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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.

MISSION

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.

2

Fairfax Water

What We Do

- Produce high-quality drinking water for over two million residents of Northern Virginia.
- Operate and maintain over \$2 billion of water infrastructure from the source to the tap.
- Operate two of the largest water treatment plants in the Commonwealth with 345 million gallons per day of capacity.
- Maintain a long-term focus on water supply, infrastructure, and financial planning.
- Work collaboratively with regional partners to ensure a robust water supply for Northern Virginia and the Washington Metropolitan area.

Griffith Water Treatment Plant

Corbalis Water Treatment Plant

Our 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.

3

Fairfax Water

Wholesale Partners and Communities Served

Retail Service
 1.1 million residents
 660,000 employees

Wholesale Service
 990,000 residents
 495,000 employees

4

Water Utility Forecasts

- ▶ Long-term forecasts of water demand supports strategic water utility decisions concerning investments in infrastructure involving the provision of water supplies and other related sanitary services
 - ▶ Utility or System master plans
 - ▶ Capital Improvement plans and infrastructure financing
 - ▶ Water supply development



Fairfax Water

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Service Area Population

- ▶ Use GIS to intersect MWCOG's traffic analysis zone (TAZ) polygons with Fairfax Water's service area shapefiles.
- ▶ Forecast population and employment data is stored within the TAZ polygons.
 - ▶ Where boundary TAZ polygons were truncated, data was proportioned based on the percentage of area within the service area.
- ▶ Output: tabular summaries of projected retail and wholesale service area population and employment.



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FAIRFAX WATER ESTIMATED POPULATION SERVED
November 2022

