

Fairfax Water

Joint Board Meeting - October 12, 2021

Introductions

[INTRO TO FAIRFAX WATER VIDEO](#)



Fairfax Water Board Members



Philip W. Allin
Chairman
Sully District
Member since April 7, 1992



Frank R. Begovich
Vice-Chairman
Lee District
Member since September 27, 2004



J. Alan Roberson
Treasurer
Braddock District
Member since August 3, 2009



Richard Dotson
Secretary
Providence District
Member since September 14, 2009



Burton J. Rubin
Springfield District
Member since May 21, 1984



Harry F. Day
Mason District
Member since June 29, 1987



Anthony H. Griffin
At-Large Member
Member since May 01, 2012



Joseph Cammarata
Mt. Vernon District
Member since October 16, 2012



Nancy Colleton
Hunter Mill District
Member since February 25, 2020



Cheryl Ginyard-Jones
Dranesville District
Member since March 23, 2021

Fairfax Water Staff



Jamie Bain Hedges
General Manager



John W. Kingsbury III
Deputy General Manager



Joel L. Thompson
Director
Production Division



Michele L. Moore
Director
Finance Division



Theresa L. Robey
Director
Technology Division




Nat Atapoor
Director
Planning and Engineering Division



Traci K. Goldberg
Director
Transmission and Distribution
Division

Agenda

- Fairfax Water – an Overview
 - Infrastructure Planning and Asset Management
 - Rates and Finances
 - Water Quality
 - City Water System Acquisitions – Seven Years Later
 - Water Resources Planning and Management
 - Customers and Community
 - Discussion
- 

Fairfax Water - Overview



CREATION

Under the Virginia Water and Waste Authorities Act by the Fairfax County Board of Supervisors and chartered by the State Corporation Commission on September 26, 1957.

To establish, operate, and maintain a comprehensive, county-wide water system to be accomplished through the acquisition of existing systems and the construction of new facilities.

VISION

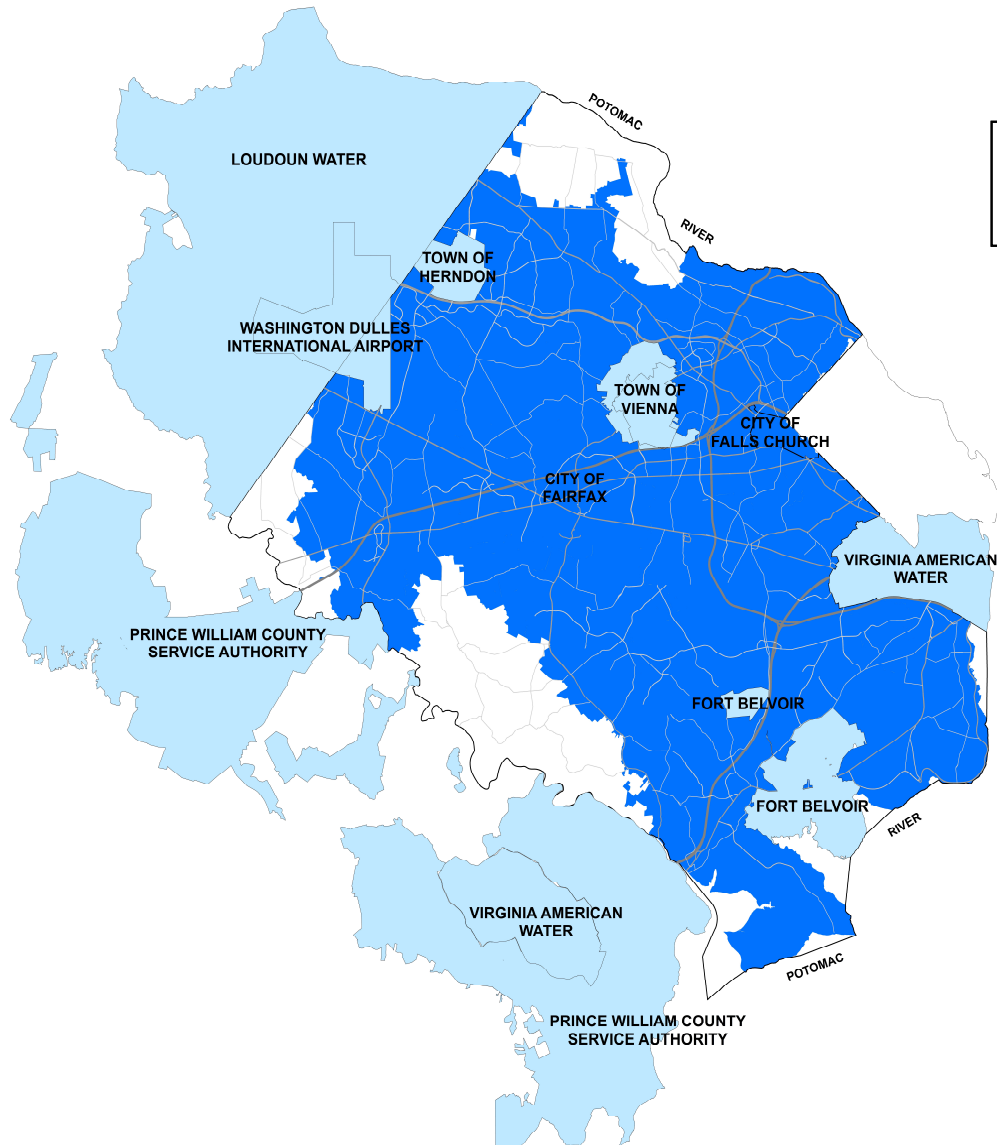
To remain a respected industry leader, upholding our customers' trust by providing water of exceptional quality and reliability, at a reasonable price, while supporting the high quality of life, economic vitality of the region, and preserving the Occoquan and Potomac water resources for future generations.

