

FREDERICK COUNTY WATER AND SEWERAGE PLAN

**MDE Approved Plan
September 25, 2025**

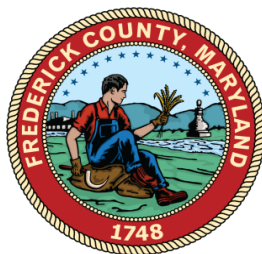


Frederick County Water and Sewerage Plan

MDE Approved Plan
April 28, 2025

As Amended by Case WS-25-06 (MDE Approved September 24, 2025)

This Plan was prepared by:
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Frederick County Water & Sewerage Plan

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Section 1: Definitions

Approving Authority - the County Governing Body, which is defined below.

Capital Improvement Program (CIP) - the Frederick County CIP that is reviewed and adopted each year by the County Governing Body and contains specific proposed water and sewer infrastructure improvements for which funding is programmed for design or construction by the County within the current six-year time frame.

Community Sewerage System - any system serving two or more lots, for the collection and disposal of sewerage or industrial wastes of a liquid nature, including various devices for the treatment of such sewage and industrial wastes.

Community Water System - a source of water and a distribution system, including treatment and storage facilities, serving two or more lots.

County Comprehensive Plan or Comprehensive Plan - a composite of maps and written text, the purpose of which is to guide the physical development of the County, and adopted by the County Governing Body under the provisions of the Land Use Article of the Annotated Code of Maryland. The Comprehensive Plan includes a Countywide Plan map and text, and individual community and corridor plans. The municipal plan designation will be used for properties within a municipal boundary.

County Governing Body - the County Council and the County Executive for Frederick County.

County Water and Sewerage Plan or Water and Sewerage Plan - this Water and Sewerage Plan which is a comprehensive plan for the provision of adequate water supply systems and sewerage systems throughout the County and includes all amendments and revisions thereto.

Denied Access Water or Sewer Line - a water or sewer line, which is designated and intended to function as part of a regional distribution and/or collection system and which passes through areas generally outside of Community Growth Areas as designated on the County Comprehensive Plan and are generally not intended to be provided with public water or sewer service. Denied Access lines shall be specifically identified on the County Water and Sewerage Plan Maps. Access to Denied Access lines will not be permitted, except as specified in the policies and procedures stated as part of this Plan.

Department - the Maryland Department of the Environment (MDE).

DWSU - Frederick County's Division of Water and Sewer Utilities.

Existing Service Area - that area which is currently served by either a publicly-owned community sewerage system or publicly-owned community water system.

GPD or gpd - gallons per day.

Individual Sewerage System - a single system of sewers, piping, treatment tanks, or other facilities serving only a single lot, and which has treatment discharge capacity of 5,000 gpd treatment or less.

Individual Water System - a system of piping, pumps, tanks, or other facilities utilizing a source of ground or surface water to supply only a single lot, and which has the capacity to supply less than 5,000 gpd.

Interim Plant - a sewage or water treatment plant that is designed to temporarily serve a portion of a designated Regional Service Area established in the Frederick County Water and Sewerage Plan.

Lot - a contiguous area of land separated from other areas of land by separate description including a recorded deed, a subdivision plat of record or survey map, or by metes and bounds, for purpose of sale, lease, transfer or ownership or separate use, including separation of legal ownership by a condominium regime.

MGD or mgd – Gallons per day (in millions).

Multi Use Sewerage System - a system serving a single lot or institution with a treatment discharge capacity in excess of 5,000 GPD. A Multi-Use Sewerage System involves the collection, treatment and discharge of sewage or industrial wastes of a liquid nature and various devices for the pumping, storage and treatment of such wastes. A Multi-Use Sewerage system is not publicly owned or operated.

Multi Use Water System - a system serving a single lot or institution with the capacity to provide in excess of 5,000 GPD utilizing a source of ground or surface water. The Multi-Use Water System includes the piping, pumps, tanks, or other facilities utilizing a source of ground or surface water. A Multi-Use Water system is not publicly owned or operated.

Nonpoint Source - pollution originating from land run off where no specific outfall can be identified.

Public Service Facilities (or Facility) - structures and properties owned or operated by Frederick County and related to the public health, safety and welfare, including but not limited to water and sewerage facilities, public schools, public maintenance facilities, public parks, and law enforcement facilities. Public Service Facilities also include community fire and rescue service facilities.

Publicly Owned - owned and operated by a State or local government.

Regional Treatment Plant - is an existing or planned water or sewage treatment facility, which has been located on the County Water and Sewerage Plan Map and designated to serve an entire regional service area or Community Growth Area defined in the County Comprehensive Plan.

Sewerage Service Area - is that area served by, or planned to be served by, a public sewage system.

Water and Sewerage Plan - the “County Water and Sewerage Plan” as defined above.

Water and Sewer Regulations - refer to the Rules and Regulations established by the Division of Water and Sewer Utilities (DWSU).

Water Service Area - that area served by or planned to be served by a public water system.

Section 2:

Goals and Policies for Water and Sewer Planning

A. Introduction

Title 9 (Environment Article), Subtitle 5 (County Water and Sewerage Plans) of the Annotated Code of Maryland requires each County to develop a plan for water supply and sewerage systems in accordance with the County Comprehensive Plan. The extent, adequacy, sizing, staging, and other characteristics of such water and sewerage systems must be in compliance with all applicable Federal, State and local jurisdictional laws relating to water quality, environmental protection and land use. The Water and Sewerage Plan contains information about proposed water and sewerage projects. This information has been provided by the County's Division of Water and Sewer Utilities or municipal staff. While not all information has been prepared and reviewed for adequacy by a registered professional engineer licensed in the State, the projects will be reviewed by a licensed professional engineer as they are designed.

The Maryland Code further specifies that the extension and expansion of water supply and sewerage systems shall be consistent with the County's adopted land use plan. The Maryland Code establishes the authority for the Water and Sewerage Plan and delegates that authority to the Counties. It also establishes the procedures by which the Counties prepare, adopt, and amend the water and sewerage Plans. This County Water and Sewerage Plan fulfills this legal requirement.

The County's Division of Water and Sewer Utilities (DWSU) is the primary regulating authority that provides public water and sewer service to County residents and businesses within designated water/sewer service areas. In addition to these areas, DWSU is the water and/or sewer utility provider to the municipalities of New Market, Walkersville (sewer only), and portions of the City of Frederick.

This Plan has been developed in cooperation with the municipalities that own and operate their own public water and sewer systems in the County. The municipalities including Emmitsburg, Frederick, Thurmont, Woodsboro, Mount Airy, Middletown, Myersville, and Brunswick own and operate their own water supply and sewer systems. The Town of Walkersville only operates its public water system. The Village of Rosemont has a public water system that is connected to and managed by the City of Brunswick. Remaining areas in the County outside of municipalities and Community Growth Areas are generally served by privately owned wells and individual septic systems, in addition to several small community systems as described in Chapters 3 and 4.

Located within the City of Frederick is Fort Detrick, which supports several federal agencies as well as Department of Defense functions and owns and operates its water and sewer facilities. Both the water treatment plant and wastewater treatment plant are located on the Monocacy River and referred to as Area C.

The County also submitted a draft of this plan to the required comprehensive planning agencies (coordinated by the Maryland Department of the Environment) as required by COMAR 26.03.01.02. A finding of consistency with the County comprehensive plan was made by the Frederick County Planning Commission on December 18, 2024. The Frederick County Council adopted the Water and Sewerage Plan on February 18, 2025.

B. Planning Framework

Water and Sewer Planning

In the first water and sewerage plan, adopted in 1969, Frederick County was divided into 32 drainage basins for water and sewerage planning purposes. The engineering consultant who worked on the first Plan proposed a sewage treatment plant site for each drainage basin, regardless of whether or not the particular basin was planned to have community sewer service within the 20-year time frame of the Plan. Potential surface water impoundments were also located on tributaries to the Monocacy River and Catoctin Creek throughout the County. An impoundment of the Monocacy River at Sixes Bridge was studied as part of a series of back-up water sources for the greater Washington, DC metropolitan area. The designation of the Monocacy River as a State Scenic River in 1974 was the result of major citizen opposition to the proposed dam and virtually eliminated all possibilities of a future impoundment on the Monocacy River.

The 1992 Water and Sewerage Plan marked the departure from drainage basin planning to a discussion of water and sewerage organized by systems and service areas. Over the years, the Central Frederick Service Area has expanded beyond the original drainage basin boundaries so that it no longer makes sense to discuss service to this area in terms of the original 32 drainage basins. At the other extreme, there are existing municipal systems that only provide water and sewer service in a single drainage basin. Many municipal systems were not planned to expand to serve areas outside the municipal boundaries or sized to encompass their entire drainage basins.

1997 Priority Funding Areas Act

The Maryland General Assembly passed the Neighborhood Conservation and Smart Growth initiatives in 1997 (1997 Act). This legislation enhanced the *1992 Planning Act* that established the seven visions to guide growth and development throughout the State (in 2009, the State replaced the existing visions with 12 new visions through HB 294 and SB 273). The Smart Growth initiatives go further than the *1992 Planning Act* by establishing a variety of State programs and fiscal tools in an effort to protect sensitive areas, plan for better growth, and direct resources. The State's Smart Growth toolbox includes a wide range of policies and programs that address land preservation, economic development, neighborhood revitalization, transportation, environmental protection, historic preservation and other initiatives.

The 1997 Act established Priority Funding Areas (PFA), which are designated geographical areas within each county where the State wants to target its programmatic efforts and infrastructure funding to support economic development and new growth. Existing or new development located outside of a State-certified PFA would not be eligible to receive State funding for infrastructure improvements such as roads, water or sewer. Generally, the PFA criteria require a property to be within a designated growth area, have appropriate zoning, and be included in a 10-year water/sewer service area designation.

County Comprehensive Plan

The County adopted the Livable Frederick Master Plan (LFMP) on September 3, 2019, which replaces the 2010 County Comprehensive Plan document. The Land Use Plan and Zoning maps that were amended in 2012 are still in place. The LFMP generally maintains the concept of designated Community Growth Areas (CGAs) where residential, commercial and employment uses will be concentrated. Ten of the CGAs are municipalities and their future annexation areas; the remaining 12 are Unincorporated Growth Areas (UGA), where the planning and zoning is under the County's jurisdiction. The intent of the land use plan is to direct development to the designated CGAs while protecting the County's green infrastructure and agricultural/rural resources. CGAs will be targeted for publicly owned facilities and infrastructure financing and improvements. A higher level of available community services is to be expected within a CGA. Public water and sewer service is provided or planned for all CGAs whereas areas outside CGAs will be served by future individual well and septic systems. The only exception to this policy is possible reconciliation of a public health emergency, where public water or sewerage service could be used outside of a Community Growth Area to maintain public health and safety.

- Municipal Growth Areas (MGA) - Most of the County's municipalities continue to provide a logical location for managed growth both within their existing municipal borders and in surrounding lands which are subject to possible future annexation. The General Plan highlights the existing municipal boundary and the future growth area that would be controlled by the municipality through the annexation process. The limits of a MGA on the County Plan may be different from a growth area identified on a respective municipal plan. The MGAs in the County Plan represent those areas the county has recognized as appropriate for future growth given the limitations and constraints on County public facilities and services during the timeframe of the Comprehensive Plan.
- Unincorporated Growth Area (UGA) – There are several existing communities under the County's jurisdiction that have served as a foundation for growth. These communities have an historic "downtown" core, schools, and water/sewer infrastructure to support additional growth. Several of the UGAs delineate newer communities, which focuses on an older historic core.

Water Resources Element

On May 2, 2006, the State of Maryland adopted legislation (HB 1141, *Land Use—Local Government Planning*) requiring local jurisdictions to include a Water Resources Element (WRE) in their comprehensive land use plans. The Water Resources Element is divided into three components:

- Drinking Water Assessment
- Wastewater Assessment
- Managing Stormwater and Non-point Source Pollution

The purpose of the WRE is to coordinate growth management and water resources planning efforts in Frederick County. The WRE primarily addresses the County owned and operated water and wastewater systems, although data is included for municipal systems and Municipal Growth Areas. Included within these three components of the WRE are discussions of the watershed resources of the County; the quality and quantity of drinking water supplies with respect to planned growth; the treatment capacity of wastewater facilities and disposal of treated effluent; and a review of the County's stormwater management and non-point source pollution programs. Recommendations for sound land and water

resource management practices that contribute towards the health and sustainability of our major watershed systems and human communities are included in the form of goals, policies and action items. Frederick County adopted its WRE on September 23, 2010 with the adoption of the County Comprehensive Plan. The adoption of the Livable Frederick Master Plan on September 3, 2019 incorporated the 2010 WRE document. A new WRE was adopted on January 21, 2025.

County Government Organization Relationship to the Management of Water Supply and Sewerage Facilities

The Department of Planning within the Division of Planning and Permitting administers and manages the Frederick County Water and Sewerage Plan. Close coordination with Environmental Health Services (Health Services Division), the County Attorney's Office, and the Division of Water and Sewer Utilities occurs with all Plan text amendments, category reclassifications, category & infrastructure mapping, as well as the Triennial Update. The Department of Planning also has close relationships with all 12 municipalities within Frederick County, as the County's Water and Sewerage Plan includes all municipalities; there are no separate, distinct municipal Water and Sewerage Plans within Frederick County.

[org chart]

C. Goals for Water Quality and Water and Sewerage Planning

1. To improve the water quality of Frederick County streams by meeting or exceeding the assigned effluent discharge requirements and by identifying and seeking to reduce other sources of pollution, e.g., failing septic systems).
2. To assure a dependable supply of water for drinking, irrigation, recreation, and stream augmentation for present and future generations, recognizing other legitimate uses for streams.
3. To assist in correcting sanitary and water supply problems in existing problem areas that may be located outside of a designated Community Growth Area. The best available and most economical water and sewer technologies and methods, whether publicly-owned or individual in nature, shall be utilized in a manner which will protect the health, safety and welfare of the public.
4. To promote the use of publicly owned and operated regional community water and sewer systems for new development in a manner consistent with the County Comprehensive Plan.

D. Livable Frederick Master Plan Goals and Initiatives

Goal: Water Quality

Improve and protect water quality for human and environmental health by eliminating impairing levels of pollution to local waterways and by adequately funding and implementing water quality restoration and protection efforts.

Initiative: Best Practices

Implement best management practices (BMPS) in all land use sectors and activities to improve water quality, in-stream and riparian (streamside) habitat.

Supporting Initiatives

- Promote enhances pre-treatment systems and soil based BMPs for new or replacement on-site sewage disposal systems (septic systems) within wellhead protection areas, area of karst geology, and other sensitive areas in Frederick County.
- Require regular pump out and maintenance of septic systems.

Goal: Supply and Treatment Infrastructure

Ensure groundwater and surface water remain safe, reliable, and sustainable sources of public consumption.

Initiative: Water and Sewer Adequacy

Ensure that wastewater and water supply infrastructure is adequate, sound, and efficient to provide for current and future populations.

Supporting Initiatives

- Identify and implement protection strategies for lands critical to the quality of public water supplies, including easements, fee-simple acquisition, and transfer of development rights, and changes to County Code or operational policy.

- Thoroughly evaluate the location and size of area designated for growth and development based on the adequacy of and impacts to drinking water supplies and wastewater treatment and conveyance capacities.
- Promote practices to reuse and recycle greywater, rainwater, and stormwater in order to conserve raw water resources and lessen overall water usage.
- Ensure that wastewater treatment and water treatment plants have appropriate technology to remove algal toxins, priority pollutants, microplastics, and endocrine disrupting compounds.

E. General Policies

The following policies will be used to accomplish the stated goals in the Water and Sewerage Plan and guide the implementation of the Water and Sewerage Plan:

1. Water Quality and Supply:

- Existing treatment plants will continue to be improved and meet or exceed Maryland Water Quality Standards.
- The County will cooperate with Federal, State, and private efforts to reduce sources of stream pollution.
- The citizens of the County will be informed of pollution problems and their advice and cooperation solicited.
- The utilization of nitrogen-reducing septic systems as a means to reduce ground and surface water enrichment will be encouraged. Alternatives to the conventional septic system will be used to correct existing problems.
- In the event that existing individual private water supply or sewerage systems prove inadequate or unsafe, the County will attempt to provide connection to a public system.
- The nature and extent of all existing water and sewer problems will be investigated and solutions sought. The County will seek to identify potential public health problems and potential solutions.
- In planning for publicly owned water and sewer facility construction programs, the following shall be considered:
 - Areas experiencing public health hazards needing immediate solution.
 - Existing systems in need of upgrading.
 - Developing areas.
 - Goals and policies of the Comprehensive Plan.
 - Determination of physical and financial feasibility.
- All water storage (impoundment) projects shall meet State and Federal requirements and shall consider recreation use and riparian rights of downstream owners.

2. Interjurisdictional Coordination:

- a. All branches of the County government and municipalities will be expected to comply with the Water and Sewerage Plan and their activities will be expected to be in conformance with the policies of the Plan.
- b. The County government shall aid and encourage river basin cooperation with all adjoining jurisdictions, including support of efforts and activities of the Interstate Commission on the Potomac River Basin (ICPRB).
- c. In adopting this Plan, it is not the intent of the County Governing Body to usurp the basic powers and responsibilities of the municipalities as now existing under present laws and regulations.
- d. Nothing in this Plan should be construed as relaxing any existing regulations, rules, agreements, decisions or other acts of any municipality or any branch of the County or State governments; in cases of conflict, the more restrictive provisions shall apply.

3. Ownership, County Operation and Financing of Water and Sewer facilities:

- a. All new community water and sewerage systems shall be publicly owned.
- b. The County with guidance from the Division of Water and Sewer Utilities (DWSU) will continue to seek alternative methods to serve properties which may not be adequately served by the remaining privately owned community water and sewer systems. Acquisition of privately owned systems, when appropriate, shall be done through the adoption of the Capital Improvement Plan (CIP) with consideration of the effects upon existing water and sewer user fees and capacity charges.
- c. With respect to any County owned water or sewerage system, DWSU shall determine the feasibility of a proposed sewer or water improvement or extension project, the manner in which service may be obtained, and may require a developer to provide information necessary to determine the estimated cost of such service.
- d. If a proposed project is to receive public funding in addition to private funding, a public works agreement or public improvements agreement between the County and the developer must be signed before the project can become part of the County Capital Improvements Program (CIP).
- e. If a project is constructed from private or a combination of public and private funds, all necessary funds (other than grants and County supplied funds) shall be guaranteed to the County Governing Body prior to the initiation of each phase of a project.
- f. All water and sewerage systems (excluding systems and facilities owned and operated by the municipalities) shall be designed and built in accordance with Frederick County Design Manual and General Conditions and Standard Specifications. All designs shall conform to applicable Federal, State, and local regulations and recognized industry standards, including but not limited to, *American Water Works Association, Recommended Standards for Water Works (or Sewage Works)* "Ten States Standards", etc., and shall be

reviewed and approved by the Maryland Department of the Environment, when required, and/or the County, prior to construction.

- g. Publicly owned community water and sewerage systems will be designed based on the population designated, or the equivalent dwelling units (EDU) for the comprehensively planned or zoned properties on an acreage basis within the Comprehensive Plan for the area. Designs must be reviewed and approved by the DWSU.
- h. All public water and sewerage projects (excluding systems and facilities owned by incorporated municipalities) shall be inspected by a representative designated by and on behalf of DWSU.

4. Sub-Regional Water and Wastewater Plants:

- a. The construction of new sub-regional water or sewerage treatment plants shall not be permitted.

5. Plant Size Service Area:

- a. The County will be served by regional plants. Publicly owned Community water and sewerage service will not be extended to serve properties in areas designated Agricultural/Rural or Natural Resource on the County's Comprehensive Plan, unless applicable criteria in Section 2 (E) (8) are satisfied.
- b. Extension of existing water or sewerage systems, as anticipated in the County Comprehensive Plan, shall be considered the preferred method of serving future residential development. The capacities of water transmission mains and/or sewer interceptors, along with a recommended alignment(s), after approval by DWSU (or the County Governing Body) shall be incorporated into the Frederick County Water and Sewerage Plan via the amendment process.
- c. An interim treatment plant is acceptable in principle and may be approved, provided it is an interim step in a long-range regional plan. The Regional permanent facility and its ultimate service area must be defined in the County Water and Sewerage Plan prior to consideration of an interim plant.
 - i. If approved, interim plants shall be located in growth areas that are planned for regional systems as identified in the County Comprehensive Plan. Interim plants shall not be used in areas outside of Community Growth Areas designated for well and septic development.
 - ii. An interim plant may only be approved by an amendment to the County's Water and Sewerage Plan. Approval will be given only if it is compatible with appropriate regional plans for such water or sewerage service.
 - iii. An interim plant shall not be considered a justification to increase the density of zoning from what was previously granted or is identified in the Comprehensive Plan.
 - iv. An interim plant and appurtenances must be publicly owned and operated.
 - v. An interim plant will be designed to meet all applicable health and water quality requirements as established by DWSU and subject to the appropriate Federal, State, and local regulations and pursuant to recognized industry standards.

- vi. Any request to consider the establishment of an interim plant shall be reviewed by DWSU. The applicant shall provide sufficient data to allow DWSU to make a preliminary determination as to the financial feasibility of the proposal, including future operating expenses. Whether a project or system can be self-supporting will be evaluated as well as the projected impact on the consolidated rate system. Separate determinations will be made of the feasibility of a water system and sewerage system.
- vii. The minimum size of an interim plant will be determined by DWSU based on, but not limited to, anticipated operating costs, the maximum number of equivalent dwelling units as determined by the County or another permitting authority, life expectancy of the interim plant, proximity or feasibility of connections to interceptors (transmission mains), anticipated time that permanent regional facilities will be ready for use, etc.
- viii. The County will not be responsible for the cost of oversizing any interim plant or interim facility. Oversizing, in this case, means construction of an interim system providing capacity in excess of what is needed to serve the applicant's property. The County may require that the developer establish an escrow account to cover an interim system's maintenance and operating expenses until there are sufficient connections to provide operating revenue to meet expenses. The County may pay for oversizing of lines provided that the criteria in DWSU Water and Sewer Rules and Regulations are followed (see also § 2-13-6(b) (5) of the Public Local Laws). The County is solely responsible for determining if the lines or plant and appurtenances should be oversized or an escrow account set up for operating expenses.
- ix. When an interim plant has been approved, transmission mains and interceptors will be designed to facilitate connection with permanent lines or plant(s) and according to DWSU specifications, and easements reserved to provide access to the system (and Regional facilities) by adjoining properties.
- x. All interim water systems shall be required to meet minimum standards for fire flow volume/rate and pressure as determined by DWSU design criteria. The water systems shall be designed to be interconnected with adjacent properties within the respective pressure zone, but each subdivision may be required to expand the facilities, e.g., booster pumping station, water storage tank, etc., necessary to accommodate the interconnection.
- xi. A standard connection charge will be assessed against all equivalent units (including those owned by the County) utilizing the interim plant and be accumulated toward the establishment of the permanent regional treatment system. There shall be no credits or reimbursements for expenses incurred in the development of the interim treatment plant or interim offsite facilities.
- xii. If a developer cannot qualify for an interim plant, or is proposing a minor subdivision, with the approval of the County, the developer may develop on well and septic if the developer installs "dry" lines and complies with DWSU design criteria and plans for the future lines.
- xiii. Interim plants may be used to serve areas considered as having a health problem as identified and documented by the Health Department.

d. Environmental Considerations:

- i. The applicant for an interim water service area shall provide the County with appropriate hydrogeologic studies which assess the environmental impact of the system on surrounding development. No new systems will be approved which negatively impact the well yields of surrounding properties or surface waters, as determined by the Maryland Department of the Environment, Water Management Administration. The water system must not exceed the natural recharge available for their service area. These studies will be submitted to the State to support approval (or denial) of the necessary Water Appropriation and Use Permit (WAUP) from MDE.
 - ii. Interim sewage treatment plants cannot be so located that they would cause more stringent effluent NPDES limitations to be placed on existing or proposed sewage treatment plants. State agencies will be requested to comment on any proposal and validate that NPDES limitations will not be affected. The applicant shall employ qualified registered professionals who will be required to calculate the 7Q10 low flow of the receiving stream at the point of discharge in conjunction with the assimilative capacity of the stream.
- e. The use of gravity flow collectors and interceptors are the preferred method of serving all service areas. In the rare instances where a portion of the service area (or sub drainage area) cannot be served via gravity, regional pumping station alternatives must be studied, sized, properly located, etc., and approved by DWSU (see Policy 5 (b) above) prior to County approval of a pump station symbol on the Water and Sewerage Plan Map.

6. Capacity ("Tap") Allocations

See the DWSU Water and Sewer Rules and Regulations for the criteria necessary to secure water and/or wastewater capacity allocations.

7. Denied Access Lines

In order to properly regulate development and direct growth to appropriate locations in accordance with the Frederick County Comprehensive Plan, properties designated Agricultural/Rural, Institutional, or Natural Resource and located outside of a Community Growth Area on the County Comprehensive Plan will not be permitted to access lines identified as "Denied Access" on the official Water and Sewerage Plan Map except under one of the following conditions:

- a. To provide service to areas planned for water and sewer service on the Water and Sewerage Plan Maps and County Comprehensive Plan.
- b. To provide service to properties where a written agreement with the County, executed prior to the creation of the Denied Access designation, obligated the County to permit access to the particular line to provide service to a specific property.
- c. To provide service to areas where the Health Department determines access is necessary to solve an existing Health related problem and the County Governing Body agree to permit access to the line.
- d. To provide service to Public Service Facilities.

- e. To provide public sewer service to existing structures or facilities and any future accessory structures¹ to parcels with Institutional Zoning (Euclidean) as of December 31, 2018, in order to reduce the level of nutrient pollution discharged to groundwater and surface waters, where an Individual Sewerage System would have the potential to discharge more than 200 pounds of nutrients (total nitrogen) per year, provided that:
 - i. The Institutional Zoned parcel also connects to public water to avoid recharge imbalance, unless the Applicant can demonstrate to DWSU's satisfaction that connection to public water is not economically feasible; and
 - ii. The Applicant relinquishes and assigns to the County, if allowed by the issuing authority, all discharge or appropriation permits issued by federal, state or local governments; and
 - iii. All existing and future accessory structures² or facilities located in the parcel must connect to public sewer and water unless the connection to public water is not required pursuant to (e)(i) above.

Any change to the status of all or a portion of a Denied Access line will require consistency with the County Comprehensive Plan and an amendment to the Water and Sewerage Plan as described in the Review and Amendment Procedures of this Plan. No connections will be allowed if there is no capacity in the Denied Access Line.

Properties and uses that are eligible to be served by a Denied Access line shall apply for an appropriate Water and Sewerage Plan classification amendment as described in Section 3 Review and Amendment Procedures. These procedures include submission of the amendment to the Maryland Department of the Environment for the Department's review.

8. Service to a Property Zoned Agricultural

Publicly owned community water and sewer service is generally not planned for properties zoned Agricultural. Agriculturally zoned properties may be located within or outside of Community Growth Areas. Applications to amend the Water and Sewerage Plan classification for Agriculturally zoned properties to a classification other than "NPS" (No Planned Service) will not be accepted, except as provided below. The amendment procedures include submission of the amendment to the Maryland Department of the Environment for the Department's review.

Agricultural zoned properties may apply for reclassification to allow connection to publicly owned community water and sewer service if at least one of the following conditions listed in (a), (b), (c), or (d) below are met:

- a. The property is within a Community Growth Area, in an area planned for publicly owned community water and sewer service on the Comprehensive Plan and;

¹ Accessory structures are those structures that provide support to existing structures or facilities. A subordinate use or structure which is located on the same lot as the principal use or building except as outlined in 1-19-8.250.1(F) [guardhouses] and serves a purpose customarily incidental to the principal use or building. For example, athletic fields, including stadium-style seating, concession and associated restrooms, and other types of buildings and activities typical of day-to-day functions for a school.

- i. Adequate capacity exists in lines and/or treatment facilities; and
 - ii. Service is restricted to uses allowed in the Agricultural zone.
- b. The property designation on the Comprehensive Plan is a category other than Agricultural/Rural or Natural Resource; and
 - i. Adequate capacity exists in lines and/or treatment facilities; and
 - ii. Service is restricted to uses allowed in the Agricultural zone.
- c. The property is used or proposed for use as a Public Service Facility, and adequate capacity exists in lines and/or treatment facilities.
- d. The property meets one of the conditions in 7. Denied Access Lines allowing access to a Denied Access water or sewer line. No connections will be allowed if there is no capacity in the Denied Access Line.

9. Partial Classification on the Water & Sewerage Plan Maps

In order to properly regulate the timing of development and direct growth to appropriate locations in accordance with the Frederick County Comprehensive Plan, it may be necessary to limit connection to the community system to only a portion of a parcel or lot of record.

Therefore, only the real property covered by the footprint of the structure(s) authorized to connect to the community system by the Division of Water and Sewer Utilities (DWSU) will be illustrated on the water and/or sewer classification map if (a) or (b) apply:

- a. A property is being reclassified under
 - i. 7. Denied Access Lines; or
 - ii. 8. Service to a Property Zoned Agricultural.
- b. For all other reclassification requests, county staff may recommend only a portion of a lot be reclassified to the County Governing Body if County staff determine there is limited water and/or wastewater system capacity and (i) or (ii) apply:
 - i. The property has remaining subdivision potential as determined by the Department Director of Development Review & Planning; or
 - ii. A property within any non-residential zoning district has remaining development potential which could result in a 50% increase in square footage as determined by the Zoning Administrator.

The partial classification shall be illustrated as part of the piecemeal amendment request. The amendment procedures include submission of the amendment to the Maryland Department of the Environment for the Department's review.

10. Individual Wells and Septic Systems

- a. Individual well and septic systems will be allowed in areas classified NPS, PS, as well as in areas with categories of W-5/Dev., and S-5/Dev.

- i. Properties classified S-5/W-5 are not required to connect to the community system.
 - ii. Properties classified S-4/W-4 shall connect to the public system when service lines about the property and adequate capacity exists to serve the property.
 - iii. Properties classified S-3/W-3 shall connect to the public system when service lines about the property and adequate capacity exists to serve the property.
- b. The installation of individual water supply or individual, private septic systems must comply with all State of Maryland and Frederick County Health Department regulations and policies regarding percolation testing, well drilling, water appropriation, and lot size. An individual water supply or individual, private septic system may not be permitted when adequate water and sewer service lines about a property having a classification of W-4 Dev, S-4 Dev., W-3 Dev., S-3 Dev., or W-1/S-1 and when the adequate water and sewer lines that about a property are located within a public right-of-way or a public water/sewer easement.
- c. A treatment system utilizing best available technology (BAT) to reduce nitrogen discharges may be required:
 - i. Where the septic system is installed within a Well-Head Protection area: or
 - ii. When analysis shows that a septic system may cause nitrogen concentrations in the groundwater to exceed acceptable levels affecting a well on the subject property or a well on a neighboring property.
- d. For septic systems with sewage design flows or a maximum daily flow greater than 1,500 gallons/day, and where nitrogen discharge is identified by the Health Department to be a problem requiring treatment an individually engineered treatment system is required.
- e. If an existing, publicly owned community water or sewerage system is inadequate or is not available, an interim individual water and/or sewerage system may be used provided that:
 - i. Pertinent State and local regulations including minimum lot size are complied with,
 - ii. Permits for such systems bear a notice regarding the interim nature of the permit and stating that connection to a future regional community system shall be made within 1 year or less after such system becomes available, and
 - iii. If individual interim systems are used, provision shall be made, whenever possible, to locate such systems to permit connection to the public facilities in a most economical and convenient manner, including the installation of dry lines [see Policy 5 (c)]

11. Multi-Use Systems

- a. If required, sewerage construction permits, groundwater appropriation permits, and discharge permits must be obtained from the State of Maryland for any Multi-Use Water or Multi-Use Sewerage System approved by Frederick County.

- b. Decisions relating to Multi-Use systems must conform to the land use policies contained in the Comprehensive Plan. Consistency with the Comprehensive Plan shall consider the physical and environmental impacts, impacts to agriculture, rural landscapes, natural resource areas, as well as an evaluation of the scale and intensity of the proposed development of the land for which the multi-use systems are sought to be used in light of the uses proposed, envisioned and articulated in the Comprehensive Plan for that area.

12. Response to Sanitary and Water Supply Problems

The Secretary of the Maryland Department of the Environment has the statutory power to direct that action be taken to correct a health emergency caused by failed septic systems or private well contamination. Recognizing this, the following policies and procedures have been established. They address how the County (jointly with a municipality, if applicable) will respond to health emergencies which may arise. In addition, they establish standards for planning extension of water and sewer services to unserved areas adjoining municipalities which are not emergencies, but which may need such service in the future.

- a. Applicability: The following policies apply if the number of septic failures or well contaminations determined by a Health Department Sanitary Survey exceeds 25% of the properties surveyed.
- b. Problem Area Response Procedures
 - i. When notified by the local Health Department of a well contamination or septic failure area, the County will initiate a meeting among appropriate county departments, the Frederick County Health Officer, and municipal representatives, if applicable, to discuss the problem and potential solutions.
 - ii. An informational meeting with affected landowners will be held by the County following the meeting referenced in (2) (a) above.
 - iii. If both capacity and funding are available, a municipality or the County system will serve the area of need.
 - iv. Establishment of a community sub-regional system that may be located outside of a Community Growth Area may be used to serve a problem area if all other applicable criteria in the Water and Sewerage Plan and DWSU's Rules and Regulations are met.
 - v. The County will support and assist in the annexation of the area to be served when possible.
 - vi. If annexation is not favored by the municipality, the County will require, assuming that a municipality will authorize service outside of their municipal boundary, all properties in the area of need to connect to any municipal line that abuts the property when service becomes available and the property owner is able to fund a connection.
 - vii. The County will initiate the appropriate change in the County Water and Sewerage Plan to facilitate service to the area of need.

c. Connection and Financing Costs

- i. The owners of developed and undeveloped buildable lots in the area of need shall be responsible for the cost of extension of services to their properties.³
- ii. The property owners in the area of need shall be responsible for the cost of the tap (capacity) fees and the lateral connections from the sewer line to the house or the waterline to the house, and the closure of septic field or well.
- iii. The County or municipality may consider financing mechanisms to assist property owners in the area of need with the costs for service.
- iv. The municipality or County may adopt property tax abatement to property owners in the area of need for a specified number of years.

13. Requirements for Individual On-Site Sewage Systems

The following pertinent information is excerpted from the Health Department regulations (consult the Frederick County Health Department for further details):

- a. Sewage percolation tests for individual on-site sewage systems will be performed only during the period from February 1st through April 15th, if there is one or more of the following soil series present as described in the Soil Survey for Frederick County, Maryland, 2002:

Adamstown (AdA,AdB), Airmont(ArB,ArD), Bagtown (BaB,BaC,BaD,BbD,BbE), Baile-Glenville (BcB), Benevola (BdB*,BdC*), Birdsboro (BgA,BgB), Blocktown (BhE*), Brinklow-Blocktown (BkD*), Braddock (BnB,BnC,BoB), Croton-Abbottstown (CrA,CrB), Dekalb-Bagtown (DbF), Dryrun (DqA), Glenelg (GeB*,GfB*,GgB*,GgC*), Glenelg-Blocktown (GhB*,GhC*), Glenelg-Mt.Airy (GmB*,GnB*), Glenville (GoB,GoC), Glenville-Baile (GuB), Hyattstown (HtF*) Hyattstown-Linganore (HyD*), Klinesville (KeB,KeC,KeD,KnB,KnC), Lehigh (LqB), Linganore-Hyattstown (LyB*,LyC*), Morven (MbA,MbB), Mt.Airy (MeB*,MeC*,MeD*,MeF*), Mt.Zion (MmA,MmB,MmC), Mt.Zion-Rohrersville (MnA,MnB), Murrill-Dryrun (MtB), Norton (NoA,NoB,NoC), Penn (PaB,PeB,PeC,PnB,PnC), Penn-Reaville (PqB,PrA,PrB), Ravenrock (RaD), Ravenrock-Highfield (ReB,ReC,ReD,ReF), Ravenrock-Rohrersville (RfC), Readington (RgA,RgB), Reaville(RmA), Springwood (SpA,SpB,SpC,SqB), Springwood-Morven(SrB), Stumptown-agtown (SuD,SuF), Thurmont (TaB,TaC,ThB), Trego (ToA,ToB,TqB,TrB), Watchung (WcB), Weaverton-Hazel (WeC*,WeD*,WeE*).

The Frederick County Health Department, with the guidance of the Maryland Department of the Environment, may modify these wet season percolation dates based on soil conditions.

*These soils are classified as Lower 1/3 Landscape Position Restricted Soils.

- b. If one or more of these soil series is present in only a portion of a subdivision, the preliminary plan for that subdivision may be modified to exclude the areas containing these soils; percolation on the excluded portion will be performed only during the period February 1st through April 15th on a resubmitted plan.

³ The Water and Sewer Rules and Regulations, effective October 1, 2022, Section 6, Failing Water or Septic Systems, stipulates the applicable cost-sharing criterion, which may include possible funding from local, state, or federal government sources to offset/reduce costs.

- c. The following floodplain soils are unsuitable for sewage disposal and will not be subject to percolation:

Adamstown-Funkstown (AfB), Bermudian (BfA), Bowmansville-Rowland (BmA,BmB), Codorus & Hatboro (CgA), Combs (CmA,CnA), Foxville (FoB), Foxville-Hatboro (FxA), Glenville-Codorus (GvA,GvB), Hatboro-Codorus (HdA), Lantz-Rohrersville (LaB), Lindside (LsA), Melvin-Lindside (MaA), Mt.Zion-Codorus (MoB), Rohrersville-Lantz (RoB), Rowland (RwA), Trego-Foxville (TxB), Wheeling (WhB) and Wiltshire-Funkstown (WtB).

Section 3:

Review and Amendment Procedures

A. Triennial Review

State Law Title 9, Subtitle 5 of the Environment Article of the Annotated Code of Maryland requires the governing body of the County, after reasonable opportunity for public hearing, review at least triennially the County Water and Sewerage Plan.

B. Amendment Procedures

The governing body of the County may amend the County Water and Sewerage Plan when necessary or when Maryland Department of Environment requires it.

1. **CIP Process:** To the extent that the currently adopted six-year CIP contains projects not already included in the Water and Sewerage Plan, the infrastructure listed in the six-year CIP will be added to the Water and Sewerage Plan. The current CIP is forwarded in its entirety to the Maryland Department of the Environment following its adoption, as Appendix A of the Water and Sewerage Plan.
2. **Comprehensive Plan Update Process:** The County Governing Body may, as part of the Comprehensive Plan Hearing and Adoption Process, concurrently make revisions to the Water and Sewerage Plan. These revisions may include the addition or removal of proposed infrastructure or facilities, as well as placing properties into or out of the Planned Service Areas. As required under State law and the County Comprehensive Plan, notice will be provided prior to the Comprehensive Plan hearings when these revisions to planned water and sewer service areas or infrastructure will be discussed. All Water and Sewerage Plan classification and/or infrastructure revisions made during the Comprehensive Plan update process shall be forwarded to the Maryland Department of the Environment as currently required.

3. Piecemeal Application Process

- a. Applications for amendments to the Water and Sewerage Plan for Frederick County, including its incorporated municipalities, may be submitted at any time. Applications received are processed in three cycles, Spring (deadline March 31st), Summer (deadline July 31st), and Fall (deadline November 30th).

The County Governing Body may at their discretion initiate amendments to the Water and Sewerage Plan outside of the tri-annual review sequence when necessary; (i) To allow service to an existing structure from an existing system when a potential health hazard has been declared by the Health Department, or (ii) To allow requests submitted by a government agency or for capital projects to proceed.

- b. Applications for proposed amendments to the County Water and Sewerage Plan and supporting documents, shall be submitted to the Frederick County Division of Planning & Permitting, 30 North Market Street, Frederick, Maryland, 21701 through the online application system.

- c. Requests for amendments to provide service to properties with a land use plan designation of Agricultural/Rural, or Natural Resource on the County Comprehensive Plan are not in conformance with the County Comprehensive Plan and will not be accepted, unless service is permitted pursuant to Section 2. e. 7. Denied Access Lines.
- d. Requests for amendments to provide service to properties zoned Agricultural will not be accepted unless service is permitted pursuant to Section 2. e. 8. Service to Properties Zoned Agricultural.
- e. Requests to amend the water and sewer classification of a particular property may be made by the property owner, their agent or a contract purchaser with consent of the owner. A municipality may initiate an application with regard to municipally owned infrastructure and property, or to revise its planned service area to be consistent with the comprehensive plan for the municipality.

The County Staff may initiate an application with regard to location of infrastructure generally or reclassification of properties to implement the Comprehensive Plan, or if the property no longer meets the requirements of its current classification.

- f. It shall be the responsibility of the Frederick County Division of Planning & Permitting to coordinate the review of amendments to the Water and Sewerage Plan in cooperation with the staff of the Division of Water and Sewer Utilities, the County Attorney's Office, and the staff of the County Health Department.

The above-mentioned staffs shall review the proposed amendments and submit their recommendations which may be in the form of text, maps, tables, charts or other information necessary to explain the proposed amendments.

- g. Amendments proposed within a municipality must be proposed by that municipality or be accompanied by a letter from the Mayor or Burgess or a designated municipal official certifying the amount of excess water supply system and wastewater system capacities and the intent to provide the available capacity to the property that is the subject of the amendment. When certifying the amount of excess water supply system and wastewater system capacities, a methodology not less stringent than that provided in the Maryland Department of the Environment, Water and Wastewater Supply Capacity Management Plans, as amended from time to time, will be utilized. In the event that excess water supply system and wastewater system capacity do not exist, the application shall include detailed information proposing how sufficient capacity will be provided to serve the property and a letter from a municipal official indicating that the municipality agrees to the proposal.
- h. The proposed amendments will be submitted to the County Planning Commission, which will determine whether the Plan amendment is consistent with the County Comprehensive Plan.

The municipal plan designation will be used for properties within a municipal boundary.

A property or development project is only required to obtain a finding of consistency once.

- i. Before the County Governing Body adopts any amendment to the Water and Sewerage Plan, the following steps must take place:
 - i. The County Council must conduct a public hearing, and
 - ii. The County Council must give notice of the Plan amendment to the principal elected official of each affected municipal corporation at least 14 days before the hearing, and
 - iii. Notice of the time and place of the public hearing, with a summary of the amendment(s) must be published in at least one newspaper of general circulation, once each week for two successive weeks with the first notification appearing at least 14 days prior to the hearing.
 - iv. The County Council must prepare a written Resolution approving or denying the amendment(s), which must be transmitted to the County Executive within ten (10) days for approval or veto.
 - v. For good cause, the County Council may continue a proposed amendment for further study and information until a date certain as determined by the Council, but in no event longer than six (6) months after the public hearing in which the decision to continue the proposed amendment was made, except as provided by law. If the County Council takes no action or makes no decision on the proposed amendment within six (6) months of its public hearing, the application shall be deemed null and void, and the applicant must reapply for a Water and Sewerage Plan amendment. If the lack of action or a decision by the County Council is not the fault of the applicant, then the applicant will not be charged fees for the reapplication.
 - j. Following the decision of the County Council and approval or veto by the County Executive, the amendment shall then be sent to the Maryland Department of the Environment for its review and final approval. The State has at least 60 days and may extend its review period.
 - k. Unless an amendment to the County Water and Sewerage Plan expressly provides otherwise, an amendment to the County Water and Sewerage Plan shall take effect: upon approval by the Maryland Department of the Environment (MDE) or upon the failure of MDE to disapprove, in whole or in part, the proposed amendment or revisions within the review period specified in the Annotated Code of Maryland, Environment Article §9-507.
4. **Water and Sewer Plan Classification After Connection Process:** When the requirements of the Water and Sewerage Plan have been met and a property connects to the community water and/or sewer system (whether publicly owned or private), County staff will update the Water and Sewerage Plan maps to reflect the property as W-1 and/or S-1. This will not require a public hearing or approval by the County Governing Body or notification of property owner(s). A list of properties reclassified as W-1 or S-1 by staff will be included for informational purposes with the next piecemeal amendment cycle.

C. Fees

The fee schedule established by the County Governing Body applies to all applications to amend the Water and Sewerage Plan, including developer funded projects that will ultimately be owned by a government entity.

Fees for amendments filed by a government entity for property or infrastructure owned by the government entity, or amendments resulting from changes to a local government's comprehensive plan, shall be waived.

Fees must be paid at the time of application and are not refundable.

D. Severability

The requirements of this Water and Sewerage Plan are severable, and if any of its requirements are held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining sections.

Section 4:

County Water and Sewerage Plan Classification System

A. General

A classification system has been established for properties that will be served by publicly owned community water and sewer systems. The classification system reflects a progression toward the attainment of public water and sewer service so as to implement the County Water and Sewerage Plan, as well as County or municipal Comprehensive Plans.

The classification system is designed to show need and intent of the County, its municipalities and the private developer for establishing or extending publicly-owned community water and sewer systems.

Classifications which indicate anticipated improvements within the next six (6) years should be part of an action plan to be implemented within the constraints of funding and various required agreements and approvals. The classification system is not intended to prevent development of publicly owned community water and/or sewerage systems or facilities prior to or later than the time periods indicated; rather it is the best estimate at the time of adoption as to when such development may be expected to occur. Every effort should be made by the County, municipalities, and developers to progress with water and sewer projects to the point that construction may occur in accordance with the Plan. However, after having achieved one level, there is no guarantee that the next level classification will be granted.

B. Water and Sewerage Plan Classifications

Tracts of land where publicly owned community water and/or sewer facilities are proposed to be extended by developers or where the County or municipalities anticipate that development may occur within 20 years may be assigned a classification with the suffix "Development" or "Dev.". A "Dev." designation means that the extension or construction of publicly owned community systems or facilities is dependent upon developer or landowner action and funding.

The year of adoption of a piecemeal Water and Sewerage Plan amendment is noted within the water and sewer classification designations for properties in 4 and 3 categories, (e.g. 90 S-3 means the sewer priority classification of S-3 was approved by the County in 1990).

NPS – No Planned Service

A classification assigned during the Comprehensive Planning Process to land which is not planned or projected to be served by publicly owned community water or sewer systems within the timeframe of the County Comprehensive Plan. This classification may also be assigned by a staff-initiated piecemeal amendment application if a property no longer meets the requirements of its current classification.

PS – Planned Service

A classification assigned during the Comprehensive Planning Process to an area or property shown on the Comprehensive Plan for growth utilizing publicly-owned community water and/or sewer systems, or within a Community Growth Area of a community to be served by public water and sewer in the County Comprehensive Plan, within the 11–20-year time frame. Properties within this classification have designations other than Agricultural/Rural, Natural Resource, or the Open Space Form Designation on the

County Comprehensive Plan. This classification may also be assigned through the piecemeal application process by a staff-initiated application with regard to location of infrastructure generally or reclassification of properties to implement the Comprehensive Plan, or if the property no longer meets the requirements of its current classification. Additionally, this classification may be assigned through the piecemeal application process to provide service to areas where the Health Department determines access is necessary to solve an existing health related problem.

S-5/W-5 – Mid-Range Plan Phase

A classification assigned through the Comprehensive Planning Process where improvements to, or construction of, publicly owned community sewerage or water systems are planned within the 7-10-year time period.- Except as provided below, properties requesting this classification shall meet the following criteria:

1. Have a land use plan designation other than Agricultural/Rural, Natural Resource, or the Open Space Form Designation on the County Comprehensive Plan. As per the policy for PS-Planned Service, this classification may be assigned through the piecemeal application process to provide service to areas where the Health Department determines access is necessary to solve an existing health related problem.
2. Have zoning other than Agricultural or Resource Conservation.
3. If located within a municipality where the municipality provides community water and sewer, the property shall be designated in the municipal plan to be provided services in the 7-10-year time frame.
4. Be located within a Community Growth Area as shown on the Frederick County Comprehensive Plan.
5. Demonstrate that there is sufficient capacity planned in the systems serving the property within the 7–10-year period.

In addition, this classification may be assigned through the piecemeal application process to property:

1. Annexed into a municipal corporation, if the property is located within a municipal growth area and described in an adopted Municipal Growth Element (MGE); or
2. Granted a Planned Unit Development (PUD) or Mixed-Use Development (MXD) or Open Space Recreation (OSR), or Institutional (I) floating zone classification; or
3. Zoned Agricultural, if all the criteria set forth in Section 2, General Policies 8. Service to a Property Zoned Agricultural or, if applicable, Section 2, General Policies 7. Denied Access Lines are satisfied; or
4. To provide public water and/or sewer service to Public Service Facilities if the applicable criteria in Section 2, General Policies 8. Service to a Property Zoned Agricultural are satisfied.

S-4/W-4 – Concept Evaluation Phase

A classification assigned through the piecemeal application process to properties designated residential, commercial, or industrial, or in general, a category other than Agricultural/Rural, Natural Resource, or the Open Space Form Designation on the County Comprehensive Plan, and where improvements to, or construction of, publicly-owned community sewerage or water systems are planned within the 4–6-year time period. As per the policy for PS-Planned Service and S-5/W-5, this classification may also be assigned through the piecemeal application process to provide service to areas where the Health Department determines access is necessary to solve an existing health-related problem. Properties requesting this classification shall meet the following criteria:

1. The criteria required for the S-5/W-5 classification have been complied with.
2. The application shall include documents that show conceptually how the applicant plans extensions of water and sewer lines to serve the property, including topographic information from appropriate sources and an estimate of construction costs.

Water concept submissions shall consider the County's water pressure zones to develop the concept, e.g., water booster pumping stations or pressure reducing valves.

Sewerage concepts shall consider gravity service as the preferred method (see Section 2, General Policies 5. Plant Size Service Area, paragraph (e)). All concept plans shall distinguish between County planned and developer provided facilities and be complete and accurate as determined by the Division of Water and Sewer Utilities (DWSU).

3. Adequate capacity shall exist or be programmed within the County or a municipal CIP for the system, which will serve the site. If adequate capacity does not exist, the property owner/applicant must identify and propose needed improvements (as approved by DWSU) to provide adequate capacity.

After an S-4/W-4 classification has been granted, an application may be submitted to the Maryland Department of the Environment for Water and/or Sewerage construction permits, as applicable.

S-3/W-3 – Preliminary Design Phase

A classification assigned through the piecemeal application process to properties where improvements to, or construction of, publicly owned community sewer or water systems are planned to be completed and operational within 3 years. Properties requesting this classification shall meet the following criteria:

1. Criteria required for the S-4/W-4 classification have been complied with.
2. Applicant shall provide a study of the components of the existing water and wastewater system and identify inadequacies that may result from the development of the property. This study may be performed in conjunction with the Adequate Public Facilities Ordinance (APFO) studies.
3. A preliminary plan of subdivision, or equivalent plan in a municipality, has been approved by the Planning Commission, or equivalent body within a municipality.

- a. If the County provides water and/or wastewater services to a municipality through a water or sewer service agreement, then the preliminary plan of subdivision or equivalent plan must be deemed acceptable by the Division of Water and Sewer Utilities.
4. If there is no preliminary plan of subdivision, and the property is not intended to be subdivided, and the property is a legal lot of record, a site plan (if required), or an equivalent plan in a municipality, has been approved by the Planning Commission, or equivalent body within a municipality.
 - a. If the County provides water and/or wastewater services to a municipality through a water or sewer service agreement, the site plan (if required) or equivalent plan must be deemed acceptable by the Division of Water and Sewer Utilities.
5. A discharge permit, where appropriate, has been approved by all appropriate State agencies.
6. A hydrogeologic study, where appropriate, supports the establishment of a community water system, which will not be detrimental to adjoining wells or surface waters. The hydrogeologic study is typically required to appropriate both ground (well) or surface waters. A Water Appropriation and Use Permit, where appropriate, has been approved by all appropriate State agencies.
7. If County funded CIP project(s) are needed to provide service, then construction funds for each project must be contained in the first or second year of the County's approved CIP.
8. Off-site water/sewer improvement plans, construction cost proposals, and easements (if applicable) that are needed to provide service to the site must be approved and signed. This criteria is considered met if a water/sewer line abuts the project site within a public right-of-way or a recorded public water/sewer easement.

Within this criteria, "project site" means the entire area included in an approved preliminary plan or site plan. "Off-site improvement" means a required water/sewer project that is not located within the project site.

Satisfaction of Items 7 and 8 will create a rebuttable presumption in favor of the applicant that service will be available within 3 years. If a property does not obtain onsite water and sewer improvement plan approval and the Adequate Public Facilities Ordinance (APFO) letter of understanding (LOU) for the project expires, County staff may initiate a piecemeal amendment to recommend reclassification to a "5" or "4." If there is not an APFO LOU for the project, County staff may initiate a piecemeal amendment to recommend reclassification to a "5" or "4" five years after approval of the reclassification by the Maryland Department of the Environment (MDE). Before initiating a piecemeal amendment, county staff will make a good faith effort to consult the applicant and/or owner of record.

S-2/W-2 – Engineering Phase

This classification is not mapped. Properties are assigned this category by County staff and do not require a public hearing or approval by the County Governing Body. Properties shall meet the following criteria:

1. All criteria required for the S-3/W-3 classification have been complied with.

2. Improvement plans for water and sewer lines and preliminary design of treatment plants and other infrastructure, as appropriate, have been approved.
3. Location of facilities, i.e., tanks, pumping stations, treatment plants have been located on the Water and Sewerage Map by prior amendment.
4. Properties classified S-2/W-2 shall connect to the publicly owned system when service lines abut the property.

During the S-2/W-2 phase, final construction design drawings and documents are prepared, rights-of-way are determined and the necessary acquisitions are pursued, various construction related permits are applied for and obtained, a public works agreement, allocation of taps and improvement guarantees are approved. Final plats may then be recorded, where appropriate.⁴

S-1/W-1 – Existing Service

A classification assigned by County staff to properties where publicly-owned community sewer or water systems or private community systems are existing and are connected to and serving a structure(s) on the property. County staff will update the Water and Sewerage Plan maps to reflect the property as W-1 or S-1. This will not require a public hearing or approval by the County Governing Body or notification of property owner(s). A list of properties reclassified as W-1 or S-1 by staff will be included for informational purposes with the next piecemeal amendment cycle.

Multi-Use Water System

A classification assigned during the piecemeal application process to a single parcel, or lot, or institution serving a number of individuals with the capacity to provide in excess of 5,000 GPD utilizing a source of ground or surface water. The Multi-Use Water system includes the piping, pumps, tanks, or other facilities utilizing a source of ground or surface water. A Multi-Use Water system is not publicly owned or operated.

Applications to amend the Water and Sewerage Plan to obtain approval to use a Multi-Use Water system on a specific property will be accepted and processed in the same manner as requests for water and sewer category changes. Properties approved to use Multi-Use Water systems will be identified in the Plan text in Chapter 3 and on the Water Plan Map.

Multi-Use Sewerage System

A classification assigned during the piecemeal application process to a single parcel or lot or institution serving a number of individuals with a treatment discharge capacity in excess of 5,000 GPD. A Multi-Use Sewerage system is not publicly owned or operated. A Multi-Use Sewerage system involves the collection and discharge of sewage or industrial Wastes of a liquid nature and various devices for the storage, pumping and treatment of such wastes.

Applications to amend the Water and Sewerage Plan to obtain approval to use a Multi-Use Sewerage system on a specific property will be accepted and processed in the same manner as requests for water and sewer category changes. Properties approved to use Multi-Use Sewerage systems will be identified in the Plan text in Chapter 4 and on the Sewer Plan Map.

⁴ See Sec. 1-16-106 of the County Code for additional requirements.

Applications for Multi-Use Sewerage Systems that propose to utilize a surface application and/or underground drain field system shall include, but not be limited to the following:

1. Analysis of groundwater mounding impacts of the system.
2. Nitrogen balance analysis to show that nitrogen concentrations at a property line or at any watercourse on the property do not exceed 10 mg/l.
3. Identify a suitable replacement area for the discharge/drain field.
4. Determination of treatment system requirements and discharge methods.

Section 1: Natural Features

Geology

Frederick County lies within two of the five geologic provinces located in Maryland, the Piedmont Plateau and the Blue Ridge. The Maryland Geological Survey has four publications detailing the provinces and their properties of Frederick County from which the following data is summarized, see Reger and Cleaves (2008); Dugion and Dine (1987); and Myer and Beall (1958). The Piedmont Plateau Province is divided into a Lowland (western) and Upland (eastern) Section. A large portion of Frederick County lies in the Lowland Section, in a natural central column of the county, which generally extends from the eastern edges of Woodsboro, Walkersville and Frederick City to the eastern slope of Catoclin Mountain. The Lowland Section is generally characterized by a valley of gently rolling terrain and slow flowing streams. The Upland Section, the eastern slice of the county, is rolling low elevation terrain with major streams in narrow valleys. The Blue Ridge Province is a mountain ridge and valley area of heavily rolling terrain, and deep, restricted, and fast flowing streams. The Blue Ridge is a narrow geologic province located between the Valley and Ridge (west) and Piedmont (east) Provinces. The South Mountain Ridge divides this Province between Frederick County and Washington County.

The Piedmont Plateau Province

Piedmont Lowland Section

The Piedmont Lowland Section is covered by the Regions of Frederick Valley District, Mesozoic Lowland, and Chesapeake Gorges.¹ The rock type in the Frederick Valley is Frederick and Grove limestones with some diabase intrusion and New Oxford Formation overlying the limestone at its western edge. Its sedimentary rock is easily eroded to form deep soils, whereas the metamorphic and especially the igneous materials of other regions require more time and more severe eroding. Therefore, from the Potomac River northward, this area is characterized by deep soils, streams with shallow banks, and gently rolling land. A quartzite ridge to the east of the section separates this section and its region.

The Mesozoic Lowland Region formed in upper Frederick County and to the southwest of the Frederick Valley is flat to rolling lowlands with red soils, low ridges with diabase dikes and limestone conglomerates with common sinkholes. Upper Frederick County is composed of much the same material as the Frederick Valley, the major difference being that this upper region has not been as heavily eroded. Its soil cover is shallower, and its rolling character is due to the harder rock material overlying the softer limestone. The flood plain sediment deposits formed a belt of red sandstone and shale, which crosses Maryland, Pennsylvania, and New Jersey.

Piedmont Upland Section

The Piedmont Upland Region has its roots in the Precambrian Era. Its rock materials are different from those in the Frederick Valley and Triassic Upland Regions, which once probably served as a deposit area for the erosion material from the Piedmont Upland Region. The Piedmont material existed before the

¹ For both Provinces of Frederick County there is a separate Chesapeake Gorges Region. Both locations are carved by the flood plain of the Potomac River. From the western Northern Blue Ridge Section, the Region flows over resistant beds of quartzite, sandstone, siltstone, greywacke, phyllite, shale and gneiss through to over Piedmont Lowland Section's carbonate valley mingled with bedrock islands.

formation of the Appalachian Mountains. It has metamorphic, igneous, and sedimentary materials, which are probably related to the volcanic activity that took place during Precambrian time.

The Piedmont Upland Section is encompassed by the Harford Plateaus and Gorges Region and the Wakefield Valley and Ridge Regions. The Harford Plateaus and Gorges Region of Frederick County is made of phyllite, fine grained schists and hard-ledged quartzite. The Wakefield Valley and Ridge Regions is made of phyllitic meta-basalt (Sams Creek), rhyolite, quartzite, and narrow bands of marble.

The Blue Ridge Province

The Northern Blue Ridge Section in Frederick County is bounded by the eastern base of Catoclin Mountain and the western base of South Mountain and basically constitutes the Middletown Valley. Cambrian Quartzite weathered into metamorphosed lava, which forms the mountain core, characterizes the area. The quartzite, a weather resistant material, has served as a deterrent to erosion thereby creating the present mountain valley topography.

The Section is divided into three regions: (1) Catoclin-South Mountain, (2) Middletown Valley, and (3) Chesapeake Gorges. The Catoclin-South Mountain Region is composed of two prominent quartzite ridges of South and Catoclin Mountains. The Middletown Valley Region is mainly compromised of meta-basalt granite gneiss and sand and silt alluvium in flood area of gorges. Geologic materials found in this Section are similar to those found in the Piedmont Upland Region of the Piedmont Province; that is, they are predominantly metamorphosed rock of igneous origin with similar characteristics.

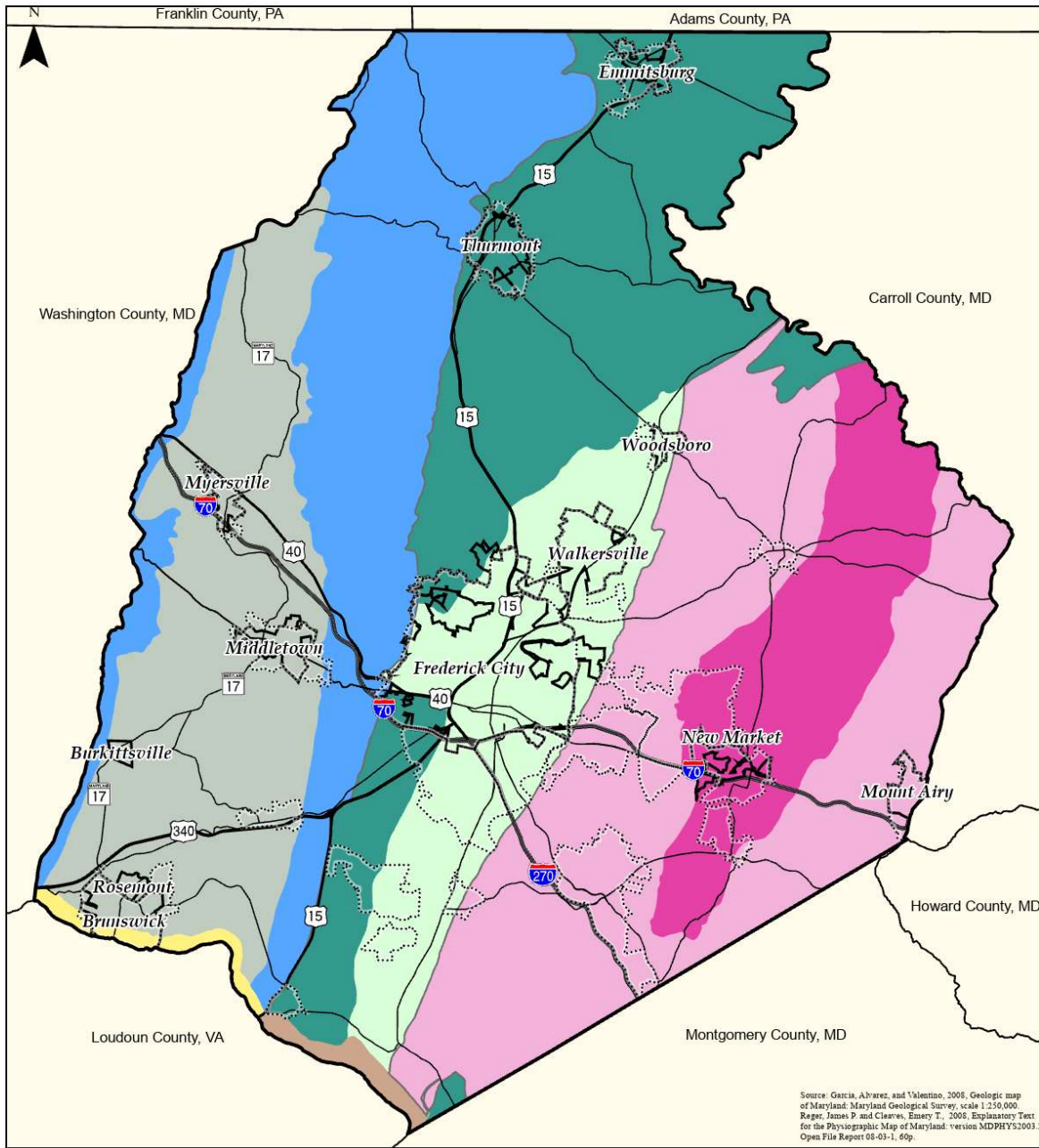
Sources:

Duigon, Mark T. and Dine, James R., 1987, Water Resources of Frederick County, Maryland: Maryland Geological Survey Bulletin 33, 106p.

Meyer, Gerald and Beall, R.M., 1958, The Water Resources of Carroll and Frederick Counties: Maryland Department of Geology, Mines and Water Resources Bulletin 22, 355p.

Reger, James P. and Cleaves, Emery T., 2008, Explanatory Text for the Physiographic Map of Maryland: version MDPHYS2003.2 Open File Report 08-03-1, 60p.

Map 2-1: Regions Within Physiographic Provinces



Regions within Physiographic Provinces

Piedmont Lowland Section

- Chesapeake Gorges Region
- Limestone Lowland Region
- Mesozoic Lowland Region

Piedmont Upland Section

- Harford Plateaus and Gorges Region
- Wakefield Valley & Ridge Region

Northern Blue Ridge Section

- Catoclin-South Mountain Region
- Chesapeake Gorges Region
- Middletown Valley Region

Municipalities

- Community Growth Areas

1:260,000

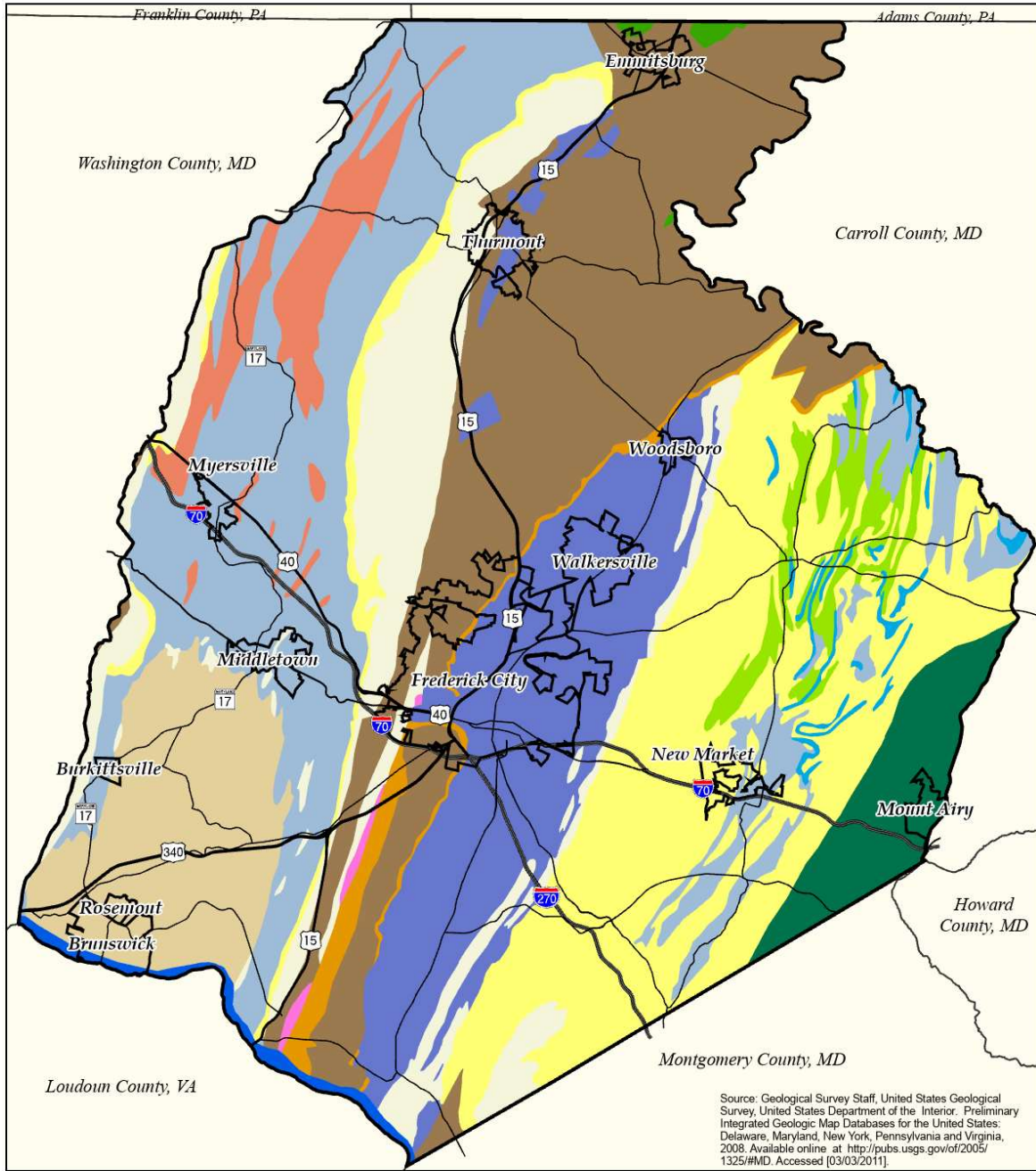
0 1 2 3 4 Miles



Frederick County, Maryland
Division of Planning and Permitting
Frederick County GIS

Projection: NAD 1983 State Plane Maryland FIPS 1900 Feet
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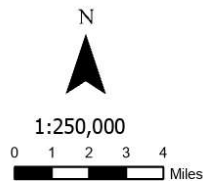
Map 2-2: Generalized Rock Type



Generalized Rock Type

Rock Type

conglomerate	meta-rhyolite
diabase	mica schist
dolostone (dolomite)	phyllite
granitic gneiss	quartzite
limestone	rhyolite
marble	shale
meta-basalt	water



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Topography

The topographic characteristics in Frederick County range from the low, wide, flat Monocacy River valley to high, steep, mountain slopes. Though the Monocacy's headwaters in Frederick County evolve in the gently rolling Upper Triassic Region (dropping 3.86 feet per mile), they shortly flow into the low, level area of the Frederick Valley proper. The Monocacy flows through the Valley in a shallow, slow, and widely meandering fashion, dropping 2.32 feet in elevation per mile.

