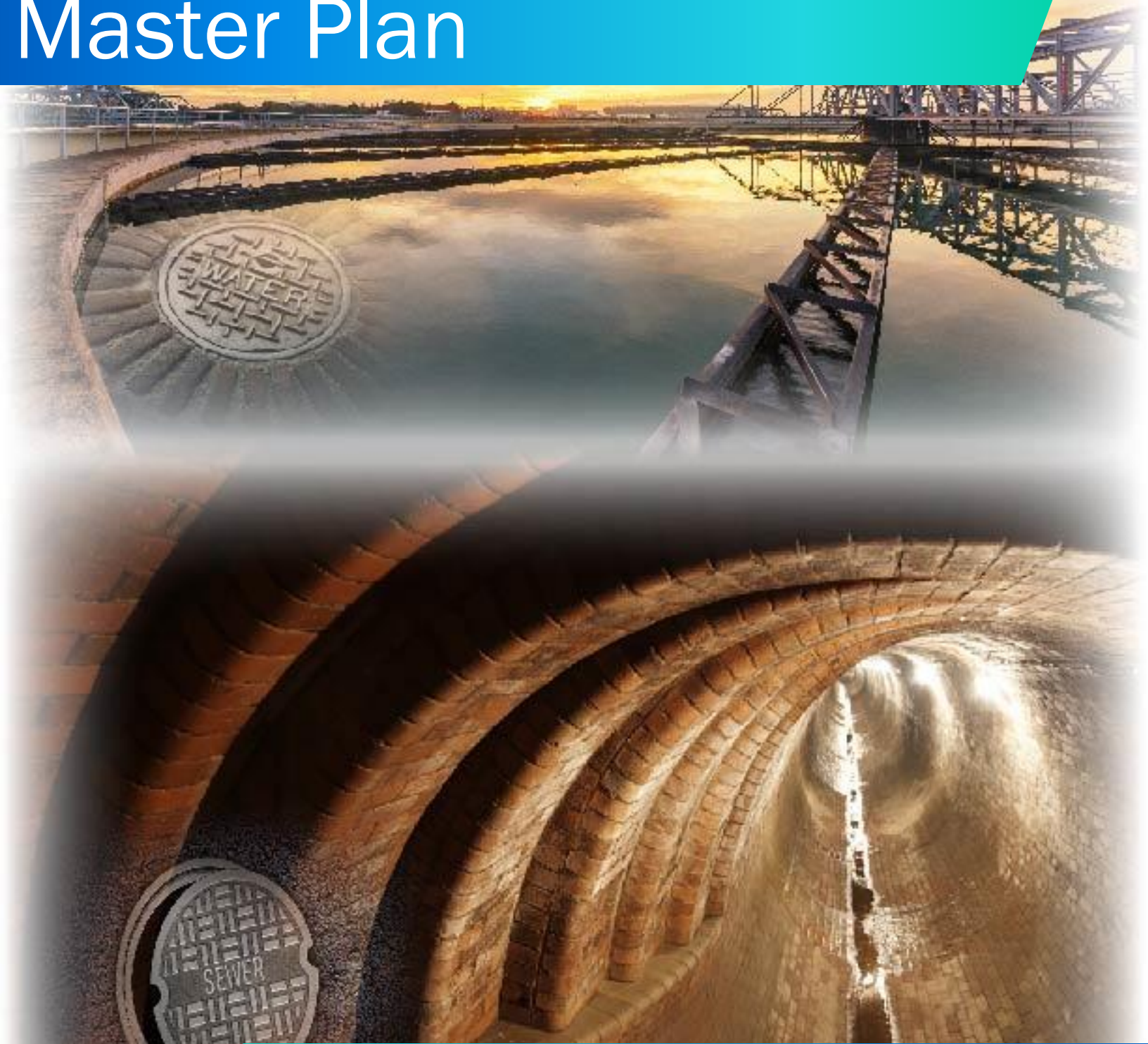
Carroll County Water & Sewer Master Plan



Approved by Maryland Department of the Environment
August 24, 2020
2020 Spring Amendment

RESOLUTION NO. 1066 -2020

(2020 Spring Amendment Cycle to the Carroll County Water and Sewer Master Plan)

WHEREAS, the County Commissioners of Carroll County are required by Title 9, Subtitle 5 of the Environment Article of the Annotated Code of Maryland to periodically review and revise the Carroll County, Maryland Water and Sewer Master Plan; and

WHEREAS, staff from various agencies worked together to develop proposed amendments to the Water and Sewer Master Plan; and

WHEREAS, on July 7, 2020 the City of Westminster Planning and Zoning Commission certified the proposed amendments as consistent with the *City of Westminster 2009 Comprehensive Plan;* and

WHEREAS, on July 21, 2020 the Carroll County Planning and Zoning Commission Certified the proposed amendments as consistent with the *2014 County Master Plan, Amended 2019; 2018 Freedom Community Comprehensive Plan; City of Westminster 2009 Comprehensive Plan; and the City of Taneytown 2010 Comprehensive Plan;* and

WHEREAS, on July 27, 2020 the City of Taneytown Planning and Zoning Commission certified the proposed amendments as consistent with the *City of Taneytown 2010 Comprehensive Plan;* and

WHEREAS, the County Commissioners of Carroll County conducted a Public Hearing, as duly advertised, on the 2020 Spring Amendment Cycle on August 13, 2020.

NOW THEREFORE, BE IT RESOLVED that the County Commissioners Adopt the following 2020 Spring Amendment to the 2019 Carroll County Water and Sewer Master Plan this 13th day of August, 2020, as follows:

1. The Sewer amendment adds the LEF Stone Chapel LLC property at Avondale Road and Stone Chapel Road to the Projected Sewerage Demands and Planned Capacity table (32) and updates the Westminster Sewer Service Area map (29); and
2. The Sewer amendment removes the Jantz property from the Westminster Sewer Service Area map (29); and
3. The Sewer amendment adds the Taneytown Crossing properties at Baltimore Blvd and Harney Road to the Projected Sewerage Demands and Planned Capacity table (32) and updates the Taneytown Sewer Service Area map, (27); and
4. The Sewer amendment removes the Birger property (Dandelion Ridge) at Ridge Road from the Projected Sewerage Demands and Planned Capacity table (32) and updates the Freedom Sewer Service Area map (21); and
5. The Sewer amendment adds Long Reach Farms lot 20 to the Freedom Sewer Service Area map (21). Also updates the Projected Sewerage Demands and Planned Capacity table (Table 32) to accommodate the difference of the

proposed demand for the site and utilization of the Birger property's demand; and

6. The Sewer amendment updates the Freedom Sewer Service Area map (21) to reflect the existing service and connection of the properties along Snowden Creek Road (S-1, Existing/Final Planning), and add 500 gpd to Priority Planning for residential demand (Table 32) to accommodate two infill properties.; and
7. The Water amendment adds the LEF Stone Chapel LLC property at Avondale Road and Stone Chapel Road to the Projected Water Supply Demands and Planned Capacity table (15) and update the Westminster Water Service Area map (20); and
8. The Water amendment adds the Taneytown Crossing properties at Baltimore Blvd and Harney Road to the Projected Water Supply Demands and Planned Capacity table (15) and update the Taneytown Water Service Area map (18); and
9. The Water amendment removes the Birger property (Dandelion Ridge) at Ridge Road from the Projected Water Supply Demands and Planned Capacity table (15) and update the Freedom Water Service Area map (12); and
10. The Water amendment adds Long Reach Farms lot 20 to the Freedom Water Service Area map (12). Also update the Projected Water Supply Demands and Planned Capacity table (15) to accommodate the difference of the proposed demand for the site and utilization of the Birger property's demand; and
11. The Chapter amendment adds water and sewer chapter updates and clarifications for the City of Westminster, which were agreed upon with MDE during the 2019 Water and Sewer Master Plan to not delay the Master Plan; and
12. The Chapter amendment adds water and sewer chapter updates and clarifications for the City of Taneytown, to illustrate more accurately current and future status of the utility; and
13. The Chapter amendment will make official the changes to Table 9B, for the Town of Mount Airy, addressing comments by MDE during approval of the Master Plan; and

BE IT FURTHER RESOLVED that this Resolution shall not be effective until the 2020 Spring Amendments are Approved by the Maryland Department of the Environment in accordance with the Annotated Code of Maryland, Environment Article, Section 9-507.

ADOPTED this 13th day of August, 2020.

THE COUNTY COMMISSIONERS
OF CARROLL COUNTY, MARYLAND,
a body corporate and politic of the
State of Maryland

ATTEST:

~~Shawn D. Reese, County Clerk~~ --

Vivian M. Daly, Acting County Clerk

(SEAL)
Stephen A. Wantz, President

(SEAL)
Edward C. Rothstein, Vice-President

(SEAL)
C. Richard Weaver, 2nd Vice-President

(SEAL)
C. Eric Bouchat, Commissioner

(SEAL)
Dennis E. Frazier, Commissioner

Approved for legal sufficiency:

Timothy C. Burke, County Attorney

874-0141/ATTORNEY/RESOLUTIONS/WSMASTERPLANS/Spring2020/Resolution.doc/08/04/20

Planning & Zoning Commission
Carroll County Government
225 North Center Street
Westminster, Maryland 21157
410-386-2145
1-888-302-8978
MD Relay service 7-1-1/800-735-2258

2019 Carroll County Water and Sewer Master Plan
Spring 2020 Amendment Cycle

July 21, 2020

The Carroll County Planning and Zoning Commission hereby Certifies that the following recommended amendments to the *2019 Carroll County Water and Sewer Master Plan* are consistent with the 2014 County Master Plan, Amended 2019; 2018 Freedom Community Comprehensive Plan; City of Westminster 2009 Comprehensive Plan; and the City of Taneytown 2010 Comprehensive Plan:

Spring 2020 Sewer Amendment:

City of Westminster

- This amendment will add the LEF Stone Chapel LLC property at Avondale Road and Stone Chapel Road to the Projected Sewerage Demands and Planned Capacity table (32) and update the Westminster Sewer Service Area map (29). The site is zoned Industrial and Conservation; however, the amendment is only for the Industrially zoned portion. The owner is proposing to develop the property and requested the City to add them to the sewer service area. This project has a proposed annual demand of 33,420 gallons per year, (24,252 gpd priority and 9,168 gpd future).
- Remove the Jantz property from the Westminster Sewer Service Area map (29). The property was removed from the Water Service Area map during the 2019 Water and Sewer Master Plan.

City of Taneytown

- This amendment will add the Taneytown Crossing properties at Baltimore Blvd and Harney Road to the Projected Sewerage Demands and Planned Capacity table (32) and update the Taneytown Sewer Service Area map (27), with the properties shown as Priority (S-3). The owner/developer is proposing single family attached and multi-family residential units and requested the addition of their properties to the sewer service area. This project has a proposed demand of 4,500 gpd.

Freedom Area

- This amendment will remove the Birger property (Dandelion Ridge) at Ridge Road from the Projected Sewerage Demands and Planned Capacity table (32) and update the Freedom Sewer Service Area map (21), placing the property in Long Range. The owner requested removal from the sewer service area.
- This amendment will update the Freedom Sewer Service Area map (21) to reflect the existing service and connection of the properties along Snowden Creek Road (S-1, Existing/Final Planning), and add 500 gpd to Priority Planning for residential demand (Table 32) to accommodate two infill properties.
- This amendment will add Long Reach Farms lot 20 to the Freedom Sewer Service Area map (21) for Priority Service Area (S-3). Also add 700 gpd to Priority Planning for other demand (Table 32) to accommodate the difference of the proposed demand for the site and utilization of the Birger property's demand. The proposed site development will utilize the demand from the Birger property's removal from the sewer service area.

Spring 2020 Water Amendment

City of Westminster

- This amendment will add the LEF Stone Chapel LLC property at Avondale Road and Stone Chapel Road to the Projected Water Supply Demands and Planned Capacity table (15) and update the Westminster Water Service Area map (20), placing the property in Priority (W-3). The site is zoned Industrial and Conservation; however, the amendment is only for the Industrially zoned portion. The owner is proposing to develop the property and requested the City to add them to the water service area. This project has a proposed annual demand of 33,420 gallons per year, (24,252 gpd priority and 9,168 gpd future).

City of Taneytown

- This amendment will add the Taneytown Crossing properties at Baltimore Blvd and Harney Road to the Projected Water Supply Demands and Planned Capacity table (15) and update the Taneytown Water Service Area map (18), with the properties shown as Priority (W-3). The owner/developer is proposing single family attached and multi-family residential units and requested the addition of their properties to the sewer service area. This project has a proposed demand of 4,500 gpd.

Freedom Area

- This amendment will remove the Birger property (Dandelion Ridge) at Ridge Road from the Projected Water Supply Demands and Planned Capacity table (15) and update the Freedom Water Service Area map (12), placing the property in Long Range. The owner requested removal from the water service area.
- This amendment will add Long Reach Farms lot 20 to the Freedom Water Service Area map (12) for Priority Service Area (W-3). Also add 700 gpd to Priority Planning for other demand (Table 15) to accommodate the difference of the proposed demand for the site and utilization of

the Birger property's demand. The proposed site development will utilize the demand from the Birger property's removal from the water service area.

Spring 2020 Chapter Amendments:

City of Westminster- Overall water and sewer chapter updates and clarifications which were agreed upon with MDE during the 2019 Water and Sewer Master Plan to not delay the Master Plan.

City of Taneytown- Overall water and sewer chapter updates and clarifications to illustrate more accurately current and future status of the utility.

Town of Mount Airy-This amendment will make official the changes to Table 9B, addressing comments by MDE during approval of the Master Plan.

