WATER PROGRAM

The Water Program is administered by 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 Program 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 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.

Dean Drive Storage Tank

PRIOR YEAR ACCOMPLISHMENTS

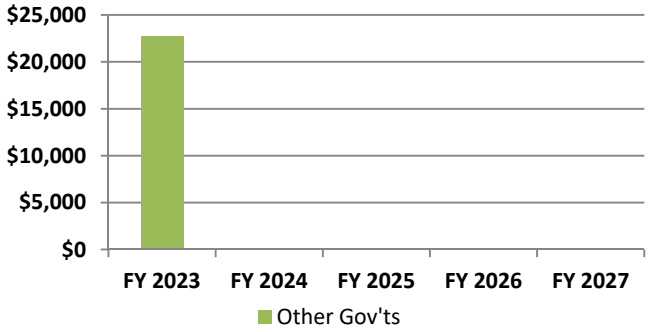
The Water Program continues to invest in ongoing projects to maintain and upgrade the City's reservoir, Water Treatment Facility, and transmission/distribution system. These projects include:

- Upgrading existing 24" water transmission main to 36" (W-042). Phase V of the project, replacing 5,600 feet along Route 28 was completed.
- Completed construction of the new 2.5-million gallon storage tank on Dean Drive (W-071).
- Rehabbed the filter system and replaced the media and flocculators 1 and 2 at the water treatment plant.

THE FIVE-YEAR PLAN (FY 2023 – FY 2027)

The FY 2023 Five-Year Capital Improvement Program (CIP) includes $22,700,000 in Federal Aid.

FY 2023 funding consists of $22,700,000 in Federal Aid.



(Dollars in Thousands)

FY 2023 CAPITAL PROJECTS

24" Transmission Main Replacement (W-042)
Ongoing work to replace the existing 24" transmission main.

Water Treatment Plant Improvements
Ongoing improvements at the water treatment plan to increase finished water capacity to 18 MGD (W-047), clear well addition and roof renovation (W-065), surge tank expansion (W-072) and screw press decant (W-076).

FY 2023 MAINTENANCE CAPITAL PROJECTS

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), Hazel Drive (Peabody Street to Peabody Street), Park Street, and Park Avenue.

NEW CAPITAL PROJECTS

There are no new projects in the Water Program.

SUMMARY OF WATER CAPITAL PROJECTS

($ in Thousands)

Cost Estimates:	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project	5-Year CIP
Planning	2,275	-	-	-	-	-	-	2,275	-
Land	-	-	-	-	-	-	-	-	-
Construction	30,406	22,700	-	-	-	-	-	53,106	22,700
Total Cost	**32,681**	**22,700**	**-**	**-**	**-**	**-**	**-**	**55,381**	**22,700**
Funding Sources:									
General Fund	-	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-	-
Water Fund	12,980	-	-	-	-	-	-	12,980	-
Electric Fund	-	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-	-
Bonds	19,701	-	-	-	-	-	-	19,701	-
State	-	-	-	-	-	-	-	-	-
Federal	-	22,700	-	-	-	-	-	22,700	22,700
NVTA	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-
Total Funding	**32,681**	**22,700**	**-**	**-**	**-**	**-**	**-**	**55,381**	**22,700**
Operating Impacts:									
Revenue	-	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-	-
Program (Costs) Saving	-	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

WATER CAPITAL PROJECT LISTING

($ in Thousands)

Project Name	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project	5-Year CIP
24" Transmission Main R	16,710	16,000	-	-	-	-	-	32,710	16,000
Finished Water Capacity	7,600	-	-	-	-	-	-	7,600	-
Clear-Well Addition and	5,071	-	-	-	-	-	-	5,071	-
Nokesville Road Water	1,300	-	-	-	-	-	-	1,300	-
Surge Tank Expansion	2,000	-	-	-	-	-	-	2,000	-
Screw Press Decant	-	6,700	-	-	-	-	-	6,700	6,700
Total	**32,681**	**22,700**	**-**	**-**	**-**	**-**	**-**	**55,381**	**22,700**

W-042 24" Transmission Main Replacement

Year Introduced: 2007
Change: Funding Source
Associated Proj: T-042
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.3
CFI 7.4.11

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 end 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. ARPA funding to complete the project is shown in FY23.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	1,225	-	-	-	-	-	-	1,225
Land	-	-	-	-	-	-	-	-
Construction	15,485	16,000	-	-	-	-	-	31,485
Total Cost	**16,710**	**16,000**	**-**	**-**	**-**	**-**	**-**	**32,710**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	8,130	-	-	-	-	-	-	8,130
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	8,580	-	-	-	-	-	-	8,580
State	-	-	-	-	-	-	-	-
Federal	-	16,000	-	-	-	-	-	16,000
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**16,710**	**16,000**	**-**	**-**	**-**	**-**	**-**	**32,710**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-047 Finished Water Capacity Increases

Year Introduced: 2009
Change: Increased Estimate
Associated Proj: W-065
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.1
CFI 7.4.3

Est. Start: 7/1/2013
Est. Complete: 6/30/2023

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 finished water capacity increase will increase to 18 mgd. The project will reduce reliance on Prince William County Service Authority interconnects.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	750	-	-	-	-	-	-	750
Land	-	-	-	-	-	-	-	-
Construction	6,850	-	-	-	-	-	-	6,850
Total Cost	**7,600**	**-**	**-**	**-**	**-**	**-**	**-**	**7,600**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	7,600	-	-	-	-	-	-	7,600
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**7,600**	**-**	**-**	**-**	**-**	**-**	**-**	**7,600**
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: Increased Estimate
Associated Proj: W-047
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.3