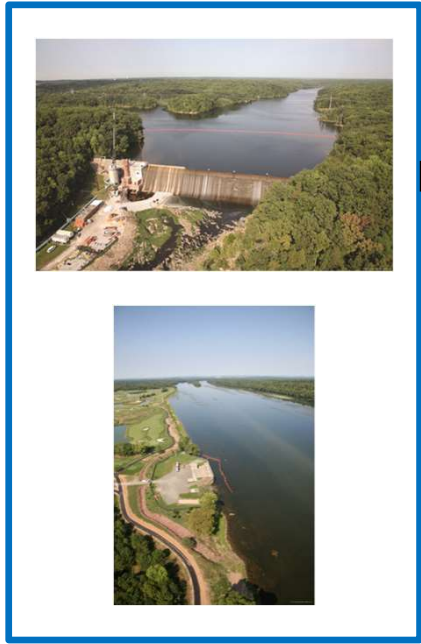


Areas Served

Wholesale Service 
946,000 residents
466,000 employees

Retail Service 
1.1 million residents
647,000 employees

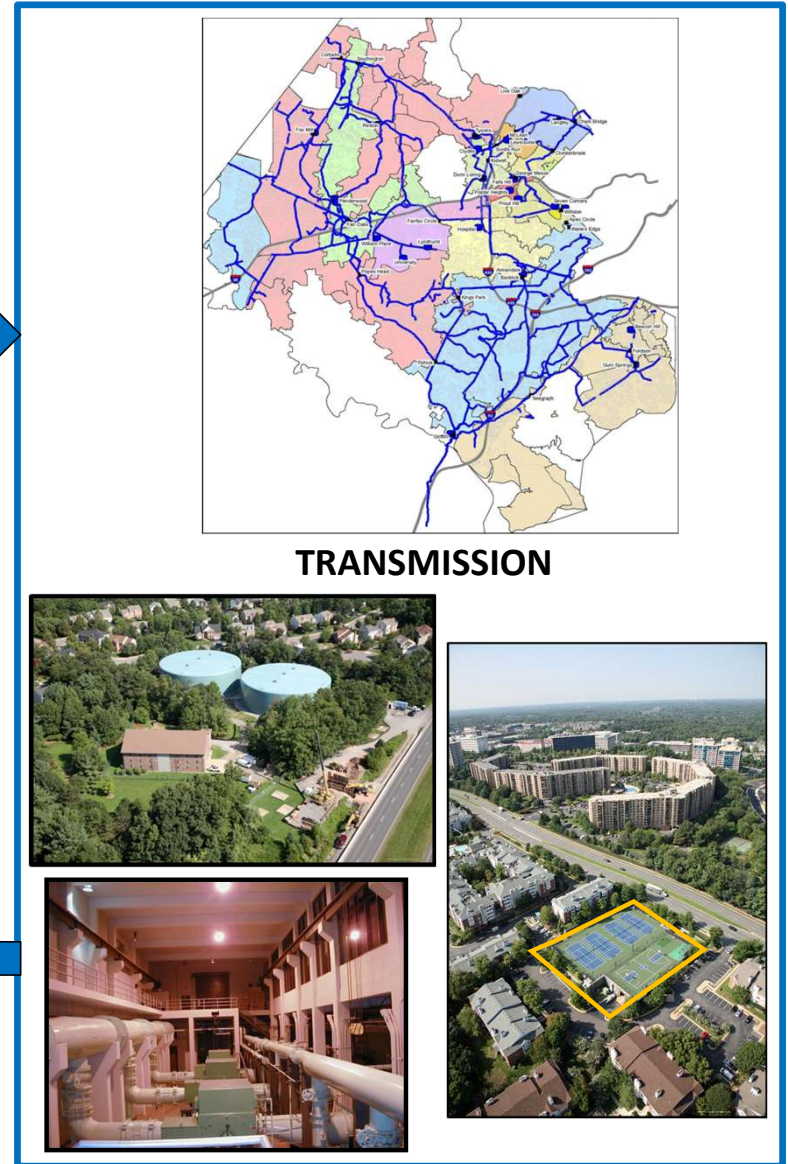




SUPPLY



TREATMENT



TRANSMISSION

DISTRIBUTION SYSTEM

Over \$2
Billion in
Infrastructure



Key Success Factors

- Single-purpose: providing water of exceptional quality and reliability at a reasonable price
- Board with diverse experience and long-term view
 - Acquisition and integration of City systems
 - Vulcan Quarry (Edgemon Reservoir) acquisition and development
- Professional staff with extensive experience in the water utility industry and long tenure with Fairfax Water
- A long-term perspective in financial and infrastructure planning supported by strong financial policies and consistent rate increases
- Relatively new, state of the art water treatment facilities and a highly integrated transmission system
- Water supply secured to meet all future projections
- Demonstrated commitment to asset management
- Investment in operational and information technology that provide value and efficiencies
- Regionally low rates that are affordable

A Vocation of Distinction

“We are, all of us, water beings on a water planet. Water is life. Without it, all living things die....Of the Earth’s vast resources of water, only a small fraction is fresh and drinkable. A few people among the globe’s billions have been charged with the task of ensuring everyone else has a reliable supply of safe water.
Supplying potable water is an essential human activity, a great responsibility, and a vocation of distinction.”

J.B. Mannion

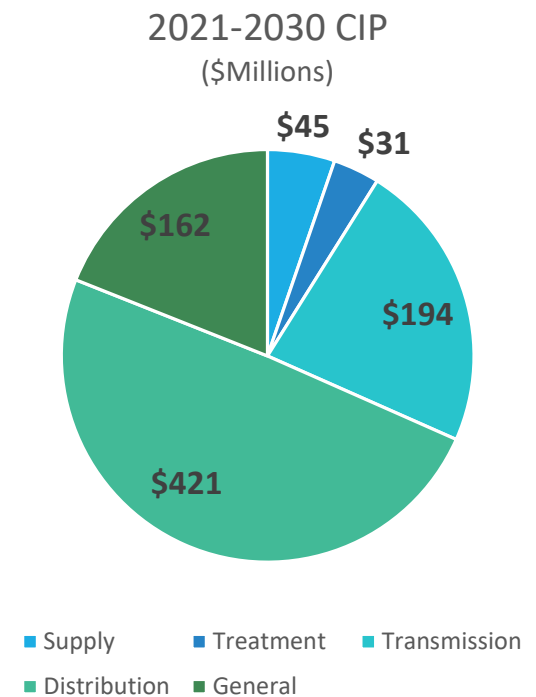
[Fairfax Water Staff Video](#)



Infrastructure Planning and Asset Management

Capital Improvement Program

- 10-Year plan
 - Revised annually and incorporated into County CIP
- Identifies investments in capital facilities necessary to:
 - Meet or surpass all state and federal water quality regulations
 - Support County Comprehensive Plan
 - Meet customer demands for water service
 - Provide reliable and continuous water service
 - Remain safe for our employees and the community
- 2021 – 2030 CIP: \$853+ Million



Distribution System Sustainability

- Replacement/rehabilitation of water mains
- Maintain system-wide break rate below 20 per 100 miles of main per year
 - Less than half the break rate of neighboring utilities
- 10-year Capital Improvement Plan expenditures
 - \$262 million
 - Over 30% of the total 10-year CIP
- Coordinated with VDOT repaving plans when feasible



Recent and Ongoing Capital Investments

- Water storage tank rehabilitation
- Electrical system replacements
- Distribution Maintenance and Warehouse facilities
- Transmission system improvements
 - Resilience
 - Integration with former City of Falls Church, City of Fairfax systems
- Information Technology
- Operations Technology



Risk and Resiliency

- Drinking water utilities designated as one of sixteen Critical Infrastructure Sectors
- Physical and cyber security are a significant focus for Fairfax Water
- Risk and Resiliency Assessment of 2019
 - Utilized industry standard methodology (AWWA J100)
 - All hazards assessment of physical and cyber infrastructure and systems
 - Multi-agency contributors (e.g. EPA, DHS, Fairfax Joint Local Emergency Planning Committee, Virginia State Police and others)
 - Updated Fairfax Water Emergency Response Plan
- Power resiliency
 - Fairfax Water invested over \$50 million in power resiliency and storage following Tropical Storm Isabel
 - Ongoing review and improvements to ensure adequate emergency power to keep water system pressurized

Rates and Finances

Rates and Finances

- Fairfax Water operations are completely self funded
 - Rates, fees and charges collected for provision of water service
- Long-term perspective in financial planning
 - Annual budget
 - Ten-year strategic financial model
 - Ten-year capital improvement program
- Maintain a AAA bond rating from all three major rating agencies
- Rates for water service among the lowest in the Washington Metropolitan Area

Standard and Poor's – June 25, 2021

“A strong conservative management team has been able to plan for significant water capacity in the future while keeping current financial metrics very strong.”

“We believe the financial management practices are strong, comprehensive, and supportive of high credit quality.”

“The long-term planning process is rigorous, and the ten-year plan is annually updated and made publicly available.”