Cynthia L. Cheatwood, Chair
Carroll County Planning and Zoning Commission

Lynda D. Eisenberg, Secretary
Carroll County Planning and Zoning Commission

CITY OF WESTMINSTER
56 West Main Street, Suite 1
Westminster, Maryland 21157

TELEPHONE:
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Baltimore Line (410) 876-1313
www.westminstermd.gov

Spring 2020 Amendment to the 2019 Carroll County Water and Sewer Master Plan

July 14, 2020

In a joint effort between the City and County staff, the Spring 2002 Amendment to the 2019 Carroll County Water and Sewer Master Plan was created. Planning and Zoning Commission Certification is one of the first steps in getting this amendment package approved and submitted to Maryland Department of the Environment. In accordance with Section 9-506 of the Maryland Annotated Code, it is the Planning and Zoning Commission's responsibility to certify that the Amendments are consistent with county comprehensive plans.

On July 9, 2020, the Westminster Planning and Zoning Commission voted to approve the changes to the information, pertaining to the City of Westminster, in the Carroll County Water and Sewer Master Plan.

Therefore, the Westminster Planning and Zoning Commission hereby certifies that the 2020 Spring Amendment to the 2019 Carroll County Water and Sewer Master Plan, as it pertains to the City of Westminster, is consistent with the 2009 City of Westminster, Maryland Comprehensive Plan.

Ross W. Albers, Esq.,
Chair, Westminster Planning and Zoning Commission

c: Mark A. Depo, Director of Community Planning and Development
Andrea Gerhard, Comprehensive Planner

MAYOR AND CITY COUNCIL

2020 CARROLL COUNTY WATER AND SEWER MASTER PLAN

July 27, 2020

The Taneytown Planning Commission hereby Certifies that the 2020 Spring Amendment to the 2019 Carroll County Water and Sewer Master Plan as it pertains to the City of Taneytown is consistent with the 2010 City of Taneytown Comprehensive Plan.

James Parker
Chairman, Taneytown Planning Commission

17 E. BALTIMORE STREET • TANEYTOWN, MARYLAND 21787
(410) 751-1100 • Fax (410) 751-1608
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Overview

Carroll County's MDE approved 2020 Spring Amendment for the 2019 Carroll County Water and Sewer Master Plan, consists of changes to the Projected Water Supply Demands and Projected Capacity table (15); the Projected Sewer Supply Demands and Projected Capacity table (32); the Freedom Area water and sewer maps; the City of Westminster water/sewer chapters and maps; the City of Taneytown water/sewer chapters and maps, and to make official Table 9B: Mount Airy WSA Average Daily Use.

The City of Taneytown MDE approved amendment **replaces** the following sections of the 2019 Triennial update.

- The Water and Sewer Chapters in their entirety which provide updates and clarifications to illustrate more accurately current and future status of the utilities.
- Projected Water Supply Demands and Planned Capacity table (15) and Projected Sewerage Demands and Planned Capacity table (32), adding demand for Taneytown Crossing properties at Baltimore Blvd and Harney Road.
- Update the Taneytown Water Service Area map (18), and the Taneytown Sewer Service Area map (27) with Taneytown Crossing properties shown as Priority (W-3) and Priority (S-3) respectively.

The City of Westminster MDE approved amendment **replaces** the following sections of the 2019 Triennial update.

- The water and sewer chapters in their entirety. Per agreement with MDE during the Triennial update, minor changes were made during the Triennial update with understanding a more thorough update will occur in the form of an amendment.
- Projected Water Supply Demands and Planned Capacity table (15) and Projected Sewerage Demands and Planned Capacity table (32), dividing demand for the Stone Chapel Road, LLC property between Priority and Future Planning.
- Update the Westminster Water Service Area Map (20), and the Westminster Sewer Service Area Map (29), adding the entire Industrial zoned portion of Stone Chapel Road, LLC property to the Priority Service Area (W-3), and Existing Service Area (S-1) respectively.
- Remove the Jantz property from the Westminster Sewer Service Area Map (29), per request from the owner.

The Freedom Area MDE approved amendment **replaces** the following sections of the 2019 Triennial update.

- Projected Water Supply Demands and Planned Capacity table (15), add 700 gpd to Priority Planning for other demand to accommodate the difference of the proposed demand (4,200 gpd) for Long Reach Farms lot 20 and utilization of the Birger property's demand (3,500 gpd). Projected Sewerage Demands and Planned Capacity table (32), add 700 gpd to Priority Planning for other demand to accommodate the difference of the proposed demand (4,200 gpd) for the Long Reach Farms lot 20 and utilization of the Birger property's demand (3,500 gpd). The proposed site development will utilize the demand from the Birger property's removal from the water and sewer service areas. Add 500 gpd to Priority Planning for residential demand (Table 32) to accommodate two infill properties along Snowden Creek Road.

- Update the Freedom Water Service Area map (12) and the Freedom Sewer Service Area map (21) placing the Birger property (Dandelion Ridge) in Long Range (W-7, S-7) for both water and sewer service. Add Long Reach Farms lot 20 to the Priority Service Area (W-3, S-3) for both water and sewer service. Reflect the existing service and connection of the properties along Snowden Creek Road (S-1, Existing/Final Planning).

The Town of Mount Airy MDE approved amendment **replaces** the following sections of the 2019 Triennial update.

- This amendment will make official the changes to Table 9B, addressing comments by MDE during approval of the Master Plan.

Taneytown Water Service Area

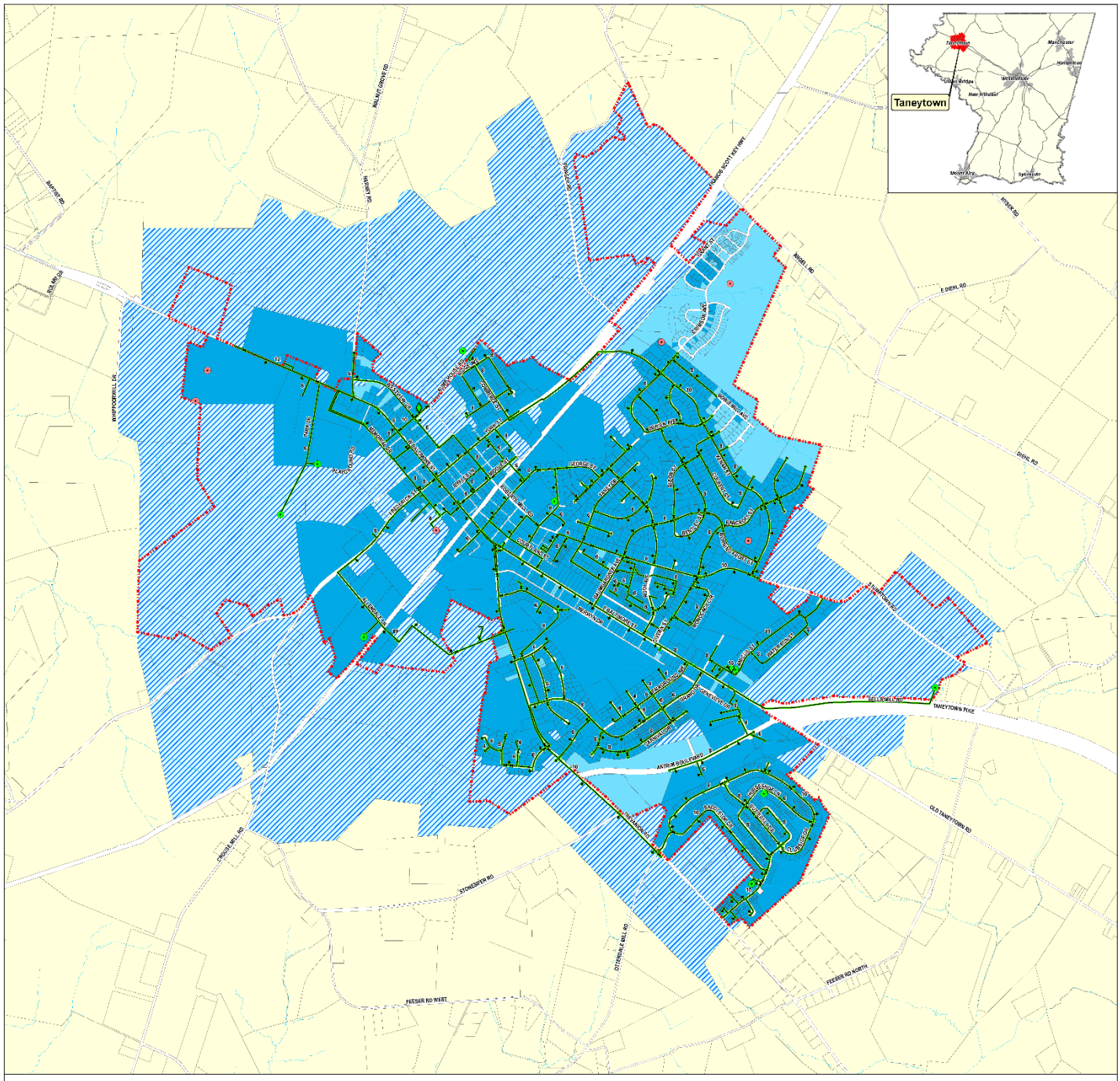
Current Conditions

The City of Taneytown owns and operates the community water supply system and generally limits service to the area located within the City's corporate boundary. Taneytown's WSA serves 2,916 accounts. The overall planned WSA covers approximately 3,134 acres within and bordering the municipality, and is situated in the northwest portion of the County along MD 140 and MD 194. See Map 18: Taneytown WSA. The City estimates that 77 percent of total consumption is generated by the residential population. Permitted daily use is 0.552 mgd. Average daily use is 0.355 mgd.

Taneytown's water supply system relies on groundwater which is supplied by eight municipal wells. Wells 8 and 9 have a permitted average day capacity of 190,000 gallons. Wells 11 and 12 have a permitted average day capacity of 118,000 gallons. Well 14 provides an additional 90,000 gallons average day capacity. Wells 15, 16 and 17 are permitted for a total of 154,100 gallons average day capacity. In order to address pumping limitations, Wells 11 and 12 alternate pumping.

When signaled by a level controller at the City's 150,000-gallon (0.150 mg) elevated storage tank, all wells currently on line (typically seven) are activated. Chlorination by chlorine gas, the only treatment used, occurs at each pumphouse, with the exception of Wells 9 & 12. Well 9 treatments include granular activated carbon treatment for volatile organic compounds. Water from Well 12 also is treated at the Well 11 pumphouse. After chlorination, water is piped directly into distribution mains and the City's two aboveground storage tanks, a 0.150-mg elevated tank and a 0.750-mg standpipe (0.460-mg usable storage). The combined usable storage of 0.610 mg provides a 1.5 days' supply of water based on actual consumption. In addition to maintaining constant pressure throughout the system, the storage tanks also provide an adequate supply for firefighting.

Map 18


Taneytown
Taneytown Water Service Area
Carroll County, Maryland
2020 Spring Amendment
Water & Sewer Master Plan
Water Service Categories
W - 1 Existing/Final Planning
W - 3 Priority (0-6 yr)
W - 5 Long Range Future (10+ yr)
Water Distribution Lines
Existing Line
Water Facilities
Existing Well
Existing Storage Tank
Future Well
General
Corporate Limit
County Border
Stream
0 300 600 1,200
Feet

The City had previously been under a Consent Agreement with MDE which ended June 4, 2012.

Unaccounted-for water is the difference between pump water and accounted-for water which includes metered and other authorized unmetered water. Unaccounted-for water averages 12%, based on 2017, 2018 and 2019 data, which is attributed primarily to the leaks within the city's distribution system. The City has a leak identification and repair program to address this water loss. The City installs data loggers in key locations, monitored semi-annually, or as needed based on pumping rates. The City adds loggers to the system each year working towards permanent installation of loggers throughout the City. The City replaces water meters as it becomes aware of any issues.

See Table 12A for Taneytown WSA appropriations; Table 12B for Taneytown WSA Average Daily Use; and Table 12C for Taneytown WSA Storage Tanks.

Table 12A: Taneytown WSA Appropriations

6-Digit Watershed	Water Source	Permit Number	Permitted Daily Average Use (gpd)	Average Day Demand Month of Maximum Use (gpd)
Middle Potomac	Wells 8 & 9	CL1978G079 (10)	190,000	209,000
Middle Potomac	Well 10	CL2010G002 (01)	77,600*	N/A
Middle Potomac	Wells 11 & 12	CL1978G279 (02)	118,000	130,000
Middle Potomac	Well 14	CL1978G179 (05)	90,000	197,000
Middle Potomac	Wells 15 & 16	CL2004G018 (03)	135,000	182,000
Middle Potomac	Well 17	CL2007G003 (02)	19,100**	225,000
Total			*552,100*	*943,000*

* *Well 10 is currently not in service.*

** The existing permitted capacity of Well 17 is 19,100gpd, however the reliable yield of the Well is approximately 270,000 and a permitted daily average use of up to 204,500gpd is estimated. The City is evaluating acquisition of recharge acreage which will be linked to well permit increases.

12B: Taneytown WSA Average Daily Use

Water Source	Max. Safe Yield (MGD)	Avg. Daily Use (MGD)	Max. Peak Flow (MGD)	WTP Capacity
Well 8	0.079	0.038	0.069	66 gpm
Well 9	0.187	0.079	0.095	137 gpm
Well 11	0.166	0.026	0.095	46 gpm
Well 12	0.202	0.036	0.114	64 gpm
Well 14	0.180	0.053	0.093	93 gpm
Well 15	0.125	0.035	0.081	61 gpm
Well 16	0.149	0.056	0.097	98 gpm
Well 17	0.270	0.034	0.069	250 gpm
Total	*1.358*	*0.357*	*0.713*	

12C: Taneytown WSA Storage

Storage Tank	Storage Capacity (mg)
Pump House Rd. Standpipe	0.750
E. Baltimore St. Water Tower	0.150
Total	0.900

Allocation Procedure

City of Taneytown typically provides community water service on a "first come, first served" basis. Generally, the water capacity cannot be purchased in advance and is not held in reserve. However, the City can enter into Development Rights and Responsibility Agreements (DRRA) for specific circumstances. The Mayor and City Council allocate water with passage of a monthly resolution. Building permits are issued for new development only after all fees are paid, included are water connection and benefit-assessment charges, unless specified otherwise in a DRRA. The City is evaluating its recharge policy. Recent developments have utilized DRRA's to address potential recharge needs, and the City wishes to develop a more proactive approach to recharge acquisition.