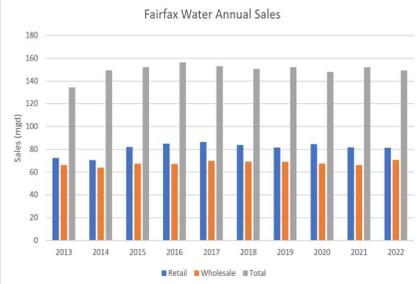
YEAR	RETAIL CUSTOMERS				WHOLESALE CUSTOMERS				TOTAL WHOLESALE POPULATION	TOTAL SERVICE POPULATION	
	Liquor Lic. Area	City of Falls Church	City of Fairfax	Pt. Wm. County	Loudoun County	City of Albemarle	City of Fort Belknap	Town of Henric			Town of Verano
2020	921,552	149,877	50,518	440,218	351,989	159,463	16,177	21,745	28,942	960,953	1,028,000
2021	926,871	150,240	50,725	441,221	352,261	160,275	16,271	22,201	29,174	970,986	1,038,213
2022	932,191	151,103	50,925	442,028	353,103	161,103	16,377	22,651	29,595	981,029	1,048,628
2023	937,511	151,966	51,125	442,835	353,942	161,938	16,482	23,099	30,016	991,171	1,058,849
2024	942,830	152,829	51,322	443,642	354,781	162,773	16,588	23,549	30,437	1,001,214	1,069,070
2025	948,149	153,692	51,522	444,449	355,620	163,608	16,693	24,000	30,858	1,011,257	1,079,291
2026	953,468	154,555	51,722	445,256	356,459	164,443	16,798	24,451	31,279	1,021,300	1,089,512
2027	958,787	155,418	51,922	446,063	357,300	165,278	16,903	24,902	31,700	1,031,343	1,099,733
2028	964,106	156,281	52,122	446,870	358,141	166,113	17,008	25,353	32,121	1,041,386	1,109,954
2029	969,425	157,144	52,322	447,677	358,982	166,948	17,113	25,804	32,542	1,051,429	1,120,175
2030	974,744	158,007	52,522	448,484	359,823	167,783	17,218	26,255	32,963	1,061,472	1,130,396
2031	980,063	158,870	52,722	449,291	360,664	168,618	17,323	26,706	33,384	1,071,515	1,140,617
2032	985,382	159,733	52,922	450,098	361,505	169,453	17,428	27,157	33,805	1,081,558	1,150,838
2033	990,701	160,596	53,122	450,905	362,346	170,288	17,533	27,608	34,226	1,091,601	1,161,059
2034	996,020	161,459	53,322	451,712	363,187	171,123	17,638	28,059	34,647	1,101,644	1,171,280
2035	1,001,339	162,322	53,522	452,519	364,028	171,958	17,743	28,510	35,068	1,111,687	1,181,501
2036	1,006,658	163,185	53,722	453,326	364,869	172,793	17,848	28,961	35,489	1,121,730	1,191,722
2037	1,011,977	164,048	53,922	454,133	365,710	173,628	17,953	29,412	35,910	1,131,773	1,201,943
2038	1,017,296	164,911	54,122	454,940	366,551	174,463	18,058	29,863	36,331	1,141,816	1,212,164
2039	1,022,615	165,774	54,322	455,747	367,392	175,298	18,163	30,314	36,752	1,151,859	1,222,385
2040	1,027,934	166,637	54,522	456,554	368,233	176,133	18,268	30,765	37,173	1,161,902	1,232,606
2041	1,033,253	167,500	54,722	457,361	369,074	176,968	18,373	31,216	37,594	1,171,945	1,242,827
2042	1,038,572	168,363	54,922	458,168	370,000	177,803	18,478	31,667	38,015	1,181,988	1,253,048
2043	1,043,891	169,226	55,122	458,975	370,841	178,638	18,583	32,118	38,436	1,192,031	1,263,269
2044	1,049,210	170,089	55,322	459,782	371,682	179,473	18,688	32,569	38,857	1,202,074	1,273,490
2045	1,054,529	170,952	55,522	460,589	372,523	180,308	18,793	33,020	39,278	1,212,117	1,283,711
2046	1,059,848	171,815	55,722	461,396	373,364	181,143	18,898	33,471	39,699	1,222,160	1,293,932
2047	1,065,167	172,678	55,922	462,203	374,205	181,978	18,999	33,922	40,120	1,232,203	1,304,153
2048	1,070,486	173,541	56,122	463,010	375,046	182,813	19,104	34,373	40,541	1,242,246	1,314,374
2049	1,075,805	174,404	56,322	463,817	375,887	183,648	19,209	34,824	40,962	1,252,289	1,324,595
2050	1,081,124	175,267	56,522	464,624	376,728	184,483	19,314	35,275	41,383	1,262,332	1,334,816

Notes:
 Prince William County includes service populations for PWCSA and Va-Air Prince William District (Date City)
 Sources:
 MWCOC Round 10 Cooperative Forecasts