Sustainability

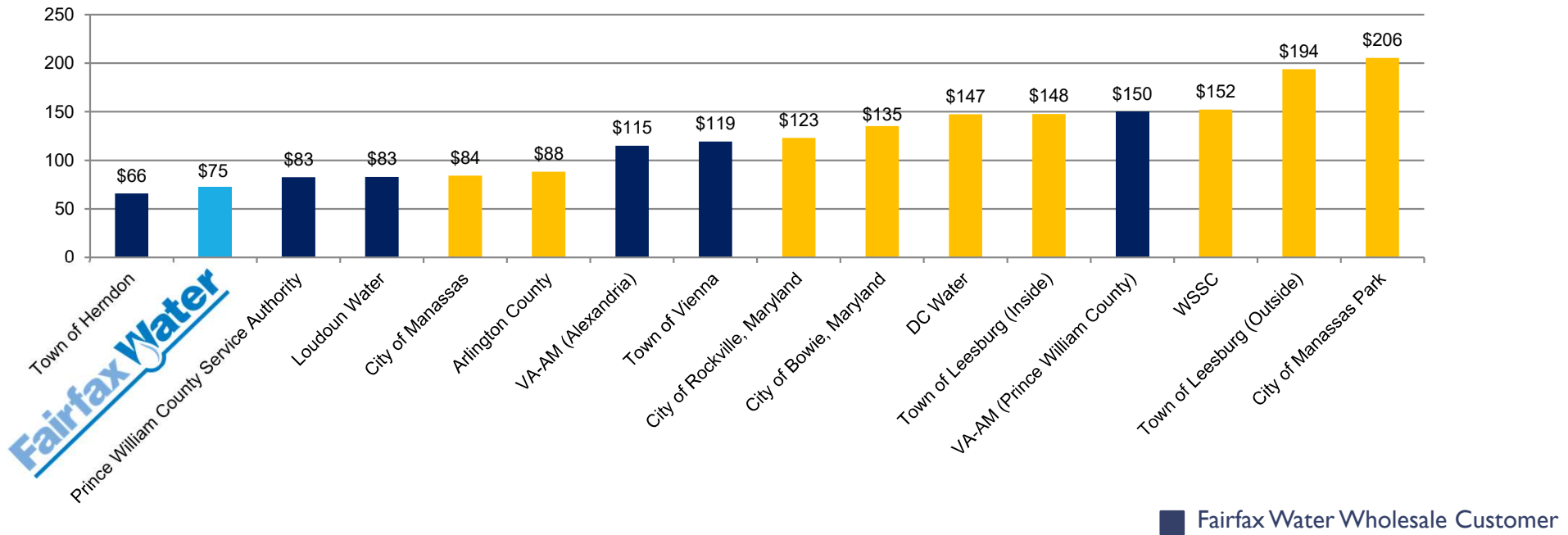
- Reducing water loss in the system
 - Proactive water main leak detection and repairs
 - Replacement of aging water mains through Distribution System Sustainability Program
 - Meter management program
- Incentivizing wise water use
 - Customer education
 - Peak-use charge
- Maintaining a comprehensive energy management program
 - Since initiated, reduced electricity usage enough to power 21,000 homes
- Optimizing treatment processes to reduce chemical usage
- Proactively managing watersheds to prevent/reduce contaminants
- Addressing climate change in water supply planning



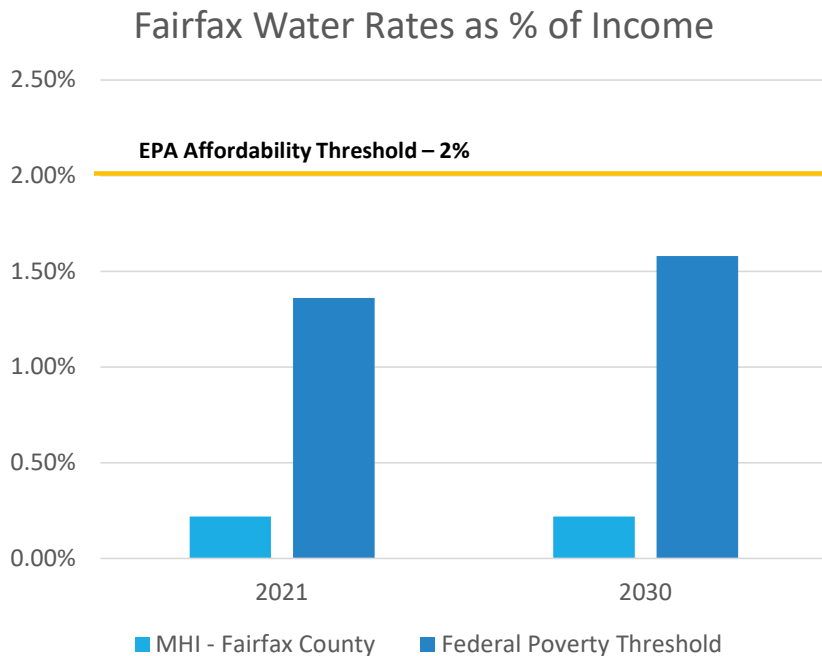
Association of Metropolitan Water Agencies
Sustainable Management Award

Retail Customer Rates

**Quarterly Retail Bill Comparison
(18,000 gallons, winter water usage, rates as of April 1, 2021)**



Affordability



- Current Fairfax Water rates are well below the EPA affordability guidance of 2% of income
 - 0.22% of Median Household Income (MHI) for Fairfax County
 - 1.36% of Federal Poverty Threshold
- Fairfax Water rates are projected to remain affordable with planned rate increases through 2030
 - 0.22% of MHI for Fairfax County
 - 1.58% of Federal Poverty Threshold

Water Quality

Water Treatment Plants

- Griffith Water Treatment Plant
 - 120 million gallons per day (MGD)
 - Sourced from the Occoquan Reservoir
- Corbalis Water Treatment Plant
 - 225 million gallons per day (MGD)
 - Sourced from Potomac River
 - Largest water treatment facility in Virginia
- Conventional treatment processes with the addition of ozone and granular activated carbon used in a biological mode
- Both plants are master planned for future expansion



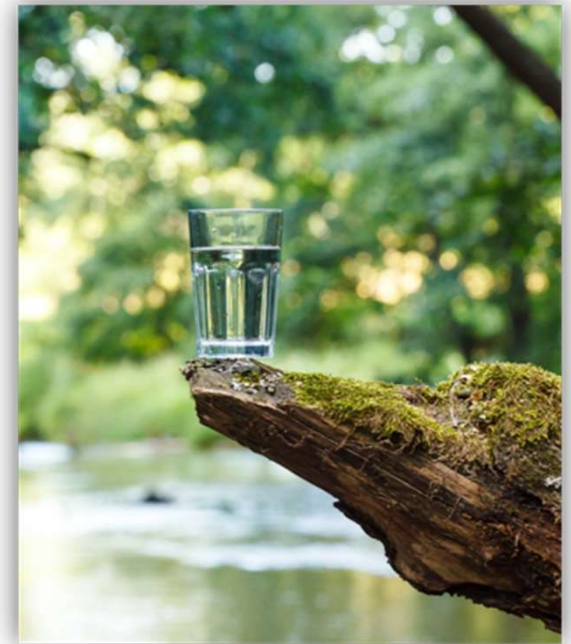
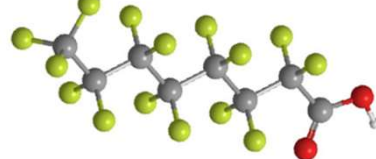
Water Quality

- Surpasses all regulatory requirements
 - 286 compounds
- Fairfax Water Laboratory
 - State certified
 - 100% proficiency
- Over 15,000 samples collected every year
- Over 50,000 laboratory analyses completed
 - Regulatory compliance
 - Process control
 - Special studies
- Collaboration with Water Research Foundation



