Water Supply

Program Description

Residents of Fairfax County receive public water service from one of three water agencies: Fairfax Water, the Town of Vienna, or the Town of Herndon. Fairfax Water owns and operates a full production and distribution system; the Towns purchase water wholesale from Fairfax Water and operate their own distribution systems. Using recent estimated averages, Fairfax Water serves 97 percent of Fairfax County residents, the towns serve one percent, and the remaining two percent receive water from their own individual, private wells.

Link to the Comprehensive Plan

The Public Facilities Water Supply Section of the Policy Plan within the Fairfax County Comprehensive Plan includes the following established objectives:

- Locate sites, for adequate and appropriate facilities to treat, transmit, and distribute a safe and adequate potable water supply, which conform to the land use goals of the Comprehensive Plan.
- Plan and provide for facilities to treat, transmit, and distribute a safe and adequate potable water supply.

Source: 2017 Edition of the Fairfax County Comprehensive Plan- Public Facilities, Amended through 4-9-2019

Program Initiatives

While Fairfax County has neither direct administrative nor budgetary control over water suppliers, the importance of water facilities to County planning is recognized. The Board of Supervisors has entered into an agreement with Fairfax Water which requires Board approval of all capital projects undertaken by Fairfax Water. Fairfax Water projects included in this CIP represent a program guided by the objectives of the Comprehensive Plan and endorsed by the Board of Supervisors. Additional information can be found in Fairfax Water's 2025 Ten-Year Capital Improvement Program, which is available directly from Fairfax Water.

Fairfax Water

The principal sources of water for Fairfax Water are the Occoquan Reservoir and the Potomac River. The Occoquan Reservoir is impounded by a gravity type concrete dam across the Occoquan River, a few miles upstream of its confluence with the Potomac River. The dam was constructed in 1957. The drainage area of the Occoquan River above the dam is approximately 590 square miles. The dam impounds approximately 8.5 billion gallons of water when filled to the crest of the dam at Elevation 122 feet, mean sea level. The present Occoquan Reservoir supply has a safe yield of about 82.5 million gallons per day (MGD).

Treatment of water from the Occoquan Reservoir is provided by the 120 MGD Griffith Water Treatment Plant in Laurel Hill, placed in service in 2006. This facility applies various chemicals for coagulation, the control of taste and odors, fluoridation, and disinfection. Construction of the intake structure on the Potomac River, raw water pumping station and the initial phase of the Corbalis Treatment Plant commenced in 1978 and was placed into operation in 1982. During 2008, construction of Stage III was completed, bringing total treatment capacity for this treatment plant to 225 MGD.

On January 3, 2014, Fairfax Water purchased the water systems previously owned and operated by the cities of Falls Church and Fairfax. As part of the agreement, Fairfax Water acquired Falls Church's existing water supply contract with the Washington Aqueduct. Up to 31 MGD of finished water can be supplied to Fairfax Water by the Washington Aqueduct.

Twenty-two booster pumping stations are located within the distribution system to provide adequate pressure. A total of 56 million gallons (MG) of distribution system storage is provided at 21 locations throughout Fairfax County, the City of Falls Church, and the City of Fairfax; an additional 37 MG of treatment plant clear well storage is also available between the Corbalis and Griffith facilities. There are approximately 4,000 miles of water main up to 54 inches in diameter in the system.

Development of Fairfax Water's supply, treatment, transmission, and distribution facilities is conducted in accordance with a Ten-Year Capital Improvement Program. Highlights of the current program include:

- **Distribution System Sustainability:** Increased reinvestment in the distribution system infrastructure to maintain a high level of service to customers.
- **Construction of various Transmission Improvements:** Transmission mains included in the projects are the Lewinsville, Chain Bridge, and Poplar Heights Transmission Mains, the Dulles Toll Road crossing at Innovation Center, and Phase II of the Braddock Road Transmission Main project. Various pumping station and storage improvements are also planned, including completion of the new pump station on Sleepy Hollow Road, upgrades to the Pohick and Backlick Pump Stations, and replacement storage tanks in the City of Fairfax (Lyndhurst Tank), Seven Corners (Willston Tank), and Poplar Heights areas (Poplar Heights Tank).
- **Source Water Protection Activities:** Fairfax Water continues to advocate for source water protection through support of the Occoquan Watershed Monitoring Program, Occoquan Nonpoint Source Program, the Potomac River Basin Drinking Water Source Protection Partnership, study of critical watershed areas, increased involvement in watershed and water quality issues, and analysis of ongoing activities in the watershed.