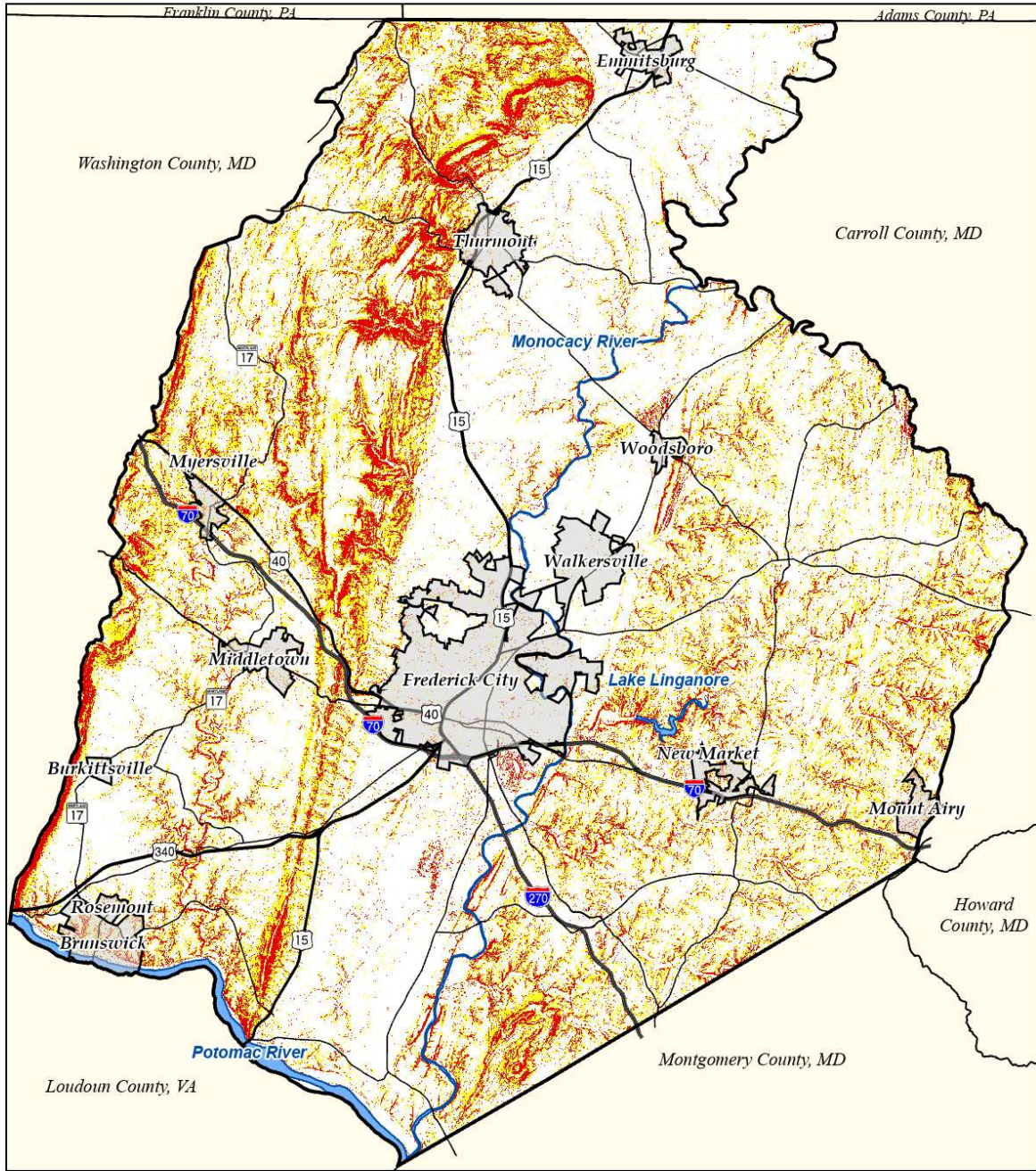
The Piedmont Upland Region, east of the Monocacy River, consists of rolling land. Characteristically, the streambeds are moderately narrow, and high flows produce deep channels in the original bed. The stream flow is east to west, with an average drop of 9.5 feet/mile (Linganore Creek).

The Middletown Valley is best characterized as an intermountain area of steeply rolling land, narrow streams, and rapid topographic descent from north to south. The fall is about 14.0 feet/mile (Catoctin Creek) or about five times that for the Frederick Valley. Surrounding the Middletown Valley on three sides are the Catoctin and South Mountains. The south leg of Catoctin Mountain is wide as compared to the narrow, ridge characteristics of South Mountain. In the north, where the two mountain ridges come together, a steep, elevated mountainous area prevails with peaks, flats, and valleys.

In addition to the mountain ranges, Frederick County has a monadnock named Sugarloaf Mountain (due to its similar appearance to a popular form of processed sugar in the American Colonies at the time of its discovery). It rises 800 feet above the Piedmont Province to an elevation of 1,282 feet and is characteristic of most mountainous areas, except that the elevation falls off in all directions.

Generally, elevations vary from less than 400 feet in the Frederick Valley to more than 1,800 feet in the mountains of the northwest. The elevation of the lower Middletown Valley and the Triassic and Piedmont Uplands is generally between 400 and 600 feet.

Map 2-3: Slopes



Slopes



Frederick County, Maryland
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Frederick County GIS

Slope

	15% - 24.99%
	> 25%

0 1 2 3 4 Miles

1:250,000



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000921Master Plan/2024

Soils

Frederick County's soils have been combined into eleven general graphic groups. The Natural Resource Conservation Service, of the United States Department of Agriculture, published the most recent revision of the soils descriptions in the County on their web site in 2019. The physiographic characteristics, soil series and suitability for on-site sewage disposal of the several soil groups are described in the following paragraphs. (For the official copy of soils information, please consult the soil survey at <https://websoilsurvey.nrcs.usda.gov/app/>).

Highfield-Ravenrock

These are soils that formed from a mixture of greenstone schist and metabasalt. This map unit occurs in the region of the Blue Ridge that lies between South and Catoclin Mountains and, to a lesser extent, in scattered areas near Sugarloaf Mountain. Slopes range from 3 to 65 percent but are commonly less than 25 percent. Highfield soils are limited for septic tank absorption fields and sewage lagoons because of slope, restricted permeability, and depth to bedrock. Ravenrock soils are limited for septic tank absorption fields and sewage lagoons because of depth to saturated zone, slope, restricted permeability, and depth to bedrock. Minor soils Catoclin, are very limited due to depth to bedrock and slope. Minor soil Rohrsville is very limited due to depth to cemented pan, depth to saturated zone, slope, and depth to bedrock.

Bagtown-Stumptown-Edgemont

These are soils that formed from quartzite, metagraywacke, schist, and phyllite. This map unit occurs on the mountain ridges and back slopes of Catoclin and South Mountains. Slopes range from 0 to 65 percent but are dominantly less than 45 percent. Bagtown soils are very limited for septic tank absorption fields because of depth to saturated zone, slope and restricted permeability. Stumptown soils are very limited for septic tank absorption fields because of slope, depth to bedrock and content of large stones. Edgemont soils are somewhat limited due to slope and depth to bedrock.

Myersville-Catoclin-Mt. Zion

These are soils that formed from a mixture of colluvium, metabasalt, meta-andesite, and other rocks of the Blue Ridge. This map unit occurs on summits, on back slopes, on foot slopes, and in drainage ways of the Blue Ridge between South and Catoclin Mountains. Slopes range from 0 to 45 percent. Myersville soils are somewhat limited for septic tank absorption fields because of depth to bedrock and restricted permeability. Catoclin soils are very limited because of depth to bedrock and slopes. Mt. Zion soils are very limited for septic tank absorption fields because of depth to saturated zone, restricted permeability and depth to bedrock.

Trego-Foxville-Thurmont

These are soils that formed from alluvium and colluvium of phyllite and quartzite and, to a lesser extent, greenstone and greenstone schist. This map unit occurs on the lower mountain back slopes and foot slopes of South and Catoclin Mountains in the Blue Ridge region. Slopes range from 0 to 5 percent but are commonly less than 5 percent. Trego soils are very limited for septic tank absorption fields because of depth to cemented pan, depth to saturated zone and depth to bedrock. Foxville soils are very limited for septic tank absorption fields because of flooding, depth to saturated zones, restricted permeability, and content of large stones. Thurmont soils are somewhat limited for septic absorption fields due to restricted permeability, depth to saturated zone, and depth to bedrock.

Mt. Airy-Glenelg-Blocktown

These are soils that formed from residuum of micaceous schist and phyllite. This map unit occurs on ridges and side slopes of highly dissected landforms of the eastern Piedmont Plateau. Slopes range from 0 to 65 percent but are commonly less than 50 percent. Mt. Airy soils are very limited for septic tank absorption fields due to slope and depth to bedrock. Glenelg soils are somewhat limited for septic tank absorption fields due to slope and restricted permeability. Blocktown soils are very limited for septic tank absorption fields because of depth to bedrock and slope.

Penn-Klinesville-Reaville

These are soils that formed in residuum from Triassic red shale, siltstone, and sandstone. This map unit occurs on the part of the Frederick Valley known as the Triassic Basin. Slopes range from 0 to 65 percent but are commonly less than 30 percent. Penn soils are very limited for septic tank absorption fields because of depth to bedrock. Klinesville soils are very limited for septic tank absorption fields because of depth to bedrock and slope. Reaville soils are very limited for septic tank absorption fields because of ponding, depth to saturated zone, and depth to bedrock.

Duffield-Hagerstown-Ryder

These are soils that formed from limestone. This map unit occurs in the Frederick Valley from about 1 mile west of the city of Frederick to the Araby Ridge in the east and at the Potomac River as a narrow band that widens to the northeast as far as Woodsboro. Slopes range from 0 to 25 percent. Duffield soils are somewhat limited for septic tank absorption fields because of restricted permeability. Hagerstown soils are somewhat limited for septic tank absorption fields because of depth to bedrock and restricted permeability. Ryder soils, found only in association with Duffield soils, are very limited for septic tank absorption fields due to depth to bedrock.

Linganore-Hyattstown-Conestoga

These are soils that formed from micaceous and calcareous schist, phyllite, slate, and limestone. This map unit occurs in the area that is centered on Urbana and runs from the southwest, at the Montgomery County line, to the northeast near Clemsonville. It is bordered irregularly by other soil map units. Slopes range from 3 to 65 percent. Linganore soils are very limited for septic tank absorption fields because of restricted permeability and depth to bedrock. Hyattstown soils are very limited for septic tank absorption fields because of depth to bedrock and slope. Conestoga soils are somewhat limited for septic tank absorption fields because of slope and restricted permeability.

Cardiff-Whiteford

These are soils that formed from slate and phyllite. This map unit occurs on a narrow ridge known as the Araby Ridge that runs from Woodsboro in the north to the Potomac River in the south. Slopes range from 3 to 65 percent but are commonly less than 40 percent. The Cardiff and Whiteford soils occur in association with each other. They are very limited for septic tank absorption fields because of depth to bedrock, restricted permeability, slope and content of large stones.

Codorus-Hatboro-Combs

These are soils that formed in alluvium from limestone and mica bearing igneous and metamorphic rocks. This map unit is located around perennial streams and major rivers. The soils all occur in association with each other. They are very limited for septic tank absorption fields because of flooding, depth to saturated zone, filtering capacity, and restricted permeability. Combs soils are only somewhat limited for septic tank absorption fields due to flooding.

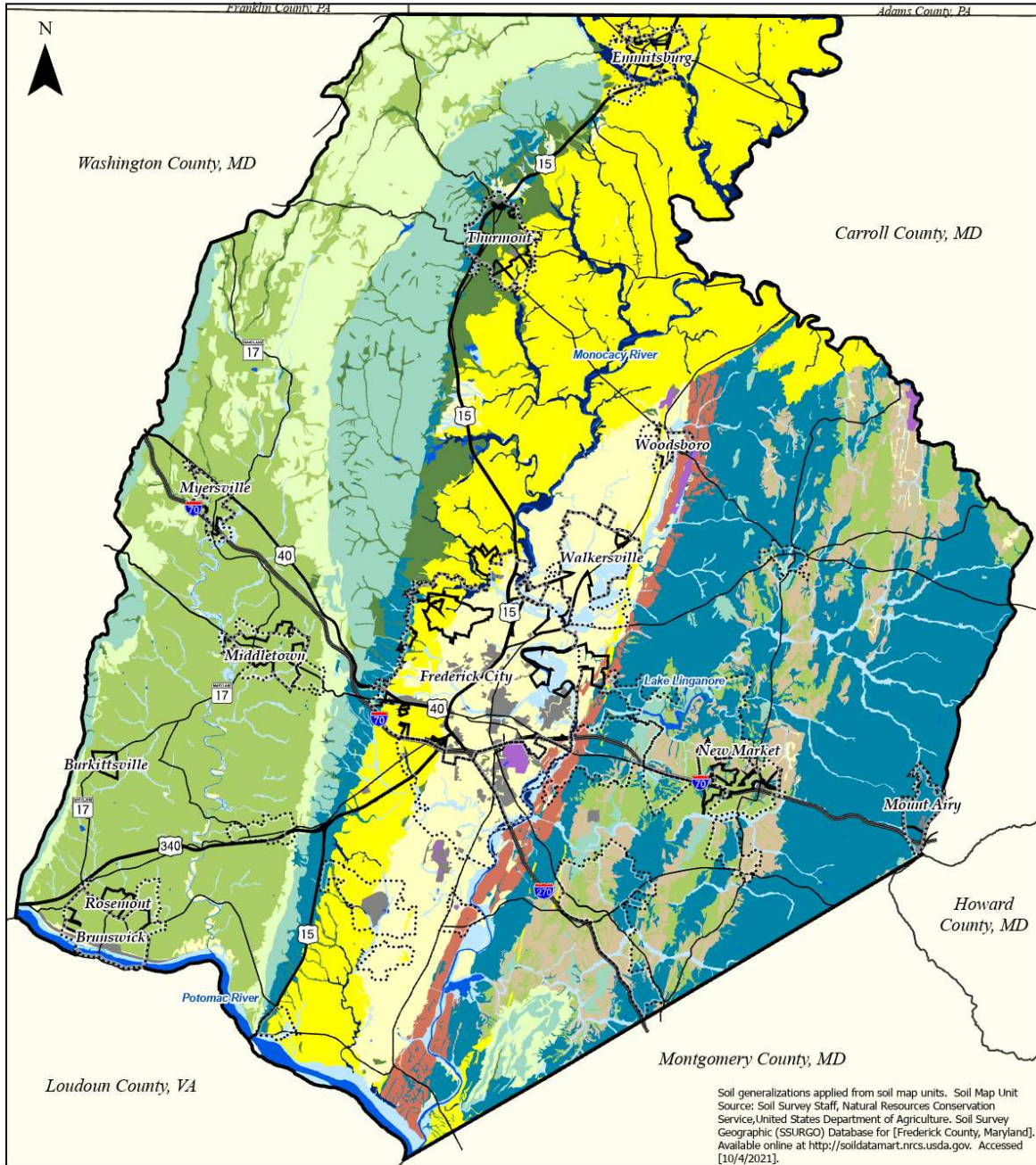
Rowland-Bermudian-Bowmansville

These are soils that formed in alluvium from red shale, sandstone, and conglomerate. This map unit is located along perennial streams in the part of the Frederick Valley known as the Triassic Basin. Rowland and Bowmansville soils only occur in association with each other. They are very limited for septic tank absorption fields because of flooding, depth to saturated zone and restricted permeability. Bermudian soils are very limited for septic tank absorption fields because of flooding, filtering capacity and depth to saturated zone.

Restricted Soils

Because so many of the soil types within Frederick County have moderate to severe restrictions for on-site sewage disposal due to any one or a combination of factors such as permeability, depth to bedrock, seasonal high water table, and slope and flood hazard; the local Health Department, with the aid of the Natural Resources Conservation Service (NRCS), has prepared a list of those soils in which percolation for on-site sewage systems is restricted to the wetter season (Restricted Soil Season; February 1 April 15) of the year.

Map 2-4: General Soils



General Soils



Frederick County, Maryland
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Highfield-Ravenrock
Bagtown-Stumppstown-Edgemont
Myersville-Catoctin-Mt. Zion
Trego-Foxville-Thurmont
Mt. Airy-Glenelg-Blocktown
Penn-Klinesville-Reaville-Goresville
Duffield-Hagerstown-Ryder
Linganore-Hyattstown-Conestoga
Cardiff-Whiteford

Codorus-Hatboro-Coms
Rowland-Bermudian-Bowmansville
Water
Quarries
Urban land
Municipalities
Community Growth Areas

1:250,000

0 1 2 3 4
Miles

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**Table 2-1: Soils Restricted for On-Site Sewage Disposal
Frederick County, Maryland**

Adamstown (AdA, AdB)	Morven (MbA, MbB)
Airmont (ArB, ArD)	Mt. Airy (MeB*, MeC*, MeD*, MeF*)
Bagtown (BaB, BaC, BaD, BbD, BbE)	Mt. Zion (MmA, MmB, MmC)
Baile-Glenville (BcB)	Mt. Zion-Rohrersville (MnA, MnB)
Benevola (BdB*, BdC*)	Murrill-Dryrun (MtB)
Birdsboro (BgA, BgB)	Norton (NoA, NoB, NoC)
Blocktown (BhE*)	Penn (PaB, PeB, PeC, PnB, PnC)
Brinklow-Blocktown (BkD*)	Penn-Reaville (PqB, PrA, PrB)
Braddock (BnB, BnC, BoB)	Ravenrock (RaD)
Croton-Abbottstown (CrA, CrB)	Ravenrock-Highfield (ReB, RreC, ReD, ReF)
DeKalb-Bagtown (DbF)	Ravenrock-Rohrersville (RfC)
Dryrun (DqA)	Readington (RgA, RgB)
Glenelg (GeB*, GfB*, GgB*, GgC*)	Reaville (RmA)
Glenelg-Blocktown (GhB*, GhC*)	Springwood (SpA, SpB, SpC, SqB)
Glenelg-Mount Airy (GmB*, GnB*)	Springwood-Morven (SrB)
Glenville (GoB) (GoC)	Stumpton-Bagtown (SuD, SuF)
Glenville-Baile (GuB)	Thurmont (TaB, TaC, ThB)
Hyattstown (HtF*)	Trego (ToA, ToB, TqB, TrB)
Hyattstown-Linganore (HyD*)	Watchung (WcB)
Klinesville (KeB, KeC, KeD, KnB, KnC)	Weaverton-Hazel (WeC*, WeD*, WeE*)
Lehigh (LqB)	
Linganore-Hyattstown (LyB*, LyC*)	

* These soils are classified as lower 1/3 landscape position restricted soils.

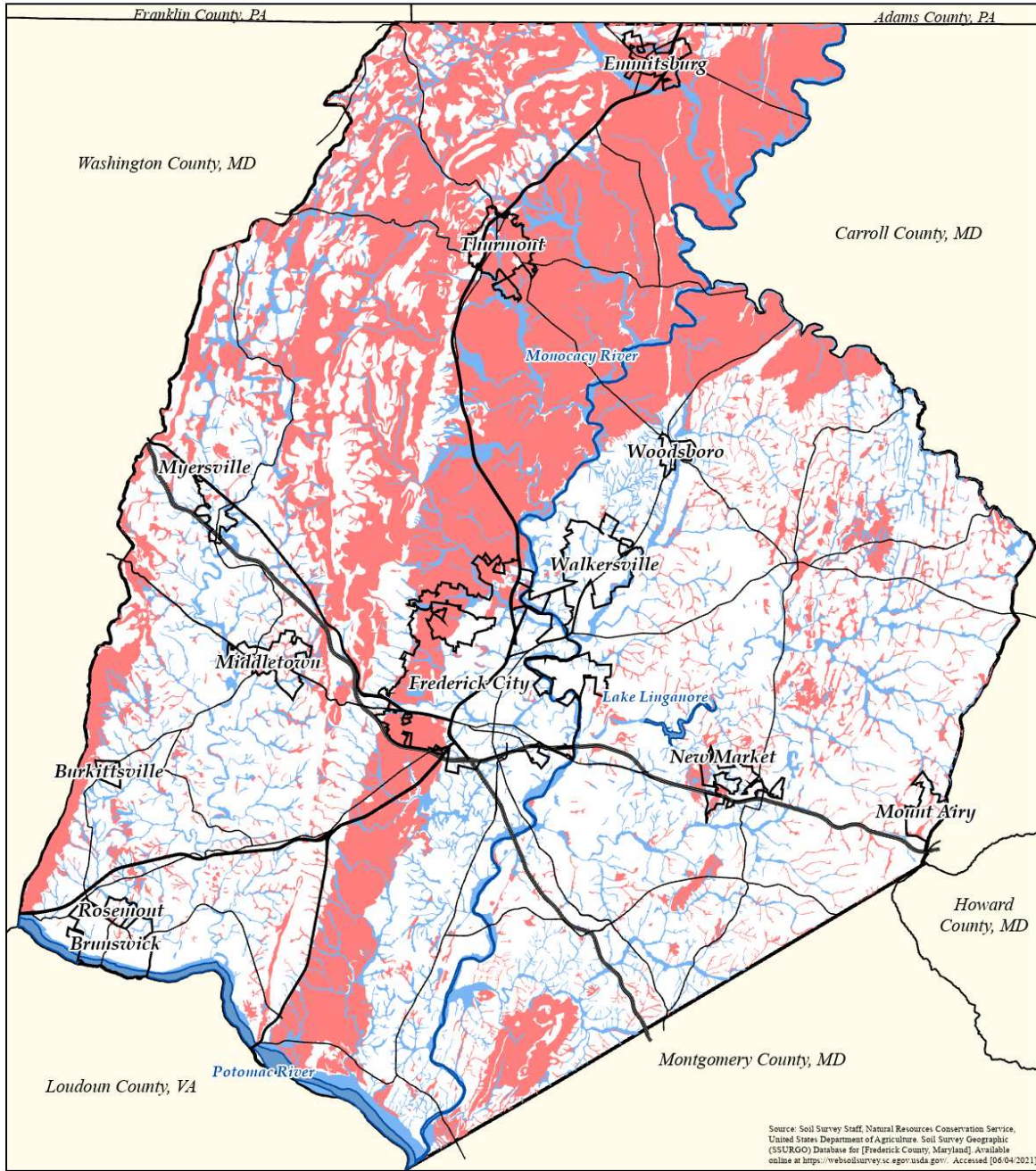
Source: Frederick County Health Department, 2018

Table 2-2: Floodplain Soils Prohibited On Site Sewage Disposal

Map Symbol	Soil Name
AtB	Adamstown-Funkstown complex
BfA	Bermudian silt loam
BmA	Bowmansville-Rowland silt loams
BmB	Bowmansville-Rowland complex
CgA	Codorus-Hatboro silt loams
CmA	Combs fine sandy loam
CnA	Combs silt loam
FoB	Foxville cobbly silt loam
FxA	Foxville-Hatboro soils
GvA	Glenville-Codorus complex
GvB	Glenville-Codorus complex
HdA	Hatboro-Codorus silt loams
LaB	Lantz-Rohrersville silt loams
LsA	Lindside silt loam
MaA	Melvin-Lindside silt loams
MoB	Mt. Zion-Codorus complex
RoB	Rohrersville-Lantz silt loams
RwA	Rowland silt loam
TxB	Trego-Foxville complex
WhB	Wheeling gravelly loam
WtB	Wiltshire-Funkstown complex

Source: Frederick County Health Department

Map 2-5: Restricted Soils

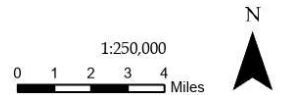


Restricted Soils



Frederick County, Maryland
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Restricted
Floodplain



Projection: NAD 1983 State Plane Maryland FIPS 1000 Feet
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Water Resources

Surface Water

Frederick County's surface waters comprise a small segment of the Potomac Basin and are principally contained in three major streams: the Potomac River, Catoctin Creek (draining most of the Middletown Valley), and the Monocacy River (draining most of the Frederick Valley). Several minor streams, Little Catoctin Creek (draining the Brunswick Petersville portion of the Middletown Valley), Tuscarora Creek (draining the Adamstown Licksville portion of the Frederick Valley), and Washington Run (draining the Point of Rocks portion of the Frederick Valley) flow directly into the Potomac River and complete the principal drainage network. The Patapsco and Patuxent Rivers together drain a small portion of the County, north and south of Mt. Airy, which amounts to about 150 acres. Although Catoctin Creek and the Monocacy River are tributaries to the Potomac River, each has its own distinctive characteristics as a stream and will be discussed separately in the paragraphs below.

Potomac River

The Potomac River drainage basin encompasses a total drainage area of 14,679 square miles, including all of Frederick County, 664 sq. mi. (4 ½% of the total). Run off in the Frederick County portion of the Potomac Valley is highly diversified in character due to the varied topography and the variety of soil materials found over the large area.

The highest flow on record was a 1936 flow at Point of Rocks of 310,080 MGD (480,000 cfs) (more than 50 times the average flow), which reached a gage height of 41.03 feet. The average flow at Point of Rocks for the period of record is 6,147 MGD. The record low flow was 342 MGD in September 1966, which is about 6% of the average.

Flooding along the Potomac is not as variable as with Catoctin Creek and the Monocacy River. The streambed is wide and shallow with short, steep banks, and there is a distinctive second bank to which overflow waters reach in the event of severe flood conditions.

Catoctin Creek

The Catoctin Creek Watershed contains approximately 120.6 square miles and drains 78% of the Middletown Valley. It is bounded by Catoctin Mountain to the east and South Mountain to the west. The area is characterized by steep slopes with stony and shallow soils in the mountain, elevated intermountain areas, and rolling slopes in the lower intermountain valleys.

The steep slopes of the Valley contribute to an average 100-foot drop per mile from the highest point of the watershed to the beginning of Catoctin Creek at Myersville. From Myersville to the Potomac this drop is only about 13 feet/mile.

The soils of the Valley are of low porosity and are, therefore, unable to store quantities of water large enough to adequately feed the streams during long periods of extended drought. Beneath this soil cover there is moderately weather resistant rock.

Based upon calculations made from precipitation and flow data, the Maryland Geologic Survey estimates that approximately 38% of the total rainfall in the Catoctin Creek Watershed is run off. This factor, in addition to the topographic characteristics, contributes to flood conditions and rapid flow. Such conditions, although restricted due to topography, can be sufficient to severely damage or destroy any structure or development within its natural path.

The Middletown gaging station is located on the right bank of Catoctin Creek, 300 feet downstream from the MD-17 Bridge and 2.2 miles downstream from Little Catoctin Creek. The drainage area at this point is 66.9 sq. mi. or 55.3% of the Catoctin Creek Watershed. The largest peak discharge on record for this station was 12,000 cfs recorded on October 9, 1972. This flow crested at 14.13 feet above the gage altitude of 385 feet. The lowest known flow was 0 recorded in 1966 from 8/27 to 9/12. The average discharge at this station is 76.7 cfs.

The greatest rise on Catoctin Creek (18 feet) was observed in 1885 near what is now the old gaging station below the Route 340 Bridge near Jefferson. At this point the drainage area is 111 square miles or 91.7% of the Catoctin Creek Watershed. Below this point, the Catoctin Creek is subject to flooding from both its own run off and from back up of the Potomac River. Naturally, flood levels would be at their highest if Catoctin Creek and the Potomac River reached their crest at the same time.

Monocacy River

The primary tributary of the Frederick Valley is the Monocacy River which drains a total area of 970 square miles, approximately 543 square miles of which (56%) is in Frederick County. This drainage area includes portions of Adams County in Pennsylvania and extends from Catoctin Mountain on the west into Carroll County to the east. Generally, the river is slow flowing and meanders in a wide, shallow riverbed with an average drop of 2.8 feet/mile from Pennsylvania to the Potomac River.

The Monocacy tributaries to the west drain areas which have mountainous characteristics partially similar to those in the Middletown Valley. On the east the drainage areas are more expansive and encompass rolling lands with moderately deep soils.

It is estimated that from 44% to 46% of all precipitation is carried away by the Monocacy River and its tributaries except for Owens Creek, Hunting Creek, and Fishing Creek (all mountain streams), which have over 52-55% run off. The low average is similar to the Potomac River, but greater than that for the Catoctin Creek Watershed.

The average flow of the Monocacy at the Jug Bridge gaging station is 931 cfs based upon a period of 50 years. When converted to gallons the flow equates to 575.2 MGD. This amounts to a CFSM (cubic feet per second per square mile) of 1.06 or .688 MGD per square mile of watershed. The total yearly runoff is 14.79 inches.

The highest peak flow on record for the Monocacy at the Jug Bridge station is 81,600 cfs which was attained on June 23, 1972 at the height of Tropical Storm Agnes. This flow crested 5.9 feet above the previous record flood (261.9 feet). In 2003 the Monocacy had the fourth highest flow recorded since record keeping began in 1944.

Floodplains

There are three types of regulated floodplains in the County: flooding soils, 100- year floodplain and the historic flood plains. Flooding soils are natural areas where soils are regularly wet or where marsh conditions exist. This floodplain, shown throughout the County, is based upon the soils listed in Table 2-2 which are prohibited from percolation by the local Health Department. Proposed development is constrained to some extent by all three types of floodplain.

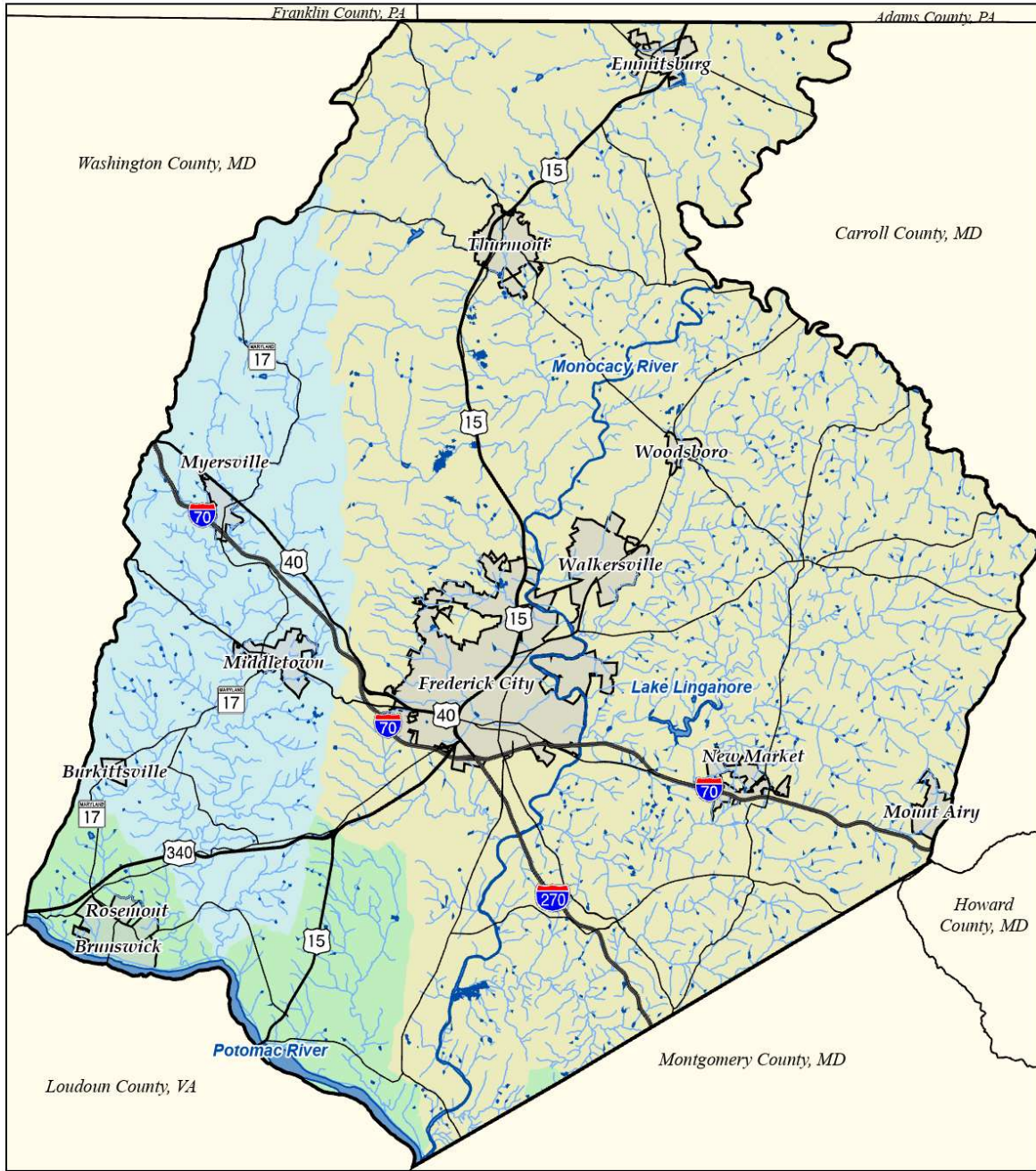
The 100-year floodplain is delineated by the Federal Emergency Management Agency (FEMA) in conjunction with their flood insurance program. It is defined generally as the land which has a 1% chance in any year of being flooded.

The historic floodplain is compiled from historical flood data for three major waterways: the Potomac River, Catoctin Creek and the Monocacy River. Data for these are more abundant than that for the tributaries.

Stream Flow Characteristics

Streams may be required to dilute and dispose of liquid wastes, provide municipal or industrial water supplies, provide water for irrigation, maintain suitable conditions for fish and aquatic communities, or any combination of these. Knowledge of low-flow characteristics is necessary to plan for these functions. Many water-quality standards have been based on the 7-day, 10-year low-flow frequency (7Q10), defined as the lowest mean daily flow over a period of 7 consecutive days, recurring once every 10 years. A large range of low flow per square mile exists among the sub basins. Highest values of 7Q10 are found in the southwestern and southeastern tributaries to the Monocacy, and the lowest values are found in the northern tributaries and in the Catoctin Creek drainage basin.

Map 2-6: Drainage Areas



Drainage Areas



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- Catoctin Creek Drainage
- Monocacy Drainage
- Potomac Direct Drainage



Projection: NAD 1983 State Plane Maryland FIPS 1000 Feet
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Map 2-7: Watersheds



Watersheds



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Watershed

Ballenger Creek	Lower Bush Creek
Bennett Creek	Lower Linganore Creek
Carroll Creek	Middle Creek
Catoctin Creek	Monocacy Direct Southwest
Fishing Creek	Owens Creek
Glade Creek	Potomac Direct
Hunting Creek	Toms Creek
Israel Creek	Tuscarora Creek
Little Catoctin Creek South	Upper Bush Creek
Little Pipe Creek	Upper Linganore Creek

0 1 2 3 4 Miles



Projection: NAD 1983 State Plane Maryland FIPS 1900 Feet
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Groundwater

Sources

Most groundwater in Frederick County originates locally from precipitation, a portion of which infiltrates into the ground. Water that has descended to the zone of saturation does not move very far horizontally (a few miles at most) before being discharged to one of the numerous streams in the county. Water may evaporate directly or be transpired through plant leaves, re-entering the atmosphere, and completing the hydrologic cycle. Under some circumstances, a well may induce water from a nearby stream to replenish water pumped from the aquifer.

The boundaries of a groundwater system may be difficult to identify. The upper boundary of a groundwater system may be a zone of relatively impermeable geologic material, or it may be the top of the zone of saturation. The individual geologic formations underlying Frederick County are not simple, distinct aquifers because the water-bearing fractures may cut across contacts between lithologies and formational differences may be as hydrologically significant as differences between formations. Individual groundwater flow systems in this area are more commonly bounded by groundwater divides which generally correspond to the local topography. In some areas (limestone terranes are noted for this), the ground water and surface-water divides may not coincide.

Groundwater may occur under unconfined or confined conditions. The upper boundary of an unconfined aquifer is the top of the saturated zone. This surface is called the water table. In the fractured-rock terrane characteristic of Frederick County, water-table conditions prevail where the fractures are numerous and well connected; this is the case for most of the county. In some areas, however, the distribution of fractures may be such that zones of unfractured rock effectively confine groundwater flow, and wells tapping such confined fractures are “artesian wells” because their water levels rise above the level of the intersected fractures.

Recharge

Because the aquifers of Frederick County generally exist under water-table conditions and precipitation falls across the entire county, some amount of recharge can occur almost anywhere in the county. Weather and antecedent soil moisture conditions are two important factors governing what percentage of precipitation reaches the groundwater body. This percentage ranges from approximately 12 to 30 percent in Frederick County. Water from other sources can enter an aquifer. For example, when surface runoff causes a stream to rise, some water may move from the channel into the stream banks. Another mechanism of recharge important in some areas is the return of water to the ground via septic tank waste disposal systems.

Discharge

Groundwater discharge in Frederick County occurs primarily along stream channels. Discharge into streams is generally diffuse in the noncarbonated terranes, but in the Frederick Valley, many streams can be traced to springs discharging from the Frederick or Grove Limestones, which supply nearly all of the stream flow during base-flow periods. The sustained, or base, flow of a stream is derived from groundwater discharge and, in Frederick County, may be more than half of a stream’s annual flow. Much of the groundwater in Frederick County eventually drains to the Potomac River.

Some of the numerous springs can be utilized in public water supply systems. The spring at Fountain Rock, FR DE 42, is the largest in the county and has a discharge that exceeds 1,000 gallons per minute. In some areas, springs are more diffuse and are frequently referred to as seepage springs or seeps. Subsurface water is also lost to the atmosphere by evaporation and plant transpiration. Withdrawal of water from

wells is another means of groundwater discharge. The impact of pumping on a groundwater system depends on the pumping rate and the location of the well.

Groundwater Storage

Groundwater may be stored in the soil, the underlying weathered zone, and in bedrock. The amount of water in storage will depend upon the depth and permeability of the soil and weathered zone, the number of interconnected joints and faults along with the extent of fracturing in the bedrock, and the individual characteristics of each rock type. The availability and quantity of that supply will depend upon the preceding factors plus topography and the ability of the weathered zone and bedrock to transmit the water in storage.

Except for a few types, the geologic materials, which underlie Frederick County, are generally water bearing formations of low storage capacity and low transmissibility. Contributing to these characteristics is the high percentage of fine particle soils, together with an extensive stream network. Sandstone (and shale) has a high porosity and because of the abundance of this type of rock in the upper Monocacy River Valley, or the Triassic Upland Region, it has the greatest internal ground water storage capacity, followed by the lower Frederick Valley with its limestone. However, limestone has the lowest rate of flow while that of sandstone (New Oxford Formation) is somewhat higher. Thus, the implication is that limestone in the lower Monocacy River Valley has large quantities of water stored underground, but due to its slow, non-channel movement, recharge is slow. In other words, wells on the average must be deep to counteract rapid drawdown and slow recharge when not in limestone channels. The water bearing properties and average well yields of rock types found in Frederick County are given in Table 2-3.

When interpreting a group of wells the Maryland Geological Survey (Duigon and Dine, 1987) recommend looking at specific capacity (gallons per minute per foot of well depth) as one high well yield value can result in an elevated mean yield.

In 1969, the U.S. Geological Survey, in cooperation with the Maryland Geological Survey attempted to rank the water yielding character of the geologic units in Maryland in terms of average yield and specific capacity. Average yield is defined as gallons per minute. Specific capacity is defined as the yield in gallons per minute per foot of drawdown. Note the pumping data is from Frederick and Carroll Counties Water Resources, Maryland (Myer and Beall, 1958).

Table 2-3: Water-Bearing Properties of Rock in Frederick County

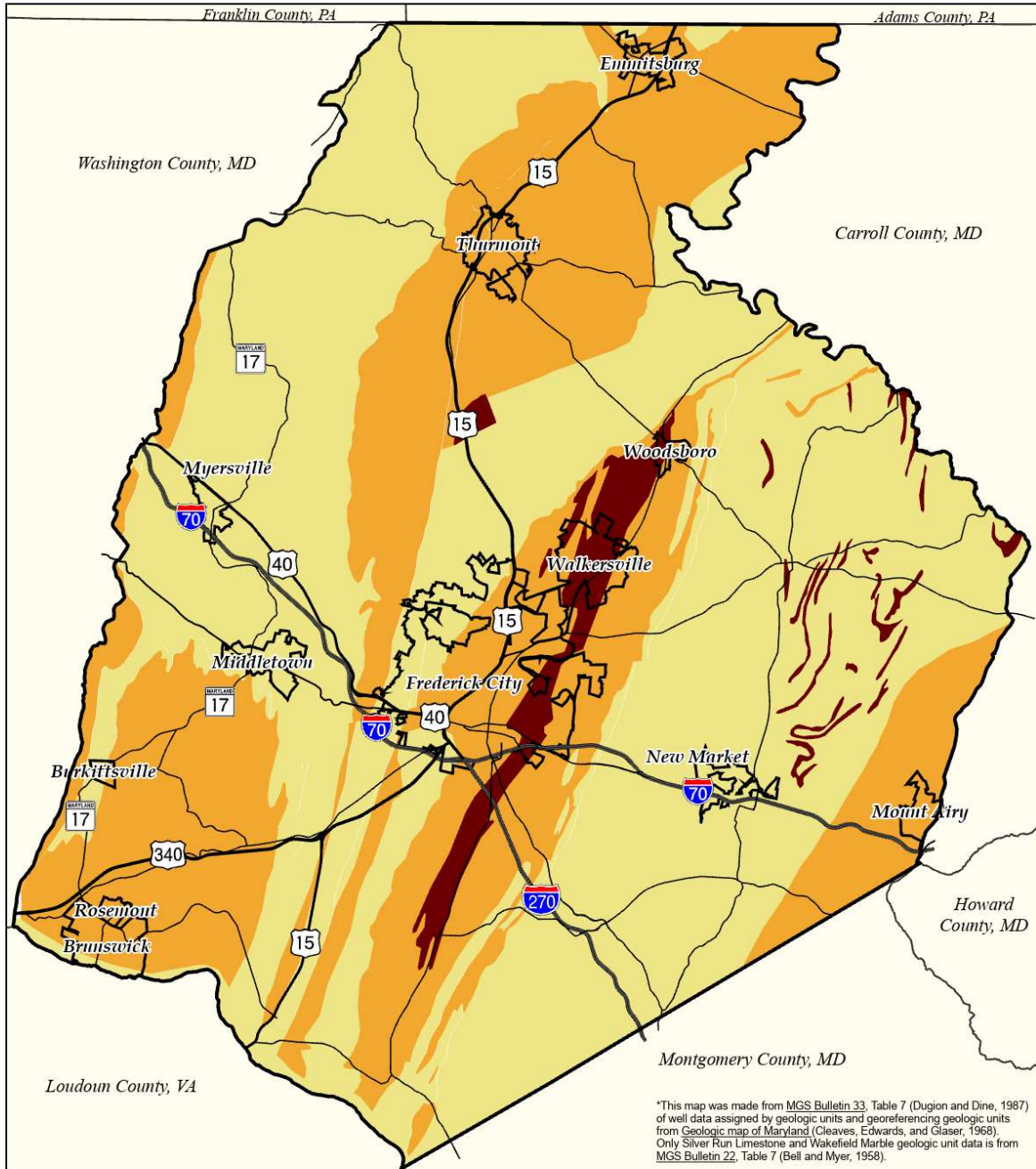
Rock Type	Geologic formations in which it occurs	Average Well Depth (ft.)	Average Discharge or Yield (gpm)	Specific Capacity (gpm/ft)	General Water-Bearing Characteristics
Schist	Antietam formation	100	89	.673	Water occurs in fractures, planes of schistosity and shear zones and in weathered mantle. It is a principal source of groundwater. Adequate domestic supplies everywhere and larger supplies locally. Water generally is soft and low in mineral content.
	Metabasalt	N/A	N/A	N/A	
	Marburg schist	138	22	1.678	
Gneiss	"Injection complex" (intrusive material underlying Middletown Valley)	N/A	N/A	N/A	Water occurs in fractures, along plan of schistosity and in weathered mantle. Important as a source of water in west Frederick County. Adequate domestic supplies generally available and large supplies locally. Water is soft and generally low in mineral content, except for iron locally.
	Granodiorite and granite gneiss	59	8	1.8	
Quartzite	Loudoun formation	161	8	.216	Water occurs chiefly in fractures. Mantle generally thin. An important source of groundwater. Interbedded quartzite makes moderately good aqua of some of the schist and phyllite that otherwise are mediocre water bearers. Adequate supplies for domestic and limited commercial or industrial use available. Water is generally soft and low in mineral content.
	Weverton formation	259	13	1.463	
	Antietam formation	100	8	.673	
	Urbana formation	160	16	.5	
	Sugarloaf Mt. quartzite	65	27	N/A	
	Marburg schist	138	22	1.678	
Phyllite And Slate	Loudoun formation	161	8	.216	Water occurs in fractures and along cleavage planes of slaty rocks. Weathered mantle thin and absent in places. Adequate domestic supplies generally obtainable, but locally only one of several wells may be successful. Little likelihood of obtaining large supplies except under most favorable conditions. Water is soft and low in mineral content.
	Harpers formation	197	12	.625	
	Ijamsville formation	165	9	.365	
	Marburg schist	138	22	1.678	
	Urbana formation	161	16	.5	
Metabasalt	Catoctin metabasalt	187	16	.573	Water occurs in fractures and shears and in weathered mantle. Important source of water in western Frederick County. Adequate domestic supplies obtainable but larger supplies rare. Water is soft and low in mineral content.
	Sams Creek metabasalt	118	7	.283	
Aporhyolite, metarhyolite, and rhyolite	Libertytown metarhyolite	183	8	.287	Water chiefly in fractures. Weathered mantle generally thin. Moderately important source of water for domestic supplies in western Frederick County. The chemical quality of the water is good.
	Metarhyolite and associated pyroclastic sediments	130	16	.389	
	Aporhyolite*	52	12	.8	

Rock Type	Geologic formations in which it occurs	Average Well Depth (ft.)	Average Discharge or Yield (gpm)	Specific Capacity (gpm/ft)	General Water-Bearing Characteristics
Diabase	Diabase silts and Dikes	157	19	.421	Water occurs in fractures and shear. Of minor importance as sources of groundwater. Adequate domestic supply obtainable, but not larger supplies.
Limestone, dolomite and marble	Tomstown dolomite	232	31	.542	Water occurs in fractures and openings, some of which are solutionally enlarged. Rocks are major sources of groundwater. Adequate domestic supplies obtained nearly everywhere. Chances of obtaining moderately large to large supplies are good. Water is hard but otherwise of chemical quality.
	Frederick limestone	171	24	1.585	
	Grove limestone	206	59	8.153	
	New Oxford formation-conglomerate	108	40	1.799	
	Wakefield Marble	143	16	N/A	
	Silver Run limestone*	142	17	.7	
	Unnamed bodies of rock	N/A	N/A	N/A	
Sandstone & shale	New Oxford formation	135	18	.433	Water occurs in fractures and, to some extent, in the pores of sandstone. Adequate domestic supplies available to wells everywhere; larger supplies will be obtained locally. Water is of good quality generally but locally is hard.
	Gettysburg shale	166	28	2.011	

*Only Aporhyolite and Silver Run limestone numbers are from 1958 compiled well data, all other numbers are from 1987 compiled well data.

Source: Table 3, pp. 14-15 of Bulletin 22 (The Water Resources of Carroll and Frederick Counties Maryland Department of Geology, Mines and Water Resources, 1958.
Table 7, pp. 34-35 of Bulletin 33 (Water Resources of Frederick County, Maryland, Maryland Geological Survey, Duigon and Dine, 1987.

Map 2-8: Aquifers: Average Well Specific Capacity



Aquifers: Average Well Specific Capacity



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Specific Capacity (gpm/ft.)



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Section 2: Protection of Water Resources

The State of Maryland has declared "ownership" of the waters, which occur in or flow through the State either above or below ground. As the "guardian" of these waters, the State has adopted policies and regulations regarding the quantity and use of water, which is assigned to the Department of Natural Resources, Water Management Administration (COMAR, Title 08, Subtitle 5). The protection of water quality has been assigned to the Maryland Department of the Environment (COMAR, Title 26, Subtitles 03 through 09).

Surface Water

It is difficult to translate the overall goal of clean water into a set of enforceable standards. The most obvious requirements are covered by Maryland's General Standards (COMAR 26.08.02 Maryland Department of the Environment). The Waters of the State shall, at all times, be free from:

1. Substances attributable to sewage, industrial waste, or other waste that will settle to form sludge deposits that are unsightly, putrescent or odorous to such degree as to create a nuisance, or that interfere directly or indirectly with water uses;
2. Floating debris, oil, grease, scum, and other floating materials attributable to sewage, industrial waste, or other waste in amounts sufficient to be unsightly to such a degree as to create a nuisance, or that interfere directly or indirectly with water uses;
3. Materials attributable to sewage, industrial waste, or other waste which produce taste, odor, or change the existing color or other physical and chemical conditions in the receiving waters to such a degree as to create a nuisance, or that interfere directly or indirectly with water uses; and
4. High temperature, toxic, corrosive or other deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere directly or indirectly with water uses, or which are harmful to human, animal, plant or aquatic life. The absence of such substances does not, however, assure the absence of pollution. Research has shown that the subtle physical, chemical, and biological properties of water must be within well-defined limits and that each water use requires a different set of limits.

In Maryland, each body of water has been classified according to the most critical use for which it must be protected as follows:

- Use class I:** Protected for contact recreation, for fish and other aquatic life, and for wildlife (such protection is sufficiently stringent to protect for use as water supply).
- Use class II:** Protected for shellfish harvesting. (Frederick County does not have waters in this use category.)
- Use class III:** Protected as natural trout waters.
- Use class IV:** Protected as recreational trout waters (waters capable of holding adult trout for put and take fishing).

Table 2-4: Water Use Classifications and Stream Designations

USE I: WATER CONTACT RECREATION & AQUATIC LIFE	Use II: SHELLFISH HARVESTING	USE III: NONTIDAL COLD WATER	USE IV: RECREATIONAL TROUT WATERS
Waters, which are suitable for water contact sports, play and leisure time activities where the human body may come in direct contact with the surface water, and the growth and propagation of fish (other than trout), other aquatic life, and wildlife.	Waters where shellfish and propagated, stored, or gathered for marketing purposes including actual or potential areas for harvesting of oysters, soft-shell clams, hard-shell clams, and brackish water clams.	Waters which are suitable for the growth and propagation of trout, and which are capable of supporting natural trout populations and their associated food organisms.	Waters which are capable of holding or supporting adult trout for put-and-take fishing, and which are managed as a special fishery by periodic stocking and seasonal catching.
All Waters not otherwise classified	Not found in Frederick County	<ul style="list-style-type: none"> -Tuscarora Creek, all tributaries -Carroll Creek, above MD Rt. 15, all tributaries -Rocky Fountain Run, all tributaries -Fishing Creek, all tributaries -Hunting Creek, all tributaries -Owens Creek, all tributaries -Friends Creek, all tributaries -Middle Creek Catoctin Creek's Frostown & Bolivar Branches, Grindstone Run & Musket Ridge -Bennet Creek, Furnace Branch only -Ballenger Creek, all tributaries 	<ul style="list-style-type: none"> -Catoctin Creek, mainstream only below Alternate 40. -Toms Creek, except Friends Creek tributaries -Glade Creek -Little Pipe Creek -Israel Creek -Upper & Lower Liganore Creek -Upper and Lower Bush Creek -Bennett Creek, except Furnace Branch -Monocacy Direct Southwest, except Rocky Fountain Run

Every waterway in the state is at least Class I. Those waters in Frederick County classed as I, III, and IV (Regulation 26.08.02.08, Maryland Department of the Environment) are listed in Table 2 07. Figure 2 F shows the location of each stream so classed. Water quality standards are found at COMAR 26.08.02.03-3.

Table 2-5: Summary of State Water Quality Standards

	Use I Waters	Use III Non-Tidal Cold Water	Use IV Recreational Trout Waters
Bacteriological	Enterococci—33 or 61 for frequent full body contact (counts per 100 milliliters) E. coli—126 or 235 for frequent full body contact (counts per 100 milliliters)	Same as Use I waters	Same as Use I waters
Dissolved Oxygen	not less than 5 mg/liter	minimum daily average not less than 6 mg/liter	Same as Use I waters
Temperature	may not exceed 90° F or the ambient temp. of the surface waters whichever is greater	may not exceed 68° F or the ambient temp. of the surface waters whichever is greater.*	
pH	6.5 to 8.5	Same as Use I	Same as Use I waters
Turbidity	may not exceed levels detrimental to aquatic life may not exceed 150 units or 50 units as monthly average	Same as Use I	Same as Use I waters
Color	not to exceed 75 units as monthly average	Same as Use I	Same as Use I waters
toxic substance criteria to protect	freshwater aquatic organisms fish for human consumption	Same as Use I	Same as Use I waters Same as Use I and public water supplies for IV-P
Total Residual Chlorine	-	None	-

* Policy of State of Maryland that riparian forest buffer adjacent to these waters shall be retained whenever to maintain the temperature.

Two specific water quality conditions are excepted from these standards. The first is the waterway having a "natural" water quality that is poorer than that allowed by the standards (essentially, "natural" means "unaffected by man" for details consult Maryland regulations). An example would be a case where a stream is eroding mineral deposits (unmined) at its banks and pH or turbidity problems result. It is not the intention of the standards to require correction of this problem.

High Quality (Tier II) Waters

The second exception from the state water quality standards is the waterway where existing water quality is already better than the standards, known as Tier II Waters. These waters indicate exceptional water quality, in-stream and riparian habitat conditions as measured by the health of the biological community—fish and insects—in a stream. To protect these high-quality Tier II waters, the State has adopted an “anti-degradation” policy and regulatory protections. To implement this policy, state regulations require a Tier II anti-degradation review be performed if proposals for wastewater, stormwater or other discharges result in a new discharge or modifications of an existing discharge into Tier II waters. The regulations also apply to discharges in the watershed located upstream of identified Tier II segments in order to protect downstream water quality.

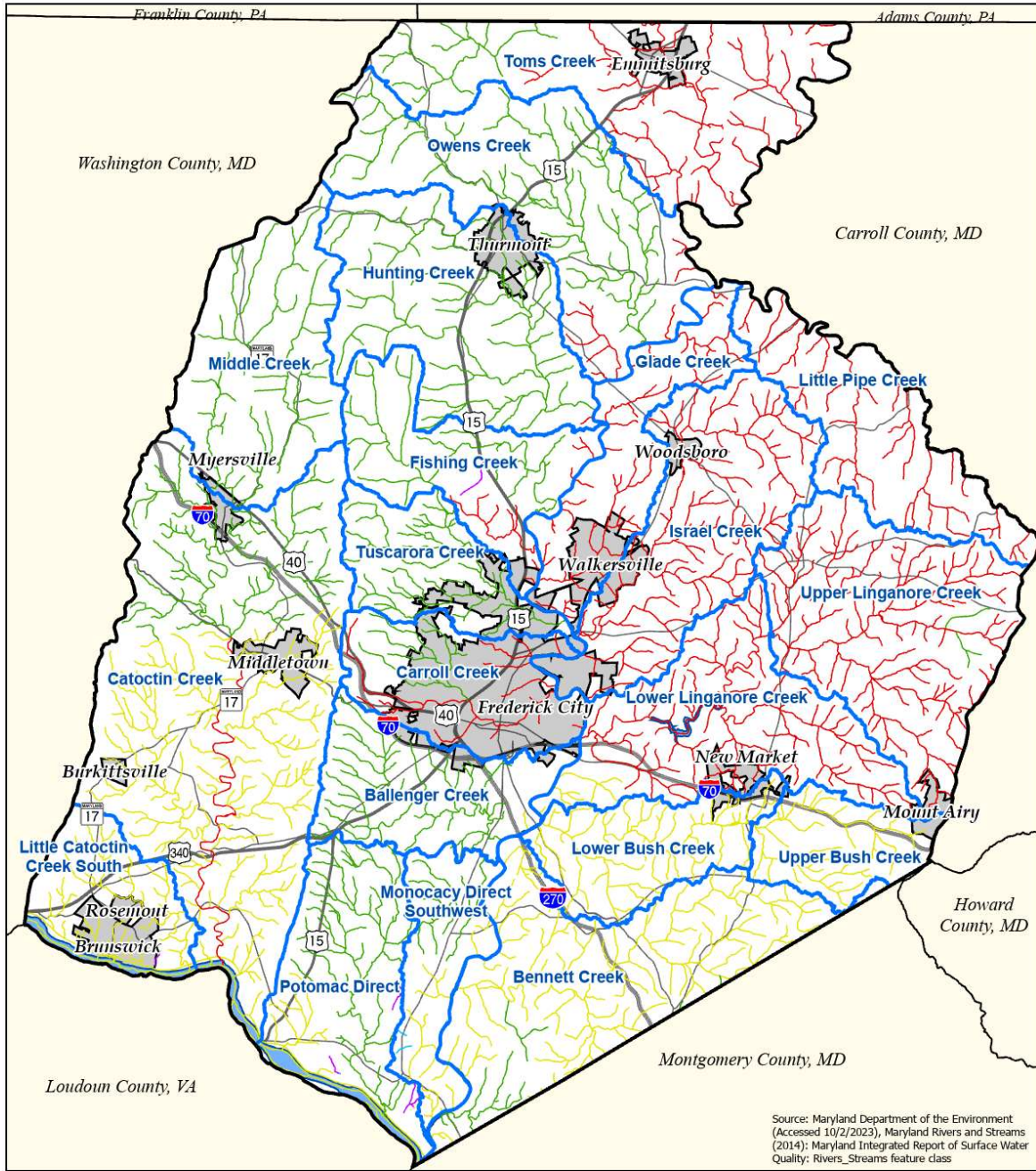
The Maryland Department of the Environment’s Water Quality Infrastructure Program is responsible for coordinating the review of applications for discharges into Tier II waters. The anti-degradation regulation states, “The quality of these waters shall be maintained unless and until it has been demonstrated to the

Administration that a change is justifiable as a result of necessary economic or social development and will not diminish uses made of, or presently possible, in these waters.”

Four stream segments and their watersheds in Frederick County have been identified by the State as high-quality Tier II waters:

1. Big Hunting Creek
2. High Run
3. Weldon Creek
4. Un-named tributary to Talbot Branch

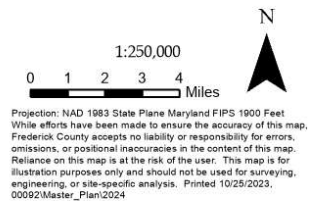
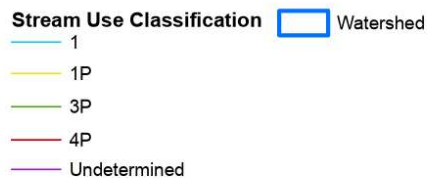
Map 2-9: Stream Use Classifications



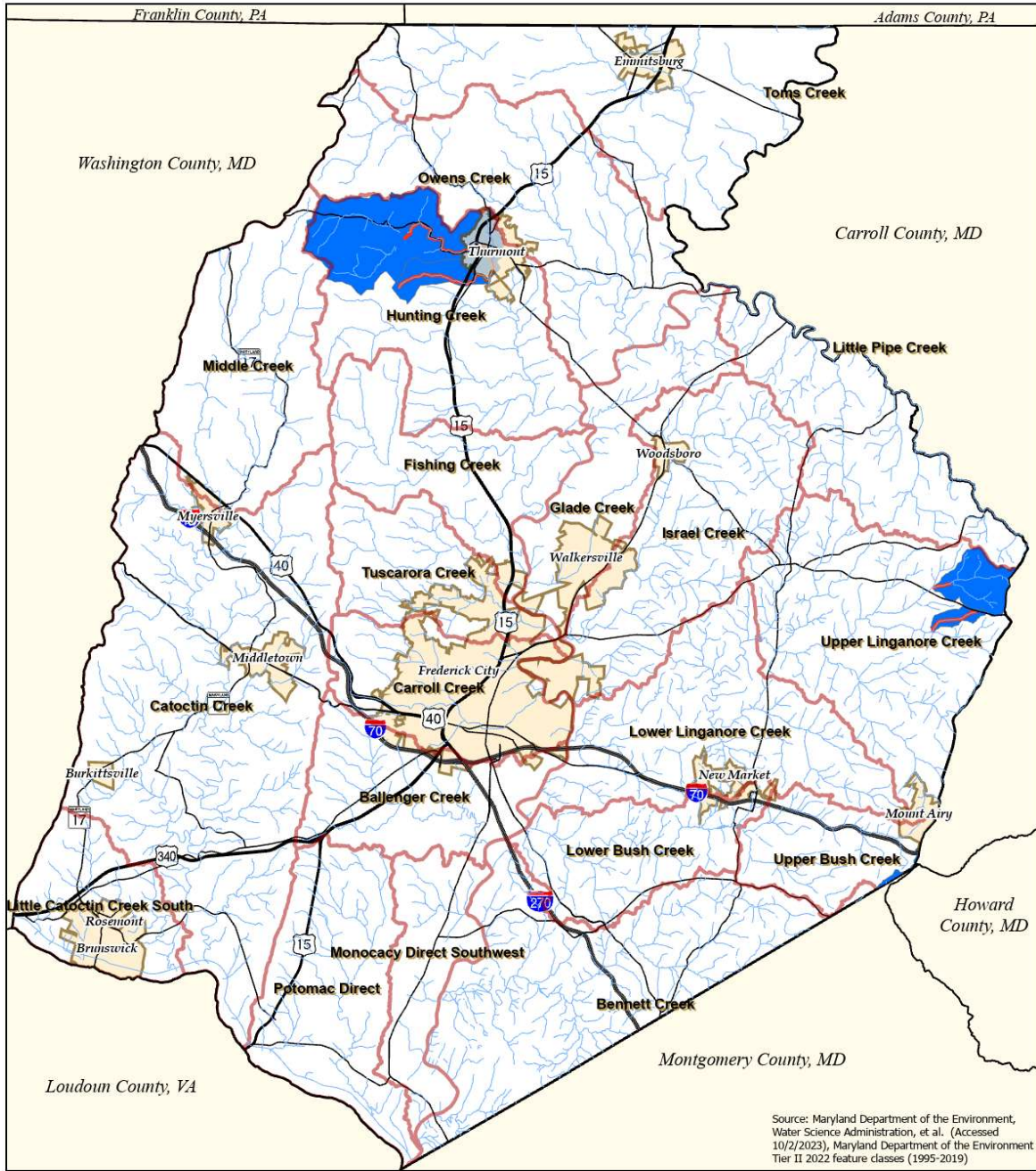
Stream Use Classifications



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Map 2-10: Tier II Streams



Tier II Streams



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- Rivers & Streams
- Tier II Stream Segments
- Tier II Watersheds



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Federal Clean Water Act

Since 1972, the Clean Water Act has provided the foundation for our nation's water pollution control programs. Section 101 of the Act states the objective of the Act is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. In order to achieve this objective, it is declared that consistent with the provisions of this Act:

1. It is the national goal that the discharge of pollutants into the navigable waters be eliminated;
2. It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved;
3. It is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;
4. It is the national policy that Federal financial assistance is provided to construct publicly owned waste treatment works;
5. It is the national policy that area wide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State;
6. It is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone and the oceans.

Although water quality professionals, lawyers, and public interest groups continue to debate the interpretation of these national goals, meaningful action programs have been established in pursuit of clean water. For example, in response to the objectives of the Clean Water Act, Maryland operates its portion of the National Pollution Discharge Elimination System (NPDES) permit program and manages the Federal construction grants program for sewage treatment facilities both under delegation agreements from the U.S. Environmental Protection Agency. The State's water quality planning program is a direct outgrowth of the policy expressed in Section 101(a) above.

National Pollution Discharge Elimination System (NPDES)

Each wastewater treatment plant in the County and the municipalities has a NPDES discharge permit issued by the State of Maryland that regulates the amount and concentration of various nutrients and other compounds that can be discharged into waterways. The state also regulates land application of sewage sludge as well as subsurface application of effluent from large-scale septic systems, known as Multi-Use Sewage Systems. NPDES Industrial discharge permits for stormwater cover sites throughout the County; these permits are designed to prevent pollution from industrial activity from entering the storm sewer system. Frederick County Government has 10 facilities covered under these permits.

Frederick County is further covered under the Phase I National Pollutant Discharge Elimination System-Municipal Separate Storm Sewer System (NPDES MS4) permit program. This program covers stormwater discharges from developed land, separate from discharges of treated sewage effluent and other types of NPDES permits. Frederick County is a Medium Phase I jurisdiction due to its population. Permit No. 22-DP-3321/MD0068357 requires numerous activities such as implementing comprehensive stormwater management programs for addressing runoff from new and redevelopment projects, restoring urban

areas where there is currently little or no stormwater management, and working toward meeting stormwater wasteload allocations for local water resources and the Chesapeake Bay. Also included in the permit are conditions that require the County to possess the necessary legal authority to control stormwater discharges, map its storm drain system, monitor urban runoff, and eliminate illicit discharges to the storm drain system.

The NPDES MS4 permit also requires biennial Financial Assurance Plans and yearly Watershed Protection and Restoration Plans to ensure MDE and the Maryland General Assembly that the County is financially compliant with its stormwater obligations. The County also submits annual reports to MDE on each anniversary of permit issuance to report on permit-mandated compliance activities. The current permit was issued December 30, 2022 and expires December 29, 2027.

Total Maximum Daily Loads (TMDLs)

Waterways with water quality monitoring data suggesting impairment (not meeting State water quality standards) are put on a 303(d) list by MDE and evaluated for Total Maximum Daily Loads (TMDLs) for impairing pollutants. The MDE develops TMDLs for impairing substances in waterbodies with allocations to specific entities, such as NPDES permit holders. These are submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of the Clean Water Act. TMDLs for waterbodies in Frederick County include:

- Catoctin Creek: Phosphorus, Sediment
- Double Pipe Creek: Fecal Bacteria, Phosphorus, Sediment
- Lake Linganore: Phosphorus, Sediment
- Lower Monocacy River: Fecal Bacteria, Phosphorus, Sediment
- Potomac River Montgomery County: Sediment
- Upper Monocacy River: Fecal Bacteria, Phosphorus, Sediment
- Chesapeake Bay: Nitrogen, Phosphorus, Sediment

All sectors, such as agriculture, nonpoint sources, septic systems, wastewater permit holders, and MS4 permit holders are assigned load allocations (LAs) or waste load allocations (WLAs) for the impairing substance in each TMDL. Any load above the allocation needs to be reduced to meet the TMDL. The regulatory obligations for compliance within different sectors vary. Frederick County Government is required by its NPDES MS4 permit to develop plans to meet stormwater WLAs for TMDLs and to put these plans in a schedule. TMDL goals are also written into permits for wastewater treatment plants. Nutrient Management Plans for farms in the agricultural sector have to be consistent with the TMDL. Nonpoint and septic sectors have goals, but regulatory enforcement is not as strong as in other sectors. Frederick County Government has prepared TMDL Restoration Plans as part of its MS4 permit compliance and submits yearly updates and has achieved varying levels of compliance.

Chesapeake Bay Protection and Restoration

In addition to the nationwide goals for restoring and maintaining water quality, the Federal government has given special recognition to the Chesapeake Bay as a natural resource of major significance. Nineteen eighty-three marked the end of an intensive period of Bay research conducted by the Environmental Protection Agency, and the beginning of a landmark coordinated effort to correct water quality, habitat and resource problems identified by this effort. With the signing of the "Chesapeake Bay Agreement of 1987" by Maryland, Virginia, Pennsylvania, the District of Columbia, and the Environmental Protection Agency, a commitment was made to implement coordinated plans to improve and protect the water

quality and living resources of the Bay. To initiate this effort, Federal funds earmarked specifically for Bay implementation actions and long-term resource management became available. This effort was furthered by the subsequent signing of the “Chesapeake Bay Agreement of 2000”, which established additional goals for the health of the Chesapeake Bay and commitments to adopt restoration measures to return the Bay’s ecosystem to a healthy state and to remove it from the federal listing of impaired waters (known as the “303(d)” list from the section of the Clean Water Act) by 2010.