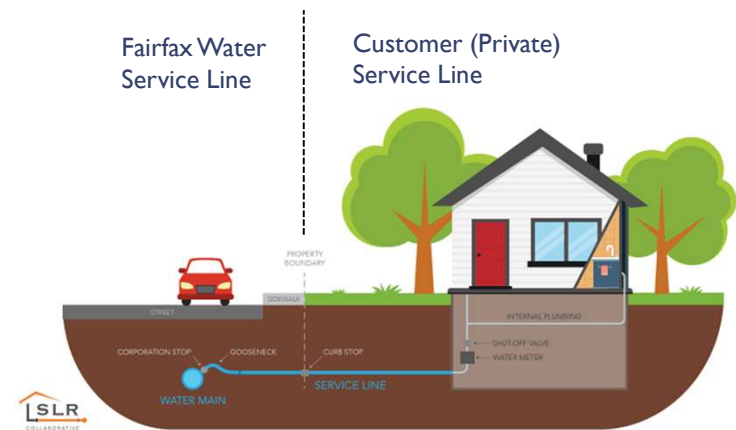
Emerging Issues - PFAS

- Poly and Perfluoroalkyl Substances (PFAS)
 - Used in common household and consumer products
- Not currently regulated in drinking water by U.S. EPA
 - Lifetime health advisory
- Virginia Department of Health PFAS Workgroup
- PFAS monitoring at Fairfax Water
 - Detected at extremely low levels
 - All results below EPA health advisory and most stringent levels set by any state



Emerging Issues – Lead and Copper Rule

- Fairfax Water lead results are substantially below EPA limits
- Significant portion of Fairfax County housing stock constructed after lead pipe was banned
- Pending revisions to the EPA Lead and Copper Rule
 - Increased monitoring requirements for schools and child-care facilities
 - Water utilities required to prepare a service line inventory within three years of effective date
 - Utility side
 - Customer side – little available data

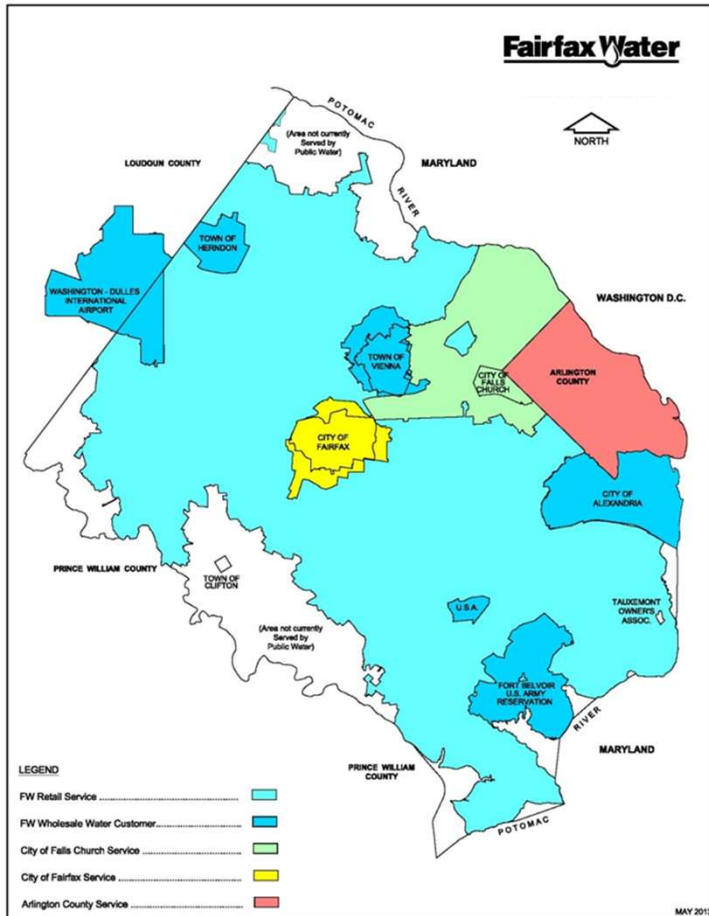


City Water System Acquisitions

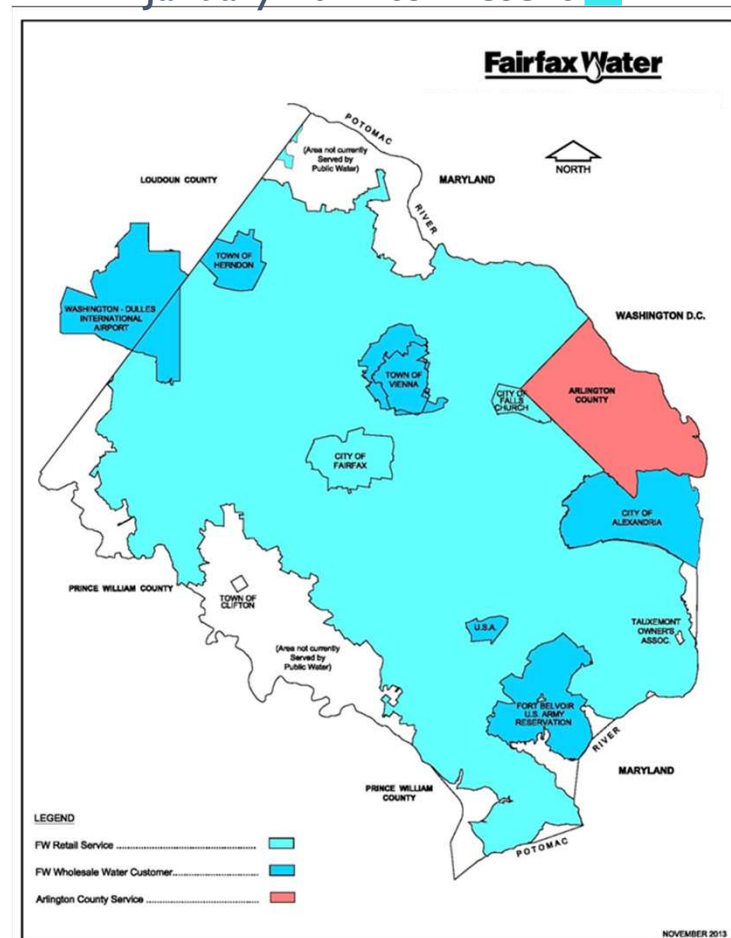
SEVEN YEARS LATER



Fairfax Water Retail Service December 2013



Fairfax Water Retail Service January 2014 to Present



Growth “Overnight”

WATER SYSTEM ASSETS ADDED

Description	Count Increase	% Increase
Miles of water main	700	21%
Fire hydrants	3,520	19%
Customer accounts	45,500	19%
Storage tanks	13	56%
Pumping Stations	8	44%

PRE-CLOSING ACTIVITIES

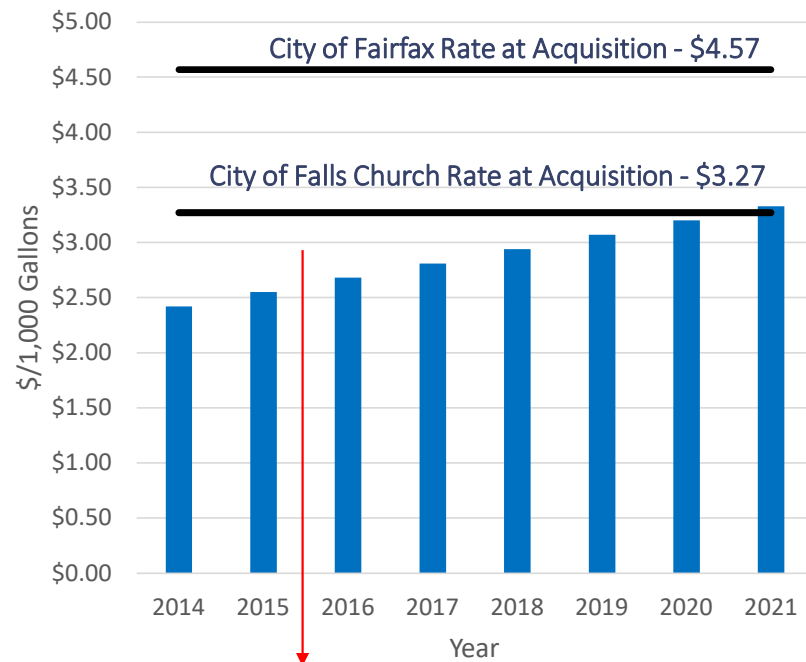
- Inspection of transferring assets
- Agreements with Washington Aqueduct
- Incorporated infrastructure data into Fairfax Water asset management systems
 - Geographic Information System (GIS)
 - Enterprise Resource Planning system (ERP)
- Migration of customer account data
- Communications with customers
- Coordination with regulatory agencies

