,035	20,135
Total Cost	**34,970**	**1,725**	**13,595**	**1,415**	**3,300**	**400**	**6,900**	**62,305**	**20,435**
Funding Sources:									
General Fund	-	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-	-
Water Fund	13,720	1,725	1,595	1,415	1,300	400	5,000	25,155	6,435
Electric Fund	-	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-	-
Bonds	21,250	-	12,000	-	2,000	-	1,900	37,150	14,000
State	-	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-
Total Funding	**34,970**	**1,725**	**13,595**	**1,415**	**3,300**	**400**	**6,900**	**62,305**	**20,435**
Operating Impacts:									
Revenue	-	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-	-
Program (Costs) Saving	-	-	-	-	-	-	-	-	-
Debt Service	-	-	-	(930)	(930)	(1,085)	(18,755)	(21,700)	(2,945)
Net Revenue	**-**	**-**	**-**	**(930)**	**(930)**	**(1,085)**	**(18,755)**	**(21,700)**	**(2,945)**

WATER CAPITAL PROJECT LISTING

($ in Thousands)

Project Name	Prior Years	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Future	Total Project	5-Year CIP
24" Transmission Main	16,761	1,000	12,900	900	2,900	-	2,800	37,261	17,700
Finished Water Capacity	3,000	-	-	-	-	-	-	3,000	-
Main Replacement / Loo	2,534	200	495	515	400	400	2,900	7,444	2,010
Clear-Well Addition and	2,400	-	-	-	-	-	-	2,400	-
Nokesville Road Upgrad	-	-	-	-	-	-	1,000	1,000	-
Interconnecting Meter V	30	50	-	-	-	-	200	280	50
Water Plant Improvemen	245	475	200	-	-	-	-	920	675
Dean Storage Tank	10,000	-	-	-	-	-	-	10,000	-
Total	**34,970**	**1,725**	**13,595**	**1,415**	**3,300**	**400**	**6,900**	**62,305**	**20,435**

W-042 24" Transmission Main Replacement

Year Introduced: 2007
Change: Increased Estimate
Associated Proj: T-042
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
Comprehensive Plan 7.7

Est. Start: 7/1/2012
Est. Complete: 6/30/2025

Description:

Replace the existing 45-year old water transmission main with a 36" water transmission main in order to increase reliability and water transmission capacity from the Water Treatment Plant to the City. The main is approaching the ends of its useful life and experiences unacceptable hydraulic conditions during peak demand periods. Two phases have already been completed, one phase is in construction and half completed, three more phases are in design, and the last is being planned out. The project will be coordinated with both City roadway improvements and Prince William Country roadway improvements.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Future	Total Project
Planning	1,225	-	-	-	-	-	125	1,350
Land	-	-	-	-	-	-	-	-
Construction	15,536	1,000	12,900	900	2,900	-	2,675	35,911
Total Cost	**16,761**	**1,000**	**12,900**	**900**	**2,900**	**-**	**2,800**	**37,261**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	7,761	1,000	900	900	900	-	900	12,361
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	9,000	-	12,000	-	2,000	-	1,900	24,900
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**16,761**	**1,000**	**12,900**	**900**	**2,900**	**-**	**2,800**	**37,261**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-			(930)	(930)	(1,085)	(18,755)	
Net Revenue	**-**	**-**	**-**	**(930)**	**(930)**	**(1,085)**	**(18,755)**	**(21,700)**

W-047 Finished Water Capacity Increases

Year Introduced: 2009
Change: No change
Associated Proj: W-065
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
Comprehensive Plan 7.7

Est. Start: 7/1/2013
Est. Complete: 6/30/2021

Description:

Due to growth in the City and increased water demands during the summer months, it is anticipated that additional capacity will be required in the future. The first phase will enable the Water Treatment Plant to increase permitted capacity rating from 14 million gallons per day (mgd) to 15 mgd. The second phase will be to increase to 18 mgd. The project will reduce reliance on Prince William County Service Authority interconnects.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Future	Total Project
Planning	750	-	-	-	-	-	-	750
Land	-	-	-	-	-	-	-	-
Construction	2,250	-	-	-	-	-	-	2,250
Total Cost	**3,000**	**-**	**-**	**-**	**-**	**-**	**-**	**3,000**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	750	-	-	-	-	-	-	750
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	2,250	-	-	-	-	-	-	2,250
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**3,000**	**-**	**-**	**-**	**-**	**-**	**-**	**3,000**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-050 Main Replacement / Looping

Year Introduced: 2009
Change: Increased Estimate
Associated Proj: T-030
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
Comprehensive Plan 7.7

Est. Start: 7/1/2008
Est. Complete: 6/30/2025

Description:

Replace undersized and aging/failing water mains and loop existing dead-ends.
FY19: Peabody Street (Stonewall Road to Hazel Drive) and Hazel Drive (Peabody Street to Peabody Street)
FY20: Jackson Avenue (Sudley Road to Longstreet Drive) and Weems Road (Sudley Road to Longstreet Drive)
FY20: Longstreet Drive from Jackson Avenue to Weems Road
FY21: To Be Determined