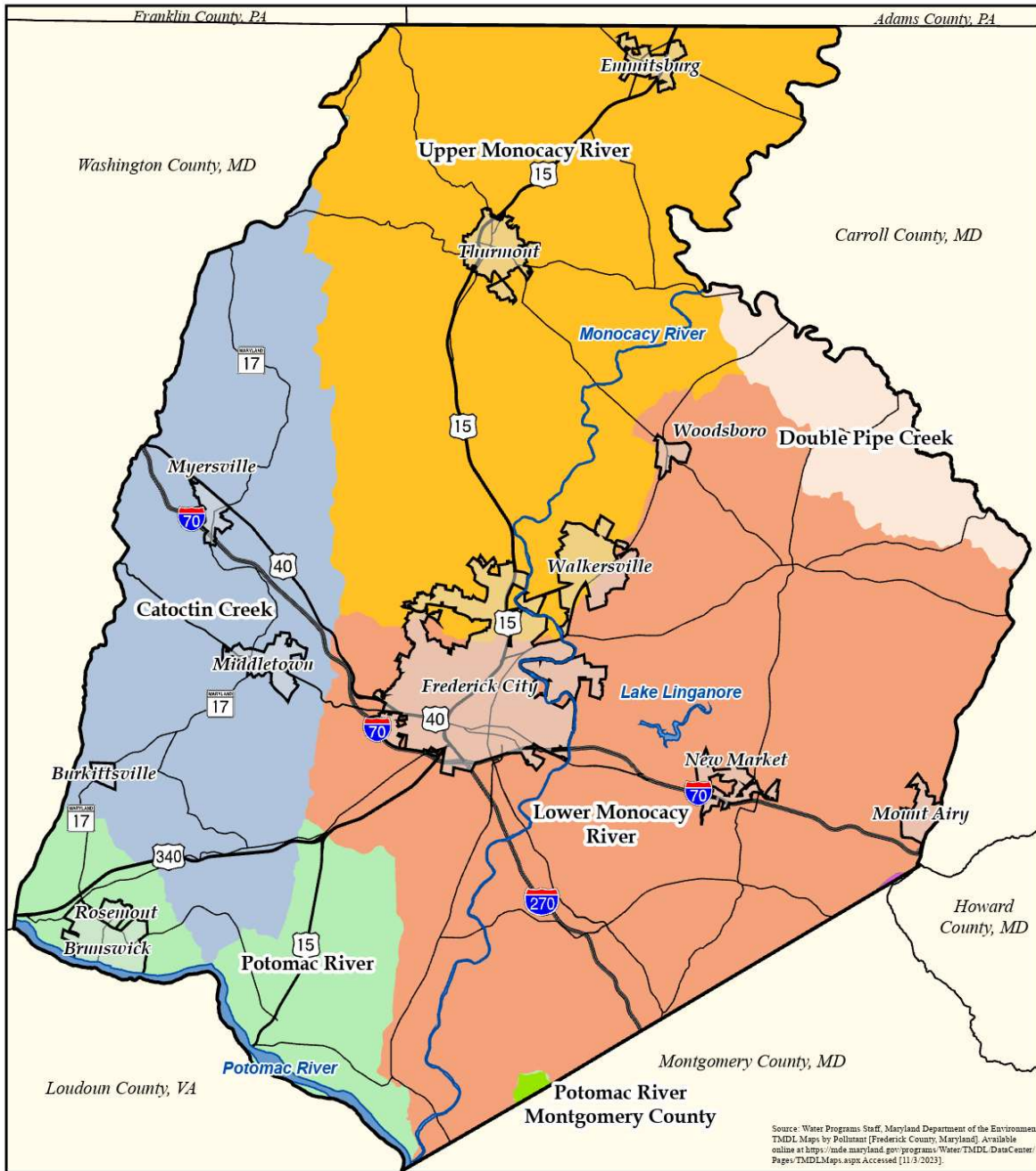
The Federal government acknowledged that the 2010 goals for the Chesapeake Bay would not be met. Litigation over the failure to meet Clean Water Act requirements and Presidential Executive Order No. 13508, Chesapeake Bay Protection and Restoration, issued May 12, 2009, ushered in a new and aggressive plan of action to improve water quality, aquatic habitat and living resources of the Chesapeake Bay. A Chesapeake Bay Watershed-wide Total Maximum Daily Load (TMDL) was developed by the US EPA that establishes specific nutrient and sediment targets or loads from all sources and land sectors—agriculture, wastewater treatment, developed and developing lands, and septic systems---within the 64,000 square mile Bay Watershed, which includes Frederick County plus portions of six states (New York, Pennsylvania, Delaware, Virginia, West Virginia, Maryland and Washington, DC).

The Chesapeake Bay TMDL, and its pollutant reduction targets, is the largest TMDL ever written and has implications not just for Frederick County, but all states, counties, cities and towns within the Bay drainage area. In general, the Chesapeake Bay TMDL sets pollutant (nitrogen, phosphorus, sediment) pollution limits for all sources and land sectors by dividing or allocating the maximum allowable pollutant loads, among those sources, that waterways can assimilate and still meet water quality standards. Chesapeake Bay Watershed states are required to develop Watershed Implementation Plans (WIP) that identify target loads to be achieved by various pollution source sectors.

Maryland’s Phase I WIP was submitted to the US EPA on December 3, 2010 and includes a series of 75 proposed actions and strategies to reduce sediment and nutrient pollution. Maryland pledged to meet its nutrient and sediment reduction goals by 2020, five years earlier than the 2025 end-date established by the EPA to remove the Chesapeake Bay from the Clean Water Act’s 303d listing of impaired waterbodies.

A substantial majority of the actions required under the Phase I WIPs will be carried out at the local---County---level, whether they are stormwater program enhancements, wastewater treatment plant upgrades, adoption of agricultural runoff controls, stream restoration, or septic system upgrades. The Bay TMDL is further subdivided into Phase II WIPs, a geographically-refined, local County-based pollution reduction plan. Frederick County and various stakeholders are required to identify and describe the various pollution control actions and practices to be implemented to achieve the necessary pollution reductions. Frederick County prepared its required Phase II WIP during 2010 and 2011, with submission to the Maryland Department of the Environment on November 11, 2011 and is currently implementing the Phase III WIP with goals specific to Frederick County. The State of Maryland is on track to meet the Bay TMDL’s 2025 implementation goal for phosphorus and sediment reductions, but more work is needed to reduce nitrogen.

Map 2-11: Impaired Watersheds



Impaired Watersheds



Frederick County, Maryland
Division of Planning & Permitting
Frederick County GIS

Watershed	Bacteria	Nutrients	Sediment	Toxics
Catoctin Creek		X	X	
Double Pipe Creek	X	X	X	
Lower Monocacy River	X	X	X	
Upper Monocacy River	X	X	X	
Potomac River		X	X	
Potomac River MO County		X	X	

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Projection: NAD 1983 State Plane Maryland
FIPS 1900 Feet
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Groundwater

The USGS/MGS sampled water from 142 wells and 25 springs for analysis. These data may be found in Dine et al, Basic Data Report No. 15, Ground and Surface Water data for Frederick County, Maryland. 1985.

Water quality criteria for drinking water have been promulgated by the U.S. Environmental Protection Agency (USEPA). The standards set by USEPA are generally applicable to public water-supply systems and are based on health aspects of the water consumed. Water for other uses may have to be treated to remove scale-forming substances, which clog pipes; acidity, which corrodes plumbing and equipment; chemicals that cause undesirable reactions in processes requiring a mix with water; or to remove objectionable qualities.

Human factors, such as improper disposal of waste and careless handling of various substances, also affect the quality of groundwater, sometimes to a greater degree than natural processes. Buried steel fuel tanks eventually rust and may leak for some time before being detected. Not only does this result in contamination of groundwater, but it can also result in explosive conditions where gasoline is pumped out of the ground by a water well. The state program requiring the finding and removing these underground storage tanks (UST) has done much to alleviate this problem.

Natural protection of groundwater quality in Frederick County is afforded to some extent by such means as filtration by and adsorption on geologic materials. Most renovation of contaminated water occurs in the unconsolidated material overlying bedrock, especially in the shallower portion, which is biologically more active and contains much clay-size material, which provides greater surface area and electrostatic attraction. Open fractures provide little opportunity for renovation; enlarged joints, fractures, and bedding planes have no renovation capacity, and can act as conduits for pollution migration. The Grove and Frederick Limestones are the geologic units most likely to allow conduit flow in Frederick County; consequently, areas underlain by these units require special safeguarding. Proper location and construction of a well can prevent many contamination problems, and this is reflected in State and local regulations.

At present, the cornerstone for Maryland's general policy on groundwater quality is found in COMAR 26.08.02.03. The regulation has three basic provisions:

- All aquifers are to be classified into one of three types, according to their potential for use, as determined by concentration of dissolved solids and by storage and transmissivity characteristics.
- Groundwater quality standards are established for each aquifer.
- A State groundwater discharge permit issued by MDE is required for each discharge to "underground" waters, except for individual septic systems and certain landfills which are governed by other regulations. This discharge permit is the State's principal means of controlling discharge of wastes and other potential pollutants to the groundwaters of Maryland.

The stipulation that a groundwater discharge permit "will contain limitations and requirements deemed necessary to protect the public health and welfare..." gives MDE broad discretionary powers in regulating discharges to all aquifer types. It is important to note that under the regulations, the burden of proof that

an aquifer will not be degraded is on the would-be discharger, not the State. Groundwater discharge permits in Frederick County apply primarily to treated sewage effluent and certain industrial process waters. Decisions on pre-treatment level, application rate, etc., must be made on a case-by-case basis, with site specific variables, such as soil texture and depth, being of crucial importance.

Groundwater management by the State is largely oriented toward controlling potential pollution sources. As a result, responsibility is spread among a number of different programs within the Maryland Department of the Environment (MDE), each dealing with a different type of potential source. The Department's overall mission is to protect and restore the quality of Maryland's water, air, and land resources while fostering smart growth, economic development, healthy and safe communities, and quality environmental education for the benefit of the environment, public health, and future generations.

Maryland Department of the Environment (MDE)

The Water Management Administration in MDE has a wide variety of duties and functions to restore and maintain the quality of the State's ground and surface waters, manage the utilization of Maryland's water and mineral resources, and protect wetland habitats throughout the State. The Water Supply Program and the Wastewater Permits Program are located within the Water Management Administration. Major functions of the Water Management Administration include:

- Conducting sanitary surveys and comprehensive engineering evaluations of public water systems to ensure that water systems are optimized and reduce the risks of passing pathogens into the drinking water.
- Ensuring public water system compliance with the national primacy drinking water regulations adopted under the Safe Drinking Water Act including public notification procedures.
- Ensuring responsible management, conservation, and equitable development of Maryland's water resources on an aquifer, watershed, or other appropriate geographical basis.
- Providing guidance and technical assistance on County Water and Sewerage Plans to foster smart growth and the regionalization of facilities where appropriate and beneficial.
- Assisting local governments in developing local wellhead protection and watershed protection programs for their public water supply sources.
- Managing environmental health functions delegated to local health Departments.
- Protecting public health and water quality through NPDES permits for surface water discharges—both industrial and municipal—and control of discharges to ground waters of the State through State Ground Discharge Permits.
- Inspecting and maintaining compliance at facilities and activities including industrial and municipal wastewater discharges, agriculture, and construction involving major waste and sewerage facilities, sediment control, stormwater management, wetlands, and waterways.

The Maryland Geological Survey (MGS)

The MGS functions as a research unit, which, often in collaboration with the U.S. Geological Survey, compiles information on quantity and natural chemical quality of groundwater.

Frederick County Health Department

The local health department is responsible for the following groundwater related functions, as delegated by MDE:

- Evaluating properties for the installation of individual water wells and on-site sewage disposal systems.
- Issuing permits and overseeing the siting and proper installation of private water wells and sewage disposal systems.
- Verifying adequate well yield before a subdivision plan is approved and recorded.
- Verifying that adequate water quantity and quality exists before an individual water well is placed into service.
- Reviewing subdivision plans with respect to environmental impact.
- Evaluating and sampling private domestic water wells, upon owner request, for bacterial and chemical quality.
- Investigating environmental complaints.
- Conducting sanitary surveys to determine the need for community water and/or sewage systems.
- Assisting the MDE with evaluation and permitting Multi-Use Water and Sewerage Systems.

Wellhead Protection

The State of Maryland currently has regulations that provide minimum wellhead protection to all public water supply wells. Well construction regulations require wells using an unconfined aquifer as a water supply source to be located 100 feet from identifiable sources of contamination and designated subsurface disposal areas. In addition, there are minimum distances set for location of wells away from sewer lines, roads, building foundations and property lines.

The Wellhead Protection Program is a state program involving coordination among several State agencies, Federal agencies and local governments, and agencies to combine regulatory authority to manage all potential sources of contamination in a Wellhead Protection Area (WHPA). This is defined as the surface and subsurface area surrounding a water well or well field, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or well field.

Delineation of the Wellhead Protection Area is not usually a simple matter of measuring a horizontal distance on the land surface. Maryland extends across eight physiographic regions, which results in extremely varied hydrological settings. The selection of methods and criteria for delineating WHPA's will

be complex and varied. As discussed at the beginning of this chapter, Frederick County contains three of six hydrogeologic environments present in Maryland.

The State has been conducting delineation projects in various environments and has prepared a manual to assist local governments to delineate WHPAs and has prepared a Model Ordinance for consideration if a jurisdiction wishes to regulate land use for the purpose of wellhead protection.

In response to the Clean Water Act requirement, the state has prepared Source Water Assessments, which inventory and map potential sources of contamination such as underground storage tanks, and other potential sources of contamination in the WHPA of a public drinking water well or well field.

Frederick County, in the interim before delineating WHPA's, enacted legislation that regulates the location of hazardous substance storage tanks in relation to a community water supply system well. In May 2007, the County revised that section of local code. A hazardous substance storage tank must be more than 500 feet from a community water supply system well. Within a WHPA, and greater than 500 feet from a community water supply well, the tank must be above ground and surrounded by a 100% catchment basin or double-walled containment and a spill protection overfill alarm. Outside a WHPA, the tank may be located underground if accompanied by a report from a hydrogeologist stating the nature of the underlying soil, geologic structure, aquifer, and the likelihood of contamination of the neighboring water sources in the event the contents of the tank are discharged, and the estimated groundwater travel time. The County may refuse to grant the permit if there is undue danger to the public health, safety or general welfare. The location of all community water supply system wells has been mapped and the tank location regulations are implemented by a permit system, which refers to the maps. In addition, the County amended its Zoning Ordinance with regard to hazardous substance storage tanks. The Permitted Use Table was amended to indicate that several land uses are now prohibited in Wellhead Protection Areas, and they and other uses are marked and cross-referenced to the storage tank section of the Code. The Special Exception requirements for uses, which might involve the storage or leakage of hazardous substances, were amended to cross reference the storage tank section of the Code.

Table 2-6: Source Water Assessments for Public or Private Water Systems

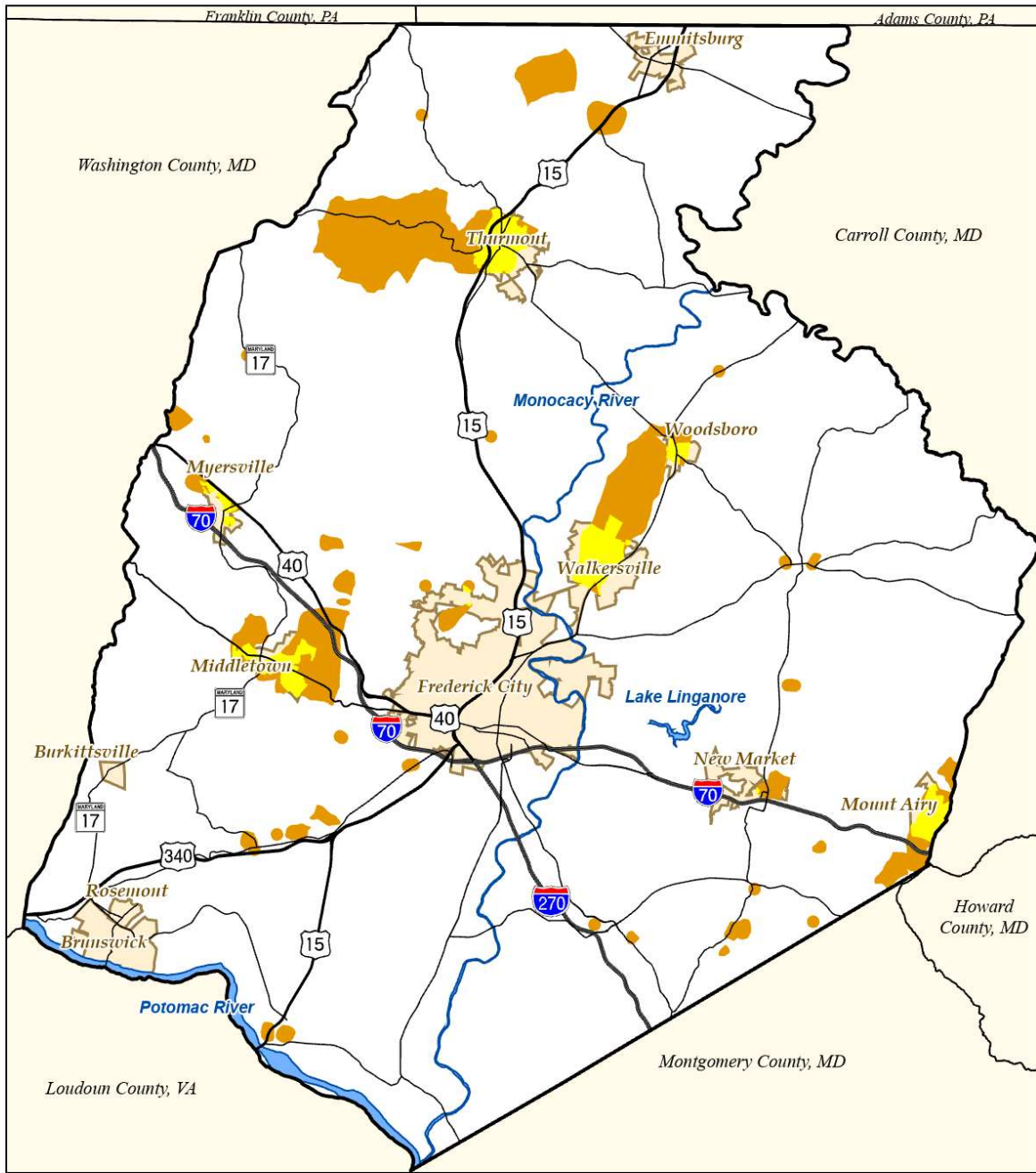
Community System

Town of Emmitsburg	2001
City of Frederick	2002
Town of Middletown	2005
Town of Mount Airy	2000
Town of Myersville	2002
Town of Thurmont	2000
Town of Walkersville	2001
Town of Woodsboro	1997
Fort Detrick	2005

Small Water Systems

Amelano Manor	
Libertytown Apartments	
Gilberts Mobile Home Park	
Poling Mobile Home Estates	
Spring View Mobile Home Park	
Green Valley Elementary	
Kemptown Elementary	
Lewistown Elementary	
Liberty Elementary	
New Midway Elementary	
Sabillasville Elementary	
Valley Elementary	
Wolfsville Elementary	
Yellow Springs Elementary	
Bradford Estates	2002
Briercrest Apartments	2005
Cambridge Farms	2002
Cloverhill III	2002
Concord Estates Mobile Home Park	2005
Copperfield	2002
Cunningham Falls State Park	2003
Fountaindale	2002
Liberty East	2002
Mill Bottom	2002
Mount St. Mary's University	2005
White Rock	2002
Windsor Knolls +school	2002

Map 2-12: Municipal and Community Wellhead Protection Areas



Municipal and Community Wellhead Protection Areas



Frederick County, Maryland
Division of Planning and Permitting
Frederick County GIS

Delineated Municipal and Community Wellhead Protection Areas

Delineated Municipal and Community Wellhead Protection Areas within Incorporated Limits

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Projection: NAD 1983 State Plane Maryland FIPS 1900 Feet
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Sinkholes

Frederick County contains a vulnerable Karst topography covering about 35 square miles. “Karst” describes terrain that is characterized by sinkholes, caves, underground streams, and other features that are formed by the slow dissolution of calcium and magnesium oxides in limestone, dolomite, or marble bedrock. In populated areas, sudden subsidence features known as sinkholes can cause damage to buildings, roads and farmed land, as well as threaten ground and surface water quality by the potential for direct introduction of contaminants. Stream water or surface water runoff that enters a sinkhole can bypass natural filtration through soil and sediment. Groundwater can travel quickly through these underground networks carrying surface contaminants to wells and springs.

Table 2-7: Potential of Selected Soil Series for the Formation of Sinkholes

(Soil scientists from NRCS and geologists from USGS assigned the ratings in this table after they made field observations of the soil series and the underlying bedrock geology. Onsite investigation by a qualified geologist is needed before a determination can be made for interpreting urban and engineering uses of soils for site specific uses).

Soil series	Rating*	Geologic formation * *
Adamstown	Moderate High Moderate High High	Frederick Limestone (Rocky Springs Station Member -- east) Frederick Limestone (Rocky Springs Station Member -- west) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member) Grove Limestone
Athol	Moderate	Triassic Conglomerate (limestone)
Athol, rocky phase	High	Triassic Conglomerate (limestone)
Benevola	Moderate	Sams Creek Metabasalt (Wakefield Marble Member)
Buckeystown	High	Grove Limestone
Buckeystown, rocky phase	Very high	Grove Limestone
Conestoga	Low Low Moderate	Marburg Schist (Silver Run Limestone Member) Sams Creek Metabasalt Sams Creek Metabasalt (Wakefield Marble Member)
Dryrun	Moderate High Moderate High	Frederick Limestone (Rocky Springs Station Member-east) Frederick Limestone (Rocky Springs Station Member west) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member)
Duffield	Moderate High Moderate High	Frederick Limestone (Rocky Springs Station Member - - east) Frederick Limestone Rocky Springs Station Member - - west) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member)
Downsville	Moderate	Frederick Limestone (Adamstown Member)
Funkstown	Moderate High Moderate High Low Moderate	Frederick Limestone (Rocky Springs Station Member - - east) Frederick Limestone (Rocky Springs Station Member - west) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member) Sams Creek Metabasalt Sams Creek Metabasalt (Wakefield Marble Member)
Hagerstown	High	Frederick Limestone (Lime Kiln Member)
Hagerstown, rocky phase	High Very high Very high	Frederick Limestone (Rocky Springs Station Member – west) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member)

Soil series	Rating*	Geologic formation * *
	Very high	Grove Limestone
Letort	Low Moderate Low	Sams Creek Metabasalt Sams Creek Metabasalt (Wakefield Marble Member) Marburg Schist (Silver Run Limestone Member)
Morven	Low	Triassic Conglomerate (limestone)
Murrill	Moderate High Moderate High High	Frederick Limestone (Rocky Springs Station Member -- east) Frederick Limestone (Rocky Springs Station Member - west) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member) Grove Limestone
Opequon	Moderate High High High High	Frederick Limestone (Rocky Springs Station Member -- east) Frederick Limestone (Rocky Springs Station Member - west) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member) Grove Limestone
Ryder	Moderate High ModerateHigh High	Frederick Limestone (Rocky Springs Station Member -- east) Frederick Limestone (Rocky Springs Station Member west) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member) Grove Limestone
Springwood	Moderate	Triassic Conglomerate (limestone)
Springwood, rocky phase	High	Triassic Conglomerate (limestone)
Walkersville	Moderate Moderate High High	Frederick Limestone (Rocky Springs Station Member -- east) Frederick Limestone (Adamstown Member) Frederick Limestone (Lime Kiln Member) Grove Limestone
Wiltshire	Moderate	Sams Creek Metabasalt (Wakefield Marble Member)

Source: Soil Survey of Frederick County, Maryland. United States Department of Agriculture and the Natural Resources Conservation Service, 2002.

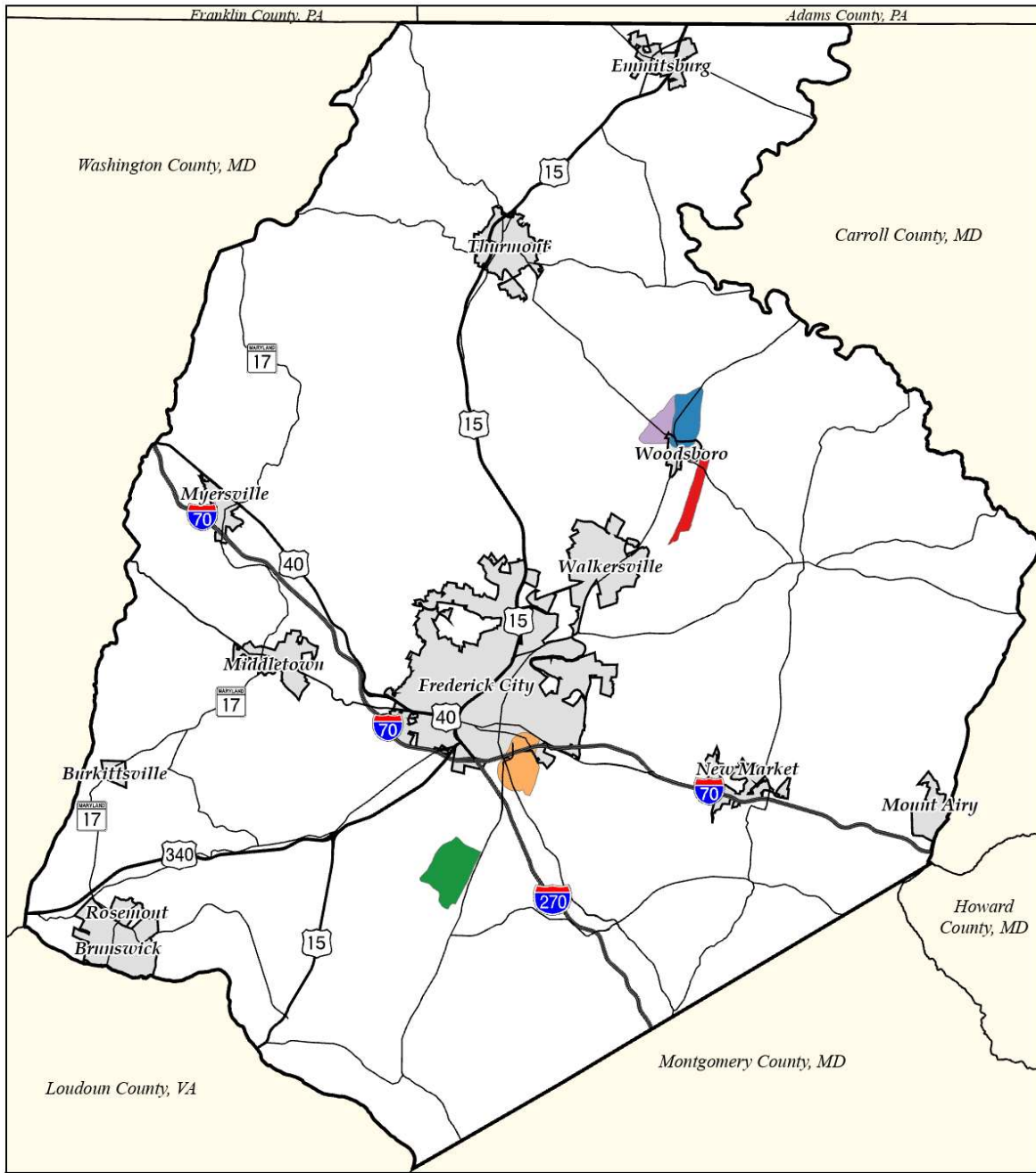
* Ratings are only assigned to soil series that have shown potential for sinkhole formation. A rating of “low” indicates a less than 1 percent chance of sinkhole formation; “moderate,” 1 to 5 percent; “high,” 5 to 20 percent; and “very high,” more than 20 percent. If a soil has been disturbed, the assigned rating should be increased to the next higher rating where appropriate.

** Rocky Springs Station Member - - east indicates the east side of Frederick Valley, and Rocky Springs Station Member - - west indicates the west side of Frederick Valley.

Zones of Influence

Under a 1991 Amendment to Maryland’s Surface Mining Law, the Maryland Department of the Environment (MDE) is required to establish and define Zones of Influence (ZOI’s) around limestone and marble quarries in Baltimore, Carroll, Frederick, and Washington Counties. Limestone mining operations are required to repair a sinkhole within a ZOI if MDE determines that the sinkhole resulted from quarry dewatering. Extraction companies are also required to replace a water supply that fails due to declining water levels caused by a quarry’s pumping operation. The following quarries have delineated Zones of Influence: LeGore/Barrick, Lehigh, Martin Marietta (Frederick Quarry), and Essroc.

Map 2-13: Zones of Influence



Zones of Influence



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- Barrick Quarry
- Essroc Quarry
- Frederick Quarry
- Legore Pit
- Woodsboro Quarry

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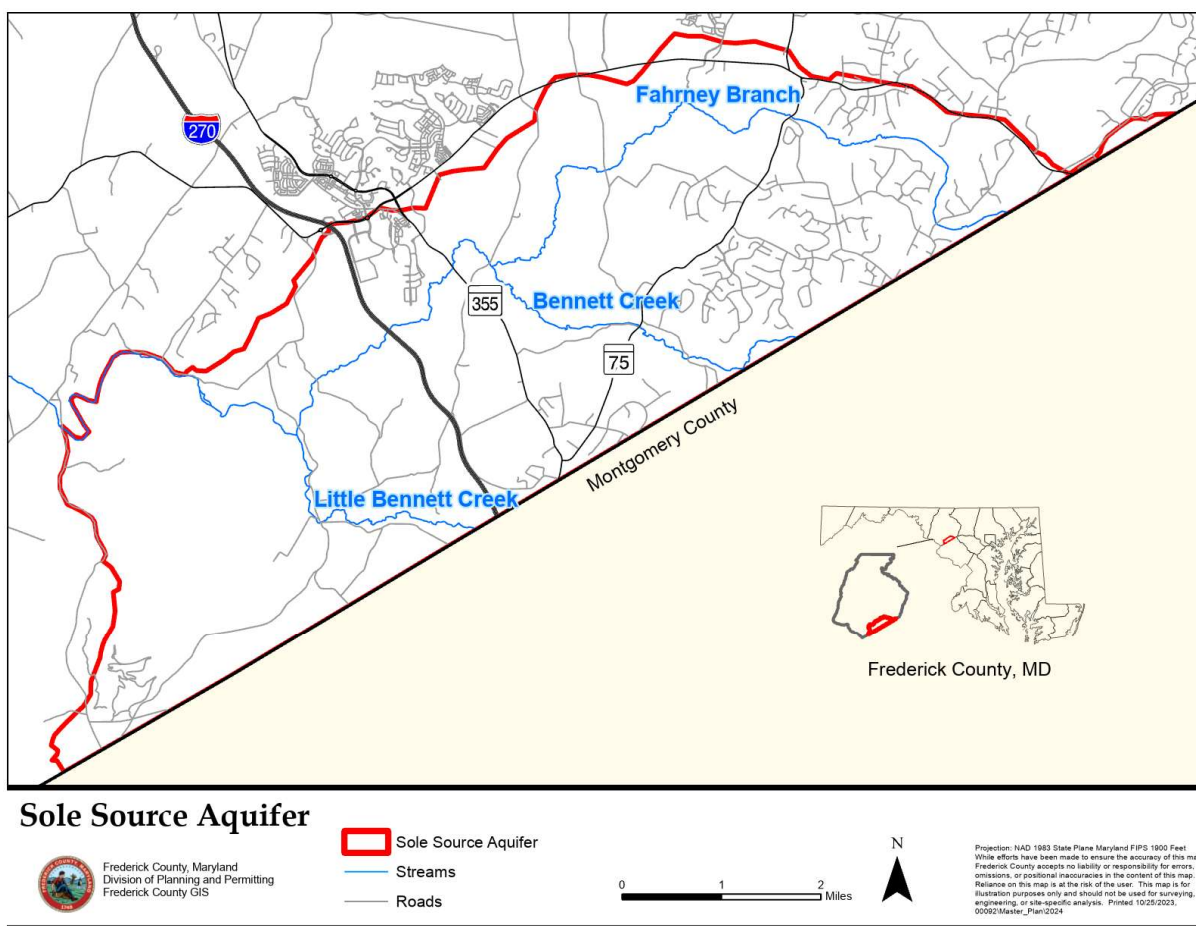


Projection: NAD 1983 State Plane Maryland FIPS 1000 Feet
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Sole Source Aquifer

On August 27, 1980, several drainage basins in the southeastern portion of the County and in Montgomery County were designated by the US Environmental Protection Agency (EPA) as a Sole Source Aquifer under the Safe Drinking Water Act of 1974 Section 1424(e). The EPA defines a sole or principal source aquifer as one that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas can have no alternative drinking water source(s), which could physically, legally, and economically supply all those who depend upon the aquifer for drinking water. The designation means that any future project in the area funded with federal assistance would be subject to review by EPA for potential impact on the groundwater system and additional pollution prevention requirements. The drainage basins in Frederick County, which are included in this area, are Bennett Creek and Little Bennett Creek to their confluence, and Fahrney Branch to its confluence with Bennett Creek. This area is also known as “Green Valley” and the Sole Source Aquifer designation is reflective of the substantial amount of low-density residential development on individual groundwater wells that exist outside of designated public water and sewer service areas in this portion of the county.

Map 2-14: Sole Source Aquifer



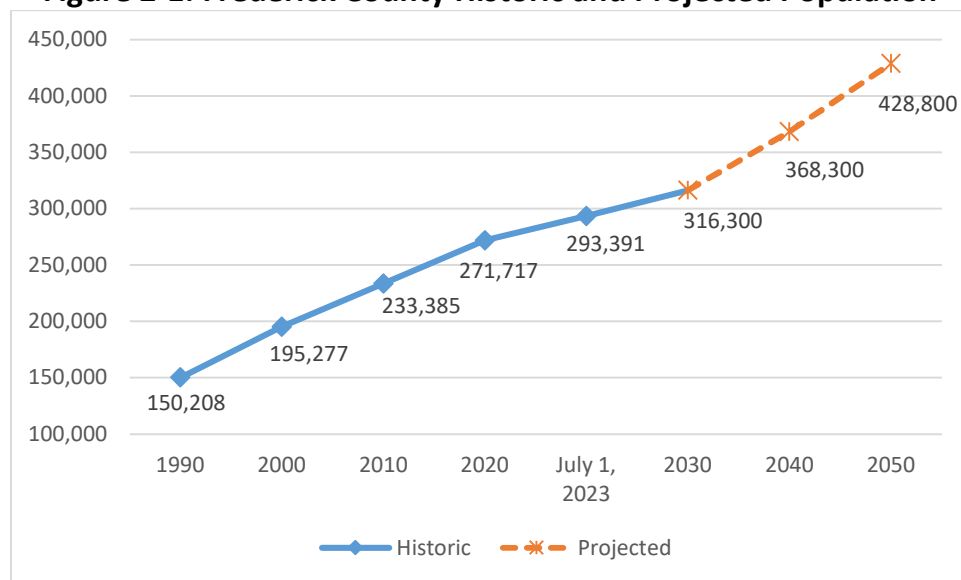
Section 3: Population & Land Use

Frederick County Growth Trends

The County's 2020 population (US Census Bureau) was 271,717, which includes the City of Frederick's population of 78,171. From 2010 to 2020 the County's population has increased by 16% or 38,332 people. The County's estimated population as of July 2023 was 293,391 (estimate by US Census Bureau, 2023). From 2020 to 2050, the County's population is expected to increase by 57.8% (MWCOG, 2023).

The graph below shows the County's historic and projected population out to 2050. The projected populations below were prepared as part of the Metropolitan Washington Council of Governments Cooperative Forecasting process, Round 10.0, which was adopted in June 2023.

Figure 2-1: Frederick County Historic and Projected Population



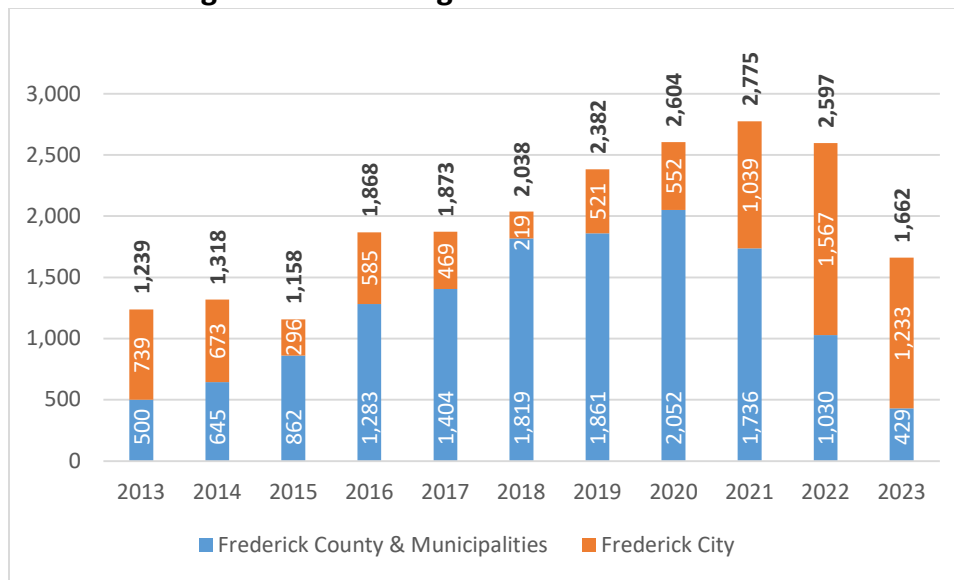
Sources: U.S. Decennial Census (1990-2020), U.S. Census Bureau Population Estimates Program (July 1, 2023), MWCOG Round 10.0 (2030-2050).

As in the Washington, DC Region generally, household sizes in the County will decline, but not to the same extent as the Washington metropolitan area. The US Census Bureau estimates the County's current household size is 2.70, which remains consistent with the household size indicated during the previous iteration of this Water and Sewerage Plan even though the regional household size is projected to continue to decrease.

Housing construction between 2013 and 2023 has averaged around 1,200 permits per year. This number includes the unincorporated area of Frederick County and all municipalities except for the City of Frederick. There has been a recent decrease in new housing unit permits post-2021, but it remains to be seen if this is a long-term trend.

Over the same period, Frederick City has averaged around 700 permits per year. There has been a large increase in building permits issued in the City during 2021-2023. In 2022 and 2023 the number of new dwellings permitted in the City outpaced the County.

Figure 2-2: Housing Unit Permits 2013-2023



Source: Frederick County Division of Planning & Permitting

Employment Trends

Several major companies have located in the County in the past three (3) years, including Kite Pharma (approximately 400 employees initially, with an additional 100 employees announced as part of an expansion of cell therapy manufacturing announced in January 2023), and Aligned Data Centers (which became the first data center operator to receive Site Plan approval for facilities in the Quantum Frederick Data Center). These businesses join other data and biosciences business, such as Thermo-Fisher Scientific (950 employees), Astra Zeneca (700 employees), Leidos Biomed / Frederick National Lab+ (2,341 employees), and Lonza (464 employees) that have chosen to locate in Frederick County in recent years. The US Social Security Administration's National Data Center, located in Urbana, opened in 2014 with approximately 80 jobs.

The Metropolitan Washington Council of Governments (MWCOG) draft Round 10.0 forecasts indicate that three-fourths of new jobs to 2050 will be in the service industries of engineering, computer and data processing, business services and medical research. Additionally, while the region is expected to add one million jobs by 2050, this is approximately 200,000 fewer jobs than indicated in the previous forecast. The forecast also indicates that the cohort of persons 65+ in age is expected to be the fastest growing cohort at 64 percent.

Municipal Growth Trends

The County has 12 municipalities with all but Rosemont and Burkittsville designated as growth areas. Each has their own planning and zoning function and with a few exceptions control their own municipal services such as water or sewer facilities. Mount Airy is situated on the County line with the greater portion of both its land area and population within Carroll County.

Table 2-8: Municipal Population Growth

	Actual Population			Projected Population ¹		
	2010	2020	2023 ²	2030	2040	2050
Brunswick	5,870	7,762	8,309	8,412	9,681	10,308
Burkittsville	151	142	149	150	150	150
Emmitsburg	2,814	2,770	2,959	3,420	4,796	5,495
Frederick City ³	65,239	78,171	85,793	89,500	100,800	112,000
Middletown	4,136	4,943	5,307	5,294	5,838	6,045
Mount Airy ⁴	3,814	3,529	3,613	3,568	3,698	3,762
Myersville	1,626	1,748	1,943	1,904	2,655	2,992
New Market	656	1,525	1,641	2,721	5,117	6,321
Rosemont	294	272	292	275	275	275
Thurmont	6,170	6,213	6,680	6,863	8,317	9,016
Walkersville	5,800	6,156	6,610	6,221	7,348	8,034
Woodsboro	1,141	1,092	1,174	1,118	1,351	1,481
Municipal Subtotal	97,711	114,323	124,470	129,446	150,024	165,879
County Total ³	233,385	271,717	287,079	316,300	368,300	428,800

¹ Projected Population, unless otherwise noted, are developed by Frederick County Livable Frederick Planning and Design Office informed by multiple sources including Round 10.0, residential pipeline, and municipal plan documents. Household size at 2030 is 2.60 and 2.59 in 2040 and 2050.

² Estimated July 1, 2023 population from Maryland Department of Planning.

https://planning.maryland.gov/MSDC/Documents/pop_estimate/estimates-post2010/municipal/Table4.pdf

³ Projected population for Frederick City and County Total are directly from M-W COG Round 10.0 Cooperative Forecasting.

⁴ Frederick County portion only. Information from Maryland Department of Planning State Data Center.

Land Use & Zoning

An understanding of existing land use patterns and past trends will aid in the understanding of the current Comprehensive Plan and the pattern of existing and proposed water and sewerage service areas. The most significant land use changes have occurred since 1960; prior to this time, the communities, which existed, had been established in the 1800's or earlier and only gradual changes occurred when new residences were built along the rural roads.

The 1970's were a period of rapid development in Frederick County. In the late 1960's, Frederick City annexed over 4,200 acres, most of which were developed in the 1970's. Residential subdivisions proliferated throughout the County. The Lake Linganore PUD was established as well as the Eastalco industrial facility.

In contrast, the 1980's was a period of more concentrated development. The Ballenger Creek area south of Frederick City emerged as an intensive, urbanized area following the construction of a regional sewage treatment plant and water system. This was the only significant concentration of medium and high-density housing units, commercial, office and industrial land uses outside of a municipality.

The 1990's continued the pattern of concentrated development. The Linganore and Spring Ridge PUD's and the Urbana PUD saw increased development and the planned industrial area southeast of Urbana began to develop. The New Market and Urbana Regions in general saw the greatest increase in housing growth.

In 2012 the County completed a Comprehensive Plan/Zoning Review of the 2010 Comprehensive Plan. Requests for changes in the either the land use plan designation and/or zoning were reviewed and ultimately adopted on September 13, 2012 with amended Land Use Plan and Zoning Maps. While the Land Use Plan and Zoning maps are still current, the recent adoption of the Livable Frederick Master Plan on September 3, 2019 has replaced the County Comprehensive Plan document adopted in 2010.

Table 2-9: Land Use Plan Designation and Zoning

Land Use Plan Designation ¹	Comp Plan (acres)	Comp Plan (% of County)	Zoning (Acres)	Zoning (% of County)
Agricultural	217,367	51.22%	237,026	55.84%
Commercial/Industrial/Mixed Use	12,882	3.04%	11,964	2.82%
Institutional	2,967	0.70%	1,251	0.29%
Municipal	28,969	6.83%	28,976	6.83%
Natural Resource	108,017	25.45%	95,362	22.47%
Residential	40,815	9.62%	36,442	8.59%
Transportation Right of Way (ROW)	13,364	3.15%	13,415	3.16%
	424,380	-	424,436	-

¹ Land use and zoning calculations exclude water.

Residential Land Use

Historically residential development activity has been focused within the County's municipalities with the City of Frederick accommodating the greatest portions. Residential development within the County has been focused in those areas with public water and sewer including the Ballenger Creek, Urbana, and

Linganore communities. Projects in Urbana are nearing build-out. Projects in the Linganore growth area continue to build out but there are also a significant number of units remaining in the pipeline. The South Frederick Corridors Plan (2024) plans for an additional 10,000 dwelling units in the South Frederick and Ballenger Creek growth areas. Frederick County has seen a decrease in building permits for new residential dwellings since 2020 (Frederick City has had a less defined trend).

Commercial and Industrial Land Use

Beginning with the recession in 2007, and exacerbated by the COVID pandemic that began in 2020, the market for office/employment uses has been flat in Frederick as it is in much of the Washington metropolitan area. Non-residential construction activity has been focused on warehousing, industrial flex space, and commercial uses (primarily restaurant and hotel uses). Many of the commercial uses are located within the municipalities, and primarily the City of Frederick. The primary area for commercial and industrial development within the County has traditionally been the MD-85 corridor just south of the City of Frederick and into the Ballenger Creek community. Newer areas for commercial and employment development are developing in the MD-180/I-70 area (Jefferson Technology Park). In Urbana, along the I-270 corridor, a recent rezoning in 2017 replaced proposed office/employment uses with residential. Approximately 3.4 million square feet of office/employment space from the Urbana Town Center MXD and the Urbana Office Research Center was eliminated as a result of the rezoning.

With the South Frederick Corridors Plan, adopted in 2024, Frederick County hopes to leverage opportunities presented by the slow market for office and employment through the incremental redevelopment of the area between I-270 and MD 355 that focuses on more urban, residential land uses that are supported by a multi-modal transportation network. The County also has an economic opportunity plan underway (“Investing in Workers and Workplaces”) which will look at economic development needs as they relate to land, zoning requirements, infrastructure and workforce needs, etc. The plan is anticipated to be complete in mid-2025.

Natural Resource Lands

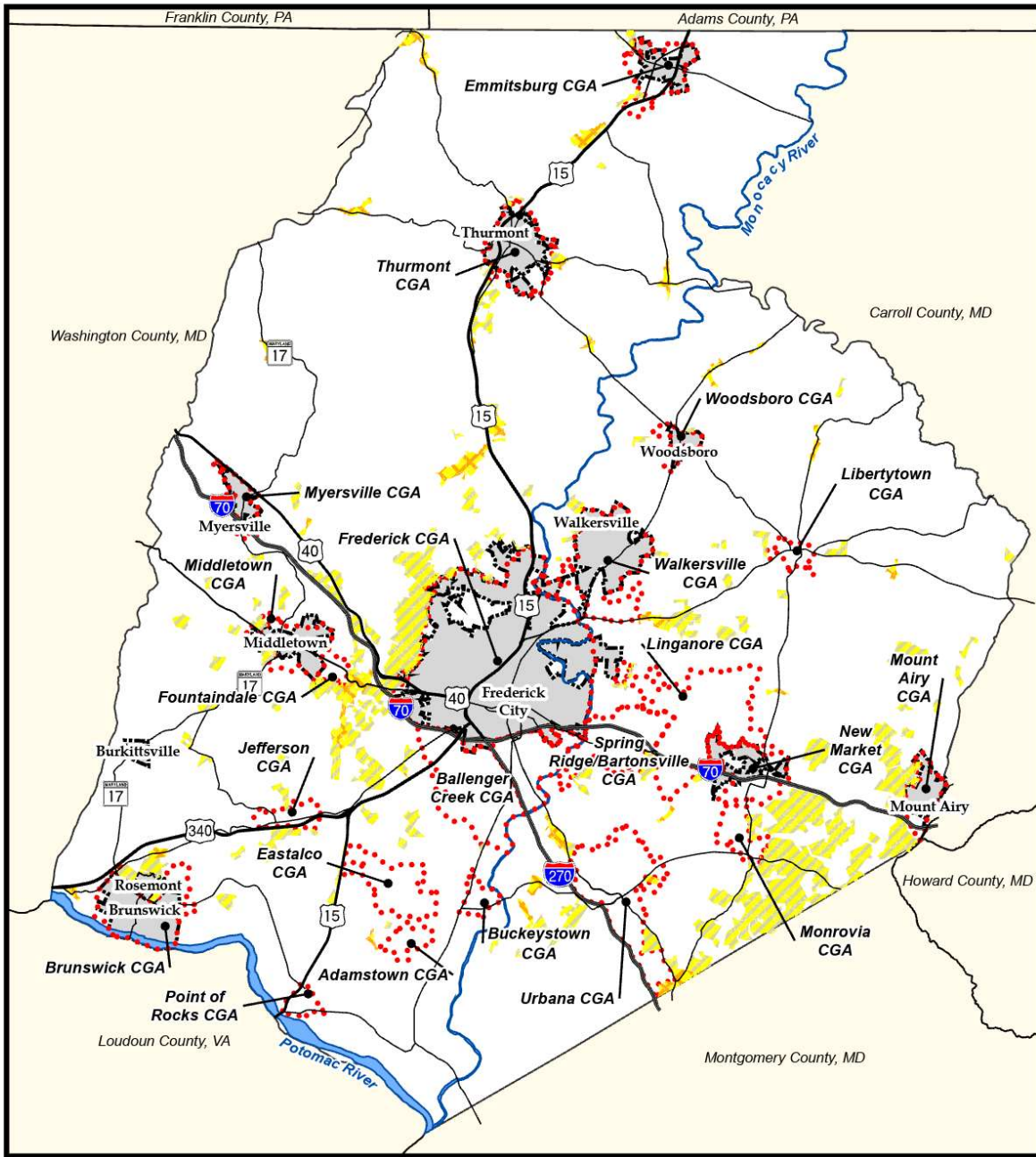
Frederick County includes several features representative of the Blue Ridge province including Catoctin Mountain, South Mountain, and Sugarloaf Mountain. Other significant resource features include the Monocacy and the Potomac Rivers. The mountain areas with their steep slopes and large areas of contiguous woodlands are primarily zoned Resource Conservation which does permit limited residential subdivision at a density of one dwelling per ten acres. The Resource Conservation zoning also exists along other major stream systems, and the floodplains associated with the Monocacy and Potomac Rivers.

Agriculture

The highest percentage of land use in the County is still agriculture comprising over 50% of the County’s land area with the Natural Resource land use designation equaling around 25% of the County. The County’s Agricultural zoning permits very limited residential subdivision by permitting only 3 lots and a remainder parcel to be subdivided from an original tract of land that existed as of August 1976. Additional subdivision rights are available with a cluster provision.

The County has a very active Agricultural Preservation Program comprised of state and county programs to permanently protect agricultural lands. As of December 2023, 73,180 acres are under permanent easements. The agricultural preservation areas have been concentrated in the northeast part of the County as well as in the Middletown Valley and Adamstown areas.

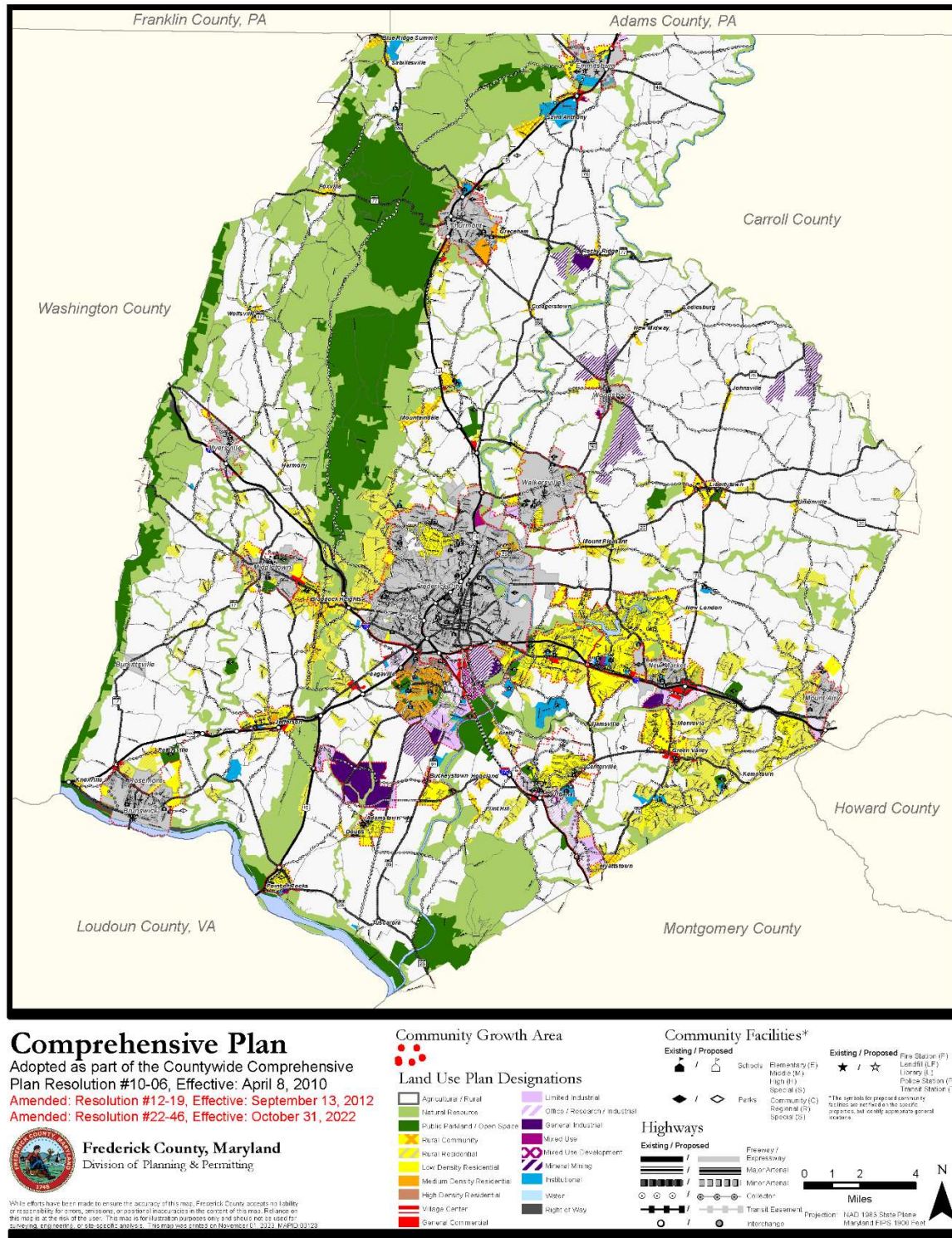
Map 2-15: Generalized Population Distribution, Municipalities, Community Growth Areas, Existing Well & Septic Residential Areas



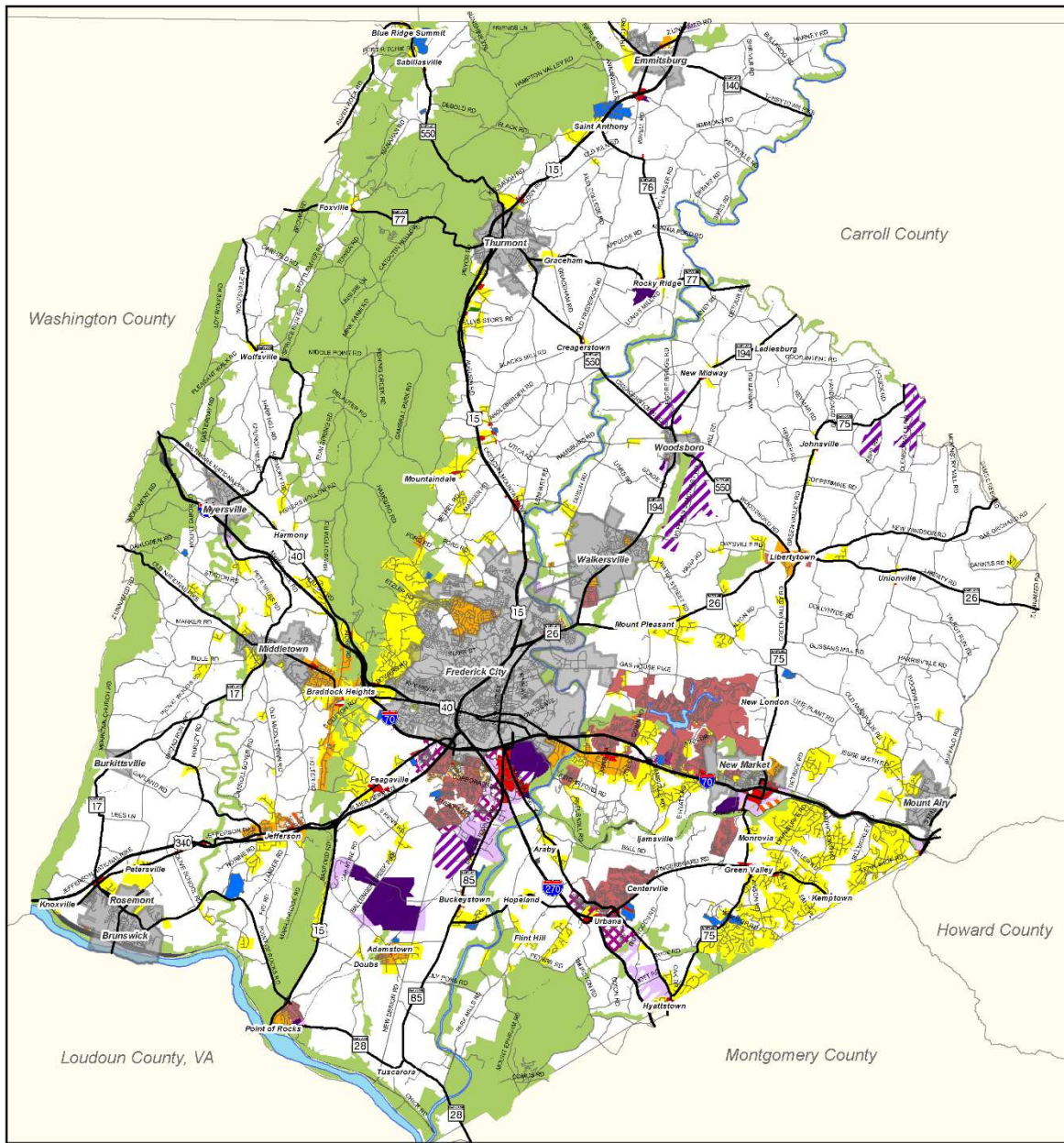
Generalized Population Distribution: Municipalities, Community Growth Areas, Existing Well & Septic Residential Areas



Map 2-16: Comprehensive Plan



Map 2-17: Zoning



Zoning

Adopted as part of the Countywide Comprehensive Plan Ordinance #10-05-540, Effective: April 8, 2010

Amended:

#10-27-562, 11-23-2010,
#12-25-600, 03-08-2012,
#12-22-617, 09-13-2012,
#12-28-623, 11-28-2012,
#13-14-642, 07-11-2013,
#13-26-654, 12-05-2013,
#14-03-658, 05-08-2014,
#14-04-659, 05-29-2014,
#14-17-672, 10-09-2014,
#14-18-673, 10-09-2014,

#14-20-675, 10-23-2014,
#14-27-682, 11-24-2014,
#14-29-684, 11-24-2014,
#14-28-683, 11-24-2014,
#17-02-002, 07-11-2017,
75-80 Properties, LLC v. RALE, Inc.,
470 Md. 598 (2020),
#20-05-005, 11-10-2020,
#20-05-006, 11-10-2020,
#22-04-004, 6-28-2022,
#22-05-005, 6-28-2022,
#22-07-007, 10-31-2022

A – Agricultural	R12 – High Density Residential	ORI – Office/Research/Industrial
RC – Resource Conservation	R16 – High Density Residential	MX – Mixed Use
OSR – Open Space Recreation	PUD – Planned Unit Development	MXD – Mixed Use Development
R1 – Low Density Residential	VC – Village Center	MM – Mineral Mining
R3 – Low Density Residential	GC – General Commercial	IE – Institutional
R5 – Middle Density Residential	GI – General Industrial	Municipality
R8 – Middle Density Residential	LI – Limited Industrial	Right of Way



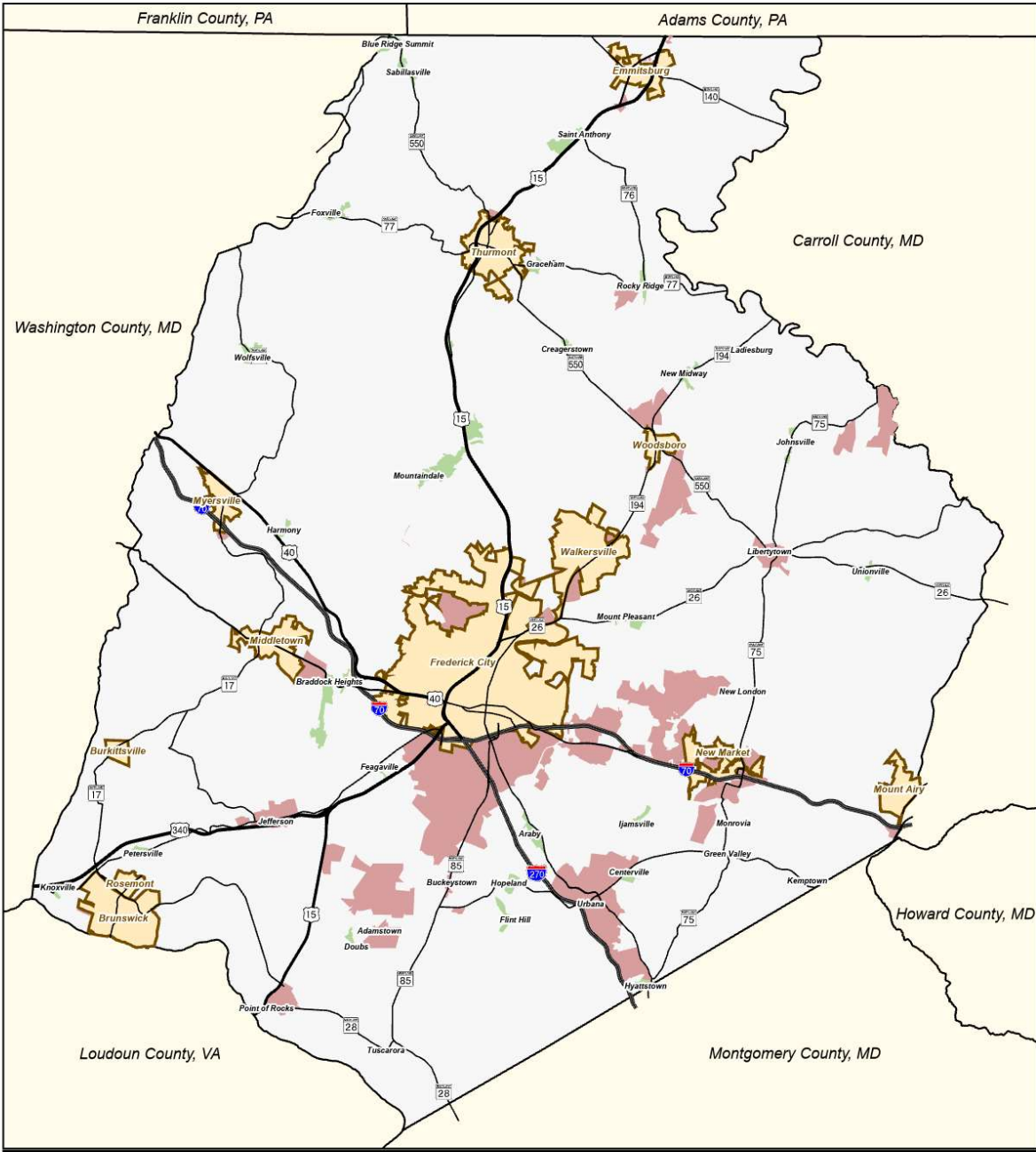
Frederick County, Maryland
Division of Planning & Permitting

0 1.75 3.5 7 Miles

Projection: NAD 1983 State Plane Maryland FIPS 1800 Feet
While efforts have been made to ensure the accuracy of this map, Frederick County accepts no liability or responsibility for errors, omissions, or positional inaccuracies in the content of this map. Reliance on this map is at the risk of the user. This map is for illustration purposes only and should not be used for surveying, engineering, or site-specific analysis. This map was printed on November 01, 2023. MAPID:00123



Map 2-18: Priority Funding Areas

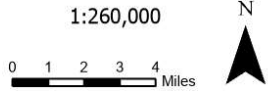


Priority Funding Areas



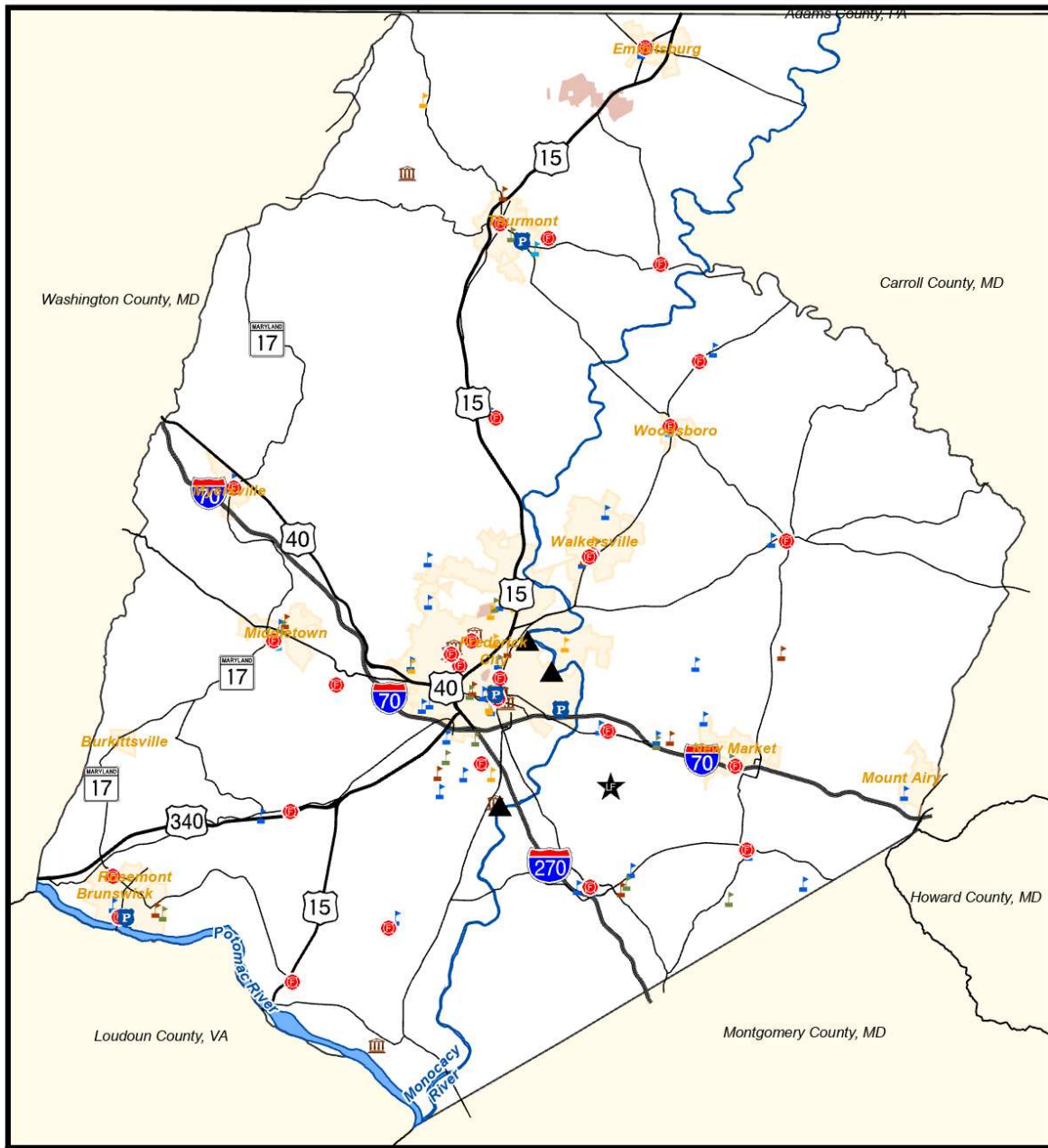
Frederick County, Maryland
Division of Planning and Permitting
Frederick County GIS

- County
- Rural Village
- Municipality



Projection: NAD 1983 State Plane Maryland FIPS 1900 Feet
While efforts have been made to ensure the accuracy of this map, Frederick County accepts no liability or responsibility for errors, omissions, or positional inaccuracies in the content of this map. Reliance on this map is at the risk of the user. This map is for illustration purposes only and should not be used for surveying, engineering, or site-specific analysis. Printed 10/31/2023, 000921Master_Plan/2024

Map 2-19: Community Facilities



Community Facilities



Frederick County, Maryland
Division of Planning and Permitting
Frederick County GIS

Community Facilities

- ★ Landfill
- P Police Stations
- Fire Stations
- Government Facilities
- Wastewater Treatment Plant

Frederick County Public Schools

- Elementary
- High
- Middle
- Primary
- Special
- Colleges & Universities

1:260,000

0 1 2 3 4 Miles



Projection: NAD 1983 State Plane Maryland FIPS 1900 Feet
While efforts have been made to ensure the accuracy of this map, Frederick County accepts no liability or responsibility for errors, omissions, or positional inaccuracies in the content of this map. Reliance on this map is at the risk of the user. This map is for illustration purposes only and should not be used for surveying, engineering, or site-specific analysis. Printed 10/31/2023, 000921Master_Plan2024

Table 2-10: Major Institutions & Facilities

Governmental Complex	2020 Approximate Population/Employees
Winchester Hall	190
30 North Market Street	90
Frederick City Hall	56
Frederick City Annex	58
Frederick County Courthouse	450
Fleet Services Facility	38
Health Department Building	200
Division of Utilities & Solid Waste Management Headquarters	40
Bourne Building	51
Foxville Naval Facility (federal)	200
U.S. Army Garrison, Ft. Detrick (federal)	8,330
Governmental Service Facilities	
Fire Stations (29 system wide)	110 (career firefighters staff 22 stations)
Law Enforcement Center	255
Detention Center	160 (corrections staff) 426 (average inmate population)
Reichs Ford Road Landfill	37
Ballenger-McKinney WWTP	6
Ft. Detrick WWTP	4
City of Frederick WWTP	5
New Design WTP	4
Health Care Facilities	
Frederick Health & Frederick Health Medical Group	2,700 (system wide employees)
Montevue Assisted Living/Citizens Care & Rehabilitation Center	Currently closed and undergoing renovation.
Educational Institutions	
Hood College	2,500 students & 410 faculty/staff (2019)
Mt. St. Mary's University	2,200 students & 689 faculty/staff (2019)
Frederick Community College	16,000 students & 1,000 faculty/staff (2019)
County Elementary Schools (38 system wide)	21,522 students & 1,510 faculty/staff (2024)
County Middle Schools (13 system wide)	10,142 students & 784 faculty/staff (2024)
County High Schools (10 system wide)	14,516 students & 982 faculty/staff (2024)
Public Charter/Other	1,403 students & 92 faculty/staff (2024)

Section 1: Introduction

Community Water Systems

Most Frederick County residents obtain their water from publicly-owned Community Water Systems (CWS); water systems that supply at least 25 people or 15 service connections for at least 60 days per year. Seven of these CWS are Regional Systems, owned and operated by Frederick County's Division of Water and Sewer Utilities (DWSU) and nine of the CWS are owned and operated by municipalities. There is one federal CWS that serves Fort Detrick and one institutional CWS that serves Mount Saint Mary's University. The County also owns and operates four Sub-Regional CWS that serve individual subdivisions and residential developments throughout the County. In addition, there are several small, private community water systems, described in Section 5.