Needs Analysis

Additional sources must be developed to accommodate the growth planned for the Priority and Future Planning Categories. The City intends to utilize the additional capacity at Well 17 to meet future demand generated by future growth. Water recharge rates in the City and surrounding area are substantially lower than demand per acre projections for commercial or industrial uses and residential density desired for Priority Funding Areas (PFA). As a result, the City is evaluating acquisition of recharge acreage which will be linked to well permit increases.

Table 12D: Taneytown WSA Water Problem Areas

Location	Population	Nature of Problem	Status
City of Taneytown	Future Population	Insufficient recharge area for future growth	Under study

Planned Projects and Recommendations

See Table 12E for Taneytown WSA priority projects and below for a list of long-term recommendations (10+ years).

Table 12E: Taneytown WSA Priority Projects

Project Name	Planning Category	Description	Location	Added Capacity
Antrim Blvd. Water Main	Priority (W-3) 5 years	Loop water main in Antrim Blvd to Trev anion Road	Antrim Blvd.	0 MGD
Water Storage Tanks Rehabilitation	Priority (W-3) Immediate	Cleaning, repair, and painting of both storage tanks	Breakiron Street and Pump House Road	0 MGD
Roberts Mill Water Main Replacement	Priority (W-3) 5 years	Replace deteriorated water main and services	Roberts Mill Road	0 MGD
Water System Telemetry Improvements	Priority (W-3) Immediate	Hardware, software, and programming to automate water system	Whole System	0 MGD

Long-Term Recommendations (10+ years)

- Identify and develop new water supplies adequate to support planned future growth.
- Continue to monitor and address sources of water loss.
- Maintain long-term options for non-groundwater water supply, including Big Pipe Creek.
- Amicus Street elevated water storage tank inspection & rehabilitation project.
- Westview Drive water main replacement project.
- Construct a new 500,000-gallon water storage tank to accommodate future growth and fire prevention in the Southeast section of Town.
- Upgrade Well 8. Project includes replacing the pump/pipe, controls, wiring and apparatus as needed. Rehab well house building (will need a new roof).
- Trevanion Road water service line replacement project.
- New Production Well project: to determine the location for a new production well and to bring it online.
- Memorial Drive water main replacement project.
- Demolish Well 13. This includes the well house, and abandoning well per Carroll County Health Department requirements.
- Upgrade Well 11. Replace pump/pipe, controls, wiring and apparatus as needed.
- Upgrade Well 12. Replace pump/pipe (well head only) and controls.
- Broad Street water main replacement project.
- Taney Drive water main replacement project.
- Upgrade Well 9. Replace pump/pipe, controls, wiring and apparatus as needed. Rehab well house.
- Replace the pump and pipes for Well 15.
- Water meter replacement project.
- Acquisition of Water Recharge land to allow for future growth.

Projected Water Supply Demands and Projected Capacity

The following table summarizes projected water demand over the next ten years. It incorporates planned capacity improvements that respond to the demand projections.

Table 15[2]
Projected Water Supply Demands and Planned Capacity

Service Area	Present Year						Priority Planning (0-6 Year)						Future Planning (7-10 Year)					
	Res. Pop. Ser.	GPCD	Capacity Million Gal. Daily (MGD)				Res. Pop. Ser.	GPCD	Capacity Million Gal. Daily (MGD)				Res. Pop. Ser.	GPCD	Capacity Million Gal. Daily (MGD)			
			Res. Dem.	Oth. Dem.	Tot. Dem	Ex. Cap.			Res. Dem.	Oth Dem	Tot. Dem.	Pl. Cap.			Res. Dem.	Oth. Dem.	Tot. Dem.	Pl. Cap.
Freedom/Sykesville	22,867	80	1.837	0.097	1.934	4.427	31,775	85	2.71	0.499	3.209	4.427	31,199	86	2.73	0.514	3.244	7.0
Hampstead	5,960	47	0.279	0.072	0.351	0.630	7,540	55	0.420	0.277	0.697	0.770	8,021	57	0.464	0.290	0.754	0.945[3]
Manchester	5,370	47	0.256	0.036	0.292	0.581	6,550	55	0.361	0.048	0.409	0.606	6,884	56	0.391	0.048	0.439	0.606
Mount Airy[4]	9,786	64	0.628	0.177	0.805	0.927	10,139	68	0.692	0.305	0.997	1.079	10,139	68	0.692	0.305	0.997	1.079
New Windsor [5]	1,449	62	0.090	0.016	0.106	0.196	2,054	63	0.130	0.050	0.180	0.196	2,054	63	0.130	0.218	0.348	0.446
Taneytown[6 7]	7,053	42	0.296	0.087	0.384	0.552	8,098	47	0.379	0.105	0.484	0.552	8,098	47	0.379	0.105	0.484	0.552
Union Bridge	977	55	0.053	0.045	0.098	0.208	1,803	74	0.134	0.074	0.208	0.250	1,803	74	0.134	0.074	0.208	0.250
Westminster [8 9 10]	29,308	91	2.66	0.396	3.056	4.231	30,464	91	2.768	0.479	3.247	4.731	30,464	91	2.768	.554	3.322	5.231

[2] See Appendix 3 Method for Projecting Water Supply and Sewer Demands.

[3] Florida Rock Property has a total allocation of 82,816 gpd. On the Water Map for Hampstead this property shows as Priority. The allocation is split 63,816 gpd in the Priority Water Service Area and 19,200 gpd in the Future Service Area.

[4] Mount Airy's Total Demand includes 119,640 gpd to account for drought conditions (which is 12% of total demand). The Priority calculations were provided by the Town of Mount Airy.

[5] New Windsor's Priority and Future calculations are based on 165 gal per unit for residential demand.

[6] Mount Airy, Taneytown and Union Bridge do not have any properties in the Future Planning Category.

[7] The Priority calculations are based on the development projects in the approval process and were provided to the County by the City.

[8] Westminster's Priority and Future calculations are based on 235 gal per unit for residential demand and 55 gallons/1,000 s.f. other demand.

[9] Westminster does not have any residential properties in the Future Planning Category.

[10] LEF Stone Chapel LLC property has a total demand of 33,420 gpd. The water map for Westminster has the Industrial zoned portion in Existing/Final Planning. The demand is split 10,500 gpd in Existing, 13,752 gpd in Priority and 9,168 gpd in Future.

Taneytown Sewer Service Area

Current Conditions

The City of Taneytown owns and operates the community sewer system and generally limits service to the area located within the City's corporate boundary. The entire planned sewer service area comprises approximately 3,135 acres and is situated in the northwest portion of the County and serves 2,793 accounts. See Map 28: Taneytown SSA. The treated effluent is discharged to Piney Creek, which is in the Upper Monocacy River watershed. See Table 23E for Taneytown WWTP Design capacity is 1.1 mgd. Average flows are 0.965 mgd.

The Taneytown community sewer system is composed of collection lines, four pumping stations, and a WWTP. The City's WWTP was put into service in 2000. It has an average daily flow design capacity of 1.1 mgd, with a three-year average flow from 2017-2019 of approximately 0.965 mgd including I&I. Hydraulically, the plant can treat a peak flow of 5.0 mgd. Sewage is treated via the sequence batch reaction process. The WWTP was upgraded to meet enhanced nutrient removal (ENR) discharge limits in 2016.

Inventory of Existing Wastewater Treatment Plants, Interceptors, Sewage Pumping Stations, and Force Mains

See Tables 23A-23D for Taneytown SSA infrastructure.

Table 23A: Taneytown SSA Treatment Plant

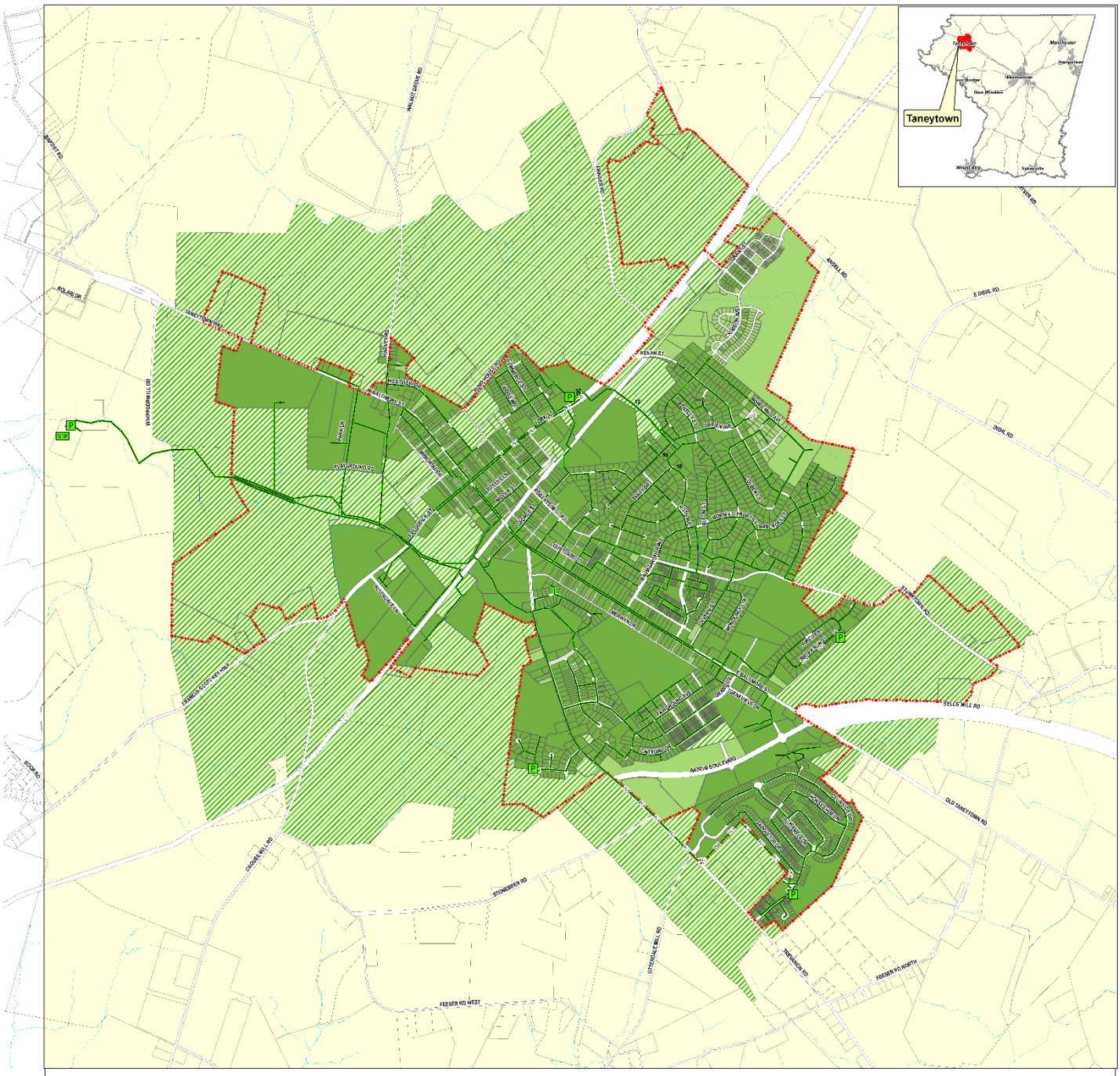
WWTP Treatment Type	Points of Discharge	WWTP Design Capacity (MGD)	Average Flows (MGD)	Method of Sludge Disposal
Activated sludge/ENR	Piney Creek	1.100	0.965	Land application

Discharge Permit Number: 00DP0687A NPDES Number: MD0020672

Table 23B: Taneytown SSA Interceptors

Service Area and/or WWTP Name	Interceptor	Diameter (inches)	Average Day Flow (MGD)	Design Flow (MGD)
Taneytown	Main	12, 15, 18	0.965	5.000

Map 27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Sewer Service Categories
S-1 Existing/Final Planning
S-3 Priority (0-6 yr)
S-4 Long Range (10+ yr)
Sewer Facilities
WTP Existing Treatment Plant
P Existing Pumping Station
Sewer Distribution Lines
Existing Line
Existing Force Main
General
Corporate Limit
County Border
Stream
N
0 300 600 1,200 Feet

Table 23C: Taneytown SSA Pumping Stations

Pumping Station	Coordinate Location*	# of Pumps	Capacity of Each Pump (MGD)	Normal Pumping Capacity (MGD)	Average Day Pumping (MGD)
York Street	N 727472.49 E 1264460.76	3	1.152	2.304	0.2390
Wheatfields	N 720824.54 E 1263817.06	2	0.140	0.140	0.0110
Carroll Vista	N 718575.85 E 1268438.20	2	0.425	0.425	0.0374
Creekside	N 723194.41 E 1269294.18	2	0.144	0.144	0.0050
Total		9	N/A	3.013	0.2924

*Coordinate locations are Maryland State Plane 1983 Datum.

Table 23D: Taneytown SSA Force Mains

Force Main	Maximum Day Pumpage in MGD	Diameter (inches)	Design Flow (MGD)
York Street	1.963	12	2.304
Wheatfields	0.072	4	0.140
Carroll Vista	0.204	6	0.425
Creekside	0.019	6	0.144
Total			*3.013*

*Provided Design Average Daily Flow for Design Flow.

Sludge Management

Sludge is disposed of by land application, which is handled by an outside contractor (Enviro-Organic Technologies), which holds all applicable permits for fields that are applied to. The material is cake solids that are incorporated into the fields before the end of the day on which it is applied. The WWTP disposed of 342.12 wet Tons of sludge from January 1, 2016 to December 31, 2016.