Cost Estimate: ($ in 1,000s)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Future**	**Total Project**
Planning	100	60	60	60	60	60	340	740
Land	-	-	-	-	-	-	-	-
Construction	2,434	140	435	455	340	340	2,560	6,704
Total Cost	**2,534**	**200**	**495**	**515**	**400**	**400**	**2,900**	**7,444**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	2,534	200	495	515	400	400	2,900	7,444
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**2,534**	**200**	**495**	**515**	**400**	**400**	**2,900**	**7,444**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-065 Clear-Well Addition and Roof Renovation

Year Introduced: 2011
Change: No change
Associated Proj: W-047
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
Comprehensive Plan 7.7

Est. Start: 7/1/2017
Est. Complete: 6/30/2020

Description:

Construct a second clear-well to improve reliability of the treatment plant per current design standards. With the new clear well on-line, the roof of the existing clear well will be rehabilitated due to age and observed deterioration identified during an inspection. This project ensures the ability to continue to provide water to the City's customers.

Cost Estimate: ($ in 1,000s)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Future**	**Total Project**
Planning	200	-	-	-	-	-	-	200
Land	-	-	-	-	-	-	-	-
Construction	2,200	-	-	-	-	-	-	2,200
Total Cost	**2,400**	**-**	**-**	**-**	**-**	**-**	**-**	**2,400**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	2,400	-	-	-	-	-	-	2,400
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**2,400**	**-**	**-**	**-**	**-**	**-**	**-**	**2,400**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-066 Nokesville Road Upgrade

Year Introduced: 2012
Change: No change
Associated Proj: N/A
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
Comprehensive Plan 7.7

Est. Start:
Est. Complete:

Description:

Upgrade 3,200 feet of 8" steel pipe to 16" pipe on Route 28 (Foster Drive to Technology Drive). The new pipe will connect to the existing 24" transmission main and extend 3,200 feet northward to connect with the 16" line installed with the Route 28 Overpass project. This project reduces the potential for breaks in an identified trouble area and is consistent with meeting the City's initiative to improve distribution system operations.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Future	Total Project
Planning	-	-	-	-	-	-	200	200
Land	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	800	800
Total Cost	**-**	**-**	**-**	**-**	**-**	**-**	**1,000**	**1,000**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	1,000	1,000
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**-**	**-**	**-**	**-**	**-**	**-**	**1,000**	**1,000**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-068 Interconnecting Meter Vaults

Year Introduced: 2017
Change: No change
Associated Proj: N/A
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
Comprehensive Plan 7.7

Est. Start: 12/17/2012
Est. Complete: 6/30/2023

Description:

The City plans to upgrade or install three meter vaults that interconnect with the Service Authority. These connections will improve the City's ability to utilize emergency capacity that was purchased and allocated in the agreement of 8/12/1996 and reaffirmed on 12/17/2012.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Future	Total Project
Planning	30	-	-	-	-	-	-	30
Land	-	-	-	-	-	-	-	-
Construction	-	50	-	-	-	-	200	250
Total Cost	**30**	**50**	**-**	**-**	**-**	**-**	**200**	**280**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	30	50	-	-	-	-	200	280
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**30**	**50**	**-**	**-**	**-**	**-**	**200**	**280**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-070 Water Plant Improvements

Year Introduced: 2018
Change: Increased Estimate
Associated Proj: N/A
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
Comprehensive Plan 7.7.3

Est. Start: 7/1/2018
Est. Complete: 6/30/2024

Description:

Replace and refurbish critical components of the Water Treatment Plant related to both age and increased capacity requirements.
FY21: Install sludge de-watering screw/bolt press cartridge.

Cost Estimate: ($ in 1,000s)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Future**	**Total Project**
Planning	-	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-	-
Construction	245	475	200	-	-	-	-	920
Total Cost	**245**	**475**	**200**	**-**	**-**	**-**	**-**	**920**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	245	475	200	-	-	-	-	920
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**245**	**475**	**200**	**-**	**-**	**-**	**-**	**920**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-071 Dean Storage Tank

Year Introduced: 2019
Change: No change
Associated Proj: W-071
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
Comprehensive Plan 7.7.3

Est. Start: 1/1/2019
Est. Complete: 12/31/2020

Description:

The 2.5 million gallon water storage tank is required to be in compliance of VDH regulations for minimum system-wide storage as well as to meet peak seasonal water demands. The new tank will be similar in size, capacity and appearance to the existing tank.

Cost Estimate: ($ in 1,000s)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Future**	**Total Project**
Planning	-	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-	-
Construction	10,000	-	-	-	-	-	-	10,000
Total Cost	**10,000**	**-**	**-**	**-**	**-**	**-**	**-**	**10,000**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	10,000	-	-	-	-	-	-	10,000
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**10,000**	**-**	**-**	**-**	**-**	**-**	**-**	**10,000**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

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