FAIRFAX WATER ESTIMATED EMPLOYMENT SERVED
November 2022

YEAR	RETAIL CUSTOMERS				WHOLESALE CUSTOMERS				TOTAL WHOLESALE EMPLOYMENT	TOTAL SERVICE EMPLOYMENT	
	Liquor Lic. Area	City of Falls Church	City of Fairfax	Pt. Wm. County	Loudoun County	City of Albemarle	City of Fort Belknap	Town of Henric			Town of Verano
2020	437,071	149,053	32,747	146,265	144,148	101,803	40,994	19,207	13,823	438,038	1,069,885
2021	441,008	149,251	33,102	146,366	144,602	102,038	41,308	19,503	14,020	440,613	1,082,175
2022	445,000	149,450	33,457	146,467	145,056	102,273	41,613	19,808	14,219	443,188	1,094,663
2023	448,974	149,648	33,812	146,568	145,510	102,508	41,918	20,113	14,418	445,763	1,107,153
2024	452,948	149,846	34,167	146,669	145,964	102,743	42,223	20,418	14,617	448,338	1,119,643
2025	456,922	150,044	34,522	146,770	146,418	102,978	42,528	20,723	14,816	450,913	1,132,133
2026	460,896	150,242	34,877	146,871	146,871	103,213	42,833	21,028	15,015	453,488	1,144,623
2027	464,870	150,440	35,232	146,972	147,326	103,448	43,138	21,333	15,214	456,063	1,157,113
2028	468,844	150,638	35,587	147,073	147,780	103,683	43,443	21,638	15,413	458,638	1,169,603
2029	472,818	150,836	35,942	147,174	148,234	103,918	43,748	21,943	15,612	461,213	1,182,093
2030	476,792	151,034	36,297	147,275	148,688	104,153	44,053	22,248	15,811	463,788	1,194,583
2031	480,766	151,232	36,652	147,376	149,142	104,388	44,358	22,553	16,010	466,363	1,207,073
2032	484,740	151,430	37,007	147,477	149,596	104,623	44,663	22,858	16,209	468,938	1,219,563
2033	488,714	151,628	37,362	147,578	150,050	104,858	44,968	23,163	16,408	471,513	1,232,053
2034	492,688	151,826	37,717	147,679	150,504	105,093	45,273	23,468	16,607	474,088	1,244,543
2035	496,662	152,024	38,072	147,780	150,958	105,328	45,578	23,773	16,806	476,663	1,257,033
2036	500,636	152,222	38,427	147,881	151,412	105,563	45,883	24,078	17,005	479,238	1,269,523
2037	504,610	152,420	38,782	147,982	151,866	105,798	46,188	24,383	17,204	481,813	1,282,013
2038	508,584	152,618	39,137	148,083	152,320	106,033	46,493	24,688	17,403	484,388	1,294,503
2039	512,558	152,816	39,492	148,184	152,774	106,268	46,798	24,993	17,602	486,963	1,306,993
2040	516,532	153,014	39,847	148,285	153,228	106,503	47,103	25,298	17,801	489,538	1,319,483
2041	520,506	153,212	40,202	148,386	153,682	106,738	47,408	25,603	18,000	492,113	1,331,973
2042	524,480	153,410	40,557	148,487	154,136	106,973	47,713	25,908	18,199	494,688	1,344,463
2043	528,454	153,608	40,912	148,588	154,590	107,208	48,018	26,213	18,398	497,263	1,356,953
2044	532,428	153,806	41,267	148,689	155,044	107,443	48,323	26,518	18,597	499,838	1,369,443
2045	536,402	154,004	41,622	148,790	155,498	107,678	48,628	26,823	18,796	502,413	1,381,933
2046	540,376	154,202	41,977	148,891	155,952	107,913	48,933	27,128	18,995	504,988	1,394,423
2047	544,350	154,400	42,332	149,000	156,406	108,148	49,238	27,433	19,194	507,563	1,406,913
2048	548,324	154,598	42,687	149,101	156,860	108,383	49,543	27,738	19,393	510,138	1,419,403
2049	552,298	154,796	43,042	149,202	157,314	108,618	49,848	28,043	19,592	512,713	1,431,893
2050	556,272	154,994	43,397	149,303	157,768	108,853	50,153	28,348	19,791	515,288	1,444,383

Notes:
 Prince William County includes service populations for PWCSA and Va-Air Prince William District (Date City)
 Sources:
 MWCOC Round 10 Cooperative Forecasts

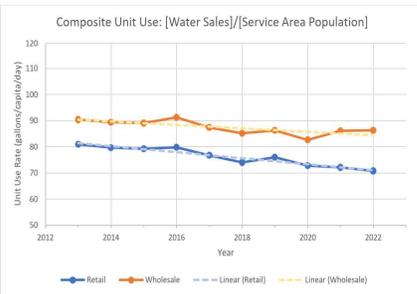


Fairfax Water Annual Sales

Year	Retail (mgd)	Wholesale (mgd)	Total (mgd)
2013	70	65	135
2014	70	65	135
2015	80	70	150
2016	85	75	160
2017	85	75	160
2018	85	75	160
2019	85	75	160
2020	85	75	160
2021	85	75	160
2022	85	75	160