A Win-Win Solution

- Completion of Fairfax Water's 1957 Mission!
 - Comprehensive County-Wide Water System
- Rate equalization/reduction for former City water system customers
- All water system customers benefitted from increased economies of scale
- Third source of supply acquired with Washington Aqueduct source
- Improve overall system resilience by integrating pipe networks
- All City employees provided employment with Fairfax Water

Rate Equalization for City Customers

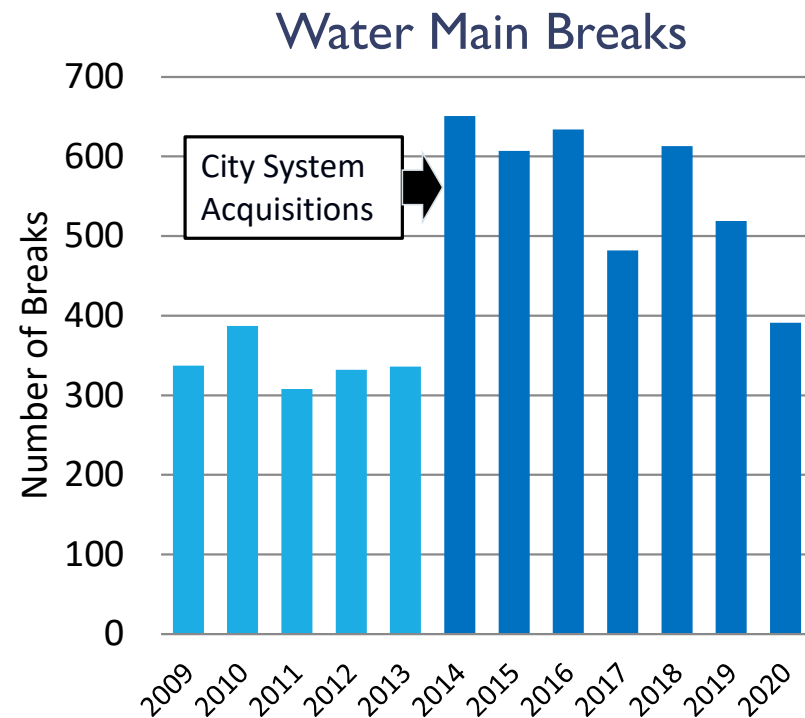
- Rate disparity at time of acquisition
 - City of Falls Church rate 35% higher
 - City of Fairfax rate 89% higher
- Rates equalized sooner than required
 - Six months ahead for former City of Falls Church customers
 - Eighteen months ahead for former City of Fairfax customers



Rates equalized July 1, 2015

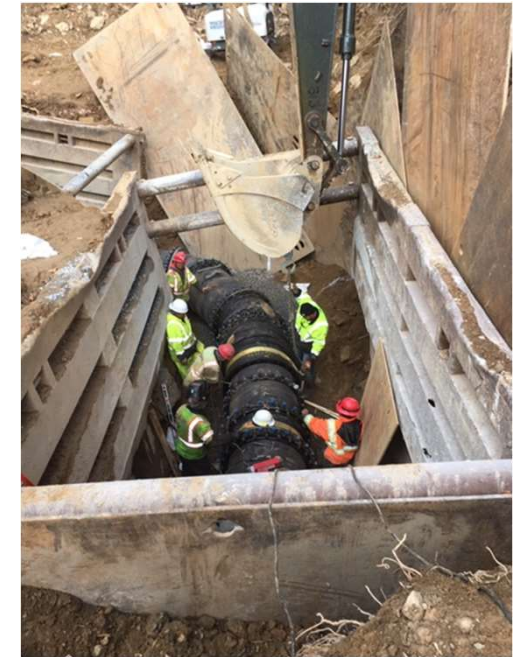
Post-acquisition Activities

- Enhanced asset management
- Capital improvements to integrate systems
 - Address areas of chronic low pressure and reduced hydrant flow
 - Address single point of failure with Washington Aqueduct supply
 - Construct maintenance and warehouse facility to serve central part of County and Cities



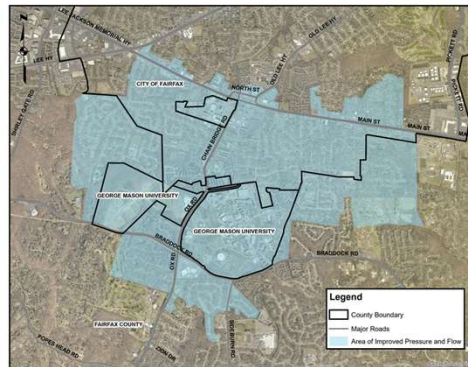
Resiliency – Single Source of Supply

- City of Falls Church system relied on single pipeline from Washington Aqueduct
- Fairfax Water constructed transmission improvements for resiliency
- Failure of supply line from Washington Aqueduct in 2019
 - Repair took 11 days
 - Prior to acquisition, break would have resulted in loss of water supply to portions of Tysons, McLean, and Falls Church for several days



Service Improvements

- Former City of Fairfax and City of Falls Church water service areas
- Improvements
 - New transmission mains
 - New storage tank on GMU-Fairfax campus
- Improved pressure and fireflow to nearly 5,000 customers in Fairfax County



■ Pressure Improvements from GMU Tank



Central Maintenance Facility

- Now under construction!
- Replaces leased facility in City of Falls Church
- House crews and equipment for emergency repair and preventive maintenance for the distribution system
 - McLean
 - Tysons
 - Merrifield
 - City of Falls Church
- LEED certified building



Remaining Improvements

- Replacement of Seven Corners and Willston Tanks
- Replacement of the Poplar Heights storage tank
- Issues with current tanks
 - Ineffective, insufficient for current demands
 - Pressure and flow are below Fairfax Water service targets
 - Water quality challenges
- Fairfax Water continues to pursue locations for new storage tanks
- Interim improvements in Seven Corners with the Sleepy Hollow pumping station



Water Resources Planning and Management



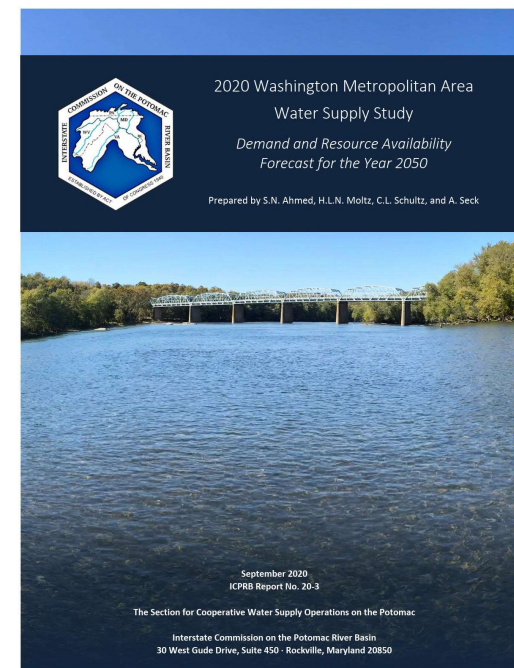
Water Supply

- Occoquan Reservoir
 - 590 square mile multi-jurisdictional watershed
 - 8.3 billion gallons of usable storage
 - Increasing safe-yield from UOSA effluent
 - Pre-eminent example of indirect potable reuse
- Potomac River
 - Shared resource
 - 9,000 square mile multi-state watershed
 - On-shore and off-shore intakes