Table 23E: Taneytown SSA Sludge Management

Quantity	Quality	Method of Disposal/Use	Permit #s	Future Disposal Method
342.12 wet Tons/year	15.48% solids Belt Press Dried	Dried sludge applied to farmland	2014-STF-5816-sewage sludge utilization permit. All other Permits for land application are held by the contractor (Enviro-Organic Technologies).	N/A

Allocation Procedure

A property owner, developer, or individual seeking site plan or subdivision approval must obtain certification of sewer adequacy, prior to final approval by the City, for any part of a proposed development project that will be recorded in the Land Records of Carroll County. The sewer allocation will be based upon approved regulations of the Maryland Department of the Environment. Sewer allocations are assigned and held in reserve at no charge for one year following the effective date of plan approval. The allocation may be renewed once for a one-year period only upon payment of a sewer allocation reservation fee. The fee is $250 per lot or dwelling unit that does not possess a valid building permit. The fee is in addition to any other fee or charge that the City may assign.

The sewer allocation is effective for one year from the date of allocation. If actual construction on the development project has not commenced by the end of the one-year period, as evidenced by the possession of a valid building permit, the allocation expires unless renewed for the additional year. Once an allocation has expired, the owner, developer, or individual must reapply for a sewer allocation unless specified otherwise in a DRRA.

Needs Analysis

The area served by the sewer system is nearly the same as that served by the water supply system. The recorded sewage flows are substantially higher than the recorded water demand. This differential is the result of I&I of stormwater and groundwater into the sewer collection system. Part of the problem stems from the fact that the original collection system was installed with terra cotta clay pipe, much of which still remains in the system. This material tends to form cracks over time, which invites the flow of water from saturated soil into the pipe during storm events. The City has taken several steps in recent years to address this problem. It regularly inspects the lines with video equipment, completing one-third of the system each year, to identify and then correct any problems.

Depending on when and how much of the infiltration and inflow problem is corrected, the design capacity and permitted capacity of the WWTP may be insufficient to serve the Priority and Future service areas depicted in this plan.

See Table 23F for Taneytown SSA sewage problem areas.

Table 23F: Taneytown Sewage Problem Areas

Location	Population (Where Applicable)	Nature Of Problem	Status
Various locations throughout the City	n/a	Tree roots have penetrated the main sewer lines.	The city contracts a root control company to chemically treat these areas on an as needed basis. Pipe lining will be considered as a permanent fix.

Planned Projects and Recommendations

See Table 23G for Taneytown SSA priority projects.

Table 23G: Taneytown SSA Priority Projects

Project Name	Planning Category	Description	Location	Capacity Added
Sewer Lines	Future (S-5) 5 Year	Replacement and repair of existing sewer lines	Commerce Street, Windy Hills Drive, Roberts Mill Road	0 MGD
Meades Crossing Pump Station	Priority (S-3) Immediate	Construct a new Pump Station to convey development plans	Meades Crossing	.082 MGD
Belt Filter Press Replacement	Priority (S-3) Immediate	Replace belt filter press at WWTP	Existing WWTP	0 MGD

Long-Term Recommendations (10+ years)

- Continue CCTV inspection and assessment of collection system to priority projects to reduce I&I
- Windy Hills Sewer pumping station rehabilitation project.
- Carroll Vista Sewer pumping station rehabilitation project.
- York Street sewer pumping station rehabilitation project.
- Creekside Sewer pumping station rehabilitation project.
- Demolish old WWTP.

Projected Sewer Supply Demands and Projected Capacity

The following table summarizes projected sewer demand over the next ten years. It incorporates planned capacity improvements that respond to the demand projections.

Table 32[11]
Projected Sewerage Demands and Planned Capacity*

Service Area	Present Year						Priority Planning (0-6 Year)						Future Planning (7-10 Year)					
	Res. Pop. Ser.[1]	GPCD	Capacity Million Gal. Daily (MGD)				Res. Pop. Ser.[2]	GPCD	Capacity Million Gal. Daily (MGD)				Res. Pop. Ser.[3]	GPCD	Capacity Million Gal. Daily (MGD)			
			Res. Dem.	Oth. Dem.	Tot. Dem.	Ex. Cap.			Res. Dem.	Oth. Dem.	Tot. Dem.	Pl. Cap.			Res. Dem.	Oth. Dem.	Tot. Dem.	Pl. Cap.
Freedom/Sykesville	22,867	80	1.837	.097	1.934	2.74[12]	29,172	84	2.442	0.489	2.931	3.500	29,177	87	2.657	.549	3.206	3.500
Hampstead	6,002	77	0.466	0.076	0.542	0.900	7,486	80	0.598	0.245	0.843	0.900	8,039	80	0.647	0.311	0.958	0.900
Manchester	3,512	77	0.271	0.036	0.307	0.500	4,304	79	0.342	0.048	0.390	0.595	4,548	80	0.364	0.048	0.412	0.845
Mount Airy[13]	9,786	64	0.627	0.177	0.804	1.200	10,248	65	0.666	0.373	1.039	1.200	10,248	65	0.666	0.373	1.039	1.200
New Windsor[14]	1,399	48	0.067	0.012	0.079	0.115	2,004	53	0.106	0.026	0.132	0.115[15]	2,004	53	0.106	0.066	0.172	0.230
Taneytown[16 17]	7,053	106	0.745	0.220	0.965	1.100	8,098	87	0.708	0.206	0.915	1.182	8,098	87	0.708	0.206	0.915	1.182
Union Bridge	977	81	0.079	0.080	0.159	0.200	1,794	87	0.159	0.097	0.256[18]	0.246	2,601	91	0.238	0.097	0.335	0.315
Westminster [19]	28,839	144	4.156	0.676	4.832	5.000	29,995	142	4.264	0.759	5.023	6.5	29,995	142	4.264	.834	5.098	6.5

[11] See Appendix 3 Method for Projecting Water Supply and Sewer Demands. Note: Table 32 corresponds with MDE's required Table 32 and is therefore out of sequence with preceding and succeeding table numbers.

[12] This number represents the Carroll County portion of the capacity

[13] The Priority calculations are based on the Mount Airy's "pipeline" allocations and were provided to the County by the Town.

[14] New Windsor's Priority and Future calculations are based on 165 gal per unit for residential demand.

[15] New Windsor will be eliminating this deficit by conducting an I&I project that will recapture more than 17,000 gpd.

[16] Mount Airy and Taneytown do not have any properties in the Future Planning Category.

[17] The Priority calculations are based on the development projects in hte approval process and were provided to the County by the City. These calculations account for I/I reductions in the York Street Pump Station.

[18] Union Bridge will be eliminating this deficit by conducting an I&I project that will recapture more than 10,000 gpd.

[19] LEF Stone Chapel LLC Property has a total demand of 33, 420 gpd. The Sewer map for Westminster has the Industrial zoned portion in Existing/Final Planning. The demand is split; 10,500 gpd in Existing, 13,752 gpd in Priority and 9,168 gpd in Future.

Westminster Sewer Service Area

Portions of the information provided in this chapter for the City of Westminster are excerpted from the City's most recent Wastewater Capacity Management Plan, submitted to the Maryland Department of the Environment (MDE) in January 2018. The WWCMP was prepared by Whitman, Requardt and Associates, LLP.

Current Conditions

The City of Westminster owns and operates the Westminster Wastewater Treatment Plant (WWTP) that treats wastewater from the Westminster sewage service area. The WWTP, located on Old New Windsor Pike, was originally constructed in 1973. It discharges into the Little Pipe Creek, a tributary to the Double Pipe Creek, which is a major tributary to the Monocacy River. The WWTP has been expanded and upgraded over time to provide biological nutrient removal (BNR) levels of treatment. The WWTP is an activated sludge treatment system permitted for an annual average flow of 5.0 million gallons per day.

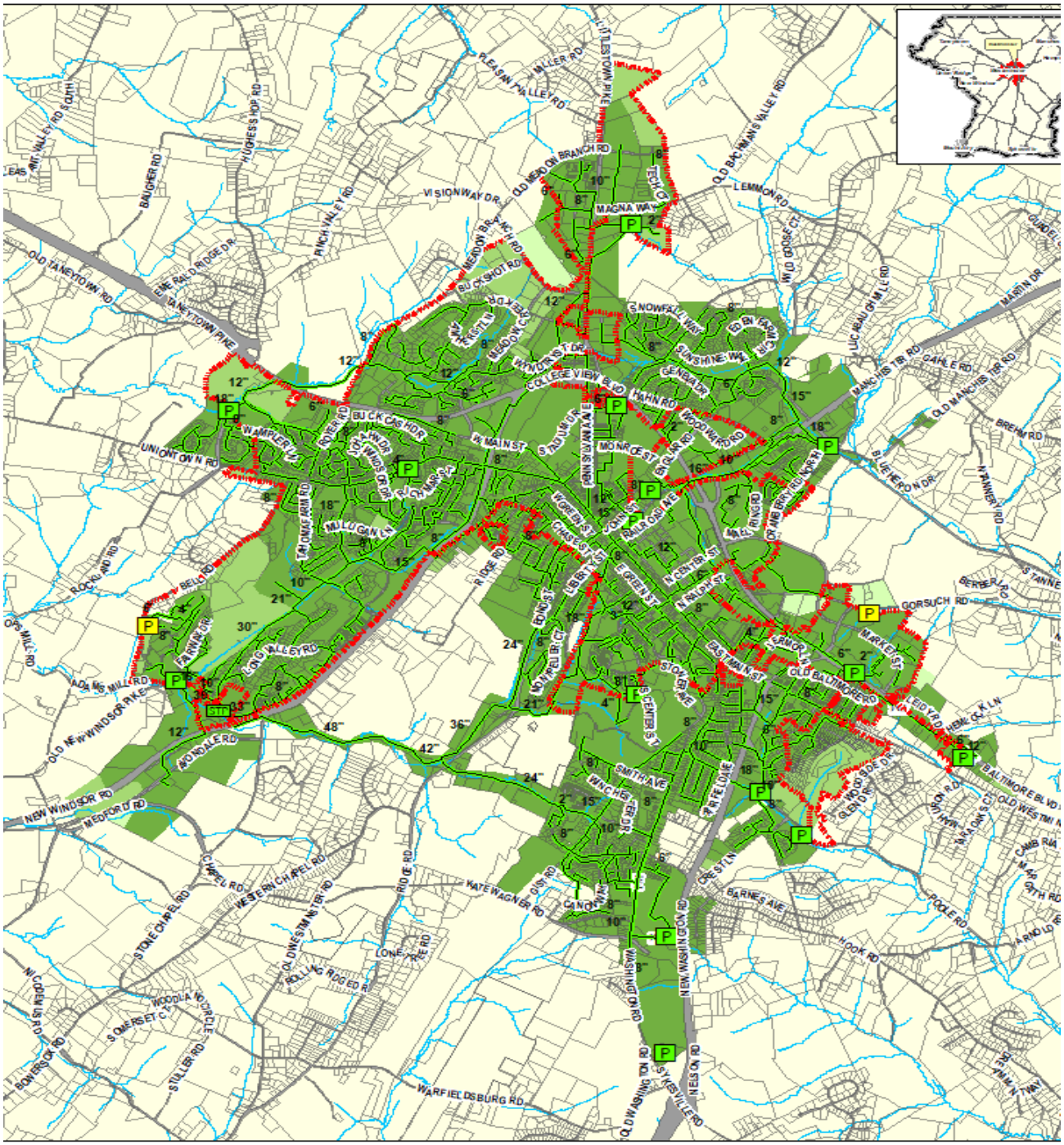
The Westminster WWTP has been operating above 80% of its design and permit capacity since at least 2005. The City has been actively working to secure sufficient available wastewater treatment capacity.

The City recognizes that infiltration and inflow (I&I) into the sewage collection system is a significant contributor to the annual average flows to the WWTP. The City has undertaken several I&I studies and completed several collection system rehabilitation projects. The City recently completed a two-phase system wide rehabilitation project, including replacement of 1,312 LF of collection pipeline, grouting of 1,078 pipe joints, and installation of 3,707 LF of pipeline repair liner. Addition projects will continue to be on going.

The City's *2009 Comprehensive Plan* included plans to upgrade the WWTP to provide Enhanced Nutrient Removal (ENR) levels of treatment and expand the capacity to 6.5 MGD annual average flow design capacity. The City has designed an upgrade of the WWTP to provide ENR levels of treatment (i.e., effluent annual average total nitrogen concentration of less than 4 mg-N/L, and total phosphorus of less than 0.3 mg-P/L) at a design annual average flow of 5.0 MGD. Construction of the ENR upgrade project got underway in early 2019. Construction is expected to take approximately 43 months to complete.

Regulatory Setting

The MDE requires municipalities operating wastewater treatment plants at flows above 80% of their design capacity to complete an Available Capacity Report, a Wastewater Capacity Management Plan (WWCMP), and a Municipal Sewage Capacity Report (MSCR). The Available Capacity Report provides information on WWTP flows, treatment, and permitted capacity. The WWCMP is a planning and engineering tool used to monitor the relationship between WWTP capacity and collection system growth. The MSCR evaluates the treatment plant's capacity and performance, and provides guidance for steps to be taken to provide sufficient WWTP capacity for expected growth. The WWCMP consolidated



Westminster Sewer Service Area
Carroll County, Maryland

Water & Sewer Master Plan
Spring 2020 Update

Sewer Service Categories
- Existing/Final Planning
- Priority (0-6 yr)
- Future (7-10 yr)

Sewer Distribution Lines
- Existing Line
- Existing Force Main

Sewer Facilities
- STP Existing Treatment Plant
- P Existing Pumping Station
- P Priority Pumping Station

General
- Corporate Limit
- County Border
- Stream

the information in lieu of three separate documents. This chapter draws from the WWCMP and updates the charts from prior Carroll County Water & Sewer Master Plans.