The 21 County and municipal systems supply water to approximately 194,558 people, which is 68% of the County's total 2022 estimated population of 287,079 (MDP June 2023).

Table 3-1: Frederick County/DWSU Owned Water Systems

Water System	Approximate Population Served	Primary Water Source	Water System ID
Regional Systems			
Cambridge Farms	948	Groundwater	MD0100033
Cloverhill III ¹	902	Surface water	MD0100031
Copperfield	753	Groundwater	MD0100037
Fountaindale ²	2,630	Groundwater	MD0100013
Liberty West (Libertytown Apartments)	97	Groundwater	MD0100036
Liberty East	113	Groundwater	MD0100038
New Design ³	64,209	Surface Water (Potomac River)	MD0100030
Total	69,652		
Sub-Regional Systems			
Bradford Estates	178	Groundwater	MD0100032
Samhill	1,401	Groundwater	MD0100040
White Rock	248	Groundwater	MD0100026
Windsor Knolls	2,754	Groundwater	MD0100041
Highfields/Cascade ⁴	1,141	Groundwater	MD0210001
Total	5,722		

¹ County distribution system only. Connected to the City of Frederick water system in 2016. Water is supplied via the County's New Design Water Treatment Plant through agreement with the City of Frederick.

² Includes Fountaindale and Braddock Heights

³ Includes Adamstown, Ballenger Creek, Buckeystown, Eastalco site, portions of Frederick City, Frederick Southeast, Holly Hills, Linganore, Monrovia, New Market, Point of Rocks, Spring Ridge/Bartonsville, and Urbana Community Growth Areas/Service Areas.

⁴ Owned and operated by Washington County, MD

Table 3-2: Municipal Owned Community Water Systems

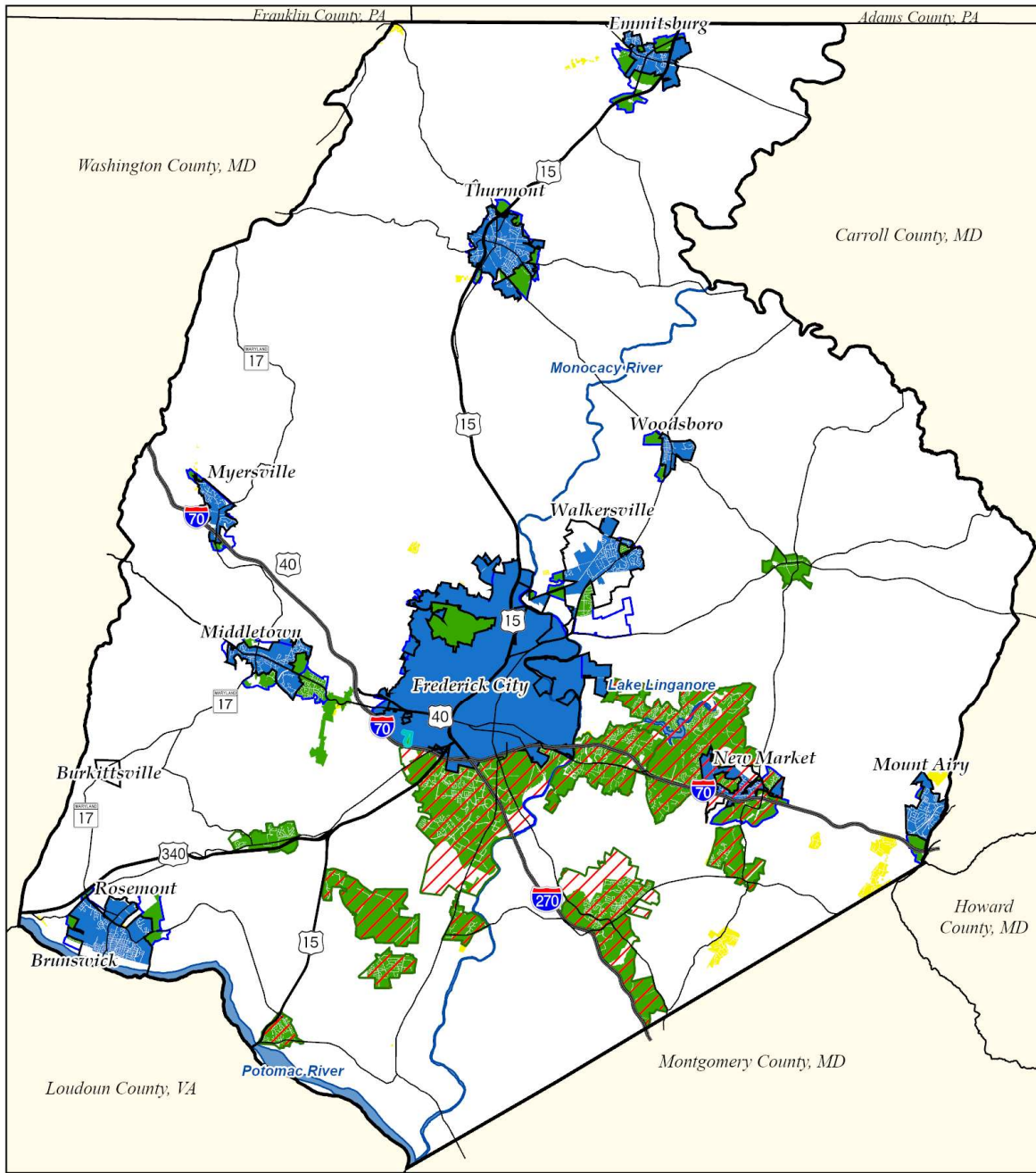
Water System	Approximate Population Served ¹	Primary Water Source	Water System ID
City of Brunswick	8,100	Surface Water (Potomac River & Yourtee Springs)	MD0100005, MD0100045 (Rosemont distribution system)
Town of Emmitsburg	2,400	50/50 Surface/Groundwater (two impoundments of Turkey Creek, a tributary of Tom's Creek & wells)	MD0100010
City of Frederick	82,175	Surface Water (Monocacy River, Potomac River, Linganore Creek, Fishing Creek Reservoir)	MD0100015
Town of Middletown	5,239	Groundwater (wells and springs)	MD0100018
Town of Mount Airy (Frederick County portion)	3,542	Groundwater	MD0060007
Town of Myersville	1,854	Groundwater (wells, springs)	MD0100020
Town of Thurmont	6,588	Groundwater	MD0100023
Town of Walkersville	8,440	Groundwater	MD0100025
Town of Woodsboro	846	Groundwater	MD0100027
Total	119,184		

Table 3-3: Federal/Institutional Owned Community Systems

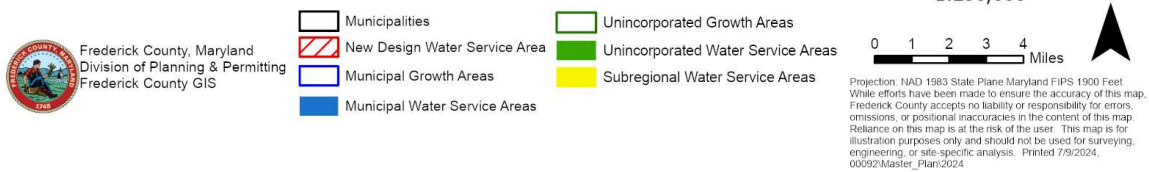
Water System	Approximate Population Served	Primary Water Source	Water System ID
Fort Detrick	7,900	Surface Water (Monocacy River)	MD0100011
Mount Saint Mary's University	1,900	Groundwater	MD0100019
Total	9,800		

¹ Estimates provided (or verified) by municipalities.

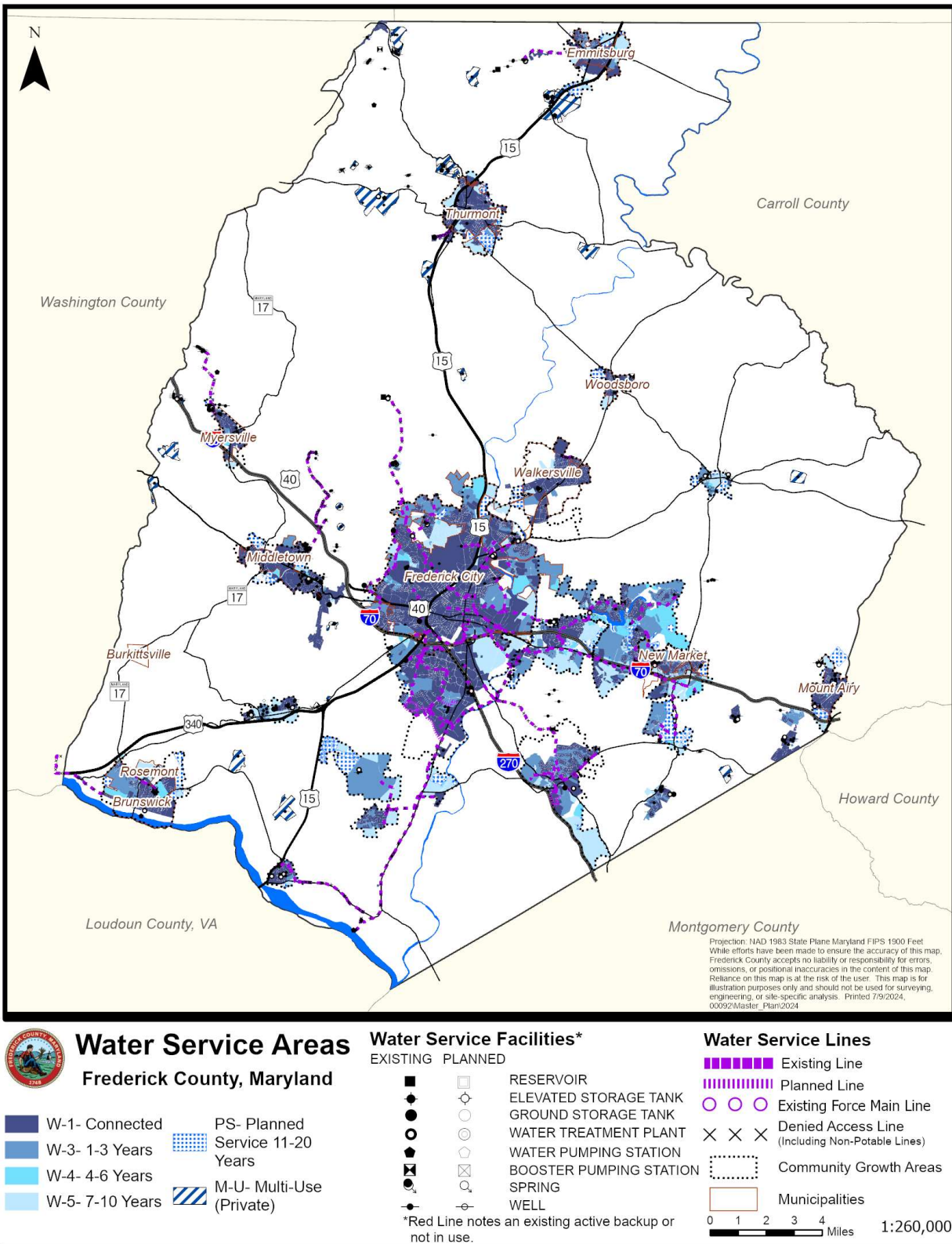
Map 3-1: Water Service Areas



Current/Planned Water Service Areas



Map 3-2: Water Service Areas & Infrastructure Map



Water Supply Planning Tools

In 1992, the County completed its first major study for a Water Distribution Plan for the southern two thirds of Frederick County. Prepared by Boyle Engineering, the study was intended to be a planning tool to help the Division of Water and Sewer Utilities implement water system improvements, as needed, on a cost-effective basis. Population projections were used to estimate future demands if all current zoning and Comprehensive Plan designations were built. Since pipeline and treatment plant life is generally 50 100 years, the Distribution Plan recommendations go beyond the 20-year planning period of this Water & Sewerage Plan, which does not necessarily imply that the planned growth will occur within the planning period. In other words, the growth anticipated in a 20-year planning period may in fact take 40, 50 or more years to occur and thus, the infrastructure must be designed to last accordingly. Since 2001, DWSU has completed important long-term water supply engineering studies and construction projects that have resulted in significant improvements to the water system. These projects, which in some cases build on the earlier work by Boyle, are intended to provide the necessary water supply infrastructure needed by DWSU surface water systems until 2045.

The Boyle study also established a computer model to evaluate DWSU water system operating characteristics. Whitman, Requardt & Associates would later update this study with a focus on the Linganore area. Focus was placed in Linganore due to deficiencies encountered by infrastructure that was designed and built by a developer. Since the Boyle model was created the DWSU has worked on developing its own water model with more current software. The effort is ongoing to validate the existing model, qualify results via field data and continue to add further detail and capture new infrastructure.

Based on concepts contained in the 1992 Boyle Study and more recent analysis, the County has moved away from small individual ground water supply systems and relies primarily on its Potomac River Water Supply system. Based on DWSU's current water supply program, the County's New Design Road (Potomac River) WTP, is the primary water supply for the Central Frederick, East County and Point of Rocks water service areas. The County's New Design Road WTP and transmission system has been constructed for expansion to provide up to 45 MGD (max day demand) of water capacity to these areas by 2045. Smaller existing groundwater systems would remain in use until the regional water system is connected. Inter connection of existing individual systems is a logical step toward a county wide system that was identified in the original Boyle study. Phasing of this integration will involve analysis of cost to benefit with respect to the capital cost for connection and any mitigated operational fees from taking a smaller water treatment plant offline.

Features of a county wide system include:

1. The relatively high up front capital cost of a county wide system with its oversized distribution pipelines should be viewed as a long-term investment. Planning and design incorporates both short- and long-term goals to the extent possible.
2. Unregulated development along large water supply lines will not occur. The County, through the designation of denied access lines, restricts development in areas where these cross county waterlines are located outside of designated community growth areas. Development will continue to be focused within designated community growth areas as defined in the County Comprehensive Plan.
3. Although the regional system requires greater capital investment, the County has developed a program of phased improvements that allow the incremental deployment of the water

supply infrastructure to compliment the pace of land development. Since 2001 the County has had a strict policy that requires water system infrastructure necessary for new development to be funded by water system capacity fees-- not by the County's water system users.

4. The County's regional water system relies on the largest water source in the County to provide water to County residences and businesses. The Potomac River, and the reservoirs that augment its flow, is the most reliable source of water in the County.
5. As State and Federal regulators increase the requirements for drinking water quality, more burden is put on water producers to meet these requirements. Increased control over water quality due to a centralized water system would provide safe water for the users and easier quality control for the County.
6. Several existing water treatment plants would remain in operation to avoid County dependence on a single water source. Water would remain available to users throughout the study area even in the event of a failure or emergency; however, water usage would need to be severely reduced. Maintaining existing water systems allows the useful life of the capital improvements to be utilized fully.

The County has decided to implement some of the recommendations of the Distribution Study as the need arises in the form of amendments to the County Water & Sewerage Plan. Some of the more remote phases or recommendations may never be adopted.

Estimating Future Demand

The consumption estimate value used in this Plan is 250 gallon per day per equivalent dwelling unit (EDU). In addition to domestic usage, however, there are industrial and commercial demands on a water system and a certain amount of system loss, especially in the older systems. Estimates for commercial and industrial usage contain large variability as each land use, operation, or facility will have different demands for water usage and generate different wastewater flows.

Water demand is not constant throughout the day nor is daily demand consistent throughout the year. The maximum day demand is called the peak flow. It should be noted that the average factor varies and is affected by a variety of considerations, such as the size of the water system and the diversity within the water system, to name a few. The Frederick County Design Manual for Water and Sewer Facilities details sizing requirements for pipelines, treatment plant capacity, and calculating peaking factors.

It should be noted that not all water used is processed through the sewerage system. Lawn watering, car washing, evaporation from cooling systems and water included in processed products are all examples of how water demand can exceed sewage treatment demand. Consequently, sewage treatment demand in Chapter 4 may not identically match water demands reported in Chapter 3.

As Table 3-4 illustrates, the existing water treatment capacity in some systems may need to be increased to meet short-term demands. In most cases, an increase in supply and treatment capacity will be required for ultimate growth to occur. If new water sources are required to meet future needs, future updates to the Water and Sewerage Plan will include a discussion of alternatives and rationale.

Table 3-4: Water Supply and Demand by Regional/Sub-Regional/Municipal System in million gallons/day (MGD)

	Permitted Withdrawal (average)	Permitted Withdrawal (maximum)	Existing Treatment Capacity	Existing Demand, Yearly Average	Average for Month of Maximum Use	Projected Demand 2030	Projected Demand 2040	Projected Demand 2050
Frederick City	14.923	19.344	12.4	6.27	10.032 ²	7.46	7.83	8.16
New Design ¹	16.0	26.0	25.0	6.537	11.433	8.172	11.222	13.232
Fort Detrick	2.0	2.6	4.250	1.4	1.726	1.400	1.500	1.600
Myersville	0.256	0.4806	0.300	0.115	0.129	0.151	0.207	0.207
Mount Airy	0.927	1.3865	1.50	0.704	0.770	0.745	0.805	0.870
Walkersville ³	1.00	1.50	1.20	0.635	0.715	0.681	0.752	0.831
Woodsboro	0.128	0.1782	0.128	0.085 ⁴	0.157	0.091	0.101	0.111
Thurmont	0.806	1.209	1.200	0.426	0.436	0.544	0.684	0.752
Emmitsburg	0.612	0.994	0.600	0.243	0.277	0.306	0.438	0.506
Brunswick/Rosemont	1.350	2.00	2.00	0.596	0.68	0.85	1.2	1.85
Middletown	0.387	0.504	0.533	0.308	0.329	0.332	0.370	0.384
Fountaindale/Braddock ¹	0.280	0.420	0.280	0.167	0.204	0.179	0.198	0.218
Knolls of Windsor ¹	0.1068	0.1773	0.1068	0.066	0.089	0.071	0.078	0.086
Copperfield ¹	0.075	0.1237	0.075	0.046	0.060	0.049	0.054	0.060
Cambridge Farms ¹	0.0620	0.100	0.062	0.042	0.054	0.045	0.050	0.055
Bradford Estates ¹	0.0170	0.0280	0.0170	0.012	0.016	0.013	0.014	0.016
Samhill ¹	0.1556	0.260	0.155	0.088	0.117	0.094	0.104	0.115
Libertytown East ¹	0.0157	0.0236	0.016	0.007	0.010	0.034	0.092	0.102
Libertytown West (Liberty Apts.) ¹	0.093	0.147	0.093	0.003	0.004	0.040	0.091	0.093
White Rock ¹	0.0300	0.0450	0.030	0.022	0.036	0.024	0.026	0.029
Totals	39.2241	57.5209	49.9458	17.772	27.274	21.281	25.816	29.277

Municipal information provided by municipal staff unless otherwise noted.

¹ Information for Yearly Average and Month of Maximum Use for 2021-2023; provided by Frederick County DWSU.

² Using Peaking Factor provided by City of Frederick.

³ 2023 1-Year Average. A leak was repaired in 2022 and demand has decreased.

⁴ 2021 3-Year average from previous Frederick County Water and Sewerage Plan.

Existing Regional Water Agreements

The Metropolitan Washington Council of Governments has prepared the Metropolitan Washington Water Supply and Drought Awareness Response Plan: Potomac River, which provides implementation steps during drought conditions for the purpose of coordinated regional response. The Plan consists of a regional year-round plan emphasizing the wise water use and conservation, and a water supply and drought awareness and response plan. The drought awareness plan contains four stages:

- Normal – wise water use
- Watch – voluntary water conservation measures
- Warning – voluntary water restrictions
- Emergency – mandatory water restrictions

This Plan is primarily designed for those customers who use the Potomac River for their drinking water supply source. Since Frederick County relies on other water supply sources as well, other drought restrictions may apply to those non-Potomac source areas.

Frederick County has the following agreements with neighboring county jurisdictions and municipalities within Frederick County. The agreements listed are not all-inclusive and may be amended from time to time and is provided for information purposes only. Inter-jurisdictional agreements are executed to provide operational, capital funding, capacity sharing details, etc., that cannot be adequately captured within the Water and Sewerage Plan.

1. Frederick County (DWSU) and Town of New Market – Water and Sewer Service Area Agreement allows DWSU to serve properties within the municipal limits of the Town of New Market.
2. Frederick County, City of Frederick, and Lake Linganore Water Supply Agreement regarding the withdrawal of water from Lake Linganore/Linganore Creek.
3. Frederick County (DWSU) has an agreement with the City of Frederick to provide up to 8.0 MGD of maximum day water capacity (5.0 MGD Annual Average) from its Potomac supply.
4. Frederick County residents in Blue Ridge Summit receive water from Washington County.
5. Frederick County provides to the Rattlewood Golf Course Clubhouse, located off of Penn Shop Rd., in Montgomery County.
6. The Town of Walkersville has the right of first refusal to use the Fountain Rock Spring as a public water supply.
7. Frederick County, the City of Frederick, and Fort Detrick are working on an agreement for the County to provide water through Frederick City to the Fort on an emergency-only basis.
8. Frederick County and the City of Brunswick – Rosemont Water Supply Agreement recognizes certain commitments where the City provides water capacity for the Village of Rosemont Water customers.

Water Conservation

Historically, water conservation has been seen in relation to a particular distribution system. In fact, water withdrawn from a well affects an aquifer which also feeds the streams. Water discharged from a sewage treatment plant is conveyed away from an aquifer faster than it might have been if treated by an on-lot disposal system. Therefore, water conservation should be a universal ethic because of the interrelatedness of the water cycle and the natural system.

Water consumption in Frederick County is below the national average and reflects the limited nature of the supply serving many of the residents. Water usage could increase in various areas of the County as abundant water supply systems are developed. However, even users on a system with abundant supply must be educated to conserve water due to the costs of treatment and distribution.

The Maryland Water Conservation Plumbing Fixtures Act requires that only water conserving plumbing fixtures be used in new construction or remodeling and that only water conserving fixtures may be sold. The Frederick County Permits & Inspections Office inspects plumbing for compliance with all laws and regulations prior to approval of certificates of occupancy.

Frederick City, Walkersville and the County subdivision of Waterside participated in a water conservation pilot study by offering kits containing low flow shower heads, toilet dams, and faucet aerators. In addition, dye tablets were offered to check for leaky toilets. The tablets were the least expensive item which resulted in the greatest water conservation, once the leaks were repaired. Leak detection has been built into the computer billing systems of both the County and Frederick City. The City of Brunswick initiated a water conservation program in 1989.

Water conservation in community service areas has a sewage treatment reduction benefit which, added to the water treatment cost savings, should encourage the consumer to be careful regardless of the abundance of the supply. Water conservation is especially significant for on lot disposal systems. It has been reported that current water saving technology can have up to a 40% reduction in sewage flows. This can alleviate existing overloading problems of small treatment plants or malfunctions of individual on lot disposal systems.

Section 2: Source Water Protection and Supply

Impaired Surface Waters

When it rains (or snow melts) on a natural surface, water mostly soaks into the ground. When rain falls on improved surfaces such as roads, roofs, or parking lots, it is unable to soak into the ground because these surfaces are usually made of impervious materials. This stormwater runoff must be collected, stored, and eventually discharged into a creek, stream, or river.

As runoff moves over impervious surfaces it collects pollutants. Pollutants also come from surface runoff over pervious surfaces like lawns, parks, and agricultural uses. There are federal, state, and local regulations and policy tools to reduce pollution to water bodies from stormwater runoff collected and discharged by storm drains. The purpose of these regulations is to protect water quality both for human purposes like drinking water and recreation but also for plants, animals, and aquatic resources. Potential water pollutants can also come from septic systems or wastewater treatment plants.

Protecting water quality is also important because watersheds are interconnected. While water in Frederick County drains locally to the Monocacy River, Catoctin Creek, the Potomac River, etc., eventually all the land in the County drains to the Potomac River and eventually the Chesapeake Bay. Frederick County regularly measures stream health, conducts watershed assessments, and undertakes stream and watershed restoration projects. Frederick County also has upgraded its primary wastewater treatment plant (Ballenger-McKinney) with Enhanced Nutrient Removal (ENR) technology (refer to Chapter 4 for more information).

Section 303 (d) of the Federal Clean Water Act which became law in 1972, establishes a system of reporting impaired surface waters in a jurisdiction. Usually, the impaired water body is a section of a stream, and the 303 (d) list is an annual list of 12 digit watersheds. An impairment is identified when water quality monitoring data suggest that a water body does not meet or is not expected to meet water quality standards. Most of the impairments are biological, although the larger 8-digit watersheds of which they are a part, are listed for sediments, nutrients, and bacteria, as well as biological impairment.

Total Maximum Daily Loads (TMDLs)

A TMDL establishes the maximum amount of an impairing substance or stressor that a water body can assimilate and still meet water quality standards and allocates that load among pollution contributors. TMDLs are written for streams or stream segments which are listed on the 303 (d) list. It is possible for a stream segment and its watershed to be removed from the list if it resumes meeting water quality standards, or if further research determines that it meets water quality standards (see chapter 2 for a complete listing/description of TMDLs in Frederick County).

Chesapeake Bay TMDL

In addition to the nationwide goals for restoring and maintaining water quality, the Federal government has given special recognition to the Chesapeake Bay as a natural resource of major significance. Nineteen-eighty-three marked the end of an intensive period of Bay research conducted by the Environmental Protection Agency, and the beginning of a landmark coordinated effort to correct water quality, habitat and resource problems identified by this effort. With the signing of the Chesapeake Bay Agreement of 1987 by Maryland, Virginia, Pennsylvania, the District of Columbia, and the Environmental Protection Agency, a commitment was made to implement coordinated plans to improve and protect the water quality and living resources of the Bay. To initiate this effort, Federal funds earmarked specifically for Bay implementation actions and long-term resource management became available. This effort was furthered

by the subsequent signing of the Chesapeake Bay Agreement of 2000, which established additional goals for the health of the Chesapeake Bay and commitments to adopt restoration measures to return the Bay's ecosystem to a healthy state and to remove it from the federal listing of impaired waters (known as the "303(d)" list from the section of the Clean Water Act) by 2010.

The federal government acknowledged that the 2010 goals for the Chesapeake Bay would not be met. Litigation over the failure to meet Clean Water Act requirements and Presidential Executive Order No. 13508, Chesapeake Bay Protection and Restoration, issued in 2009, ushered in a new and aggressive plan of action to improve water quality, aquatic habitat and living resources of the Chesapeake Bay. A Chesapeake Bay Watershed-wide Total Maximum Daily Load (TMDL) was developed by the EPA that establishes specific nutrient and sediment targets or loads from all sources and land sectors—agriculture, wastewater treatment, developed and developing lands, and septic systems within the 64,000 square mile bay watershed.

The Chesapeake Bay TMDL, and its pollutant reduction targets, is the largest TMDL ever written and has implications not just for Frederick County, but all states, counties, cities and towns within the Bay drainage area. In general, the Chesapeake Bay TMDL sets pollutant (nitrogen, phosphorus, sediment) pollution limits for all sources and land sectors by dividing or allocating the maximum allowable pollutant loads, among those sources, that waterways can assimilate and still meet water quality standards. Chesapeake Bay Watershed states are required to develop Watershed Implementation Plans (WIP) that identify target loads to be achieved by various pollution source sectors.

Maryland's Phase I WIP was submitted to the EPA on December 3, 2010 and includes a series of 75 proposed actions and strategies to reduce sediment and nutrient pollution. Maryland pledged to meet its nutrient and sediment reduction goals by 2020, five years earlier than the 2025 end-date established by the EPA to remove the Chesapeake Bay from the Clean Water Act's 303d listing of impaired waterbodies.

A substantial majority of the actions required under the Phase I WIPs, to be carried out at the local level, included stormwater program enhancements, wastewater treatment plant upgrades, adoption of agricultural runoff controls, stream restoration, or septic system upgrades. The Bay TMDL is further subdivided into Phase II WIPs, a geographically-refined, county-based pollution reduction plan. Frederick County and various stakeholders are required to identify and describe the various pollution control actions and practices to be implemented to achieve the necessary pollution reductions. Frederick County submitted its Phase II WIP to the Department on November 18, 2011 and is currently implementing the Phase III WIP with goals specific to Frederick County. The State of Maryland is on track to meet the Bay TMDL's 2025 implementation goal for phosphorus and sediment reductions, but more work is needed to reduce nitrogen. (see chapter 2 for further information on Chesapeake Bay protection and restoration).

Public Water Supply Safe Yield Requirements

The safe yield of a public water supply is the maximum dependable draft that can be made continuously on a source of water supply during a period of years during which the probable driest period or period of greatest deficiency in water supply is likely to occur.¹ The Recommended Standards for Water Works further defines surface water source water quantity requirements as follows:²

- Be adequate to meet the maximum projected water demand of the service area as shown by calculations based on the extreme drought of record while not significantly affecting the ecology of the water course downstream of the intake,
- Provide a reasonable surplus for anticipated growth,
- Be adequate to compensate for all losses such as silting, evaporation, seepage, etc.,
- Be adequate to provide ample water for other legal users of the source.

The Extreme Drought of Record for a particular water source is based on historical hydrologic events. When evaluating historical data to determine the Safe Yield of a source for use as public water supply, it is important to understand that even 100 years of daily flow data from a river or stream reflects only a very small period in geologic time. One must recognize that the historical Extreme Drought of Record is probably not the most severe drought that will occur during a period of use of the water source. It is for this very reason that water supply systems are planned and developed to be able to meet the calculated maximum daily water demand during the Extreme Drought of Record. Should a more severe drought occur, than that which had been previously recorded, the water supplier can impose mandatory water use restrictions to ensure that adequate water is available during a drought more severe than that on which the design of the water system had been previously based.

This design requirement effectively provides a design safety factor for source adequacy. Once such a more severe drought has occurred it is incumbent upon the water supplier to augment its supply to meet the projected maximum daily demand, based on the new (more severe) recorded period of greatest deficiency in water supply. Failure to follow this doctrine can seriously jeopardize the water supply adequacy and the public's health and well-being.

The Average Daily Demand (ADD) of a water system is the average daily demand recorded over a period of one to three years, depending upon the systems permit language. Average values do not show the extreme high and low demand values that may be encountered through the year. Average values should not be used for allocation purposes since they do not represent the extreme conditions under which a water system will need to operate. The Maximum Day Demand (MDD) of a water system is highest recorded demand on a given day throughout the year. Such events are usually preceded and followed by near MDD values. Water systems must have adequate source water and treatment capacity to be able to meet the MDD since water storage tanks are typically designed to meet maximum hourly demand only. In most cases the MDD will occur during the summer, typically in July or August, although such events can occur at other times as well.

The ratio of the annual Average Daily Demand and the Maximum Day Demand is the Maximum Day Peaking Factor. This value represents the multiplier between the ADD and the MDD. This factor is frequently used to identify the magnitude of the water use when demand is at its highest. When

¹ Source: Glossary - Water & Wastewater Control Engineering, Prepared jointly by the American Public Health Association, American Society of Civil Engineers, American Water Works Association, Water Environment Federation.

² Published by The Great lakes Upper Mississippi River Board of State Public Health & Environmental Mangers

evaluating these water demand relationships, it is important to use several years of data and to ensure that unique events, such as periods when water use restrictions are in place, do not suppress the demand values. Conversely, data that arbitrarily inflates the Maximum Day Demand should also be culled from the data used in the analysis. One example would be the rapid filling of a water storage tank immediately following a routine cleaning that coincided with a period of high water demand.

Permitted water withdrawals should complement the water treatment system's MDD capacity. Surface water treatment plants typically do not operate at 100% efficiency. In most WTPs, approximately 5% to 7% of the water withdrawn from the source of supply is needed to sustain the operation of various treatment processes to convey WTP residuals to waste treatment facilities. This includes water used for clarifier blow down and filter backwashing. Other less significant activities, such as continuous monitoring devices, also use water effecting the efficiency of the WTP. This wastewater can be treated and reprocessed through the WTP, or as is the case with the New Design Road WTP, be treated and returned to the Potomac River.

The aggregate water supply must be capable of delivering the maximum day demand. Water storage facilities must have adequate volume to meet maximum hourly demands or fire flow demands, whichever is greater.

Potomac River Supply Adequacy

The Potomac River, as a managed water source, is clearly the most abundant water supply available to meet the existing and future needs of Frederick County and the City of Frederick.¹ Almost all of the land in Frederick County drains to the Potomac River, primarily through drainage basins associated with the Monocacy River and Catoctin Creek. This provides significant quantities of water not just for Frederick County but also its downstream neighbors.

According to the Maryland Geologic Survey (MGS) Frederick County's large land area represents a major source of water for the Potomac River. Using the hydrologic budget concept identified by the MGS for Frederick County, the aggregate volume of water resulting from average precipitation, in the various drainage basins that ultimately flow to the Potomac, in inches and Billions of Gallons per Year is estimated to be approximately 708 billion gallons per year. The MGS estimates that total annual runoff associated with Frederick County's land area is approximately 419 billion gallons per year.² This represents an average daily volume of water of approximately 1.15 billion gallons per day (BGD).

Frederick County and the City of Frederick's combined water supplies, compared to many of the large downstream users of this water resource, have no significant consumptive impact on the Potomac River. The combined return flow to the Potomac River from the County and City WWTPs and the volume of watershed by the large land area associated with Frederick County ensures that the overall use of the water is efficient and large quantities of water will be subsequently available for current and future downstream users of the Potomac River.

The ICPRB, through its Section for Cooperative Water Supply Operations on the Potomac, coordinates the operations of the three major metropolitan area water suppliers during times of drought and

¹ The MDE does not provide flow-by requirements in WAUP for the Potomac River. Minimum flow requirements at Little Falls are used to trigger releases from upstream reservoirs.

² A very small number of acres flows to the Patuxent River.

Source: Maryland Geological Survey, Bulletin 33, 1987, Water Resources of Frederick County, Maryland, Hydrologic Budgets and Water Availability.

recommends releases of stored water. These operations ensure adequate water supplies for the Washington metropolitan area during droughts. The Jennings Randolph Reservoir in western Maryland, and Little Seneca Reservoir in Montgomery County, MD, is used as a system to ensure adequate river flows. The larger Jennings Randolph Reservoir, in conjunction with the Savage Reservoir, ensures that adequate water is available to the Washington metropolitan area.

Low-Flow Augmentation

The State of Maryland is a party to the Potomac River Low Flow Allocation Agreement (LFAA), which was signed by several states in the Potomac River Basin on January 11, 1978. The agreement was established to equitably apportion water during low-flow periods and to prevent non-federal interests from taking so much water from the river that it would threaten drinking water supplies for the District of Columbia and Arlington County and the City of Falls Church in Virginia.¹

As a signatory party, the State of Maryland's Code of Regulations (COMAR) states in Title 26, Subtitle 17, Section 07, Chapter 03, Section 02 that permits for withdrawals that are issued or amended by the Maryland Department of the Environment for surface water appropriation in the Potomac River Basin and upstream of Little Falls after January 1, 1985, shall condition the withdrawal of water by any permittee upon the provision of low-flow augmentation for consumptive water use if the maximum consumptive water use can exceed 1-million gallons per day (1 mgd) at any time. Low-flow augmentation requirements are typically satisfied by the creation of an impoundment system that allows water to be captured, held, and released during periods of low flow. This can also be addressed by halting the consumptive use or lowering the consumptive use below one MGD.

Much of the Frederick County's current utilization of water from the Potomac River is considered "non-consumptive" because the water is returned to the Potomac River watershed after treatment by wastewater treatment plants. Certain uses like bottling or evaporative cooling are considered consumptive because they result in the transfer of water outside the watershed through transportation or evaporation. Future planning efforts that focus on the establishment or development of industrially zoned land that can support packaging plants or technological applications like data centers should be undertaken with consideration of the implications of consumptive use. Additionally, the establishment of an augmentation system represents a significant investment in terms of time, effort, and expense which should borne by permittees and not the citizens of Frederick County.

¹ The Cruden Team. (2018). *A Review of the Potomac River Low Flow Allocation Agreement*. Retrieved January 31, 2024, from https://www.potomacriver.org/wp-content/uploads/2018/04/LFAA_Review_Final_2.22.185.pdf

Section 3: Community Water Systems

Frederick County (DWSU) Water Systems

Frederick County, through its Division of Water and Sewer Utilities (DWSU), operates 11 separate community water systems located throughout Frederick County. The County water systems serve approximately 75,374 people located in several defined services areas. Of this population approximately 10,263 (13%) are specifically served by groundwater systems.

Frederick County Surface Water Supplies

DWSU's largest water supply system, the New Design Road Water Treatment Plant (WTP), which withdraws water from the Potomac River, has the greatest source capacity of all the water supplies in Frederick County. The New Design Road WTP Potomac River intake is located 2.5 miles upstream of the confluence of the Potomac and Monocacy Rivers. The New Design Water System serves the following Community Growth Areas:

- Adamstown
- Ballenger Creek
- Buckeystown
- Eastalco
- Frederick Southeast
- Holly Hills
- Linganore
- Monrovia
- New Market
- Point of Rocks
- Spring Ridge/Bartonsville
- Urbana
- City of Frederick (via PRWSA)

The Potomac River is the most abundant water supply in Frederick County. All of the land in Frederick County drains to the Potomac River, providing significant quantities of water not just for Frederick County but also its downstream neighbors. Additionally, Frederick County's large land area represents a major source of water for the Potomac River. The Maryland Geologic Survey (MGS) estimates that total annual runoff associated with Frederick County's land area is approximately 419 billion gallons per year. This represents an average daily volume of water of approximately 1.15 billion gallons per day (BGD). DWSU's use of the Potomac River as a water supply is basically non-consumptive. Water withdrawal and wastewater return flow data, during the two most recent drought years (1999 and 2002); reflect relatively low consumptive use during drought, compared to that of other large (downstream) users of the Potomac.

DWSU's Facility Plan for the New Design Road WTP is based on providing an ultimate 45 MGD maximum day capacity. Based on the Facility Plan, the first major increase in treatment capacity provides 25 MGD of maximum daily treatment capacity. DWSU's Water Appropriation and Use Permit (WAUP) for the Potomac River supply currently allows the withdrawal of up to 26 MGD, providing the New Design Road WTP with a permitted treatment capacity of 25 MGD to meet maximum day demands. Substantial completion for the WTP upgrade project occurred in April 2011. Completion of the plant upgrade allowed the County to fulfill its 8 MGD (max day) supply obligation to the City of Frederick per the Potomac River Water Supply Agreement (PRWSA).

In conjunction with this project the New Design Transmission Main (Phases 1 thru 5) was completed in 2010. The 42" transmission main conveys water from the New Design WTP to Frederick City via two different points of interconnection and also supplies the eastern part of Frederick County via the East County Water Storage Tank and Booster Station. The New Design Road WTP is authorized to discharge treated wastewater to the Potomac River generated from the water treatment process and residuals treatment, and from on-site wastewater treatment under NPDES discharge permit MD0061841 (State Permit 15-DP-2296A).

DWSU also has a 2.0 MGD surface water treatment facility located at Lake Linganore. This permanent facility was constructed in 1991 after the County deployed several smaller temporary surface water treatment systems that relied on the Lake as a source of supply. Presently this water appropriation allows DWSU to withdraw 0.30 MGD on an average annual basis and 2.0 MGD maximum monthly daily basis. A package filtration plant provides complete treatment of the lake water. Screened intakes located at various depths in the lake provide the WTP with multiple points of withdrawal.

In 2000 Frederick County, the City of Frederick, and the Lake Linganore Association executed a Regional Water System Agreement. This agreement addressed several long-standing issues associated with the use of Lake Linganore as a water supply. In addition to providing public funds to make repairs to the aging private dam and spillway, the agreement also addressed conflicting permit flow-by requirements that are contained in the City of Frederick's Linganore Creek WAUP and the Lake Linganore Association (LLA) obstruction permit. The agreement required the LLA to release enough water from the lake to ensure that the City of Frederick can withdraw up to 6.0 MGD and also meet its WAUP permit flow-by requirement of 4.46 MGD. The agreement also required the County, once it completed the construction of its Potomac River Water Supply system, including a direct connection to the Linganore Service Area, to cease all water withdrawal from the Lake whenever its pool level (in the lake) is below elevation 308 AMSL (the crest of the dam's spillway). This requirement effectively prevents the County from continuously relying on Lake Linganore as a source of supply. Since the Potomac River water supply projects are completed, the County's Lake Linganore water supply is an un-allocable secondary source, used only to supplement the Potomac River supply when excess water resources are available in the Linganore basin or during certain emergencies. After the completion of the PRWSA improvements, the 2000 agreement was superseded in 2014 by the Lake Linganore Water Supply Agreement (which maintained the withdrawal protection for the City of Frederick and limits on Frederick County's use of the lake).

The County's combined surface water appropriation associated with the New Design Road and Lake Linganore sources allows for the average daily withdrawal of up to 16.3 MGD with a combined maximum daily withdrawal of 28 MGD. However, the provisions of the 2014 agreement regarding the use of Lake Linganore limit the allocation of this surface water to the permitted values provided in the New Design Road WAUP. Table 3-5 Summarizes the County's current surface water appropriations.

Table 3-5: Frederick County/DWSU Surface Water Appropriations

Water System	Current Water Appropriation and Use Permits		
	Permit Number	Daily Average	Max Daily Use
Lake Linganore (impoundment of Linganore Creek) (secondary source)	FR 85S002 (10)	0.3	2.00
New Design Road (Potomac River)	FR 68S005 (09)	16.00	26.00
Total (MGD)		16.3	28.00

Water treatment requirements for DWSU's surface water supplies are not unlike those of other systems with similar source water quality. DWSU's New Design Road WTP, which withdrawals water from the Potomac River, provides complete conventional surface water treatment, including pre-settling, flocculation, sedimentation and filtration. Turbidity levels in source water from the Potomac River can exceed 1,500 NTU necessitating more substantial (conventional) treatment.

Table 3-6: Inventory of Existing Impounded Supplies

	Crest Elevation (ASL)	Total Length of Dam	Flooded Area of Crest Elevation	Length of Shore Line at Crest Elevation	Area of Land Owned	Water Overflowed Crest for First Time	Capacity of Reservoir	Safe Yield (MGD)	Average Daily Withdrawal (MGD)
Lake Linganore (Private)	324.5 feet	750 feet	276 acres	9.14 miles	N/A	N/A	7,900 ac-ft	N/A	N/A

Table 3-7: Frederick County/DWSU Surface Water Treatment Requirements

Water System	Screening		Pre-Settling	Flash Mix	Pre-Chlorination	Activated Carbon	Flocculation	Sedimentation	Rapid Sand Filtration	Disinfection		Corrosion Control		Fluoridation
	Course	Fine								Post Chlorination	Ultra-Violet Light	PH Adjustment	Orthophosphate	
New Design	●	●	●	●	■	■	●	●	●	●	●	●	■	■
Lake Linganore (secondary source)		●		●	■	■	●	●	●	●		●	■	■

- Necessary treatment process, used continuously
- Optional treatment process, available but used only if needed

Frederick County DWSU Groundwater Supply Systems

DWSU also owns and operates several groundwater supply systems that supply water to the County's small individual Community Water Systems (CWS) or are available to supplement the surface water supplies. These small systems range in size from 0.01 MGD to 1.0 MGD.

As Frederick County grows, its water distribution network expands, allowing the interconnection of small groundwater-based systems to larger water systems that rely on the more abundant surface water supplies. These interconnections frequently result in the partial idling of the smaller ground water supply and treatment systems. In most cases, when distribution system interconnections occur, the surface water supply subsequently becomes the CWS primary source of water, with the groundwater system maintained as a secondary supplemental system only. These consolidations of the DWSU's groundwater systems with larger surface water supplies, creates a supplemental relationship between several of the ground and surface water appropriations.

A series of New Design Water Transmission Main projects and Linganore waterline loop projects have facilitated the interconnection of Lake Linganore, New Market and Monrovia to DWSU's New Design Road System Potomac River water supply. This has resulted in the idling of the Linganore WTP and decommissioning the New Market West and Woodspring systems. Some waterline loop projects will be completed in the future by developer-initiated projects in these service areas. Water supply to the City of Frederick is provided by two 24" waterlines. The County began "wheeling" water through the City of Frederick's water distribution system to supply the County's Waterside and Cloverhill III water systems.

DWSU's water system consolidations continue. In 2004 a 20-inch water transmission line was constructed along MD-28 from New Design Road to Point of Rocks. This allowed the DWSU's Point of Rocks CWS to be connected to its New Design Road WTP supply.

Treatment requirements for the groundwater supplies vary depending on the source of supply to ensure Safe Drinking Water Act (SDWA) compliance or to meet reasonable aesthetic expectations of the customer. Table 3-7 provides a basic summary of the treatment requirements for the DWSU's groundwater based CWS.

Table 3-8: Frederick County/DWSU Groundwater CWS Treatment Requirements

Groundwater Systems										
Water System	Radon Removal (Aeration)	Nitrate Removal	Fe/Mg Removal	Cartridge Filtration	Corrosion Control		Disinfection		Fluoridation	PFAS Removal
					pH Adjustment	Orthophosphate	Chlorination	Ultra-Violet Light		
Bradford Estates		●		□	●		●	□	●	□
Cambridge Farms				□	●	■	●	□	●	
Copperfield			●		●	■	●		○	
Fountaindale/Braddock Heights	●	■		●	●		●		○	□
Knolls of Windsor		■		●	●		●	●	●	□
Libertytown Apartments					●		●		○	
Libertytown East			■		●		●		●	
Samhill	■	●			●		●		●	□
White Rock					●		●		○	□

- Necessary treatment process, used continuously.
- Optional treatment process, available but used only if needed.
- Treatment process provided through programmed WTP improvements.
- The County's goal is to provide Fluoride prophylaxis for all of its customers including those on small ground water supplies. However, these particular CWS (WTP) are not yet fluoridated.

Table 3-9: Frederick County/DWSU Ground Water Appropriations

Frederick County Groundwater Supplies			
Water System	Current Water Appropriation and Use Permits (MGD)		
	Permit Number	Daily Average	Month of Maximum Use
Bradford Estates	FR 1988G002 (04)	0.0170	0.0280
Cambridge Farms	FR 1970G014 (06)	0.0620	0.1000
Cambridge Farms	FR2024G001(01)	0.005	0.008
Copperfield- Woodbourne Manor Wells	FR 2004G103 (02)	0.0126	0.0307
Copperfield- Woodbourne Manor Wells	FR 2004G003 (02)	0.0331	0.0457
Copperfield	FR 1987G034 (04)	0.0293	0.0473
Fountaindale	FR 1966G012 (11)	0.2250	0.3375
		--	--
Knolls of Windsor	FR 1990G031 (06)	0.1068	0.1773
Knolls of Windsor- Horan Wells	FR 2013G001 (02)	0.0113	0.0187
Libertytown Apartments	FR 1985G001 (06)	0.0080	0.0120
Libertytown West- Mill Creek Wells	FR 2013G004 (01)	0.0371	0.0618
Libertytown West- Mayne Wells	FR 2006G004 (06)	0.0483	0.0734
Libertytown East	FR 1989G024 (05)	0.0207	0.0310
Samhill Estates	FR 1990G013 (06)	0.1556	0.2600
White Rock	FR 1954G007 (06)	0.0240	0.0360
Total		0.7958	1.2674

The County has 15 separate WAUPs associated with its various groundwater supplies. These WAUP identify the daily average water withdrawals that are permitted on annual basis and during the month of maximum use. DWSU's ground water appropriations allow for 0.7958 MGD of ground water to be used on an annual average basis with up to 1.2674 MGD available during the month of maximum use. The individual WAUP are shown in Table 3-9.

Frederick County DWSU Water System Pressure Zones

DWSU's water supply systems have six (6) categorized pressure zones. These pressure zones establish the minimum and maximum water pressure available for the water service areas. By using categorized pressure zones, water storage and booster pumping facilities can be planned in a uniform way, ensuring that ultimate interconnection of water systems is possible. DWSU also has several small water systems that operate outside of the categorized pressure zones. These systems were developed before uniform design standards for water storage facilities and defined pressure zones were established. When feasible DWSU is converting these water systems so that they operate in one of the categorized pressure zones. For example, a 1.0 million gallon Zone 1 (overflow 473) elevated tank replaced a standpipe in Point of Rocks that was built with an overflow elevation of 452. The ground elevations that can be served by each pressure zone are shown on Table 3-9. Multi-story structures exceeding these elevations require specific considerations consistent with adopted design criteria by DWSU.

Table 3-10: DWSU Water System Pressure Zones

Pressure Zone	Tank Overflow Elevation (ft.)	Service Area	
		Minimum Elevation (ft.)	Maximum Elevation (ft.)
1	473	242	373
2	610	373	510
3 East	700	469	600
3 West	737	506	637
4	870	639	770
5	1021	790	921

DWSU's water systems rely on a combination of water storage systems to maintain an adequate, reliable hydraulic gradient across the water distribution system. DWSU's water systems pressure zones are established by the overflow elevation of its reservoirs (tanks), standpipes and elevated tanks. Reservoirs and standpipes constructed at defined elevations and or elevated water tanks are used on most DWSU distribution systems to provide gravity water storage. Only DWSU's smallest water systems rely on pump storage supply with either ground tanks or standpipes used for supply. The only exception to this would be those homes served by the Jordan Tank in the area west of New Market.

Frederick County's topographic relief (1,695 feet) necessitates the need for multiple pressure zones. To the extent possible categorized pressure zones have been established to facilitate coordination and connection of DWSU's water storage tanks.

DWSU currently has 17 water storage tanks operating in the 6 active DWSU categorized pressure zones. These tanks and their particular pressure zones and configurations are shown in Table 3-11.

Table 3-11: DWSU Pressure Zones/Water Storage Tanks

Tank Name	Overflow (Ft. AMSL)	Dimensions		Construction Type	Capacity (MG)	Note
		Height	Diameter			
Pressure Zone 1						
Ballenger 1 (MD 85)	473.0	144	50	Steel/Elevated	0.50	
Ballenger 2 (Reich's Ford, Public Safety site)	473.0	44	112	PSC/Tank	2.5	(1)
Ballenger 3 (Hannover)	473.0	69	70	PSC/Tank	2.0	(2)
Point of Rocks	473.0	122	75	Steel/Elevated	1.0	(3)
Pressure Zone 2						
Ballenger 4	610.0	182	67	Comp./Elevated	1.0	(4)
Linganore 1	610.0	50	47	Steel/Tank	0.70	
Linganore 2	610.0	48	90	PSC/Tank	2.5	(5)
Urbana 2 (Pontius Ct)	610.0	88.5	87	Comp./Elevated	1.5	(6)
Copperfield	660.0	114	41	Steel/Elevated	0.20	
White Rock 1	610.0	14	47	Steel/Standpipe	0.054	
White Rock 2	610.0	14	47	Steel/Standpipe	0.054	
Pressure Zone 3 (East County)						
Bradford Estates	700.0	25	47	Steel/Standpipe	0.176	(7)
Monrovia	700.0	150	90	Comp./Elevated	2.0	(8) (9)
Pressure Zone 3 (West County)						
Cambridge Farms 1	737.0	98	25	Steel/Standpipe	0.35	
Cambridge Farms 2	737.0	98	25	Steel/Standpipe	0.35	(11)
Libertytown	737.0	156	56	Steel/Elevated	0.50	
Pressure Zone 4						
Fountaindale	870.0	39	70	Steel/Standpipe	0.625	(10)
Samhill	870.0	15	62	Steel/Tank	0.309	
Pressure Zone 5						
Braddock Hts.	1021	46	61	Steel/Standpipe	0.75	

(1) East County System. This reservoir also supplies booster pump system, which supplies Linganore 2 tank in Pressure Zone 2.

(2) Booster pump station located at this reservoir supplies Ballenger 4 located in Pressure Zone 2.

(3) This tank replaced existing non-categorized zone tank in Point of Rocks.

(4) Supplied from booster pump system at Ballenger 3 tank

(5) This reservoir also supplies booster pump system, which supplies Pressure Zone 3.

(6) Supplied from Pressure Zone 1 by Ball Road Booster pump station.

(7) Pumped storage supply system for Bradford Estates Subdivision.

(8) Supplied from Pressure Zone 2 by Jordan booster Pump station located at Linganore Tank 2.

(9) A developer-funded 1 MG water storage tank, Monrovia 2, is approved under construction permit application 21-1056 but not under construction. The tank will be a Comp/Elevated tank 82' high and 74' in diameter.

(10) This standpipe also supplies booster pump system, which supplies Braddock Tank in Pressure Zone 5.

(11) Tank 2 is in the permitting stage and not yet under construction.

In addition to these water storage facilities the County also has several water storage tanks that do not operate by gravity. Some of these tanks are located at WTPs, which in conjunction with pumping systems, supply water to the various pressure zones. In some cases, such as the Bradford Estates, Knolls of Windsor

and Samhill water systems, these tanks were designed to complement their categorized pressure zones and the tanks can provide both gravity and pumped storage supply. These tanks do not supply water to the distribution systems by gravity, they rely on pumping systems located at the WTP to convey water, at the appropriate gradient, into the distribution system, which may or may not have gravity storage on the distribution system. These tanks are shown on Table 3-12.

Table 3-12: DWSU WTP Ground Storage Tanks

Tank Name	Overflow (Ft. AMSL)	Dimensions		Construction Type	Nominal Capacity (MG)
		Height	Diameter		
Pumping to Pressure Zone 1 – OF 473					
New Design WTP 1	300.0	44	65	PSC/Reservoir	0.90
New Design WTP 2	310.0	51	77	PSC/ Reservoir	1.30
Pumping to Pressure Zone 2 – OF 610					
Knolls of Windsor	610.0	38	42	Steel/ Reservoir	0.40
Pumping to Pressure Zone 3 – OF 700					
Fountaindale ETP 1	665.0	47	25	Steel/Standpipe	0.17
Bradford Estates	700.0			Steel/ Reservoir	0.176
Pumping to Pressure Zone 4 – OF 870					
Samhill	870.0	15	62	Steel/Reservoir	0.310
Fountaindale Standpipe	870.0	70	39	Steel/Standpipe	0.625

When it is necessary to convey water from a lower pressure zone to a higher-pressure zone DWSU generally deploys booster pump stations at water storage facilities to facilitate a controlled increase in system pressure and flow. Therefore, some water storage facilities provide both gravity storage pressure in a lower zone and pumped storage supply for the next higher zone. These configurations increase the reliability of both pressure zones since flow can be easily controlled (in either direction) between pressure zones.

Table 3-13: DWSU Water Pumping Stations

	Number of Pumps Domestic / High	Capacity of Pumps (gpm) Domestic / High	Average Day Pumpage (gpd)
Ball Road Booster Pump Station	3 / 1	950 / 2,800	953,300
Spring Ridge Booster Pump Station	3	750 / 1,225	905
Dogwood Lane Booster Pump Station	2	30 / 0	1,320
Aspen North Booster Pump Station	3 / 2	174 / 1,174	11,250
Meadows Booster Pump Station	2 / 2	500 / 1570	56,480
Fountaindale Braddock Booster Pump Station	2 / 2	76 / 475	35,600
Hannover Booster Pump Station	2 / 2	350 / 1,250	309,000

	Number of Pumps Domestic / High	Capacity of Pumps (gpm) Domestic / High	Average Day Pumpage (gpd)
Urbana High Zone Booster Pump Station	2 / 2	50 / 220	30,660
Lake Ridge (Pinehurst) Booster Pump Station	1 / 0	15	4,000
Jordan Booster Pump Station	0 / 3	1,144	664,000
Harvest Ridge Booster Pump Station	2 / 0	40 / 0	1,800
East County Booster Pump Station	2 / 3	1,875 / 4,100	2,078,000

Notes:

1. Pump capacity varies and are estimates only.
2. East County station contains 2 City of Frederick pumps and 3 County pumps

Fountaindale Water System

The Fountaindale Water System (MD0100013) is owned by Frederick County (DWSU) and provides water service to the Fountaindale and Braddock Heights communities. Raw water is conveyed at eight active wells and centrally treated then distributed to the community through 6, 8, and 12-inch mains. The Braddock Heights water system was combined with the Fountaindale system in 2002. In response to an Order issued by the Maryland Department of the Environment to provide water service to the Braddock Heights community, the County constructed new lines and facilities to serve the properties previously served by the private Braddock Water Company. Additional information can be found earlier in this chapter under Frederick County (DWSU) Groundwater Supply Systems. The most recent updates to the system were in 2019 when an additional raw water well was added to the system and plant controls were updated.

The Fountaindale Water System has approximately 974 service connections with an estimated population served of 2,630. There are few taps available and only a small undeveloped acreage. The Braddock Heights water system service area has a few large undeveloped properties, which may be developed in the future but only to the extent that the existing groundwater appropriations and supply could support development.

Planned Improvements

PFAS treatment improvements at the Fountaindale WTP may have to be implemented in the future.

Jefferson Water System

The Jefferson Water Service Area covers 2.01 square miles including and surrounding the unincorporated community of Jefferson. A portion of the area is currently served by two County (DWSU) water systems and one private water system, which are planned to become part of one community water system in the future. The majority of the service area population is currently served by individual wells including the Valley Elementary School.

Existing Facilities

Copperfield Water System (MD0100037) is owned and operated by the County (DWSU) and serves the 125 lot Copperfield and 197 lot Woodbourne Manor subdivisions on the west end of Jefferson. Water from seven wells is chlorinated, pH adjusted and filtered for iron. The system will be fluoridated in the

future. Additional information can be found earlier in this chapter under Frederick County (DWSU) Groundwater Supply Systems.

Briercrest Apartment Water System (MD0100004) is privately owned and operated system serving a 24-unit apartment complex from an underground 10,000-gallon pressurized tank. The apartment complex is in the process of connecting to the public water supply.

The **Cambridge Farms Water System (MD0100033)** is owned and operated by the County (DWSU) and serves the Cambridge Farms subdivision of single-family lots at the east end of Jefferson. The water is chlorinated, pH adjusted and eventually will be fluoridated. Water is stored in a 356,000-gallon standpipe. Additional information can be found earlier in this chapter under Frederick County (DWSU) Groundwater Supply Systems.

Existing & Future Demand

The Cambridge Farms and Briercrest Apartments water systems serve a total population of 948 and have 351 service connections. The average daily use in 2022 was 41,518 gpd. The Copperfield system currently serves 279 service connections and an estimated population of 753 persons. The 2022 average daily use was 37,296 gpd. The Jefferson Growth Area has an estimated population of 2,928 (Frederick County Estimate, 2021).

Table 3-14: Jefferson Area Ground Water Sources

Aquifer/location	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD in month of maximum use)	Permit Number
Granodiorite & Biotite Granite Gneiss <i>Copperfield</i>	29,300	47,300	FR1987G034(04)
Catoclin Metabasalt <i>Cambridge Farms & Briercrest Apts.</i>	62,000	100,000	FR1970G014(08)
Catoclin Metabasalt <i>Cambridge Farms & Briercrest Apts.</i>	5,000	8,000	FR2024G001(01)
Granodiorite & Biotite Granite Gneiss <i>Valley Elementary</i>	5,000	10,000	FR1968G008(06)
Biotite Granite Gneiss <i>Woodbourne Manor</i>	33,100	45,700	FR2004G003(02)
Biotite Series <i>Woodbourne Manor</i>	12,600	30,700	FR2004G103(02)

Planned Improvements

A new water storage tank (steel/standpipe) will be added to the Cambridge Farms water system. It will have an overflow elevation of 737' and is 98' in height and 25' in diameter.

It is anticipated that the separate water systems will be joined to provide a Jefferson community system and depends entirely on the collective availability of groundwater and the ability to appropriate same from the Maryland Department of the Environment. An alternative to groundwater supply in the future suggested by the Boyle Water Distribution Study includes a connection from the County distribution network from the Ballenger system west along MD-180. However, the capital cost for such a system, relative to the number of users, would be extremely high.

Wellhead Protection

The Wellhead Protection Areas (WHPAs) delineated in the Jefferson Area overlap in some instances. The Copperfield WHPA is approximately 160 acres and extends to the east side of Broad Run Road and includes part of the Valley Elementary School site. The Elementary School's WHPA, is a standard 1,000' radius around the well, which is standard for public water supplies which yield less than 10,000 gpd. The Cambridge Farms WHPA follows topographic divides and covers an area of approximately 191 acres. The Briercrest WHPA is the standard 1,000' radius from the well and includes the Briercrest Subdivision lots, as well as existing dwellings along Old Middletown Road and along Jefferson Pike, which are served by individual wells.

Libertytown Water System

The Libertytown Service Area is approximately 0.5 square miles in size encompassing the unincorporated community of Libertytown, which is designated as a community growth area and has an estimated population of 988 (Frederick County Estimate, 2021). Most of the community are served by individual wells. However, the County (DWSU) has a water system serving the convenience store and a condominium complex on the west end, and another serving the Liberty East development on the east end of the community. Two projects (Mill Creek and Mayne) have been approved for a combined 334 dwelling units. These projects are located south and north of MD-26 and the existing community. These projects will provide additional supply and the impetus to connect the entire service area into one system.

The area is underlain with a relatively low yielding aquifer with scattered intrusions of high yielding Wakefield Marble. A community system can take advantage of locating production wells, where these high water-yielding rocks occur, to the benefit of the entire community.

Existing Facilities

The ***Liberty East Water System (MD0100038)*** serves a population of 113 people and has 42 service connections for the Liberty East subdivision which is built out. There is a 2-acre undeveloped commercial parcel in this subdivision. It obtains its water supply from two wells. Additional wells have been drilled in the Liberty Village PUD development on the south side of MD-26, but water quality issues precluded the use of those wells. The water is treated with chlorination and pH for corrosion control at a small WTP on-site in the Liberty East subdivision. Fluoride treatment was added to the finished water in the WTP. Additional information can be found earlier in this chapter under Frederick County (DWSU) Ground Water Supply Systems.

The ***Libertytown Apartments Water System (MD0100036)*** This system currently serves the Libertytown condominiums and the 7-11 convenience store. New development in this system will include the Libertytown Gardens development, which will include 14 multi-family dwellings and some retail/office uses. Additional information can be found earlier in this chapter under Frederick County (DWSU) Ground Water Supply Systems.

The ***Liberty Elementary School (MD1100016)*** is a Multi-Use system served by two wells with an appropriation permit to withdraw 4,000 gpd.

Table 3-15: Libertytown Area Ground Water Sources

Aquifer/location	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD in month of maximum use)	Permit Number
Wakefield Marble & Ijamsville Formation <i>Liberty East & Liberty Village</i>	20,700	31,000	FR1989G024(05)
Metarhyolite <i>Libertytown Apartments</i>	8,000	12,000	FR1985G001(06)
Metarhyolite <i>Liberty Elementary School</i>	4,900	8,700	FR1973G017(05)

Existing & Future Demand

The current estimated population of the Libertytown community is 988 persons. A potential projected population at build out would be approximately 2,450. However, the ultimate residential and commercial build out will be greatly affected by the amount of groundwater available in the local watershed. As of December 2023, there are 443 dwellings in the pipeline. Vacant residentially zoned land could result in approximately 100 additional dwellings. There is also approximately 8.5 acres of Village Center or General Commercial land. Additional water supply is needed to serve the commercial and institutional uses in the community.

Planned Improvements

The Libertytown Apartments water system will be combined with planned improvements with the future Mayne, Mill Creek, and Libertytown Gardens developments. There will be additional wells, a new water treatment plant (WTP), and an elevated water storage tank added to the system. The future WTP site has been identified on the north side of the community at MD-550 next to the Mayne property. A 500,000 gallon elevated water storage tank has been constructed but will not be operational until development occurs. The Mill Creek development south of MD-26 will connect to this shared system and participate in ensuring shared infrastructure is adequate to support the entire system.

Wellhead Protection

The WHPA for the Liberty East Water System was delineated to include the extent of the fracture traces intersecting near the wells, the outcrop of Wakefield Marble and the watershed boundaries of the small creek that passes near the wells. The area was then modified to approximate a recharge area. An area of approximately 98 acres is delineated.

The WHPAs for the Libertytown Apartments and the Liberty Elementary School, are the standard 1,000 ft. radius around the wells, which is standard for water systems producing less than 10,000 gpd. These WHPAs overlap somewhat. The Elementary School wells showed a detection of MTBE, but the Libertytown Apartment wells did not.

Section 4: Municipal Community Systems

City of Brunswick/Rosemont/Knoxville

The Brunswick Area Water System (MD0100005) serves the City of Brunswick, some of the unincorporated community of Knoxville, and the subdivision known as New Addition. The service area also includes customers in Washington County adjacent to the Yourtee Springs.

In 2013, the County completed construction of a water distribution system for the Village of Rosemont. The Rosemont Water System (MD0100045) is supplied with treated water from the City of Brunswick via the Rosemont Water Supply Agreement.

Existing Facilities

The Brunswick Water Treatment Plant was built in 1968 to supplement the spring supply. In 1990, the plant was upgraded and expanded to 1 MGD and the Potomac became the major water source. In 2012, the treatment plant was expanded to an ultimate capacity of 2.0 MGD. The city has a withdrawal permit for a daily average withdrawal of 1.6 mgd with a maximum daily withdrawal of 2.0 MGD. The treatment plant has coagulation, clarification, filtration, and disinfection. A clear well at the treatment plant has a capacity of 130,000 gallons and an overflow elevation of 260 ft.

The Yourtee Springs are located in Washington County, Maryland, 3 miles west and 7 miles north of the Town at elevation 588. Yourtee Springs is permitted for 0.35 MGD (daily average) and 0.50 MGD (max. day demand). The supply is chlorinated at the intake of an 8-inch gravity main, which carries water along MD 67 to Weverton, thence, easterly along US 340 to Knoxville when the main increases to 10 inches. The 10-inch main travels easterly along MD 478 into Brunswick a total of 7 miles. In 2018, the spring was determined to be under the direct influence of surface water. Upgrades to the spring were completed in December of 2021 to mitigate the potential for future surface water intrusion.

Three Loudoun County, Virginia springs at elevations of 585' to 653' had previously flowed by gravity through 2 ½ miles of 4 8-inch mains under the Potomac River to join the northern springs transmission main at Knoxville. However, these springs are currently not being utilized to supply the Brunswick system due to leaks in the transmission main and reported minor surface water contamination problems. If needed in the future, the Virginia Springs have a capacity of 120,000 gpd with a safe yield of 60,000 gpd. Two wells located inside the corporate limits of Brunswick are rated at 30-50 gpm but are out of service and not planned to be utilized as a future municipal source.

Water storage includes a 3-million-gallon capacity concrete lined reservoir located in the northern part of Brunswick at an elevation of 509'. The reservoir serves lower areas and controls service from 246' to 440' elevation. The City is working with engineer to demo and replace this reservoir. There are two elevated storage tanks located at the reservoir site with a combined capacity of 1,250,000 gallons. Two 650-gpm pumps with chlorination equipment are provided at the reservoir site to pump water to the elevated tank. The tank provides increased pressure for elevations 370' to 550'. The tank's overflow elevation is 608'. The city has installed a 200 KW generator to provide a backup power source for the reservoir pumping station. The Brunswick water distribution system consists of approximately 16 miles of 4, 6, 8, 12, and 16-inch mains.

Table 3-16: City of Brunswick Surface Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD in month of maximum use)	Average System Demand (GPD)	Permit Number
Potomac River	1,000,000	1,500,000	379,000	FR1979S013(06)
Yourtee Springs	350,000	500,000	110,000	WA1983G012(04)
Total	1,350,000	2,000,000	489,000	

Water Upgrades completed from 2021 – 2023:

- Ultra sonic flow meters were installed on all three filter influent pipes. Flexim Flexus F501.
- Hach 1720D turbidimeters were replaced with Hach TU5200 Laser turbidimeters.
- Soft start controllers were replaced with VFD's on both 1-million-gallon elevated tower pumps.
- VFD's for the Intake pumps were replaced with new VFD's that include an option to bypass and run manually without the VFD control.
- Yourtee Springs Filtration Plant was brought in service to provide an average of 120 GPM of water to the system.
- A mixer was installed in the 250,000-gallon elevated storage tank.
- A new power line was run from the wastewater plant to the intake to provide emergency power in the event of an outage.

