## Taneytown Water Service Area

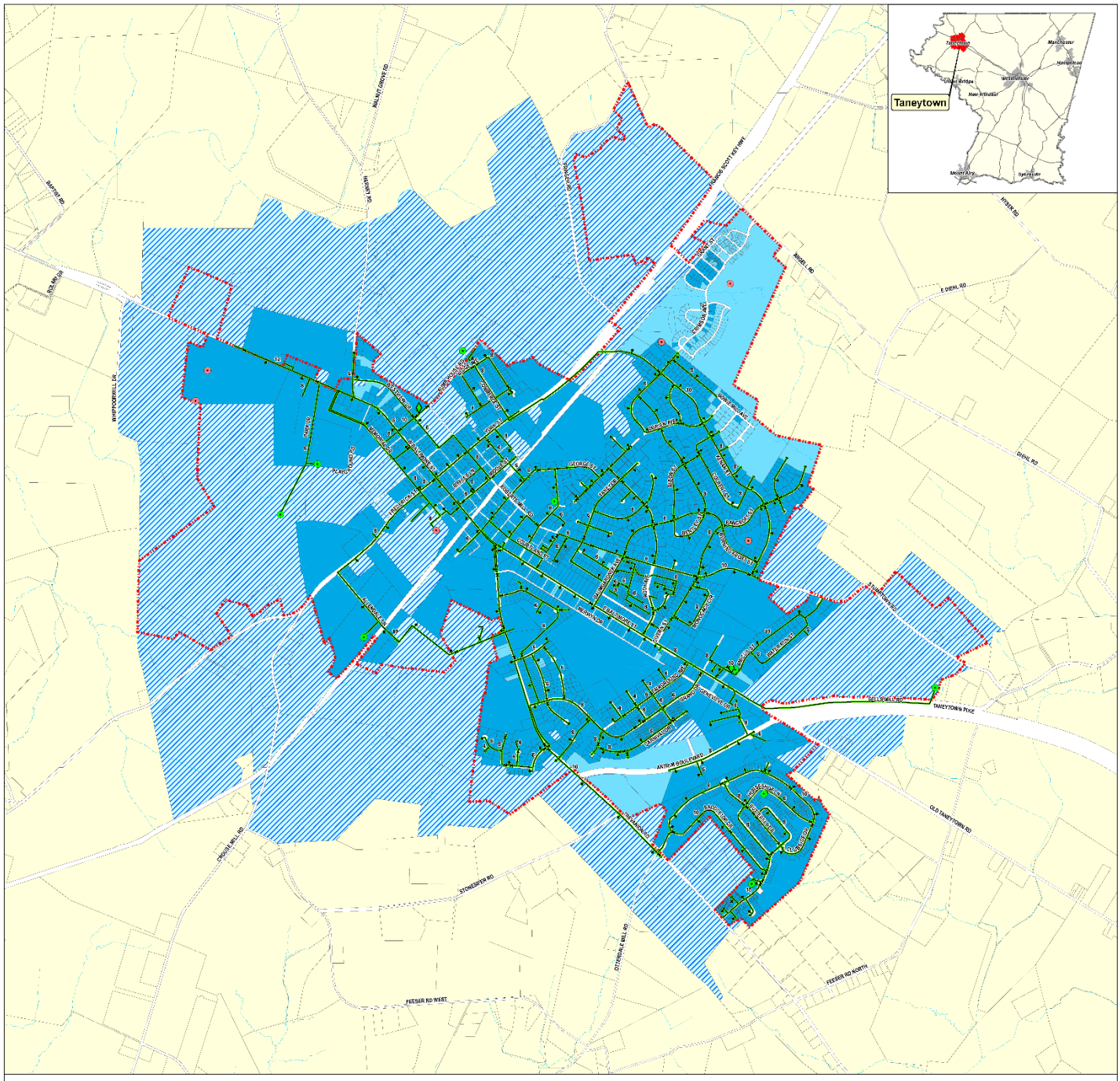
### Current Conditions

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 - 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
N
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

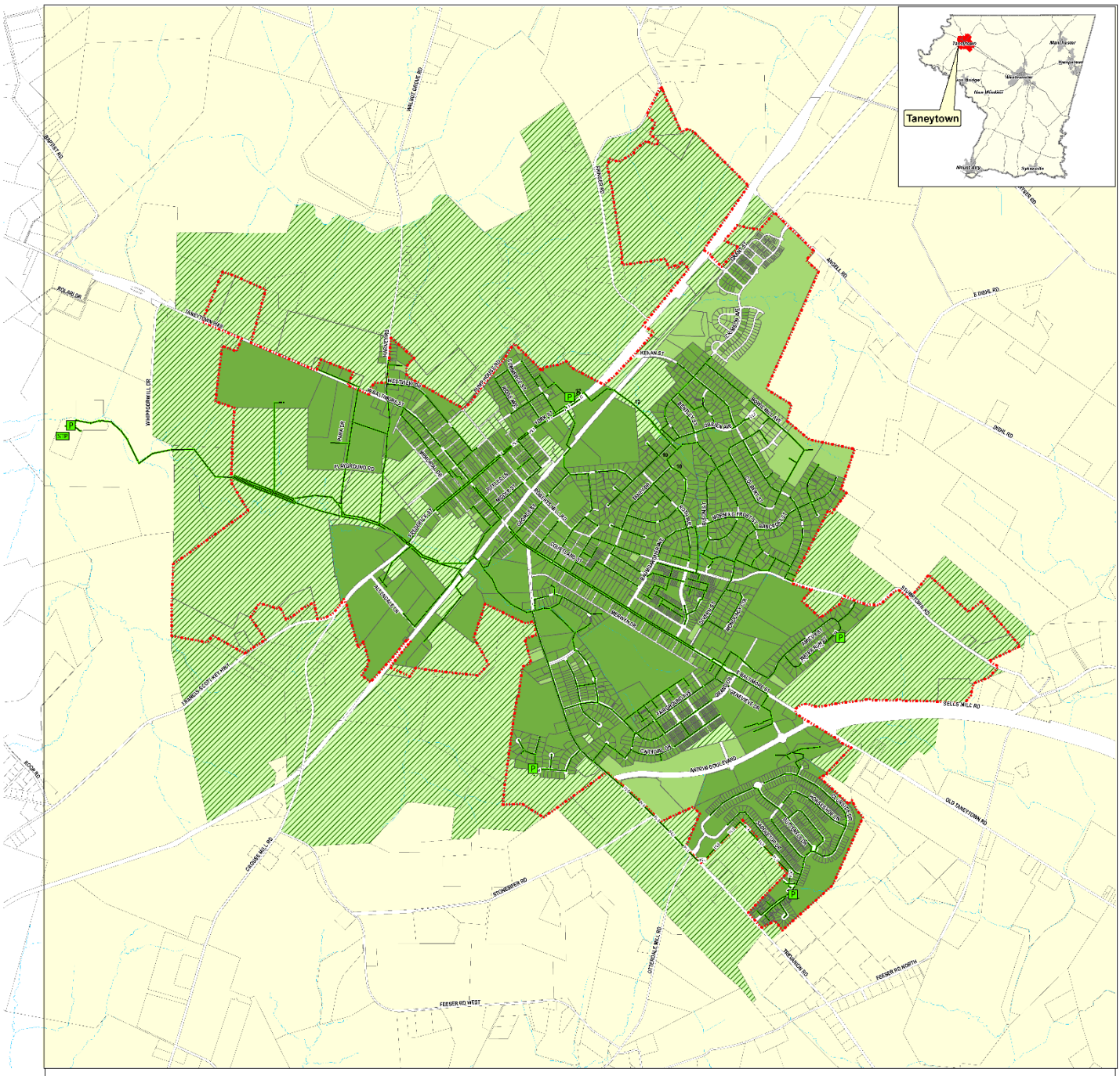

Taneytown
Taneytown Sewer Service Area
Carroll County, Maryland
2020 Spring Amendment
Water & Sewer Master Plan
Sewer Service Categories
S-1 Existing/Final Planning
S-3 Priority (0-6 yr)
S-3 Long Range (10+ yr)
Sewer Facilities
STP Existing Treatment Plant
P Existing Pumping Station
Sewer Distribution 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.

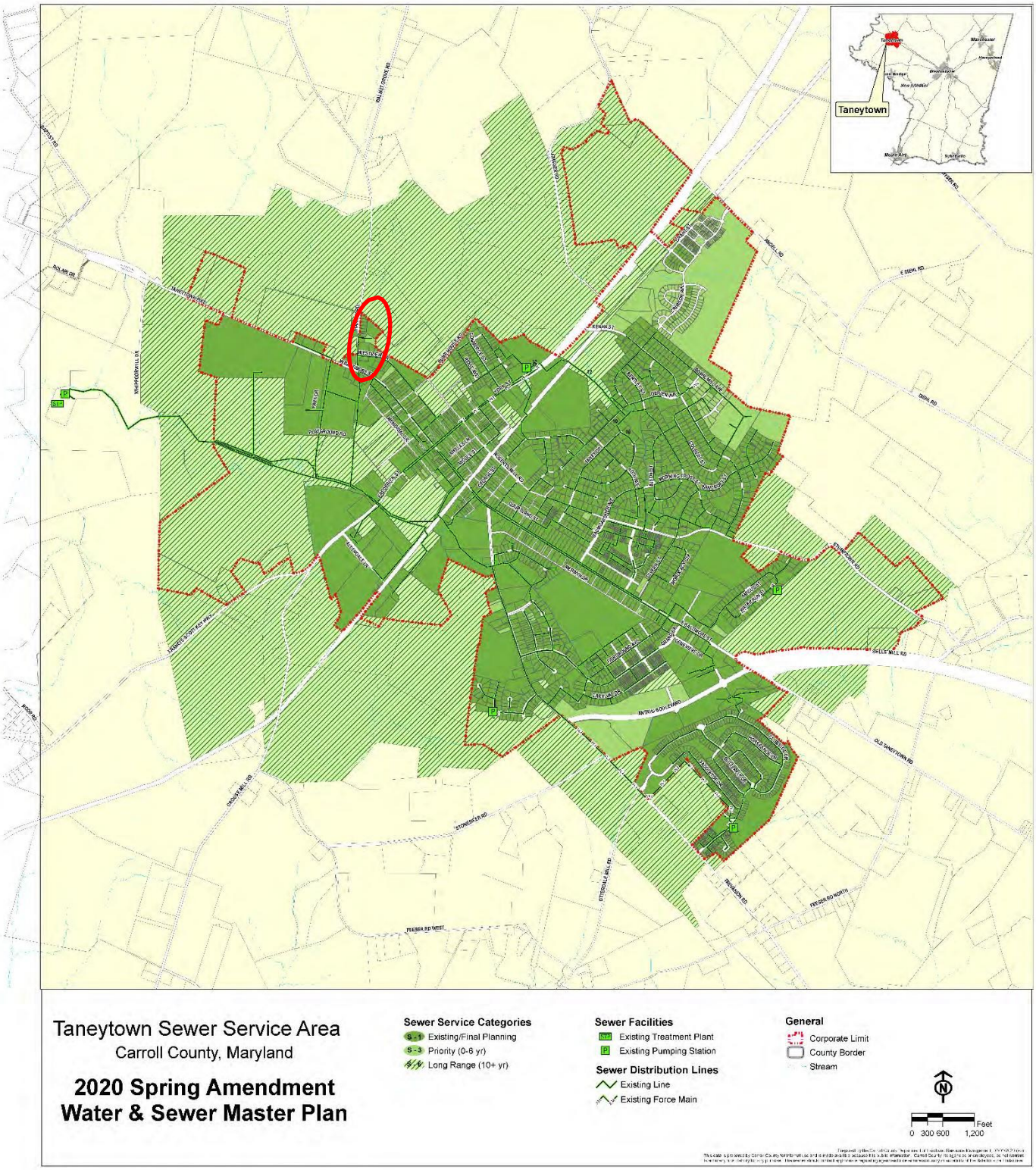
[15] New Windsor will be eliminating this deficit by conducting an I&I project that will recapture more than 17,000 gpd.

[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.


Taneytown
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Sewer Facilities
STP 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

Subject Area
Taneytown
Manchester
Hampstead
Union Bridge
Westminster
New Windsor
Mount Airy
Sykesville
HARNEY
WESTVIEW
Area of Amendment
Harney Rd. (Hayfield AMND PLT A)
Sewer Service Area
Carroll County, Maryland
Water & Sewer Master Plan
Spring 2020 Amendment
Sewer Service Categories
Existing/Final Planning
Priority (0-6 yr)
Long Range (10+ yr)
Sewer Distribution Lines
Existing Line
General
Parcels
Stream
N
Feet
0 40 80 160
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## 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. |
| 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 |

[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 the approval process and were provided to the County by the City. These calculations account for I/I reductions in the York Street Pump Station.