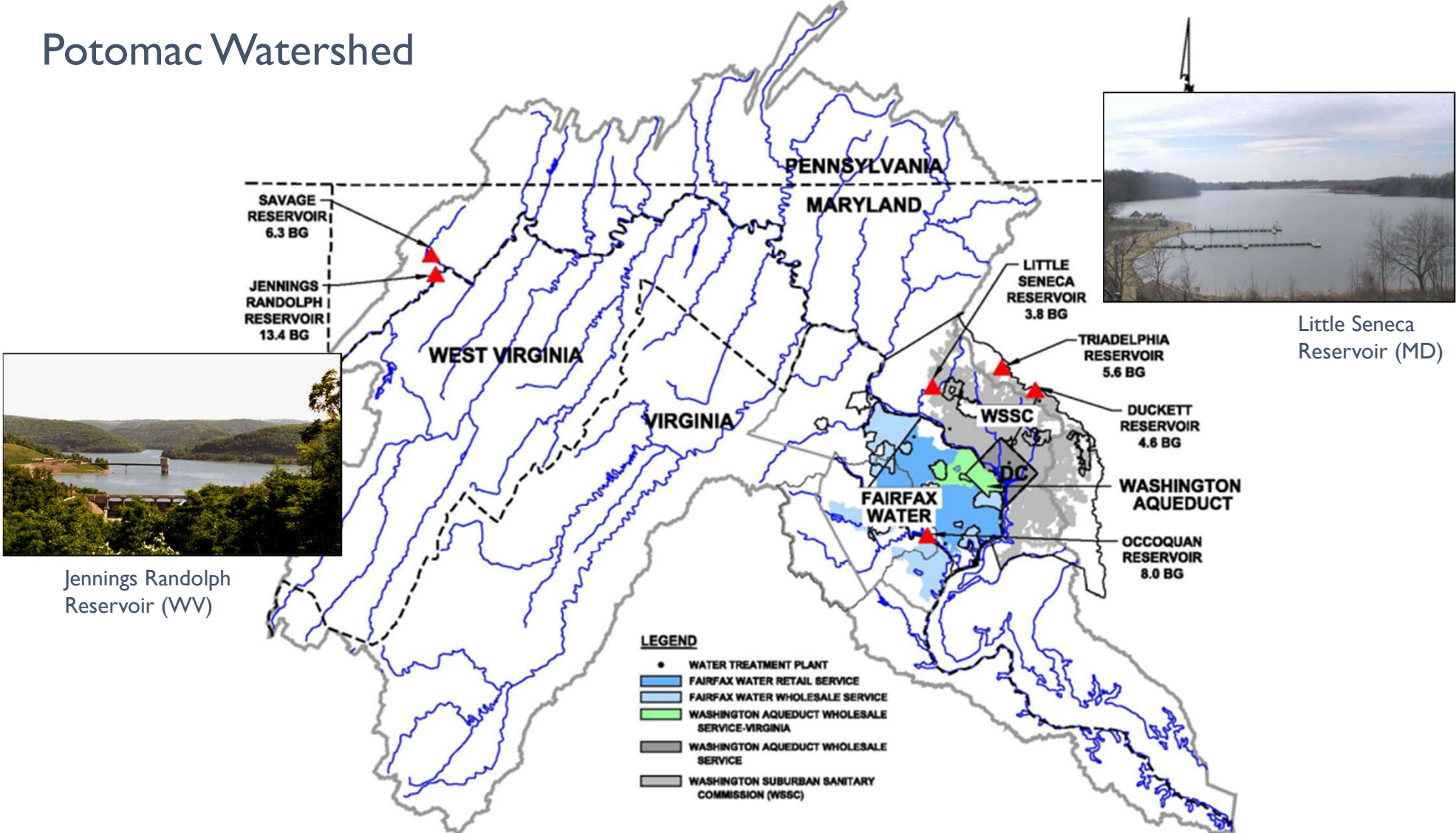


Regional Water Supply Agreements

- Potomac Low-Flow Allocation Agreement (LFAA)
 - Allocates water to Washington Metro Area Suppliers when flow is insufficient to meet demands
- Water Supply Coordination Agreement
 - Avoids triggering the LFAA
 - Coordinates system operations among Fairfax Water, WSSC Water, and the Washington Aqueduct
 - Establishes cost sharing agreements for current and future supply augmentation
 - Conducts planning studies every five years of projected demands and supply availability
 - Prepared by Interstate Commission on the Potomac River Basin (ICPRB)



Potomac Watershed



Jennings Randolph Reservoir (WV)



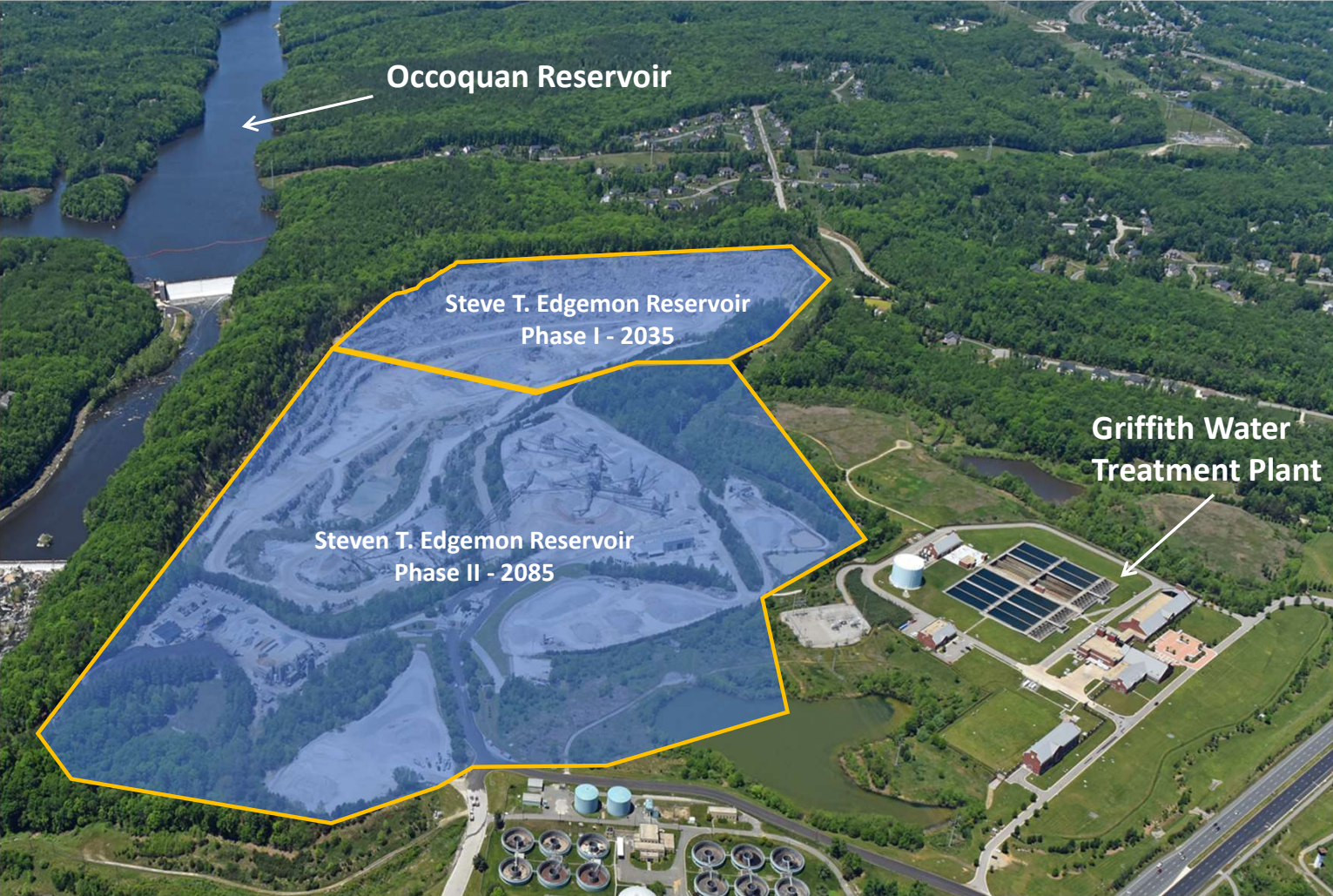
Little Seneca Reservoir (MD)