Existing & Future Demand

The Brunswick water system currently serves an estimated population of 8,100 (2,900 services) including the City of Brunswick, portions of the Village of Rosemont and the Knoxville and New Addition communities just west of Brunswick. The present demand on the system is reported at 0.489 MGD. The total capacity of the system currently is 2.0 MGD. The city estimates that drinking water demand will reach 1.0 mgd by 2030. To accommodate the projected population, additional appropriations will be required.

In the spring of 2002, the City of Brunswick annexed the Hope and Enfield farms located to the south of Burkittsville Road and to the east of Jefferson Pike. The annexation agreement sets forth that these properties, together with the Long farm, shall be developed with 1,505 residential dwelling units in conjunction with the commercial and office uses as set forth in the City of Brunswick Master Plan and County Comprehensive Plan ("Brunswick Crossing"). The average daily water demand for Brunswick Crossing will be 0.45 MGD. Therefore, the City of Brunswick's water system will have a total average daily demand of 0.99 MGD with a 1.62 MGD maximum day demand. The annexation agreement sets forth the various City infrastructure improvements required to meet this increased demand. This included the 2012 capacity expansion of the water treatment plant and construction of a 300,000 gallon pre-sedimentation tank. As of Frederick County's Quarter 4, 2023 residential development pipeline, 449 dwelling units (100 multifamily and 349 single family detached) remain as part of Brunswick Crossing.

In 2013, the Rosemont Water Supply Agreement was executed between the City of Brunswick and the Frederick County Board of Commissioners. The agreement states that the City will set aside and provide to the County, capacity to serve a maximum of 150 equivalent dwelling units (EDUs), based on 250 GPD (average daily demand) with a maximum daily demand capacity of 400 GPD per EDU exclusive of fire protection.

In addition, the City has contracted with consultants to do a complete analysis of the water treatment plant to bring the treatment capacity to 2.2-2.5 MGD by 2050.

Planned Improvements

The following improvements are planned to increase the efficiency of the plant to meet water demand:

- Installation of valves and system modifications to pump sediment collected in the pre-sedimentation basin to the WWTP digester tank.
- Installation of new stainless-steel screens on the water intake in the Potomac River.
- A proposed 150,000 gallons ground storage tank will be constructed at Yourtee Springs.
- The 3,000,000 gallons reservoir will be demolished and replaced with new concrete ground storage tank.
- Third sediment basin
- Sludge removal system
- UV disinfection

Fort Detrick

Fort Detrick is a U.S Army Installation Management Command (IMCOM) facility. The U.S. Army Garrison, Fort Detrick, provides sustainable base operations support, quality of life programs, and environmental stewardship to facilitate the sustainment of vital national interests. Ft. Detrick supports 5 (five) cabinet-level agencies: the Department of Defense, Department of Veterans Affairs, Department of Agriculture, Department of Homeland Security, and the Department of Health and Human Services. Within the Department of Defense, Ft. Detrick supports elements of all four military services. The primary missions at Ft. Detrick are biomedical research and development, medical logistics and material management and global Department of Defense telecommunications.

Ft. Detrick is located within the City of Frederick and consists of four separate parcels of land designated as Area A, Area B, and two parcels that comprise Area C. Ft. Detrick encompasses approximately 1,212 acres, including 69 acres in Area A owned and operated by Frederick National Laboratory for Cancer Research (FNLCR).

Fort Detrick obtains drinking water from the Monocacy River. The MDE Water and Science Administration has authorized Fort Detrick to obtain a daily average of 2.0 MGD annually from the Monocacy River with a maximum daily withdrawal of 2.6 MGD. Fort Detrick owns, operates, and maintains the Installation water treatment plant (WTP) and distribution system. The WTP has a maximum processing capacity of 4.25 MGD. Source water is withdrawn from the Monocacy River and is processed through the Fort Detrick WTP utilizing Water Appropriation and Use Permit No. FR1943S001 (04). This water allocation permit expired January 31, 2019 but MDE has administratively extended the permit until a new permit is issued. Fort Detrick also has a groundwater appropriation, FR1943G101 (08), for a daily average of 8,000 gallons on a yearly basis and a daily average of 12,000 gallons for the month of maximum use. Water associated with this permit is used solely for aquatic research.

Fort Detrick owns and operates a community water system regulated by the Maryland Department of the Environment (MDE) under Public Water System Identification MD010-0011. The system provides drinking water to approximately 7,900 people. The water treatment plant (WTP) operates 24 hours a day, seven days a week. The Fort Detrick Water Appropriation Permit allows for the acquisition of water for drinking

water purposes from the Monocacy River (Ft. Detrick WTP). The permit further details that water use from the Fort Detrick WTP exceed a daily average of 2.0 million gallons on a yearly basis and a maximum daily withdrawal of 2.6 million gallons.

Surface water treated at the Fort Detrick WTP is obtained from the Monocacy River and is pumped from the low-lift pump station to the static mixer for chemical addition, then to the two pre-sedimentation basins. Coagulant is added at the rapid mix and the water is fed through the flocculation/sedimentation basins. Liquid alum will be fed in the summer months and poly aluminum chloride in the winter. Pre-oxidation is conducted using potassium permanganate. Settled water is then filtered to remove additional sediment and treated with ultraviolet (UV) disinfection at one of two UV contactors. Water is then chlorinated, fluoridated and treated with zinc orthophosphate (for corrosion control) prior to flowing to two underground clear wells. The high-lift station pumps the water to the distribution system through both a 12-inch and a 16-inch line, which converge to a single 18-inch line.

The Fort Detrick distribution system has piping ranging in size between 4 to 18-inches in diameter. Piping material is polyvinylchloride (PCV) and cast iron. The distribution system has four water storage tanks used to balance supply versus demand variations in the system and to maintain operating pressure. There are three elevated water towers and one ground-level storage tank. There is one 300,000-gallon storage tank (facility 725) located near building 722, one 500,000-gallon storage tank (facility 1409) located near building no. 1776, and one 500,000-gallon storage tank (facility 1057) located near building no. 1054. The facility 725 elevated storage tank has been taken out-of-service and is planned for future demolition. A 2-million-gallon ground-level (facility 8725) is located in the north-central area of the Post. Tanks are operated simultaneously and water levels are maintained between 50% and 90%, but normally no lower than 80% of maximum capacity. A supervisory control and data acquisition (SCADA) system remotely monitors the storage tanks and allows for managing of water levels.

Table 3-17: Fort Detrick Water Production (2020-2023)

Drinking Water Demand	CY 2020	CY 2021	CY 2022	CY 2023
Daily Average (MGD)	1.312	1.222	1.399	1.420
Annual Total (gallons)	479,706,300	444,781,000	510,804,000	518,276,000

Table 3-18: Fort Detrick Water Sources

Water Source	Permitted Withdrawal (average MGD)	Permitted Maximum Withdrawal (MGD in month of maximum use)	Average System Demand (MGD)	Permit Number
Monocacy River	2.0	2.6	1.420 (2023 average)	FR1943S001(04) ¹

¹ Water Appropriation and Use Permit FR1943S001(04) expired on January 31, 2019 but the MDE has administratively extended the permit until a new permit is issued.

Town of Emmitsburg

The Emmitsburg Water Service Area consists of the Town of Emmitsburg and Mount St. Mary's University which are served by independent water systems which are interconnected for emergency purposes.

Existing Facilities

The Emmitsburg Water System (MD0100010) currently serves an estimated population of 2,921 (MDP Estimate, 2023) Town residents, plus a limited number of County residents and facilities. There are currently 1,065 service connections. The existing Emmitsburg Water Treatment facility has been on-line since 2003. The treatment system - located on College Mountain near the intersection of Hampton Valley Road-Crystal Fountain Road - consists of a 432,000 gallon per day treatment plant, a 500,000 gallon steel storage tank, and a 140,000 gallon glass-lined tank. The water treatment system has the capability of treating up to 600,000 gallons per day, if needed. Once it is treated, the water is stored in the two tanks until distributed via mains of various sizes, as described below. The entire system is gravity fed.

The Emmitsburg water system utilizes both surface and groundwater sources. The primary source of raw water supply is 33-million-gallon Rainbow Lake, a 13-acre impoundment located along Hampton Valley Road, approximately one mile west of the water treatment facility. Rainbow Lake, at elevation 870.0 (msl), forms the headwaters of Turkey Creek. The town owns 700 acres of land within the Rainbow Lake watershed. It also owns 610 acres of land adjoining the watershed, south and east of the lake that are held under a conservation easement and serve as wellhead protection areas for wells along Turkey Creek. One emergency reservoir on College Mountain, Reservoir No. 3, impounds three million gallons of water. It is situated 3,100 feet east of Rainbow Lake at elevation 740 (msl) and is fed by a diversion dam across Turkey Creek. A 6-inch transmission line from Rainbow Lake increases to an 8-inch line at Reservoir No. 3 before continuing the remaining 2,300 feet to the treatment facility.

In addition to surface water, the current water supply system includes five wells. Wells No. 1 and No. 2 pump directly to the treatment facility where they require only pH adjustment and chlorination. Water from Wells No. 3, 4, and 5 are injected into the main raw water transmission line from Rainbow Lake to the treatment plant, where it is filtered, pH adjusted, and chlorinated. These wells are capable of outputs ranging from 28 gallons per minute up to 100 gallons per minute for wells No. 2 and 3. Once the water is treated, it is stored in the two storage tanks adjacent to the treatment plant.

Table 3-19: Emmitsburg Ground/Surface Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD month of maximum use)	Permit Number
Turkey Creek Rainbow Lake Reservoir #3	168,000	350,000	FR1976S014(04)
Catoctin Metabasalt Wells #1 & #2	168,000	252,000	FR1975G011(06)
Catoctin Metabasalt Wells #3 & #5	87,000	131,000	FR1976G114(05)
Catoctin Metabasalt Well #4	40,000	60,000	FR1997G032(03)
Totals	463,000	793,000	

The Town has two wells that are not presently in use. Both are situated in the Gettysburg Shale formation:

1. Well 7, Permit FR2002G020(03) has a Permit Average GPD of 83,000 and a Permit Maximum GPD of 109,000.
2. Well "J" Permit FR2007G014(03) has a Permit Average GPD of 66,000 and a Permit Maximum GPD of 92,000.

These wells will be utilized when the demand warrants. The water treatment plant to be located in Emmitt Gardens has been designed for the treatment of these two wells.

From the treatment and storage facilities located at College Mountain, the distribution system begins as a 10-inch transmission main, then splits into a 10-inch and an 8-inch transmission main, which is in process of abandonment. These two water mains continue down the mountain, the 10-inch along Hampton Valley Road, the 8-inch along Turkey Creek. The 10-inch line continues into Emmitsburg where it once again splits into two 10-inch waterlines which serve as the Town's primary distribution lines. One branch of these two 10-inch lines goes down Main Street. The 8-inch line along Turkey Creek joins one of the 10-inch lines just west of Town to augment the system and to provide a backup system during emergencies. Additionally, a 6-inch line connects Mount St. Mary's University to the Town's system to serve as an emergency water supply in case of problems with the University's own system.

The "downtown" distribution systems consist of a network of 4 in., 6 in., 8 in. and 10-inch waterlines. As of 2014, an 8-inch line extends the Town's system east of US-15 to serve the wastewater treatment facility and a portion of the zoned undeveloped land along the US-15 corridor. There is a provision, via sleeves under US-15, to allow future water connections for the remainder of the town-zoned undeveloped lands on the east side of US-15.

Fewer than 100 County households are served by the Emmitsburg system. Some are served off the 8- and 10-inch transmission mains while others along Mt. View Road, Waynesboro Road and Gettysburg Road are served by branches off the "downtown" distribution network. A major 10-inch branch extends south along South Seton Avenue to serve the Town's major water user, the National Emergency Training Center. This branch also serves the former St. Joseph's Provincial House/Daughters of Charity facility (now closed). With only a few exceptions, all distribution lines are looped to eliminate dead ends.

The Town has a contract extending until 2040 with Mount St. Mary's University, to purchase on demand up to 100,000 gallons of water per day. As of August 2023, the Town is not currently purchasing water from Mount St. Mary's since PFAS (particularly PFOS and PFOA) were identified in wells operated by the university.

The ***Mount St. Mary's University Water System (MD0100019)*** is a large institutional Community System adjacent to the Town of Emmitsburg. Water for the University is obtained from three deep wells. The system serves a population of approximately 2,000 during the academic year.

Well #5 is located 0.3 miles west of the junction of US 15 and Annandale Road, just behind the Physical Plant. This well is situated in the Weverton Quartzite formation. Well #3 is located 0.4 miles east of the junction of US 15 and Motter Station Road (MD 76), and draws from the Grove limestone, and is overlain by Gettysburg Shale. Well #5 produces 30 gallons per minute while Well #3 produces 130 gallons per minute. Both wells form the central water supply for the university.

Well #6 is located 0.1 mile north of College Lane, 0.3 miles east of the junction of US 15 and College Lane. The well draws from the Frederick Limestone and is overlain by the Gettysburg Shale formation. Well #6 produces from 120 gallons per minute and is connected to the central water supply system. Water from Well #6 is used as an emergency reserve supply.

Groundwater from the wells east of US 15 is conveyed through a 4-inch pipe under US 15 to a booster pump station located behind the McGowan Center, and then is transmitted up to a 300,000-gallon concrete storage tank behind the main campus, at an elevation of 762 feet. The water is run through a sand filter and chlorinated in a 50,000-gallon treatment tank before entering the storage tank.

The distribution system begins with a 12-inch line, from which 6-inch and 8-inch lines split off to service the facilities on the main campus (west of US 15). The 12-inch primary distribution line runs beneath University Way and under US 15, then splits into a 6-inch line and an 8-inch line to service facilities on the east campus.

Water is also available from Roddy Quarry, located approximately 0.1 mile south of the college east of Motter Station Road (MD 76), but this water is reserved for emergency purposes. This quarry has a storage capacity of approximately 10 million gallons and forms the headwaters of Stoney Branch. A spring located 0.4 miles north of the junction of Grotto Road and Saint Anthony Road (formerly MD 806), supplies water for a fountain at the National Shrine Grotto of Lourdes, located west of the main campus and just south of the 300,000-gallon water storage tank.

Table 3-20: Mount St. Mary's Groundwater Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD month of maximum use)	Permit Number
Well #5 and #3. Weverton Quartzite/ Grove Limestone	110,000	165,000	FR1975G013(07)
Well #6. Frederick Limestone	70,000	210,000	FR1975G413(04)
Roddy Quarry. Harpers Formation	15,000	50,000	FR1975G113(03)

Existing & Future Demand

Emmitsburg has an estimated population of 2,921 residents (MDP, July 2023 estimate).. Within the Town boundaries, on the east side of US 15, there are large areas of potential commercial and office/industrial land which are presently undeveloped. Potential future water needs for these areas was addressed in the Water Capacity Management Plan within the Town's 2009 Comprehensive Plan. Rezoning efforts subsequent to the adoption of the Comprehensive Plan coordinated water supply and land use types.

Existing water demand of 225,000 gpd is below the existing plant capacity of 432,000 gpd. However, projections for the year 2030 are that there will be some industrial/commercial growth along with population growth to create a demand of 430,000 gpd. Emmitsburg will require additional water supply in the near future.

Planned Improvements

Proposed improvements to the Emmitsburg water system are the ongoing maintenance and replacement of existing lines as needed. A water line will be replaced in DePaul Street. All permits have been received for the project. Construction completion is expected within 2024.

An additional water plant, proposed for an Emmit Garden location, has been designated but has not yet been approved for construction by the Town Board. The first phase of the plant could provide an additional 468 taps and the second phase could provide 240 taps. Construction of this plant would enable the use of two wells that exist but are not yet active—Well “J” and Well No. 7—located in the Gettysburg Shale aquifer. An in-town storage tank would also be constructed as part of the system improvements.

Wellhead Protection

The Wellhead Protection Area (WHPA) for the Town of Emmitsburg consists of the 1,126- acre watershed of Rainbow Lake, and for the Town wells, the Turkey Creek watershed upstream of the wells plus 1,000’ downstream of the wells.

The Wellhead Protection Area for Mount St. Mary’s University is the watershed that contributes ground water to the supply wells. The area was modified to account for topography, ground water drainage divides including the down-gradient stagnation points, significant land features, estimating the underlying Frederick Limestone cavernous layer for Wells 3 and 6 by overlaying available geologic maps, and by using a conservative calculation of total ground water recharge during a drought. The WHPA is irregularly shaped and has an area of 624 acres. The entire campus and the small residential community of St. Anthony is included.

City of Frederick

The City of Frederick encompasses 22.1 square miles. The City’s 2022 population estimate is 82,175 (MDP 2023). The City utilizes four sources for treated water supply: The Monocacy River, Linganore Creek, Fishing Creek Reservoir, and the Potomac River. Although the safe yield of the Monocacy source has been reduced to zero (MDE Consent Order, 2002), the City has gained the use of up to 8 mgd (maximum day) from the County’s Potomac River New Design Water Treatment Plant. The combined safe yield of the sources listed above is 14.89 mgd (maximum day).

The City's water service area consists of two pressure zones (462 and 595). There are three elevated and one ground level storage tanks floating off the 462 zone with a combined storage of 5.0 million gallons. There are two ground storage tanks and one elevated storage tank in the western high zone (595) with combined storage of 2.750 million gallons. A 4 mgd booster pumping station located at Rt. 40 and Baughman's Lane and a 2 mgd booster pumping station is located at Christopher’s Crossing and Whittier Drive serve the 595’ pressure zone. One new storage tank is planned for each pressure zone in the near future to help accommodate new development within the City. The City is also in the process of updating its Water Master Plan to evaluate existing conditions and plan for future City water needs.

Existing Facilities

The use of the four water sources listed above is regulated by the Maryland Department of the Environment (MDE) through the issuance of Water Appropriation and Use Permits pursuant to Title 5 of the Environmental Article, Annotated Code of Maryland.

The Linganore Creek Water Treatment Plant (WTP), originally constructed in 1932, was upgraded in 1993 and has a current design capacity of 7.2 MGD. This WTP relies on Linganore Creek for its source water. The safe yield of this source water was increased by the 1971 construction of an 883 million gallon privately owned lake, Lake Linganore. The County, City and Lake Linganore Regional Water System Agreement, dated December 14, 2000 (“the 2000 agreement”), confirms and clarifies the lake owners—Lake Linganore Association—obligation to release enough water from the lake to satisfy the flow-by requirement of the City’s Linganore Creek appropriation and use permit and also to provide the City with a 6.0 mgd allocation of water. This system provides a safe yield of 6.0 mgd (maximum day).

In developing this agreement with the City and Lake Linganore Association, the County evaluated the safe yield of Lake Linganore based on the combined withdrawals associated with the County’s WTP and the previously mentioned releases. The result of this analysis indicated that Lake Linganore could provide a safe yield of 2.4 MGD for the County while maintaining the previously mentioned releases. (This is modified by other provisions of the County – Lake Linganore Agreement.)

In 2022, the Frederick County, Frederick City and the Lake Linganore Association completed a dredging project to remove approximately 350,000 cubic yards of sediment and restore Lake Linganore to its original 1972 capacity. Chemical analysis of the sediments indicated there was no human health concerns, so the sediment was able to be used as daily cover the Reichs Ford Road Sanitary Landfill.

The City’s Monocacy WTP was constructed in 1960 with an initial design capacity of 2.0 MGD. The treatment facility’s capacity was increased to 3.0 mgd in 1988. The City’s Monocacy River appropriation permit also has a flow-by requirement. Again, quoting the Malcolm Pirnie, Inc. August 5, 2004 Water Resources Development & Optimization Final Report, “The historical flow-by rule did not allow any Monocacy River withdrawals by the City when flows immediately downstream of its intake dropped below 40.5 cfs (equates to 50 cfs at downstream Jug Bridge gage). The June 2002 Consent Order between MDE and Frederick City, limits withdrawals to 3mgd, but allows withdrawals to continue when flows at Jug Bridge drop below 50 cfs, as long as such withdrawals do not exceed 20 percent of the river flow. In effect, this allows the city to withdraw 3 mgd at all times until flow at Jug Bridge drops below 29 cfs. Historically, flows below 29 cfs at Jug Bridge have been a rare occurrence, recorded on only 27 days of the 1929-2003 historical record (all occurrences in 1966 or 2002).

Further, even at the lowest recorded flow rate at Jug Bridge (19cfs), the City can still withdraw up to 2mgd under the Consent Order since that would represent 20 percent of the estimated flow at the City’s intake.” Both the City’s Linganore Creek and Monocacy River supplies have the following treatment: corrosion control, coagulation, fluoridation, flocculation, sedimentation, filtration, and disinfection.

In addition to the Linganore Creek and Monocacy River supply, the City also has a 50-million-gallon reservoir that supplies the Lester Dingle WTP, which has a current treatment capacity of 3.2 MGD. The primary tributary of this reservoir is Fishing Creek and the City’s appropriation permit for this source also has specific flow-by requirements. Based on the low-flow release in the City permit, the yield of this supply appears to be limited to the storage capacity of the reservoir, which is 50 million gallons. This system, in combination with operating procedures for all of the City’s water supplies, provides, according to MDE, an annualized sustained safe yield of 0.89 mgd. The Lester Dingle WTP at the Fishing Creek reservoir source has corrosion control and uses fluoridation, filtration, and disinfection.

The city had two production well fields. Well #4 (former permit number FR2002G022(04)) located in the Monocacy Village Park, had an appropriation of 365,000 gpd average daily demand and 420,000 gpd for

the month of maximum use. Well # 7 and Well #3 (former permit number FR2003G016(01)), located in Riverwalk and Fredericktowne Village Parks were permitted for a total of 200,000 gpd average daily demand and 260,000 gpd for the month of maximum use. These groundwater sources are not currently being pursued for use by the city for water supply. From 2002 until 2004, water from the well source was treated by a portable ultrafiltration system which was decommissioned in 2007 and removed in 2009. In 2022, all three well fields were officially abandoned per MDE requirements and no longer exist. Accordingly, they have been removed from Table 3-20, Frederick City Groundwater Sources.

Table 3-21: Frederick City Surface Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD month of maximum use)	Average System Demand¹ (GPD)	Permit Number
Fishing Creek Reservoir	1,910,000	3,800,000	752,400	FR1924S001(05)
Tuscarora Receiver ²	0	0	0	FR1930S001(04)
Linganore Creek ³	6,000,000	7,200,000	4,138,200	FR1940S001(05)
Monocacy River ⁴	2,000,000	3,000,000	940,500 ⁵	FR1961S001(07)
Potomac River ⁶	5,000,000	8,000,000	1,366,200	FR1968S005(09)
Totals	14,910,000	19,300,000	6,270,000	

Table 3-22: Frederick City Ground Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD month of maximum use)	Average System Demand (GPD)	Permit Number
Frederick Limestone <i>Golf Course</i>	10,000	40,000	0	FR1990G007(07)
Weverton Formation <i>Standby Well</i>	3,000	4,000	0	FR1983G007(04)
Totals	13,000	44,000	0	

Through the Potomac River Water Service Agreement, signed in 2006, Frederick County has agreed to supply treated water to the City of Frederick from its recently expanded New Design WTP. The city has funded a share of the expansion of the County's WTP and has the capability to use and pay for up to 5.0 mgd average daily (8.0 mgd maximum day) of treated water through two metered connections to the

¹ Data from 2022 Annual Drinking Water Quality Report, City of Frederick, Maryland

² Permit number FR1930S001(04) is currently inactive and there was a permit application number FR1930S001(05) that was withdrawn.

³ There is a permit--FR1940S001(06) that is in the renewal process

⁴ There is a permit—FR1961S001(08) that is in the renewal process. The Monocacy Water Treatment Plant was shut down from September 15, 2017 for plant upgrades through May 2022 when upgrades were completed and the plan came back on-line.

⁵ As per Consent Order Agreement, the safe yield of the Monocacy has been reduced to zero (0). The City continues to maintain and utilize this source under the permitted withdrawal limits (as shown above) as water is available.

⁶ Frederick County appropriation and use permit

County distribution system. The City may ultimately procure an additional 2.5 mgd (4.0 mgd, maximum daily demand) under the provisions within the existing agreement.

Existing & Future Water Demand

In 2009, the city received the final version of the 2006 Water Master Plan prepared by Dayton & Knight. The report indicates that the City's water demand (and corresponding production) has seen a significant decrease from an average high in 2001-2002 of 6.8 mgd to 5.8 mgd average daily in 2005. Much of the reduction is attributable to an aggressive leak detection and repair program for the distribution system initiated by the city. The amount of water unaccounted for (leakage) has been reduced from an estimated 24% in the 1980's and 1990's to an acceptable level of 9%.

The 2006 Water Master Plan further pointed out that the per capita water demand has also decreased from an average high of over 130 gpd per capita to about 100 gpd per capita. Using this average demand and population projections within the PRWSA area, Dayton-Knight predicted maximum day water needs of over 19.0 MGD in the year 2030 and 25.0 MGD in the year 2040. The analysis indicated that, given the predicted rate of growth, the City's current supply of 14.89 MGD (safe yield= max. day) and the anticipated additional 4.0 MGD from Frederick County in 2015 will be surpassed by demand in or about the year 2030. An update to the Water Master Plan is in progress where the above numbers will be more accurately revisited.

Planned Improvements

Currently planned City CIP water projects include:

- Dingle/Yellow Springs transmission main
- Walter Martz Road transmission main
- Homewood Water Storage Tank, 1.0 mg and transmission main
- Zone 595 Water Storage Tank, 0.75 mg and transmission main
- Update of Water Master Plan in 2023 /2024 will revisit population projection analysis and necessary water system improvements.
- Ballenger Creek Interconnect Water Pumping Station with a capacity of 3 million gallons per day (MGD).

Town of Middletown

The Middletown Water System area includes the Town of Middletown and its municipal growth area. The municipality centers on an established commercial district along US-40A, has a full complement of elementary, middle, and high schools, and a regional park surrounded by low density residential uses. This system is separate from the adjoining Fountaindale/Braddock system, which is operated by the County though discussions have been held about connecting the two systems for emergency use only.

Existing Facilities

The ***Middletown Water System (MD0100018)*** presently has 23 municipal wells, with 13 useable and 10 not connected or useable. These wells have yields ranging from 30-65 gallons per minute (gpm). The community also utilizes four springs with a total yield of 100-110 gpm. The total water supply has a production capacity of 0.533 million gallons per day (mgd). In 1999, the Town completed a Surface Water Treatment Rule Testing program with the cooperation of MDE and received ground water certification of all the spring sets currently in use by the Town. This testing may be required in the future to maintain ground water certification of the Town Springs.

The Town completed construction of a 400,000-gallon water storage tank and distribution line improvements in 1997. In 2021 the Town constructed a new 1-million-gallon prestressed concrete water storage tank. This tank replaced two synthetic rubber lined and covered embankment reservoirs adjacent to Hollow Road. The reservoirs have now been abandoned since the 1 MG water tank is complete. The Town also installed a new 16-inch ductile iron pipe to provide a secondary waterline from the reservoir to the town's water booster pump station and water distribution system for redundancy.

Middletown has been divided into three (3) pressure zones, utilizing five Master PRV vaults, located at East Green Street, Cone Branch Drive, Summers Drive, the booster station, and North Pointe Terrace, to reduce pressure in the distribution system prior to entering lower elevations in Town. The water treatment plant was relocated to the reservoir under the 1997 project. The Town has installed iron and manganese removal systems at two (2) of three (3) water treatment facilities.

Table 3-23: Town of Middletown Ground Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD in month of maximum use)	Average System Demand (GPD)	Permit Number
Wells 1—13, 15, 18, 19 and springs (Catoclin Metabasalt Hollow Creek Watershed)	308,000	390,800	-	FR1974G025(07)
Wells 14, 16, 17 (Catoclin Metabasalt Cone Branch Watershed)	53,500	80,000	-	FR1974G225(06)
Wells 20, 21, 22 (Catoclin Metabasalt Catoclin Creek Watershed)	25,500	33,200	-	FR1974G125(02)
Totals	387,000	504,000	307,000	

Raw water is chlorinated and pH adjusted with caustic soda at the 2021 reservoir via the new water treatment plant and is conveyed to the Town through a 12- and 16-inch main to the booster pump station prior to entering the distribution system. In 2022, the system had an average daily demand of approximately 307,000 GPD. In 1982, approximately 40% of the mains in Town were upgraded with plastic pipe. The Town completed in 2019 the replacement of the 1893 6" cast iron Main Street waterline. The line was replaced with 8" Ductile Iron pipe with new copper services and outside meters. Additional water main projects completed in 2022 and 2023 are the Remsberg Park interconnection and the Linden Boulevard Main and service replacements. The Water Booster Station was upgraded in 2022 with new piping, valves, VFD's and SCADA controlled process.

The water (and wastewater) treatment facility is 100% powered by solar energy from an 836-kilowatt solar array commissioned by the Town in 2016. The solar installation is directly adjacent to the East Wastewater Treatment Plant and delivers 1,143 MWh of electricity annually to fully power Middletown's water and wastewater facilities.

Existing & Future Water Demands

The Middletown Water System serves a population of approximately 5,239 (MDP 2023) with a current demand of 0.307 MGD (3 year average, 2022). The projected 2030 population is 5,547 persons and an associated drinking water demand of 0.344 MGD. A total of 203 residential units with an estimated

population increase of 450 are possible through infill and redevelopment through 2040. The Middletown Water System has 1,703 services connected to the system as of 2023. The Town's water use by service categories is 78.6% Residential; 10.3% Public Facilities; 5.9% Commercial; 0.2% Places of Worship; and 4.9% Apartments according to October 2022 billing data. These uses are consistent for the past six (6) quarters of usage.

The Town of Middletown has its own Water Conservation Public Alert System and accompanying ordinances, which allow the Town to impose reasonable restrictions on the use of water from the municipal water system during periods of short supply, protracted drought, excessive demand or other scarcity of water.

Planned Improvements

The Town of Middletown continues to investigate water sources to increase its water supply. The Town's primary focus over the past ten (10) years has been conservation. A new water treatment plant will be constructed on the Admar property north of the County Park for an active-adult development of 148 units. In addition, 3,700LF of the 1893 raw water line from the spring sources is in the planning stage and currently funded for 2024. The project will replace 4" cast iron from 1893 with 6" ductile iron.

Wellhead Protection

The Town of Middletown has adopted a Wellhead Protection Ordinance. Hyder North America, Inc. conducted a delineation of the Wellhead Protection Area in 2001. Much of the 576-acre WHPA extends beyond the boundaries of the municipality.

Town of Mount Airy

Mount Airy is divided between two counties, Frederick and Carroll. The Mount Airy water service area includes land in both counties, utilizing groundwater from the unconfined, fractured rock aquifer within the Ijamsville Formation and Marburg Schist. The Town of Mount Airy owns and operates the community water system which provides water to Town residents only. Development currently located outside the Town limits uses individual wells. Information about the Mount Airy Water system is obtained from the Carroll County Water & Sewerage Plan.

Existing Facilities

The Town of Mount Airy's Water System consists of eleven (11) wells in three separate watersheds (Linganore Creek, Bush Creek, and Patapsco River). The Town of Mount Airy is located on Parrs Ridge, which is a major hydro geologic boundary in this area.

Mount Airy uses five (5) treatment stations to treat all well water. Liquid chlorine is added for disinfection, caustic soda (sodium hydroxide—NaOH) is used for pH regulation, with fluoride added for public dental health. Water from well #8 and #10, treated at station no. 4, employs nitrate removal via an ion exchange system.

The Town has three elevated storage tanks capable of holding 1,705,000 gallons in reserve. The water system is 100% metered.

Table 3-24: Town of Mount Airy Ground Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD in month of maximum use)	Average System Demand (GPD)	Permit Number
Well Nos. 1--4 (Frederick County)	255,000	347,000	-	FR1976G007(07)
Well No. 5 (Carroll County)	43,000	43,300	-	CL1987G076(08)
Well No. 6 (Carroll County)	149,000	180,000	-	CL1987G176(09)
Well No. 7 (Frederick County)	99,000	139,000	-	FR1976G107(03)
Well No. 8 (Frederick County)	150,000	210,000	-	FR1995G020(04)
Well No. 9 (Frederick County)	79,000	204,000	-	FR2001G022(03)
Well No. 10 (Carroll County)	77,000	144,000	-	CL2000G022(04)
Well No. 11 (Carroll County)	75,000	82,500	-	CL2009G001(03)
Totals	927,000	1,349,800	704,000¹	

Existing & Future Demand

The total population of Mount Airy is 9,819 (MDP, 2023). The Frederick County portion of Mount Airy has a population of approximately 3,542 (Carroll County Bureau of Permits and Inspections, December 2023). The Town's water service area serves 3,627 connections. Full build-out within the Town's growth boundary (both Carroll and Frederick County) is estimated to result in a future water demand of 1.092 MGD. Considering existing pipeline projects, the Town's water system is beyond 80%, but not exceeding 88% of its appropriations and is therefore, in accordance with Town Code, approaching inadequate capacity.

Planned Improvements

Currently, the town is seeking MDE approval for new or re-appropriations to four (4) wells on the Harrison/Leisher properties in Carroll County (well nos. 1, 3, 12, and 18). Based upon the Town's testing, the wells have an anticipated combined appropriation of 152,000 GPD. The Town has identified several long-term actions for increasing its public water supply, including additional groundwater wells plus a possible 100-million-gallon surface water impoundment in the Gills Falls area which could yield up to 850,000 GPD.

Infrastructure improvements to the Town's water system include new well connections and waterlines, upgraded water mains.

Wellhead Protection

Mount Airy adopted a Wellhead Protection Ordinance in 1997. The Wellhead Protection Areas (WHPA) extend beyond the boundaries of the municipality. Mount Airy's WHPA consists of five smaller WHPAs. These WHPAs are based on the five sub-watersheds in which the wells are located. Wells 1-4 are all in the

¹ From 2023 Carroll County Water & Sewerage Plan, Page 60, Table 9B.

Woodville Branch sub-watershed of the Linganore Creek Watershed. Each of the other wells has its own WHPA. Residential and commercial land within the WHPA is sewered or in planned service areas.

In addition, the Mount Airy water supply is susceptible to nitrate contamination, volatile organic compounds (VOCs) [except well no.8], synthetic organic compounds (SOVs), and radionuclides, but not susceptible to protozoans. Further, well no. 2 and no. 7 are susceptible to bacteria and viruses.

With increased attention to PFAS levels in drinking water systems by the EPA the Mount Airy Water System was tested at all 5 stations' points of entry to the system and on all raw water points at all 11 individual wells. Several stations/wells were found to have elevated levels of PFAS which, if EPA's recently proposed MCL holds, the Town will then need to treat several treatment plants for these forever chemicals. Quarterly testing has been implemented and a DWSRF grant application has been submitted for funding assistance.

Town of Myersville

The Town of Myersville is located in the western portion of Frederick County, situated approximately 700 feet above sea level within the Catoctin Creek Watershed. The main stem of Catoctin Creek and its tributary, Grindstone Run, flow within the Town's boundary.

Existing Facilities

The Myersville Water System (MD0100020), operated by the Maryland Environmental Service (MES), obtains its drinking water from a combination of groundwater, spring water, and surface water sources. All of the wells are located in the Catoctin Metabasalt bedrock. The springs are located on South Mountain and were developed as part of the original public water supply in 1937. The water from the springs flow by gravity through a 3-inch ductile iron, raw water line into the Town's smaller reservoir north of US 40. A 6-inch force main delivers the water to the Town's larger reservoir water treatment plant south of US 40. The surface water treatment plant uses conventional filtration. The well houses are disinfected with a sodium hypochlorite solution. All but one (1) well in Town is filtered.

The total water supply is permitted for 0.256 mgd. The water treatment plant has a design capacity of 0.300 mgd and current water demand is 0.115 mgd. The Town currently maintains approximately 1 million gallons of storage in the existing reservoir.

Additional water sources have been added to the Town system in the last 30 years through developer contribution of groundwater wells. These groundwater wells are located in the Ashley Hills, Canada Hill, Deer Woods, Quail Run, and Saber Ridge subdivisions, and in Doubs Meadow Park ('Meadow Wells'). All sources of water are treated in three (3) existing water treatment plants and incorporated into the water conveyance system.

The water lines are generally 6, 8 or 12-inch lines with a few older lines with a smaller diameter. Much of the old cast iron piping has been replaced between 2015 and 2017. The Town recently abandoned the 3-inch and 6-inch main lines along Main Street south of Wolfsville Road and replaced those lines with a single 12-inch main to match the 12-inch main that was installed along the Town-owned portion of Main Street in 2014. Water lines are generally extended to serve new development within the Town at the expense of the developer.

Table 3-25: Town of Myersville Ground/Surface Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD month of maximum use)	Average System Demand (GPD)	Permit Number
Little Catoctin Creek	35,000	150,000	-	FR1964S003(07)
Treatment Plant Well	15,000	25,000	-	FR1987G004(07)
Ashley Wells (3)	22,500	37,600	-	FR1987G104(04)
Deer Woods Well	18,000	20,700	-	FR1987G204(05)
Canada Hill Wells (2)	38,000	46,800	-	FR1988G035(07)
Meadow Wells (2)	27,000	57,000	-	FR1995G022(03)
Reservoir Well	12,500	15,000	-	FR1997G034(04)
Quail Run Wells (3)	27,500	38,500	-	FR2004G001(04)
Saber Ridge/Catoctin Meadow Wells (2)	20,500	30,800	-	FR2003G043(03)
Spring Supply	40,000	60,000	-	FR1987G020(07)
Totals	256,000	481,400	115,000	

Existing and Future Demand

There are approximately 1,854 (MDP 2023) residents within the Town. The Town projects a 2030 population of 2,466. State figures used to estimate average water usage per household is 250 gpd, indicating that the Town should consider an estimate of approximately 250 gallons for residential water usage. However, the Town Adequate Public Facilities Ordinance requires that new development provide 500 gpd for each new unit that is connected to the Town's system.

Under the Town's 2022 Comprehensive Plan, the Town forecasts that the projected future residential development of 341 new dwelling units and the annexation of seven (7) existing dwelling units will result in an increase in water demand by approximately 85,750 gpd; assuming each additional dwelling unit consumes approximately 250 gpd. Projected commercial development will result in approximately 9,000 gpd of additional demand; assuming each additional commercial unit will consume approximately 1,000 gpd. Overall, the total increase of demand for the potable water supply is projected at 94,750 gpd.

Planned Improvements

In addition to accepting new wells from new developments, the Town is planning extensive capital improvement projects through the enterprise fund. The Town is planning a final phase of raw water line replacement for the Town's spring sources on South Mountain. This will likely further reduce leaks and finished water losses. A new water treatment plant was approved in 2013 to treat raw water from the public wells in the Quail Run subdivision. This water treatment plant would not be constructed until Quail Run is built.

Source Water Protection

In 1996, the Maryland Department of the Environment (MDE) developed a Wellhead Protection Plan for the Town, followed in 2002 by a Source Water Assessment, which included recommendations for protection of Myersville's groundwater supplies. These included:

- Continued water quality monitoring
- Engaging in public outreach and education

- Land acquisition/easements for protecting sources
- Development of a contamination contingency plan for the public water supply
- Incorporating Wellhead Protection Area zoning considerations in land use planning and development review
- Periodic updates to the contaminant source inventory and land use changes

Since completion of the Myersville Source Water Assessment Area report in 2002, the Town has added new sources of groundwater to its public water system. In 2013, the MDE completed and published an update to the 2002 Source Water Assessment report for the Town of Myersville.

A wellhead protection area (WHPA) was originally delineated in 1996 for the wells and springs based on long term aquifer tests and inferred fracture trace interpretations from the groundwater appropriation permits together with topographic features and drainage divides.

To date, according to MDE, groundwater and surface water quality have been good, but two locations—the Springs intake and the Meadow wells—have been categorized by MDE as groundwater under the direct influence of surface water (GUDI). This designation requires additional monitoring and is an indication of greater susceptibility to surface water impacts than most groundwater sources.

The Town owns a small portion of land in the watershed of Little Catoclin Creek and Seven Springs: two acres along the creek and 12 acres at the springs. The Town has also purchased approximately 63 acres (6 properties) since 2009 to augment the 12 acres at the Seven Springs area for the purposes of well head protection. These purchases have yielded an uninterrupted, contiguous protection area between Pleasant Walk Road and South Mountain of approximately 75 acres.

Town of Thurmont

The Town of Thurmont's Public Water System (MD 0100023) provides water service within its boundaries to 6,588 (MDP 2023) Town residents, with 2,493 connections. The Town is located at the foothills of the Catoclin Mountains and encompasses 3.1 square miles. The majority of the Town is located within the Hunting Creek watershed, and the northeast portion of the Town within the Owens Creek watershed, both of which are tributaries to the Monocacy River.

Existing Facilities

Thurmont's water source is ground water, which consist of multiple groundwater wells, located within the Frederick Limestone and Gettysburg Shale bedrock. Only five of the wells are currently active, with well #2 and #5 no longer utilized (there was never a Well #6). The Town also had a surface water appropriation (FR1974S013) from High Run, a tributary of Hunting Creek, but it was not used. The safe combined yield of all these wells is 1,202,400 gallons per day.

Table 3-26: Thurmont Water Sources

Water Source¹	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD in month of maximum use)	Average System Demand (GPD)	Permit Number
Well Nos. 3 & 4 ²	275,000	460,000	265,000	FR1969G021(06)
Well No. 7	125,000	168,000	70,000	FR1988G004(03)
Well No. 8	202,000	263,000	0	FR1993G036(03)
Well No. 9	204,000	318,000	91,000	FR2003G001(04)
Totals	806,000	1,209,000	426,000	

The five wells currently in use share three (3) treatment plants where the raw water received hypochlorite treatment. Well Nos. 7 and 8 also receive air stripping treatment for Volatile Organic Compounds (VOCs). The water system includes three (3) elevated storage tanks and a covered concrete storage basin which have a combined total capacity of 580,000 gallons.

Existing & Future Demand

The Thurmont Water System serves a 2022 population of 6,588 people (MDP, 2023). Average water consumption is 0.426 MGD. Maximum (peak) daily production has been reported at 0.436 MGD. There are 86 service connections located outside of the existing corporate boundaries. Industrial demand is approximately .05 MGD. This rate is expected to continue into the future. Projected population for the Thurmont PWS and service area by the year 2030 is 7,700 persons. According to the town, the existing treatment capacity of their plant is 1.2 mgd and the ultimate demand on the system will be 1.3 mgd at build-out of their land use plan.

Planned Improvements

Extensions of water lines are expected to occur as annexation occurs.

One of the wells, Well No. 3, was found to be under the influence of surface water. Diatomaceous earth pressure filters, and more chlorine detention time have been added to the treatment of this well. Also, Wells No. 7 and No. 8 are treated for VOCs by the use of stripping towers.

Source Water Protection

In 1995, the Maryland Department of the Environment (MDE) developed a Wellhead Protection Plan for the Town, which addressed potential contaminant sources and defined wellhead protection areas, utilizing zones based upon travel time of contaminants to the wells. This was followed in 2000 by a Source Water Assessment, which included recommendations for protection of Thurmont's groundwater supplies. These included:

- Continued water quality monitoring
- Engaging in public outreach and education
- Implementation of a Contingency Plan for emergency spill response
- Adoption of a Municipal Wellhead Protection Ordinance

¹ Permit Number FR2002G030(06) for Jermae Well is expired and was not reinstated by MDE. It has been removed from Table 3-24.

² Well No. 5 no longer permitted.

- Physical protections/buffers for the Town's wells
- Periodic updates to the contaminant source inventory and land use changes

In 2013, the MDE completed and published an update to the 2000 Source Water Assessment report for the Town of Thurmont. Well No. 3 has been categorized by MDE as groundwater under the direct influence of surface water (GUDI). This designation requires additional monitoring and is an indication of greater susceptibility to surface water impacts than most groundwater sources.

Town of Walkersville

The Walkersville service area consists of the Town of Walkersville and the adjacent County subdivisions of Glade Manor I, Discovery and Spring Garden Estates. The total area of the service area is 10.76 sq. mi.

Existing Facilities

The Town of Walkersville (MD0100025) treats water from 3 high yield production wells with softening, chlorination and fluoridation. The wells have a combined capacity of 550 GPM, 575 GPM and 500 GPM. All of the wells are located in the Grove Limestone formation. A 1993 study found that Glade Creek contributes approximately 25% of the water pumped from the Town wells. In 1990 the use of springs and a reservoir east of Town was discontinued.

The Town recently constructed a new, technically-advanced water treatment plant (WTP) using microfiltration (membrane) technology with reverse osmosis for nitrate removal. The new plant began operations in July 2020 and was constructed on the same property as the existing plant at 77 West Frederick Street. It has a permitted treatment capacity of 1.4 mgd. This capacity is determined to be adequate for projected growth in the Town over the next 30 years. The new plant eliminates the need for a permanent interconnection with the City of Frederick and Frederick County, since it is fully equipped to handle any contaminants in the water supply.

Storage is provided by three elevated storage tanks. The Crum Road tank has a reported overflow elevation of 450 ft. which is 12 ft. lower than the Frederick City Low Zone tanks and, therefore, presents a barrier to inter connection of the systems. The Discovery tank provides storage for the Discovery and Spring Garden Estates Subdivisions (725 units). This tank is connected to the rest of the system by a 12-inch main along one side of the MD 194 to Crum Road and an 8 inch main along the other side of MD 194 and Frederick Street. The third tank is located on the north side of Devilbiss Bridge Road west of the Walkersville Southern Railroad tracks. It is connected to the system by a 12-inch main along Devilbiss Bridge Road. The existing distribution system includes approximately 200,000 feet of mains. There are approximately 340 fire hydrants in the system.

Table 3-27: Walkersville Ground/Surface Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD in month of maximum use)	Average System Demand (GPD)	Permit Number
Well #1	400,000	600,000	174,530	FR720037 GU
Well #2	233,000	349,500	254,120	FR810307 GU
Well #3	367,000	550,500	206,042	FR815107 GU
Totals	1,000,000	1,500,000	634,692	

¹ Data supplied by the Town of Walkersville, 2024

Existing & Future Demand

The Walkersville water system is reported to have 3,036 connections all of which are metered. Average water use is 624,758 gpd. The Town's estimated population is 6,521 (MDP 2023). The three County subdivisions of Glade Manor, Spring Gardens Estate, and Discovery have an estimated population of 2,314. Despite new development, the average demand for water decreased in 2021 and 2022, after seven years of increases out of proportion with new growth. An aggressive leak detection and repair program, completed in 2021, appears to have resolved the issue. The average daily demand increased in 2023 to 624,658. The usage increase was attributed to lingering water leaks and increased lawn watering during drought conditions in the summer.

The Town's 2023 draft comprehensive plan calls for an additional 265 to 365 dwelling units yielding 705 to 970 people as well as industrial and limited commercial growth.

There are large industrial, commercial and institutional users also served by the water system including Lonza, Autumn Lake Healthcare, Sheetz (including a carwash), five school facilities, and two shopping centers.

Planned Improvements

Fountain Rock Spring, which is owned by the County as part of the Fountain Rock Park, is a perennial spring located just outside the western boundary of the Town. The spring discharges to a pond of approximately 5,000 sq. ft. It has a reported average yield of between 1.5 and 3 mgd. The spring is available to Walkersville by agreement as a water source for the future. Analysis of the spring's water quality indicates that it is likely from the same limestone formation as the Town's production wells.

Development of Fountain Rock Spring is an additional source of public water that would necessitate construction of an intake structure and pumping to the treatment plant approximately 2,500 linear feet to the north.

Using the Fountain Rock Spring supply, the Town of Walkersville could become a water exporter into the City of Frederick or Frederick County's Waterside systems or at least provide backup or emergency supply.

As a result of water contamination incidents in 1999 and 2008, a temporary water interconnection of Walkersville with the City of Frederick was built and used for several months. This led to plans for a permanent interconnection with Frederick City and Frederick County for emergency use.

The Town constructed a new, more technically-advanced water treatment plant (WTP) using microfiltration (membrane) with reverse osmosis for nitrate removal. The new plant began operations in July 2020 and was constructed on the same property as the existing plant at 77 West Frederick Street with the same permitted capacity of 1.0 MGD. The capacity is determined to be adequate for projected growth in the Town over the next 30 years. The former WTP will be reused as a storage facility or demolished. The new plant eliminates the need for a permanent interconnection with the City of Frederick and Frederick County.

Wellhead Protection

As a result of a wellhead tracer study, the Town of Walkersville has delineated a Wellhead Protection Area which extends to the north beyond the Town boundaries, to the Town of Woodsboro. The Town of Walkersville has adopted a wellhead protection ordinance. Sinkholes are a common occurrence in the Wellhead Protection Area. Much of the Town's water supply has a greater susceptibility to contamination

because the Karst terrain (limestone geology) present in this area creates conditions where the groundwater is under the direct influence of surface water (GWUDI). Potential contaminants can travel quickly to the Town wells. Travel times encountered during dye tracing ranged from a few hours to a few days. This was unfortunately illustrated in 1999 when a construction accident ruptured a sewer line, and the contamination reached the Town wellfield in a matter of days. In that incident, thousands of feet of water line were laid by the County to connect the Town system to City of Frederick water, until the wells could be restored to use. In 2008, a significant manure spill upstream of the Town's wells resulted in contamination of groundwater, whereby the installation of the temporary water line interconnection with the City of Frederick was repeated. The technically advanced treatment at the new water plant was planned in response to these contamination incidents.

Town of Woodsboro

The Woodsboro Service Area consists of the Town of Woodsboro, plus 5 properties that are served by 1,000 linear feet of waterline along Gravel Hill Road and MD-550. Although there are small areas of industrial growth designated on the County's Comprehensive Plan west and south of the Town, the Town's policy is not to extend water and sewer service to areas outside the corporate limits. The Town is located wholly within the Israel Creek watershed.

The Town of Woodsboro is located within the limestone lowland section of the Piedmont Physiographic Province. The limestone lowlands region consists of valley regions floored by limestone bedrock, exhibiting many sinkholes, but few caves.

Existing Facilities

The Town of Woodsboro water system (MD0100027) is operated by the Town and supplied by groundwater delivered by five wells that are located within limestone of either the Frederick or Grove Formations, according to MDE.

Table 3-28: Woodsboro Ground Water Sources

Water Source	Permitted Withdrawal (average GPD)	Permitted Maximum Withdrawal (GPD month of maximum use)	Average System Demand (GPD)	Permit Number ^{1, 2}
Well #1 (standby)	-	-	-	FR2001-0039
Well #2	-	-	-	FR2003-4608
Well #2A	-	-	-	FR1988-1545
Well #3	-	-	-	FR1981-0518
Well #7	-	-	-	FR1988-1607
Well #14	-	-	-	FR1988-1833
Totals	128,000	178,200	85,000	

Well 1 has been found to be under the direct influence of surface water (GWUDI) and is currently not used for primary production. MDE states that well #1 is susceptible to contamination by microbiological contaminants and, lacking treatment, should be abandoned and sealed. Well #1 is not used for water supply but kept in standby status in case of the need for water in a firefighting emergency.

¹ Permit numbers in this column reflect individual well permit numbers.

² All Town wells operate under one (1) WA&U permit, FR1979G010 (07).

The five (5) wells currently in use share three (3) treatment plants where the raw water receives hypochlorite treatment. Storage capacity in the system includes a 50,000-gallon elevated storage tank which has an overflow elevation of 520.5 ft. A 200,000-gallon ground storage tank is located in the Copper Oaks development on the east side of Town. The distribution system consists of 6- and 8-inch mains.

In 1994, a booster pump station was built to provide adequate pressure for the residential lots of Copper Oaks at the highest elevations. In addition, the 2-inch line located along Gravel Hill Road and MD 550 west of Town was replaced with an 8-inch line.

Existing and Future Demand

The Woodsboro system serves 456 residences serving a population of 1,156 (MDP 2023). Permitted withdrawal is 128,000 gpd. Data provided by MDE indicates that, from 2002 to 2011, the Woodsboro PWS has appropriated an average of 31 million gallons of groundwater each year, or about 85,000 gallons per day.

Included in the service area is an elementary school and a number of commercial establishments. The Woodsboro Industrial Park is served by a well that is not connected to the Town system. Some of the properties in the industrial park are connected to 2-inch lines coming from Barricks Lane to the south and MD 550 to the north. Fire protection is not available via hydrants in the industrial park.

As of the adoption of the 2021 Water and Sewerage Plan, the Town had the potential for another 442 dwellings, which would have a water demand of approximately 110,500 gpd. The Town cannot meet this demand without establishing new wells and the water loss via leaks is corrected.

Planned Improvements

Woodsboro has an ongoing program of leak detection and correction.

Source Water Protection

In 1997, the MDE's Public Drinking Water Program developed a Wellhead Protection Plan for the Town. The 1997 Plan found that Woodsboro's wells were highly susceptible to contamination due to the limestone bedrock and made recommendations on strategies for well head protection. The MDE also completed a Source Water Assessment for the Town in 2002, which included identifying potential sources of contaminants, designating a formal source water assessment area, and completing a susceptibility analysis for each public groundwater source of water.

The Town's unique geology includes a diabase dike of Jurassic age that bisects the Town in a north/south fashion. The dike serves as a boundary between the LeGore and Barrick limestone quarries, and subsequent wellhead protection areas. The MDE established a zone of dewatering influence around the Barrick and LeGore quarries in the late 1990's. This zone is based on topography, watershed boundaries, geologic structure, and composition. According to the MDE, dye tracer tests indicate that dye sourced in the quarry locations and sinkholes can be detected in Town wells within a short time span. Another key finding from the State is that Israel Creek contains a losing reach north of the Town (water discharging from the stream into the ground), which further emphasizes the connection between surface and groundwater in this limestone system.

In 2010, the Town's Source Water Protection Committee issued a Source Water Protection Plan, as an extension to the 2002 MDE Assessment, although the Town's Plan was not formally adopted. The Town's 2010 Source Water Protection Plan contained a number of recommendations including BMP implementation for water management, public outreach and education, contingency planning, aquifer

protection through zoning, and Committee review of relevant ordinances to better manage and protect the Town's water supply. Currently, the Town does not have an adopted Wellhead Protection Ordinance.

TMDE published an update to the 2005 Source Water Assessment report in 2013 that included an update to the source water assessment area with expanded data and recommendations.

Section 5: Small Community Water Systems

Small Community Water Systems have a ground water appropriation permit of less than 10,000 gallons average daily use and typically serve a single subdivision. Small systems in Frederick County obtain their water supply from unconfined fractured rock aquifers, for which a 1,000' radius source water assessment area is defined in Maryland's Source water Assessment Plan (SWAP).

Public Systems

The publicly owned Waterside (MD0100029) and Cloverhill III (MD0100031) community water systems no longer have water treatment and storage and are now tied to the County's and the City of Frederick's water supply.

The five (5) Sub-Regional water systems-White Rock, Samhill, Windsor Knolls, Bradford Estates, Highfield/Cascade are publicly owned systems and serve existing developed areas, not within Community Growth Areas. The Highfield Water System is operated by Washington County under Appropriation Permit WA1988G032, with a permitted daily average of 100,000 gpd and a maximum average of 150,000 gpd. The reported daily average pumpage in 2007 was 71,663 gpd. The system currently serves 964 people in both Frederick and Washington Counties.

Private Systems

The **Briercrest Apartment Water System (MD0100004)** is privately owned and operated and is served by one well with a yield of 13 gpm. Water from the well is chlorinated by use of hypochlorinators. Water is distributed to the 24-unit apartment complex from an underground 10,000-gallon pressurized tank. The County has received State funding to connect the apartment buildings to public water and this effort is currently under design.

The **Amelano Manor Water System (MD0100001)** is privately owned and presently serves 11 residences and 36 persons. Daily consumption is reported at 800 GPD. The system includes a well rated at 40 GPM, a 20 GPM pump and a 4,000-gallon pressure tank. Treatment is chlorination. The distribution system is a 6-inch main along Amelano Drive. The County has no plans to purchase or improve this system. Hook up to Frederick City's system may be possible in the future as development extends to this area, if the subdivision is annexed into the City.

Several mobile home parks in the County have their own private water systems and are listed under Multi-Use Water Systems.

Section 6: Water Problem Areas

Areas within Frederick County where the Frederick County Health Department or the State of Maryland has conducted sanitary surveys or collected data to determine the location, extent, and severity of problems and issues with both individual groundwater wells and on-site sewage disposal systems include the community of Lewistown, and the municipality of Burkittsville, and an area known as “Crows Nest.” These two (2) communities of Lewistown and Burkittsville are older communities with concentrated populations on small lots served by private groundwater wells and individual septic systems. All three of these areas, communities, along with others, are also included below in the County’s list of Water Problem Areas, and on the list of Septic Problem Areas (Table 4-9, Chapter 4, Frederick County Water and Sewerage Plan).

Table 3-29: Water Problem Areas

Community	Estimated Population	Survey Dates	Problem
Lewistown	240	1994, 2013	Ecoli and Fecal Coliform Bacteria discovered in 29 wells during 2013 survey. This community contains soils with shallow depth to groundwater
Burkittsville	163	2016	Ecoli and Fecal Coliform Bacteria discovered in 21 wells during 2016 survey.
Crows Nest (335 W. Main Street, Thurmont)	50	2022	Ecoli detected in community groundwater well; expiration of Groundwater Appropriation and Use Permit

Section 7: Multi-Use Water Systems

The Federal system of classification of water systems defines a Public Water System as a system that served 25 or more people 60 days per year. Community, non-transient non-community and transient non-community are sub-categories of Public Water Systems. The state's definition of a Public Water System (PWS) is generally consistent with the Federal definition above.

The Water & Sewerage Plan objective is to develop the water and sewerage systems in a way consistent with county comprehensive planning. Therefore, the useful distinction for that purpose among PWS is between a system serving two or more individual lots (community system) and a system which serves a group of people on a single lot or under the same ownership (multi-use system).

A multi-use water system is one which produces over 5,000 gpd and serves a group of individuals on a single lot or under the same ownership. Uses that typically employ multi use water systems include churches, schools, campgrounds, highway rest areas, and isolated commercial or industrial sites. These systems are distinct from community systems which also serve many people but serve multiple lots or connections and are, by policy, not permitted to be privately owned and operated unless "grandfathered". Multi use systems in the County include both private and public systems. While some are found within regional water system service areas and may be absorbed as regional service reaches them, most are located outside community water service areas.

Identification and tracking of Multi-Use systems provide the County information on the location of on-site Multi-Use systems and will allow the County to identify areas where Multi-Use systems may create cumulative impacts on ground and surface waters, and facilitate a more comprehensive review of future proposal for Multi-Use systems which are to be located in areas where the provision of community water and sewer service is not anticipated.

In order to ensure the protection of natural resources, the County may, in consultation with the Health Department and the Maryland Department of the Environment, require hydrogeologic studies of the potential effects of the proposed Multi-Use system on ground and surface water resources, if warranted.

In addition to multi-use systems are transient and non-transient systems defined as follows and listed in Table 3-31.

Non-Transient Non-Community (NTNC): A public water system that regularly supplies water to at least 25 of the same people at least six months per year. Some examples are schools, factories, office buildings, and institutional uses which have their own water systems.

Transient Non-Community (TNC): A public water system that provides water in a place such as a gas station or church where people do not remain for long periods of time.

Table 3-30: Multi-Use Water Systems

Water System	ID (MD)	Groundwater appropriation permit	Ownership	Appropriation gpd	
				Ave.	Max
ATT Switching Station, Fingerboard Rd (MD 80)	N/A		Private	Exempt	Exempt
Baptist Convention of Maryland/Delaware, Inc. (Skycroft)	1101171	FR1979G008(05)	Private	8,600	20,100
Baltimore Brick Co., Rocky Ridge	N/A		Private		
Briarcrest Apartments, Jefferson	0100004	FR72-0448	Private	5,000	8,000
Camp Airy	1101030	FR1958G003	Private	7,000	25,000
Catoctin Mountain Park	1101033	FR1955G002	Federal	40,000	50,000
Concord Mobile Home Park	0100203	FR1970G010	Private	13,100	21,800
Cunningham Falls State Park Houck Area	1101279	FR1971S006	State	15,000	60,000
Cunningham Falls State Park Manor Area-Campground	1101278	FR1957G103	State	Exempt	Exempt
Foxville Naval Quarters			Federal	45,000	
Gambrill State Park High Knob	1101232	FR1963G004	State	Exempt	Exempt
Gambrill State Park Rock Run	1101262	FR1963G004	State	Exempt	Exempt
Gilbert's Mobile Home Park	0100207	FR1997G038	Private	3,000	4,000
Green Valley Shopping Center	110058	FR1975G005	Private	Exempt	Exempt
I-70 Rest Area, Myersville	1101162	FR1966G013	State	35,000	50,000
Kemptown Elementary School	1100013	FR1978G010(03)	County	Exempt	Exempt
Lewistown Elementary School & Fire Dept.	1100015	FR1973G018(03)	County	Exempt	Exempt
Liberty Elementary School	1100016	FR1973G017(04)	County	Exempt	Exempt
Life in Jesus Retreat Center (Sacred Monastery of St. Nina)	1101291	FR2001G026	Private	12,000	20,000
Mar-Lu-Ridge Conference Center	1101130	FR1959G001	Private	Exempt	Exempt
New Life Foursquare Church & School	1100052	FR1979G005	Private	Exempt	Exempt
Pollings Mobile Home Estates	0100210	FR1970G005	Private	8,500	10,000

Water System	ID (MD)	Groundwater appropriation permit	Ownership	Appropriation gpd	
				Ave.	Max
Sheppard Pratt Treatment Center/ Jefferson School ²	1100054	FR1994G012	Private	N/A	N/A
Spring View Mobile Home Park	01000212	FR1963G013	Private	6,800	13,600
Summit Lake Bible Conference	1101183	FR1962G008	Private	9,200	20,000
T.E.C. Building Partnership, Hyatt Industrial Park	1100011	FR1986G011	Private	5,500	9,000
Valley Elementary School, Jefferson	1100033	FR1968G008	County	6,700	10,000

¹ “Exempt” indicates a notice of exemption has been filed with the Maryland Department of the Environment due to an annual average use of less than 5,000 gpd. Information verified as of January 2024.

² The Sheppard Pratt Center is not in operation and is closed.