## 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.

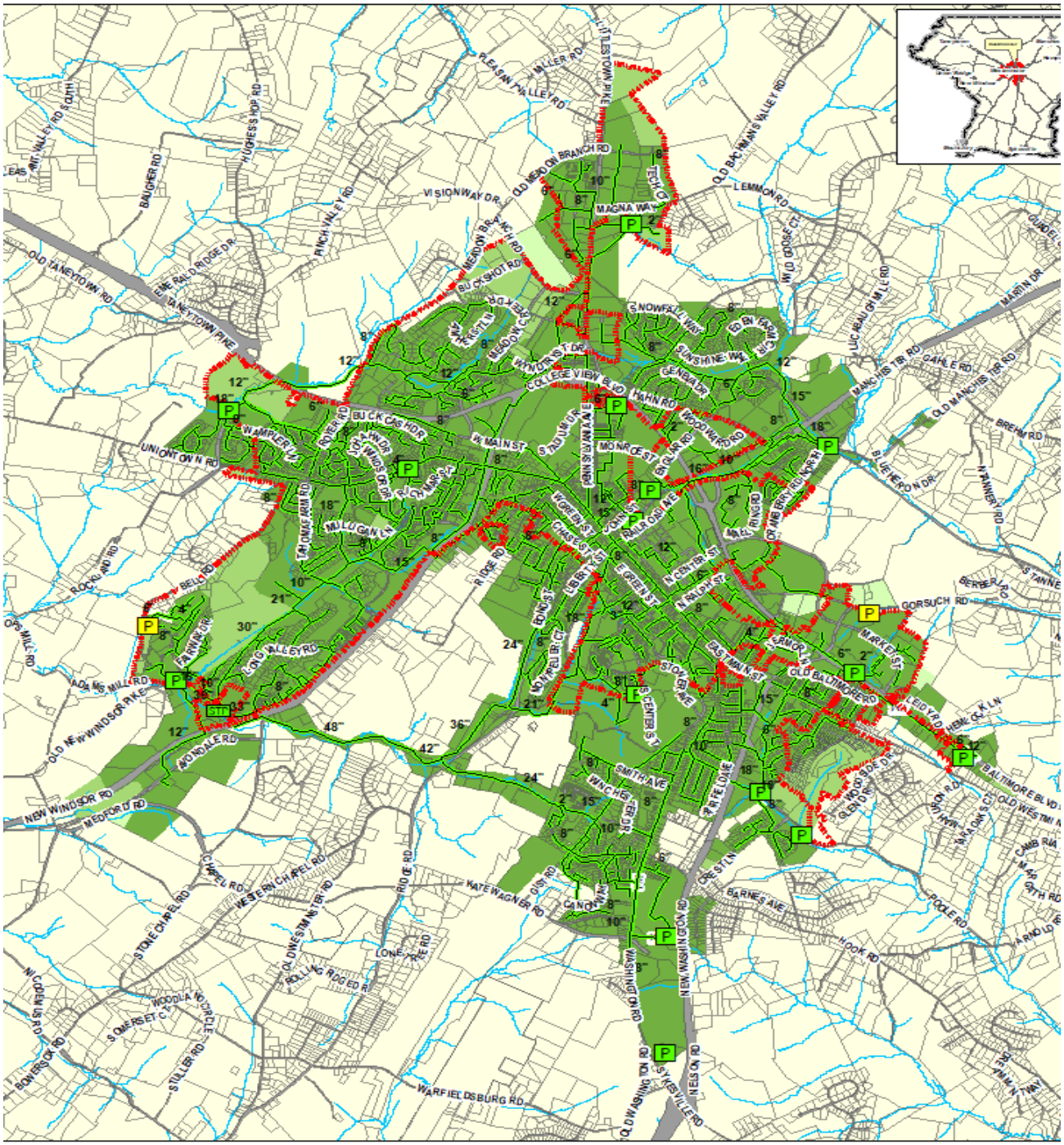
The Westminster WWTP has been operating above 80% of its design and permit capacity since at least 2005. The City has been actively working to secure sufficient available wastewater treatment capacity.

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**
- Existing Treatment Plant
- Existing Pumping Station
- Priority Pumping Station

**General**
- Corporate Limit
- County Border
- Stream

Feet
0 1,200 2,400

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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

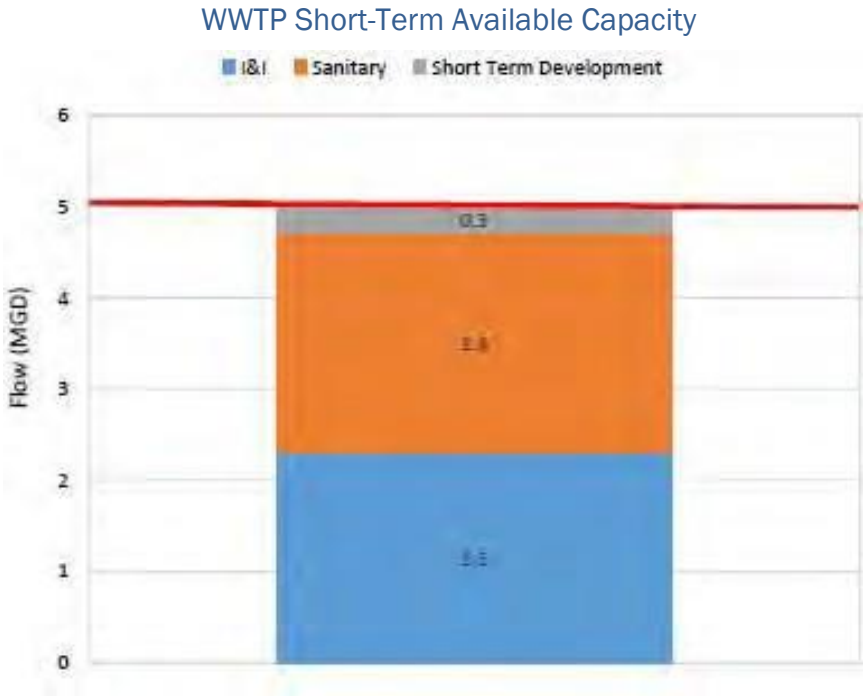
| | Demands | Associated I&I | Total Wastewater |
|---|---|---|---|
| | *gpd* | *gpd* | *gpd* |
| Allocated Demand | 90,605 | 17,214 | 107,819 |
| Short-term Demand | 181,571 | 24,498 | 206,069 |
| **TOTALS** | **272,176** | **41,712** | **313,888** |

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

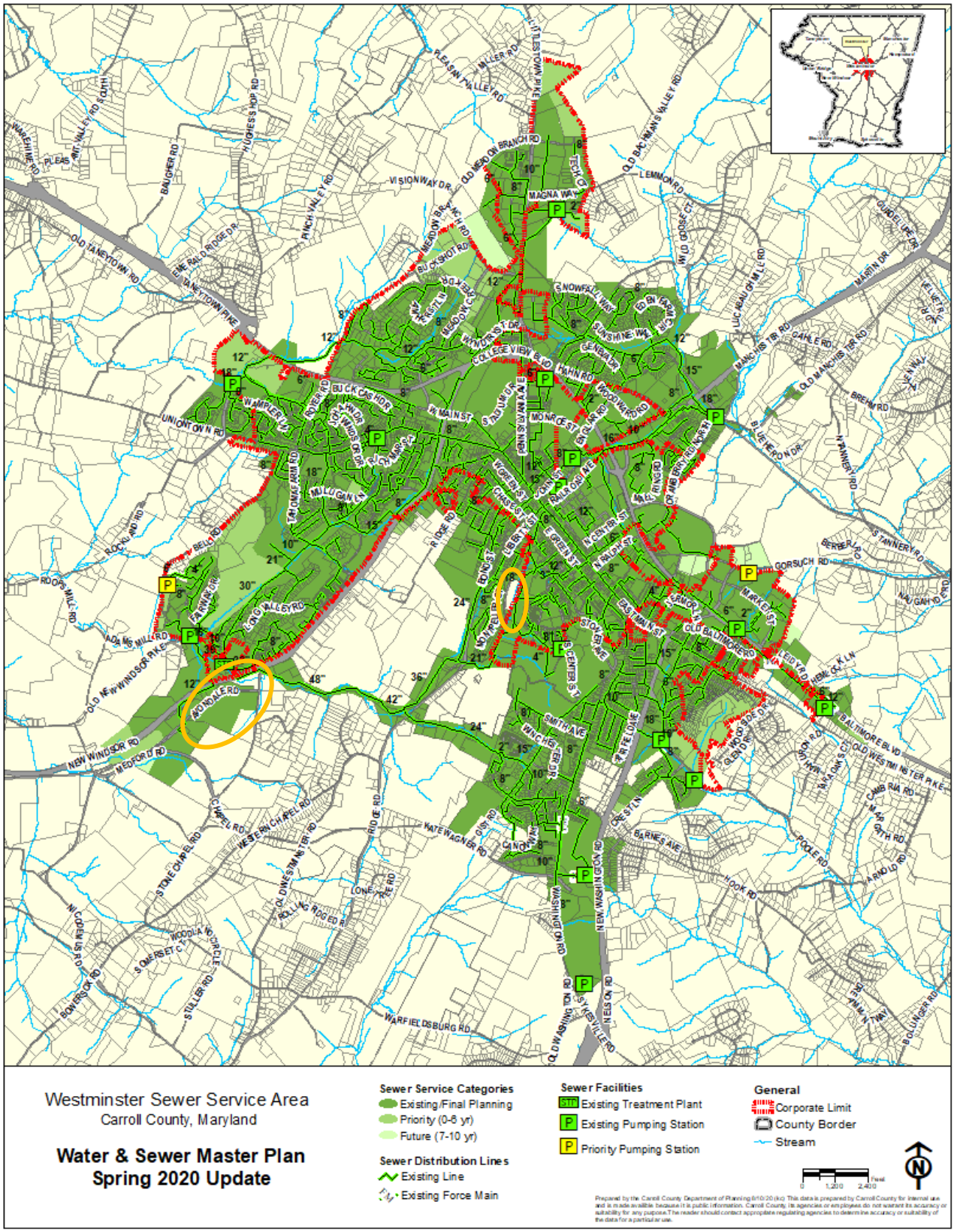
| Project Name | Planning Category | Description | Location | Capacity Added |
|---|---|---|---|---|
| Sewer System Rehabilitation | Priority (S-3) Immediate | Rehabilitate leaking mains | Throughout the City's 65 miles of sewerage collection system | 1.76 MGD |
| Rehabilitate Pump Station 15 | Priority (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.