Inventory of Existing Wastewater Treatment Plants, Interceptors, Sewage Pumping Stations and Force Mains

Westminster Sewer Service Treatment Plant (updated)

WWTP Treatment Type	Points of Discharge	WWTP Design Capacity (MGD)	Average Flows (MGD)	Method of Sludge Disposal
Activated sludge	Little Pipe Creek	5.000	4.832	Integrated Agronomics is contacted to remove and dispose of sludge by landfilling in Pennsylvania and Virginia
Westminster WWTP Discharge Permit Number: 14DP0837				**NPDES Number**: MD0021831

Westminster Sewer Service Interceptors (same as 2014)

Interceptor	Diameter (inches)	Average Day Flow (MGD)	Design Flow (MGD)
Copp's Branch	18-30	Not metered	-
Meadow Branch	12	Not metered	-
Maryland 27	24-48	Not metered	-

Westminster Sewer Service Pumping Stations (same as 2014)

Pumping Station	Coordinate Location*	# of Pumps	Capacity of Each Pump (MGD)	Normal Pumping Capacity (MGD)	Average Day Pumping (MGD)
1 Sullivan Avenue	N 699738.85 E 1312599.55	2	0.374	0.051	0.051
3 John Street and Railroad Avenue to Monroe	N 696845.29 E 1314524.55	2	0.676	0.061	0.061
4 John Street and Carroll Street to MD 140	N 695828.31 E 1313919.20	2	0.640	0.036	0.036
5 Cranberry	N 698394.98 E 1319778.95	2	3.168	1.900	1.900
6 Vo-tech	N 681626.90 E 1315263.07	2	0.518	0.050	0.050
7 MD 140 to Hemlock Lane	N 687704.57 E 1323834.77	2	0.180	0.020	0.020
8 MD 140 and Old Baltimore Pike	N 690586.02 E 1320529.58	2	0.432	0.051	0.051
12 Airport Industrial Park	N 705925.48 E 1313822.35	2	0.864	0.066	0.066
13 Near Carroll Lutheran Village	N 690247.02 E 1300214.17	2	0.720	0.032	0.032
14 Near Roops Mill	N 699569.35 E 1301957.57	2	0.720	0.275	0.275
15 Poole Road	N 686433.34 E 1317793.41	2	0.720	0.209	0.209
Total		*22*	*9.012*	*2.751*	*2.751*

Westminster Sewer Service Pumping Stations (same as 2014)

Pumping Station	Coordinate Location*	# of Pumps	Capacity of Each Pump (MGD)	Normal Pumping Capacity (MGD)	Average Day Pumping (MGD)

*Coordinate locations are Maryland State Plane 1983 Datum.

Westminster Sewer Service Force Mains (same as 2014)

Force Main	Maximum Day Pumpage in MGD	Diameter (inches)	Design Flow (MGD)
Old Bachman Valley Road	Not metered as such. Unable to provide.	8	0.124
Bond St./MD 27	Not metered as such. Unable to provide.	16	3.168
John Street (2)	Not metered as such. Unable to provide.	8 & 8	0.097 & 0.092
MD 140 (2)	Not metered as such. Unable to provide.	6 & 6	0.026 & 0.062
The Greens	Not metered as such. Unable to provide.	10	0.103
Vo-Tech	Not metered as such. Unable to provide.	10	0.074
Sullivan Avenue	Not metered as such. Unable to provide.	6	0.054
Poole Road	Not metered as such. Unable to provide.	10	0.103
Carroll Lutheran Village	Not metered as such. Unable to provide.	10	0.062
Total			*3.811 & 3.842*

*Provided Design Average Daily Flow for Design Flow.

Sludge Management

Sludge from the WWTP presently is hauled from the plant and applied to farmland or transported to a landfill in Pennsylvania. As part of the most recent upgrade to the plant, the volume of sludge is now reduced by a dewatering process. In conjunction with upgrades being made to the wastewater treatment plant to add Enhanced Nutrient Removal, the City is constructing a sludge drying system. Dried sludge could then be transported and burned at a cement manufacturing facility in nearby Union Bridge, Maryland or used as a soil conditioner. See table below for sludge management.

Westminster Sewer Service Sludge Management (updated)

Quantity (tons/yr)	Quality	Method of Disposal/Use	Permit #	Future Disposal Method	Problems
5,187.44 wet	Dewatered to 15% solids	Landfill Disposal	215-STR-2424-July 2025	Sludge drying system	None

Carroll County entered into an agreement with the City of Westminster in 1987 to construct, operate, and maintain a septage receiving and pre-treatment facility at the Westminster WWTP. This facility opened in 1993. The septage facility receives and treats septage pumped from septic systems, holding tanks, and dry wells located throughout the County, and leachate removed from County landfills.

The septage and leachate is discharged by haulers who are authorized and licensed by the County. The septage facility is designed to receive average daily combined flows of 26,000 gallons, with a peak daily

combined flow not to exceed 39,000 gallons. Following pre-treatment, which consists of removal of Biochemical Oxygen Demand (BOD), the solids are dewatered, and the septage sludge cake is hauled by truck to the County Landfill. The liquid removed from the septage is treated at the City's WWTP and discharged in accordance with the City's National Pollutant Discharge Elimination System (NPDES) permit. All normal expenses associated with the operation and maintenance of the septage facility are the County's responsibility. The Board of County Commissioners approved a $4M upgrade to the septage facility to produce cleaner effluent, which will ensure that the City of Westminster's WWTP can meet ENR requirements imposed by the MDE.

Allocation Procedure

On June 23, 2017, the City temporarily suspended the processing of applications requiring a net new water and/or sewer allocation for nine months. Concurrent with the water suspension, the City was also preparing an update to its WWCMP. The City decided to wait for completion of the WWCMP, before reviewing applications for sewer allocations, since WWTP capacity is informed by the update. On March 26, 2018, the Mayor and Common Council of Westminster passed and approved Resolution No. 18-04, implementing a new water and wastewater allocation policy that supersedes all prior policies. The policy has been amended four times since its initial adoption.

Westminster's Sewer Service Area presently extends outside its corporate limits. In August 2002, the Mayor and Common Council adopted Good Cause Waiver legislation for the extension of public water and sewer outside the corporate limits. That legislation requires new or redevelopment projects to be in compliance with the Town-County Agreement, which stipulates that the owner of a property contiguous to the City's corporate limits must initiate annexation of the property into the City in order for the property to be served. If the property does not meet the test for annexation, the owner must file a Good Cause Waiver application with the City. In order for the Mayor and Common Council to approve a Good Cause Waiver, the property must be identified as S-1 or S-3 in the Carroll County Water and Sewer Master Plan. If approved, the applicant must also execute an "Intent to Annex" agreement. The applicant must also obtain a sewer allocation from the City. These procedures provide control over the extension of City utilities outside the City limits.

Needs Analysis

Estimated wastewater demands from partially built and unbuilt parcels were considered in short-term and long-term categories as part of the 2018 WWCMP. The short-term category included known projects with and without approved building permits. Projects were evaluated regarding expected timeframe and whether or not they already had an MDE-approved allocation. The chart on the following page indicates the short-term and allocated categories to correspond with the timeframe of this chapter.

The WWTP is also being upgraded to provide ENR levels of treatment for an annual average design flow of 5.0 MGD. The construction of ENR-related improvements will take several years to complete. The 2015-2017 operating data was used in determining the available wastewater capacity compared to an annual average of 5.0 MGD design and permit flow. The chart on the following page shows capacity.

Wastewater Demand with I&I for Current Planning Period

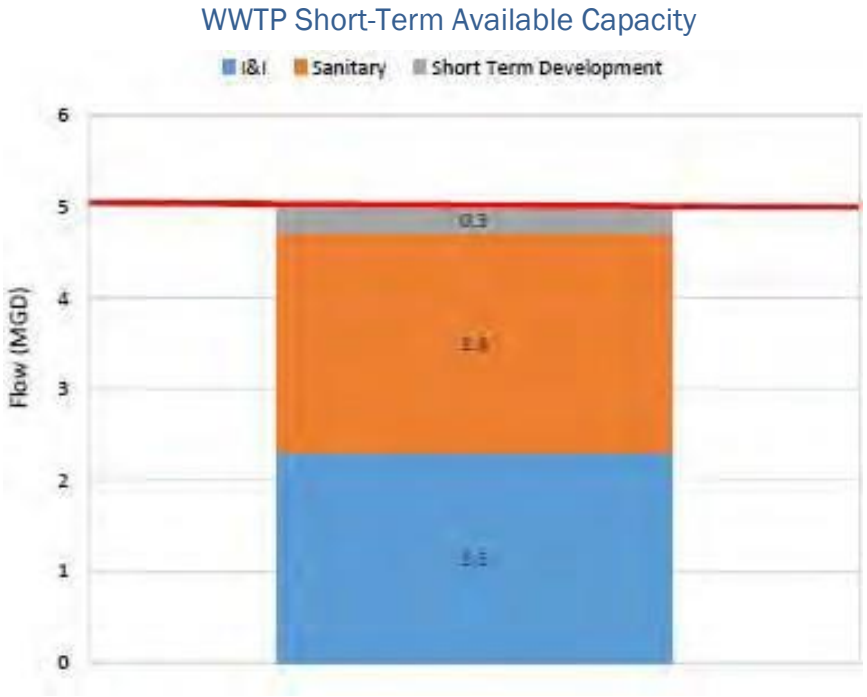
	Demands	Associated I&I	Total Wastewater
	gpd	*gpd*	*gpd*
Allocated Demand	90,605	17,214	107,819
Short-term Demand	181,571	24,498	206,069
TOTALS	**272,176**	**41,712**	**313,888**

Based on the existing 4.7 MGD average flows added to the 0.3 MGD of short term and 0.8 MGD of long-term demand, the Westminster WWTP is expected to have a total long-term wastewater demand of 5.8 MGD. From these estimates, the WWTP would need to be expanded to accommodate the long-term wastewater demands.

Determination of Available Wastewater Capacity

The Westminster WWTP is planning an upgrade to provide ENR levels of treatment for an annual average design flow of 5.0 MGD. The upgrade will require several years before being constructed and brought fully on line. The 2015-2017 operating data is considered in determining the available wastewater capacity compared to an annual average of 5.0 MGD design and permit flow. The WWTP is currently hydraulically underloaded, with a three-year unadjusted average daily flow of 4.7 MGD compared to the 5.0 MGD design and permitted capacity.

The chart below depicts the 2015-2017 wastewater flows, split into the portions related to I&I and to sanitary flows, and the potential additional capacity for the projected short-term development wastewater demands.



Despite the current flows nearing the design flow, the WWTP has consistently performed very well, providing effluent quality better than the NPDES discharge permits for every month of the 2015-2017 period. There have been no reported bypasses or overflows during this period.

The City continues to operate its plant well within current NPDES permit limits. The planned ENR project incorporates state-of-the-art nutrient removal technology. Once this ENR project has been completed, this technology will limit future design and permitted capacity expansion to 6.5 MGD.

Priority Projects

The charts below represent updated information as provided by the City of Westminster's Public Works Department in response to a request by Carroll County Planning for updated information in this format.

Westminster Sewer Service Area Sewage Priority Projects

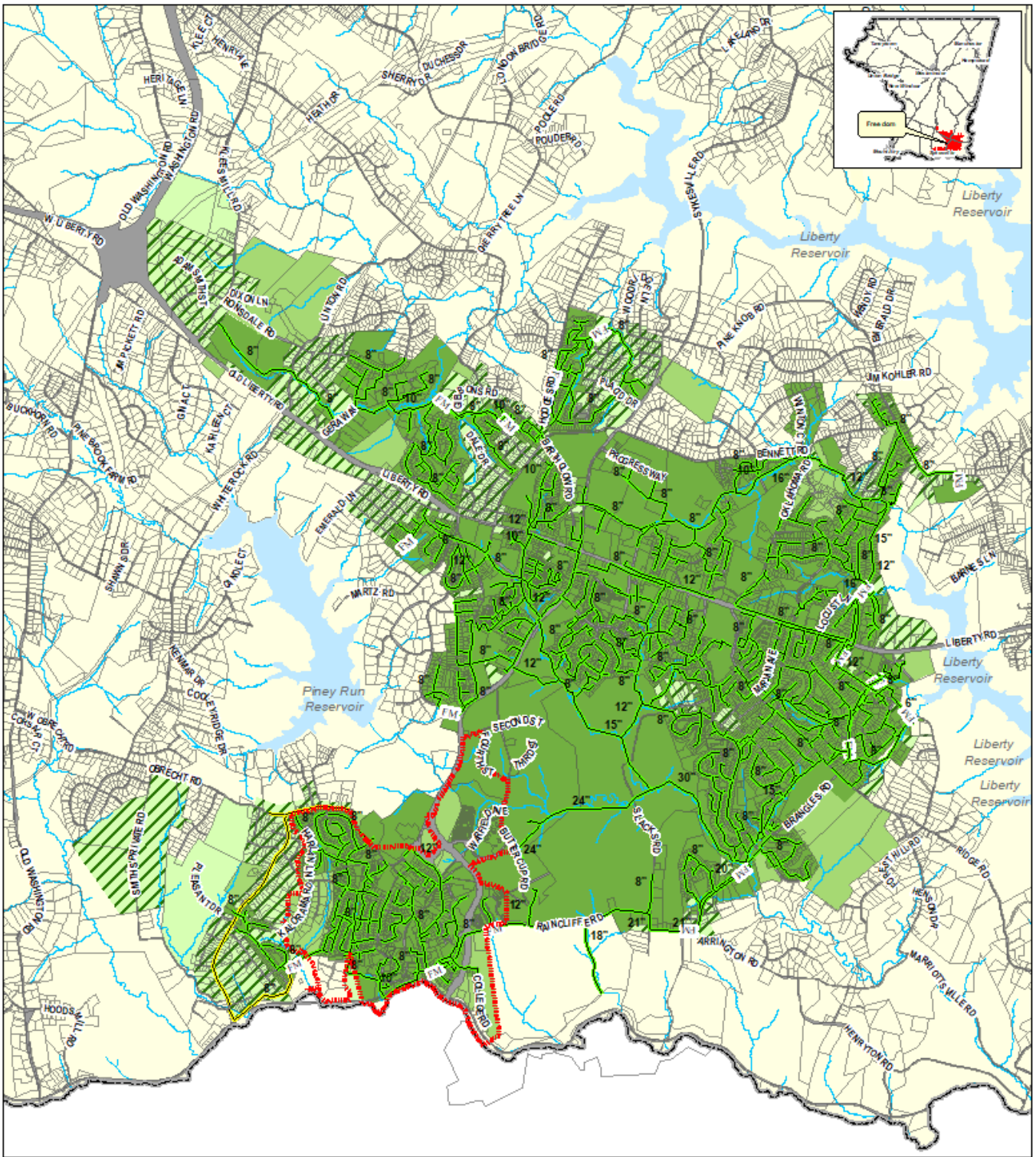
Project Name	Planning Category	Description	Location	Capacity Added
Sewer System Rehabilitation	Priority (S-3) Immediate	Rehabilitate leaking mains	Throughout the City's 65 miles of sewerage collection system	1.76 MGD
Rehabilitate Pump Station 15	Priority (S-3) 5 Years	Replace pumps	Poole Road off MD 97	0 MGD
Upgrade Pump Station 12	Priority (S-3) 5 Years	Install two new submersible pumps, a new wet well, valve vault, and piping	Old Bachman's Valley Rd. adjacent to West Branch Trade Center Industrial Park	0 MGD
WWTP Expansion	Priority (S-3) 5 Years	Expand Treatment Capacity	WWTP on MD Route 31	1.5 MGD
Enhanced Nutrient Removal	Priority (S-3) Immediate	Install new treatment technology	Wastewater Treatment Plant	0 MGD
Upgrade of the Pre-treatment Septage Facility	Priority (S-3) Immediate	Upgrade the septage facility to produce cleaner effluent	Existing WWTP	0 MGD

Long-term Recommendations

The 2018 WWCMP identified current trends towards decreasing influent flows. Along with the ongoing and planned I&I reduction efforts, there should be long-term, reduced wastewater inflows over time The City's allocation policy will further control the growth of flows.