Table 3-31: Transient and Non-Transient Water Systems

PWSID	Name	Water System Type	Permit #	Annual Avg (gpd)	MMU (gpd)
MD0100001	AMELANO MANOR	NTNC	FR1969G006	3,000	4,700
MD1100008	GREEN VALLEY ELEMENTARY	NTNC	FR1971G008	4,000	6,000
MD1100010	HYATT PARK #1	NTNC	FR1986G008	900	1,500
MD1100011	T.E.C. BUILDING PARTNERSHIP	NTNC	FR1986G011	5,500	9,000
MD1100012	JEFFERSON PIKE WAREHOUSE CONDO INC.	NTNC	FR1952G001	500	1,500
MD1100013	KEMPTOWN ELEMENTARY	NTNC	FR1978G010	5,000	10,000
MD1100015	LEWISTOWN ELEMENTARY	NTNC	FR1973G018	3,000	5,000
MD1100016	LIBERTY ELEMENTARY	NTNC	FR1973G017	4,900	8,700
MD1100017	LINGANORE HIGH SCHOOL	NTNC	FR1989G005	300	1,200
MD1100018	LONG FENCE COMPANY	NTNC	FR1987G003	300	500
MD1100020	MOUNTAIN MANOR TREATMENT CENTER	NTNC	FR2005G031		
MD1100024	NEW MARKET SHOPPING CENTER	NTNC	FR1981G015	5,000	7,000
MD1100025	NEW MIDWAY ELEMENTARY	NTNC	FR1973G019	1,800	2,500
MD1100030	SABILLASVILLE ELEMENTARY	NTNC	FR1965G004	2,000	3,000
MD1100033	VALLEY ELEMENTARY	NTNC	FR1968G008	5,000	10,000
MD1100034	WOLFSPVILLE ELEMENTARY	NTNC	FR1973G020	1,700	2,500
MD1100036	YELLOW SPRINGS ELEMENTARY	NTNC	FR1997G028	2,500	6,000
MD1100040	FAITH BAPTIST CHURCH	TNC	FR1980G006	100	200
MD1100044	CHILDRENS CENTER FOR DISCOVERY	NTNC	no permit		
MD1100045	HYATT CENTER	NTNC	FR1988G029	3,000	5,000
MD1100046	EMMANUEL BIBLE CHURCH, GAMBRILL CENTER	TNC	FR1969G026	10,000	12,000
MD1100048	BURDETTE BROTHERS USED CARS	NTNC	FR1971G013	1,000	2,000
MD1100052	NEW LIFE CHRISTIAN SCHOOL	NTNC	FR1979G005	3,000	4,000
MD1100055	DANDELION - EDUCARE LEARNING CENTER	NTNC	FR1995G002	1,200	1,500
MD1100058	GREEN VALLEY PLAZA	NTNC	FR1988G026	3,000	4,000
MD1100059	GREEN VALLEY SHOPPING CENTER	NTNC	FR1975G005	1,000	3,000
MD1100061	FRIENDS MEETING SCHOOL	NTNC	FR2000G025	2,500	3,000
MD1100062	LUCY SCHOOL (ECOFARM, INC.)	NTNC	FR2002G005	300	500
MD1100064	LITTLE TRAVELERS DAY CARE & LEARNING CTR	NTNC	no permit		
MD1100065	FREDERICK CHRISTIAN ACADEMY	NTNC	FR1974G024	2,000	3,000
MD1100066	SAINT JOHNS CATHOLIC PREP	NTNC	FR2004G023	4,000	10,000
MD1100067	KIDS VILLA LEARNING CENTER LLC	NTNC	no permit		
MD1100068	KNOWLEDGE FARMS	NTNC	FR2001G020	6,600	12,200

PWSID	Name	Water System Type	Permit #	Annual Avg (gpd)	MMU (gpd)
MD1100071	BUCKEYSTOWN VETERINARY HOSPITAL	NTNC	no permit		
MD1100072	CHILDRENS CENTER OF MONROVIA	NTNC	no permit		
MD1100073	BREIT - 3951 DARTMOUTH CT	NTNC	no record		
MD1100074	BREIT - 4780 WINCHESTER BOULEVARD	NTNC	no record		
MD1100076	FREDERICK BAPTIST CHURCH & SCHOOL	NTNC	no record		
MD1100077	COPPER HILL CORPORATE CENTER	NTNC	no record		
MD1100078	MISS LORETTA'S EARLY LEARNING CENTER	NTNC	no record		
MD1101001	BP (URBANA PIKE)	TNC	no permit		
MD1101006	THE SALTY CHEF	TNC	FR1988G030	900	1,700
MD1101011	BECKLEYS CAMPING CENTER	NTNC	FR1984G015	300	600
MD1101012	BECKLEYS STORE AND MOTEL	TNC	FR1958G002	2,500	5,000
MD1101020	BROOKSIDE INN	TNC	NO PERMIT		
MD1101023	BUCKEYSTOWN UM CHURCH	TNC	no permit		
MD1101026	BUSH CREEK CHURCH OF BRETHREN	TNC	no permit		
MD1101027	CACTUS FLATS	TNC	no permit		
MD1101030	CAMP AIRY, LIL STRAUSS FOUND	TNC	FR1958G003	7,000	25,000
MD1101031	CAMP WEST MAR, AMERICAN LEGION	TNC	no permit		
MD1101033	CATOCTIN MOUNTAIN NAT. PARK-MISTY MOUNT	TNC	FR1955G002	40,000	50,000
MD1101034	CATOCTIN QUAKER CAMP	TNC	FR1958G001	500	2,500
MD1101035	CATOCTIN WILDLIFE PRESERVE & ZOO	TNC	FR2003G018	2,500	5,000
MD1101036	FAITH UNITED CHURCH OF CHRIST	TNC	FR1967G006	1,000	1,400
MD1101040	CHUBBYS BBQ	TNC	FR1981G004	500	750
MD1101046	MOUNTAINDALE CONVENIENCE STORE	TNC	NP PERMIT		
MD1101049	THE FURNACE	TNC	NP PERMIT		
MD1101067	FREDERICK COUNTY 4-H CAMP CENTER	TNC	FR1980G003	4,000	5,000
MD1101074	GATEWAY INC	TNC	FR1983G003	2,000	3,000
MD1101079	GRACEHAM MORAVIAN CHURCH	TNC	no permit		
MD1101080	GREEN VALLEY ANIMAL HOSPITAL	TNC	FR1975G017	500	1,000
MD1101083	GROSSNICKLE CHURCH OF THE BRETHREN	TNC	no permit		
MD1101085	HALLOWOOD RETREAT AND CONF. CENTER	TNC	FR1984G011	3,500	6,000
MD1101086	T. J. ROADHOUSE	TNC	no permit		
MD1101087	HARNES MARKET	TNC	no permit		
MD1101088	HARRIET CHAPEL	TNC	FR1970G016	300	500
MD1101090	7-ELEVEN- THURMONT#28960	TNC	FR1983G008	300	500

PWSID	Name	Water System Type	Permit #	Annual Avg (gpd)	MMU (gpd)
MD1101097	HOLLY HILLS COUNTRY CLUB	TNC	FR1974G030	6,900	14,000
MD1101102	CROWN JEFFERSON	TNC	no permit		
MD1101106	JEFFERSON BP	TNC	no permit		
MD1101107	JEFFERSON MARKET	TNC	FR1974G018	300	500
MD1101109	JEFFERSON RURITAN COMMUNITY CENTER	TNC	FR1969G015	500	1,000
MD1101110	JOHNSVILLE UM CHURCH	TNC	FR1974G022	700	1,000
MD1101112	KEMPTOWN STORE	TNC	no permit		
MD1101118	LEWISTOWN VOLUNTEER FIRE DEPARTMENT	TNC	FR1978G013	500	1,000
MD1101120	LIBERTY METHODIST CHURCH	TNC	NP PERMIT		
MD1101122	LIBERTYTOWN VOLUNTEER FIRE CO.	TNC	FR1966G009	1,000	1,500
MD1101129	FREDERICK NATIONAL GUARD	TNC	FR1979G012	3,850	5,000
MD1101130	MAR LU RIDGE -LODGE 3 AND POOL	TNC	FR1959G001	9,000	15,000
MD1101132	VINTAGE	TNC	FR1967G010	1,000	4,000
MD1101134	NANNIE'S DINNER	TNC	FR1986G010	150	300
MD1101135	BLUE SKY & HILLTOP CONVENIENCE STORE	TNC	FR1992G013	2,400	3,300
MD1101142	MT PLEASANT RURITAN CLUB	TNC	FR1965G007	750	1,000
MD1101145	NEW MARKET GRANGE #362	TNC	FR1965G002		
MD1101147	NEW MIDWAY VOLUNTEER FIRE DEPARTMENT	TNC	FR1984G013	500	600
MD1101150	MONOCACY CROSSING	TNC	FR1986G018	2,000	3,000
MD1101155	PROVIDENCE UM CHURCH	TNC	FR1986G025	400	700
MD1101161	ROCKY RIDGE VFD	TNC	FR1966G007	600	1,000
MD1101162	I-70 REST AREAS (EASTSIDE AND WESTSIDE)	TNC	FR1966G013	20,000	45,000
MD1101163	LIBERTYTOWN SHOPPING CENTER	TNC	FR1985G017	3,000	5,000
MD1101167	SHAMROCK RESTAURANT	TNC	no permit		
MD1101174	STUPS GARAGE AND USED CARS, INC.	NTNC	NO PERMIT		
MD1101177	ST JOHNS LUTHERAN CHURCH	TNC	FR1973G012	200	300
MD1101180	EMMANUEL TRINITY LUTHERAN CHURCH	TNC	NO PEERMIT		
MD1101182	ST PAULS LUTHERAN CHURCH	TNC	NO PEERMIT		
MD1101183	SUMMIT LAKE CAMP	TNC	FR1962G008	9,200	20,000
MD1101196	TOMS CREEK U M CHURCH	TNC	FR1998G028	100	300
MD1101202	URBANA VFD	TNC	FR1976G012	3,000	4,000
MD1101207	WESLEY CHAPEL UMC	TNC	NO PERMIT		
MD1101210	WILCOMS INN	TNC	FR1967G012	100	150
MD1101215	BALLENGER COMMUNITY CENTER	TNC	FR1978G103		

PWSID	Name	Water System Type	Permit #	Annual Avg (gpd)	MMU (gpd)
MD1101219	BUCKEYSTOWN PUB	TNC	NO PERMIT		
MD1101231	VALERO (E-Z FILL GETTY SHOP, INC	TNC	NO PERMIT		
MD1101232	GAMBRILLS STATE PARK BOOT JACK,HIGH KNOB	TNC	NO PERMIT		
MD1101233	MARYLAND SHERRIFS YOUTH RANCH	NTNC	FR2001G024	2,200	3,300
MD1101236	7- ELEVEN - (GASMAST OF FREDERICK)	TNC	FR1987G018	500	800
MD1101241	GATHLAND STATE PARK	TNC	FR1957G005	1,500	10,000
MD1101243	KEMPTOWN COMMUNITY PARK	TNC	FR1982G002	1,800	2,500
MD1101244	DELAUTER AND SONS	TNC	NO PERMIT		
MD1101253	MOUNT AIRY EXXON	TNC	FR1973G003	900	1,500
MD1101255	OLE MINK FARM	TNC	no permit		
MD1101258	CERESVILLE MANSION	TNC	FR1989G029	1,000	2,000
MD1101260	DAHLGREN AND SOUTH MOUNTAIN STATE PARK	TNC	FR1970G008	1,500	2,500
MD1101262	GAMBRILLS STATE PARK (ROCK RUN)	TNC	FR1963G004	2,000	10,000
MD1101265	MCDONALDS	TNC	FR1993G037	2,500	3,000
MD1101269	GLADE VALLEY GOLF CLUB	TNC	FR1989G132	3,000	6,000
MD1101270	LIBERTY ROAD SEAFOOD	TNC	FR1986G030	1,250	2,000
MD1101273	MORNINGSIDE INN	TNC	FR1994G001	800	2,600
MD1101274	SUGARLOAF MOUNTAIN, STRONGHOLD MANSION	TNC	FR1992G007	300	500
MD1101278	CUNNINGHAM FALLS - MANOR CAMPGROUND	TNC	FR1957G103	3,500	7,000
MD1101279	CUNNINGHAM FALLS - HOUCK AREA	TNC	FR1971S006	5,000	50,000
MD1101280	FOUNTAIN ROCK PARK	TNC	no permit		
MD1101282	BROOKHILL UMC AND WEEKDAY PRESCHOOL	TNC	FR2001G018	1,200	
MD1101284	MAPLE RUN GOLF COURSE	TNC	FR1991G008	43,000	170,000
MD1101285	PLEASANT GROVE U M CHURCH	TNC	no permit		
MD1101286	TUSCARORA TENNIS BARN	TNC	FR1975G007	2,000	3,000
MD1101293	BUCKEYSTOWN MARKET	TNC	FR1984G006	300	500
MD1101295	CHAPEL LUTHERAN CHURCH	TNC	no permit		
MD1101300	P. B. DYE GOLF CLUB	TNC	FR1997G017	83,000	288,000
MD1101302	SHELL OIL CO(MT. AIRY SHELL)	TNC	FR1985G024	500	700
MD1101303	ST JOSEPHS ON CARROLTON MANOR	TNC	NO PERMIT		
MD1101304	ST PAULS LUTHERAN CHURCH(FREDERICK	TNC	NO PERMIT		
MD1101305	ST PETERS CHURCH AND OFFICE BLDNGG	TNC	FR1990G025	900	1,500
MD1101306	STONE MANOR	TNC	FR1988G021	4,200	5,000
MD1101309	UNITED CIVIC CENTER OF SHOOKSTOWN	TNC	no permit		

PWSID	Name	Water System Type	Permit #	Annual Avg (gpd)	MMU (gpd)
MD1101310	URBANA CONVENIENCE SHOP (EXXON)	TNC	no permit		
MD1101311	WORTHINGTON MANOR GOLF CLUB	TNC	FR1996G008	51,000	202,000
MD1101313	THORPEWOOD CONFERENCE CENTER INC.	TNC	FR1998G027	300	500
MD1101314	WHISKEY CREEK GOLF COURSE	TNC	FR1996G005	23,000	72,000
MD1101316	FREDERICK MASONIC TEMPLE	TNC	FR1996G022	100	300
MD1101318	LIBERTYTOWN COMMUNITY PARK	TNC	FR1997G001	1,600	2,200
MD1101319	MUSKET RIDGE GOLF CLUB	TNC	FR1999G022	5,000	8,000
MD1101320	HOPE VALLEY GOLF COURSE	TNC	FR1967G105	1,000	2,000
MD1101321	ST MARKS LUTHERAN CHURCH	TNC	no permit		
MD1101322	CATOCTIN MOUNTAIN NAT. PARK - JIM BROWN	TNC	FR1955G002	40,000	50,000
MD1101323	CATOCTIN MOUNTAIN NAT. PARK - IKE SMITH	TNC	FR1955G002	40,000	50,000
MD1101324	MARYLAND NATIONAL GOLF CLUB	TNC	FR1996G017		
MD1101326	MAR LU RIDGE - LODGE	TNC	no permit		
MD1101327	UNITARIAN UNIVERSALIST CONGREGATION	TNC	no permit		
MD1101329	ST PETERS THRIFT SHOP	TNC	no permit		
MD1101330	CATOCTIN MOUNTAIN ORCHARD	TNC	no permit		
MD1101332	FREDERICK CHRISTIAN FELLOWSHIP	TNC	FR1999G037	7,000	14,000
MD1101333	OLD NATIONAL PIKE DISTRICT PARK	TNC	FR2003G021	500	800
MD1101334	ST PETERS PARISH CENTER-SULLIVAN HALL,	TNC	FR1990G025	300	500
MD1101335	CLOVERHILL SWIM CLUB	TNC	no permit		
MD1101336	BAR T MOUNTAINSIDE	NTNC	no permit		
MD1101337	UTICA DISTRICT PARK	TNC	FR2007G005	300	500
MD1101338	LITTLE LIGHTS CHILD CTR/FIRST BAPTIST CH	NTNC	FR2003G048	1,000	1,500
MD1101339	STEPPING STONE DAYCARE AGE CENTER	TNC	no permit		
MD1101341	BREIT - 4840/4844 WINCHESTER BOULEVARD	NTNC	FR2003G041	600	1,000
MD1101343	HOLY FAMILY CATHOLIC COMMUNITY	TNC	NO PERMIT		
MD1101344	THE ATHLETE FACTORY /EXTRA INNINGS	TNC	NO PERMIT		
MD1101345	LINGANORE WINECELLARS -BERRYWINE PLANT.	TNC	NO PERMIT		
MD1101346	VENTRIE CENTER, PARKVIEW AND SUBWAY	TNC	FR1988G012	1,000	1,500
MD1101347	ROCKY POINT CREAMERY	TNC	no permit		
MD1101348	CATOCTIN CREEK NATURE CENTER	TNC	no permit		
MD1101349	BLACK ANKLE VINEYARDS	TNC	FR2004G005	300	500
MD1101350	FALCON FUELS	TNC	FR1988G009	300	500
MD1101351	DRCC-DAMASCUS ROAD COMMUNITY CHURCH	TNC	no permit		

PWSID	Name	Water System Type	Permit #	Annual Avg (gpd)	MMU (gpd)
MD1101352	KINGDOM HALL OF JEHOVAHS WITNESSES	TNC	no permit		
MD1101353	J B SEAFOOD	TNC	no permit		
MD1101354	MOUNTAIN VIEW COMMUNITY CHURCH	TNC	FR2002G032	300	500
MD1101355	CRUSADORS SPORT BAR	TNC	no permit		
MD1101356	THURMONT UNITED METHODIST CHURCH, INC	TNC	no permit		
MD1101357	MUSKET RIDGE GOLF CLUB-BATHROOMS	TNC	no permit		
MD1101358	CHRISTIAN LIFE CENTER	TNC	no permit		
MD1101359	THE LITTLE RED BARN ICE CREAMCAFE	TNC	no permit		
MD1101360	EGS GYMNASTICS	TNC	no permit		
MD1101361	SPRINGFIELD MANOR	TNC	no record		
MD1101363	ST. IGNATIUS OF LOYOLA CATHOLIC CHURCH	TNC	no record		
MD1101365	WILLOW OAKS, LLC	TNC	no record		
MD1101366	GLENN ELLEN FARM	TNC	no record		
MD1101367	MAR LU RIDGE CONFERENCE CENTER	TNC	no record		
MD1101368	DJ CATERING & SERVICES	TNC	no record		
MD1101369	LIGHTHOUSE SEAFOOD	TNC	no record		
MD1101370	CABOSE FARMS	TNC	no record		
MD1101372	MOUNTAINDALE CONVENIENCE STORE # 2	TNC	no record		

Table 3-32: Ground Water Permits- Frederick County Public Schools

Permit Number	Aquifer Name	School	Effective Date	Average gpd	Max gpd
FR71G008(03)	Ijamsville Formation	Green Valley Elementary School	5/01/97	4,000	6,000
FR1078G010 (03)	Ijamsville-Marburg Formation	Kempton Elementary School	5/01/01	2,000	3,000
FR73G018(03)	New Oxford Formation	Lewistown Elementary School	5/01/97	3,000	5,000
FR73G017(05)	Libertytown Metarhyolite	Liberty Elementary School	3/01/96	4,000	6,000
FR73G016 (04)	Libertytown Metarhyolite	Linganore High School	5/01/97	13,000	19,500
FR1989G005 (03)	Libertytown Metarhyolite	Linganore High School Stadium	2/01/03	2,500	8,000
FR73G019 (03)	New Oxford Formation	New Midway Elementary School	5/01/97	1,800	2,500
FR1965G004 (05)	Catoctin Metabasalt	Sabillasville Elementary School	6/01/05	2,000	3,000
FR1968G008 (05)	Granodiorite and Biotite Gneiss	Valley Elementary School	6/01/05	6,700	10,000
FR73G020 (03)	Catoctin Metabasalt	Wolfsville Elementary School	5/01/97	1,700	2,500
FR97G028 (01)	Mountain Wash	Yellow Springs Elementary School	8/01/97	2,500	6,000

Section 8: Ground & Surface Water Permits

Permit Number (FR)	Stream/ Aquifer Name	Owner's Name	Remarks	Effective Date	Permit Average (GPD)	Permit Max (GPD)
FR2002G006(02)	Urbana Formation	12041 New Market Corporation	Turnpike Farm Ind/Comm. Subdivision Lot 1	5/1/2005	100	200
FR1998G008(02)	New Oxford Formation	7 K Frederick LLC	Aquaculture Project	7/1/2012	67,500	90,000
FR1981G013(03)	Ijamsville Formation - Marburg Schist, Undifferentiated	84 Lumber Company	Home Center & Truss Plant	12/1/2001	300	500
FR2012S002(01)	Unnamed Tributary	A.S.A.P. Port-A-Pots, Inc.	Portable Toilets	6/1/2012	100	200
FR1969G018(03)	Frederick Limestone	Amber Associates, Inc.	Memory Lane Diner & Memory Lane Motors	2/1/1990	1,400	1,600
FR1990G030(02)	New Oxford Formation	Andrew Miles Chrisler	Gardencraft Landscaping Company	11/1/2002	800	2,600
FR1984G009(03)	Ijamsville Formation - Marburg Schist, Undifferentiated	Anita Venner & Ira Steinberg	Groundwater Heat Pump	8/1/2008	1,500	2,000
FR1956G105(02)	Grove Limestone	Argos USA, LLC	Essroc Cement Corp. Dust Control	11/30/2017	10,000	15,000
FR2003G004(01)	Harpers Formation	Arthur Dale Kemp	Dale's Place	3/1/2003	500	800
FR1979G008(05)	Cactoctin Metabasalt	Baptist Convention Of Maryland/Delaware	Skycroft Baptist Conference & Retreat Center	12/1/2013	8,600	20,100
FR1970G002(05)	Cactoctin Metabasalt	Barbara Colunga & Sylvia King	Valleydale Apartments	2/1/2014	3,000	4,500
FR2013S002(01)		Barrick & Sons, LLC	Barrick & Sons, LLC Hydroseeding	4/1/2013	600	1,200
FR1994G022(04)	Grove Limestone	Barrick LLC	Potable Supply And Miscellaneous Uses	12/9/2021	7,500	11,500
FR2000G001(02)	New Oxford Formation	Bel Development Group, LLC	FMA, Inc. - Light Manufacturing	11/1/2012	300	1,000

FR1986G007(02)	Ijamsville Formation	Bernard & Gail M. Wolcott	Multi Tenant Office/Warehouse	5/1/1998	600	900
FR1986G018(02)	Ijamsville Formation	Blue Fox Inn	Blue Fox Inn - Restaurant	11/1/1998	2,000	3,000
FR1970G035(06)	Grove Limestone	Bluegrass Materials Company, LLC	Frederick Quarry Dewatering	11/15/2018	10,420,000	16,300,000
FR1989G002(02)	Antietam Formation	Board Of County Commissioners Of Frederick County	Fire Training Center	7/1/2001	500	2,000
FR2012G003(01)	Urbana Formation	Bowman Consulting Group, Ltd.	20 - Lot Subdivision	8/1/2012	4,400	7,300
FR1993S002(02)	Unnamed Tributary	Brian E. Glass	Farm Irrigation	11/1/2010	6,600	40,000
FR2012G001(01)	Cactoctin Metabasalt	Briercrest Associates, LLC	Briervest Associates, LLC Apartments	2/1/2012	3,600	5,400
FR2014S004(01)		Buffalo Construction Company, Inc.	Buffalo Construction Company, Inc. - Hydroseeding	4/1/2014	800	4,000
FR1979G014(03)	New Oxford Formation	Builders Supply & Lumber	Woodworking Shop	11/1/1997	2,000	3,000
FR1909S012(04)	Other	Burgess & Commissioners Of Walkersville	Municipal Water Supply - PWSID 0100025	6/1/2011	83,000	1,000,000
FR1978G017(07)	Grove Limestone	Burgess & Commissioners Of Walkersville	Community Water Supply - PWSID 0100025	6/1/2011	1,000,000	1,500,000
FR1974G025(07)	Cactoctin Metabasalt	Burgess And Commissioners Of Middletown	Middletown Municipal Water Supply (Wells #1-13, #15, #19 And Springs)	4/1/2010	308,000	390,800
FR1974G125(02)	Cactoctin Metabasalt	Burgess and Commissioners of Middletown	PWSID 0100018 Brookridge South Wells	10/22/2020	25,500	33,200
FR1974G225(06)	Cactoctin Metabasalt	Burgess And Commissioners Of Middletown	Middletown (Cone Branch Wells #14, #16 & #17)	5/1/2011	53,500	80,000
FR2006G001(01)	Urbana Formation	Bush Creek Church Of The Brethren	Church	1/1/2006	300	500

FR2018S003(01)	Monocacy River	C J Miller, LLC	Hydroseeding, Dust Control, And Road Paving Operations.	9/15/2018	2,200	5,000
FR2022S002(01)	Other	C J Miller, LLC	Small Mobile Intermittent Withdrawal County Wide	6/17/2022	2,200	6,000
FR2014G001(01)	Harpers Formation	Catoctin Breeze Winery	Catoctin Breeze Winery Tasting Room	1/1/2014	400	500
FR1991G008(07)	Gettysburg Shale	Catoctin Land Management, LLC	Maple Run Golf Course	2/15/2023	43,000	170,000
FR1991S008(07)	Hunting Creek	Catoctin Land Management, LLC	Maple Run Golf Course	2/15/2023	9,000	20,000
FR1993G018(03)	Mountain Wash	Catoctin Mountain Orchard, Inc.	Irrigation	7/1/2018	75,000	267,000
FR1973G008(04)	Harpers Formation	Catoctin View Seventh Day Adventist Church	Church	5/1/2005	200	300
FR2000G022(02)	New Oxford Formation	Charles Fry	Turicey Farm	12/1/2012	9,400	14,100
FR1986G015(03)	New Oxford Formation	Charles M. Boyles	Nursery Irrigation	3/1/2011	4,000	8,000
FR2005G020(01)	Ijamsville Formation	Cheryl And Donald Mcculley, Sr.	Maple Lane Stables	3/1/2005	1,000	1,500
FR1964G002(05)	Frederick Limestone	Christian Brothers Of Frederick, Inc.	Offices & Spritual Center (Religious & Charitable)	4/1/2006	400	600
FR2002G011(01)	Gettysburg Shale	Christine Mayo And Steven Boszormenyl	Lost Hen Farm - Tree & Shrub Nursery	4/1/2002	1,000	3,000
FR1979S013(06)	Potomac River	City Of Brunswick	Potomac River Intake	6/1/2011	1,000,000	1,500,000
FR1924S001(05)	Fishing Creek	City Of Frederick	Fishing Creek Reservoir	12/27/2016	1,910,000	3,800,000
FR1940S001(05)	Linganore Creek	City Of Frederick	Linganore Creek Intake	12/15/2016	6,000,000	7,200,000
FR1961S001(07)	Monocacy River	City Of Frederick	Monocacy River Intake - 3YR Permit, Consider 12 YRS On Renewal	12/27/2016	2,000,000	3,000,000
FR1990G007(07)	Frederick Limestone	City of Frederick	Municipal Golf Course	9/1/2023	10,000	40,000

FR2002G022(04)	Frederick Limestone	City Of Frederick	Frederick City Municipal Well Pw-4 (Monocacy Village Park)	8/6/2015	365,000	420,000
FR2003G005(02)	Ijamsville Formation - Marburg Schist, Undifferentiated	Claudia Nami	Nursery - Plants	3/19/2015	3,300	39,000
FR2022S001(01)	Hunting Creek	Clearwater Construction	U.S Bridge # 1010900 Repair Project.	2/14/2022	1,000	2,000
FR1970G001(03)	Grove Limestone	Clover Hill Civic Association		5/1/2003	100	200
FR2010S001(02)	Carr Creek	Coastal Drilling East, LLC	Coastal Drilling East, Llc Bridge Construction/City Of Frederick	1/1/2011	400	10,000
FR1969G021(06)	Frederick Limestone	Commissioners Of Thurmont	Wells #3 & #4 - Well #2 (Now Permitted Under FR69G121)	6/1/2013	275,000	460,000
FR1988G004(03)	Gettysburg Shale	Commissioners Of Thurmont	Well #7 - Separate System, Not Connected To Towns Central System	6/1/2013	125,000	168,000
FR1993G036(03)	Gettysburg Shale	Commissioners Of Thurmont	Thurmont - Well #8 - Apples Church Rd	6/1/2013	202,000	263,000
FR2002G030(06)	Gettysburg Shale	Commissioners of Thurmont	Thurmont Municipal Well @ Moser & Jimtown Road	3/1/2019	200,000	275,000
FR2003G001(04)	Gettysburg Shale	Commissioners Of Thurmont	Thurmont - Well (#9)	6/1/2013	204,000	318,000
FR1991G010(02)	New Oxford Formation	Commonwealth Propane, Inc.	Thomas Industrial Park, Lot 2, Section 1	8/1/1997	300	500
FR1929G006(06)	Araby Formation	Comus Mining Company LLC	Laurel Hill Quarry-	1/1/2011	1,500,000	2,500,000
FR1970G010(06)	Harpers Formation	Concord Mobile Home Park Limited Partnership	Concord Mobile Home Park	4/15/2016	13,100	21,800

FR1979G010(07)	Frederick Limestone	Corporation of Woodsboro	Municipality	12/15/2017	128,000	178,200
FR2011G005(01)	New Oxford Formation	Cricket Associates, LLC	Cricket Associates, LLC, Tractor Supply Co.	9/1/2011	1,000	2,000
FR1982G012(03)	Ijamsville Formation	Daniel J. Duke	Office Bldg/Warehouse	1/1/2004	500	800
FR1990G020(06)	Sams Creek Metabasalt	Daniel P. Litteral	Lot 1, Kajen I Commercial Subdivision - Real Estate Investment	8/1/2004	300	500
FR1997G017(04)	Urbana Formation	Dansam Development, Inc	P.B. Dye Golf Club Irrigation - 8 Wells	12/7/2021	85,200	288,000
FR1997S021(03)	Bennett Creek	Dansam Development, Inc.	Golf Course And Country Club	12/7/2021	9,800	480,000
FR1998G009(03)	Urbana Formation	Dansam Development, Inc.	Club House For Golf Course	12/7/2021	1,700	2,500
FR1988G023(02)	Ijamsville Formation - Marburg Schist, Undifferentiated	Darlene Runkles	Beauty Shop	1/1/2002	100	200
FR1997G033(01)	Ijamsville Formation	Darren E. Wilson	Ground Water Heat Pump	10/1/1997	3,000	6,000
FR1990G004(02)	Frederick Limestone	Dearbought Community Association, Inc		8/5/2014	2,000	5,000
FR1988S039(02)	Monocacy River	Dearbought Community Association, Inc.		8/5/2014	7,000	9,500
FR1988G005(02)	New Oxford Formation	Doubs/Epworth United Methodist Church	Church	10/1/2001	100	200
FR2013S005(01)	Chesapeake Bay	East Coast Green, Inc.	East Coast Green, Inc. Hydroseeding	7/1/2013	2,000	35,000
FR1968G020(04)	Cactoctin Metabasalt	Edward Lee Walker	Myersville Chevron	9/1/1996	300	400
FR2001G032(02)	Urbana Formation	Elizabeth Franklin	Elizabeth Franklin	4/1/2014	100	200
FR2020S001(01)	Unnamed Tributary	Empire Landscape, LLC		6/1/2020	2,000	9,600
FR2020S002(01)	Israel Creek	Empire Landscape, LLC	Stream Restoration	8/15/2020	2,000	9,600
FR1975G016(05)	Cactoctin Metabasalt	Everett V Moser Inc.	Ready Mix Concrete Use	2/1/2006	9,000	12,000

FR1973G003(04)	Ijamsville Formation - Marburg Schist, Undifferentiated	Exxon Corporation	Four County Exxon	1/1/1998	900	1,500
FR1977G012(03)	Urbana Formation	Exxonmobil Fuels Marketing Company	Exxon SS# 26463 - 8816 Fingerboard Road - Urbana Exxon	12/1/2000	300	500
FR1987G014(03)	Grove Limestone	Exxonmobil Fuels Marketing Corporation	Exxon Station No. 28444	7/1/2001	300	500
FR2018G004(01)	Ijamsville Formation - Marburg Schist, Undifferentiated	F C Frederick, Inc.		3/1/2019	8,500	33,500
FR1943G101(08)	Frederick Limestone	Fort Detrick, U.S. Army Garrison	Aquaculture	2/1/2013	8,000	12,000
FR1963G013(06)	New Oxford Formation	Fortune Investment, Inc.	Spring View Mobile Home Park	7/1/2019	5,000	7,000
FR2013G009(01)	Ijamsville Formation - Marburg Schist, Undifferentiated	Franklin Gladhill	Frank Gladhill Glad Hill Acres (76 Lots)	9/8/2014	16,500	27,500
FR1988G019(03)	Granodiorite Gneiss & Biotite Granite Gneiss	Fred & Janice H. Beachley	Beachley	12/1/2013	2,000	3,000
FR1999G037(03)	New Oxford Formation	Frederick Christian Fellowship	Ownership Transfer	9/1/2023	5,000	10,000
FR1973G016(06)	Libertytown Metarhyolite	Frederick County Board Of Education	Linganore High School	7/31/2021	15,000	20,000
FR1954G007(06)	Harpers Formation	Frederick County Division of Utilities and Solid Waste Management	White Rock Subdivision - Community Water Supply	10/24/2016	24,000	36,000
FR1966G012(11)	Catoctin Metabasalt	Frederick County Division of Water & Sewer Utilities	Fountaindale South Community Water Supply	11/15/2018	225,000	337,500
FR1968S005(09)	Potomac River	Frederick County Division of Water & Sewer Utilities	Municipal Water Supply - Potomac River New Design WTP	5/13/2015	16,000,000	26,000,000

FR1970G014(08)	Catoctin Metabasalt	Frederick County Division of Water & Sewer Utilities	Cambridge Farms & Briercrest Apts	10/1/2024	62,000	100,000
FR2024G001(01)	Catoctin Metabasalt	Frederick County Division of Water & Sewer Utilities	Cambridge Farms & Briercrest Apts	10/1/2024	5,000	8,000
FR1977G108(04)	Frederick Limestone	Frederick County Division of Water & Sewer Utilities	Francis Scott Key Water Treatment Plant For Ballenger Creek System	6/1/2010	42,000	500,000
FR1985G001(06)	Baltimore Gabbro Complex	Frederick County Division of Water & Sewer Utilities	Libertytown Apartment Community Supply, 7-11 Store	5/20/2015	8,000	12,000
FR1985S002(10)	Linganore Creek	Frederick County Division of Water & Sewer Utilities	Lake Linganore Intake	12/1/2012	300,000	2,000,000
FR1987G034(04)	Granodiorite Gneiss & Biotite Granite Gneiss	Frederick County Division of Water & Sewer Utilities	Copperfield Subdivision	6/1/2010	29,300	47,300
FR1988G002(04)	Ijamsville Formation - Marburg Schist, Undifferentiated	Frederick County Division of Water & Sewer Utilities	Bradford Estates Subdivision	7/31/2015	17,000	28,000
FR1989G024(05)	Ijamsville Formation	Frederick County Division of Water & Sewer Utilities	Liberty East-Community Water Supply - PWSID 0100038	3/1/2018	20,700	31,000
FR1990G013(06)	Ijamsville Formation	Frederick County Division of Water & Sewer Utilities	Samhill WTP - Samhill, Penn Shop Estates & Harvest Ridge Subdivisions	10/7/2016	155,600	260,000
FR1990G031(06)	Ijamsville Formation	Frederick County Division of Water & Sewer Utilities	Knolls Of Windsor Water Supply - PWSID 0100041	8/1/2012	106,800	177,300
FR2004G003(02)	Granodiorite Gneiss & Biotite Granite Gneiss	Frederick County Division of Water & Sewer Utilities	Woodbourne Manor (Smith Farm) Community Supply (TW-2,-3,-6 & -7)	1/1/2012	33,100	45,700

FR2004G103(02)	Granodiorite Gneiss & Biotite Granite Gneiss	Frederick County Division of Water & Sewer Utilities	Woodbourne Manor (Smith Farm) Well TW-4	1/1/2012	12,600	30,700
FR2006G004(06)	Sams Creek Metabasalt	Frederick County Division of Water & Sewer Utilities	193-Lot Subdivision	2/28/2023	48,300	73,400
FR2013G001(02)	Urbana Formation	Frederick County Division of Water & Sewer Utilities	Windsor Knolls Subdiv.	10/15/2019	11,300	18,700
FR2013G004(01)	Ijamsville Formation	Frederick County Division of Water & Sewer Utilities	Libertytown Development Company, Inc. Community Water Supply	1/16/2017	37,100	61,800
FR1968G008(06)	Granodiorite Gneiss & Biotite Granite Gneiss	Frederick County Public Schools	Valley Elem. School	8/31/2017	5,000	10,000
FR1993G012(06)	Frederick Limestone	Frederick Health	Landscape Irrigation	3/10/2021	500	1,000
FR1993S012(05)	Tuscarora Creek	Frederick Health	Landscape Irrigation	3/10/2021	15,000	190,800
FR2000G025(04)	Urbana Formation	Friends Meeting School, Inc.	Friends Meeting School	7/1/2008	2,500	3,000
FR1998G039(03)	Granodiorite Gneiss & Biotite Granite Gneiss	George E. Lewis, Jr.	Catoctin Station Farm (Stocker Beef Cattle On Pasture Only)	12/9/2022	9,700	18,000
FR1955G005(04)	New Oxford Formation	George K. Enloe	Property Leased To North Glade Feed & Supply	12/1/2001	100	200
FR1993G020(04)	Ijamsville Formation	George P. Misulia	Groundwater Heat Pump	10/15/2018	3,000	6,000
FR2001G006(02)	New Oxford Formation	Glade-Link Farms, LLC	Berry Irrigation P24B	2/1/2011	10,000	60,000
FR2001G007(02)	New Oxford Formation	Glade-Link Farms, LLC	Berry Irrigation P11	2/1/2011	10,000	60,800
FR2001S004(02)	Monocacy River	Glade-Link Farms, LLC	Berry Irrigation P-110	2/1/2011	9,500	57,000
FR2006G028(01)	Sams Creek Metabasalt	Grace Episcopal Church	Episcopal Church	12/1/2006	200	300
FR2007G001(01)	Urbana Formation	Grace Episcopal Church	Grace Episcopal Church	3/1/2007	600	1,000
FR2015S002(01)	Rocky Fountain Run	Grant County Mulch, Inc.	Mulching Facility	12/7/2015	2,200	20,000

FR2005G007(01)	Harpers Formation	Greg Trout	Trout Liquors	1/1/2005	300	500
FR2002G010(02)	Urbana Formation	Harland J Shoemaker, Jr.	Lot 5	4/1/2005	100	200
FR1998G034(01)	Cactoctin Metabasalt	Harmony Church Of The Bretheren	Church	10/1/1998	300	500
FR1988G033(03)	Cactoctin Metabasalt	Harmony Church Of The Brethren	Church	9/9/2014	100	200
FR2015G002(01)	Ijamsville Formation - Marburg Schist, Undifferentiated	Hattery Farm LLC	24-Lot Subdivision	9/21/2015	5,200	8,700
FR2006S025(02)	Other	Hawkins Landscaping, Inc.	Hydro-Seeding & Landscape Irrigation For Sites In Frederick County, Md	11/1/2018	1,000	3,000
FR1997G005(01)	Antietam Formation	Henry W. & Tiquita D. Thomas, Jr.	Ambiance Salons - Hair Styling	2/1/1997	300	500
FR1990G008(03)	Frederick Limestone	Herbert Shuck		7/18/2014	3,000	6,000
FR1974G030(05)	Urbana Formation	HHCC, LLC	Hickory Hills Country Club (Club House)	8/31/2017	6,900	14,000
FR1974G131(04)	Sams Creek Metabasalt	Hhcc, LLC	Holly Hills Irrigation Wells-Needs Compliance Action (Well IW-4)	5/1/2012	33,000	165,000
FR1974S030(03)	Long Branch	HHCC, LLC	Gc Irrigation-Needs Associated Compliance Action (Well IW-4)	5/1/2012	52,000	500,000
FR1968G011(06)	Grove Limestone	Holcim - MAR, Inc.		7/17/2023	20,000	32,000
FR1992G011(03)	Cactoctin Metabasalt	Holterholm Farms, LLC	Holterholm Dairy Farm	9/1/2016	7,000	10,500
FR2004G020(01)	Cactoctin Metabasalt	Hope Alive, Inc.	Group Home	1/1/2005	2,000	3,000
FR1991G012(02)	Frederick Limestone	Howard N. Boyer	Colonial Gardens Nursery Irrigation	8/1/2003	2,800	4,000
FR1953G002(05)	Cactoctin Metabasalt	Howell-Szramski Real Estate Invest.L.L.C	Jefferson Motel	4/1/2013	2,000	2,500
FR1977S041(05)	Little Hunting Creek	Hunting Creek Fisheries, Inc.	Goldfish Farm	8/1/2011	1,500,000	3,000,000

FR1977S043(05)	Fishing Creek	Hunting Creek Fisheries, Inc.	Goldfish Farm	8/1/2011	1,000,000	2,000,000
FR1980G005(07)	Gettysburg Shale	Hunting Creek Fisheries, Inc.	Goldfish Farm	12/1/2012	350,000	450,000
FR1982G007(05)	Ijamsville Formation	Hyatt Industrial Park Limited Partnershi	Multi-Tenant Office/Warehouse Rental Property	5/1/1998	1,000	1,500
FR1986G008(02)	Ijamsville Formation	Hyatt Park I	Multi-Tennant Office/Warehouse Rental Property	5/1/1998	900	1,500
FR2014G005(01)	Urbana Formation	Hyattstown Associates, LLC	Crossroads Farm Subdivision	4/1/2014	8,500	14,200
FR2013S006(01)		J.K. Patton Turf Farm LLC	J.K. Patton Turf Farm, Llc Hydroseeding	8/1/2013	3,000	21,000
FR1991G014(02)	Urbana Formation	Jack And Sandy Gresham	Flint Hill General Store - Multi Use Bldg - PWSID #1101062	2/1/2004	1,500	2,000
FR2005G008(01)	Harpers Formation	James H. Kim	Market Basket - Convenience Store	1/1/2005	300	500
FR1989G006(02)	Ijamsville Formation	James McClellan	Driving Range And Beginners Golf Course	8/1/2001	200	700
FR1993S011(03)	Unnamed Tributary	Jean K. Phillips	Crop Irrigation	10/22/2020	46,000	1,368,000
FR1967G005(06)	Ijamsville Formation - Marburg Schist, Undifferentiated	Jesse Smith Llp	Hope Valley Golf Course - Irrigation Well	9/1/2010	22,000	84,000
FR2008G010(02)	New Oxford Formation	John Noffsinger	Ground Water Heap Pump	3/15/2021	3,000	6,000
FR1982G004(04)	New Oxford Formation	John St. Angelo	Springfield Manor Park	7/15/2021	2,500	3,500
FR2014G006(01)	Ijamsville Formation	Jonathan Soule		7/1/2014	9,700	16,200
FR2004G002(02)	Frederick Limestone	Joseph Adams	Nursery Stock Irrigation	7/21/2017	50,000	150,000
FR2004S002(02)	Tuscarora Creek	Joseph Adams	Adams Property Nursery	7/21/2017	25,000	504,000

FR2001G021(01)	Cactoctin Metabasalt	Joseph H. Ganley	Ganley Property - 2 Heat Pumps	6/1/2001	6,000	12,000
FR1999S042(02)	Weldon Creek	Joseph M. Skoczalak	Orchard & Pond	9/1/2011	5,100	31,000
FR1993G002(02)	Loudoun Formation	Joshua Carin	Farm Irrigation	11/1/2010	6,600	40,000
FR1999S023(02)	Other	Joshua N. Frey	Farm Irrigation (100 Acres)	9/1/2011	69,000	252,000
FR2014G004(02)	New Oxford Formation	JTPI Investments, LLC		6/19/2014	6,000	24,300
FR1992S001(03)	Other	Jurgen-Harald Zimmermann	Farm Irrigation - 50 Acres	7/1/2008	51,000	225,000
FR1989G037(03)	Granodiorite Gneiss & Biotite Granite Gneiss	Katherine Russell & Karen Fenwick	Riding School.	11/1/2013	1,000	1,500
FR2013G007(01)	Cactoctin Metabasalt	Keith & Cathy Bryan	Keith & Cathy Bryan Standing Column Geothermal Heat Pump	10/1/2013	1,000	2,000
FR2003G019(01)	Gettysburg Shale	Keith Gopenhaver	Monocacy Gardens, LLC	3/1/2002	600	1,200
FR1987G011(03)	Frederick Limestone	Kenneth & Lisa Houck	Groundwater Heat Pump	11/23/2015	3,000	6,000
FR1999S013(02)		Kirby Delauter	Construction - Dust Control	7/1/2011	2,000	4,000
FR1969G006(05)	New Oxford Formation	Kirk Fisher	Fisher	1/1/2002	3,000	4,700
FR1999G025(01)	Ijamsville Formation	Kmc Telecom III, Inc.	Communication Utility	8/1/1999	300	500
FR2001G020(03)	Ijamsville Formation	Knowledge Farms Partners, LLC	Office Park Development	9/1/2010	6,600	12,200
FR2004S010(02)	Catoctin Creek	L.W. Wolfe Enterprises, Inc.	L.W. Wolf Paving Contractor	9/15/2016	700	2,500
FR2007G010(01)	Granodiorite Gneiss & Biotite Granite Gneiss	Lander LLC	13 Lot Sunrise Subdivision, Section Four	6/1/2007	2,900	4,800
FR1959G008(04)	New Oxford Formation	Larry V. Holtzople	Fuel Oil Distributor	7/1/2002	100	200
FR1901G001(04)	Grove Limestone	Laurel Sand & Gravel, Inc.	S.W. Barrick & Sons Quarry	10/1/2011	2,200,000	4,600,000

FR1923G001(09)	Grove Limestone	Laurel Sand & Gravel, Inc.	Legore Quarry	11/15/2018	1,700,000	3,800,000
FR2004G009(03)	Grove Limestone	Laurel Sand & Gravel, Inc.	Bardon, Inc. Concrete Plant Potable & Sanitary Only	1/16/2017	700	1,000
FR1939G048(08)	Wakefield Marble	Lehigh Cement Company LLC	Inactive Quarry (Lake) Withdrawal	6/30/2017	4,500,000	5,300,000
FR1939G049(07)	Wakefield Marble	Lehigh Cement Company LLC	Quarry Dewatering	11/18/2022	2,000,000	4,250,000
FR1985G017(04)	Ijamsville Formation	Libertytown Center Holdings, LLC	Libertytown Shopping Center & Libertytown Plaza	10/1/2013	3,000	5,000
FR1980G009(06)	Frederick Limestone	Lilypons Water Gardens, Inc.	Lilypons Water Gardens	2/1/2013	30,000	50,000
FR1992S002(03)	Bennett Creek	Lilypons Water Gardens, Inc.	Lilypons Water Gardens Diversion Canal	2/1/2013	7,500,000	90,000,000
FR2006G011(02)	New Oxford Formation	Mark & Hannah Gaffigan	Residential Groundwater Heat Pump - 2 Wells	10/15/2018	2,000	6,500
FR1988G038(03)	Antietam Formation	Marshall Beard, Jr.	Residential Groundwater Heat Pump - 2 Wells	3/1/2013	2,000	5,000
FR1986G030(02)	Ijamsville Formation	Marvin & Debroah Curtis	Liberty Road Seafood Restaurant	4/1/2003	2,900	4,400
FR1995S033(01)	Bush Creek	Mary Elizabeth Day S. Wood	Agricultural -Grapes	1/1/1996	1,000	6,000
FR1971S006(07)	Other	Maryland Department Of Natural Resources	Cunningham Falls State Park Water Treatment Plant	2/1/2011	15,000	60,000
FR2021S001(01)	Other	Maryland Fire and Rescue Institute	Maryland Fire And Rescue Institute - County Wide	9/15/2021	600	10,000
FR1997S013(05)	Other	Maryland National Golf, L.P.	Maryland National Golf Club - Hawbottom Branch Withdrawal	4/9/2015	45,000	250,000
FR2001G027(04)	Cactoctin Metabasalt	Maryland National Golf, L.P.	Maryland National Golf, L.P.	4/9/2015	12,000	226,000

FR1966G013(08)	Metarhyolite & Associated Pyroclastic Sediments	Maryland State Highway Administration	I-70 Rest Areas At South Mountain	12/7/2015	35,000	50,000
FR2002G023(01)	Grove Limestone	Maryland State Highway Administration	Maryland State Highway Administration	7/1/2002	1,500	6,000
FR2014G002(01)	Urbana Formation	Matan Acquisitions, Inc.	Urbana Farm, LLC 57-Lot Subdivision	10/28/2015	19,700	32,900
FR1964S003(07)	Little Catoctin Creek	Mayor And Council Of Myersville	Myersville (Little Catoctin Creek) Municipal Water Supply	2/1/2014	35,000	150,000
FR1987G004(07)	Cactoctin Metabasalt	Mayor And Council Of Myersville	Myersville Municipal Supply (Wtp Well)	2/1/2014	15,000	25,000
FR1987G104(04)	Cactoctin Metabasalt	Mayor And Council Of Myersville	Myersville Municipal Supply (Ashley Hills Wells)	2/1/2014	22,500	37,600
FR1987G204(05)	Cactoctin Metabasalt	Mayor And Council Of Myersville	Myersville-Deer Woods Water Supply	2/1/2014	18,000	20,700
FR1988G035(07)	Cactoctin Metabasalt	Mayor And Council Of Myersville	Myersville-Canada Hill Wells	2/1/2014	38,000	46,800
FR1995G022(03)	Cactoctin Metabasalt	Mayor And Council Of Myersville	Community Water Supply (Myersville Meadow-Town Park Site)	2/1/2014	27,000	57,000
FR1997G034(04)	Cactoctin Metabasalt	Mayor And Council Of Myersville	Myersville's Reservoir Well	2/1/2014	12,500	15,000
FR2004G001(04)	Cactoctin Metabasalt	Mayor And Council Of Myersville	Quail Run Sbdn Municipal Water Supply	4/1/2014	27,500	38,500
FR2008S006(02)		MDOT State Highway Administration-OMT	Water For Drilling And Coring	8/1/2021	300	1,000
FR1993G007(03)	Grove Limestone	Mehrl F. Mayne	Crop Irrigation	8/4/2017	102,000	622,000
FR2000G035(01)	New Oxford Formation	Memory Lane Properties	Lawn Care, Pool Installation	8/1/2000	2,000	2,500
FR2000G032(01)	Ijamsville Formation	Michael D. Fraley	Fraley Mobile Home Repair & Service	6/1/2000	300	500

FR1994G004(04)	New Oxford Formation	Michael R. Milligan	Irrigation And Potable Supply	7/1/2012	9,400	32,700
FR2001G009(02)	Sams Creek Metabasalt	Mission Investment Fund Of The Evangelical Lutheran Church	Church - 10067 Old National Pike	3/1/2013	400	600
FR1975G013(07)	Grove Limestone	Mount Saint Mary's University	Mt. St. Mary's College (Wells #3 & #5)	8/7/2023	110,000	165,000
FR1975G113(03)	Harpers Formation	Mount Saint Mary's University	Mount Saint Mary's College (Roddy Quarry)	8/7/2023	15,000	50,000
FR1975G413(04)	Frederick Limestone	Mount Saint Mary's University	Mount Saint Mary's College (Well #6)	8/7/2023	70,000	210,000
FR1999G022(02)	Cactoctin Metabasalt	Musket Ridge Hospitality LLC	PWSID - 1101319	7/1/2011	5,000	8,000
FR1998G022(03)	Cactoctin Metabasalt	Musket Ridge Hospitality, LLC	Musket Ridge Golf Club	9/1/2023	82,000	400,000
FR1998S022(05)	Other	Musket Ridge Hospitality, LLC	Gc Irrigation - SW Ponds	9/1/2023	20,000	378,000
FR1989G032(04)	Grove Limestone	My 1, LLC	Irrigation (Clubhouse Under FR89G132)	8/1/2012	65,000	214,000
FR1970S026(09)	Linganore Creek	My 1, LLC	Westwinds Golf Club - Irrigation - Linganore Creek	5/1/2010	65,000	250,000
FR2003G009(01)	Harpers Formation	Ned P. Haynes	Crows Nest Lodge And Campground Community Water System	3/1/2003	1,000	2,500
FR1985G024(04)	Ijamsville Formation - Marburg Schist, Undifferentiated	New London, LLC	Shell Gas/Store/Carwash	12/1/2010	500	700
FR2001G012(02)	Sams Creek Metabasalt	New London, LLC	Turnpike Center - Lot 1 - Restaurant	4/1/2013	9,400	15,000
FR2007G007(01)	Ijamsville Formation - Marburg Schist, Undifferentiated	New London, LLC	Office	6/1/2007	300	500

FR2003G017(03)	Urbana Formation	NJR, LLC	Day Camp	5/1/2006	1,000	3,000
FR1993G006(03)	Urbana Formation	Norman Stockbridge	Groundwater Heat Pump	3/31/2017	3,000	6,000
FR2000G023(02)	New Oxford Formation	Oak Bluff Dairy Farms	Dairy Farm Use	12/1/2012	96,000	124,000
FR1972G015(05)	New Oxford Formation	Oak Bluff Farms, LLC	Farm Irrigation-40 Acres	5/4/2016	10,000	53,000
FR1998S025(02)		Patrick L. Christoff, Jr.	Landscaping/Lawn Care	12/1/2010	250	2,000
FR1993S017(03)	Unnamed Tributary	Paul & Jane Kerr	Nursery	4/18/2017	2,500	3,600
FR1985G004(02)	Frederick Limestone	Philip W. Ridgley	Commercial Building	4/1/1997	500	800
FR1970G005(05)	Loudoun Formation	Poling's Mobile Home Park, LLC		8/6/2014	8,500	10,000
FR1966G011(04)	New Oxford Formation	Potomac Edison Company	Doubs Substation	3/1/1997	100	200
FR1993S023(02)		Property Care, Inc.	Hydroseeding, Landscaping	9/1/2005	3,500	6,300
FR1985G016(03)	New Oxford Formation	PSK, LLC	Metal Fabrication Shop	1/1/2004	300	500
FR2023S001(01)	Potomac River	QLoop Communications Services, LLC	QLoop Horizontal Directional Drilling To Install A Fiberoptic Telecommunication s Conduit.	2/17/2023	2,000	45,000
FR2023S002(01)	Monocacy River	QLoop Communications Services, LLC	QLoop Horizontal Directional Drilling To Install A Fiberoptic Telecommunication s Conduit.	3/1/2023	2,000	45,000
FR2011S001(02)	Other	R.L.O. Contractors, Inc.	Dust Control	9/1/2023	6,000	36,000
FR2010G003(01)	Frederick Limestone	Raemelon Farm, LLC	Raemelon Farm, LLC-Trees & Shrubs-Leasee	8/1/2011	65,000	200,000
FR2011G003(01)	Frederick Limestone	Randy Cole	Athletic Field Irrigation & Gym Water Supply	8/1/2011	8,000	16,000
FR2016G001(01)	Ijamsville Formation	Raymond Loun, II	Groundwater Heat Pump	4/26/2016	3,000	5,000
FR2008S009(02)	Unnamed Tributary	Red Hill Lawn Service, Inc.	Hydroseeding	7/23/2021	1,500	6,000

FR2014G007(01)	Grove Limestone	RETREAT ROAD, LLC		10/9/2014	5,000	8,000
FR1991S032(02)	Unnamed Tributary	Rghgab Of Frederick, LLC	Land Development	2/1/2010	1,700	2,500
FR2002S027(02)	Bennett Creek	Richard & Dorothy Beebe		8/5/2014	500	1,500
FR2003G018(01)	Metarhyolite & Associated Pyroclastic Sediments	Richard & Maryanne Hahn	Catoctin Wildlife Preserve	3/1/2003	2,500	5,000
FR1998G038(07)	Cactoctin Metabasalt	Richard A. Rudy	Rudy Spring Water Co.	10/15/2018	9,900	10,000
FR1998G002(01)	Ijamsville Formation	Richard E. Broadhurst	Dog Groomer	1/1/1998	600	900
FR1997S043(05)	Hollow Road Creek	Richland Golf Club	Glenbrook Golf Course (Irrigation Pond)	4/30/2023	20,000	168,000
FR2005G029(01)	Cactoctin Metabasalt	Rita And John Bradley, Jr	A Touch Of Class Hair Salon	9/1/2005	300	600
FR2005G023(01)	Granodiorite Gneiss & Biotite Granite Gneiss	Rita Myers	Rita's Hair Salon	4/1/2005	200	300
FR2009G002(02)	Sugarloaf Mountain Quartzite	Robert Normoyle	Open Loop Geothermal	7/31/2021	1,800	3,600
FR2004G014(01)	New Oxford Formation	Robert & Ruth Cramer, Trustees	Proposed Moving Company	9/1/2004	300	500
FR2014G003(01)	Ijamsville Formation	Rockville Fuel and Feed Company, Inc.	Potable Supply	4/1/2014	3,500	5,000
FR1979G001(02)	Ijamsville Formation	Rosa Prak	Barnes Country Store	3/1/2003	1,500	2,000
FR1990G033(02)	Frederick Limestone	Roscoe Bartlett	14 Apartments/3 Tenant Houses	8/1/2003	4,000	6,700
FR1993G021(03)	Cactoctin Metabasalt	RSCM, LLC	Various Truck Crops And Calves - Irrigation & Livestock	10/15/2018	34,000	204,000
FR1986G004(03)	Urbana Formation	Ruby Bowers	Groundwater Heat Pump	4/22/2015	4,000	7,000
FR1977G008(08)	Grove Limestone	Russell Holdings, LLC	Former Arcadia Wells - Landscape Irrigation	1/31/2019	42,000	100,000
FR1979G004(03)	Ijamsville Formation	S. J. Parks III	Antique Shop	7/1/2001	100	200
FR1984G003(04)	New Oxford Formation	Sandra Smith-Gill	Groundwater Heath Pump	3/15/2022	3,000	6,000

FR2004S011(02)	Monocacy River	Scott Turner	Landscaping	8/1/2016	300	600
FR1990G037(03)	Ijamsville Formation	Shade Trees & Evergreens, Inc.	Nursery	3/17/2015	100	200
FR2016G002(01)	Harpers Formation	Shakil H. Siddiqui	Cannabis Irrigation	11/30/2016	5,200	15,000
FR1999G002(02)	Ijamsville Formation	Shakil H. Siddiqui	Nursery	5/1/2011	7,500	10,000
FR2004G012(01)	New Oxford Formation	Sharon And Russell Rowland	Art In Glass, Inc.	9/1/2004	300	500
FR1975G012(03)	Grove Limestone	Sharpe's Flowers, Inc.	Greenhouse Irrigation	1/1/1998	4,000	4,800
FR1994G012(04)	Granodiorite Gneiss & Biotite Granite Gneiss	Sheppard Pratt Health System, Inc.	Residential Treatment Center/School - PWSID # 1100054	6/17/2019	7,500	10,000
FR2003G011(01)	New Oxford Formation	Shores, Inc.	Daycamp & Retreat	4/1/2003	800	6,000
FR1988G037(04)	Cactoctin Metabasalt	SMC Real Estate Holdings, LLC	Dairy/South Mountain Creamery/Laying Hens/Misc Livestock	5/13/2022	21,000	28,000
FR2008G002(02)	Frederick Limestone	St. John's Literary Institution At Prospect Hall	Saint John's Catholic Prep High School- PWSID 1100070	2/1/2012	9,800	15,000
FR1995G021(04)	Sugarloaf Mountain Quartzite	St. Luke Evangelical Lutheran Church	Groundwater Heat Pump & Makeup Water For Pond Supply	6/1/2012	10,000	26,000
FR1990G025(02)	Ijamsville Formation	St. Peter The Apostle Church	Church And Meeting Hall/Libertytown.	9/1/2002	900	1,500
FR2002S015(02)		St. Peter's Catholic Church		6/1/2014	100	300
FR1990G026(04)	New Oxford Formation	Stadler Garden Centers, Inc.	Stadler Nursery-Stock Irrigation.	10/15/2018	26,000	76,000
FR2019S001(01)	Monocacy River	Stambaugh's, Inc.	Hydroseeding, Dust Control, And Road Cleaning Operations.	7/1/2019	2,000	10,000
FR2003G026(01)	New Oxford Formation	Stanford Limited Partnership	Future Building Lot 36	8/1/2003	100	200
FR2000G019(02)	New Oxford Formation	Stanford Trading I, LLC	Office Building And Warehouse	1/1/2012	5,200	9,700

FR1987G102(03)	Alluvium	Stephen O. Eaton	Goldfish Hatchery (Springs)	4/22/2015	1,000	6,000
FR1987S002(03)	Fishing Creek	Stephen O. Eaton	Goldfish Hatchery (Surface Water)	4/22/2015	5,000	30,000
FR1991G007(03)	Frederick Limestone	Steven & Maria Shuck	Groundwater Heat Pump-Residential	3/10/2015	1,300	2,600
FR1989S015(02)		Steven H. Hoke	Garden Irrigation	5/1/2001	100	2,000
FR1993G025(02)	Ijamsville Formation	Steven Testerman		9/1/2005	1,000	2,000
FR1985G020(05)	Sams Creek Metabasalt	Sue Armstrong	Groundwater Heat Pump	12/9/2021	5,000	10,000
FR1962G008(05)	Cactoctin Metabasalt	Summit Lake Bible Conference, Inc.	Camp & Retreat Center	7/1/2018	9,200	20,000
FR2000G014(02)	New Oxford Formation	Sunnyside Industrial, LLC	Stanford Industrial Park Sec. 3 - Lot 25	11/1/2011	3,600	6,000
FR2000G015(02)	New Oxford Formation	Sunnyside Industrial, LLC	Stanford Industrial Park Sec. 3, Lot 26	11/1/2011	3,600	6,000
FR1997G038(03)	New Oxford Formation	Sunshine Properties, LLC	Mobile Home Park-PWSID 0100207	1/14/2022	3,000	4,000
FR1999G039(02)	Grove Limestone	Teabow, Incorporated	Dairy Farm	2/1/2012	75,000	110,000
FR1986G011(04)	Ijamsville Formation	TEC Building Partnership, LLP	Hyatt Park, Lot 2B-East	9/1/2016	5,500	9,000
FR1994G009(03)	Ijamsville Formation	The Beall Farm	Commercial Florists & Greenhouse	10/15/2018	7,500	10,000
FR1958G003(08)	Loudoun Formation	The Camp Airy and Camp Louise Foundation, Inc.	Camp Airy	6/7/2017	7,000	25,000
FR2007G012(01)	Grove Limestone	The Carroll Manor Fire Company, Inc.	Vol Fire & Rescue Station	6/1/2007	300	500
FR1983G007(04)	Weverton Formation	The City of Frederick	Stand-By Well	6/1/2017	3,000	4,500
FR2000S030(02)	Monocacy River	The Jorgensen Family Foundation, Inc.	Farm Irrigation	9/1/2012	88,000	533,000
FR2001G026(04)	Libertytown Metarhyolite	The Sacred Monastery of Saint Nina, Inc	Religious Community	3/17/2015	12,000	20,000
FR1993G013(02)	Gettysburg Shale	The Taneytown Rod & Gun Club, Inc.	Rod And Gun Club	12/1/2005	100	1,000
FR1954G099(04)	Ijamsville Formation - Marburg Schist, Undifferentiated	Thomas J. Collins	C & P Telephone Company Of Maryland	11/1/1996	100	200
FR1995S012(03)	Other	Thomas, Bennett & Hunter, Inc.		7/17/2014	30,000	50,000

FR1987G019(02)	Gettysburg Shale	Thurmont United Methodist Church	Church	10/1/2001	500	800
FR1998S007(03)	Monocacy River	Toms' Retreat, LLC	Irrigation	3/1/2023	32,000	192,000
FR1975G011(06)	Cactoctin Metabasalt	Town of Emmitsburg	Turkey Creek Watershed Wells #1 & #2	3/15/2018	168,000	252,000
FR1976G114(05)	Cactoctin Metabasalt	Town of Emmitsburg	Emmitsburg Wells #3 & #5	3/15/2018	87,000	131,000
FR1976S014(04)	Other	Town of Emmitsburg	Emmitsburg-Rainbow Lake And Well #3 Reservoir	3/15/2018	168,000	350,000
FR1997G032(03)	Cactoctin Metabasalt	Town of Emmitsburg	Town Of Emmitsburg - Well #4 (Turkey Creek Watershed)	3/15/2018	40,000	60,000
FR2002G020(03)	Gettysburg Shale	Town of Emmitsburg	Town Of Emmitsburg Well #7	5/24/2021	83,000	109,000
FR2007G014(03)	Gettysburg Shale	Town of Emmitsburg	Well J (FR882886)	5/24/2021	66,000	92,000
FR1976G007(07)	Ijamsville Formation - Marburg Schist, Undifferentiated	Town of Mount Airy	Mt. Airy Wells #1 - #4	10/1/2011	255,000	347,000
FR1976G107(03)	Ijamsville Formation - Marburg Schist, Undifferentiated	Town of Mount Airy	Mount Airy Well #7	10/1/2011	99,000	139,000
FR1995G020(04)	Ijamsville Formation - Marburg Schist, Undifferentiated	Town of Mount Airy	Mt Airy Well #8	10/1/2011	150,000	210,000
FR2001G022(03)	Ijamsville Formation - Marburg Schist, Undifferentiated	Town of Mount Airy	Mt Airy New Well (#9 - Abells Knoll)	12/15/2017	79,000	204,000
FR1987G020(07)	Weverton Formation	Town of Myersville	Myersville Municipal Supply (Springs)	6/15/2022	40,000	60,000
FR2003G043(04)	Cactoctin Metabasalt	Town of Myersville	Saber Ridge Wells	9/2/2015	20,500	30,800

FR1969G121(02)	Frederick Limestone	Town Of Thurmont	Thurmont - Well #2 (Separating From Permit FR69G021)	6/1/2013	89,000	149,000
FR2014G008(01)	Gettysburg Shale	Tyler Nowell	Turkey Farm	10/17/2014	4,000	8,000
FR1943S001(04)	Monocacy River	U.S. Army Garrison, Fort Detrick	Ft. Detrick - Monocacy River Withdrawal	2/15/2016	2,000,000	2,600,000
FR1999S026(02)	Toms Creek	U.S. Fire Administration	Facility Maintenance	7/1/2011	300	1,000
FR1955G002(04)	Cactoctin Metabasalt	U.S. National Park Service	Catoclin National Park	4/23/2015	40,000	50,000
FR1989G035(02)	Granodiorite Gneiss & Biotite Granite Gneiss	U.S. Postal Service	U.S. Postal Service	1/1/2002	100	200
FR1993G019(02)	Harpers Formation	United Civic Association Of Shookstown, Edgewood & Rocky Springs	Park-Meeting Facility	3/1/2005	100	200
FR1999G029(01)	Grove Limestone	United Methodist Church, Inc.	Walkersville United Methodist Church	2/1/2000	1,000	2,000
FR1977G003(03)	New Oxford Formation	Valley Auction & Antiques, Inc.	Auction House & Mercantile	12/1/2001	500	800
FR1992G008(02)	Cactoctin Metabasalt	Valley Baptist Church Of Middletown	Church	7/1/2005	300	500
FR1983G008(04)	New Oxford Formation	Vicky Caufman	7-11 Convenience Store	6/1/2007	300	500
FR1956G005(03)	Grove Limestone	Vulcan Construction Materials, Lp	Quarry & Cement Plant	11/1/2012	1,590,000	2,590,000
FR1987G035(03)	Cactoctin Metabasalt	Walter W. King Plumbing And Heating	Adding Warehouses	3/1/2001	2,400	3,600
FR1998G031(03)	Frederick Limestone	Waverly Farms of Maryland, LLC	Waverly Farm Irrigation	11/18/2022	65,000	200,000
FR1970G026(03)	Ijamsville Formation	Westwinds Golf Club, LLC	Westwinds Country Club - Potable Maintenance Shed/Apt	10/1/2000	1,000	2,000
FR1996G005(02)	Sams Creek Metabasalt	Whiskey Creek Golf Course, LLC	Whiskey Creek Golf Course Well	5/1/2012	23,000	72,000

FR1996S005(06)	Bush Creek	Whiskey Creek Golf Course, LLC		7/1/2012	80,000	412,000
CL2002S040(02)	Double Pipe Creek	White Pine Construction Corp.	Hydroseeding and dust control at various construction sites.	7/28/2015	1,700	6,000
FR2015S001(01)	Catoctin Creek	White Pine Construction Corp.	Hydroseeding And Dust Control At Various Construction Sites	7/28/2015	1,700	6,000
FR1961G002(04)	Frederick Limestone	Wickes Inc.	Wickes Lumber Company - Bldg Supply Store	6/1/2003	700	1,000
FR2001G019(01)	Ijamsville Formation	Wilbur & Norma Nottingham	Bed & Breakfast	5/1/2001	300	500
FR2000G027(02)	New Oxford Formation	Windridge Farm, LLC	Windridge Farm, LLC	4/1/2012	9,600	10,600
FR1969G011(04)	Cactoctin Metabasalt	Wolfsville Volunteer Fire Company, Inc.		1/1/1998	300	3,000
FR1996G008(03)	Urbana Formation	Worthington Manor Golf Club	Worthington Manor Golf Club - Formerly Hopeland Gc	4/15/2021	51,000	202,000
FR1988G008(03)	New Oxford Formation	Zion, LLC	Cable TV Operations Center	2/1/2014	800	1,200

Attachment 3-1: Inventory of Existing Water Treatment Facilities (COMAR Table 6)

	Water Source	Type Treatment ⁱ	Rated Plant Capacity (MGD) ⁱⁱ	Average Production (MGD) ⁱⁱⁱ	Max. Peak Flow (MGD) ^{iv}	Storage Capacity (MGD)	Planned Expansion MGD/Dates	Operating Agency
Frederick City	Groundwater and surface water		12.4	6.27	10.032	7.750	N/A	City of Frederick
New Design	Surface water	Post-Chlorination; UV Light	25.0	6.537	11.433	15.900	N/A	Frederick County
Fort Detrick	Surface water	Pre-sedimentation, coagulation, disinfection	4.250	1.4	1.726	1.000	N/A	Fort Detrick
Myersville	Groundwater	Chlorination	0.300	0.115	0.129	1.000	N/A	Maryland Environmental Service (Town of Myersville)
Mount Airy	Groundwater	Chlorination	1.50	0.704	0.770	1.705	N/A	Town of Mount Airy
Walkersville	Groundwater	Chlorination	1.20	0.635	0.715		N/A	Town of Walkersville
Woodsboro	Groundwater	Chlorination	0.128	0.085	0.157	0.700	N/A	Town of Woodsboro
Thurmont	Groundwater	Chlorination	1.200	0.426	0.436	0.580	N/A	Town of Thurmont
Emmitsburg	Groundwater and surface water	Chlorination	0.600	0.243	0.277	0.640	N/A	Town of Emmitsburg
Brunswick/Rosemont	Groundwater and surface water	Coagulation, clarification, filtration, and disinfection	2.00	0.596	0.68	1.250	N/A	City of Brunswick
Middletown	Groundwater	Chlorination	0.533	0.308	0.329	1.400	N/A	Town of Middletown
Fountaindale/Braddock	Groundwater	Chlorination	0.280	0.167	0.204	1.721	N/A	Frederick County
Knolls of Windsor	Groundwater	Chlorination; UV Light	0.1068	0.066	0.089	0.400	N/A	Frederick County
Copperfield	Groundwater	Chlorination	0.075	0.046	0.060	0.200	N/A	Frederick County
Cambridge Farms	Groundwater	Chlorination	0.062	0.042	0.054	0.350	N/A	Frederick County
Bradford Estates	Groundwater	Chlorination	0.0170	0.012	0.016	0.176	N/A	Frederick County
Samhill	Groundwater	Chlorination	0.155	0.088	0.117	0.610	N/A	Frederick County
Libertytown East	Groundwater	Chlorination	0.016	0.007	0.010	-	N/A	Frederick County
Libertytown West (Liberty Apts.)	Groundwater	Chlorination	0.093	0.003	0.004	0.50	N/A	Frederick County
White Rock	Groundwater	Chlorination	0.030	0.022	0.036	0.108	N/A	Frederick County

ⁱ For additional treatment information, refer to Table 3-7 for County surface water systems; Table 3-8 for County groundwater systems; or the municipal narratives in Section 4.

ⁱⁱ "Existing Treatment Capacity" Table 3-4

ⁱⁱⁱ "Existing Demand, Yearly Average" Table 3-4

^{iv} "Average for Month of Maximum Use" Table 3-4

Attachment 3-2: Immediate, 5 and 10-year Priorities for Water Development (COMAR Table 8)

	Fiscal Year	County Priority Assigned	Description	Estimated Costs	Project Status - Construction Start
Jefferson Water System Redundancy	2030	Low	The project includes the installation of approximately 2,000 LF of water main to provide an additional interconnect between Copperfield and Woodbourne Manor distribution systems.	\$800,000 (Local)	Requested in FY26-31 CIP. Design and permitting second half of 2029, construction start in 2030
Fountaindale WTP Upgrade	2027	High	The project includes installation of additional treatment systems to address potential PFAS levels that may exceed published MCLs.	\$1,200,000 (State/Local)	Requested in FY26-31 CIP. Design and permitting 2026/2027; construction start late 2027
East Alco Regional Water Storage Tank	2027	Medium	The project includes construction of a potable water storage tank to serve the East Alco water service area.	\$4,000,000 (Developer/Local)	Requested in FY26-31 CIP. Design and permitting 2026/2027; construction start early 2028

The above referenced projects are not currently part of an adopted CIP. The County also attaches its most recent Capital Improvement Plan, covering Fiscal Years 2025 – 2030, as part of this adopted Water and Sewerage Plan.

Section 1: Introduction

History of County Sewerage Planning

Since the first County Water & Sewerage Plan in 1969, the County has been divided into 32 drainage basins for water and sewerage planning. The original consultant located a potential sewage treatment plant site symbol for each drainage basin, regardless of whether or not that basin was planned to have service within the 20-year time frame of the Plan. Potential surface water impoundments were also located on tributaries to the Monocacy River and Catoctin Creek throughout the County.

Over the years, sewer service basins, which were not planned to have service, had their potential treatment plant symbols removed.

The 1992 Plan marked a departure from drainage basin plans to a discussion of water and sewerage organized by systems and service areas. Over the years, the Central Frederick Service Area has grown beyond the original drainage basin boundaries so that it no longer makes sense to fragment the discussion of service to this area into several sub chapters. At the other extreme, there are municipal systems that are the only providers of water and sewerage service in a drainage basin. Many municipal systems were not planned to expand to serve areas outside the municipal boundaries and never to encompass their entire drainage basin.

As part of the County's Comprehensive Plan update process, the water and sewer service areas are revised to reflect any changes to the community growth boundaries of the designated growth areas. The community growth boundary would define the Planned Service (PS) area and properties within the growth boundary with a land use plan designation other than Agricultural or Natural Resource would be classified as PS. Revised 20-year water and sewer service areas concurrently amend the Water & Sewage Plan with the adoption of amendments to the Comprehensive Plan. Expansion of a sewer area will need amendment to the growth area in the Comprehensive Plan prior to a Water and Sewerage Plan amendment. Sub regional sewage treatment plants outside community growth areas identified in the Comprehensive Plan will not be approved.

Areas of the County outside of the designated community growth areas and thus not included in a service area and not otherwise served by an existing community system or a multi-use system, are to be served by individual septic systems. Septic systems properly sited and installed with adequate replacement fields can be expected to function indefinitely in low-density development applications.

Frederick County has 11 regional sewerage service areas (See Table 4-1) served by 17 sewer systems. Eight of the sewerage systems are owned and operated by municipalities. Fort Detrick's system is operated by the Federal government. Frederick County/DWSU has 9 wastewater treatment plants (WWTP) with a total average permitted capacity of 16.043 MGD.

In addition, there are six, small publicly owned sub-regional community sewerage systems outside of the regional sewerage service areas and community growth areas. Washington County serves a small portion of the Highfield/Blue Ridge Summit community in Frederick County with both water and sewerage service. These systems are described in Section 5, page 4-45.