Occoquan Reservoir

Vulcan Quarry

Griffith Water Treatment Plant



Occoquan Reservoir



Steve T. Edgemon Reservoir
Phase I - 2035

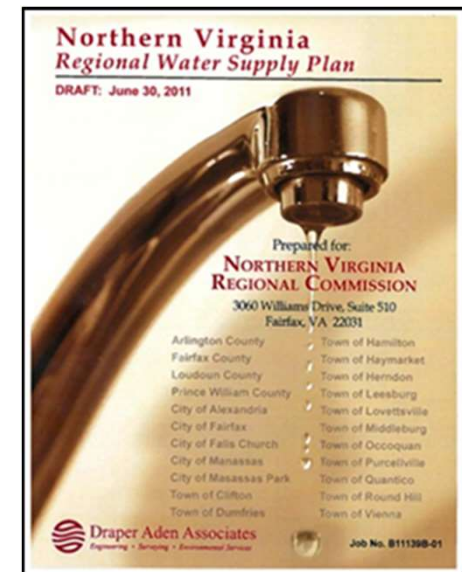
Steven T. Edgemon Reservoir
Phase II - 2085

Griffith Water
Treatment Plant



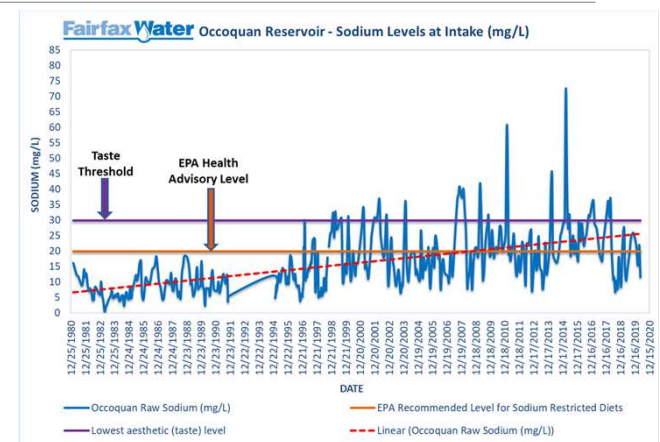
Northern Virginia Regional Water Supply Plan

- Prepared in response to Virginia Water Supply Planning Regulation
 - Original submission in 2011 with an update in 2018
 - Fully updated plan must be submitted in 2023
 - Incorporates private wells, industrial and agricultural uses
- Multi-jurisdiction plan prepared by Northern Virginia Regional Commission
 - Relies heavily on ICPRB study for areas served by Fairfax Water
 - Fairfax Water staff heavily involved



Water Resources Challenges

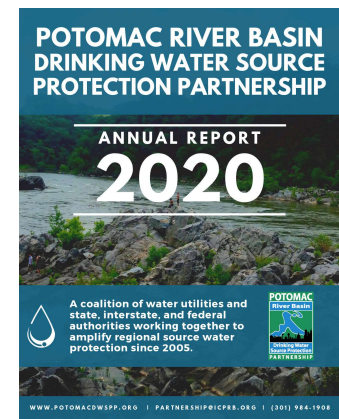
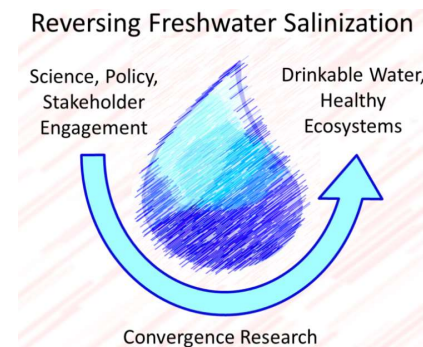
- Upstream consumptive use
- Climate change
 - Water supply
 - Source water quality
- Increasing salinization of freshwater resources
 - Occoquan
 - Potomac
- Emerging contaminants, e.g. PFAS, harmful algal blooms



Research Needs Forum Hosted by Fairfax Water, OWML

Watershed Protection Efforts

- ECOS – Executive Committee on the Occoquan Sewershed
 - Reversing Freshwater Salinization Syndrome
- Potomac Drinking Water Source Protection Partnership
 - Collaboration of utilities and regulators
 - Spill notifications and exercises
- Participation in regional, state and national initiatives and research efforts
- Education and outreach on source water protection



Winter Is Coming: How To Be 'Winter Salt Smart'

What's the problem?
In the winter, salt keeps us safe while we are on the move, but it also leads to higher levels of salt in the region's drinking water supply, including the Potomac River and Occoquan Reservoir. Learn more and be winter salt smart!

What is winter salt?
Winter salt is rock salt (sodium chloride) or ice melt (a blend of sodium chloride, magnesium chloride, and other salts). These materials are used in the winter to prevent icing of sidewalks, parking lots, and roadways.

What are the benefits of winter salt use?

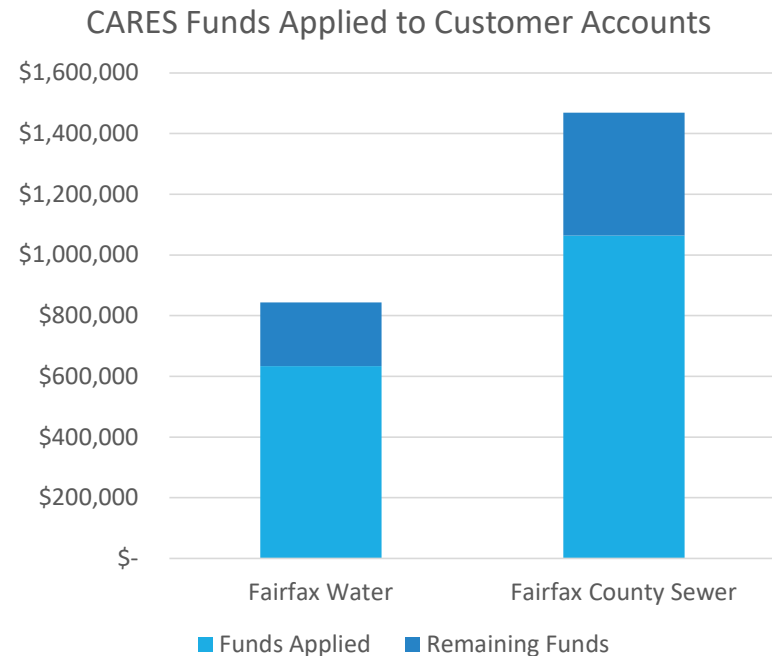
- Results in fewer incidents of slip and fall injuries.
- Reduces number of vehicle crashes.
- Enables businesses, government, and social services to continue with minimal interruption.

