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

Fairfax County's Comprehensive Plan has established a number of objectives and policies in order to:

- ✓ Provide the facilities to treat, transmit and distribute a safe and adequate potable water supply.
- ✓ Identify the need for additional water transmission facilities, including the Corbalis to Fox Mill Water Main.
- ✓ Renovate and expand pumping and storage facilities as needed.

Source: 2007 Edition of the Fairfax County Comprehensive Plan, as amended.

CURRENT 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 2015 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 about 8.3 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, raw water pumping station and 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 the facility to 225 MGD. Facilities are available for applying various chemicals for coagulation, control of taste and odors, fluoridation and disinfection.

Picture of the Occoquan Reservoir, one of Fairfax County's two principal sources of water.

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 from the can be supplied to Fairfax Water by the Washington Aqueduct.

Twenty-six booster pumping stations are located within the distribution system to provide adequate pressure. A total of 54 million gallons (MG) of distribution system storage is provided at 21 locations throughout Fairfax County and the City of Fairfax; an additional 37 MG of treatment plant clearwell 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 include: the Fox Mill to Reston Transmission Main, the Tysons East Transmission Main, and the South Kings Highway Transmission Main. Various pumping station and storage improvements are also planned.

- **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. **General and Administrative.** $159,580,000 for annual 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.

2. **Subdivision and Other Development Projects.** $15,041,000 for annual 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.

3. **Extraordinary Maintenance and Repairs.** $260,323,000 for maintenance and repairs, including $81,202,000 for extraordinary maintenance and major repair of supply, treatment, transmission and general plant facilities associated with a specific project and $179,121,000 to provide a sustainable distribution system through infrastructure reinvestment.

4. **Additions, Extensions and Betterments.** $62,987,000 for improvement and betterment of existing supply, treatment, transmission, distribution and general plant facilities associated with a specific project.

5. **General Studies and Programs.** $18,765,000 for general studies, programs, engineering and research pertaining to water quality, water supply and system development.

6. **System Integration – City of Falls Church & City of Fairfax.** $49,500,000 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.

7. **Treatment Facilities.** $192,791,000 for design and construction of the Griffith Treatment Facility, which came on line in 2006 and the removal of the former Lorton and River Station treatment plants.

8. **Transmission Facilities.** $16,983,000 for the design and construction of various pumping station modifications throughout Fairfax County.

9. **General Plant Facilities.** $49,924,000 for annual expenses attributed to administration, overhead and bond financing for projects funded by current bond issue, future bond issue or funds on hand.

10. **Potomac Stage III Transmission Facilities.** $106,180,000 for the design and construction of various transmission facilities primarily associated with development of the Potomac River Water Supply Facilities, including additional finished water pumping facilities at the Corbalis Water Treatment Plant. Water main projects include the Fox Mill - Reston Transmission Main and the South Kings Highway Transmission Main. Additional storage facilities are also planned at Penderwood.

11. **Potomac Stage III General Plant Facilities.** $52,092,000 for annual expenses attributed to administration, overhead and bond financing associated with development of the Potomac River Water Supply Facilities funded by future bond issue and funds on hand.

12. **Potomac Stage IV Transmission Facilities.** $10,009,000 for the design and construction of the Tysons East Transmission Main from the Tysons Corner Pumping Station to the existing 24-inch water main in Magarity Road.

13. **Potomac Stage IV General Plant Facilities.** $1,840,000 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 issue and funds on hand.