★


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
Existing Treatment Plant
Existing Pumping Station
Priority Pumping Station
General
Corporate Limit
County Border
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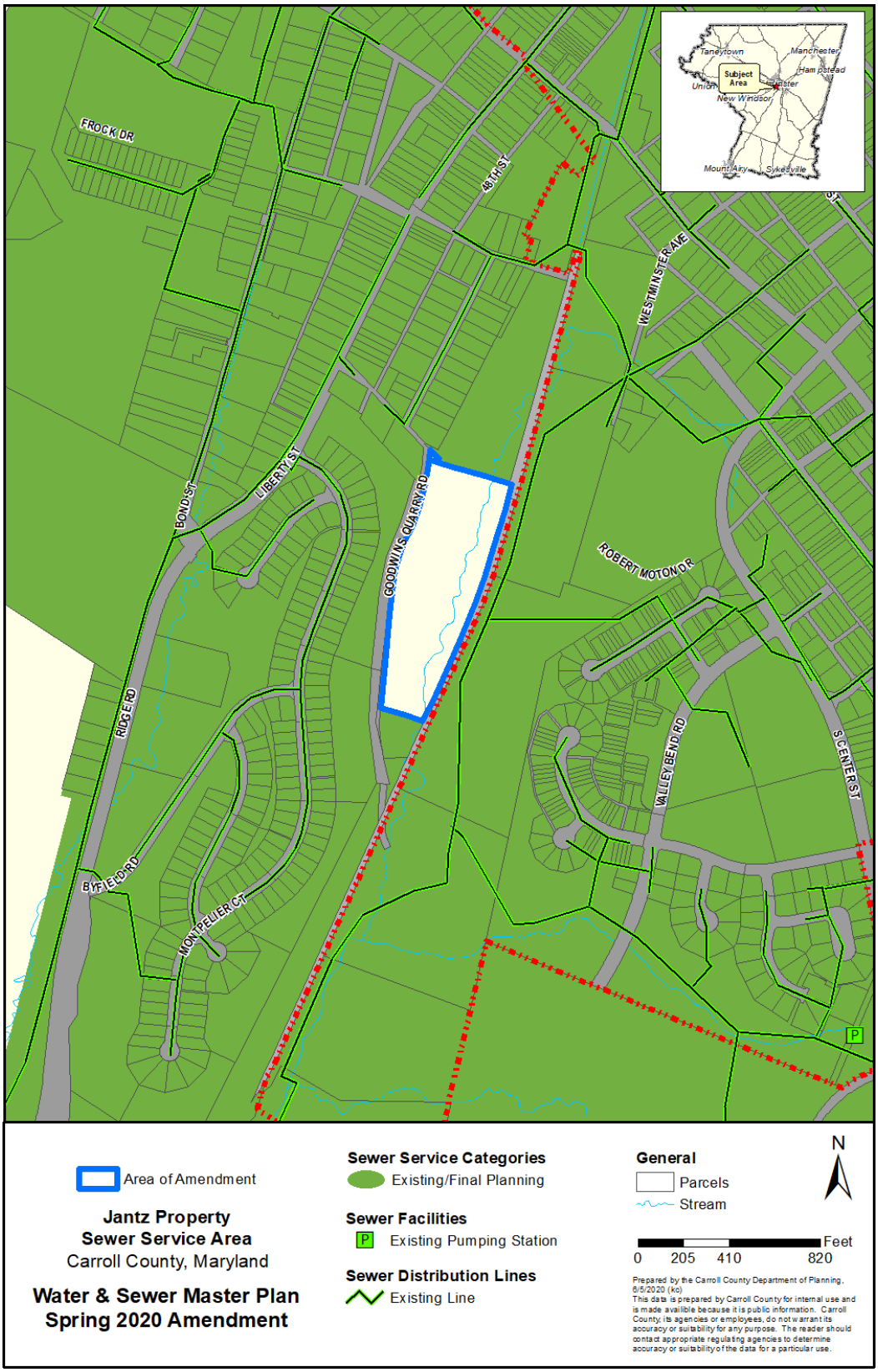
Taneytown
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Mount Airy
Sykesville
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WESTMINSTER AVE
BOND ST
LIBERTY ST
GOODWINS QUARRY RD
ROBERT MOTON DR
RIDGE RD
VALLEY BEND RD
SCENIC ST
BYFIELD RD
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Water & Sewer Master Plan
Spring 2020 Amendment
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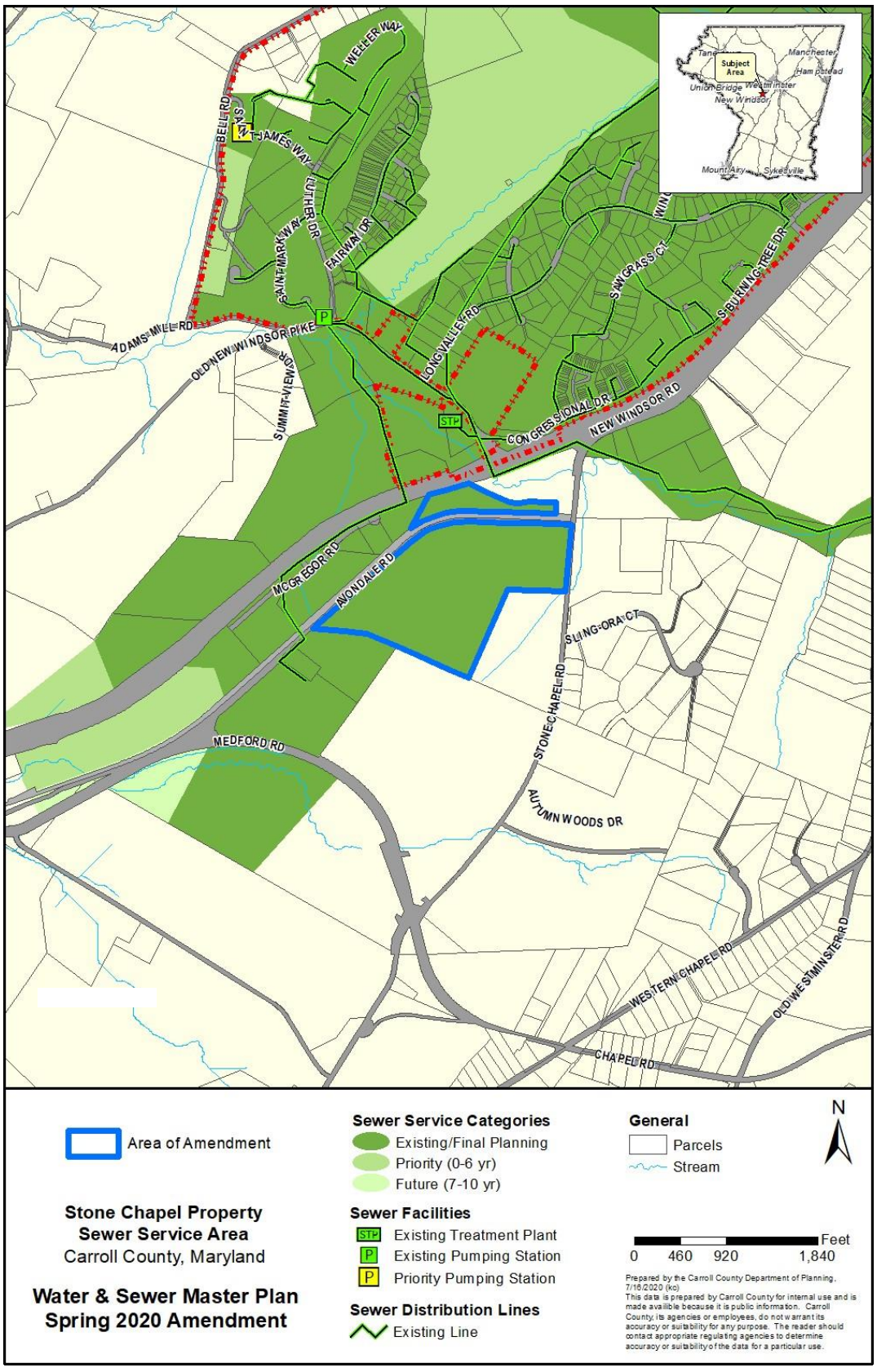
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FAIRWAY DR
SAINT MARYS WAY
ADAMS MILL RD
OLD NEW WINDSOR PIKE
SUMMIT VIEW DR
LONG VALLEY RD
SAWGRASS CT
BURNING TREE DR
NEW WINDSOR RD
CONGRESSIONAL DR
MCGREGOR RD
AVONDALE RD
SLING ORA CT
STONE CHAPEL RD
MEDFORD RD
AUTUMN WOODS DR
WESTERN CHAPEL RD
OLD WESTMINSTER RD
CHAPEL RD
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Area of Amendment
Stone Chapel Property
Sewer Service Area
Carroll County, Maryland
Water & Sewer Master Plan
Spring 2020 Amendment
Sewer Service Categories
Existing/Final Planning
Priority (0-6 yr)
Future (7-10 yr)
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Existing Pumping Station
Priority Pumping Station
Sewer Distribution Lines
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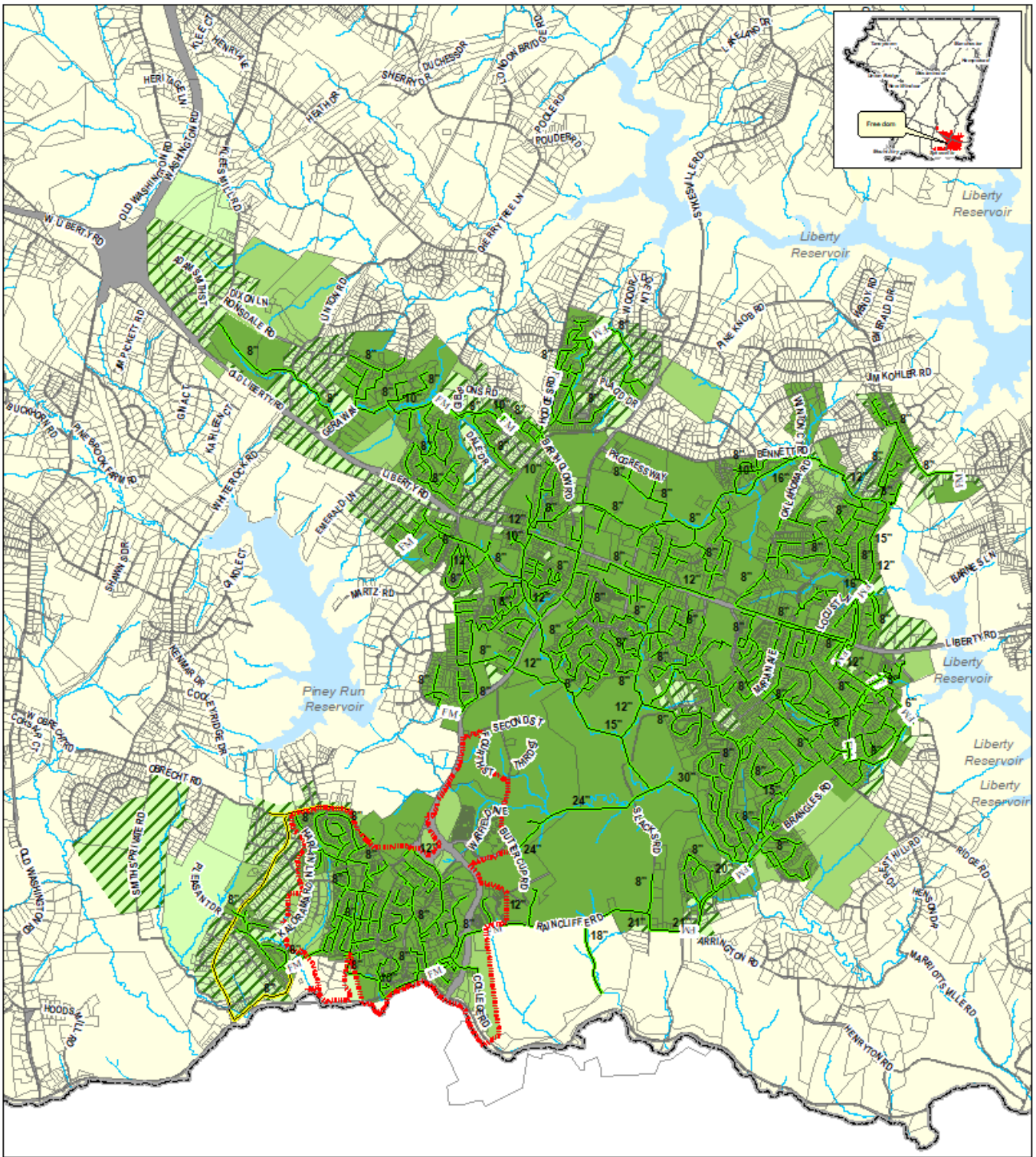
## Projected Sewer Supply Demands and Projected Capacity

**Projected Sewerage Demands and Planned 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. |
| 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 | 0.834 | 5.098 | 6.5 |

[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 allocation is split; 24,252 gpd in Priority and 9,168 gpd in Future.