(Continued on page 3)

Customers and Community

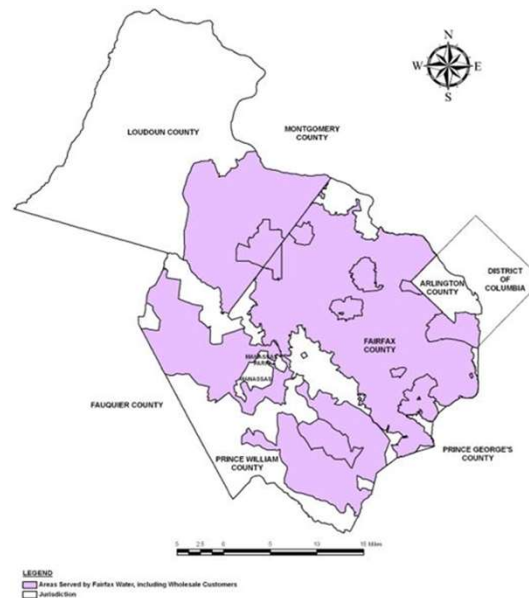
COVID Municipal Utility Relief

- COVID Municipal Utility Relief funding (CARES)
 - Over \$1.75 million applied to nearly 2,350 customer accounts
 - Application deadline is November 1, 2021
- Coordinating with County staff to implement new American Rescue Plan Act (ARPA) funds

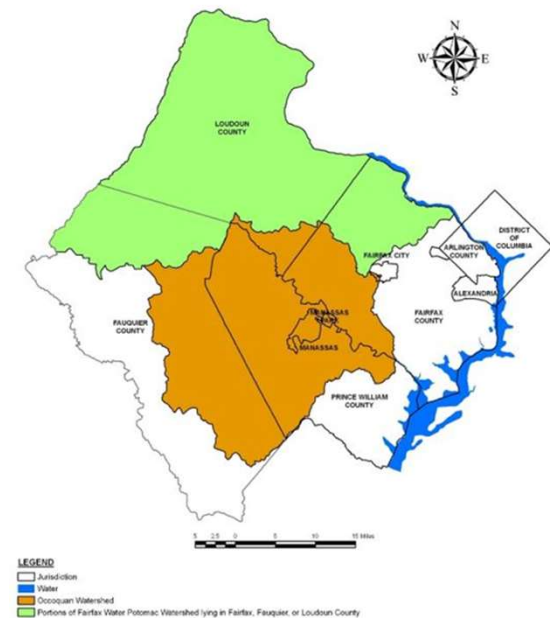


Stakeholder Outreach Grant Program

- Initiated in 2000
- Recent recipients:
 - Fairfax County Park Foundation
 - Reston Association
 - Eleanor C. Lawrence Park
 - Friends of Huntley Meadows Park
 - Friends of Accotink Creek
 - Rachael Carson Middle
 - Belvedere Elementary



Fairfax Water Service Area



Fairfax Water Source Watersheds

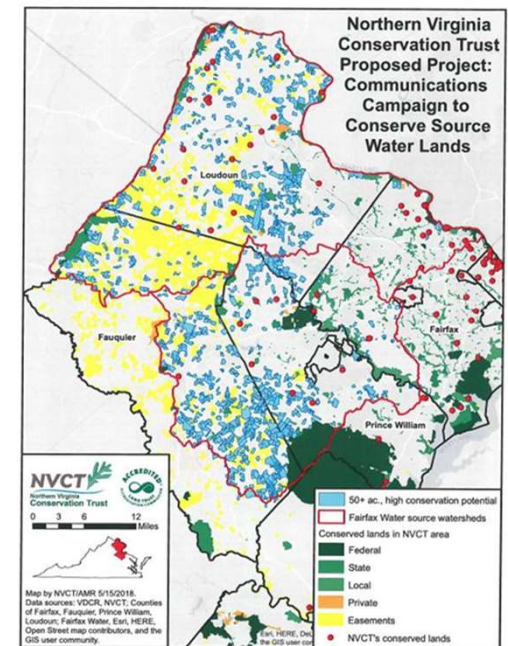
Stakeholder Outreach Grant Program



Watershed education



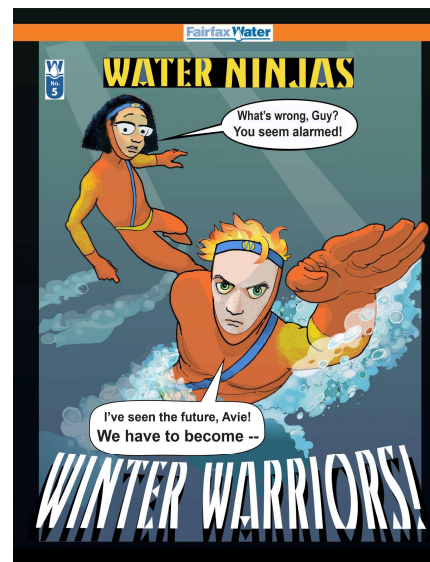
Equipment, boots, test kits, for stream water quality monitoring



Northern Virginia Conservation Trust's communication campaign to conserve source water lands.

Customer Education and Outreach


- Treatment Plant and Laboratory Tours
 - Virtual platform since 2020
- Educational Videos
- Water Ninjas comics
- From the Tap Newsletter
 - Kids Corner
- The Fairfax Water Bar
- Water Quality Field Day
- Girl Scout Wonders of Water Events
- Boy Scout tours



Straight From the Tap

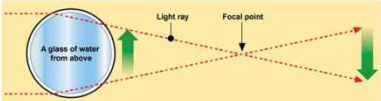
Kids' Corner

The Refraction Reaction



Try this out with a friend, sibling, or parent. Draw two arrows on a piece of paper. Fill a glass with water and then hold one arrow behind the glass. What do you see?

The arrow is backward, right? No. It just looks that way because of something called "refraction."



This happens because light travels slower through water than it does through the air. The light rays also bend in the water. As the light bouncing off the arrow travels through the water, it bends so much that the light rays cross each other and flip. That's why the arrow appears to be backward.

Read more details about this experiment here: bit.ly/2KPLvAp (Physics Central).

You can also watch the video here: bit.ly/36brAU4 (Cool Science Experiments HQ).

Customer Education and Outreach



Customer Satisfaction and Trust

- Fairfax Water rated #1 in the South Region by J.D. Power in 2021
 - Residential customer satisfaction
 - Also #1 in the Washington Metro Area
 - Key factors in the J.D. Power rating
 - Quality and reliability
 - Price
 - Online payments
- Fairfax Water rated #1 Most Trusted Water Utility in the country
 - 2021 Survey by Escalent



Fairfax Water

- We are committed to:
 - Contributing to the high quality of life by providing superior water service to the two million residents we serve in Fairfax County and the Northern Virginia region
 - Ensuring the economic vitality of Fairfax County by providing water utility infrastructure to support the objectives of the County's Comprehensive Plan
 - Supplying high quality water at a reasonable price to the residents and businesses we serve
 - Maintaining a strong focus on long-term financial and infrastructure planning
 - Proactively managing our \$2 Billion in water system infrastructure
 - Protecting the Occoquan and Potomac as water supply resources for current and future generations of our customers
 - Remaining engaged with our customers and community through education and outreach programs

Discussion