Table 4-1: Regional Sewerage Service Areas

Service Area	Ownership
Central Frederick Service Area ¹ Ballenger-McKinney WWTP system	Municipal, County, Federal
Fountaindale	County
Jefferson	County
Point of Rocks	County
City of Brunswick/Knoxville	Municipal
Town of Emmitsburg	Municipal
Town of Middletown	Municipal
Town of Mount Airy	Municipal
Town of Myersville	Municipal
Town of Thurmont	Municipal
Town of Woodsboro	Municipal

Table 4-2: Sub-Regional Wastewater Systems ²

System	Ownership
White Rock	County
Mill Bottom	County
Pleasant Branch	County
Crestview Estates	County
Lewistown	County
Highfield/Blue Ridge Summit	Washington County

¹ Serves the Community Growth Areas of Frederick City, Town of Walkersville, Linganore/Spring Ridge/ Bartonsville, Adamstown, Urbana, Fort Detrick, New Market/Monrovia, Libertytown.

² Not shown in a Regional water and sewer service area in Comprehensive Plan.

Regional Wastewater System Study

In 1993, the Boyle Engineering Corporation prepared a Regional Wastewater System Study for the southern two-thirds of Frederick County. The study was intended to be a planning tool for developing wastewater improvements to meet the County's future needs. Population projections were used to estimate future demands if all then-current zoning and Comprehensive Plan designations were built. Since pipeline and treatment plant life is generally 50-100 years, the wastewater study recommendations go beyond the 20-year planning period of this Water and Sewerage Plan, which does not necessarily imply that the planned growth will occur within the planning period. In other words, the growth anticipated in a 20-year planning period may in fact take 40, 50 or more years to occur and thus, the infrastructure must be designed to last accordingly.

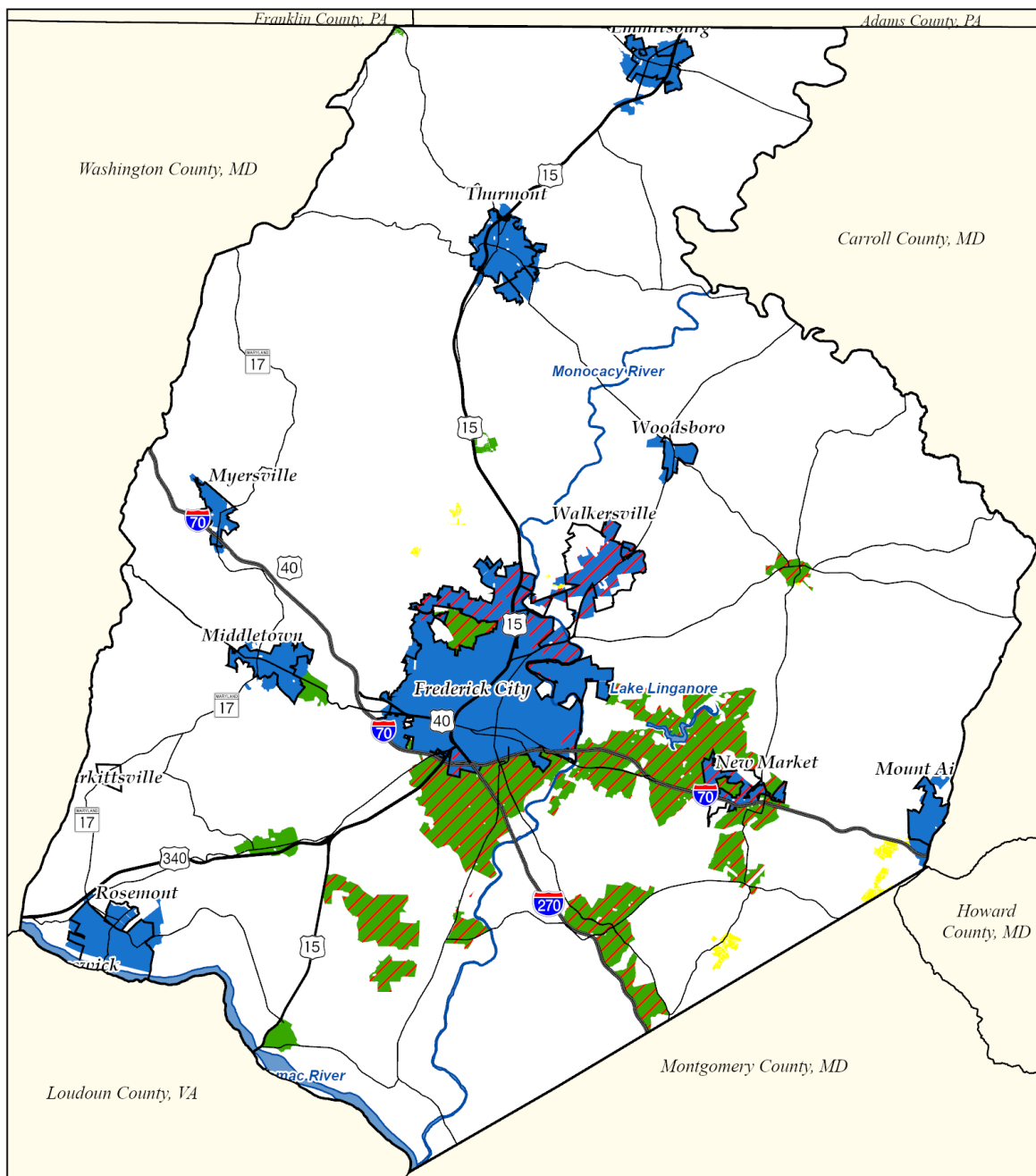
Existing sewerage systems within the study area were inspected and evaluated in the 1993 study. Each system was modeled using computer techniques to evaluate adequacy of the collection system under maximum flow conditions (ultimate build-out). It is important to note that because of budget constraints, the study did not contain a flow monitoring component to verify actual wastewater flows in the collection systems.

Since the original study, the County has continually updated these models to reflect changes in the sewerage system planning and operation. In 2005 the County completed an update to its hydraulic model for the sewer interceptor systems. The updated hydraulic model quantified average and peak wastewater flow values from existing and future wastewater flow that are tributary to the Ballenger-McKinney WWTP. This information informed the County's plan to divert wastewater flows from its minor treatment facilities to the Ballenger-McKinney WWTP, where the wastewater now receives much higher levels of treatment (Enhanced Nutrient Removal) thus decreasing Nitrogen and Phosphorus loading to local receiving streams and the Chesapeake Bay. To date, the following WWTPs have been decommissioned and their respective wastewater flows diverted to Ballenger-McKinney WWTP for treatment: New Market, Monrovia, Libertytown, and Reichs Ford Road landfill.

This hydraulic modeling also evaluated the County's Potomac River Outfall line, including possible water re-use potential from the outfall for industrial properties located between Manor Woods Road and Adamstown Road. This system has not been designed or permitted. Using effluent is one option for the Quantum data center developer to meet cooling demand once their cooling demand exceeds 1.1 MGD as stated in the Adequate Public Facilities Letter of Understanding (APFO LOU).

Based on the recommendations of the 1987 Monocacy River Wastewater Treatment Alternatives Study, Frederick County and the City of Frederick agreed to pursue a regional wastewater treatment strategy centered on the City's Gas House Pike WWTP and the County's Ballenger-McKinney WWTP. Although the combined flow from the WWTPs may exceed the 13 MGD originally anticipated in the 1987 Monocacy River Study, the use of advanced wastewater treatment technologies will limit pollutant loading to the Monocacy River to current respective permitted pollutant loads, consistent with the objectives of the MDE and the goals of the 1987 Study. As pollutant loading to the Monocacy River from the Ballenger McKinney WWTP approaches the permitted loading limits already established, the County can rely on its McKinney Outfall system to divert any excess pollutant loading directly to the Potomac River.

Map 4-1: Wastewater Treatment Service Areas



Current/Planned Wastewater Treatment Service Areas



Frederick County, Maryland
Division of Planning and Permitting
Frederick County GIS

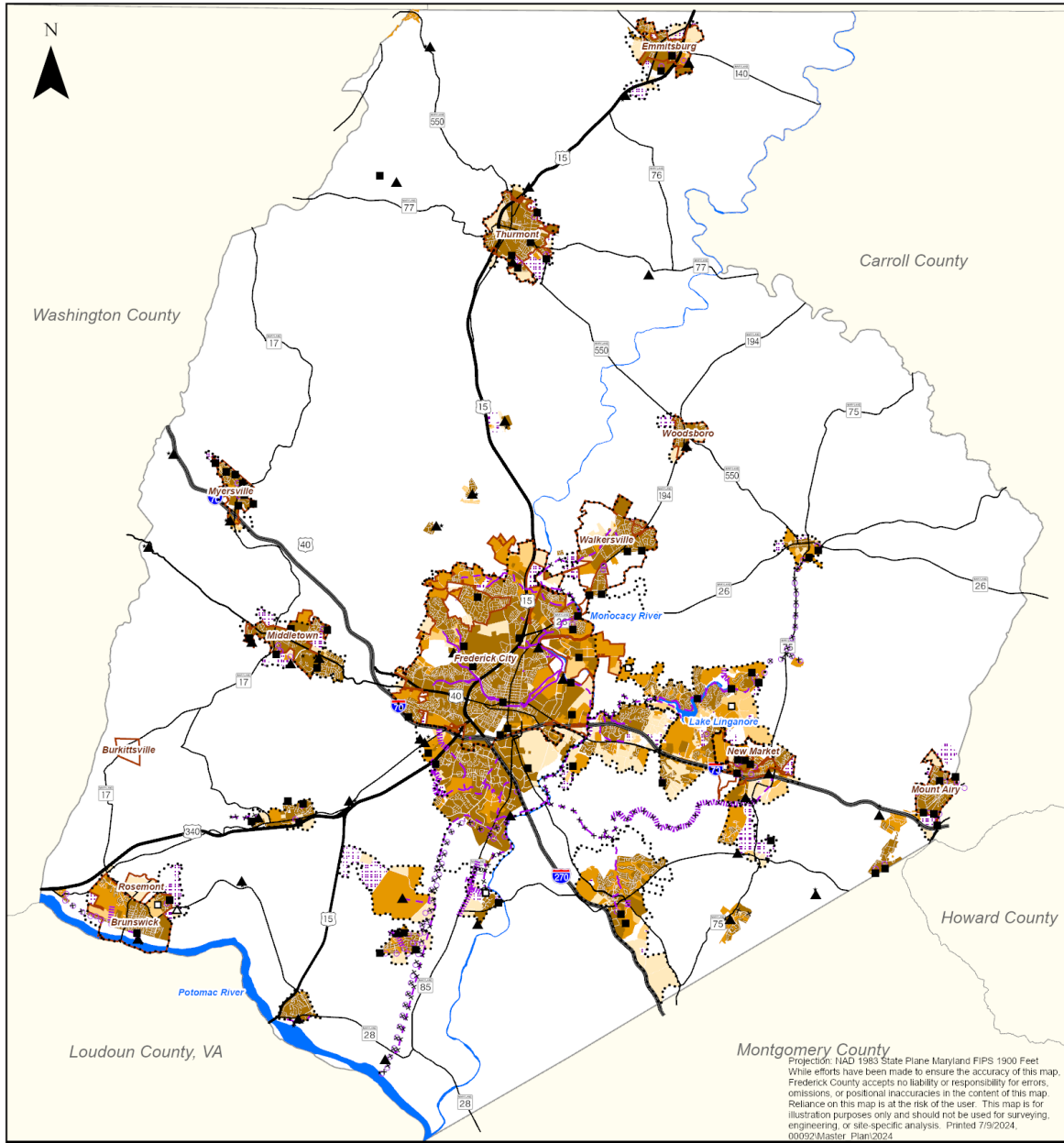
- Municipalities
- Ballenger/McKinney Service Areas
- Municipal Sewer Service Areas
- Unincorporated Sewer Service Areas
- Subregional Sewer Service Areas

1:250,000
0 1 2 3 4 Miles



Projection: NAD 1983 State Plane Maryland FIPS 1900 Feet
While efforts have been made to ensure the accuracy of this map, Frederick County accepts no liability or responsibility for errors, omissions, or positional inaccuracies in the content of this map. Reliance on this map is at the risk of the user. This map is for illustration purposes only and should not be used for surveying, engineering, or site-specific analysis. Printed 7/9/2024, 000521Master_Plan/2024

Map 4-2: Wastewater Service Areas & Infrastructure Map



Sewer Service Areas Frederick County, Maryland

- | | |
|-----------------|---------------------------------|
| S-1- Connected | PS- Planned Service 11-20 Years |
| S-3- 1-3 Years | M-U Multi-Use (Private) |
| S-4- 4-6 Years | |
| S-5- 7-10 Years | |

Sewer Service Facilities

- Existing Pumping Station
- Planned Pumping Station
- Existing Wastewater Treatment
- Planned Wastewater Treatment Plant
- Existing Point of Discharge
- Planned Point of Discharge

Sewer Service Lines

- Existing Line
- Existing Force Main Line
- Planned Line
- Denied Access Line
- Community Growth Areas
- Municipalities

0 1 2 3 4 Miles 1:260,000

Estimating Future Demand for Wastewater Treatment

Wastewater is generally characterized by three types of flow: residential, commercial/industrial, and infiltration and inflow (I&I). For the systems evaluated in this plan, most, if not all, of the wastewater comes from residential areas. For the unincorporated community growth areas, those with the most significant amounts of existing or projected commercial/industrial flow include Ballenger Creek, Frederick Southeast, I-270 Employment Corridor, and to a lesser degree Point of Rocks. Except for the City of Frederick, the other municipalities have mostly residential flow. Both Frederick County and the City of Frederick have industrial pre-treatment ordinances, which require excessive loadings or chemicals to be removed prior to discharge into the systems.

Infiltration flow in the sanitary sewer is water entering a sewer system due to poor construction, corrosion of the pipe, or structural defect. Inflow is defined as flow entering the system through connections such as storm drains, roof leaders, basement drains, or basement sumps, or through open or leaky manhole covers. Inflow is highest during wet weather conditions. All gravity sewer systems experience some degree of infiltration and inflow. Systems with pipelines or manholes in need of repair or with illegal connections will experience excessive infiltration and inflow.

Future Loadings

The future loadings for the service area are determined by the population projections within the designated community growth areas. For planning purposes, the County uses a rate of 250 gpd per equivalent dwelling unit (EDU), which incorporates residential I&I for an average community. The 2018-2022 American Community Survey data estimates the average household size in Frederick County is 2.70. This relates to a general planning number of 93 gallons per capita per day (gpcd). However, more specific estimating guidance is provided in the Water and Sewer Design Manual and should be followed when planning and designing facilities.

It should be noted that not all water used is processed through the sewerage system. Lawn watering, car washing, evaporation from cooling systems and water included in processed products are all examples of how water demand can exceed sewage treatment demand. Consequently, sewage treatment demand may not identically match water demands reported in Chapter 3.

As Table 4-3 illustrates, the existing sewage treatment capacity in some systems will have to be increased to meet short term demands. In most cases, an increase in treatment capacity will be required to accommodate ultimate growth.

The Maryland Department of the Environment has a procedure for estimating municipal water and sewer capacities and demands. This analysis is required of municipalities (and county systems) when the system exceeds 80% of its design capacity. Simply summarized, it takes the design capacity of a system, subtracts the existing customers/use, from the remainder subtracts approved but not built demand, and from that remainder subtracts vacant lots/potential demand, to get the remaining available capacity for future approvals. This kind of analysis, generally, is required for a category change in Chapter 1 of this Water & Sewerage Plan.

Sludge Disposal

Sewage sludge management primarily involves land application, which is currently managed through a contract held by Synagro for the Ballenger-McKinney WWTP. The County's Reichs Ford Road landfill could also serve as a disposal site for sludge, but only in situations where land application cannot be utilized. The Ballenger-McKinney WWTP provides sludge processing for all County owned wastewater plants as well as those of some municipalities and private entities. Treated sewage sludge is a Class B biosolid and sites must meet requirements for land application in accordance with applicable federal, state, and local laws. Biosolids from Ballenger-McKinney are land applied in Maryland, Virginia, and Pennsylvania. Septic systems produce a digested primary sludge that periodically must be removed by a 'scavenger' truck. The Ballenger-McKinney WWTP has a facility for accepting and treating septic tank sludge (septage).

Financing Sewage Collection and Treatment Facilities

The County and its municipalities have the legal means to finance sewerage facilities through the issuance of general obligation bonds backed by the full faith and credit of the respective jurisdiction. Escalating costs and requirements for adequate waste treatment would, however, place a severe strain on the ability of any jurisdiction to fully finance contemplated new systems or improvements and/or extensions. Accordingly, Federal and State aid is required to assist in the financing of wastewater treatment works.

Yearly debt and interest service on local bond issues can be raised in a variety of ways depending on local preference, including general tax assessment, front foot assessment, connection charges, surcharge on water billings and an increase in sewer rate billings (where applicable).

Most of the costs involved in planning, designing, and constructing interceptor sewers, pumping stations and wastewater treatment facilities can be financed through low interest loans administered by the Maryland Department of the Environment in conjunction with the United States Environmental Protection Agency. Additionally, small supplemental grants are available from MDE, and can be used in conjunction with other funding sources. The effect of these required annual expenditures on a local jurisdiction's taxable base must, therefore, be thoroughly evaluated and considered before it is decided to proceed with the design and construction of a central system. This evaluation should be included in a facilities plan or feasibility study prepared for the area in question.

Incorporated communities have the legal authority to issue Public Improvement Bonds to finance their share of community sewerage projects. However, due to the small rate of projected growth in many towns, their bonding capability may not be sufficient to completely fund the local share of sewerage projects without excessive indebtedness. Since these communities serve rural areas, they may be eligible for assistance from the U.S. Department of Agriculture Rural Development mission area. The Federal agency is authorized to allocate loans and other direct financial assistance to defray the costs of public sewerage systems that do not receive other grant monies.

These loans and assistance are available to rural communities with a population of less than 10,000 people in the case of state revolving funds and 2,500 in the case of the Special Evaluation Assistance for Rural Communities and Households (SEARCH) program. Also, financial assistance is available from the Department of Housing and Urban Development (HUD) and the Department of Health and Human Services (HHS) for construction of central sewerage facilities. These funds are available through the "Community Development Block Grant Program" administered by this Federal agency and can finance up

to 100% of the total construction costs for central sewerage facilities with no population limitations and no local share input. However, funds from both these Federal agencies are currently limited.

Sewer (and water) projects should be self-supporting. In all cases, best business and accounting methods should prevail. Bond money should not be used for maintenance, operation, or debt service. Amortization of bond issues should approach a straight-line basis. The cost of physical connections to various systems should not be merged with "area" or "basic" charges levied to first time users. Developers of housing, commercial and industrial projects should contribute to the cost of providing sewer (and water) service. All Public Works agreements related to development should be as nearly uniform as possible, approved as to legal form and sufficiency and secured to the satisfaction of Frederick County Department of Public Works, Division of Water and Sewer Utilities, or other agency having jurisdiction. Operating costs and service charges should be reviewed annually.

Every project should be carefully reviewed for financial feasibility before the commitment of public funds for construction. The financing of community sewerage systems in isolated health problem areas where individual septic tanks are failing requires careful study. One way to obtain the local share of required financing would be to place a substantial permit fee on each new septic tank constructed in the County. Proceeds would be placed in a revolving fund established by the County Division of Water and Sewer Utilities for the purpose of alleviating sewerage related problem areas. The legal and economic problems associated with such a permit fee should be carefully studied by the County.

The County, as a matter of policy, requires developers to pay the cost of constructing infrastructure needed to serve their developments, and often a pro-rata share of the upgrades to County facilities necessary to serve their growth-generated demand. One way developers have used to finance utility infrastructure is through Special Taxing Districts where the present and future beneficiaries of the infrastructure repay the debt for the infrastructure, which was constructed, up-front. The County currently has four Special Taxing Districts for utility infrastructure: Lake Linganore, Oakdale - Lake Linganore, Jefferson Tech Park, and Urbana PUDs, and one municipal Special Taxing District: Brunswick Crossing PUD.

The County should encourage development in the areas served by existing treatment plants so as to utilize their full capacity and thereby spread charges over as large a user base as possible. Only by building such a user base can charges be kept within reason.

Individual Septic Systems

Outside of areas served by regional or sub-regional sewerage systems, individual subdivisions and rural communities rely on individual septic systems. This includes two municipalities, Burkittsville and Rosemont though neither one is considered a growth area. In many rural developments and small towns it is not economically feasible to provide community sewage systems. The wastewater from these properties is usually treated by individual on-site sewage systems (septic tank systems).

Septic tank systems consist of a tank and some type of leeching system (trench(es), seepage pit(s) or sand mound). The septic tank is a settling chamber where solids settle to the bottom of the tank allowing only the liquid waste (effluent) to flow into the leeching part of the system. Some of the solids in the tank decompose through bacteriological action. The remaining solids must be pumped out and disposed of by a scavenger septic tank pumper. Absorption trenches are trenches dug with the contour of the ground. The trench is filled with coarse gravel (#2 stone). Perforated non-metallic approved pipe is laid in the coarse gravel approximately 2 feet below ground surface. The trench is backfill covered with 18 inches of soil.

Effluent from the septic tank seeps through the perforated pipe, through the gravel into the soil. The length, width, depth and number of the trench(es) required depends upon the amount of waste generated, the depth of the percolation tests and the soil permeability (percolation rate) of the soil. Seepage pits consist of square holes dug in the ground in which cylindrical concrete rings are placed on top of one another. The number of rings used is determined by the depth of the percolation test. The rings are covered with a concrete lid and are surrounded by coarse stone. The number of pits needed, and the size and depth of each pit, is based on the projected flow and percolation rate and depth. Distribution boxes are used to equally distribute the waste between trenches or pits. A sand mound system is an on-site sewage disposal system that is elevated above the natural soil surface in a suitable sand fill material. A gravel filled bed(s) is constructed in the sand fill and effluent from a dual compartment septic tank is pumped into the gravel bed through a pressure distribution network. Sand mound systems cannot be used in all situations. In some cases, poor soil conditions preclude the use of any on-site sewage disposal system.

Large projects outside of a wastewater service area may rely on multi-use systems, which discharge or treat more than 5,000 gallons per day using individual on-site sewage disposal system. These systems are required to gain concurrent approval from the local Health Department and the Maryland Department of the Environment (MDE). MDE procedures require that for every 5,000 gallons of wastewater generated, three acres of septic area must be designated for the septic system installation and repair. This area must be evaluated and approved concurrently by the local Health Department and MDE. Once the septic area has been evaluated and approved, septic system design plans must be submitted to MDE for review and approval. Frederick County requires these projects serve only one lot, although there may be many individuals served as in a school or camp.

Per COMAR 26.03.01.04, documentation is required in the Water and Sewerage Plan regarding the presence or absence of marinas in the County. Frederick County has no marinas, as it contains no tidal waters inside or on its borders.

Sustainable Growth and Agricultural Preservation Act of 2012 (“Septic Bill”)

Recognizing the water quality impacts from rural, large-lot, septic systems, and the state adopted Senate Bill 236, the *Sustainable Growth and Agricultural Preservation Act of 2012*. The overall goal of the legislation is to “limit the disproportionate impacts of large subdivisions on septic systems on Maryland’s farms and forest lands, streams, rivers and Chesapeake and Coastal Bays” and to establish four tiers of land use categories to identify where major and minor residential subdivisions may be located and what type of sewerage (individual septic system or public sewer) will serve them.

Frederick County adopted its Growth Tiers on February 26, 2013, as follows:

- Tier I and IA (areas currently served by public sewerage systems)
- Tier II and IIA (areas planned to be served by public sewerage systems)
- Tier III (areas not within a Community Growth Area and not planned for public sewer service, with allowance for major residential subdivisions on individual septic systems)
- Tier IV (areas planned for agricultural, resource protection, preservation, or conservation and not within a Community Growth Area and not planned for public sewer service, with prohibitions on major residential subdivisions on individual septic systems)

Senate Bill 236 contains an allowance for counties to seek an exemption to the restriction on major residential subdivisions utilizing septic systems in the Tier IV areas. Frederick County received a Tier IV exemption in May 2013 from the Maryland Department of Planning based on the County’s very limited

subdivision potential in its Agricultural and Resource Conservation zoning districts, with yields that result in densities of one (1) dwelling unit (or fewer) per 20 acres. The exemption allows the County to approve major subdivisions, more than 5 lots, in a Tier IV area.

Section 2: Water Quality Regulatory Framework

Existing Water Quality

The disposal of treated sewage effluent has traditionally been to discharge to some watercourse. More recently, treated effluent has been disposed of by application to the land. Both Emmitsburg and the City of Frederick have utilized land application for a part of their discharge. The degree of treatment that is required at any given treatment facility is determined to a large extent by the ability of the receiving water to assimilate the effluent discharge and the potential effects that such a discharge will have on the receiving ecosystem.

Monocacy River

The Monocacy River is a calm, slow moving stream with large seasonal variations in flow. The river drains approximately 970 square miles and has an average flow rate of 931 cubic feet per second (cfs) at Jug Bridge. It is characterized by shallow streambeds and wide meandering flow patterns. In addition to sediment from non-point sources, nutrient enrichment is a major water quality problem. Effluent from Frederick County's larger treatment plants including the City of Frederick WWTP are some of the major point sources of nutrient loading. The County's Ballenger-McKinney WWTP was upgraded to provide Biological Nutrient Removal (BNR) in 1995 and to Enhanced Nutrient Removal (ENR) in 2014 as part of the construction of the renamed Ballenger-McKinney WWTP. The City of Frederick's Gas House Pike WWTP was upgraded to BNR levels of treatment in 2002 and then Enhanced Nutrient Removal (ENR) as well. In addition, the County has diverted flow from nine (9) small secondary treatment plants to the Ballenger-McKinney WWTP thus increasing the flow subject ENR treatment. These plants are Lake Linganore WWTP and Spring Ridge WWTP (Linganore Creek); Pinecliff WWTP and Buckingham Hills WWTP (Monocacy River); Libertytown WWTP, New Market WWTP, Reich Ford Landfill Leachate Plant, Monrovia WWTP (Bush Creek), and Urbana WWTP.

The Monocacy River has limited assimilative capacity. This affects discharges at a distance upstream on the major tributaries to the Monocacy main stem. The Emmitsburg, Thurmont, Woodsboro, White Rock, Crestview, Frederick City, Fort Detrick, Ballenger-McKinney, Mill Bottom, and Pleasant Branch are the community sewage treatment plants which discharge into tributaries of the Monocacy or its main stem. Table 4.03 summarizes the existing capacities for all of the community wastewater treatment plants in the County.

Catoctin Creek

The Catoctin Creek drains approximately 121 square miles of mountain and valley terrain known as the Middletown Valley. Although the steep terrain causes the water to be faster moving than the Monocacy River, natural flows in Catoctin Creek are highly variable and have gone as low as 0 cfs (Middletown during summer of 1966). The average discharge of the creek is 73.2 cfs near Jefferson. Five community WWTPs discharge into Catoctin Creek or its tributaries: Myersville, Middletown West, Middletown East, Fountaindale, and Jefferson.

Potomac River

The Potomac River is a fast moving, turbulent waterway that empties into the Chesapeake Bay. The drainage area for the river totals approximately 14,670 square miles including all of Frederick County. The average flow at Point of Rocks is 9,169 cfs (5,926 MGD). The Potomac River's turbulent nature and large flow volume make it the County's best choice for meeting future wastewater disposal needs.

Two community WWTPs discharge directly to the Potomac (Brunswick and Point of Rocks), but both Catoctin Creek and the Monocacy River flow into the Potomac. The County has constructed an outfall directly to the Potomac from the Ballenger-McKinney WWTP for future use when average flows exceed 15 MGD.

Future Discharge Permits

Catoctin Creek has reached its assimilative capacity and permitted loadings (pounds of pollutants discharged to the creek) from existing WWTPs are unlikely to be raised. Any WWTP expansion would involve a corresponding reduction in pollutant concentration. The same holds true for WWTPs discharging to the Monocacy. Only small plants that discharge a fair distance upstream of the City of Frederick may be considered for secondary treatment. Finally, permits for discharges to the Potomac River have recently required the use of enhanced nutrient removal with filters. This is done for the protection of downstream water supplies and the protection of the Chesapeake Bay. To summarize, the majority of new or expanded wastewater treatment plants will need to employ filtration and enhanced nutrient removal to meet strict discharge permits.

The Maryland State General Water Quality Standards and Classification system is described in Chapter 3. In general, the smaller the size of the receiving water the more stringent the requirements will be. This is due to the fact that there is less water available for dilution especially during extended dry periods. Waters that are designated as natural or recreational trout waters will also require more stringent effluent standards than non-trout waters, especially in terms of total residual chlorine allowed. It should be noted here that all surface waters north of US Rt. 40 are designated as natural or recreational trout waters. Stringent chlorine residual standards are imposed on all discharges from existing and new facilities discharging into these streams so that either a dechlorination step is added or an alternate disinfection method is used. Low chlorine residuals of less than 0.1 mg/l are required for all plants in the county. Some, such as Emmitsburg, are permitted only trace amounts (0.02 mg/l.).

Table 4-3: County (Regional/Sub-Regional) & Municipal WWTP Capacities and Permitted Discharges into Receiving Streams (in MGD)

Facility	Permit No.	Receiving Stream	Permit Capacity	Design Capacity	Average Flow	Remaining Capacity	Projected Flow 2030	Projected Flow 2040	Projected Flow 2050	Population: Total	Residential Population: Served	Population: Unserved
Monocacy River and Tributaries												
Ballenger-McKinney	16-DP-0809A ¹ MD0021822	Monocacy R.	15.0	15.0	7.340	7.660	9.129	12.806	15.071	148,178 (unincorporated)	90,061 (34,596 accts.)	67,932
Emmitsburg	16-DP-0113 ² MD0020257	Toms Creek	0.750	0.750	0.501 ^A	0.249	0.534	0.666	0.734	2,921	3,137 (1,021 accts.)	0
Frederick City	18-DP-0801A ³ MD0021610	Monocacy R.	8.0	8.0	5.81 ^A	2.19	7.1	7.5	8.15	82,175	82,175 (21,900 accts.)	0
Thurmont	16-DP-0639 ⁴ MD0021121	Hunting Creek	1.0	1.0	0.555	0.445	0.849	1.011	1.056	6,752	6,722	30 (11 septic systems)
Pleasant Branch	15-DP-2814 ⁵ MD0065269	Bennett Creek Trib.	0.100	0.100	0.055	0.045	0.055	0.055	0.055	839	840 (314 accts.)	0
White Rock	18-DP-0278A MD0025089	Tuscarora Creek Trib.	0.05	0.025	0.010	0.015	0.011	0.012	0.013	264	265 (101 accts.)	0
Crestview	18-DP-0672 MD0022683	Muddy Run	0.036	0.036	0.018	0.018				458	313 (116 accts.)	145
Woodsboro	22-DP-1855 MD0058661	Israel Creek	0.250	0.250	0.077 ^B	0.173	0.083	0.091	0.101	1,240	1,240	0
Mill Bottom	22-DP-2841 MD0065439	Bush Creek	0.100	0.100	0.066	0.034	0.071	0.078	0.086	1,215	1,401 (520 accts.)	20
Fort Detrick	18-DP-2527 MD0020877	Monocacy R.	2.0	3.0	0.77 ^A	1.23	0.880	1.000	1.100	7,900	430	0
Lewistown	15-DP-0730 ⁶ MD0022900	Fishing Creek	0.027	0.027 ¹⁰	0.002	0.025	0.008	0.012	0.015	227	0	227
Mount Saint Mary's Univ.	13-DP-0690 ⁷ MD0023230	Tom's Creek Trib.	0.160	0.160	0.060 ^B	0.100	0.065	0.070	0.075	2,889	2,200 (students)	0
Totals												

NPDES Permit Notes

The following permits have been received and are in the permitting process:

- Permit 23-DP-0809
² Permit 22-DP-0113
³ Permit 23-DP-0801
⁴ Permit 23-DP-0639
⁵ Permit 21-DP-2814
⁶ Permit 22-DP-0730
⁷ Permit 22-DP-0690

General Notes

- Capacity figures shown are not to be used for capacity allocation purposes.
- Permit Capacity amount is Waste Allocation and is not a Limiting Factor.
- Projections supplied by respective municipalities and County's Division of Water and Sewer Utilities.
- Average flow data is 2023 3-Year Average, unless otherwise noted below.
- ^A 2022 3-Year Average
- ^B Information from previous Frederick County Water & Sewerage Plan

Facility	Permit No.	Receiving Stream	Permit Capacity	Design Capacity	Average Flow	Remaining Capacity	Projected Flow 2030	Projected Flow 2040	Projected Flow 2050	Population: Total	Residential Population: Served	Population: Unserved
Catoctin Creek												
Jefferson	16-DP-0097 MD0020737	Catoctin Creek	0.300	0.300	0.137	0.163	0.147	0.162	0.179	2,270	2,400 (960 accts.)	0
Fountaindale	20-DP-0668 MD0022721	Hollow Creek	0.200	0.250	0.107	0.093	0.114	0.127	0.140	1,712	1,685 (635 accts.)	25
Middletown West	18-DP-0462 MD0024406	Catoctin Creek	0.250	0.250	0.192 ^A	0.108	0.387	0.387	0.431	5,239	5,239 (1,683 accts.)	0
Middletown East	13-DP-3182 ^B MD0067628	Hollow Creek	0.250	0.350	0.247 ^A	0.133						
Myersville	13-DP-0124 ⁹ MD0020699	Grindstone Run	0.300	0.300	0.132 ^A	0.133	0.151	0.207	0.224	1,854	1,890	0
Totals												
Potomac River and Patapsco River (Mt. Airy)												
Mount Airy ^D	14-DP-0641 ¹⁰ MD0022527	Patapsco R.	1.2	1.2	0.732 ^B	0.468	0.785	0.867	0.958	9,873	9,838	35
Point of Rocks	15-DP-0482 ¹¹ MD0020800	Potomac R.	0.230	0.230	0.095	0.135	0.102	0.113	0.124	1,754	1,699 (651 accts.)	0
Brunswick	21-DP-0106 MD0020958	Potomac R.	1.400	1.400	0.687 ^A	0.713	.85	1.2	1.85	8,211	8,176	30 (13 septic systems)
C. William Winebrenner (Wash. Co.)	20-DP-2516 MD0003221	Falls Creek	0.600	0.600	0.115 ^C	0.485	0.160	0.204	0.249	1,200 (Fred. & Wash Co.)	1,200	0
Totals												

NPDES Permit Notes

The following permits have been received and are in the permitting process:

⁸ Permit 20-DP-3182

⁹ Permit 22-DP-0124

¹⁰ Permit 23-DP-0641

¹¹ Permit 23-DP-0482

General Notes

-Capacity figures shown are not to be used for capacity allocation purposes.

-Permit Capacity amount is Waste Allocation and is not a Limiting Factor.

-Projections supplied by respective municipalities and County's Division of Water and Sewer Utilities.

-Average flow data is 2023 3-Year Average, unless otherwise noted below.

^A 2022 3-Year Average

^B 2021-2022, Information from [Carroll County 2023 Water and Sewer Plan](#), Pages 121-125.

^C Information from Table 13-5, Page 307, [Washington County 2040 Comprehensive Plan](#).

^D Information is inclusive of the entire Town (Carroll and Frederick Counties).

National Pollutant Discharge Elimination System Permits (NPDES)

In 1972, Congress passed the Federal Water Pollution Control Act Amendments of 1972. The objective of this legislation (P.L. 92 500) amended in 1977 (PL 95 217) is to restore and preserve the integrity of the nation's waters. This act set forth as a national goal that the discharge of pollutants into the navigable waters be eliminated by 1985.

Under this legislation, each state was directed to establish water quality standards for all waters within the State, in accordance with EPA guidelines, and to enforce these standards through the issuance of discharge permits. Existing State Water Quality Standards would remain in force providing they meet the approval of EPA.

Pursuant to these regulations, all point source discharges (sources where a specific outfall can be identified) must apply for a National Pollutant Discharge Elimination System Permit (NPDES Permit). These permits are issued and enforced by the Maryland Department of the Environment and specify the allowable ranges for chemical, physical, and biological parameters of discharge. Such parameters may include biochemical oxygen demand (BOD), suspended solids (SS), total residual chlorine, coliform organisms, pH, dissolved oxygen (DO), and in some cases flow, temperature, nitrogen, phosphorus, and industrial byproducts. The State also regulates land application of sewage sludge as well as subsurface application of effluent from large-scale septic systems, known as Multi-Use Sewage Systems.

Frederick County Government is further covered under the Phase I NPDES-Municipal Separate Storm Sewer System (NPDES MS4) permit program. This program covers stormwater discharges from developed land, separate from discharges of treated sewage effluent and other types of NPDES permits (see chapter 2 for more information on the NPDES program in Frederick County).

Total Maximum Daily Loads (TMDL)

Waterways with water quality monitoring data suggesting impairment (not meeting State water quality standards) are put on a 303(d) list by MDE and evaluated for Total Maximum Daily Loads (TMDLs) for impairing pollutants. The MDE develops TMDLs for impairing substances in waterbodies with allocations to specific entities, such as NPDES permit holders. These are submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of the Clean Water Act. TMDLs for waterbodies in Frederick County include:

- Catoctin Creek: Phosphorus, Sediment
- Double Pipe Creek: Fecal Bacteria, Phosphorus, Sediment
- Lake Linganore: Phosphorus, Sediment
- Lower Monocacy River: Fecal Bacteria, Phosphorus, Sediment
- Potomac River Montgomery County: Sediment
- Upper Monocacy River: Fecal Bacteria, Phosphorus, Sediment

All sectors, such as agriculture, nonpoint sources, septic systems, wastewater permit holders, and MS4 permit holders are assigned load allocations (LAs) or waste load allocations (WLAs) for the impairing substance in each TMDL. Any load above the allocation needs to be reduced to meet the TMDL. The regulatory obligations for compliance within different sectors vary. Frederick County is required by its NPDES MS4 permit to develop plans to meet stormwater WLAs for TMDLs and to put these plans in a schedule. TMDL goals are also written into permits for wastewater treatment plants. Nutrient Management Plans for farms in the agricultural sector have to be consistent with the TMDL. Nonpoint and

septic sectors have goals, but regulatory enforcement is not as strong as in other sectors. Frederick County has prepared TMDL Restoration Plans as part of its MS4 permit compliance.

Section 3: County Regional Community Systems

Central Frederick Sewerage Service Area

The Central Frederick Sewerage Service Area covers approximately 63 square miles in the center of the County including the following community growth areas:

- City of Frederick (northern portion only)
- Town of Walkersville
- Ballenger Creek
- Frederick Southeast
- Adamstown/Eastalco
- Buckeystown
- Urbana/I-270 Employment Corridor
- Monrovia
- Town of New Market
- Linganore
- Spring Ridge/Bartonsville
- Libertytown

The Monocacy River Wastewater Treatment Alternatives Study (September 1987) addressed the need for sewage treatment for anticipated growth in the central Frederick service area through the year 2004. This study was in response to the State's determination that limited assimilative capacity may prevent further increases in treated effluent discharges from the City and County WWTPs to the Monocacy River. The solution reached was (1) to continue to discharge the approved amounts from Frederick City's WWTP to the Monocacy and from the Ballenger-McKinney WWTP to the Monocacy, (2) to maximize the capacity of the Ballenger-McKinney WWTP by constructing a raw sewage interceptor between the City's sewage treatment plant and the County's Ballenger WWTP, and (3) discharging the excess of the treated sewage through an outfall to the Potomac River. The solution was identified in the study as Alternative III and often referred to in this shortened form.

The Lower Bush Creek (Urbana) portion of the Monocacy Alternatives Study was revised in 1989 in response to proposals by several developers to serve the Urbana area including portions of the Bennett Creek drainage basin (Urbana Area Water & Sewer Service Alternatives Study, April 1989). One of the alternatives for service of both water and sewer and the one ultimately chosen, was to connect the proposed service area to the Ballenger Creek water and sewer system. This solution was identified in the study as Alternative C.

The County completed the initial phases of Alternative III through the construction, in 1992 and 1993 of a six-mile raw sewage conveyance system between the City's Gas House Pike WWTP and the County's Ballenger-McKinney WWTP. In 1995 the County completed an upgrade of the Ballenger-McKinney WWTP from a 2 MGD conventional activated sludge facility to a 6 MGD Biological Nutrient Removal (BNR) treatment plant. Under Alternative III subsequent improvements were planned to expand the Ballenger Creek WWTP to accommodate growth and the deployment of an outfall line when necessary to convey treated effluent from the expanded facilities at the County's Ballenger Creek WWTP and across the creek on the McKinney site, together referred to as the Ballenger-McKinney WWTP, to the Potomac River.

With the completion of the Monocacy Sewage Interceptor and the expansion of the Ballenger-McKinney WWTP to 6 MGD in 1995, the County decommissioned several WWTPs and diverted their respective flows to the Ballenger-McKinney WWTP. The decommissioned facilities, which included the Pinecliff WWTP, Lake Linganore WWTP, Spring Ridge WWTP, and the Buckingham Hills WWTP, eliminated a combined maximum permitted pollutant loading of 159 and 164 pounds per day for BOD5 and suspended solids respectively, from the Monocacy River or its tributaries. The County also diverted raw wastewater from the Linganore and Spring Ridge PUDs to the Ballenger-McKinney WWTP through an interceptor constructed by the County in 1993.

In 1999, in preparation for the design of the outfall to the Potomac River, the County completed a comprehensive corridor alignment study to construct a 36-inch and 42-inch effluent outfall system (McKinney Outfall) to the Potomac River. Unfortunately, the estimated total cost of the outfall was excessive. The County subsequently reevaluated the outfall system and decided to use a phased approach to its deployment. The outfall line was established by converting an existing water transmission line for use as the outfall with subsequent improvements to the effluent line planned coincident with phased construction of the McKinney expansion to the Ballenger WWTP.

In a detailed letter to MDE in February 2006, the County requested discharge-planning limits for the Monocacy River for 7, 13 and 15 MGD flow values. After receiving these planning limits, County consultants determined that the existing WWTP, with only minor improvements, could meet the 7 MGD limits with a proportionate BNR Total Nitrogen (TN) concentration goal of 6.9 mg/l. They also verified that the proposed membrane bioreactor (MBR) process for the Ballenger-McKinney WWTP would be able to meet the 15 MGD conventional pollutant concentration planning limits as well as the ENR requirements of 3 mg/l TN and 0.3 mg/l TP.

In 2009, the Ballenger-McKinney WWTP was expanded to 7 MGD capacity. Related flow allocation agreements between the City and County were amended to address changes in the City's growth areas. The Ballenger-McKinney WWTP has also been upgraded to include Enhanced Nutrient Removal (ENR), consistent with Maryland's Chesapeake Bay Restoration initiatives. Ballenger-McKinney WWTP was expanded to 15 MGD in 2015. A proposed waste-to-energy facility at Ballenger-McKinney was approved and issued permits by the Maryland Department of the Environment in 2014 including for water and sewer lines. However, the project was canceled later that year.

As a result of the reduction in pollutant loading originally permitted for discharge into the Monocacy River and its tributaries, and the more stringent ENR discharge standards, it is possible that a higher volume of high-quality effluent, from the Ballenger-McKinney WWTP can be discharged directly into the Monocacy River, or it may in the future be discharged to the Potomac through the McKinney outfall.

Although the County has constructed components of the necessary infrastructure to establish the Potomac River Treated Outfall system, the existing effluent outfall to the Monocacy River will be adequate for use by the Ballenger-McKinney WWTP until the facility exceeds existing conventional pollutant loading limits for the Monocacy River. This requirement was specifically detailed in revisions to Chapter 3 and 4 of the County's Water and Sewer Amendment WS-05-03 approved in 2006.

Frederick County's Ballenger-McKinney WWTP has a combined nutrient loading allocation based on an 18 MGD average daily design flow. MDE has allocated Frederick County's Ballenger-McKinney WWTP a combined Chesapeake Bay nutrient loading allocation of 219,280 lbs. /yr. total nitrogen and 16,446 lbs. /year total phosphorus, based on an 18 MGD average daily design flow. The combined 18 MGD capacity and nutrient loading allocations are based on previously approved Ballenger WWTP capacity of 6 MGD and nutrient loading allocation of 73,093 lbs. /yr. total nitrogen and 5,482 lbs. /yr. total phosphorus, as well as previously planned 12 MGD McKinney WWTP and nutrient load allocation of 146,187 lbs. /yr. total nitrogen and 10,964 lbs. /yr. total Phosphorus. The 15 MGD WWTP capacity values discussed represent a portion of the 18 MGD nutrient allocation recognized by MDE for the Ballenger-McKinney WWTP.

The water quality issues associated with limiting wastewater effluent flow and pollutant load to the Monocacy River have been overshadowed by the requirements to significantly limit the nutrients that are

discharged in the Chesapeake Bay watershed. The State of Maryland's strategy to reduce nitrogen loading in particular led to upgrades to WWTPs across the state to enhanced levels of treatment. The upgrade to the Ballenger-McKinney WWTP resulted in no additional discharge of pollutant(s) mass than that which is currently permitted for the existing Ballenger Creek WWTP discharge to the Monocacy River.

Based on the County's 2006 Ballenger-McKinney WWTP Facility Plan, the County's Ballenger-McKinney WWTP expansion is able to treat up to 15.0 MGD with a discharge to the Monocacy River at River. Future expansion beyond 15 MGD may be diverted to the Potomac River through the County's Potomac River outfall system, subject to acquisition of the necessary permits.

Since the 1987 Monocacy River Wastewater Treatment Alternatives Study was completed, the County has pursued the diversion of flow from minor treatment facilities (those facilities with a design capacity less than 0.5 MGD), to the Ballenger-McKinney WWTP. These Frederick County WWTP decommissioning projects have facilitated the reduction in both conventional and nutrient pollutant loading to the Monocacy River and the Chesapeake Bay. To date, Frederick County has decommissioned the following WWTPs, diverting their flow to the Ballenger-McKinney ENR facility.

- a. Lake Linganore WWTP (NPDES Permit MD0053376)
- b. Spring Ridge WWTP (NPDES Permit MD0062324)
- c. Pinecliff WWTP (NPDES Permit MD0022888)
- d. Buckingham Hills WWTP (NPDES Permit MD0059382)
- e. Urbana High School WWTP (NPDES Permit MD0066940)
- f. Libertytown WWTP (NPDES Permit MD0060577)
- g. Reich's Ford Road Landfill WTP (NPDES Permit MD0061093)
- h. New Market WWTP (NPDES Permit MD0020729)
- i. Monrovia WWTP (NPDES Permit MD0059609)

Based on the Ballenger-McKinney WWTP facility plan, the ENR improvements to 15 MGD will limit conventional pollutant loading to the Monocacy River at current permitted levels, with TN and TP loading levels at or below the state ENR goals.

The Ballenger-McKinney WWTP is the County's primary WWTP, owned and operated by Frederick County/DWSU. It is a separate wastewater system, with no components of the wastewater system combined with stormwater conveyance, treatment, or discharge. The phased construction of the project, which included the construction of a bridge across Ballenger Creek, effectively created one large single treatment complex that will provide the best available technology to meet ENR treatment requirements. This single facility will initially use the existing Monocacy River outfall but will also have the ability to divert treated effluent to the Potomac River through a 10.2-mile outfall system. The Potomac River outfall will allow the County to expand in the future based on loading requirements.

The County believes that in concert with the upgraded Ballenger-McKinney WWTP, an opportunity exists to further reduce nutrient loading to the Chesapeake Bay from Frederick County's existing sub-regional WWTPs, through the decommissioning of these systems. Flow diversions, associated with County WWTP decommissioning, have consumed treatment capacity in the Ballenger-McKinney WWTP.

Therefore, additional treatment capacity at the existing Ballenger-McKinney WWTP to replace the lost treatment plant capacity associated with the minor facilities needs to be established. These minor treatment plants have not been required to provide ENR, or for that matter, BNR levels of treatment.

However, by decommissioning these facilities and diverting their wastewater flow to the County's Ballenger-McKinney WWTP, which has ENR treatment levels, the County has reduced TN and TP levels in the aggregate treated wastewater discharged to the Monocacy River and ultimately the Chesapeake Bay.

City of Frederick System

Existing Facilities

Frederick City owns and operates a wastewater treatment plant located off Gas House Pike (GHPWWTP) near the confluence of Carroll Creek and the Monocacy River. The plant has a treatment capacity of 8.0 MGD based on effluent parameters established by the Maryland Department of the Environment. An equalization basin is provided at the facility to level out peak flows. Flow from the City's residents outfalls directly to the GHPWWTP. Flow from the County's customers in areas north of the city and the County northwest of the City and from the Town of Walkersville are now directly conveyed to the Ballenger-McKinney WWTP since the construction and operation of a new County wastewater pump station in 2020 which diverts the flow directly to the County's Monocacy River Pressure Sewer system constructed in 1993. Even with the new County pump station, the City still has the ability to divert flow from GHPWWTP to the Ballenger -McKinney WWTP if the GHPWWTP exceeds its 8.0 MGD permit flow limit. The City's system is a separate wastewater system, with no components combined with stormwater conveyance, treatment, or discharge.

The GHPWWTP incorporates the following features for ENR treatment: influent pumping station with mechanically cleaned bar screens and flow metering; two centrifugal grit removers, four primary settling tanks, three aeration/clarification basins; sand filter with eight filter cells; disinfection tank, and post-aeration tank. Residual solids processing consists of two dissolved air floatation thickening tanks, a heat exchanger utilizing methane gas, a complete-mix anaerobic digester, a second-stage anaerobic digester and two belt filter presses for dewatering. Treated effluent up to 0.30 mgd is used for irrigation purposes on the municipal golf course on the east side of the Monocacy River when weather permits.

The plant, located above the 100-year floodplain elevation, has been in service for over 45 years. Improvements to the plant to comply with requirements of the MDE Enhanced Nutrient Removal program were completed in 2018. The condition of the treatment system and transmission lines are considered by the City of Frederick Engineering Department to be in fair to good condition, with normal wear and tear and age-related issues being addressed as necessary.

The city is served by three major interceptors: Gas House Pike and Carroll Creek interceptors, which serve the majority of the central and western portions of the city and the Monocacy Interceptor which conveys wastewater from the northern section, including flow from the County customers to the north and Walkersville. Several pumping stations lift flow over higher elevations toward gravity interceptors. Among these are the Amber Meadow Meadows Pump Station, Monarch Ridge Pump Station, Patrick Street Pump Station and Rosenstock (Riverside Park) Pump Station. As of June 2020, the new County owned and operated pump station next to the City water treatment plant, directs flow from the northern portions of the City and County residents directly to the Ballenger-McKinney WWTP. Several individual lots also must rely on privately-owned pumping facilities and force mains.

There are also two industrial waste treatment facilities which pre-treat waste prior to discharge into the city sewer system. These are owned and operated by Dairy Maid and the Capital Milk Producers Cooperative.

Existing and Future Demand

As shown in Tables 4-3 and 4-4, the demand for City sewer service continues to increase at a gradual rate in keeping with the corresponding water demand as new development occurs within the City's growth boundary. However, the amount of available sewage treatment capacity is approaching the point in the foreseeable future where allocation may no longer be available, especially in the northern Basin which is treated by Frederick County at the Ballenger-McKinney WWTP. The City and County are parties to an agreement (2014 Central Frederick Sewer System Area Agreement, or CFSSAA) for additional capacity to be provided for growth in the northern Basin at the Ballenger-McKinney WWTP with the current sewer shed conveyance system study.

Similar to the water system, the city has pursued an aggressive program to reduce leakage, known as Inflow and Infiltration (I&I) within the older sections of the sewer piping system. This program will reduce the amount of future treatment capacity required by eliminating unnecessary flow from entering the piping network.

Table 4-4: Frederick City Wastewater Treatment

Treatment Facility	System Design Treatment Capacity (GPD)	Current Treatment Demand (GPD)
City of Frederick Gas House Pike WWTP	8,000,000	5, 810,000 ¹
Ballenger-McKinney WWTP ²	1,870,000	0

Planned Improvements

The Water and Sewer Master Plan by Chester Engineers (2000) has guided the improvements made to the City sewer system for the past 18 years. The Sewer Master Plan update was completed in 2022, however, much of the data collected for the study was incomplete so a Phase II analysis has been planned.

The City and County have jointly funded a study to determine the capacity of the Monocacy Interceptor from its origination near Walkersville to its outfall at the Ballenger-McKinney WWTP. The analysis has been completed and the final report contains recommendations for improvements to the conveyance system based on growth in demand from areas that are tributary to the line. A majority of the costs for this study have been, and the upgrades recommended in it are expected to be, reimbursed from developers of property using the line for conveyance.

Septic Problem Areas

Several subdivisions in and near the city which currently utilize on-lot septic systems have experienced reported failures in the recent past. These subdivisions, which are to the north and west of the City include Sunset Hills, Indian Springs, Boot-Jack Springs, Mt. Laurel Estates, Brookmere, Edgewood, Rocky Spring Road, Old Receiver Road, Clover Hill and Grove Hill On-lot rehabilitation has been recommended for these in a study performed in 1982, but system growth since that time has brought the collection system closer

¹ 2021-2022 2-Year Average

² Through 2014 CFSSAA. Includes initial allocation of 1.36 MGD and future 0.51 MGD once GHPWWTP exceeds 8.0 MGD.

and annexation with subsequent connection to the sewer system may be more feasible for most areas listed to be in need. However, timely procurement of additional treatment capacity is required to serve not only these areas of development, but also the needs of planned development within the basin.

Monocacy Collection System

The Monocacy collection system is a County owned system which transports wastewater through a portion of the City's sewage collection system to the City's Gas House Pike WWTP, where it is then pumped to the County's Ballenger-McKinney WWTP for treatment. Operation of the collection system started in 1968 and has grown throughout the years to include the Town of Walkersville, Discovery PUD, Spring Garden Estates, and Dublin Estates, and recently annexed portions of the City of Frederick. The Tuscarora Interceptor collects the area west of the Monocacy River including Clover Hill, Waterside and the City subdivisions of Tuscarora Knolls, Worman's Mill, Clover Ridge, North Crossing, Canon Bluff, and Dearbought.

Existing Facilities

The Monocacy collection system utilizes eight pumping stations to transfer flows to the Frederick City system. The largest of these is the 10.4 MGD (peak) Ceresville pumping station, which handles the majority of the flow sent from this collection system to Frederick City's Gas House Pike WWTP. From there, the City diverts a metered portion of County sewage to the Ballenger-McKinney WWTP per the 1990 City/County Agreement as amended. However, the County is currently constructing a pump station, due for completion in January 2020, which will divert County wastewater flows around the City system. Its related force main has been completed. The other large pumping station is located on College Run, which handles the northeast portion of Walkersville.

Other pumping stations on the Walkersville Interceptor are the Discovery and MD-194 stations. The Tuscarora and Walkersville Interceptors are 10 to 36-inch diameter RCP.

Planned Improvements

Growth downstream of the Ceresville pumping station is dominated by the Dearbought and Market Square developments and the Riverside industrial/office development, in the city limits. Flows from these projects are pumped into the Monocacy Interceptor.

Table 4-5: County Pumping Stations

Service Area	Sewage Pump Station	No. of Pumps	Capacity Of Each Pump (GPD)*	Force Main Size (in.)	Average Day Pumping (GPD)
Ballenger	Buckingham Hills	2	468,000	6	66,300
Ballenger	Decatur Dr. [Greenhill Manor]	2	158,400	4	22,500
Ballenger	Doubs Rd.	2	792,000	8	63,650
Ballenger	Adamstown/ New Design Rd.	2	1,008,000	6 & 8	116,000
Ballenger	Stuart Mechanic	2	403,200	6	23,800
Jefferson	Briercrest	2	144,000	4	4,000
Jefferson	Shelburn Ct./Cambridge Farms	2	198,720	4	24,000
Jefferson	Milford Ct./Copperfield	2	34,560	2	1,750
Jefferson	Rt. 340/Ruritan Club	2	273,600	6	11,400
Linganore	Ben's Branch	2	2,550,240	16	300,000
Linganore	Boyers Mill Rd.	2	4,197,600	16	550,000
Linganore	Holly Hills	2	144,000	4	12,000
Linganore	Royal Oaks (New Market II)	2	285,120	4	71,200
Linganore	Quaker Way [Royal Oaks II]	2	119,520	4	17,400
Linganore	Rt. 144	2	396,000	6	71,100
Linganore	Summerfield	2	440,640	6	29,600
Linganore	Talbot Drive (New Market I)	2	201,600	4	26,000
Linganore	Westwinds Pool	2	54,720	2	912
Linganore	Westwinds	2	115,200	4	19,200
Monocacy	Ceresville	3	10,400,000 (2 pumps)	16 (2)	2,185,600
Linganore	Tallyn Ridge	2	604,800	6	17,650
Libertytown	Libertytown	2	720,000	10	52,500
Libertytown	Liberty Village	2	50,400	2	5,500
Middletown	Limestone Lane (Fountaindale)	2	129,600	4	9,800
Mill Bottom	Manor Terrace	2	255,000	6	15,400
Mill Bottom	Turf Ct.	2	37,440	2	2,400
Monocacy	Crum Rd.	2	144,000	4	6,000
Monocacy	Dearbought Ct.	2	792,000	8	116,500
Monocacy	Discovery	2	720,000	6	78,000
Monocacy	MD 194	2	554,400	6	96,400
Urbana	Urbana North Regional	2	1,533,600	12	39,000
Monocacy	Monocacy **	3	6,000,000	24	2,310,000
Walkersville	College Run	2	1,987,200	12	800,000

*Capacity of each pump in GPD based upon design GPM x 1,440

**Total Capacity is 12 MGD with 2 pumps on

Table 4-6: Sewer Interceptors

Sewer Interceptor	Diameter (in)	Average Daily Flow (MGD)	Peak Capacity (MGD) ¹
Ballenger Creek	36	2.65	23.60
Buckeystown	30	0.07	9.00
Bush Creek/Urbana ²	30	1.08	14.40
Linganore Creek ²	30	1.60	9.90
Monocacy (Upper)	36	2.40	20.20
Monocacy (Lower) (Pressure)	48	5.12	19.70
Tuscarora Creek	30	0.98	9.90

Ballenger Creek Sewerage System

The Ballenger Creek Sewerage System serves the following Community Growth Areas (CGA's) as designated in the County Comprehensive Plan.

- Ballenger Creek
- Frederick Southeast
- Urbana/I-270 Employment Corridor
- Adamstown/Eastalco
- Buckeystown

Ballenger Creek

The Ballenger Creek service area is located south of the City of Frederick and centers on the I-270 corridor. This area, along with the city, has the highest concentration of industrial and commercial development in the county. The commercial/industrial developments include Westview Corporate Campus, Omega Center, McKinney Industrial Park, Bowman Plains, Wedgewood Industrial Park, Westview South MXD, and the Westview Promenade shopping center.

The Ballenger Creek CGA also includes a significant concentration of medium and high-density residential developments. Subdivisions include Crestwood/Mountain Village, Kingsbrook, Farmbrook, Foxcroft, Hannover, Stuart Mechanic, Ballenger Creek Meadows, Robin Meadows, Wellington Trace, Linton, Ballenger Crossing and Countryside. As of December 2023, there was a pipeline (approved but not built) of 337 dwellings and a vacant land potential for approximately 32 dwellings. However, part of the Ballenger Creek Community Growth Area is included in the South Frederick Corridors Planning Area. It is anticipated 4,000 of the 10,000 dwelling units envisioned by the SFCP will be located in the “Ballenger Creek East” sector. For more information refer to “Frederick Southeast” below.

Frederick County estimates a January 1, 2024, population of 25,876 for Ballenger Creek Census Designated Place (CDP). The Ballenger Creek CDP includes the small residential areas of Frederick Southeast (see below). With buildout of approved pipeline dwellings and the anticipated 10,000 dwellings allocated in the SFCP, Ballenger Creek and Frederick Southeast have a combined build-out projected population of approximately 52,876.

¹ Peak capacity based upon largest pipe size at lowest slope or design HGL for pressure sewers

² Contains pressure sewer and gravity sewer

Frederick Southeast

This community growth area includes lands bounded by I-270, I-70, and the Monocacy River. The primary development area is referred to as the MD-85/355 corridor, which includes the area bounded by I-270, the Larfarge quarry, and I-70. This corridor includes approximately 5.2 million square feet of existing building area comprised of commercial/retail, office/industrial, motels, and auto related uses. The MD-85/355 corridor is also targeted as a primary redevelopment area. Frederick County hopes to incrementally redevelop the area between I-270 and MD-355 into a more urban mixed-use environment with up to 10,000 new residential dwellings along with new and redeveloped commercial and employment uses. It is anticipated 6,000 of these dwellings will be located in the Frederick Southeast growth area. The South Frederick Corridors Plan is anticipated to be adopted in 2024. Development and adoption of implementation tools such as a form-based code are expected at the end of 2024.

Urbana/I-270 Employment Corridor

The Urbana community growth area includes the Villages of Urbana/Urbana Highlands PUD, the Urbana Town Center MXD, the Urbana Office/Research Center MXD and the I-270 Employment Corridor. In 2017 proposed employment uses in the Urbana Town Center MXD and the Urbana Office/Research Center MXD were replaced with residential uses. Frederick County estimates a January 1, 2024, population of 15,458. As of December 2023, there were 255 approved residential units in the pipeline. There is no vacant residentially-zoned land. Almost 76 acres of MXD (mixed-use development) remain to be built. None of these MXD projects include residential uses at this time. An additional approximately 580 acres of land is unbuilt but zoned for commercial or industrial use (Limited Industrial, General Commercial Village Center, Office/Research/Industrial). However, some of this land is undevelopable due to floodplains or public water/sewer lines are not nearby. Frederick County anticipates conducting a small area plan for the Urbana and I-270 growth corridor in 2025/2026 to develop an updated vision for the Urban Growth Area.

Adamstown/Eastalco

Adamstown was originally planned for independent future service WWTPs. One industry (Trans Tech) in Adamstown currently has a multi-use WWTP which discharges to Tuscarora Creek South. Trans Tech will be shifting from its multi-use system to the community system once the County constructs a new sewer line through the older part of Adamstown. The existing subdivisions, Green Hill Manor and Adamstown Commons as well as the proposed Carroll Manor PUD, are pumped to the Ballenger-McKinney WWTP. The older part of the community of Adamstown is planned to be served at that WWTP in the future. Frederick County estimates the January 1, 2024, population at 2,348. As of December 2023, Adamstown had 39 pipeline dwellings (Carroll Manor PUD) which could result in an additional 106 residents. There is no additional undeveloped residentially zoned land in Adamstown. However, there is approximately 5 acres of Village Center (VC) zoned land which allows for mixed residential and commercial uses. Plan build-out of the pipeline dwellings and VC-zoned land would result in 80 Equivalent Dwelling Units (EDUs) of needed sewer capacity.

North of the Adamstown growth area is the Eastalco growth area, the former site of the Eastalco aluminum plant. This area is currently proposed for data center campus development. As part of the data center development, a 1 MGD interim sewage pumping station (SPS) is under construction. This interim SPS will ultimately be replaced by a 5 MGD SPS which is still to be designed. Some construction activities were underway in 2023 but construction was paused for the developer to work with MDE on approval of an environmental management plan.

Buckeystown

The Buckeystown community is mostly served by individual septic systems. Several of these systems are located in the 100-year floodplain. However, the Buckingham Hills subdivision, Buckingham's Choice retirement/assisted living facility, and Saint John's Catholic Prep school are connected to the public sewer system and served by Ballenger-McKinney. As of December 2023, there were no residential units in the pipeline. Frederick County estimates the January 1, 2024, population at 1,072. There are approximately 71 acres of vacant land with residential zoning or a residential designation on the Comprehensive Plan Map; and just under 1 acre is zoned Village Center which allows for a mix of residential and commercial uses. At build-out, there is a potential for approximately 202 dwellings and 546 additional residents.

Existing Facilities

The existing Ballenger-McKinney WWTP is a 15.0 MGD ENR treatment facility. Although a majority of flow enters the plant by gravity, the sewage collection system tributary to the Ballenger-McKinney WWTP includes 7 sewage pump stations. The main interceptors for the collection system were installed in 1971 and are 10 inches to 36 inches RCP.

Existing & Future Demand

Assuming a 50% weighted capacity adjustment factor for all commercial/industrial accounts, the current demand is approximately 36% (2.643 MGD) Commercial/Industrial and 64% (4.697 MGD) Residential. The average per capita flow per day (gpcd), when the total flow is divided by the population, is 78 gpd.

Lake Linganore/Spring Ridge/Bartonsville

This service area is comprised of three separate community growth areas as designated in the County Comprehensive Plan. The Spring Ridge/Bartonsville growth area includes the Spring Ridge PUD and the Bartonsville area south of MD-144. This growth area also includes some surrounding low density residential areas. The Linganore growth area includes the Eaglehead/Linganore PUD, the Greenview PUD and other low-density areas along Old National Pike. The third growth area is Holly Hills, which includes the golf course and surrounding residential developments between Ijamsville Road and Mussetter Road.

Existing Facilities

The Spring Ridge WWTP and the Lake Linganore WWTP have been decommissioned and the flow diverted to the Ballenger-McKinney WWTP. The collection system utilizes five pumping stations. The Boyers Mill Road pumping station, upgraded in 2009, serves the Pinehurst, Nightingale, Westwinds and Lake Anita Louise parts of the Linganore PUD. The Summerfield pumping station, built in 1990, serves the southern portion of the Summerfield section. Three pumping stations serve Westwinds and a future pool. The replacement/expansion of Bens Branch Sewage Pumping Station was completed in 2009. Bens Branch also receives flow from the Libertytown service area. The two remaining on-site pump stations were built in 1991 and 1992.

The Linganore Creek Interceptor, located along Linganore Creek, transports wastewater from the Spring Ridge and Lake Linganore areas to the Monocacy Interceptor for delivery to the Ballenger-McKinney WWTP. This interceptor receives flows from two existing branch interceptors along Fouche' and Long Branches.

The remaining service area in Bartonsville, not drained by gravity to the Linganore Creek Interceptor, is collected for discharge directly to the Monocacy Interceptor. The original conveyance system installed in the early 1970's consisted of clay pipe. Recently constructed sections are PVC sewer lines. The steep terrain

has resulted in the presence of pipelines with very steep (10-30%) slopes. Several siphons (depressed sewers) can also be found in this system.

Existing and Future Demand

The existing lines through the Spring Ridge PUD to the Linganore Interceptor can accommodate future flows from the Bartonsville area south of MD-144, which flow toward Linganore Creek. One 0.5 MGD sewage pumping station is in the design phase for the Westridge PUD. A sewage pumping station is proposed for the Gordon Mill PUD and will be designed and constructed in the near future.

Frederick County estimates the January 1, 2024, population of these three areas at 25,112. The three community growth areas in this service area have the potential for an additional 4,232 dwellings that are approved but not built as of December 2023 and another potential for 521 dwellings in vacant land. The estimated population of these communities at complete build out is approximately 37,900.

Fort Detrick

Fort Detrick, located within the Frederick City limits, is an U.S. Army Installation Management Command (IMCOM) facility. The U.S. Army Garrison, Fort Detrick, provides sustainable base operations support, quality of life programs, and environmental stewardship to facilitate the sustainment of vital national interests. Fort Detrick supports five cabinet-level agencies: The Department of Defense, Department of Veterans Affairs, department of Agriculture, Department of Homeland Security and Department of Health and Human Services. Within the Department of Defense, Fort Detrick supports elements of all four military services. Major Department of the Army mission partners include the U.S. Army Medical Research and Materiel Command and 21st Signal Brigade. The primary missions at Fort Detrick are biomedical research and development, medical logistics and materiel management and global DoD telecommunications.

Fort Detrick-Frederick consists of four separate parcels of land designated as Area A, Area B and two parcels that make up Area C. Fort Detrick-Frederick encompasses approximately 1,212 acres, including 69 acres in Area A owned and operated by Frederick National Laboratory for Cancer Research (FNLCR).

Existing Facilities

Fort Detrick owns and operates its own Wastewater Treatment Plan (WWTP) and sanitary wastewater collection system. All sanitary waste generated at the installation is treated at the Fort Detrick WWTP, with discharge to the Monocacy River. The current population served is approximately 430 on-site residents and 7,900 employees.

The Ft. Detrick WWTP was upgraded in 2011 with enhanced nutrient removal (ENR) technologies to reduce nutrients entering the Monocacy River and ultimately the Chesapeake Bay. The Fort Detrick Discharge Permit (State Discharge Permit No. 18-DP-2527) requires ENR treated effluent limitations of 4.0 mg/L of total nitrogen (annual loading rate of 24,364 lbs.) and 0.3 mg/L of total phosphorous (annual loading rate of 1,827 lbs.) beginning July 1, 2011. The Ft. Detrick WWTP is permitted to discharge a maximum 2.0 million gallons a day of treated sanitary sewage to the Monocacy River.

The facility uses mechanical grit removal and screening systems, a flow handling structure which operates as a pump station, an oxidation ditch, secondary anoxic basins, secondary clarifiers, a flocculation basin, filtration units, ultraviolet disinfection, sludge digesters, and sewage sludge dewatering equipment. The administrative and laboratory building has been certified in for Leadership in Energy and Environmental Design (LEED) silver.

Planned Improvements

Planned improvements to the Fort Detrick WWTP and collection system include: repairs to deteriorating collection and conveyance piping; upgrades to force main piping from the installation to the WWTP; and upgrades and enhancements to the WWTP Supervisory Control and Data Acquisition (SCADA) system.