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

N

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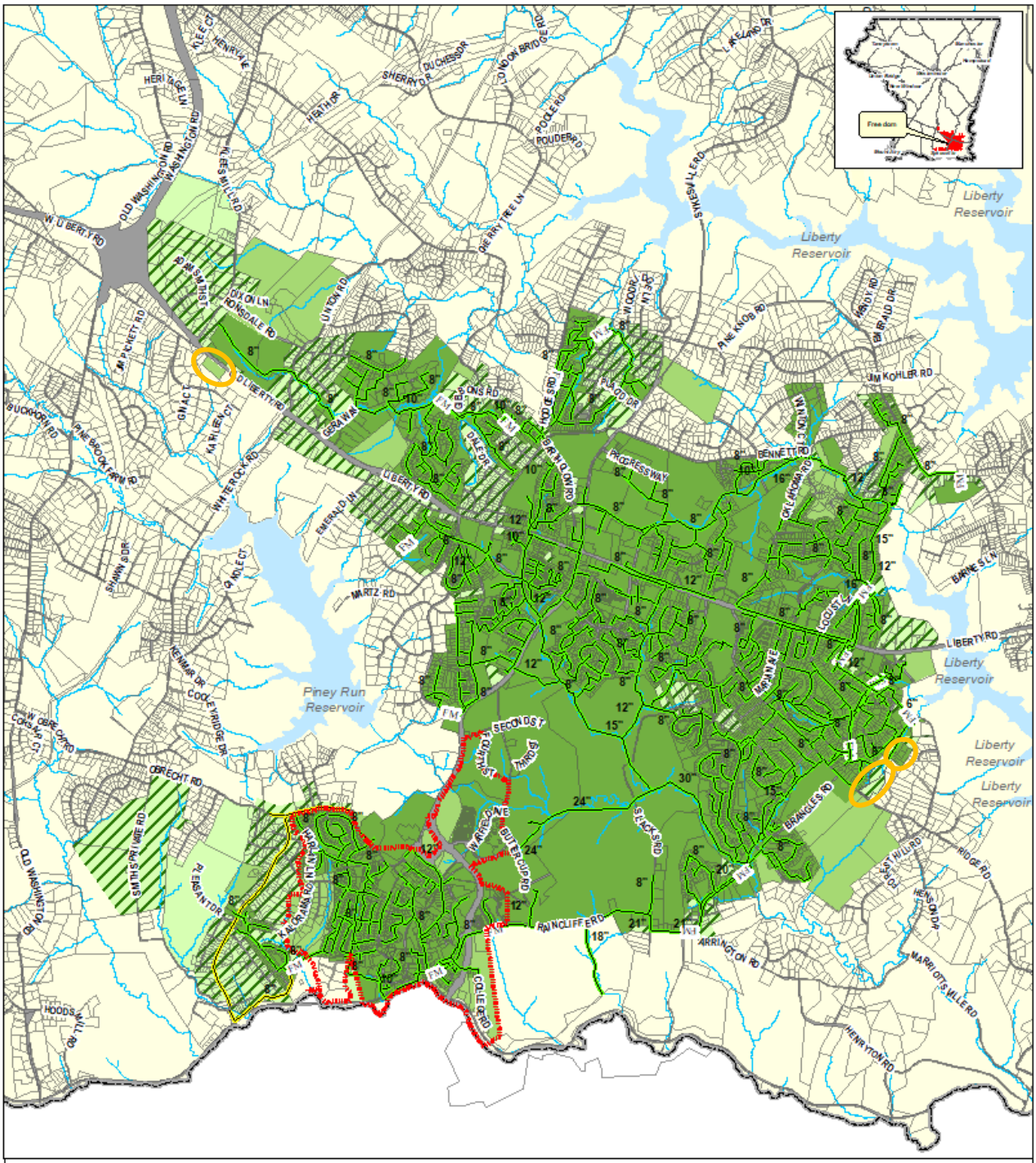
Liberty Reservoir
Piney Run Reservoir
Freedom Sewer Service Area
Carroll County, Maryland
Water & Sewer Master Plan
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Sewer Service Categories
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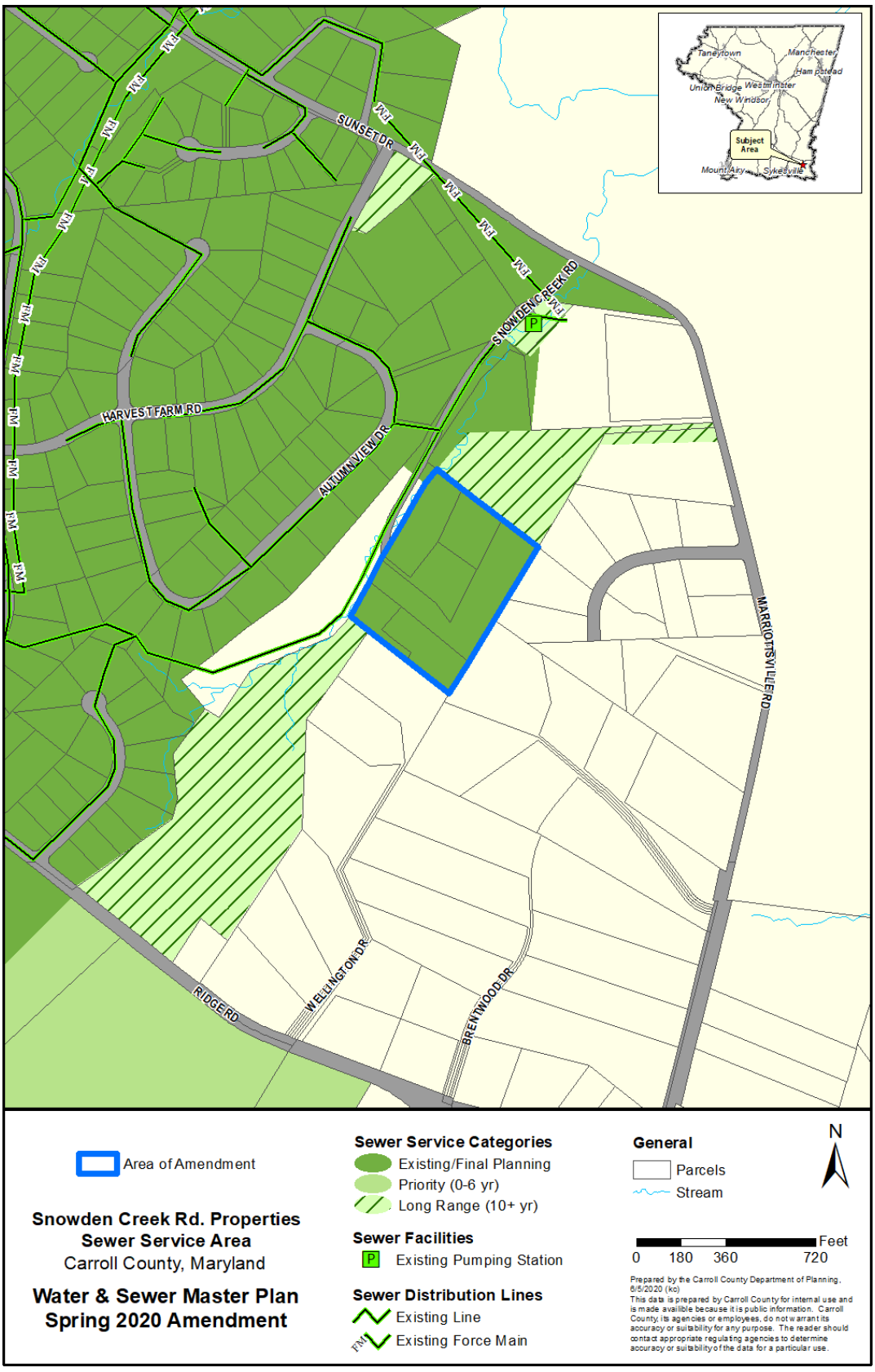
Taneytown
Manchester
Hampstead
Union Bridge
Westminster
New Windsor
Subject Area
Mount Airy
Sykesville
SUNSET DR
SNOWDEN CREEK RD
HARVEST FARM RD
AUTUMN VIEW DR
MARRIOTTSVILLE RD
RIDGE RD
WELLINGTON DR
BRENTWOOD DR
Area of Amendment
Snowden Creek Rd. Properties
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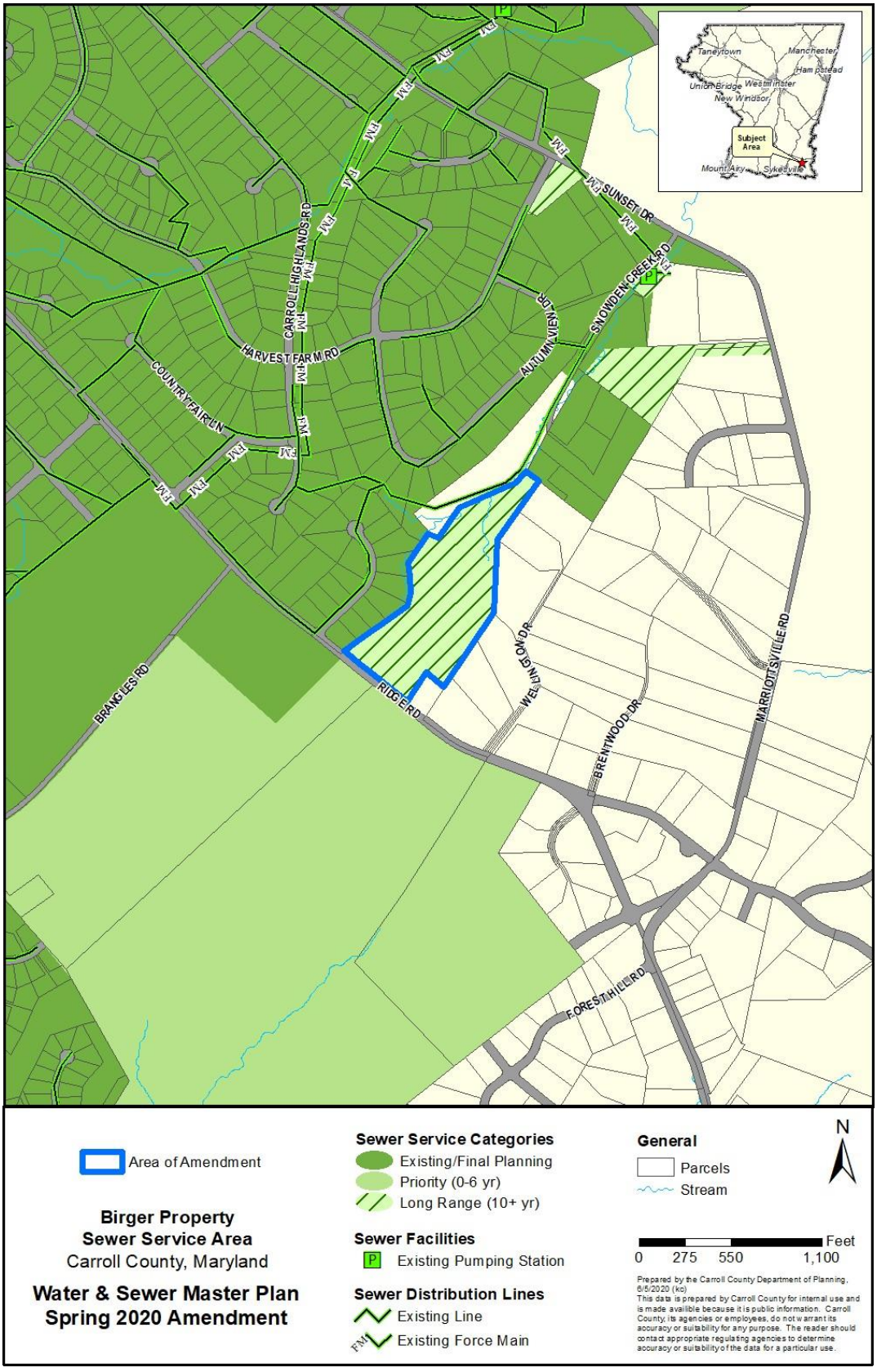
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New Windsor
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SNOWDEN CREEK RD
AUTUMN VIEW DR
CARROLL HIGHLANDS RD
HARVEST FAIR M RD
COUNTRY FAIR LN
BRANGLES RD
RIDGE RD
WELDON DR
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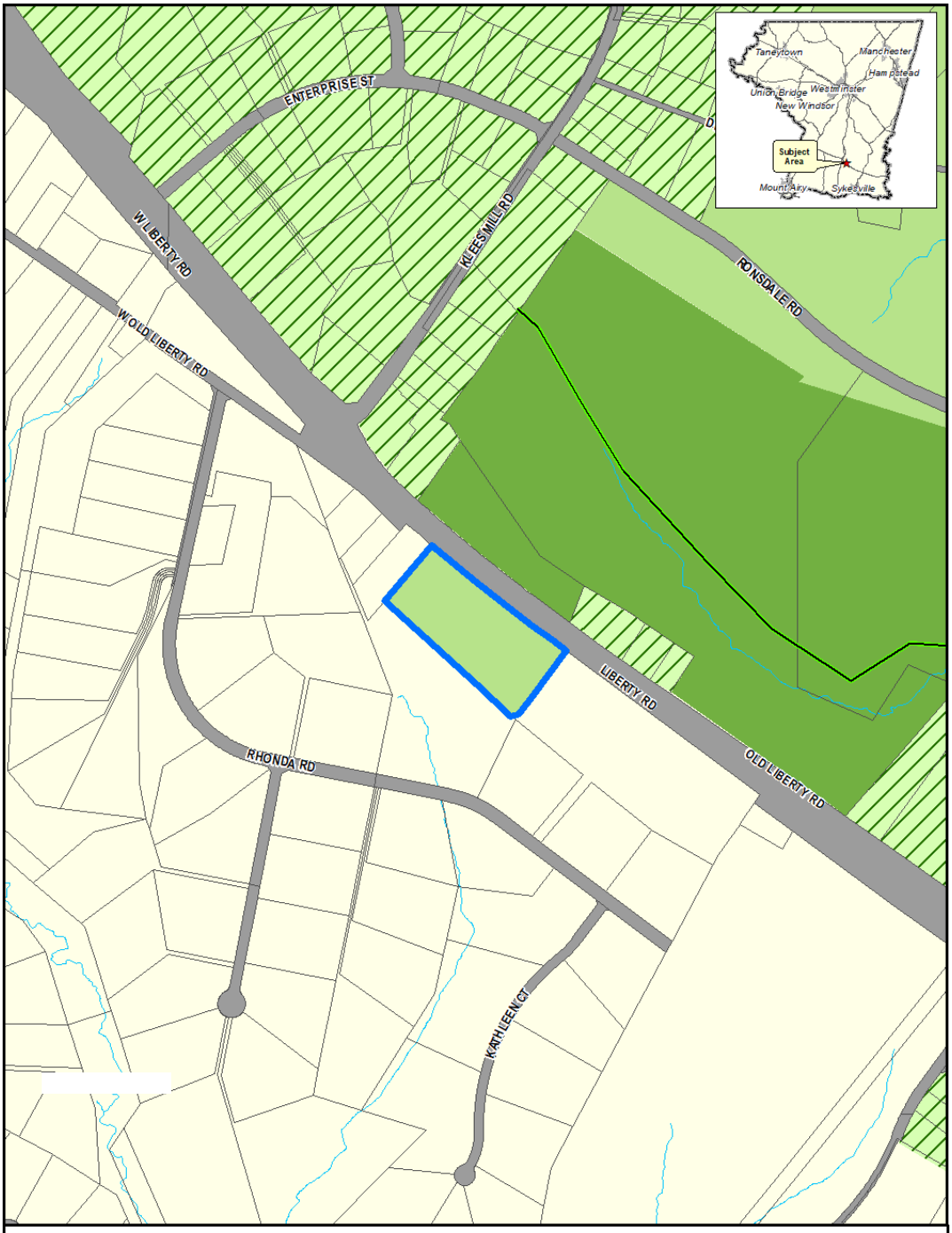
ENTERPRISE ST
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**Table 32[11]**
**Projected Sewerage Demands and Planned Capacity***

| 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. Dem. | Oth. Dem. | Tot. Dem. | Ex. Cap. | Res. Pop. Ser.[2] | GPCD | Capacity Million Gal. Daily (MGD) Res. Dem. | Oth. Dem. | Tot. Dem. | Pl. Cap. | Res. Pop. Ser.[3] | GPCD | Capacity Million Gal. Daily (MGD) 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 |

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

## *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 | 2.44[12] | 0.489[12] | 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 | 0.834 | 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. Snowden Creek Rd infill lots (2) add 500 gpd Residential Priority; Stavlas property adds 700 gpd Other Priority.

[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.

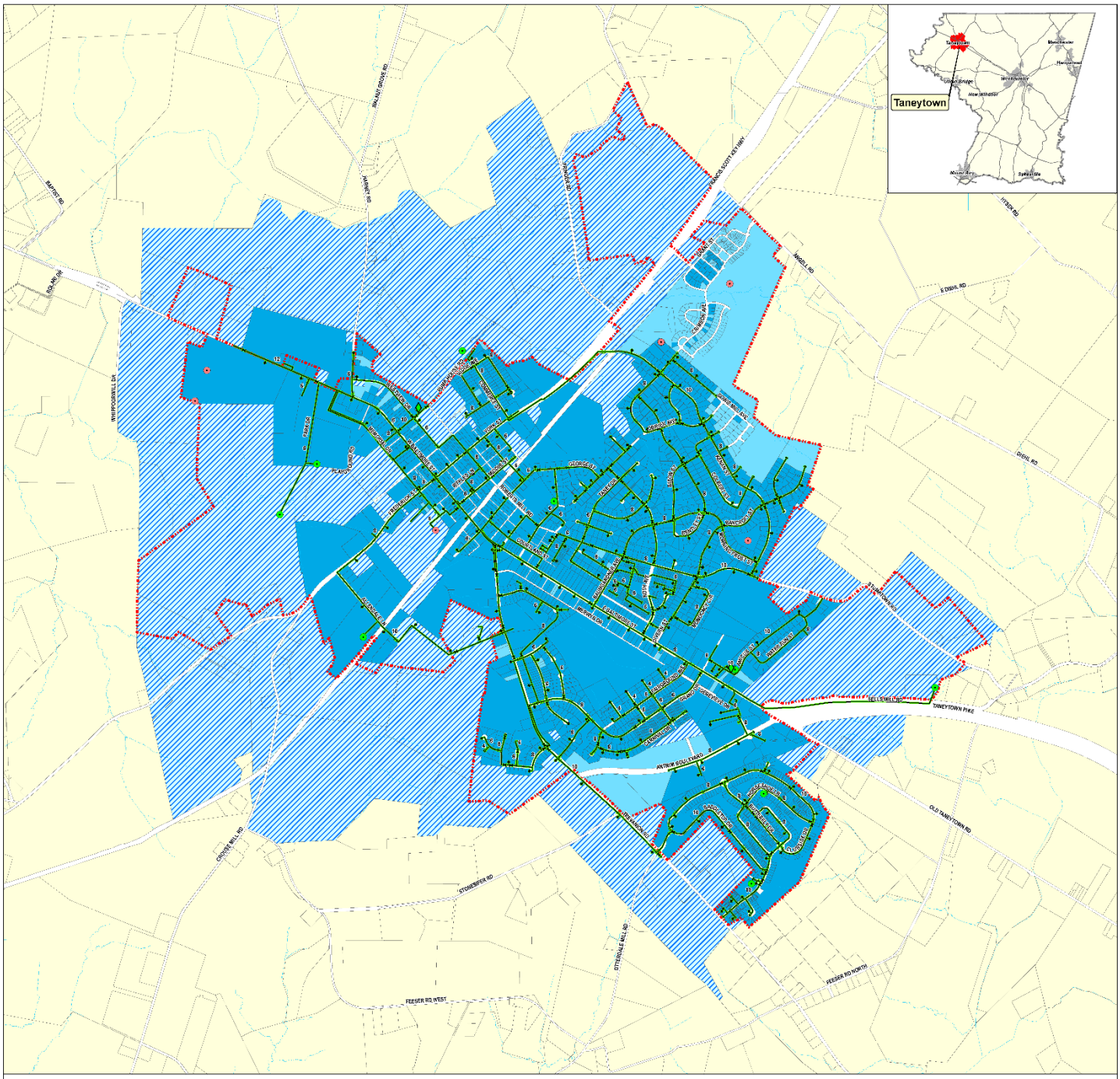
[15]New Windsor will be eliminating this deficit by conducting an I&I project that will recapture more than 17,000 gpd.