When the ENR upgrade is complete and operational, a complete re-evaluation of the treatment plant's hydraulic and treatment capacity is planned. Through a combination of flow equalization and incremental improvements at the WWTP, the system's capacity could be increased with relatively modest capital investments.

★



Freedom Sewer Service Area
Carroll County, Maryland

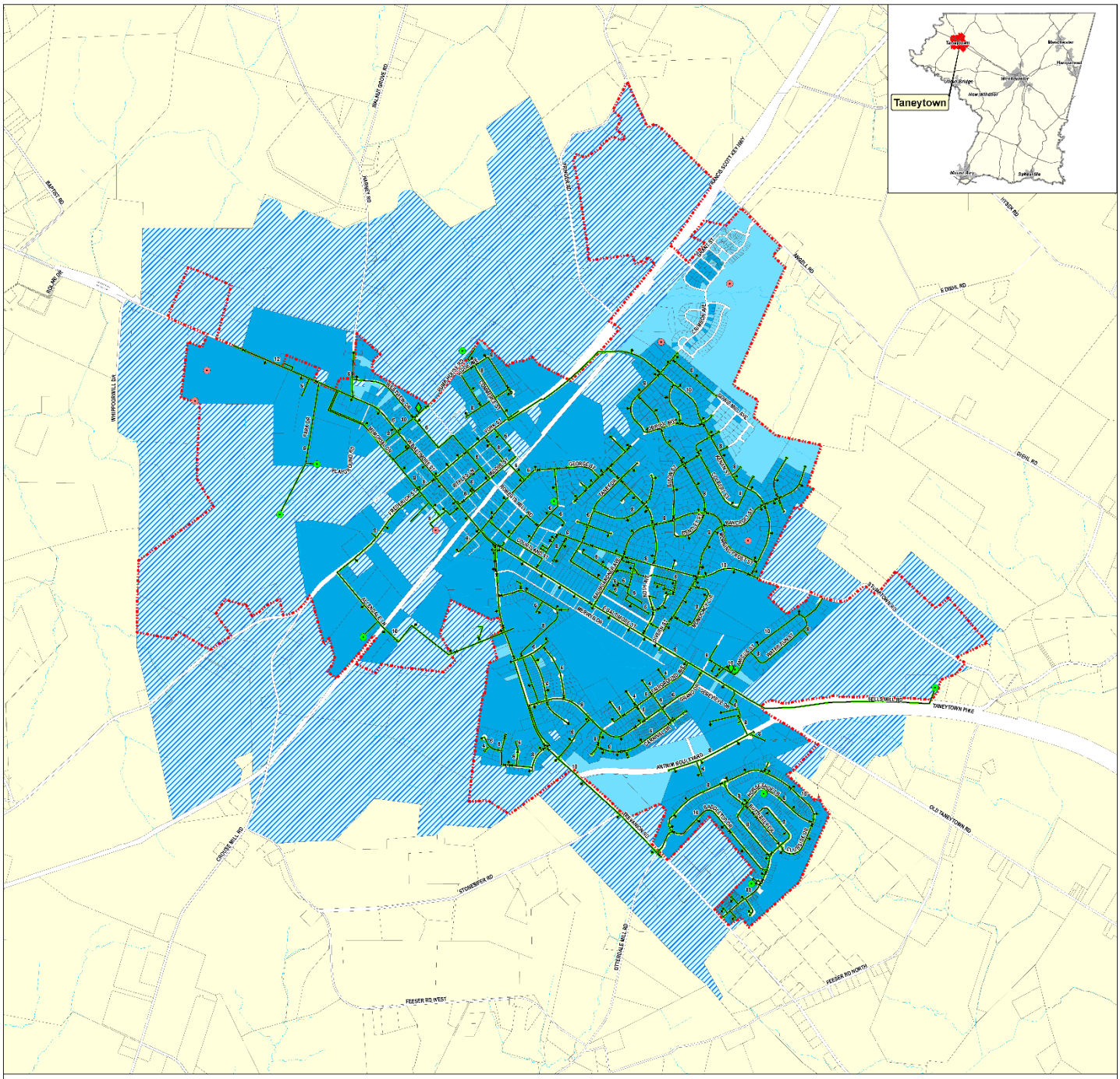
Water & Sewer Master Plan
Spring 2020 Update

Sewer Service Categories
- Existing/Final Planning
- Priority (0-6 yr)
- Future (7-10 yr)
- Long Range (10+ yr)

Sewer Distribution Lines
- Existing Line
- Existing Force Main
- Priority Line

General
- Corporate Limit
- County Border
- Stream
- Reservoirs Per Planning

0 1,200 2,400 Feet


Taneytown
Taneytown Water Service Area
Carroll County, Maryland
2020 Spring Amendment
Water & Sewer Master Plan
Water Service Categories
W - 1 Existing/Final Planning
W - 3 Priority (0-6 yr)
W - 6 Long Range Future (10+ yr)
Water Distribution Lines
Existing Line
Water Facilities
Existing Well
Existing Storage Tank
Future Well
General
Corporate Limit
County Border
Stream
0 300 600 1,200
Feet

Westminster Water Service Area

Portions of the information provided in this chapter for the City of Westminster are excerpted from the most recent Water Supply Capacity Management Plan, submitted to the Maryland Department of the Environment in February 2018. The Westminster WSCMP was prepared for the City by GHD Pty Ltd.

Current Conditions

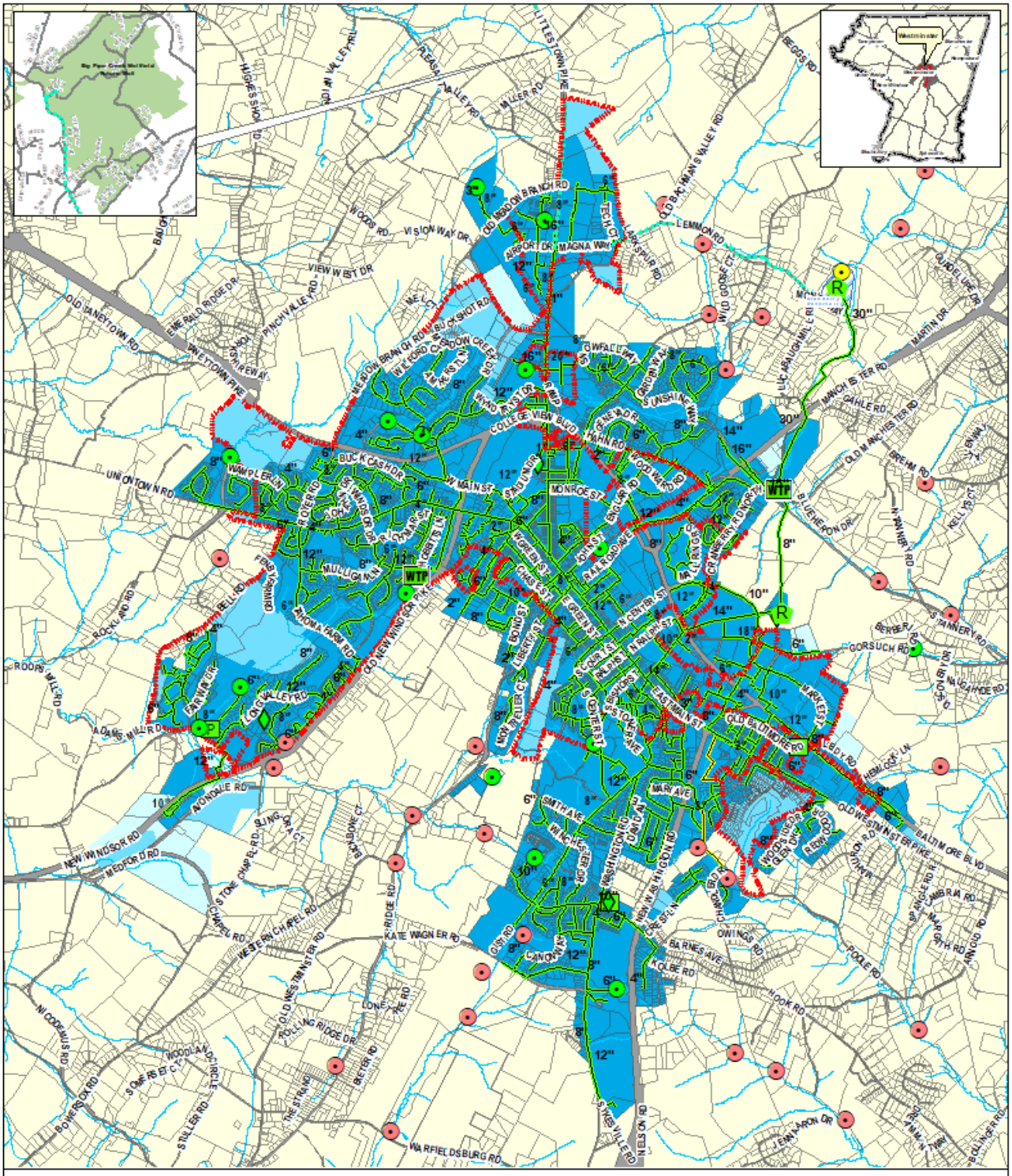
The City of Westminster's water supply system is comprised of 13 water supply wells , one augmentation well, three surface water sources, an emergency surface water supply, an emergency ground water supply, and a 121.8-million gallon (MG) raw water reservoir. The City's treatment and storage system consists of two surface water treatment plants (WTPs), two booster pump stations, one clear water reservoir, and four finished water storage tanks. Although the City operates one large water system, the City manages and operates two sub-systems: Wakefield Valley System and Cranberry System. The Wakefield Valley system includes two wells (Well No. 1 and Well No. 2) and a water storage tank and the remaining assets are included in the Cranberry system. The Wakefield Valley Wells No. 1 and No. 2 were originally an independent water distribution system but have been connected by a valve with the City's Cranberry water distribution system. The valve connecting the two systems is normally closed; however, the systems can be used to supplement each other, if necessary. The Cranberry distribution system operates with a higher pressure; therefore, water enters the Wakefield Valley distribution system through a pressure reducing valve. The Wakefield Valley well pumps can be used to augment the water supply in the Cranberry distribution system. The operation of the City's existing facilities is described in more detail in the following sections.

Regulatory Setting

The City of Westminster first developed a Water Supply Capacity Management Plan (WSCMP) in August 2006. The results of the August 2006 WSCMP indicated that the City had an existing *Drought of Record Water Deficit*. Upon completion of the WSCMP and following meetings with the Maryland Department of the Environment (MDE), the City entered into Agreement No. 998 with the State. Based on the requirements in Agreement No. 998, the City completed an Updated Water Supply Capacity Management Plan in 2008 in accordance with the 2006 MDE Water Supply Capacity Management Plan Guidance Document.

Since completion of the 2008 WSCMP, the City has pursued several actions to increase the available water supply and to mitigate increasing demands on the existing system. Further, following the last WSCMP (2018), the City has received increased permitting for existing wells in Wakefield Valley, adopted a new water allocation policy, and has brought the Gesell Well online with a renewed allocation.

In accordance with Agreement No. 998 and the 2008 WSCMP, the City has limited the approval of plats based on water supply availability, implemented water conservation programs, performed water audits, updated water metering and billing systems, and implemented regulations to allow water restrictions in the event of a drought. The City is pursuing short-, mid- and long-term strategies in order to increase its supply of water from existing sources and expand access to new sources, including water reuse options.


Westminster Water Service Area
Carroll County, Maryland
Water & Sewer Master Plan
Spring 2020 Update
Water Service Categories
W-1 Existing/Final Planning
W-2 Priority (0-6 yr)
W-3 Future (7-10 yr)
Water Distribution Lines
Existing Line
Priority Line
Water Facilities
Existing Well
WTP Existing Treatment Plant
Existing Storage Tank
P Existing Pumping Station
R Existing Reservoir
Priority Well
Future Well
General
Corporate Limit
Proposed Union Mills Waterline
County Border
Stream
0 600 1,200 2,400 Feet
Prepared by the Carroll County Department of Planning 6/10/20 (kc) This data is prepared by Carroll County for internal use and is made available because it is public information. Carroll County, its agencies or employees do not warrant its accuracy or suitability for any purpose. The reader should contact appropriate regulating agencies to determine accuracy or suitability of the data for a particular use.