Est. Start: 7/1/2017
Est. Complete: 6/30/2023

Description:

Construct a second clear-well to improve reliability of the treatment plant per current design standards. With the new clear-well online, 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 increasing the current 1.3 MGD capacity to 2.6 MGD.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	200	-	-	-	-	-	-	200
Land	-	-	-	-	-	-	-	-
Construction	4,871	-	-	-	-	-	-	4,871
Total Cost	**5,071**	**-**	**-**	**-**	**-**	**-**	**-**	**5,071**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	3,550	-	-	-	-	-	-	3,550
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	1,521	-	-	-	-	-	-	1,521
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**5,071**	**-**	**-**	**-**	**-**	**-**	**-**	**5,071**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-066 Nokesville Road Water Main Upgrade

Year Introduced: 2012
Change: Increased Estimate
Associated Proj: N/A
Program Area: Water
Managing Dept: Utilities
Manager: T. Dawood
Plan Conformance:
CFI 7.4.3

Est. Start: 7/1/2022
Est. Complete: 6/30/2024

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 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	100	-	-	-	-	-	-	100
Land	-	-	-	-	-	-	-	-
Construction	1,200	-	-	-	-	-	-	1,200
Total Cost	**1,300**	**-**	**-**	**-**	**-**	**-**	**-**	**1,300**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	1,300	-	-	-	-	-	-	1,300
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**1,300**	**-**	**-**	**-**	**-**	**-**	**-**	**1,300**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-072 Surge Tank Expansion

Year Introduced: 2021
Change: Increased Estimate
Associated Proj: W-047
Program Area: Water
Managing Dept: Utilities
Manager: M. Nicholson
Plan Conformance:
CFI 7.4.3

Est. Start: 1/1/2021
Est. Complete: 7/1/2023

Description:

Design and construction of an additional surge tank to meet the needs of increased capacity from the current rate of 14 MGD to 18 MGD. All process flow goes to the surge tank including backwash water, basin sludge, pulsator blowdowns and various sump pits. It has become increasingly more difficult to pump the surge tank between the next set of backwashes and basin cleanouts.

Cost Estimate: ($ in 1,000s)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Future**	**Total Project**
Planning	-	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-	-
Construction	2,000	-	-	-	-	-	-	2,000
Total Cost	**2,000**	**-**	**-**	**-**	**-**	**-**	**-**	**2,000**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	2,000	-	-	-	-	-	-	2,000
State	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**2,000**	**-**	**-**	**-**	**-**	**-**	**-**	**2,000**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

W-076 Screw Press Decant

Year Introduced: 2021
Change: Increased Estimate
Associated Proj: W-047
Program Area: Water
Managing Dept: Utilities
Manager: M. Nicholson
Plan Conformance:
CFI 7.4.3

Est. Start: 1/1/2021
Est. Complete: 6/30/2023

Description:

Installation of a screw press decant to optimize the solids removal for more efficient disposal using ARPA funding. With the future upgrade there will be an increase in sludge generated from the treatment process. Addtionally, the upgrade will reduce the potential of violations associated with the National Pollution Discharge Elimination System permit.

Cost Estimate: ($ in 1,000s)	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project
Planning	-	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-	-
Construction	-	6,700	-	-	-	-	-	6,700
Total Cost	**-**	**6,700**	**-**	**-**	**-**	**-**	**-**	**6,700**
Funding Sources: ($ in 1,000s)								
General Fund	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-
Water Fund	-	-	-	-	-	-	-	-
Electric Fund	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-
Bonds	-	-	-	-	-	-	-	-
State	-	-	-	-	-	-	-	-
Federal	-	6,700	-	-	-	-	-	6,700
NVTA	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-
Total Funding	**-**	**6,700**	**-**	**-**	**-**	**-**	**-**	**6,700**
Operating Impacts: ($ in 1,000s)								
Revenue	-	-	-	-	-	-	-	-
Staffing (Costs) Savings	-	-	-	-	-	-	-	-
Facility (Costs) Savings	-	-	-	-	-	-	-	-
Program (Costs) Savings	-	-	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-	-	-
Net Revenue	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

WATER MAINTENANCE CAPITAL PROJECT LISTING

($ in Thousands)

The City identifies Capital Projects as projects with a cost greater than $100,000 **and** a useful life of 10+ years. The City recognizes that there are additional projects/needs that are capital in nature but do not meet the requirement set forth for a capital project. These additional projects/needs are considered Maintenance Capital Projects, a list of which is provided below for the Water Program.

Project Name	Prior Years	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Future	Total Project	5-Year CIP
Main Replacement / Loo	4,144	-	400	400	400	400	-	5,744	1,600
Water Plant Improvemen	1,717	-	400	200	200	200	-	2,717	1,000
Conventional Filter Reha	488	-	-	-	-	300	300	1,088	300
Total Cost	**6,349**	**-**	**800**	**600**	**600**	**900**	**300**	**9,549**	**2,900**
Funding Sources									
General Fund	-	-	-	-	-	-	-	-	-
Sewer Fund	-	-	-	-	-	-	-	-	-
Water Fund	5,861	-	800	600	600	900	300	9,061	2,900
Electric Fund	-	-	-	-	-	-	-	-	-
Stormwater Fund	-	-	-	-	-	-	-	-	-
Airport Fund	-	-	-	-	-	-	-	-	-
School Fund	-	-	-	-	-	-	-	-	-
Bonds	488	-	-	-	-	-	-	488	-
State	-	-	-	-	-	-	-	-	-
Federal	-	-	-	-	-	-	-	-	-
NVTA	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-
Total Funding	**6,349**	**-**	**800**	**600**	**600**	**900**	**300**	**9,549**	**2,900**