[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 the approval process and were provided to the County by the City. These calculations account for I/I reductions in the York Street Pump Station. Taneytown Crossing has a total allocation of 4,500 gpd.

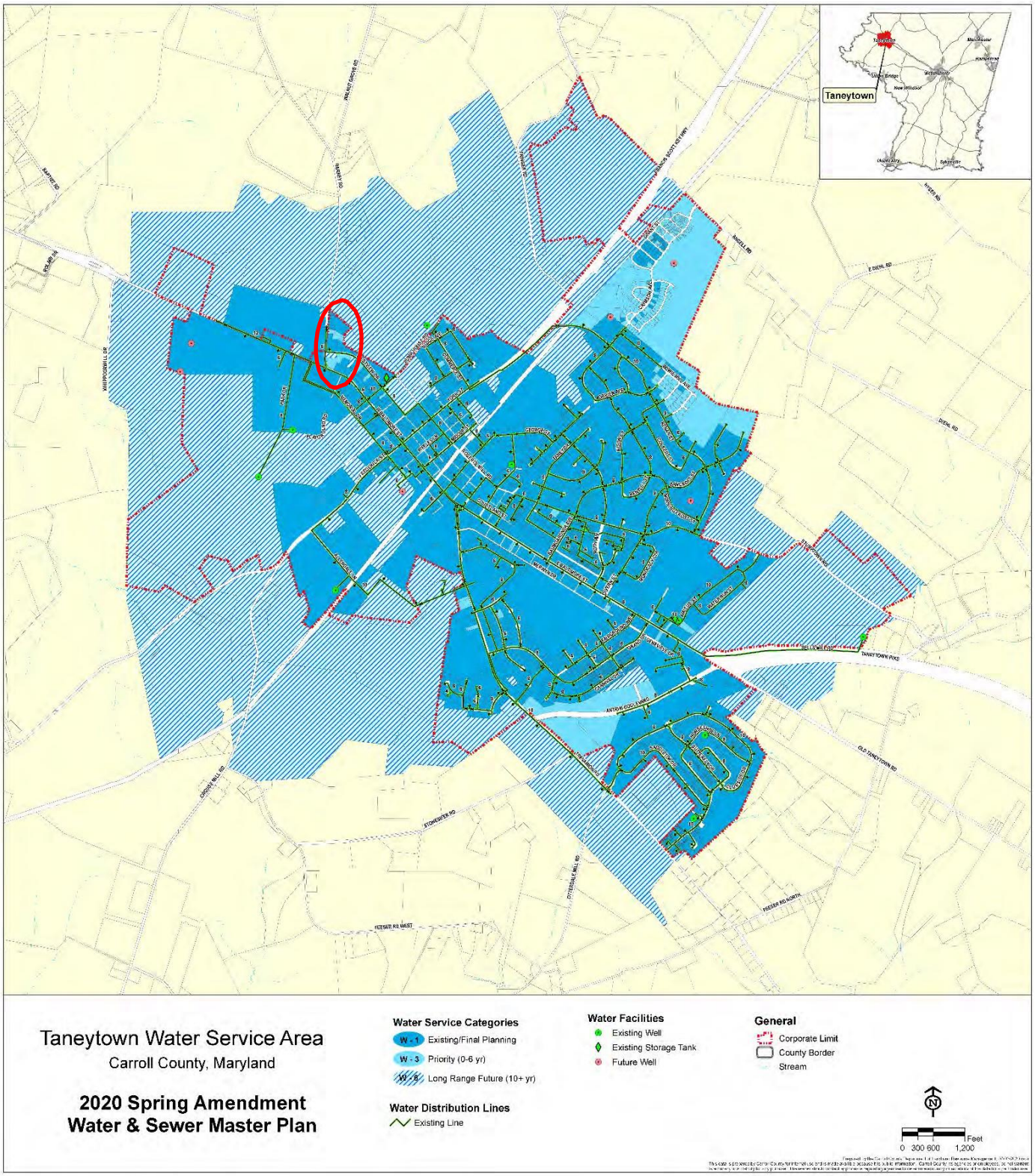
[18]Union Bridge will be eliminating this deficit by conducting an I&I project that will recapture more than 10,000 gpd.

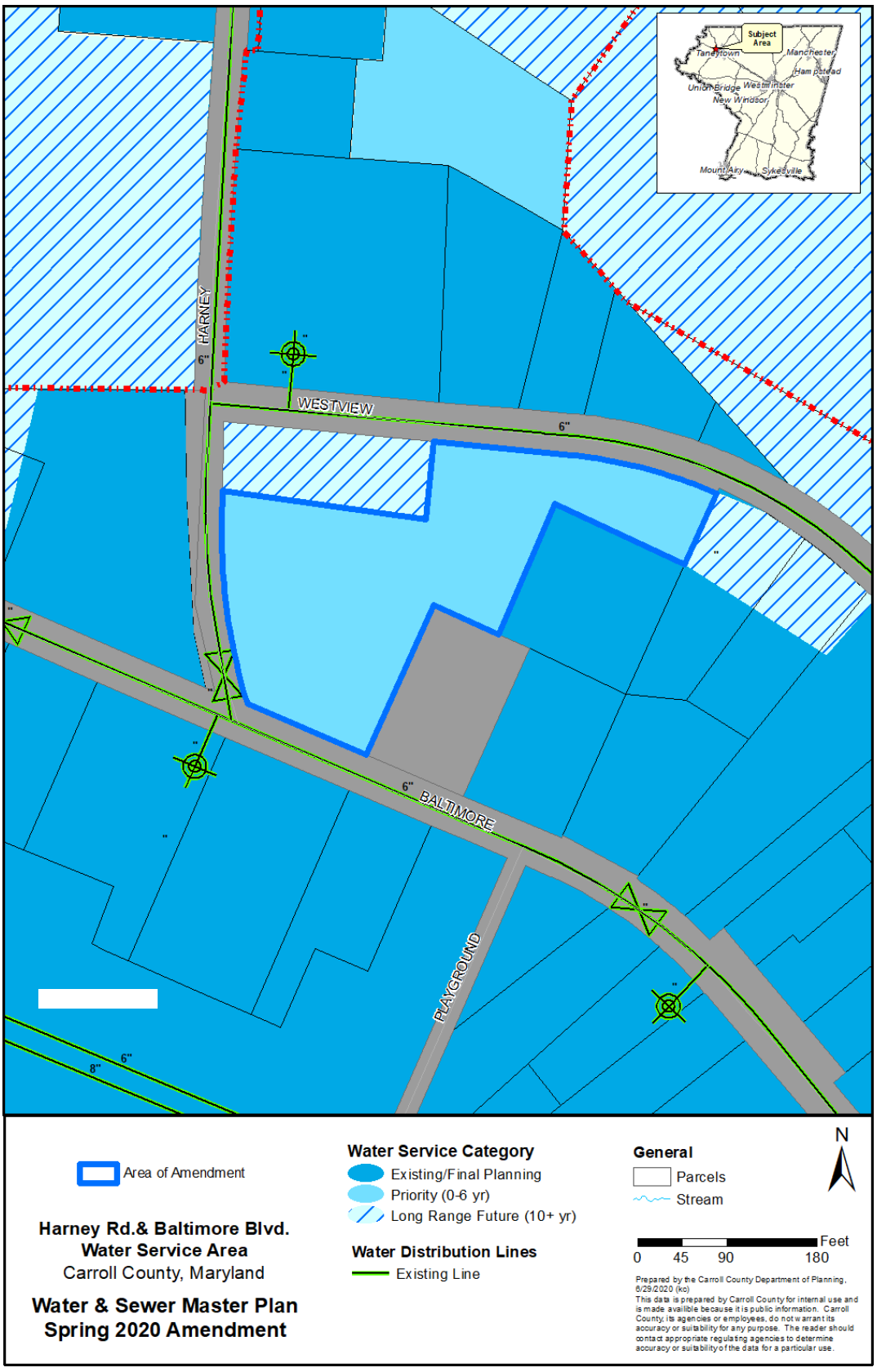
[19] LEF Stone Chapel LLC Property has a total demand of 33,420 gpd. The Sewer map for Westminster has the Industrial zoned portion in Existing/Final Planning. The allocation is split; 24,252 gpd in Priority and 9,168 gpd in Future.

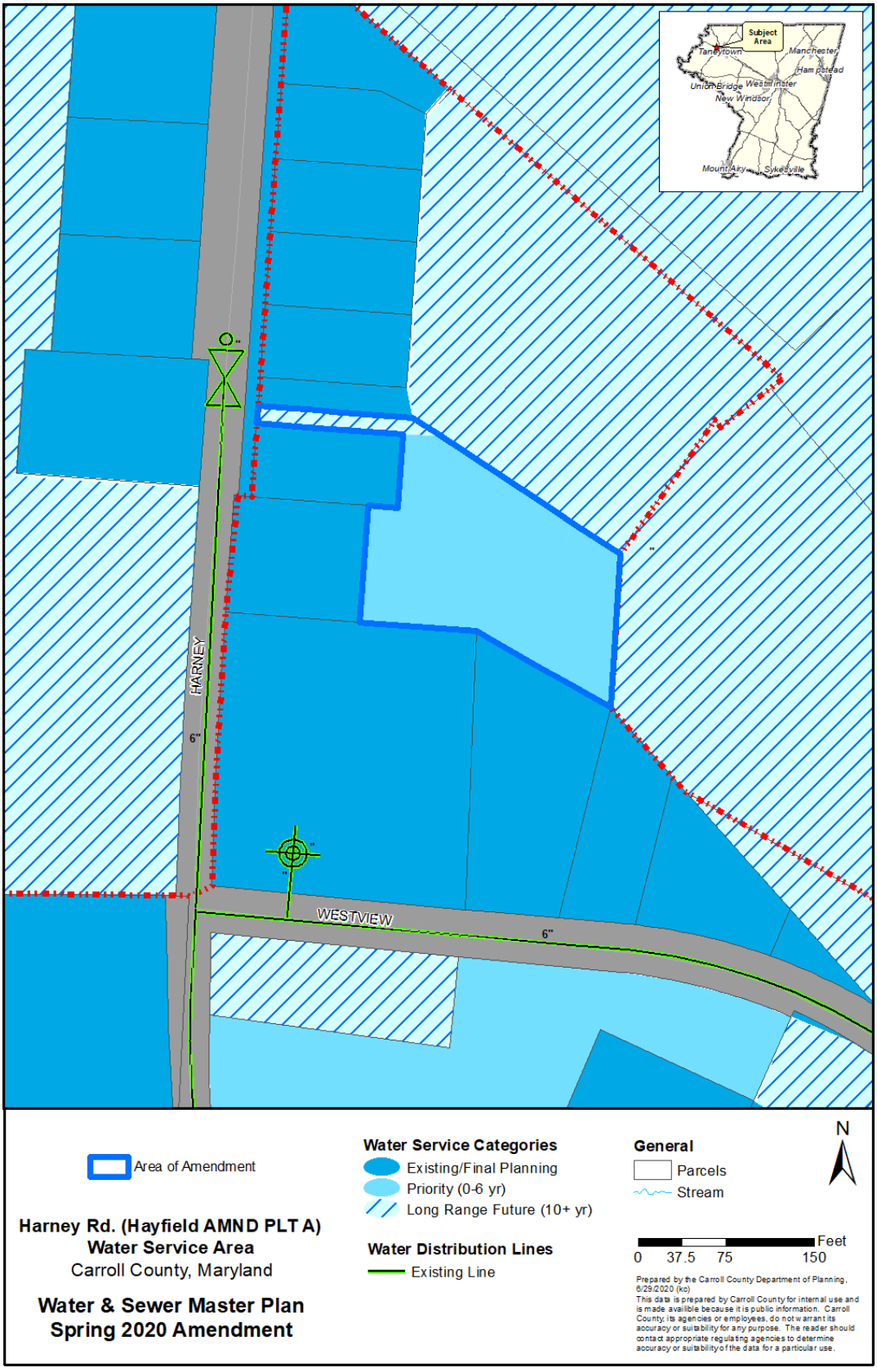



Taneytown Water Service Area
Carroll County, Maryland

**2020 Spring Amendment**
**Water & Sewer Master Plan**


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
N
0 300 600 1,200
Feet


Subject Area
Taneytown
Manchester
Hampstead
Union Bridge
Westminster
New Windsor
Mount Airy
Sykesville
HARNEY
6"
WESTVIEW
6"
6"
BALTIMORE
PLAYGROUND
8"
6"
Area of Amendment
Harney Rd.& Baltimore Blvd.
Water Service Area
Carroll County, Maryland
Water & Sewer Master Plan
Spring 2020 Amendment
Water Service Category
Existing/Final Planning
Priority (0-6 yr)
Long Range Future (10+ yr)
Water Distribution Lines
Existing Line
General
Parcels
Stream
N
Feet
0 45 90 180
Prepared by the Carroll County Department of Planning, 6/29/2020 (kc)
This data is prepared by Carroll County for internal use and is made availible 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.