Westminster Water Service Area Appropriations
UPDATED

6-digit Watershed	Water Source	Permit Number	Permitted Daily Average Use (gpd)	Average Day Demand Month of Maximum Use (gpd)
Middle Potomac	Cranberry Water Treatment Plant	CL1957S002(10)	2,000,000	3,000,000
Patapsco	Koontz Well John Street (for stream augmentation only)	CL1977G036(07)	500,000	750,000
Patapsco	Air Business Center (Well #4)	CL1977G136(06)	86,000	94,000
Middle Potomac	County Maintenance Facility (Well #3)	CL1977G236(05)	100,000	120,000
Middle Potomac	South Center Street (Well #6)	CL1977G336(04)	95,000	111,000
Patapsco	Krider's Church Road (Well #5)	CL1977G436(04)	230,000	280,000
Middle Potomac	Wakefield Valley Wells (1 & 2)	CL1977G536(04)	293,000	500,000
Middle Potomac	Carfaro (Well #7)	CL1977G636(05)	233,000	303,000
Patapsco	Vo-Tech (Well #8)	CL1977G736(04)	119,000	155,000
Middle Potomac	Koontz Property (Wells 9 & 10)	CL1977G836(03)	125,000	130,000
Middle Potomac	Roops Mill (Well #11)	CL2000G025(03)	120,000	150,000
Middle Potomac	Gesell Well & Greenvale	CL2007G019(03)	165, 000*	360,000

	Mews (Well #12)*			
Middle Potomac	Bramble Hills *	CL2000G001(04)	3,300	5,500
TOTAL			**3,904,300***	**5,955,500**
Note: Medford Quarry (Emergency Source)		CL2002S042(03)	482,000	750,000

* Gesell Well (Well #12) information is subject to change as a result of the City's Long-Term Pump Test.
* Bramble Hills Well is a non-production well. Overall system provides emergency pressure to well if needed.

Westminster Water Service Area Daily Use UPDATED

Water Source	Storage Capacity (MG)	Maximum Safe Yield (MGD)	Average Daily Use (MGD)	Maximum Peak Flow (MGD)	WTP Capacity (MGD)
Cranberry Water Treatment Plant		2.000	1.800	3.000	2.750
Wells 1 and 2 – Wakefield		0.293	0.183	0.500	0.197
Well 3 – County Maintenance		0.100	0.085	0.120	0.100
Well 4 – Air Business Center		0.086	0.072	0.094	0.170
Well 5 – Krider's Church Road		0.230	0.158	0.280	0.230
Well 6 – South Center Street		0.095	0.105	0.111	0.100
Koontz Creamery (John Street)		0.500[1]	0.255	0.750	0.500
Well 7 – Carfaro		0.233	0.130	0.303	0.300
Well 8 – Vo-Tech		0.118	0.082	0.155	0.199
Wells 9 and 10 – Koontz Property		0.095	0.080	0.130	0.125
Well 11 – Roops Mill		0.120	0.106	1.532	0.150
Well 12 – Gesell & Greenvale Mews Well*		.165[2]	-	1.532	-
Bramble Hills[3]		-	-	-	-
Raw Reservoir Cranberry	125				
Wakefield Valley Water Storage Tank	2				

Clear Reservoir	1				
McDaniel College Water Tank	.5				
Hook Road Water Tank	1.5				
Gorsuch Road High Zone Water Tank	2				
High Zone Booster Station	-				
TOTAL	**132**	**3.536**	**3.056**		

1. The Koontz Creamery Well is used to augment a tributary of the Patapsco River during low flow periods to maintain stream flow requirements and is not considered a productionwell.
2. Gesell Well (Well #12) information is subject to change as a result of the City's Long-Term Pump Test.
3. Bramble Hills Well is not a production well; however, it relies on the overall City system to provide pressure in case of an emergency. The information listed in this table is unavailable for Bramble Hills compared to the other City wells because this well was not owned by the City at the time of the Water Supply Capacity Management Plan.

Due to water conservation measures over many years, the City has evidence from its own data and from large, institutional users that water use for current, existing uses has been decreasing significantly. As a result, in the future the City will be looking for ways to recapture allocable water in conjunction with the MDE, so water savings from good practices could be re-allocable.

Needs Analysis

Ground Water Supply

The City has appropriation permits for 13 water supply wells located throughout the City. In addition, the City owns and operates the Koontz Creamery well that is used to augment an unnamed tributary of the Patapsco River and Bramble Hills Well. The Bramble Hills Well relies on the overall City system to provide pressure in case of an emergency. The operation of the Koontz Creamery well is discussed in more detail in the following sections. The table below summarizes the permitted capacities of the existing wells. The operation and production of the wells are explained in more detail in the following sections.

Permitted Well Withdrawal Capacities

Well Number	Source	Annual Average Permitted Withdrawal (MGD)
1 & 2	Wakefield	0.2930
3	County Maintenance	0.1000
4	Air Business Center	0.0860
5	Krider's Church Road	0.2300
6	South Center Street	0.0950
7	Carfaro	0.2330
8	Vo-Tech	0.1190
9 & 10	Koontz Property	0.0950
11	Roops Mill	0.1200
12	Gessell	0.1375
N/A	Greenvale Mews	0.0270
N/A	Koontz Creamery (John Street)	0.5000

Surface Water Supply and Storage

The City of Westminster has three surface water sources, one emergency water supply, and one augmentation well to supplement the surface water to meet flow-by requirements during lower flow periods. Two surface water intakes are located on tributaries that feed the Patapsco River. One surface water intake is located on Cranberry Branch, which is a tributary of the West Branch of the Patapsco River. Approximately 7,500-feet of 30-inch transmission line are used to convey water by gravity from Cranberry Branch into a raceway and to the Cranberry WTP for treatment.

The second surface water intake is located on a tributary of the West Branch of the Patapsco River known as Hull Creek. A small surface water impoundment and an infiltration gallery are located in Bennett Cerf Park. Raw water flows by gravity through a transmission line to the Cranberry WTP for treatment. The third surface water intake is Little Pipe Creek.

The City also owns and operates the Cranberry Reservoir, which is a 121.8-MG raw water reservoir located along Cranberry Branch north of Lucabaugh Mill Road. The water in the Cranberry Branch Reservoir is used when low flow conditions result in inadequate surface water supply from Cranberry Branch and Hull Creek. In 2011, a solar-powered mixer was installed in the reservoir to address stratification and mitigate algal growth. Raw water from the reservoir flows by gravity through the 30-

inch transmission main to the Cranberry WTP. During periods of higher stream flow, a raw water pump, 600 gpm (0.864 MGD), is used to pump water from Cranberry Branch into the Cranberry Reservoir.

The City maintains a water appropriation and a use permit that governs the withdrawal from the two surface water intakes from the Patapsco River. The Koontz Creamery well was purchased by the City in 1974 to meet the City's increasing water demand; however, the ground water supply to the Koontz Creamery well is contaminated with hydrocarbons. Therefore, it is not directly connected to the City's potable water system. Due to the increased withdrawal from Cranberry Branch and Hull Creek, MDE permitted the augmentation of the river flow with pumped water from the Koontz Creamery well through a state-approved discharge permit. The mixing, dilution, and aeration of the Koontz Creamery well water dissipates the hydrocarbons. The City maintains Water Appropriation and a Use Permit that allows a water withdrawal of an annual average of 0.5 MGD and daily average of 0.75 MGD for the month of maximum use. The water from the Koontz Creamery well is pumped into an unnamed tributary of West Branch to augment the flow in the West Branch Basin when the flow at the gauge station is less than 0.85 cfs (0.549 MGD) and continues to augment flow until the stream flow exceeds
1.62 cfs (1.05 MGD). The Koontz Creamery Well Preliminary Engineering Report Evaluation / Concept Design was finalized in January 2008. The 2018 WSCMP recommendation was to operate the well continuously and limit withdrawals during low-flow conditions to maintain flow-by requirements. This recommendation would require a permit modification to eliminate the low-flow augmentation limitation. Approval and implementation of the recommendations would increase the reliable capacity from the surface water system.

In addition, there is a permit that defines the conditions for an emergency withdrawal during a City water supply emergency (drought conditions). The City may withdraw water, via an emergency pump, from the West Branch of the Patapsco River at the Cranberry WTP when low flow conditions exist provided the withdrawal is authorized in writing by the Administration (Maryland Department of the Environment) and water use restrictions have been instituted within the Westminster service area. Two emergency pumps, 600 gpm each (0.86 MGD), are available to transfer water from the West Branch to the Cranberry WTP. Additionally, all water withdrawn from the West Branch must be returned by pumping the Koontz Creamery well.

Permitted Surface Water Withdrawal Capacities

Location Name	Permit Number	Annual Average Permitted Withdrawal (MGD)
Cranberry Branch & West Branch	CL1957S002(10)	2.0

Medford Quarry Emergency Water Supply

The Medford Quarry is located in Carroll County on approximately 397 acres generally bounded by Stone Chapel Road and Maryland Route 31. Ground water percolates into the quarry in excess of the quarry's needs. In June 2005, the City signed an agreement which provides the City access to excess ground water that enters the quarry. MDE approved the agreement, which provides the City raw water to serve the existing water customers. The Medford Quarry pump station and pipeline project was completed in 2009

and is operational. However, the permit has been updated recently due to recommendations from the 2014 WSCMP. The Water Appropriation and Use Permit No. CL2002S042(03) allows the use of Medford Quarry as an emergency water supply. The permitted withdrawal limitations are 0.482 MGD on an average daily basis, and 0.750 MGD on a maximum daily basis.

Permitted Raw Water Source Summary

The City has several ground water and surface water sources to provide raw water to the City's treatment plants or distribution systems. Table 3 summarizes the existing permitted capacity of the various sources, representing the annual average permitted capacity during average rainfall conditions. The reliable capacity under drought conditions is discussed in the following sections.

Permitted Raw Water Sources

Source	Annual Average Permitted Withdrawal (MGD)
Wakefield Wells Nos. 1 & 2	0.293
Cranberry System Wells No. 3-11	1.078
Well No. 12 Gesell and Greenvale Mews Well[1]	0.137
Cranberry System Surface Water Sources[2]	2.000
Total Sources	3.539
Koontz Creamery[3]	0.500
Medford Quarry Emergency Supply[4]	0.480

1. This information is subject to change as a result of the City's Long-Term Pump Test.
2. The Total Source Value was calculated by summing Wakefield Well No. 1 & 2, Cranberry System Wells No. 3-No. 11, Gesell Well, Greenvale Mews Well and Cranberry System Surface Water Sources.
3. Koontz Creamery well is used to augment a tributary of the Patapsco River during low flow periods to maintain low flow stream requirements. At this time, Koontz Creamery cannot be used as a drinking water supply.
4. The Medford Quarry Emergency Supply can only be used during emergency conditions.

Average Daily Use

The City's water system serves residential customers within the City's boundaries as well as customers in portions of Carroll County. The population served by the City's water system is summarized on the next page. Water usage is summarized per capita based on the total water sold and the total water produced by the Cranberry and Wakefield systems.

Water Usage per Capita in Cranberry and Wakefield Systems

Year	Water Quantity (MGD)	Total Population Served[1]	Water Usage Per Capita (gpd/capita)[2]
Sold Water			
2013	1.99	28,945	68.8
2014	2.13	29,077	73.3
2015	1.96	29,139	67.3
Total Delivered			
2013	2.71	28,945	93.5
2014	2.57	29,077	88.5
2015	2.66	29,139	91.2

Notes:
1. Based on data provide by the City of Westminster Finance and Planning Departments.
2. Water Usage Per Capita = Water Quantity (MGD) * 1,000,000 gal/MG / Total Population Served

Historical Growth Rates

From 2013 through 2015, the residential connections were used to determine the rate of growth for overall increase in residential and non-residential connections. The table below indicates the number of new residential and non-residential connections to the system.

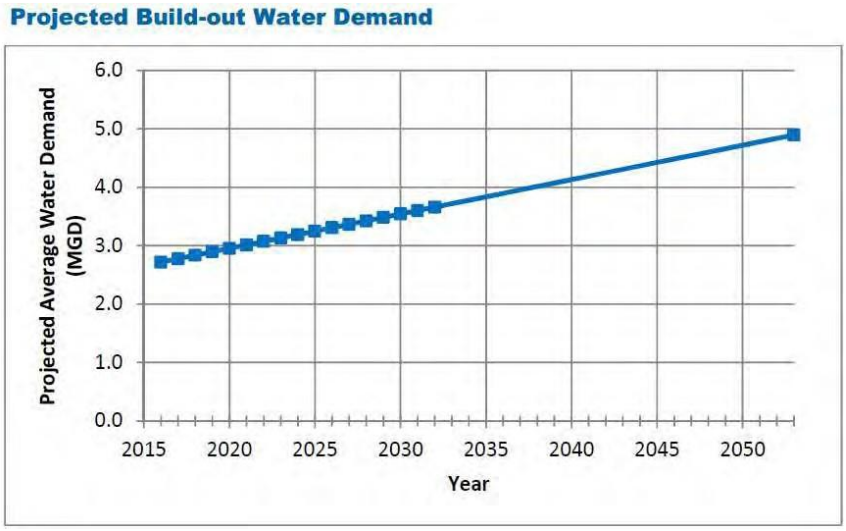
Historical Change in Residential and Non-Residential Connections

Year	New Residential Connections	New Non-Residential Connections	Overall New Connections
2013	159	-151	8
2014	134	-5	129
2015	103	-2	101
Annual Average	132	-53	79

Projected Growth

The projected build-out for residential connections is based on historical growth trends, number of issued building permits, planned and projected developments and current zoning. The graph on the following page shows the projected growth for the in-City connections and County connections through an estimated build-out year of 2053.

As a result of the City's Water allocation policy in place since 2015, which allocates a maximum of 0.0588 MGD of water per year, the growth rate of new water was effectively capped. Although this was an effective approach, the City paused all allocations when the planned addition of the Gesell Well was delayed by the required installation of filtration equipment.