Current Project Descriptions

1. **Additions, Extensions, and Betterments:** $601,670,000 for improvement and betterment of existing supply, treatment, transmission, distribution, and general plant facilities associated with a specific project, which includes $382,600,000 for PFAS treatment upgrades.
2. **Extraordinary Maintenance and Repairs:** $655,853,000 for maintenance and repairs, including $304,153,000 for extraordinary maintenance and major repair of supply, treatment, transmission, and general plant facilities associated with a specific project, and $351,700,000 to provide a sustainable distribution system through infrastructure reinvestment.
3. **General and Administrative:** $214,460,000 for expenses associated with administration and overhead. These expenses include materials and supplies; refund of advances; and costs associated with net revenue funded projects but not attributed to a single project or program.
4. **General Studies and Programs**: $51,084,000 for general studies, programs, engineering, and research pertaining to water quality, water supply, and system development.
5. **Potomac Stage IV General Plant Facilities**: $3,090,000 for annual expenses attributed to administration, overhead and bond financing associated with development of the future Potomac River Water Supply Facilities funded by future bond issues and funds on hand.

6. **Potomac Stage IV Transmission Facilities**: $11,958,000 for the design and construction of the Tysons East Transmission Main from the Tysons Pumping Station to the existing 24-inch water main on Magarity Road.

7. **Subdivision and Other Development Projects**: $11,100,000 for expenses associated with the review and approval of plans for water main installation associated with land development activities. This project also includes provisions for Fairfax Water inspection of water mains installed by land development contractors.

8. **System Integration – City of Falls Church & City of Fairfax:** $54,869,000 for transmission, distribution, pumping, and storage improvements to fully integrate the water system assets previously owned by the cities of Falls Church and Fairfax that became part of the Fairfax Water system on January 3, 2014.

Project Cost Summaries

Water Supply

($000's)

	Project Title Project Number	Source of Funds	Budgeted or Expended Through FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	Total FY 2026 - FY 2030	Total FY 2031 - FY 2035	Total
1	Additions, Extensions, and Betterments	SR	***C***	***$20,381***	$35,218	$57,542	$103,262	$155,636	$372,039	$229,631	$601,670
2	Extraordinary Maintenance and Repairs	SR	***C***	***$53,864***	$59,733	$61,774	$53,001	$68,533	$296,905	$358,948	$655,853
3	General and Administrative	SR	***C***	***$21,150***	$21,230	$21,320	$21,380	$21,450	$106,530	$107,930	$214,460
4	General Studies and Programs	SR	***C***	***$14,214***	$7,355	$3,442	$3,584	$3,628	$32,223	$18,861	$51,084
5	Potomac Stage IV General Plant Facilities	B, SR	***$2,090***				$30	$50	$80	$920	$3,090
6	Potomac Stage IV Transmission Facilities	B, SR	***$6,191***				$263	$506	$769	$4,998	$11,958
7	Subdivision and Other Development Projects	SR	***C***	***$1,020***	$1,040	$1,060	$1,080	$1,100	$5,300	$5,800	$11,100
8	System Integration - City of Falls Church & City of Fairfax	SR	***C***	***$11,865***	$9,785	$6,168	$7,721	$10,159	$45,698	$9,171	$54,869
	Total		***$8,281***	**$122,494**	**$134,361**	**$151,306**	**$190,321**	**$261,062**	**$859,544**	**$736,259**	**$1,604,084**

Notes: Numbers in bold italics represent funded amounts. A "C" in the 'Budgeted or Expended' column denotes a continuing project.

Key: Source of Funds

B	Bonds
F	Federal
G	General Fund
SR	Sewer Revenue
S	State
U	Undetermined
X	Other