Subject Area
Taneytown
Manchester
Hampstead
Union Bridge
Westminster
New Windsor
Mount Airy
Sykesville
HARNEY
6"
WESTVIEW
6"
Area of Amendment
Harney Rd. (Hayfield AMND PLT A)
Water Service Area
Carroll County, Maryland
Water & Sewer Master Plan
Spring 2020 Amendment
Water Service Categories
Existing/Final Planning
Priority (0-6 yr)
Long Range Future (10+ yr)
Water Distribution Lines
Existing Line
General
Parcels
Stream
N
Feet
0 37.5 75 150
Prepared by the Carroll County Department of Planning, 6/29/2020 (ko)
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## Projected Water 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 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.[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. |
| 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 |

[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.

## 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

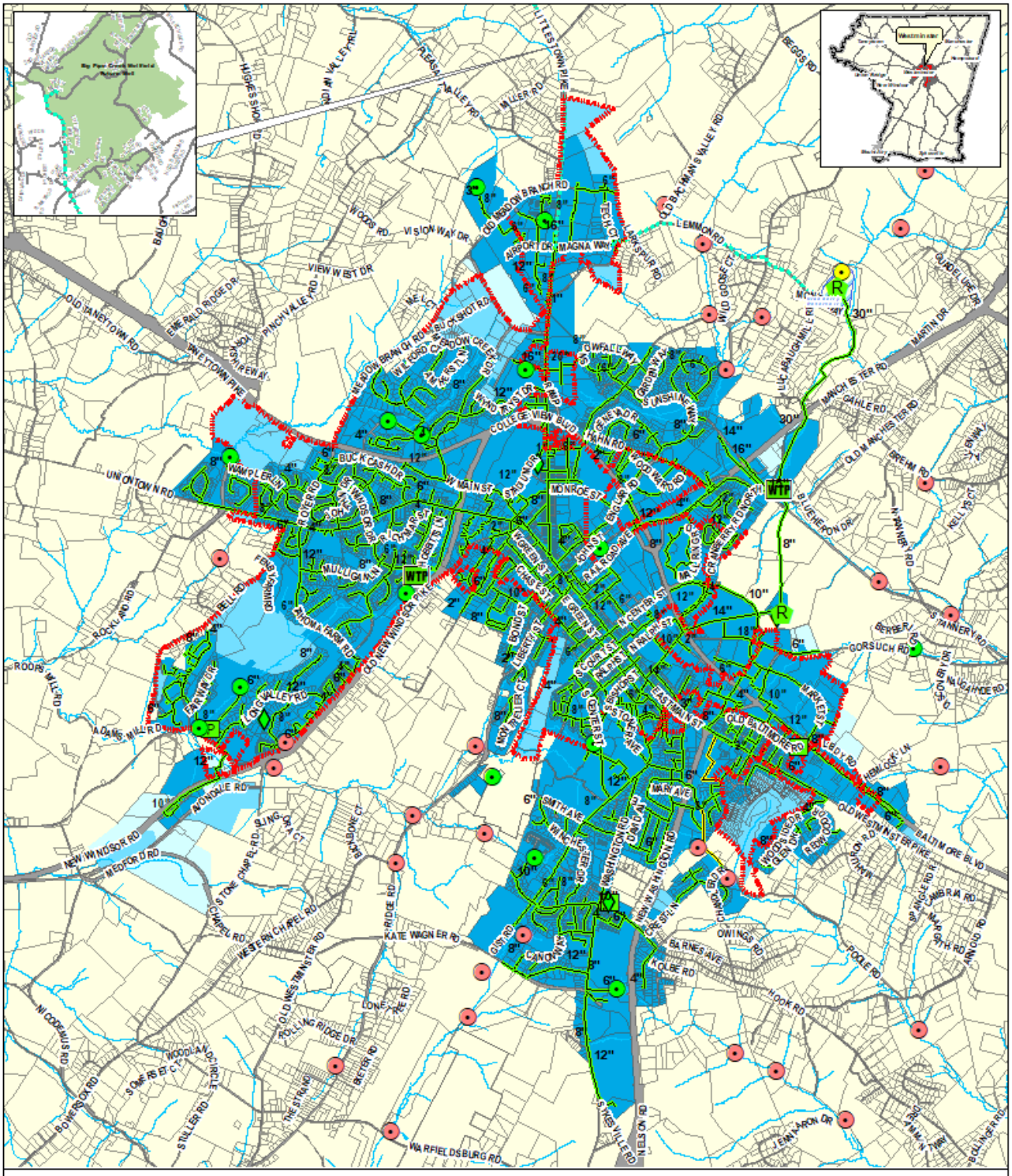
The City of Westminster's water supply system is comprised of 13 water supply wells , one augmentation well, three surface water sources, an emergency surface water supply, an emergency ground water supply, and a 121.8-million gallon (MG) raw water reservoir. The City's treatment and storage system consists 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.

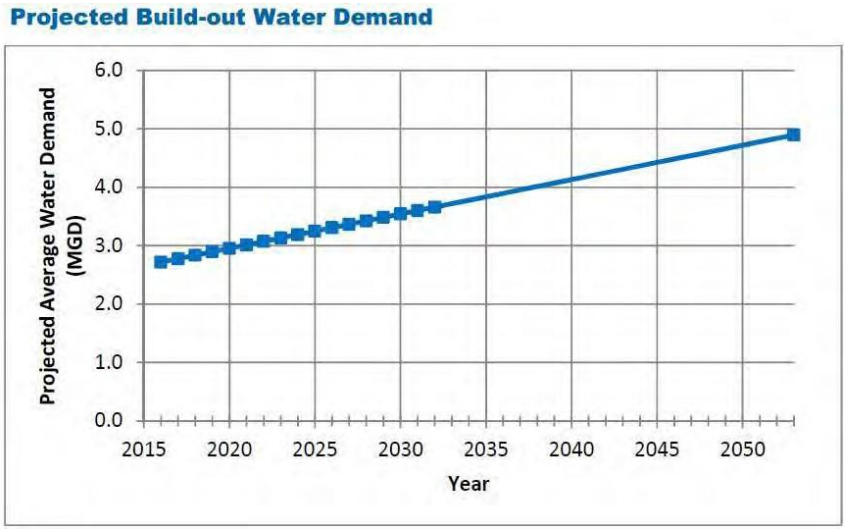
**Historical Change in Residential and Non-Residential Connections**

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

## Priority Projects for Continuous System Upgrades

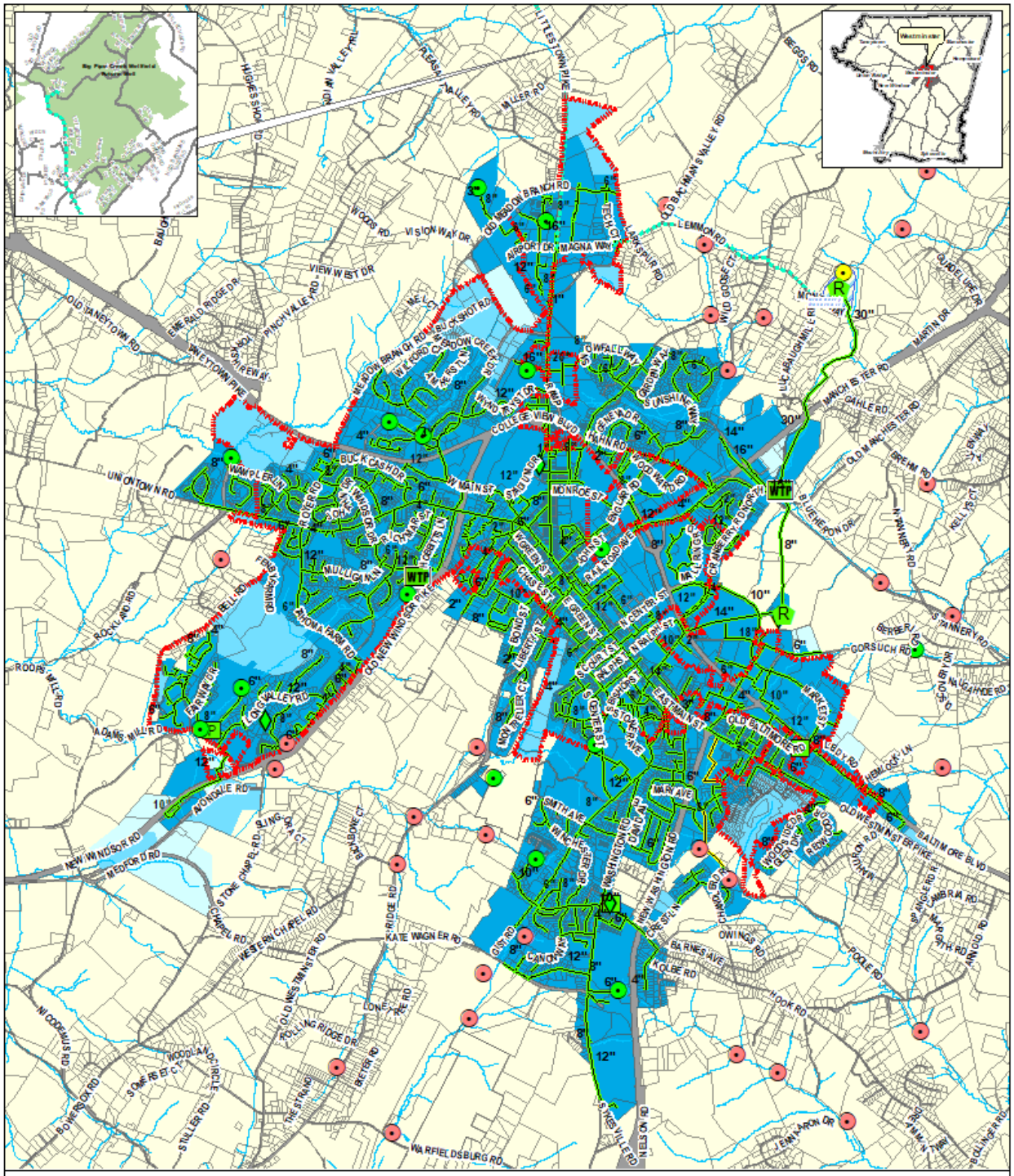
The final section of this chapter updates the priority projects identified by the City of Westminster's Public Works Department. These are in addition to the recommendations identified in the 2018 Water Capacity Management Plan above. These projects represent continuous and ongoing system upgrades. The 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 |


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
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### *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) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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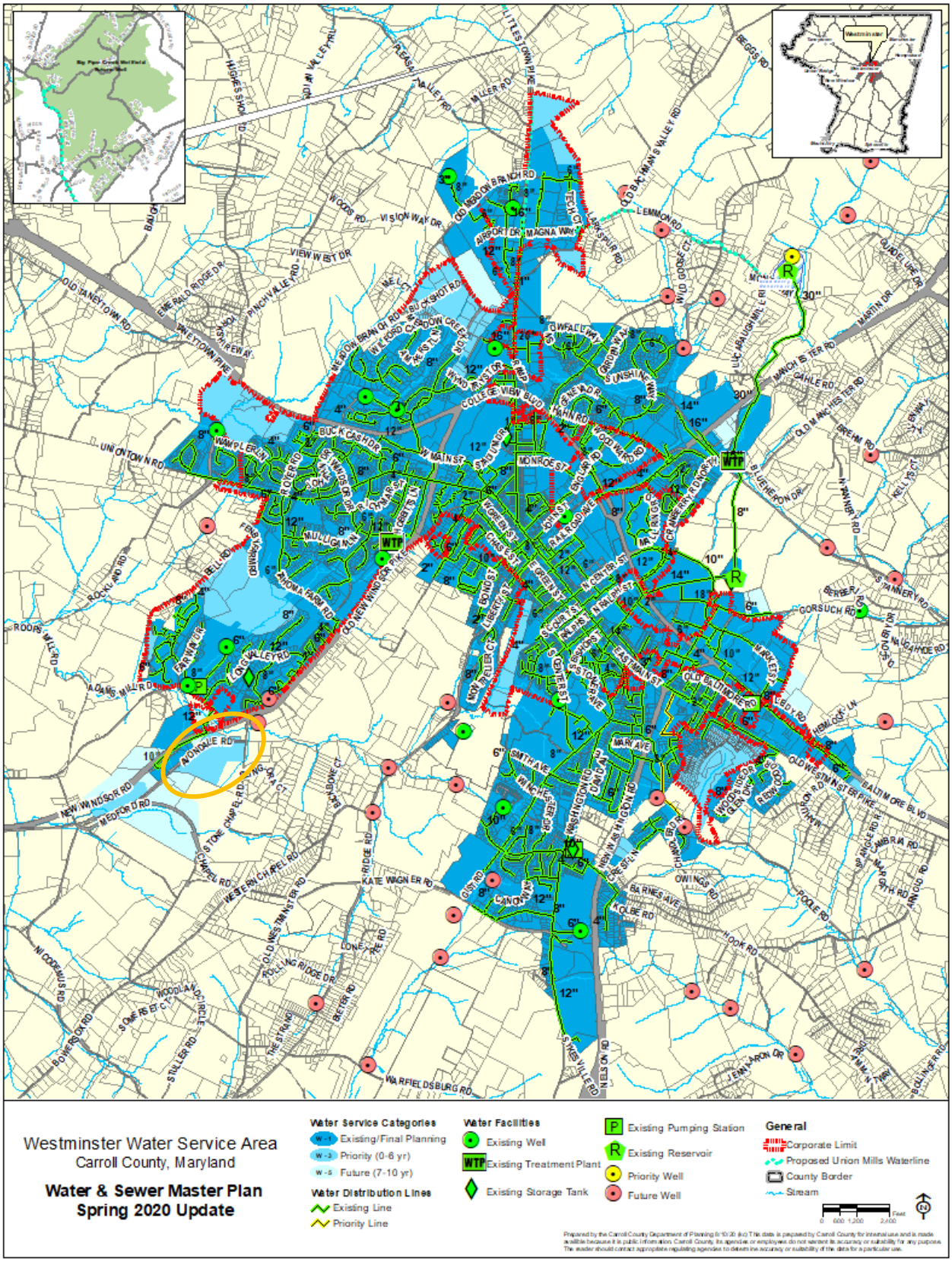
| | | | Res. Dem. | Oth. Dem. | Tot. Dem | Ex. Cap. | | | Res. Dem. | Oth Dem | Tot. Dem. | Pl. Cap. | | | Res. Dem. | Oth. Dem. | Tot. Dem. | Pl. Cap. |
| Westminster [8 9 10] | 29,308 | 91 | 2.66 | 0.396 | 3.056 | 4.231 | 30,464 | 91 | 2.768 | 0.479 | 3.247 | 4.731 | 30,464 | 91 | 2.768 | 0.554 | 3.322 | 5.231 |

[8] Westminster's Priority and Future calculations are based on 235 gal per unit for residential demand and 55 gallons/1,000 sf. other demand.
[9] Westminster does not have any residential properties in the Future Planning Category
[10] LEF Stone Chapel LLC Property has a total allocation of 33,420 gpd. The Water map for Westminster has the Industrial zoned portion in Existing/Final Planning. The allocation is split; 24,252 gpd in Priority and 9,168 gpd in Future.