Water Demand Forecast

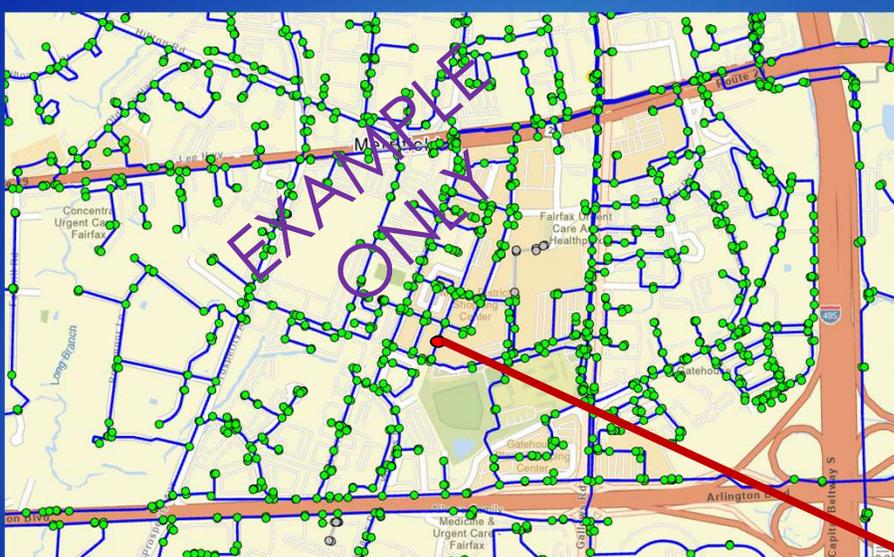
- ▶ Calculate and update unit use rates using current sales data.
 - ▶ FW Retail Residential by Housing Type
 - ▶ FW Retail non-residential
 - ▶ Each Wholesale Customer
- ▶ Water Demand = Service Area Population & employment projections x associated unit use rate
- ▶ Append Demand to GIS & model using Thiessen polygons analysis



Composite Unit Use: [Water Sales]/[Service Area Population]

Year	Retail (gallons/capita/day)	Wholesale (gallons/capita/day)
2012	80	95
2014	78	92
2016	78	92
2018	75	90
2020	72	88
2022	70	85

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Scenario Explorer

Network Data Scenario(s)

- 2025
 - 2025ADD, 2025 Planned Average Day
 - 2025MDD, 2025 Planned Max Day
- 2030
 - 2030ADD, 2030 Planned Average Day
 - 2030MDD, 2030 Planned Max Day
- 2035
 - 2035A, 2035 Planned Avg Day
 - 2035M, 2035 Planned Max Day
- 2040
 - 2040A, 2040 Planned Avg Day
 - 2040M, 2040 Planned Max Day
- 2045
 - 2045A, 2045 Planned Avg Day
 - 2045FF, 2045 Max Day plus Fire Flow
 - 2045M, 2045 Planned Max Day
- 2050
 - 2050A, 2050 Planned Avg Day
 - 2050M, 2050 Planned Max Day

JUNCTION: J375148141, Distribution

(ID)	J375148141
Description	Distribution
<input checked="" type="checkbox"/> Geometry	
X	11843919.487130910
Y	7002163.313410640
<input checked="" type="checkbox"/> Modeling	
Demand 1 (gpm)	2.54
Pattern 1	2014-R, 2014 Retail Diurnal Curve
Demand 2 (gpm)	34.04
Pattern 2	2014-R, 2014 Retail Diurnal Curve
Demand 3 (gpm)	0.00
Pattern 3	2014-W, 2014 Wholesale Diurnal C

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Questions?

Contact Information:
Gregory J. Prelewicz
gprelewicz@fairfaxwater.org
(703) 289-6318

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