New Allocations Procedure

On June 23, 2017, the City temporarily suspended the processing of applications requiring a net new water allocation for nine months. On March 26, 2018, the Mayor and Common Council of Westminster passed and approved Resolution No. 18-04, implementing a new water and wastewater allocation policy that supersedes all prior policies. On October 8, 2018, the Mayor and Common Council of Westminster passed and approved Resolution No. 18-08, amending the adopted water and wastewater allocation policy for 2018-2024.

The current policy promotes the allocation of water for economic development purposes, such as commercial and industrial uses and to support new multifamily residential projects. The policy provides for a limited supply of water for new single-family residences, recognizing the fact that there are approximately 600 single-family residences already allocated and in the pipeline.

On August 12, 2019, the Mayor and Common Council passed and approved Resolution No. 19-16, amending the Master Distribution Chart and policy text. These changes provided for the allocation of new categories to direct more economic development allocations to projects inside the City as opposed to those outside, and to address food-and beverage-related uses. Policy text was added to create commercial share principles, and two new columns were introduced on the Master Distribution Chart. The revision also contained new text to allow a queue to form across the policy timeframe for the annual, single-unit-residential allocations inside the City.

The fourth Policy revision added language allowing property owners that possess an assigned tentative water and/or sewer allocation to utilize the allocation at a temporary location while in the development/permit review and construction process, subject to certain conditions. The temporary location would be required to cease operations before the new location could receive its use and occupancy permit approval. This amendment also creates a new column in the Master Distribution Chart titled “Allocation Re-assignment for Temporary Location” to assist staff in tracking water and/or sewer allocations in this category.

Recommendations for Long-Term System Growth

The 2018 Westminster Water Supply Capacity Management Plan recommended the following for future projects to increase the water supply capacity available to the City of Westminster in future years.

- Big Pipe Creek: The use of Big Pipe Creek at Union Mills has been in the Carroll County Water and Sewer Master Plan since the 1960s. Big Pipe Creek has a significantly larger watershed than the existing Cranberry intake, which results in a substantial increased baseline stream flow when compared to the existing Cranberry Branch water supply. The initial plan to utilize Big Pipe Creek involved the construction of the raw water intake, off-line reservoir, raw water pump station, and raw water main to transfer water into the existing watersystem.

- Hyde's Quarry: Hyde's Quarry is located within a 60.15-acre parcel owned by the Commissioners of Carroll County. The quarry itself is approximately 8.3 acres in size, with no obvious tributaries adding to or draining from the quarry. Preliminary testing/monitoring of Hyde's Quarry has shown promise for significant withdrawals without deleterious effects on nearby water resources.

- Purchase of Finished Water from City of Baltimore: The City of Baltimore has a large water supply and treatment system. An agreement could be developed to allow the City of Westminster to purchase water from the City of Baltimore.

- Conservation: Continue to encourage commercial water users to practice water reuse. Although some commercial users are currently reusing water, increasing the amount of water reuse would be advantageous for reducing future water demand.

The City is actively performing a pilot study to develop the basis of design for the new Westminster Water Resource Recovery Facility (WWRF). The source water for WWRF is the effluent of the existing Westminster Treatment Plant (WWTP), which is currently under construction for an enhanced nutrient removal (ENR) upgrade. The purified water from the WWRF will be utilized to augment the Cranberry Run Reservoir.

In addition to the WWRF pilot, the City will also be working with a communications firm to develop a strategy to inform and educate the public regarding this new water re-use initiative.

Future Solutions Advantages and Disadvantages

Big Pipe Creek	Hydes Quarry	Purchase of Finished Water
Advantages: • Identified as future reservoir site by City, County and MDE in 1960s • Largest untapped water source within close proximity of the City (Approx. 12 mi. from city) • Staged Implementation option • Provides ability to meet minimum stream flow requirements at Cranberry Gauge Station • Identified as future reservoir site by City, County and MDE in 1960's • Consistent with State's Smart Growth Initiative City-owned infrastructure	**Advantages:** • Withdrawal of 600,000 GPD observed during testing without deleterious effects on nearby water resources • 1.35 MGD withdrawal achievable for a limited amount of time • Owned by the Commissioners of Carroll County • Currently recommend a surface water annual average appropriation of 400,000 gallons per day (GPD) and max daily withdrawal of 800,000 GPD	**Advantages:** • Reduced infrastructure required with construction of raw water main and pump station for conveying water from Reisterstown • Potential reduction in MDE permitting requirements • Potential reduction in operational complexity • Wells become back-up supply • Provides ability to meet minimum stream flow requirements at Cranberry Gauge Station
Disadvantages: • Extended permitting process • Substantial capital cost for raw water main and raw water storage reservoir • Requires cooperative effort between City, Carroll County and MDE	**Disadvantages:** • Results of testing are not necessarily indicative of anticipated yields under summertime or drought conditions • Further testing/monitoring recommended	**Disadvantages:** • Reliance on the an outside source for finished water with significant reduction in operational control • Potential political ramifications • Substantial capital and operating costs for purchase of finished water • Potential for disinfection by-product formation due to long travel time for finished water • Requires cooperative effort between City of Westminster, Carroll County, MDE and the water supplier

Priority Projects for Continuous System Upgrades

The final section of this chapter updates the priority projects identified by the City of Westminster's Public Works Department. These are in addition to the recommendations identified in the 2018 Water Capacity Management Plan above. These projects represent continuous and ongoing system upgrades. The chart below provides current information from the City of Westminster's Public Works Department in response to a request by Carroll County Planning for updated information in this format.

Westminster Water Service Area Priority Projects

Project Name	Planning Category	Description	Location	Added Capacity
Main Street Water Main	Priority (W-3) 5 years	Upgrade existing line to 12" water main	Main St. from Longwell Ave. to Penn Ave.	0 MGD
Water Treatment Plant Supply Main	Priority (W-3) 10 years	Renovate 30" water transmission line	Supply line from raw reservoir to Water Treatment Plant at Cranberry	0 MGD
Park Avenue Water Main	Priority (W-3) 5 years	Replace two 4" waterlines with 6" water main	Park Avenue from W. Green St. to W. George St.	0 MGD
Winters Street Water Main	Priority (W-3) 5 years	Replace existing lines with 6" water main	Winters St. from Railroad Ave. to John St.	0 MGD
Ridge Road Water Main	Priority (W-3) 5 years	Design and construct an 8" and 6" water main as a replacement for an old 2" and 4" main	Old New Windsor Rd. to Westmoreland St. to the dead end of the line on Ridge Road	0 MGD
Sophia Ave. Water Main	Priority (W-3) 5 years	Design and construct an 8" ductile iron water main, replaces existing asbestos concrete pipe	Fairfield Ave. to Gist and Washington Roads	0 MGD
John St. Water Main	Priority (W-3)	Design and construct 6" water main replacement	John St. between W. Main St. and Winters Alley	0 MGD

Replacement (only)

Replacement				
MD 27 Water Main	Priority (W-3) 5 years	Replace existing main with a new 16" DIP main to reduce breaks	MD 27 corridor	0 MGD
MD 140 Parallel Water Main	Future (W-5) 10 years	Construction of parallel main to equalize pressure and improve system operations	MD 140 corridor	0 MGD
Increased Reservoir Surface Elevation	Future (W-5) 10 years	Increase capacity of reservoir by increasing the water surface elevation	Cranberry Reservoir	0 MGD
Interzone Main	Future (W-5) 10 years	Connect zones with a new 12" main to enhance operations	Poole Road vicinity	0 MGD
New Water Supply	Priority (W-3) 5 years	Study and develop a new water source	Westminster area	TBD

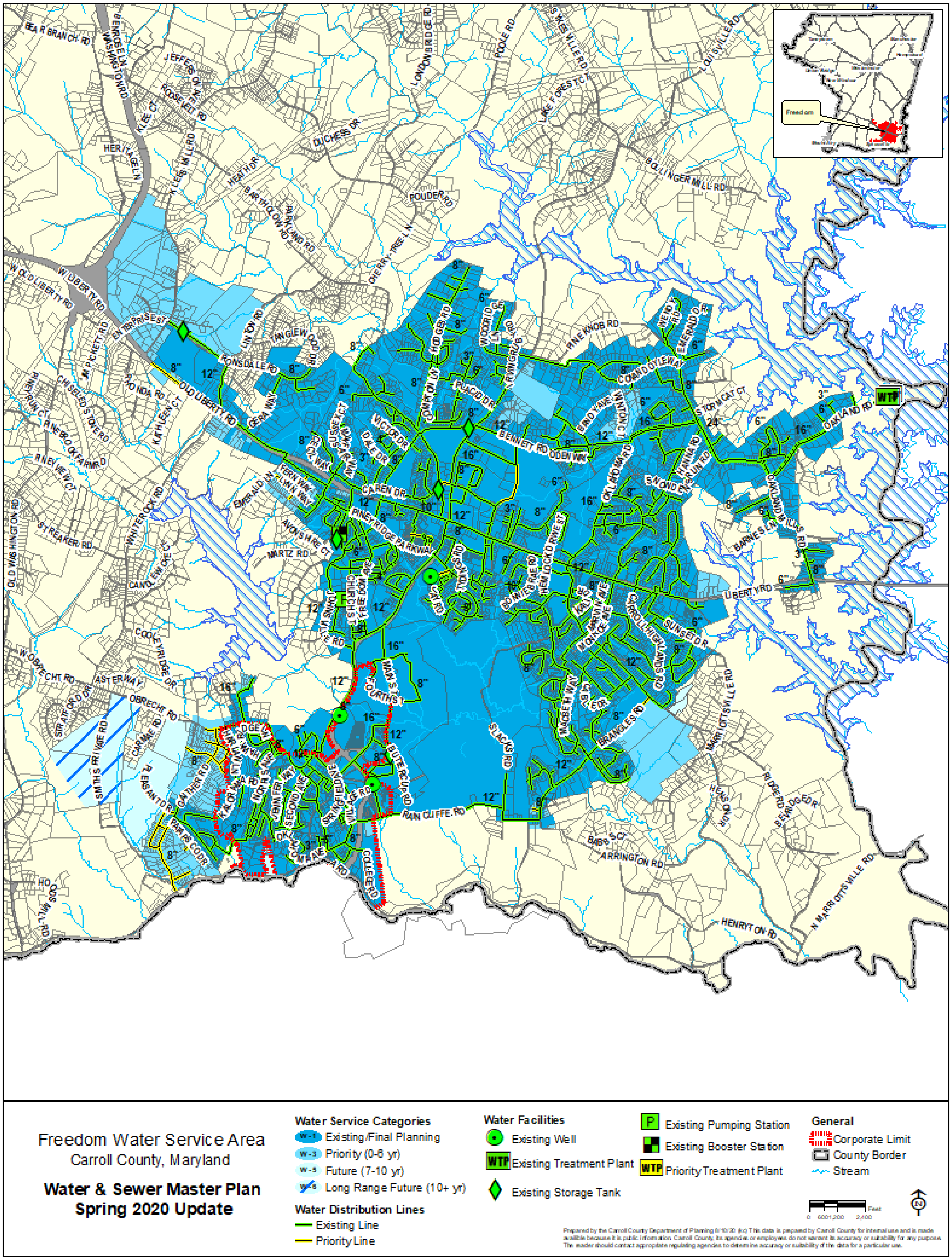

Freedom Water Service Area
Carroll County, Maryland
Water & Sewer Master Plan
Spring 2020 Update
Water Service Categories
Existing/Final Planning
Priority (0-6 yr)
Future (7-10 yr)
Long Range Future (10+ yr)
Water Distribution Lines
Existing Line
Priority Line
Water Facilities
Existing Well
Existing Treatment Plant
Existing Storage Tank
Existing Pumping Station
Existing Booster Station
Priority Treatment Plant
General
Corporate Limit
County Border
Stream
Freedom

Table 9B: Mount Airy WSA Average Daily Use

Water Source	Max. Safe Yield (MGD)	Avg. Daily Use (MGD)	Max. Peak Flow (MGD)
Main Well Field (1- 4)	0.347	0.255	0.720
Well Fields 5 & 6	0.260	0.192	0.290
Well Fields 7 & 11	0.221	0.174	0.259
Well Fields 8 & 10	0.354	0.227	0.354
Well Field 9	0.204	0.079	0.288
Total	*1.386*	*0.927*	*1.911**

*The Town only runs 2 of the 4 wells at any one time

Table 9C: Mount Airy WSA Storage Tanks

Storage Tank	Storage Capacity (mg)
Elevated Tank 1	0.200
Elevated Tank 2	0.500
Elevated Tank 3	1.005
Total	*1.705*

Allocation Procedure

The Town's Adequate Public Facilities Ordinance (APFO) requires the Planning Commission to review the adequacy of public facilities, including water upon submission of the first development plan by a developer. If water supply for any development is not adequate, the project may not proceed until such water supply becomes available. However, review of adequacy of facilities is not required for site plans for any lot contained within a commercial or industrial subdivision that received preliminary plan approval prior to April 5, 2005, unless the proposed development project is designated a "large water user". (A "large water user" refers to any proposed use which, according to water and use projections adopted by the Carroll County Health Department, will generate an average daily water consumption rate of greater than 2,500 gallons per day.)

Needs Analysis

Total future water demand assumes full build out within the growth area boundary, producing a water demand of 1,189,000 gpd. With current appropriations, the Town will need to identify an additional 262,000 gpd to meet future water demand needs. To address these needs, the Town will seek new water sources, preferably groundwater sources.

Currently, the Town is seeking MDE approval for appropriations to four wells on the Harrison/Leishear Properties (Wells #1, #3, #12, and #18). The Town is working on an agreement with the County, which owns the property, to utilize these wells. Based on the Town's testing, in accordance with MDE procedures, the wells have an anticipated (combined) appropriation amount of 152,000 gpd. The wells are situated in the Middle Run Stream subwatershed and are adjacent to the Town's Water Station #2, which was recently upgraded in 2016.

With the proximity of the wells and the need for treatment upgrade, it would be most feasible, and in the Town's best interest, to acquire water rights and easements on the