Westminster Water Service Area
Carroll County, Maryland
Water & Sewer Master Plan
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Water Service Categories
W-1 Existing/Final Planning
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W-5 Future (7-10 yr)
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Existing Line
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Proposed Union Mills Waterline
County Border
Stream
Feet
0 600 1,200 2,400
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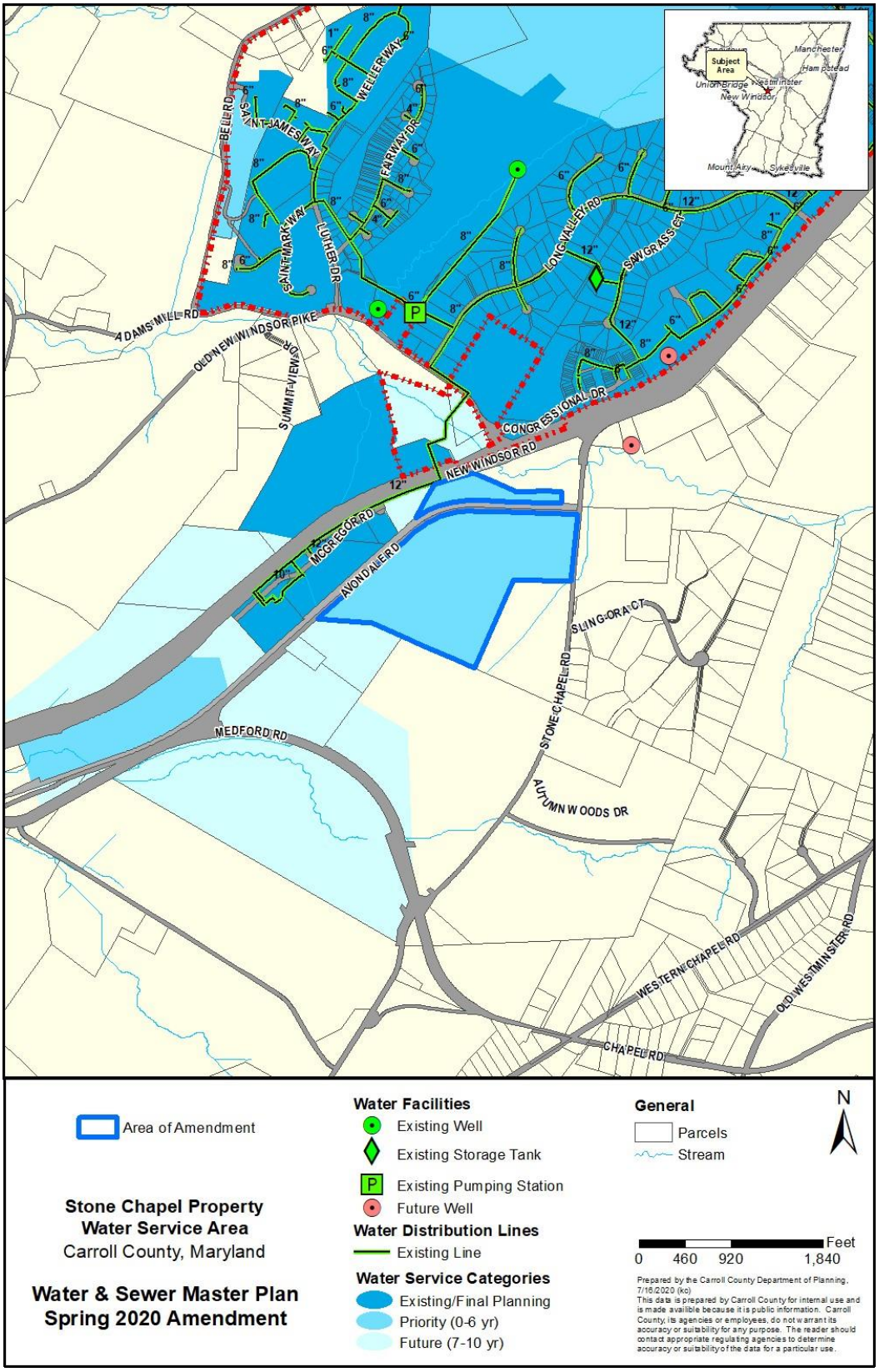
Subject Area
Manchester
Hampstead
Union Bridge
Westminster
New Windsor
Mount Airy
Sykesville
BELL RD
SAINT JAMES WAY
WELLER WAY
FAIRWAY DR
SAINT MARK WAY
LUTHER DR
LONG VALLEY RD
SAWGRASS CT
ADAMS MILL RD
OLD NEW WINDSOR PIKE
SUMMIT VIEW DR
CONGRESSIONAL DR
NEW WINDSOR RD
MCGREGOR RD
AVONDALE RD
SLING ORA CT
STONE CHAPEL RD
MEDFORD RD
AUTUMN WOODS DR
WESTERN CHAPEL RD
OLD WESTMINSTER RD
CHAPEL RD
Area of Amendment
Stone Chapel Property
Water Service Area
Carroll County, Maryland
Water & Sewer Master Plan
Spring 2020 Amendment
Water Facilities
Existing Well
Existing Storage Tank
Existing Pumping Station
Future Well
Water Distribution Lines
Existing Line
Water Service Categories
Existing/Final Planning
Priority (0-6 yr)
Future (7-10 yr)
General
Parcels
Stream
N
Feet
0 460 920 1,840
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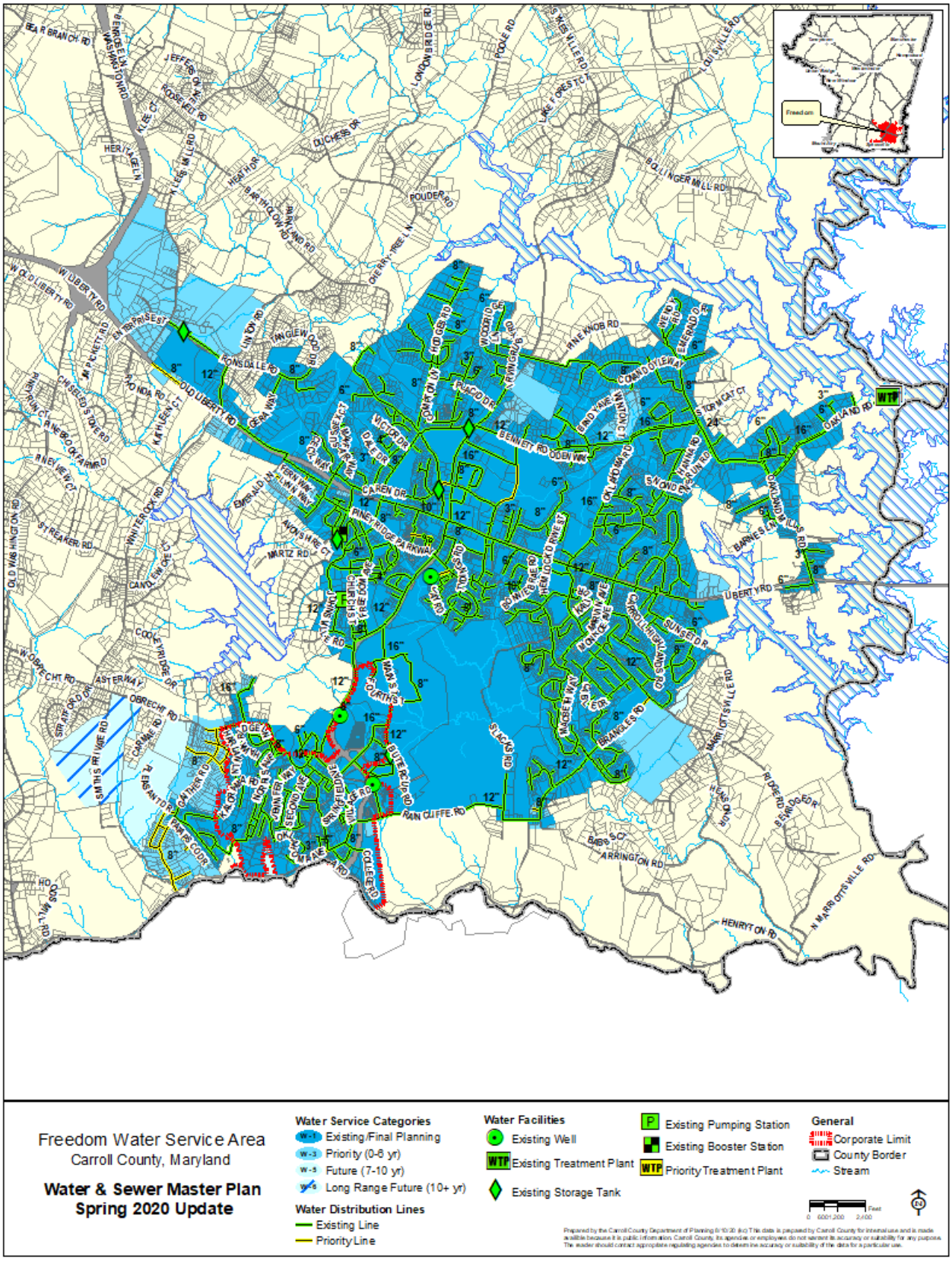
Freedom Water Service Area
Carroll County, Maryland
Water & Sewer Master Plan
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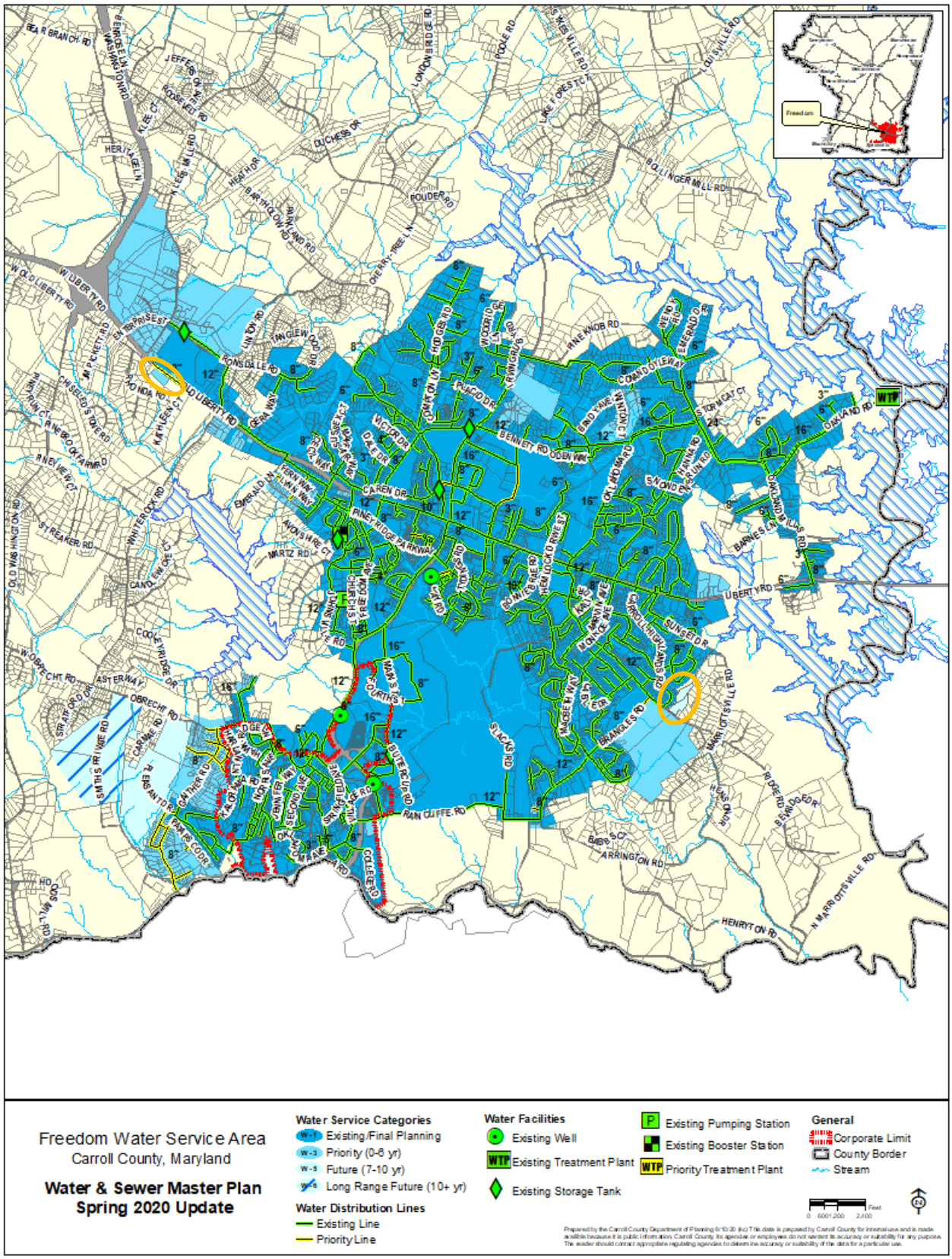
Water Service Categories
W-1 Existing/Final Planning
W-3 Priority (0-6 yr)
W-5 Future (7-10 yr)
W-5 Long Range Future (10+ yr)
Water Distribution Lines
Existing Line
Priority Line
Water Facilities
Existing Well
Existing Treatment Plant
Existing Storage Tank
Existing Pumping Station
Existing Booster Station
Priority Treatment Plant
General
Corporate Limit
County Border
Stream
Freedom
BEAR BRANCH RD
BENGEE LN
WASHINGTON RD
JEFFERSON RD
ROOSEVELT RD
KLEE CT
HERITAGE LN
KLEES MILL RD
HEATHER
BARTHOLOW LAND RD
DUCHESS DR
LONDONBRIDGE RD
POOLE RD
BOLLINGER MILL RD
LOUISVILLE RD
LAKE FOREST CT
POULDER RD
CHERRY TREE LN
W OLD LIBERTY RD
W LIBERTY RD
ENTERPRISE ST
PICKETT RD
LINDY RD
RONSDALE RD
INGLEWOOD DR
PONDA RD
KAYLEEN CT
OLD LIBERTY RD
CHISELED STONE RD
RIVERVIEW CT
RIVERBOAT RD
OLD WASHINGTON RD
STREAKER RD
WHITEOAK CT
CANDLEWICK CT
COOLSPRING DR
W OBRECHT RD
ASTERWAY
OBRECHT RD
SIR ARCHIBALD DR
CARMEL RD
SMITHS RIVER RD
GATHER RD
BRANDT RD
PARR COOR
HOOS MILL RD
LINWOOD RD
WOODRIDGE LN
RUN GRUB RD
PINE KNOB RD
EMERALD DR
COMMODORE WAY
STORM CAT CT
OAKLAND RD
BIRD AVE
MONTE CT
BENNETT RD
ODEN WAY
VICTOR DR
DAVIDA
CAREN DR
PINE RIDGE PARKWAY
FERN WAY
ELMIN WAY
EMERALD LN
WORSHAM CT
MARTZ RD
CARR RD
HOWARD
SNOWDRIFT RUN RD
OAKLAND MILLS RD
BARNES LN
UBERTY RD
SUNSET DR
CARROLLTOWN LANDS RD
MONTAGUE AVE
MAGEE HWY
BRANGLES RD
MARRIOTTSVILLE RD
BUTTERCUP RD
RAIN CLIFFE RD
SLACK'S RD
BABS CT
ARRINGTON RD
HENRYTOWN RD
N MARRIOTTSVILLE RD
RIDGEROAD
SIERRA DR
HEATHER LN
COLLEGE RD
MAIN ST
FOURTH ST
WTP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Priority Line
Water Facilities
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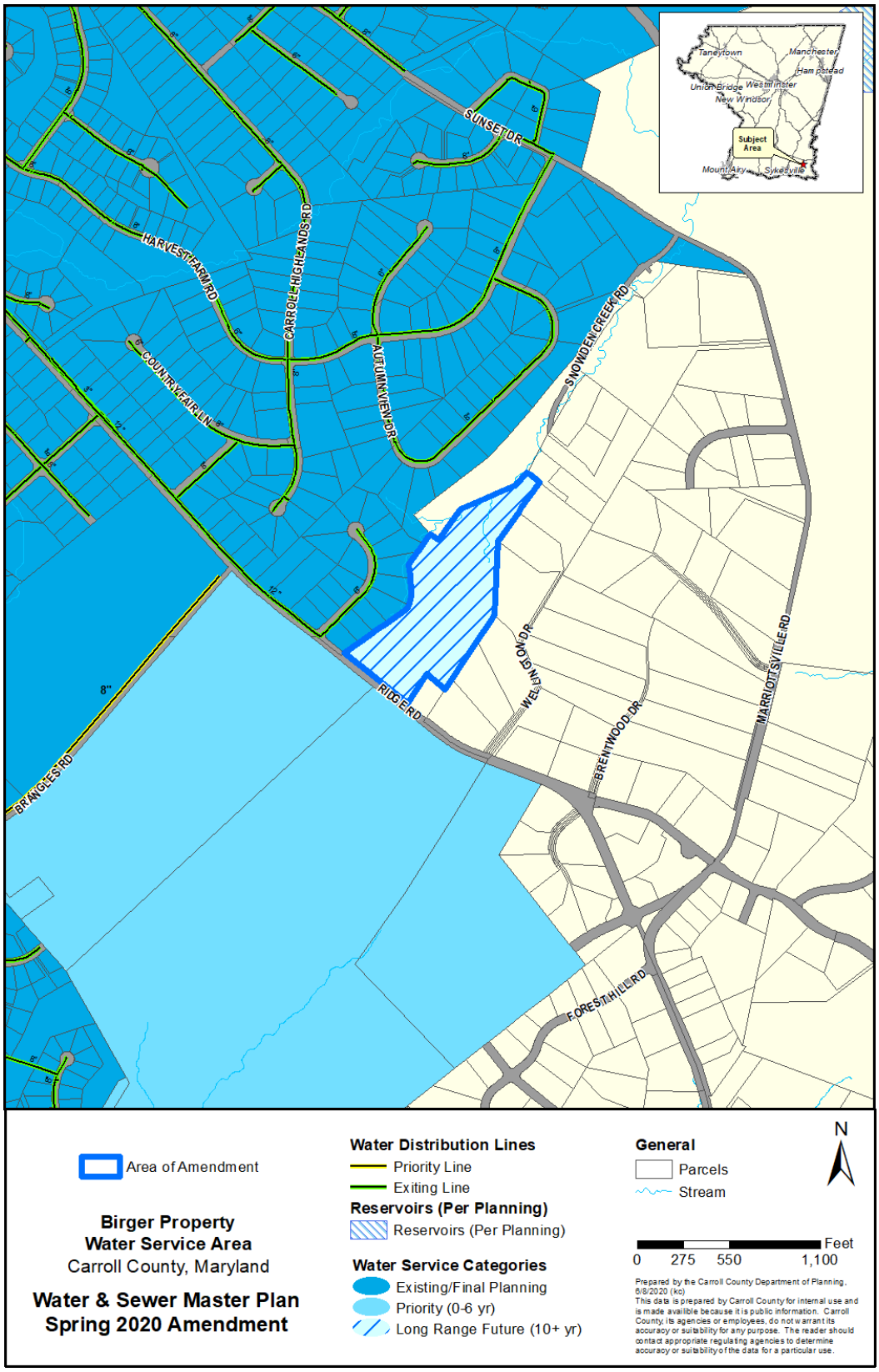
Existing Treatment Plant
Existing Storage Tank
Existing Pumping Station
Existing Booster Station
Priority Treatment Plant
General
Corporate Limit
County Border
Stream
WTP


Taneytown
Manchester
Hampstead
Union Bridge
Westminster
New Windsor
Subject Area
Mount Airy
Sykesville
SUNSET DR
HARVEST FARM RD
CARROLL HIGHLANDS RD
COUNTRY FAIR LN
AUTUMN VIEW DR
SNOWDEN CREEK RD
WELLINGTON DR
RIDGE RD
BRENTWOOD DR
MARRIOTTSVILLE RD
FORESTHILL RD
BRANGLES RD
8"
Area of Amendment
Birger Property
Water Service Area
Carroll County, Maryland
Water & Sewer Master Plan
Spring 2020 Amendment
Water Distribution Lines
Priority Line
Exiting Line
Reservoirs (Per Planning)
Reservoirs (Per Planning)
Water Service Categories
Existing/Final Planning
Priority (0-6 yr)
Long Range Future (10+ yr)
General
Parcels
Stream
N
Feet
0 275 550 1,100
Prepared by the Carroll County Department of Planning, 6/8/2020 (kc)
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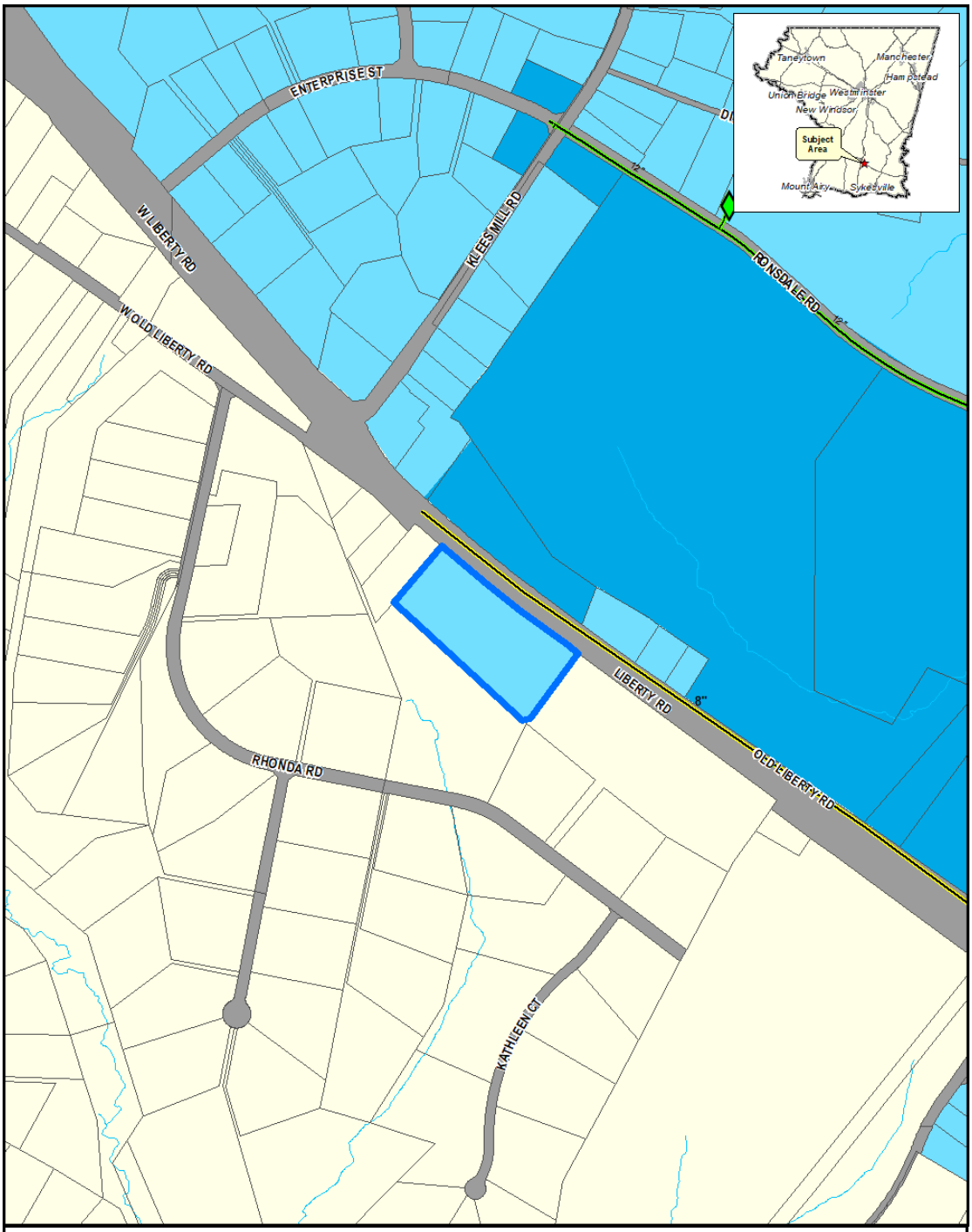
ENTERPRISE ST
W LIBERTY RD
KLEES MILL RD
RONSDALE RD
12"
OLD LIBERTY RD
LIBERTY RD
8"
RHONDA RD
KATHLEEN CT
Taneytown
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Hampstead
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0 230 460 920
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### *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**

| | Present Year | | | | | | Priority Planning (0-6 Year) | | | | | | Future Planning (7-10 Year) | | | | | |
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| | | | Capacity Million Gal. Daily (MGD) | | | | | | Capacity Million Gal. Daily (MGD) | | | | | | Capacity Million Gal. Daily (MGD) | | | |
| Service Area | Res. Pop. Ser. | GPCD | Res. Dem. | Oth. Dem. | Tot. Dem | Ex. Cap. | Res. Pop. Ser. | GPCD | Res. Dem. | Oth. Dem | Tot. Dem. | Pl. Cap. | Res. Pop. Ser. | GPCD | 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 | 0.500 | 3.21 | 4.427 | 31,199 | 86 | 2.73 | 0.515 | 3.245 | 7.0 |

## *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.

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| Freedom/Sykesville | 22,867 | 80 | 1.837 | 0.097 | 1.934 | 4.427 | 31,775 | 85 | 2.71[12] | 0.500[12] | 3.21 | 4.427 | 31,199 | 86 | 2.73 | 0.515 | 3.245 | 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 | 0.554 | 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. Taneytown Crossing has a total allocation of 4,500 gpd.
[8] Westminster's Priority and Future calculations are based on 235 gal per unit for residential demand and 55 gallons/1,000 sf. other demand.
[9] Westminster does not have any residential properties in the Future Planning Category
[10] LEF Stone Chapel LLC Property has a total allocation of 33,420 gpd. The Water map for Westminster has the Industrial zoned portion in Priority Planning (W-3). The allocation is split; 24,252 gpd in Priority and 9,168 gpd in Future.

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