Table 4-7: Fort Detrick Wastewater Treatment

	CY 2020	CY 2021	CY 2022	CY 2022
Daily Average (MGD)	0.850	0.695	0.765	0.810
Annual Total (gallons)	310,899,000	253,547,000	275,907,000	195,966,000

Table 4-8: Fort Detrick Wastewater Treatment

Treatment Facility	System Design Treatment Capacity (GPD)	Current Treatment Demand (GPD)
Ft. Detrick WWTP Permit No. 18-DP-2527 Monocacy River Discharge	2.0 MGD	0.810 MGD (2023 average)

New Market/Monrovia Service Area

The New Market/Monrovia service area is comprised of two community growth areas, the Town of New Market Municipal Growth Area and the Monrovia Unincorporated Growth Area. This service area is expected to see industrial and commercial development in addition to residential development.

Existing Facilities

The Bush Creek Interceptor is now completed, with its terminus at New Market. It conveys flows from the New Market and Monrovia Community Growth Areas to the Ballenger-McKinney WWTP. The New Market and Monrovia WWTPs were taken off-line in 2015 with flows diverted to the Bush Creek Interceptor with treatment at the Ballenger-McKinney WWTP.

There are two pumping stations serving the New Market system. After the Monrovia WWTP was taken off-line, wastewater flows by gravity from the plant to the Bush Creek interceptor.

Existing and Future Demand

The New Market community growth area includes the Town of New Market and surrounding county developments including New Market West, Woodspring, and the Meadows. The Town's 2022 population was estimated at 1,614 (MDP, 2023). As of the December 2023, there were 1,555 dwellings in the pipeline. Through 2035, the Town of New Market anticipates a total 1.37 million square feet of office/commercial/industrial development (resulting in approximately 700 EDUs) and through 2050 anticipates approximately 1,738 additional dwelling units. The total projected population with build out of the current growth area is approximately 4,700. A sewage pumping station is proposed as part of the Calumet development within the Town of New Market but still needs to be designed.

The Monrovia growth area is currently comprised of the Landsdale PUD which is approved for 1,100 dwellings. The Landsdale development is nearing completion with 27 remaining unbuilt dwellings as of December 2023.

Libertytown Service Area

The Libertytown Service Area is approximately 0.5 sq. mi. in size encompassing the unincorporated community of Libertytown which is designated as a community growth area in the County's Comprehensive Plan. Located at the intersection of MD-26, and MD-75, Frederick County estimates the community has a population of 988 as of January 1, 2024).

Existing Facilities

The Libertytown WWTP was built by the County in 1986 with a capacity of 45,000 gpd. It was built to alleviate a situation of failing septic systems and old septic systems on small lots. Completion of a pump station and force main in 2008 effectively “replaced” the WWTP and allows for conveyance of the wastewater flows for treatment at the Ballenger-McKinney WWTP via a denied access force main along MD-75 connecting into the Linganore collection system.

Existing and Future Demands

Libertytown's estimated population on January 1, 2024, was 988 (Frederick County estimate). As of December 2023, there are 443 dwellings in the pipeline. Vacant residentially zoned land could result in approximately 100 additional dwellings. There is also approximately 8.5 acres of Village Center or General Commercial land. A potential projected population at build out would be approximately 2,450. However, the ultimate residential and commercial build out will be greatly affected by the amount of groundwater available in the local watershed.

Planned Improvements

The WWTP was previously operating at its design capacity. To provide additional capacity, the County has diverted raw wastewater from the Libertytown area, via a pump station and 10-inch force main to the County's Lake Linganore collection system, which is tributary to the County's Ballenger-McKinney WWTP. This diversion eliminates the WWTP's outfall into Town Branch, a tributary of Linganore Creek. This diversion also allowed connection of the Linganore High School which had a failing septic system which was being pumped out daily. With this exception, the planned pumped conveyance system will be Denied Access between the two growth areas. An upgrade to the Libertytown SPS to increase its capacity to 1.18 MGD is currently under construction.

Fountaindale

The 2010 County Comprehensive Plan designated Fountaindale as its own community growth area separate from the adjoining Town of Middletown. Fountaindale is located on the western slope of the Catoctin Mountain just east of Middletown. It is comprised of several residential subdivisions that were developed in the 1970's. There is also a cluster of commercial uses at the intersection of Hollow Road and US 40-A. Including adjacent development of Braddock Heights, its January 1, 2024 population is estimated at 3,132, though not all residents are serviced by the Fountaindale system.

Existing Facilities

The County acquired Fountaindale Services, a private water and wastewater utility, in 1983. From 1983 to 1995 the County (DWSU) made numerous small improvements to the water and wastewater infrastructure. The Fountaindale WWTP is a 250,000-gallon per day (gpd) Sequencing Batch Reactor (SBR) that was reconstructed in 2008. It is owned and operated by Frederick County as a separate wastewater system, with no components combined with stormwater conveyance, treatment, or discharge.

One pumping station serves the Fountaindale collection system, built around 1968. The existing conveyance system is composed of 8 and 12-inch clay and PVC pipe installed in the 1970's. The conveyance system renovation was completed in 2006 and focused mostly on manholes to reduce I&I.

Existing and Future Demand

The Fountaindale wastewater treatment plant has current capacity of 250,000 gallons per day (gpd) and a permitted capacity of 200,000 gpd. Fountaindale has limited zoning potential for additional dwellings and has approximately 7.5 acres of partially developed commercial land.

Planned Improvements

Braddock Heights is an older community located along Ridge Road, east of Fountaindale. The southern section has been experiencing septic problems for some years. The houses affected number around 70. The Fountaindale service area is located less than 1,000 feet from Braddock Heights. It is recommended that the septic problem area be served by the Fountaindale WWTP. A small pump station would be required to serve the eastern half of Braddock Heights.

Jefferson Service Area

Jefferson, which is unincorporated, is designated as a community growth area. Existing development includes the subdivisions of Briercrest Heights, Copperfield, Woodbourne Manor and Cambridge Farms as well as several commercial uses along MD-180 and Lander Road.

Existing Facilities

The first Jefferson WWTP and collection system was built in 1968 and had a capacity of 0.075 MGD. Following several small WWTP expansion projects, the treatment plant received a comprehensive upgrade and expansion to its present capacity of 0.300 MGD in 1995, utilizing Intermittent Cycle Extended Aeration (ICEAS). The current plant is owned and operated by Frederick County as a separate wastewater system, with no system components combined with stormwater conveyance, treatment, or discharge.

The Jefferson WWTP collection system includes three pumping stations serving (i) portions of the Copperfield subdivision (ii) the Briercrest SPS which was built in 1968 serves a portion of the Briercrest subdivision and (iii) the Cambridge Farms pumping station, which was built in 1993.

The collection system tributary to the Jefferson WWTP is comprised of 8-inch through 12-inch clay and PVC pipe. The WWTP outfall conveys treated effluent to Catoctin Creek.

Existing and Future Demand

Frederick County estimates the population of the service area as of January 1, 2024 at 2,940. There were 52 dwellings in the pipeline as of December 2023. There is the potential for an additional 290 dwellings on vacant residentially zoned land and there are 14.5 acres of undeveloped Village Center land which

allows for residential and commercial uses. At build out, the total population is projected to be approximately 3,900. The plant receives an average daily flow of 137,000 gpd, which leaves an excess capacity of 163,000 gpd. However, the availability of groundwater may limit the ultimate growth in the service area.

Planned Improvements

The Lander Road and Meadow Drive pumping stations are planned to be converted to submersible pumps.

Point of Rocks Service Area

Point of Rocks is an unincorporated community located in southern Frederick County and is bounded by the Potomac River to the south and the Catoctin Mountains to the west. It is designated as a community growth area with low density residential, commercial and industrial uses.

Existing Facilities

The Point of Rocks wastewater treatment system was constructed in 1980 and 1981. It is owned and operated by Frederick County DWSU as a separate wastewater system, with no system components combined with stormwater conveyance, treatment, or discharge. The Point of Rocks WWTP is a 230,000 gpd extended aeration plant discharging into the Potomac River. It currently has no difficulties meeting permit requirements. The plant receives an average daily flow of 95,000 gpd.

All flow in the service area travels to the plant by gravity. The original 1981 collection system is composed of 8-inch and 10-inch DIP. Additions to the system are 8-inch ACP, PVC, or DIP. The average flow per capita equates to 50 gpcd.

Existing and Future Demand

Point of Rocks currently has an estimated January 1, 2024 of 1,886 and is essentially built out with the completion of the Canal Run development. It has vacant residential land potential for another 3 dwellings. There are approximately 23 acres of undeveloped commercial and industrial land within the growth area. The WWTP has an excess capacity of 135,500 gpd, which should be sufficient to handle the expected population and the commercial and industrial demand.

Planned Improvements

As of the County's 2024 Fiscal Year Capital Improvement Program (CIP), renovation of the Point of Rocks WWTP is scheduled for architecture and engineering in FY24 and construction in FY25. The renovation will replace old processing equipment and parts of the collection system. There is also a need to address infiltration and inflow in the system although there is no CIP project at this time.

Section 4: Municipal Community Systems

City of Brunswick/Knoxville

The Brunswick/Knoxville Service Area is served by the City of Brunswick. In addition to the municipality, the service area includes the community of Knoxville located approximately one mile west of Brunswick and the New Addition subdivision just west of the city, along the north side of Knoxville Rd. (MD-478). The Knoxville and New Addition communities were connected to the Brunswick system in 1991 to address failing septic systems.

Existing Facilities

The City of Brunswick constructed the current wastewater treatment plant in 1972, which was expanded in 1990. It is a separate wastewater system, with no components combined with stormwater conveyance, treatment or discharge. In 2008 the plant was further upgraded and expanded from 700,000 GPD to a design capacity of 1.4 MGD. This was the first WWTP in the County to be upgraded with the Enhanced Nutrient Removal (ENR) treatment system. Secondary treatment is provided using the contact stabilization method of activated sludge treatment followed by chlorination and CO₂. The WWTP discharges directly to the Potomac River 10.2 miles upstream from the County's New Design Road WTP intake and is 1,050 feet downstream from Brunswick's water treatment plant intake.

The collection system has 72,500 ft. of 8-inch, 10-inch, and 12-inch lines. The main pumping station, located along Potomac Street, has been upgraded with three variable speed (0-1600gpm) pumps, two of which are required for service and the third will function as backup. The system includes a lift station with a 400 gpm average capacity and 1,150 gpm peak flow capacity. A sewer pump station was constructed in 2003 to provide sewer service to the Galyn Manor subdivision (280 residential homes). The station is equipped with two Gorman-Rupp, two series mode, wastewater pumps. Each series system has a capacity of 300 gpm @ 162 ft. TDH. The condition of the lines is good as they were updated with the renovation of the WWTP to ENR. Inflow and infiltration is a priority maintenance effort each year to minimize stormwater and groundwater from entering the system. The City estimates that transmission lines are in a fair to good condition at this time.

For the Knoxville and New Addition areas, the County installed a low-pressure grinder pump system consisting of 1-1/2 inch to 4-inch PVC low-pressure mains in which discharge into the Brunswick collection system. The wastewater flow contributed via this low-pressure sewer system to the Brunswick WWTP is governed by the Joint Use Agreement between the Board of County Commissioners and Brunswick, dated August 22, 1990.

Existing and Future Demand

The City's estimated population as of 2022 was 8,211 (MDP, 2023). The average wastewater flow is approximately 0.55 MGD from 2,920 sewer connections. The New Addition and Knoxville areas currently have 125 residences/properties connected to the system. Under agreement with the County there is 100,000 gpd of treatment and conveyance capacity reserved for Knoxville/ New Addition and the Village of Rosemont. Rosemont does not have any sewer service at this time.

The Brunswick Crossing development, which was annexed in 2002, is approved for a total of 1,505 dwellings and as of July 2023 approximately 1,025 dwellings have been constructed/permitted. The total projected average daily wastewater flow from Brunswick Crossing is estimated to be 376,250 gpd based on 250 gpd/dwelling.

The city expects total demand to reach approximately 1.8 MGD by 2045. The City has contracted with consultants to do a complete analysis of the WWTP to bring the treatment capacity to 2.2-2.5 MGD by 2050.

Wastewater Upgrades (2022-2023)

- The SCADA PLC and its components were updated to the newest models.
- The SCADA CPU was updated and replaced with a new unit.
- The Galyn Manor PLC and its components were updated to the newest models.
- The Headworks gritter assembly was rebuilt.
- HACH RTC equipment will be installed to provide real time monitoring for Nitrates and Phosphorus.
- SBR blowers and VFD's are being replaced as they fail with newer more efficient models.

Planned Improvements

- Address approximately 12 existing septic systems within the City limits and to connect them to the public system.
- Continue to map and address inflow & infiltration issues to reduce stormwater entering the sewer system.
- The Belt press will be replaced with newer technology to increase the percent of solids in the sludge.
- The UV system will be replaced.
- Aerobic Digester and Press improvements.
- Replace Pneumatic Valves to electric.
- Add VFDs/Pressure Controller for plant water.

Town of Emmitsburg

This system is owned and operated by the Town of Emmitsburg, which is located in the northern part of the County along US 15. The system does provide service to properties currently outside the municipal limits in the Mountain View Rd. area west of Town.

Existing Facilities

The Emmitsburg Sewerage System, a separate system not combined with stormwater conveyance, treatment or discharge, serves a Town population of 2,921 (MDP Estimate 2023) plus 71 residences outside of town. It also serves the FEMA/NETC facility which is outside the municipal limits.

The Town owns and operates the 0.750 MGD wastewater treatment facility, built in 2015, which utilizes Class 5A ENR, Biolac Reactors, clarifiers, denitrification, and post aeration to achieve permit requirements. It discharges into Toms Creek that drains into the upper Monocacy River. Average flow to the facility for 2022 was 630,000 gpd with inflow/infiltration (I/I) amounts. The Town is actively pursuing a program to identify sources of I/I and to implement improvements to reduce the associated flow.

The collection system consists of 8-inch, 10-inch, and 12-inch and 15-inch lines. All sewage flows by gravity to a pumping station located along Creamery Road near Flat Run, which boosts the sewage to the treatment plant, which is located on the east side of US-15.

Existing and Future Demand

The Town's current population is 2,921 (MDP, 2023) and projects a 2050 population of 5,081 with a total of 2,000 households. This would equate to an increase in sewer demand of 75,000 gpd. Based on current figures, in 2030 the current system would have an excess capacity of 192,000 gpd.

Proposed Improvements

The existing treatment plant was brought on-line in July 2015. This plant did not increase capacity but will allow the Town to meet the annual average effluent nutrient goals of 3.0 mg/L of total nitrogen (TN) and 0.30 mg/L of total phosphorus (TP) as provided for in the Chesapeake Bay Restoration Act and ENR strategy. The nutrient load limits per year are:

- BOD5 May through September: 11,475 lbs.; remainder of year: 39,856 lbs.
- TSS, 68,525 lbs.
- Total Phosphorus, 685 lbs.
- Total Nitrogen 9,137 lbs.
- Continue a program to identify sources of I/I and to implement improvements to reduce the associated flows.

The Town is working on an upgrade to the Creamery Road pump station. The pump station is anticipated to be constructed and online by January 2025.

Mount St. Mary's University

Mount St. Mary's University is served by a private wastewater treatment plant located northeast of the junction of US 15 and College Lane and consisting of 2 trains of MBR reactors. The plant was constructed in 2015 with a design capacity of 160,000 gpd. Effluent from the plant is de-chlorinated prior to being discharged into St. Mary's Run, which flows into Toms Creek. Sludge is either applied on land or hauled for further treatment and disposal to another facility. Most sewage flows by gravity to the WWTP but there are also 3 lift stations to aid in getting the wastewater to the WWTP. The treatment plant receives an average daily flow of 60,000 gpd during the academic year. The adjacent Mountain Manor rehabilitation facility was granted a waiver by MDE to connect to the university system in 2008 due to their failing septic system. The Mountain Manor flow is forced to the WWTP by one of the 3 lift stations previously mentioned.

MDE considers the Mount St. Mary's University system as a community system because it serves more than one lot. The County recognizes it as a "legacy" community system but maps it as a Multi-Use system to reflect the private ownership and operation of the system.

Town of Middletown

Middletown is located in the Middletown Valley. The municipality centers on an established commercial district along US 40A, a full K-12 complement of schools, and a regional park surrounded by low-density residential uses. The Middletown wastewater system is owned and operated by the Town of Middletown.

Existing Facilities

The wastewater system consists of two treatment plants. The West Wastewater Treatment Plant (WWTP) was constructed in 1976 and has a design capacity of 250,000 gpd and discharges directly into Catoctin Creek. The system is a separate wastewater system, with no components combined with stormwater conveyance, treatment, or discharge. The East WWTP was constructed in 2000 with a design capacity of 350,000 gpd. and discharges into Hollow Creek, which is a tributary of Catoctin Creek. Summer discharges can be pumped to the irrigation pond at the Hollow Creek Golf course. The East WWTP has a permit capacity of 250,000 gpd. The East WWTP consists of a Biolac extended aeration/activated sludge aeration basin, grit removal, bar screen, Aquadisk filter, cascade post aeration and reed bed for sludge disposal. The addition of the East WWTP has substantially reduced flow to the West WWTP.

Approximately 1/3 of the Town flows by gravity directly to the West WWTP. From Broad Street east, however, the system flows to the Cone Branch pumping station located on Cone Branch between Old Middletown and Holter Roads, which lifts the sewage to a manhole at Holter Road and conveys sewage to either the East WWTP or the West WWTP. Another pump station, Brookridge South, conveys all sewage from the Brookridge South subdivision to the West WWTP. Both pumping stations have more than enough capacity to serve existing and future development. The West WWTP utilizes an aerated lagoon in its treatment.

The Cone Branch pumping station was built in 1955 and renovated in 2000. The Route 40-A pumping station was abandoned in 2001 with the construction of the Glenbrook subdivision. All sanitary sewage flows by gravity to the East WWTP. The Brookridge South pumping station was built in 1992. In 2005, the Foxfield pumping station was built to convey sewage into the central drainage basin which flows into the Cone Branch pumping station.

The original collection system was constructed in 1955 and is comprised of clay pipe. Expansions to the system were completed in the 1980's and 1990's and 2000's, utilizing PVC pipe. Approximately 5,600 ft. of 6 in. pressure sewer and 1,000 ft. of 4-inch force main also exists. Transmission lines are rated 'fair' by the Town.

An extensive Inflow and Infiltration (I & I) Study was performed in 1991/1993 which resulted in an I&I reduction program which significantly reduced extraneous flows. An I&I investigation/reduction program for flows into the East treatment plant is ongoing and continues on a yearly basis.

Existing and Future Demand

The Town's 2022 population is estimated at 5,239 (MDP, 2023). The Town has 1,691 existing sanitary services. Average daily flow in 2022 to the West WWTP was 0.191 MGD and to the East WWTP, flow was 0.247 MGD. The available capacity for both plants at its full design permitted capacity is 600,000 GPD. The current 2022 capacity management plan rates the collection system for an available 243 Equivalent Discharge Units (EDU's). If the East WWTP is increased by 100,000 GPD, capacity would increase by 404 EDUs. The Town's projected population for 2030 is 5,547. The Town's draft Comprehensive Plan, to be adopted in 2024, has identified a Future Growth Area. The population projections for the Town and the Future Growth Area for year 2040 have an associated increase in demand of 0.1545 MGD. This includes developed subdivisions in the Future Growth Area, which are candidates for annexation, particularly if the existing private water and/or septic systems fail.

Planned Improvements

- To improve the performance of the West WWTP, sludge was removed from the existing lagoon in 2012. The existing lagoon was constructed out of the floodplain, but is surrounded by floodplain. While work may be done within the confines of the existing lagoons, it will be necessary to perform hydrologic and hydraulic studies of the impact on the floodplain as a result of any future earthwork activity beyond the existing lagoons.
- The Town has identified additional I&I work on a five (5) year cycle in the Capital Improvements Program. The Town in 2022 completed an I & I project replacing 1500 LF of 10" and 12" sewer interceptor.
- The East WWTP was designed to be expanded to 700,000 gpd, which would also require construction of a new aeration tank, reed beds, and clarifier.
- The Town has submitted an application to increase the permitted capacity of the East WWTP to 350,000 gpd (a 100,000 gpd increase).
- The Town has received a BRF grant to begin the upgrade process to ENR. Preliminary Engineering indicates that the existing West plant Lagoon will be decommissioned, a pump station constructed in its place and flow pumped to an upgraded ENR East WWTP with a capacity of 700,000 gpd. The expected completion date for the upgrade is 2026.

Town of Mount Airy

The Town of Mount Airy owns and operates the system, which serves both the Frederick and Carroll County sides of the town. Information in this section has been taken from the 2023 Carroll County Water & Sewerage Plan. Refer to the Carroll County Water & Sewerage Plan for more information at https://www.carrollcountymd.gov/media/4xlb4isc/2023-triennial-update_mde_approved.pdf.

Existing Facilities

The WWTP has a design and permit capacity of 1.2 mgd and includes 11 pumping stations (4 in Frederick County), interceptor and collection lines ranging from 6- to 15-inches in diameter. The WWTP is located in Carroll County one mile east of MD-27 and south of Watersville Road and discharges into the South Branch of the Patapsco River, through Discharge Permit 14-DP-0641 and NPDES Permit MD G679535. Permit 23-DP-0641 has been received and is in the permitting process.

Mount Airy is making improvements each year to reduce and correct the I&I issue and allow capacity to be used elsewhere in the sewer service area. In 2021 the Town surveyed the wastewater collection system to identify key areas of rain and groundwater penetrating the collection system. In 2022 the Town had 3.5 miles of Cured-in-Place-Pipe (CIPP) liners installed to seal those I&I areas. The Town upgraded the existing treatment plant to meet Enhance Nutrient Removal (ENR) standards of 3.0 mg/l Total Nitrogen and 0.30 mg/l for total Phosphorus in 2011.

Existing and Future Demand

Average treatment flow from 2021-2022 was 732,000, including a signification amount of I&I. According to Carroll County, the total future wastewater demand assumes that lands within the Town's Growth Boundary builds-out according to the adopted land use plan and, if that occurs, the total future wastewater demand for the Mount Airy WWTP, depending on proposed development uses and quantities, will more than likely exceed the existing Wastewater Treatment Plant capacity and 15-inch gravity sewer main.

A capacity expansion evaluation was completed for the Mount Airy WWTP in September 2022. It evaluated three “process intensifying” technologies which allow increased treatment performance within a given reactor volume. The evaluation included both a 25% increase and 50% increase in capacity, to 1.5 MGD and 1.8 MGD respectively. It was found that only the MBR or IFAS systems could expand the plant capacity to 1.8 MGD whereas BioMag™ was limited to 1.5 MGD. The study also concluded that expanding to 1.8 MGD has a much greater cost effectiveness than the 1.5 MGD and is estimated between \$14M and \$15M total capital cost and \$13M - \$15M 20-year NPV (Net Present Value) O & M cost.

Planned Improvements

Per Table 20F in the Carroll County Water and Sewerage Plan, Mount Airy will continue to monitor and make improvements to reduce inflow and infiltration and implement NPDES permit requirements at the wastewater treatment plant to reduce discharge temperature.

Town of Myersville

Myersville is located in the western part of Frederick County along MD-17 north of I-70. The areas immediately adjacent to the Town’s borders are primarily shown for future low density residential uses on the Town’s Master Plan. The Myersville wastewater collection and treatment facilities are owned by the Town and operated by the Maryland Environmental Service.

Existing Facilities

The Myersville wastewater treatment plant has a design capacity of 300,000 gallons per day (gpd) and discharges into Grindstone Run, which is a tributary of Catoctin Creek. The plant uses a Sequence Batch Reactor (SBR) and experienced a three-year average (2022-2024) daily flow of 132,000 gpd. The wastewater system is separate from the stormwater management system. The condition of the treatment plant is very adequate for the current NPDES permit requirements. The most recent upgrade to the system occurred in 1999. The transmission lines along Main Street are newly installed PVC lines, constructed as part of the Main Street renovation project. The Town replaced nearly one mile of old clay sewer lines on the south end of Town in 2015, eliminating a large portion of the infiltration and intrusion into the system. The Town has experienced a steady decline in the three-year rolling average since this time. In 2022, the Town installed roughly 1,500 LF of sewer line along Canada Hill Road to serve 24 properties previously served by on-site septic systems.

Existing and Future Demand

Myersville has a 2022 population of 1,854 (MDP, 2023) and is expected to grow to 2,466 by the year 2030. The wastewater treatment plant has an excess capacity and therefore can meet the 20-year demand needs of the area. The Town forecasts that the projected future wastewater flow will increase 94,750 gpd based upon a projected increase in water demand of 94,750. The Town has recently documented a total sewer allocation of 167,750 GPD, which incorporates the existing average flows, plus future needs for existing residential and commercial lots of record, resulting in a remaining sewage treatment capacity in 2042 of 37,750 GPD.

Planned Improvements

The treatment plant experiences high levels of inflow/infiltration (I&I), although some corrections have already been made. The Town intends to install 880 LF of gravity sewer main along Easterday Road to

connect three (3) existing water customers located between U.S. 40 and Hunters Knoll to the sewerage collection system.

Town of Thurmont

The Town of Thurmont owns and operates the sewerage system, which primarily serves the municipality. The Town's estimated population in 2022 was 6,588 (MDP, 2023). Service outside the municipal boundary is also provided to Catocin High School, Catocin Mountain Park Visitors Center, Camp Airy, and Camp Misty Mount and also to Cunningham Falls State Park.

Existing Facilities

The Thurmont WWTP has a design capacity of 1 MGD, which discharges into Hunting Creek. The plant was upgraded for biological nutrient removal (BNR) in 1996 and further upgraded to Enhanced Nutrient Removal (ENR) in 2012. The average daily flows to the plant in years 2018 through 2020 were 800,000 gpd. The system is a separate wastewater system, with no components combined with the stormwater system.

The existing collection system consists of approximately 182,900 ft. of 6-in. through 24-in. pipe. Four small pumping stations exist: (1) Roddy Road, (2) Mantle Court and (3) Golf Course Lane and (4) McDonald's. Roddy Road Pumping Station receives flow from Old Barn Court, Eyler Road, Terben Court, Apples Church Road and Roddy Road. Sewage is pumped via a 6-inch force main approximately 1,000 feet to a manhole located along Apples Church Road. Mantle Court Pumping Station receives flow from Bennett Drive, Tammy Court and Mantle Court. Sewage is pumped via a 2-inch force main approximately 1,000 feet to a manhole located along Bennett Drive. Golf Course Lane Pump Station receives flow from Sylvia Circle and Golf Course Lane. Sewage is pumped via a 6-inch force main approximately 1,500 feet to a manhole located on Moser Road. The remaining drainage area of the town conveys flow to the WWTP via 6, 8, 10, 15, 20 and 24-inch gravity sewer mains and interceptors. Approximately 90% of the sewage collected flows by gravity to the WWTP. In addition to this system, a 6-inch force main extends west along Hunting Creek to Cunningham Falls State Park. This line was rehabbed in 2024 by the State of Maryland.

Existing and Future Demand

The 2022 population of the Town of Thurmont was 6,588 (MDP, 2023). Currently the Town only has eight (8) dwellings that have development approvals but are unbuilt, i.e. in the pipeline. There is remaining capacity for about 800 edu's, or about 290 edu's if the projects currently in plan review are approved. The Town's 2022 Master Plan envisions a growth of 1,080 households by 2040. These additional dwellings would be accommodated on vacant land within the current Town boundary and on land within its growth boundary that would be considered for annexation. This would lead to an increase in wastewater (and water) demand by 270,000 gpd. In 2040, this would exceed the current permitted capacity of the wastewater treatment plant by 70,000 gpd. The population increase from the additional 1,080 dwellings would be approximately 5,392.

Planned Improvements

- Expansion of the WWTP to increase the treatment capacity from 1.0 MGD to 1.33 MGD is several years away, according to the Town and dependent upon finalizing a funding program.
- Address the 11 existing septic systems within the Town limits to connect to the public system.

- Thurmont Sewer System I & I Reduction Projects:
 - Phase I –complete
 - Phase II –complete
 - Phase III – complete
 - Phase IV – complete
 - Phase V – flow equalization tank is designed but unfunded; planned to begin in 2027

Town of Woodsboro

The Town of Woodsboro owns and maintains its sewerage system. The Town includes a small industrial park, an elementary school and low intensity commercial uses along Main Street. The service area includes properties designated for industrial growth to the west and south of the Town, and residential northeast of the Town. The Town's policy is not to extend water and sewer service to areas outside the corporate limits.

Existing Facilities

The initial sewerage system for Woodsboro was constructed in 1980 and was upgraded in 2004 with a design capacity of 250,000 gallons per day. The WWTP discharges into Israel Creek, a tributary of the Monocacy River. The plant is a Sequencing Batch Reactor (SBR) system and consists of comminutors, aeration chamber, secondary clarifier, chlorination chamber, dechlorination chamber, re-aeration chamber, aerobic digester, and sludge dewatering beds.

The collection system consists of approximately 20,000 linear ft. of 8-inch and 10-inch PVC pipe and 400 ft. of 4-inch iron force main and a package lift station.

Existing & Future Demand

Woodsboro has a 2023 estimated population of 1,156 (MDP, 2023). The projected population of Woodsboro at build-out of areas designated for residential development is approximately 1,600 people. The system does not serve any properties outside of the current municipal limits.

Planned Improvements

- Perform recommended maintenance of pumps and motors to improve and maintain reliable performance.
- Evaluate the need to replace and upgrade control panel components with current technology to maintain optimal plant performance and reliability.
- Continue to monitor and address Inflow and Infiltration issues to reduce stormwater runoff entering the system.

Section 5: Sub-Regional Community Systems

There are six sub-regional community systems, which may also be referred to as small systems since they may only serve an individual subdivision or several subdivisions or other uses. Often built in response to failing septic systems, with few exceptions these community systems are not planned for expansion nor are they located so as to be connected to a regional system in the foreseeable future. All of the systems described below are public systems owned and maintained by Frederick County DWSU with the exception of the Highfield/Cascade system, which is operated by Washington County.

Highfield/Cascade System

The Washington County Sanitary District entered into an agreement with Frederick County to provide sewer service to those Frederick County properties now being served with community water by the Washington County Sanitary District. Approximately 54 properties are served by a combination Small Diameter Gravity Sewer (SDGS) system and a Septic Tank Effluent Pump (STEP) pressure sewer system and two (2) pumping stations.

Effluent is treated at the C. William Winebrenner treatment plant (formerly Ft. Ritchie WWTP). The Winebrenner WWTP utilizes primary clarifiers, rotating biological contactors (RBCs) for secondary biological treatment, secondary clarifiers, and chlorination for disinfection and sulfur dioxide for disinfection. Sludge generated on-site can either be dried on site in the sand drying beds or transported and processed at the Conococheague WWTP. Effluent is discharged into Falls Creek. Average daily flow in 2020 is 0.115 MGD (according to Tables 13-5 and 13-7 in the draft Washington County 2040 Comprehensive Plan), serving approximately 1,200 people in both Washington County and Frederick County.

The Washington County Department of Water Quality has upgraded the Winebrenner WWTP with Enhanced Nutrient Removal, with design capacity now at 0.600 MGD, which is anticipated to serve an estimated 2040 flow of 0.204 under a high growth scenario (Table 13-5, draft Washington County 2040 Comprehensive Plan).

White Rock System

White Rock is a small residential subdivision, of approximately 103 lots, located on Bethel Road northwest of Frederick City. It is zoned R-3 Low Density Residential. The initial wastewater treatment system was constructed in 1977.

Existing Facilities

A replacement WWTP was completed in 2017 with a 25,000 GPD design capacity with a permit limit of 50,000 gpd. The WWTP utilizes an equalization basin, extended aeration, and ultra-violet disinfection. . It is a separate wastewater system, with no system components combined with stormwater conveyance, treatment, or discharge. The plant discharges into a tributary of Tuscarora Creek. The plant is receiving an average flow of 10,000 gpd. It currently utilizes activated sludge for its treatment process. The excess permitted discharge capacity is 40,000 gpd.

The existing collection system is composed of PVC pipe that was installed in the late 1970's. The system appears to be in good condition with an average per capita flow of 37 gallons per capita per day (gpcd). There is indication of some infiltration or inflow, but the County has performed repairs and manhole lining projects to help reduce I/I.

Existing & Future Demand

The current population of the White Rock service area is 265.

Planned Improvements

None at this time.

Crestview Estates System

Crestview is a small residential subdivision located along Bethel Rd. just south of the Mountindale community. Many of the residences located within the area are not connected to the public sewer system and some are experiencing septic system problems.

Existing Facilities

The current WWTP, which replaced an older plant, was constructed in 1994 and has a design capacity of 36,000 gpd with average flows of 18,000 gpd. It is a separate wastewater system, with no system components combined with stormwater conveyance, treatment, or discharge. The plant is operating under the existing permit allowing a discharge of 36,000 gpd. The treatment process is an activated sludge followed by UV disinfection. The plant discharges into Muddy Creek, which is a tributary of the Monocacy River.

The existing conveyance system is composed of 8-inch clay and PVC pipe installed in the 1970's. The average flow equates to a per capita flow of 57 gallons per capita per day (gpcd). This is a large reduction from the number reported in the 2021 Water and Sewerage Plan (138 gpcd) due to successful efforts to reduce the high volume of infiltration and inflow. DWSU recently completed the capital improvement project which lined the majority of the sewer system piping and a small number of sewer manholes.

Existing & Future Demand

There are currently about 120 lots/dwellings being served by the system. There are approximately 54 additional lots/dwellings that are classified S-4, which assuming 250 gallons/day/dwelling would require approximately 13,500 gpd of capacity. The replacement treatment plant is being built to facilitate the permitted capacity of the system and improve hydraulic and operational performance.

The service area includes the surrounding houses, an unbuilt section of Crestview Estates, and some larger parcels. This is a septic problem area, and fifty-four (54) taps have been reserved by the County for existing lots.

Planned Improvements

- Replacement of WWTP

Mill Bottom System

The County's Mill Bottom system is located in the Green Valley area just south of Mount Airy. This system serves several subdivisions including Manorwood, Samhill Estates, and Harvest Ridge. It also serves the Rattlewood Golf Course clubhouse located in Montgomery County. While this service area is designated as Low-Density Residential, it is not considered as a community growth area. Surrounding development is designated as Rural Residential reflecting their use of individual well/septic systems.

Existing Facilities

The WWTP utilizes Intermittent Cycle Extended Aeration (ICEAS), and discharges into Bush Creek, a tributary of the Monocacy River. It is a separate wastewater system, with no system components combined with stormwater conveyance, treatment, or discharge. The WWTP has a permitted/design capacity of 100,000 GPD and an average daily flow of 66,000 GPD.

Existing and Future Demand

The Harvest Ridge subdivision has been built out. Frederick County Public Schools owns a parcel within this subdivision (at Autumn Crest Drive and Lomar Drive) for a future elementary school. The school site is currently classified as S-3/Dev. The service area also includes several residences on the north side of I-70 along Old Mill Bottom Road that is a septic problem area that could be served by this system. These residences could also be considered for service by the Town of Mount Airy system. Mill Bottom is currently having process improvements made to its system with no planned expansion of its discharge permit.

Limited groundwater availability may impact expansion of this facility.

Pleasant Branch System

The Pleasant Branch service area is located in the Green Valley area along Windsor Road and MD-75. The system serves the Windsor Knolls and the Preserve at Windsor Knolls (Horan) subdivisions, Windsor Knolls Middle School, and the Friends Meeting School. This system was approved under a previous policy allowing sub-regional systems.

Existing Facilities

The Pleasant Branch WWTP has a design capacity of 100,000 gpd with an average flow of 55,000 gpd and discharges to Pleasant Branch, a tributary of Bennett Creek. The Pleasant Branch WWTP is a separate wastewater system, with no system components combined with stormwater conveyance, treatment, or discharge. It uses an Intermittent Cycle Extended Aeration System (ICEAS) incorporating ammonia removal and UV disinfection. The plant is expandable to 250,000 gpd. All piping is PVC. There are no pumping stations.

Existing and Future Demand

Both the Knolls of Windsor and Preserve at Windsor Knolls subdivisions are built out. When this sub-regional system was first approved, it was anticipated to also serve the adjoining Loch Haven subdivision, which was developed in the 1970's with mostly half-acre lots on well and septic. The Loch Haven subdivision has 173 existing lots/dwellings. There may also be potential expansion of the Friends Meeting School. The Windsor Knolls Middle School is built to its maximum capacity of 924 students.

Lewistown System

The Lewistown community is located on the east side of US 15 and is generally bounded by Angleberger Road, Hessong Bridge Road, Powell Road, and US 15. It is primarily residential with several commercial and institutional uses including Beckley's RV Center, Lewistown Elementary School, and the Lewistown Volunteer Fire Company.

Lewistown has long experienced septic issues due to the small lot sizes, typically below the one (1) acre minimum now required for septic systems (onsite sewage disposal systems [OSDS]). The Frederick County Health Department (FCHD) conducted a sanitary survey in 1994, which concluded that there was a need for a public sewer system. However, due to a lack of public support, among other things, such a project did not move forward. Another survey was conducted in 2013, which reached the same conclusion. This study identified a core area of need along Hessong Bridge Road between Angleberger Road to the north and Powell Road to the south ("Core Area of Need")

Existing Facilities

The existing Lewistown Multi-Use WWTP currently serves Lewistown Elementary School and the Lewistown Fire Company and was constructed in the 1960's. The existing WWTP is owned and maintained by the Frederick County Division of Utilities and Solid Waste Management (DWSU). The facility is comprised of multiple septic tanks that provide primary treatment followed by an intermediate pumping station, which discharges to a sand filter (mound) that provides secondary treatment. Effluent from the sand filter tank is disinfected using an ultraviolet (UV) treatment unit and then discharged to an outfall to Fishing Creek. The facility is governed by NPDES Permit MD 0022900 (State Permit No. 08-DP-0730) allowing an annual average flow of 22,000 gallons per day (gpd). The flows can be quite intermittent given the school's component of the flow (particularly during the summer when school is not in session) and greatly variable during wet weather as a result of the exposed sand filter. The last improvement to the wastewater treatment facilities occurred circa 1976, while other facility improvements have been on an as-needed basis through the operation and maintenance by the DWSU.

Existing and Future Demand

Based on the Health Department's most recent Sanitary Survey, a Lewistown Sewer Service Area was established. Currently, there are approximately 84 existing residences within the Lewistown Sewer Service Area. Other uses include Beckley's RV Center, Home Run Trucking Company, Lewistown Elementary School, two (2) churches, and the Lewistown Fire Company.

Within the established sewer service area, a core area of need was identified along the Hessong Bridge Road corridor (Core Area) that includes approximately 35 residences, the elementary school, fire station, the Lewistown United Methodist Church, and several businesses. Parcel no. 375, located on Fish Hatchery Road, is also included under the Phase I allocation for the project pursuant to the Lewistown Mills Sewer Service Agreement executed November 17, 2015 between the County and Mr. John Tyler Quynn.

There are four (4) undeveloped lots of record in the Phase I area. The 35 existing residences would require an estimated 8,750 gpd of treatment capacity based on a design basis of 250 gallons per day per equivalent dwelling unit.

Future demand for wastewater treatment in a subsequent phase(s) include the remaining 49 residences, at least one business, and the Mount Prospect Church. There are also approximately three (3) undeveloped lots of record. The 49 existing residences and three (3) potential residences would require

approximately 13,000 gpd of treatment capacity based on the 250 gpd per equivalent dwelling unit used in planning assumptions.

The Lewistown Sewer Service Area specifically excludes four (4) larger, undeveloped parcels on the north side of Fish Hatchery Road and three (3) developed lots of Acer Court. Each of the undeveloped parcels may develop with a residence and are large enough to accommodate a suitable septic system. The three developed parcels on Acer Court are also large enough (2+ acres) to accommodate a suitable septic area and reserve area if needed.

Prioritization of Service

Due to the limited treatment capacity relative to the existing and future demand with the service area, the following policies will guide how the treatment capacity is allocated. There is no guarantee that sewage treatment capacity will be available to serve all existing and future development within the Lewistown Sewer Service Area.

- Priority 1 – Existing residences and businesses in the Core Area with the initial classification of S-5 on the County’s Sewer Map
- Priority 2 – Existing residences and businesses within the remaining service area and classified as Planned Service (PS) on the County’s Sewer Map.
- Priority 3 – Future residences and businesses

Planned Improvements

With the transfer of the Lewistown Mills WWTP discharge permit (5,000 gpd) to the County’s Lewistown WWTP (22,000 gpd) there would be a theoretical sewage capacity of 27,000 gpd in the Lewistown WWTP.

Considering that the Lewistown WWTP is nearly 50 years old, a plant upgrade and replacement project is currently under construction and testing. The project includes a more conventional treatment system that will treat to enhanced nutrient removal (ENR) standards. The upgrade and replacement project will accommodate wastewater flows from the newly created service area. Capacity of the Lewistown WWTP will also be dictated by possible credits for the removal of septic systems in consideration of Maryland Department of the Environment (MDE) and local Health Department funding opportunities, which may affect other key aspect of the wastewater system such as the collection system.

In developing a CIP project to provide these properties with public sewer service, the Frederick County Health Department, the Frederick County Division of Planning & Permitting, and the Frederick County Division of Utilities and Solid Waste Management have identified this Core Area as Phase 1 of a project to provide sanitary sewer service in the defined Lewistown Sewer Service Area. Phase I of the project includes replacement of the existing WWTP and the extension of low-pressure sewer lines to the properties in the Core Area that have failed or failing septic systems. Phase 1 is currently under construction.

A separate project included in the County’s FY 2024 CIP is a low-pressure sewer system (LPSS) option, whereby individual grinder pumps would be installed and constructed with small diameter foremain oriented to maximize connection of existing dwellings within the Core Area of Need and elsewhere in the Lewistown Sewer Service Area. An LPSS system provides maximum flexibility to serve “existing” dwellings that may have unique building sewer and septic configurations that differ from new plumbing construction standards. Once in place to serve the existing dwellings, any vacant lot that may be developed will also rely on the LPSS system.

The individual grinder pumps and the force main are expected to be owned and maintained by the County's DWSU, which would be memorialized with individual grinder pump agreements and easements that have been standardized in certain locations within its collective system. It is important to note that with respect to the use of grinder pumps, the Design Manual for Water and Sewer Facilities, Chapter 3 – Sewer Main Design, Section 3.1.2.3 states, *“In rare instances, a grinder pump owned and maintained by the County will be situated on private property. The grinder pump receives the flow of wastewater through the building sewer from the house or building and pumps it through a force main pip to the gravity sewer main or a pressure main. It is incumbent on the property owner to grant an easement to the County for maintenance of the grinder pump and associated force main. Cost of electric power for the grinder pump is at the expense of the property owner.”* Also, Section 3.2.3.1.1 (Depth Mains) states, *“General: Sewers shall be designed sufficiently deep to receive sewage from basements. The use of ejector pumps is discouraged in new construction; use of grinder pumps in new construction is permitted only in extraordinary circumstances as determined by the [County DWSU].”*² These citations are included to emphasize that the use of grinder pumps elsewhere with the County or proposed for certain areas, such as Lewistown, does not set precedent for their use in new development.

Section 6: Multi-Use Wastewater Systems

There are approximately 22 multi-use wastewater systems serving individual businesses or institutions on one site or under one ownership in the County. The State requires that the County approve and inventory multi-use systems in the Water and Sewerage Plan (see Table 4-9).

A Multi-Use Sewerage System for the purposes of the Plan, is defined as a system of piping, pumps, tanks, or other treatment components that have a discharge in excess of 5,000 GPD. These systems may either use a conventional septic system with a drain field or what is referred to as a package plant, which is a small wastewater treatment plant that discharges treated effluent into a nearby stream or river.

Multi-use systems have been established throughout the County. The majority of them are located outside water and sewerage service areas and will never have the opportunity of connecting to a public community system. Others are located within a service area, but it will be many years before the system will be extended so that the institution, etc., can connect to it.

Identification and tracking of multi-use systems provides the County with information on the location of on-site multi-use systems and will allow the County to identify areas where multi-use systems may create cumulative impacts on ground and surface waters. Tracking these systems facilitates a more comprehensive review of future proposals for multi-use systems which are to be located in areas where the provision of community water and sewer service is not anticipated.

In order to ensure the protection of natural resources, the County may, in consultation with the Health Department and the Maryland Department of the Environment, require hydrogeologic studies of the potential effects of the proposed multi-use system on ground and surface water resources.

The multi-use systems are shown on the Water and Sewerage Plan maps with classification shading on the entire parcel served by the system. They are almost always privately owned and operated by the individual business or institution which they serve and are not designed for, nor permitted to extend service to, any other properties nearby. One system is owned by the County to serve Kemptown Elementary school and the adjoining Kemptown Park.

Table 4-9: Multi-Use Wastewater Treatment Systems

Business/Use	Type of Treatment	NPDES Permit	Point of Discharge	Capacity (MGD)
Former South Mountain Inn, (facility currently closed; to be adaptively reused into a Visitor's Center by MD-DNR)	Contact Stabilization	MD0055425	Catoctin Creek	0.18
Redland Brick, Rocky Ridge	Activated Sludge, Chlorination pH	MD0052345	Beaver Branch	.003 (permit: .001)
Foxville Naval Quarters Foxville Gardens Foxville Plaza	Activated tertiary, flow, equalization, sand filters, Ultra violet light	MD0025119	Trib. Owens Creek MD-09-DP-2535	.045
Camp Round Meadow	lagoon		ground discharge	0.13 Future connection to Foxville system
Camp Greentop	Septic, sand filter		ground discharge	0.13
Concord Mobile Home Park	Extended aeration, activated sludge, chlorination/dechlorination	MD0023060	Renn Branch	.015
Valleyview Springview Mobile Home (formally Valley View)	Activated Sludge, Chlorination, pH	MD002870	Butterfly Branch	.007
New Life Foursquare Church & School	Extended Aeration	MD0057100	Butterfly Branch	.005
Kemptown Elementary school/park	Extended Aeration, Sand Filter, Ultra violet light	MD0056481	Fahrney Branch MD-13-DP-1574	.005
AT&T Switching Station, Fingerboard Road (MD 80)	Activated Sludge, Chlorination, Sand Filter, pH	MD2972K04	Fahrney Branch	.003

Business/Use	Type of Treatment	NPDES Permit	Point of Discharge	Capacity (MGD)
I-70 Rest Area, Myersville	Sequence Batch Reactor	MD0023680	Trib. Grindstone Run	0.050
Former Shamrock Restaurant, Thurmont (property is anticipated to be redeveloped)	Activated Sludge	MD0058050	Trib. Owens Creek	Permit: 0.010
Green Valley Shopping Ctr., Monrovia	Septic		Ground discharge	System capacity > 5,000gpd; Discharge < 5,000 gpd
Life in Jesus Retreat Ctr. (Sacred Monastery of St. Nina)		MD3529K05	Trib. North Linganore Crk.	
Shepard Pratt School (Jefferson School)	Activated Sludge	MD0067521	Lander Branch	0.010
Victor Cullen School, Sabillasville (MD Dept. of Juvenile Services) (Facility is currently closed and not in operation.)	Trickling filter. To be upgraded to ENR	MD0023922	Tributary of Friends Creek	0.05
Damascus Road Community Church, Mt. Airy	Septic		Ground discharge	
St. Ignatius of Loyola Catholic Church, Monrovia	Septic		Ground discharge	
Mt. St. Mary's University, Emmitsburg	Extended Aeration, Activated Sludge	MD0023230	Tributary to Tom's Creek	0.160
Frederick Christian Fellowship, Hansonville Road	Lagoon	MD3336K05	Spray Irrigation-ground discharge MD-18-DP-3336	
Trans-Tech (Adamstown)	Extended aeration	MD0058611	Tributary of Tuscarora Creek	

Business/Use	Type of Treatment	NPDES Permit	Point of Discharge	Capacity (MGD)
Skycroft, Frostown Road (Middletown)	Septic		Ground discharge	0.019
Dan-Dee Motel WWTP/Discovery National WWTP	Extended Aeration, SBR	MD0023710	Discharge to Rock Creek	0.012

Section 7: Septic Problem Areas

The following Table 4-10 lists various subdivisions and communities that have been identified as having problems with existing septic systems. Some of the problems may only be anecdotal in nature and some have been documented by surveys conducted by the Health Department. In some cases the septic failures may also be causing water contamination issues.

Table 4-10: Septic Problem Areas

Subdivision/Community	Problem Description	Existing Dwelling Units	Population	Sewage Treatment Demand	Possible Remedy
Bartonsville	Failing individual septs	100	270	25,000 gpd	Is in a planned sewer service area
Braddock Heights	Failing individual septs		735		connect portion of community to the Fountaindale system
Broadview Acres	Failing individual septs	48	130	12,000 gpd	connect to Frederick City or County system
Buckeystown	Failing individual septs. Businesses w/holding tanks		1,021		Is in a planned sewer service area
Burkittsville	Non-conforming septic systems; Use of holding tanks; Well contamination	69	163	17,250 gpd	Undetermined
Crestview Estates	Part of subdivision on septs w/problems	54	146	13,500 gpd	Has an existing system but without capacity for 54 lots still on septic

Subdivision/Community	Problem Description	Existing Dwelling Units	Population	Sewage Treatment Demand	Possible Remedy
Crows Nest (335 W. Main Street, Thurmont)	Inadequate and non-functional on-site sewage disposal and dispersal	50	50	12,000 gpd	Correct and address deficiencies in system
Lewistown	Failing individual septs	90	155	22,500 gpd	Public sewer service area established in 2015
Lockwood Heights/Pete Wiles Estates	Failing individual septs	60	162	15,000 gpd	Undetermined
Lori Lane/Willis Acres	Failing individual septs	35	95	8,750 gpd	Connect to Crestview system
Mountain View/Orchard Road area	Failing individual septs	4	11	1,000 gpd	Majority of lots already connected to public sewer system in Emmitsburg
Mt. Pleasant	Failing individual septs	30	81	7,500 gpd	Undetermined
New London	Failing individual septs	10	35	2,500 gpd	Undetermined
Old Mill Bottom Rd.	Failing individual septs	20	54	5,000 gpd	Possible connection to Mt. Airy municipal sewer system
Rangers Woods	Failing individual septs	25	100	6,250 gpd	Connect to Urbana service area
Riffle Road area	Failing individual septs	10	27	2,500 gpd	Undetermined
Rock Hall	Failing individual septs	13	55	3,250 gpd	Connect to Point of Rocks system
Rosemont	Failing individual septs	100	318	25,000 gpd	connect to City of Brunswick system

Subdivision/Community	Problem Description	Existing Dwelling Units	Population	Sewage Treatment Demand	Possible Remedy
Sabillasville	Failing individual septs		354		Undetermined

RESOLUTION OF THE COUNTY COUNCIL OF FREDERICK COUNTY, MARYLAND

RESOLUTION NO. 25-07

RE: 2024 TRIENNIAL UPDATE WATER AND SEWERAGE PLAN

RECITALS

The purpose of the Frederick County Water and Sewerage Plan (“W/S Plan”) is to provide an overview of the planning policies, amendment procedures, and planned infrastructure related to community water and sewerage systems. Pursuant to the authority contained in §9-503 of the Environment Article of the Maryland Code, the governing body of Frederick County, Maryland, is required to review the W/S Plan at least once every 3 years in accordance with a schedule set by the Maryland Department of the Environment (“MDE”).

A preliminary draft of the resulting W/S Plan amendments (“Triennial Update”) was prepared and sent to MDE in July and August 2024 for review and comment. Updates and revisions were also solicited from all of the County’s municipalities with water or sewerage systems. The Planning Commission reviewed the Triennial Update on December 18, 2024, and voted to find it consistent with the County Comprehensive Plan.

The final draft of the Triennial Update incorporated revisions addressing MDE comments and updates from the municipalities. According to §9-503(d), any amendments to the W/S Plan may be approved or denied by the County’s governing body after a duly advertised public hearing.

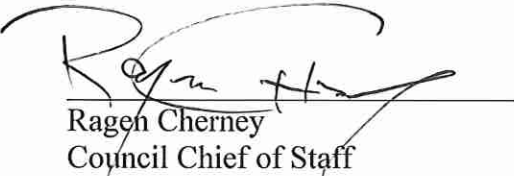
The County Council of Frederick County, Maryland, held a duly advertised public hearing on the Triennial Update on February 18, 2025, at which time the public had the opportunity to comment.


NOW, THEREFORE, BE IT RESOLVED BY THE COUNTY COUNCIL OF FREDERICK COUNTY, MARYLAND that the amendments to the W/S Plan reflected in the Triennial Update are necessary and hereby approved.

The undersigned hereby certifies that the amendment described in this Resolution was approved and adopted (by a vote of 7-0) on February 18, 2025.

ATTEST:

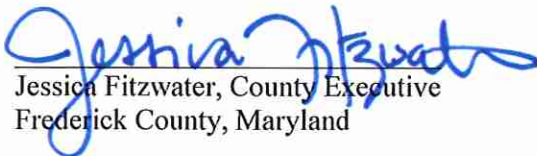
COUNTY COUNCIL OF
FREDERICK COUNTY, MARYLAND


Ragen Cherney
Council Chief of Staff

By: 
Brad Young, President

Received by the County Executive on 2/20/2025

COUNTY EXECUTIVE ACTION: ☒ Approved ☐ Vetoed ☐ No Action


Jessica Fitzwater, County Executive
Frederick County, Maryland

2/20/25
Date



Maryland

Department of the Environment

Wes Moore, Governor
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary
Suzanne E. Dorsey, Deputy Secretary
Adam Ortiz, Deputy Secretary

April 28, 2025

The Honorable Jessica Fitzwater
County Executive
Frederick County
12 East Church Street
Frederick, Maryland 21701

Dear Executive Fitzwater:

The Maryland Department of the Environment (MDE) has completed its review of the **Frederick County 2024 Water and Sewerage Plan Triennial Update (Triennial Update)**. The Frederick County Council adopted the Triennial Update on February 20, 2025, through Resolution 25-07.

Maryland Department of Planning Findings

The Maryland Department of Planning (MDP) has reviewed the above-referenced adopted water and sewerage plan update pursuant to our mandate to advise MDE on local comprehensive plan consistency and other appropriate matters as required by Environmental Article Section 9-507 (b)(2).

Comprehensive Plan Consistency

Upon reviewing the Adopted Frederick County 2024 Triennial Update, the document appears to be consistent with the 2019 Livable Frederick Master Plan (LFMP) along with its accompanying Water Resources Element (WRE), "Water Resources in Frederick County".

Reclassification List

Table 1 - Properties connected to public water and/or sewer

Frederick County indicates that the reclassifications submitted within Table 1 are to correct mapping errors. MDP does not make a finding of consistency for mapping errors.

Table 2 - Not connected to public water and/or sewer

Frederick County indicates that the reclassifications submitted within Table 2 are to correct mapping errors. MDP does not make a finding of consistency for mapping errors.

Table 3 - Myersville reconciliation (no longer in service area)

Table 3 contains properties that are no longer within the municipal service area of

Myersville. The reclassifications within this table appear to be consistent with the 2024 Myersville Comprehensive Plan Reconciliation, an Update of the Livable Frederick Comprehensive Plan, and the Town of Myersville Comprehensive Plan 2022-2042.

Table 4 - Middletown reconciliation (no longer in service area)

Table 4 contains properties that are no longer within the municipal service area of Middletown. The reclassifications within this table appear to be consistent with the 2024 Middletown Comprehensive Plan Reconciliation, an Update of the Livable Frederick Comprehensive Plan, and the Middletown Comprehensive Plan 2023.

Table 5 - Myersville reconciliation (now in service area)

Table 5 contains properties that are being added to the municipal service area of Myersville. The reclassifications within this table appear to be consistent with the 2024 Myersville Comprehensive Plan Reconciliation, an Update of the Livable Frederick Comprehensive Plan, and the Town of Myersville Comprehensive Plan 2022-2042.

Table 6 - Middletown reconciliation (now in service area)

Table 6 contains a property that is being added to the municipal service area of Middletown. The reclassification within this table appears to be consistent with the 2024 Myersville Comprehensive Plan Reconciliation Plan, an Update of the Livable Frederick Comprehensive Plan, and the Middletown Comprehensive Plan 2023.

The areas affected by the amendments may or may not currently be within a Priority Fund Area or eligible for funding under the Priority Funding Area law. Also, the amendments might result in necessary changes to the jurisdiction's growth tier map.

If there are comments or questions regarding MDP's review, MDE encourages the County to contact MDP. See enclosed MDP's comments and contact information.

MDE Review and Action

MDE has reviewed the proposed Plan changes in accordance with §9-507 of the Environment Article, Annotated Code of Maryland, and its findings are listed below. These findings and any actions required by the county or recommended to the County have been included and taken into consideration in MDE's final decision.

1. A draft of the Triennial Update was submitted to MDE in 2024, and comments were sent back to the County in August 2024. Subsequently, changes were made to the Triennial Update by the County.
2. There is an updated WRE guidance. The 2022 update WRE guidance can be found at the following link:

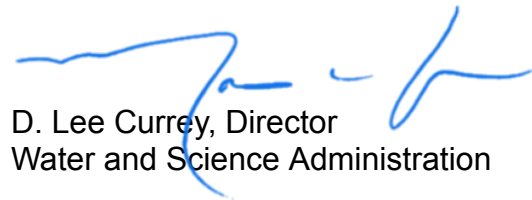
<https://planning.maryland.gov/Pages/OurWork/RRP/envr-planning/water-resources-mg/2022/2022-guidance-update.aspx>

The 2022 guidance includes best practices for protecting receiving waters and for integrating climate change and equity considerations into local water resource planning. By updating the WRE, a required element of local comprehensive plans, jurisdictions will identify recommendations and strategies necessary for ensuring community resilience and sustainability, which can inform and be informed by, project and policy needs for county water and sewer plan updates.

MDE has reviewed the proposed changes and in accordance with §9-507(a) of the Environmental Article, Annotated Code of Maryland, MDE hereby **approves the Frederick County 2024 Water and Sewerage Plan Triennial Update.**

This action completes MDE's review, as required by §9-507 of the Environment Article, Annotated Code of Maryland. If you need further assistance, please contact Matthew Rowe, Deputy Director, Water and Science Administration (WSA) at (410) 537-3512, toll-free at (800) 633-6101, or by e-mail at matthew.rowe@maryland.gov.

Sincerely,



D. Lee Currey, Director
Water and Science Administration

Enclosure

cc: Kimberly Gaines, Director, Livable Frederick Planning & Design, Frederick County
Mike Wilkins, Director, Department of Development Review & Planning, Frederick County
Barry Glotfelty, Director, Environmental Health, Frederick County
Andrew Stine, Principal Planner, Livable Frederick Planning and Design (LFPD), Frederick County
Karin Flom, Principal Planner, LFPD, Frederick County
Jason Dubow, Director, Research, Review and Policy Division, MDP
Matthew Rowe, CC-P, Deputy Director, WSA, MDE

Summary of Updates included in the 2024 Water and Sewerage Plan Triennial Update

1. Updates to dates, websites, and population throughout the Plan.
2. Updates and additions to definitions.
3. Updates and additions to general policies including, submission of amendments for MDE review, partial classifications of properties, and requirements for properties to connect for each classification.
4. Updates to Water Supply information including pumping stations, PFAS treatment, planned improvements and future demand.
5. Updates to Sewerage Systems information including new permit numbers, WWTP updates, pumping stations, planned improvements and future demand.
6. Reclassification Tables 1-6.

Address	Tax Account	Property Owner	TaxMap	Parcel	Lot	Water Existing	Water Proposed	Sewer Existing	Sewer Proposed	Reason
Table 1: Properties Connected to public water and/or sewer										
4753 Old Middletown Rd	14-312145	Maurice F & Va M Hoffmaster	84	210	4A	W-5	No Change	S-3	S-1	Connected to County sewer.
8790 Rosehaven Ln	09-605359	Richard L & Shea M Jones	78	494	103	W-3	W-1	S-3	S-1	Connected to County water and sewer.
8735 Green Valley Rd	08-590367	RW & Mew Investments LLC	60	2	2	NPS	No Change	S-3	S-1	Connected to County sewer.
8731 Green Valley Rd	08-590368	RW & Mew Investments LLC	60	2	3	NPS	No Change	S-3	S-1	Connected to County sewer.
8739 Green Valley Rd	08-213496	RW & Mew Investments LLC	60	2	1	NPS	No Change	S-3	S-1	Connected to County sewer.
5514 Mountville Rd	01-012096	Renn William & Doris Life Estate & Dawn J Shankle	103	7		NPS	W-1 house only	NPS	No change	Farmhouse connected to County water.
19 E Main St	09-253947	Jose Ines Argueta Guzman & Lorena Z Chicas Ortiz	79I	3826		W-3	W-1	S-3/Dev	S-1	Connected to County water and sewer.
40 W Main St	09-321438	Ashtin 40 LLC	79I	3773		W-3	No Change	S-1	No change	Connected to County sewer.
11715 Old National Pike	09-270302	Peter Koutsos & Nicholas Peter Koutsos	79	207		W-3	W-1	S-1	No change	Connected to County water and sewer.
5515B Mountville Rd	01-008005	Hope L Green Trustee, Barbara Lewis Kanode Rev Trust	103	5		NPS	W-1	NPS	NPS	One structure connected to County water.
2795 Adams St	01-003925	Carroll Manor Fire Company	103	816		W-1	No Change	S-3	S-1	Connected to County sewer.
12013 Old Annapolis Rd	09-223673	Board Of Education	70	36		NPS	No Change	S-3	S-1	Connected to County sewer.
4930 Executive Ct S	01-598479	WVS Parcel 204 A LLC WVS Parcel 204 B LLC	86	269	202	W-3	W-1	S-3	S-1	Connected to County water and sewer.
4931 Executive Ct S	01-045814	WVS Parcel 200 A LLC WVS Parcel 200 B LLC	86	269	201	W-3	W-1	S-3	S-1	Connected to County water and sewer.
4910 Executive Ct S	01-598480	WVS Parcel 200 LLC WVS Parcel 204 LLC	86	269	203	W-3	W-1	S-3	S-1	Connected to County water and sewer.
14707 Park Central Rd	No Tax ID	Catoctin Mountain Park Visitors Center	None	None		M-U	No Change	M-U	S-1	Connected to Thurmont sewer.
None (Camp Misty Mount)	No Tax ID	Camp Misty Mount	None	None		M-U	No Change	M-U	S-1	Connected to Thurmont sewer.
None (Cunningham Falls State Park)	No Tax ID	Cunningham Falls State Park	None	None		M-U	No Change	M-U	S-1	Connected to Thurmont sewer.
2642 Canada Hill Rd	16-355917	Marli Lockitsky	37I	78		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2702 Canada Hill Rd	16-356158	Andrew Alexander & Marie E Lee	37I	42		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2704 Canada Hill Rd	16-346500	Brent J & Donna M Toms	37I	43		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2706 Canada Hill Rd	16-348457	Candace Leta Mann Brown Trust, Candace Leta Mann Brown Trustee Etal	37I	44		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2712 Canada Hill Rd	16-354929	David M & Michelle L Smith	37I	45		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2716 Canada Hill Rd	16-348392	Krista R Allen	37I	46		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2720 Canada Hill Rd	16-356026	James J & Susan M Fear	37I	47		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2726 Canada Hill Rd	16-349631	James J & Susan M Fear	37I	48		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2730 Canada Hill Rd	16-344613	Michael E & Danielle I Gerrish	37I	24A		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2732 Canada Hill Rd	16-349232	Robert L Bartoli & Jean R Harper	37I	90		W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2736 Canada Hill Rd	16-354899	John F Headley & Maureen M Mccarrick	37I	91	2	W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2740 Canada Hill Rd	16-352136	Jose R Rivas Soto & Sara Francisca Molina Guillen	37I	101	3	W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2742 Canada Hill Rd	16-352144	Francis G & Faye E Miller	37I	113	4	W-1	No Change	S-4	S-1	Connected to Myersville sewer.
2744 Canada Hill Rd	16-347620	Rosco S Windon & Alexandra G Yurciw	37I	211	5	W-1	No Change	S-4	S-1	Connected to Myersville sewer.
10231 Meadowridge Dr	16-599546	Travis D & Samantha S Montague	046A	258	1	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10229 Meadowridge Dr	16-599547	Navid & Jessica Wlotzka	046A	258	2	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10227 Meadowridge Dr	16-599548	Ryan Legacy Builders Inc	046A	258	3	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10225 Meadowridge Dr	16-599549	Robert Anthony & Brittany Justine Roos	046A	258	4	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10223 Meadowridge Dr	16-599550	Stephen & Jessica Guilliford	046A	258	5	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10221 Meadowridge Dr	16-599551	Daniel R Jr & Alba A Bowes	046A	258	6	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10219 Meadowridge Dr	16-599552	Dominic Joseph & Jennifer Felicia Markajani	046A	258	7	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10217 Meadowridge Dr	16-599553	Ekoue Assilamehoo & Tanya P Tchermi	046A	258	8	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10215 Meadowridge Dr	16-599563	Lindquist Properties LLC	046A	258	0	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10213 Meadowridge Dr	16-599554	Ryan Legacy Builders Inc	046A	258	9	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10216 Meadowridge Dr	16-599555	Garland C & Denise N Gray	046A	258	10	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10218 Meadowridge Dr	16-599556	Jesse S & Emily K Strubert	046A	258	11	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10220 Meadowridge Dr	16-599557	Ryan Legacy Builders Inc	046A	258	12	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10222 Meadowridge Dr	16-599558	Daria Cervantes & Sareen Reilly	046A	258	13	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10224 Meadowridge Dr	16-599559	Ryan Legacy Builders Inc	046A	258	14	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10226 Meadowridge Dr	16-599560	Linnea Ellen Sallack & Terry Joe Bryce	046A	258	15	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
10228 Meadowridge Dr	16-599561	Christopher Lee & Maria Guadalupe Immormino	046A	258	16	W-3	W-1	S-3	S-1	Connected to Myersville water and sewer.
9486 Myersville Rd	16-348899	Ark-1 Limited	046D	266		W-5	W-1	S-3	No Change	Connected to Myersville water.

Address	Tax Account	Property Owner	TaxMap	Parcel	Lot	Water Existing	Water Proposed	Sewer Existing	Sewer Proposed	Reason
4930 Executive Ct South	01-598479	C/O Matan Development LLLP	86	269	202	W-3/Dev	W-1	S-3/Dev	S-1	Connected to County water and sewer.
4931 Executive Ct S	01-045814	C/O Matan Development	86	269	201	W-3/Dev	W-1	S-3/Dev	S-1	Connected to County water and sewer.
4910 Executive Ct S	01-598480	C/O Matan Development	86	269	203	W-3/Dev	W-1	S-3/Dev	S-1	Connected to County water and sewer.
7216 Dogwood Ln	24-451062	Ryan Joseph Donahue & Lindsay Erin Jenkel	66	623	16	NPS	W-1	NPS	S-1	Connected to County water and sewer.
7217 Dogwood Ln	24-456110	Sean V Buggy & Alison Maday	66	623	6	NPS	W-1	NPS	S-1	Connected to County water and sewer.
Camp Airy (10 Parcels, Sabillasville Rd)	15-339861									
	15-339853		13	8						
	15-339977		19B	8						
	15-339837		19B	9						
	15-339918		19B	2						
	15-339926		19B	239						
	15-339896		19B	3						
	15-339950	The Aaron & Lillian Strauss Foundation Inc	19B	106		M-U	No Change	M-U	S-1	Connected to Thurmont sewer.
16-604511										
Outlot A	16-604511	Town of Myersville	046A	244		W-1	No Change	S-4/DEV; S-1	S-1	Connected to Myersville water and sewer.
8901 Green Valley Rd	08-221375	Bd Of Co Commissioners	51	166		NPS	No Change	S-3	S-1	Connected to County sewer.
8511 Nature Center Pl (Fountain Rock Park)	26-494389	Board of Co Comm of Fred Co	58A	59		M-U	W-1	S-5/Dev	S-1	Connected to Walkersville sewer.
5370 Public Safety Pl	09-275967	Board Of Co Commissioners	78	710		W-3; PS	W-3 to W-1	S-4; PS	S-4 to S-1	Connected to County water and sewer.

Table 2: Properties NOT connected to public water and/or sewer

818 Knoxville Rd	12-291000	Herbert L Daugherty Jr	91I	48	24	W-1	W-5/Dev	S-1	S-3/Dev	Not connected to water or sewer.
5920B Jug Bridge Hill Rd	09-257527	Marc Michael Meilleur Ammended & Restated Trust	78D	167		W-1; W-5;	W-1 portion to	S-1; S-5;	S-1 to S-	Not connected to water or sewer.
		Anne Michael Meilleur Amended & Restated Trust				NPS	W-5/Dev	NPS	5/Dev	
4220 Tuscarora Rd	01-012444	Ballenger Enterprises LLC							S-1 to S-	
4305 Lime Kiln Rd	01-005685	C/O Saeed A Zaid	108	54		W-4	No Change	S-1 and S-5	5/Dev	No structure.
4609 Old National Pike	03-152197	4305 LK Holdings LP	86	33	1	W-1	PS	S-1	PS	Not connected to water or sewer.
9306 Woodsboro Pike	26-487226	Kenneth R & Kathy L Manahan	66	365	311	W-1	W-5/Dev	S-1	S-5/Dev	Not connected to water or sewer.
9312 Woodsboro Pike	26-484618	Hector M & Berta L Diaz	49I	81		W-1	No Change	S-1	S-5/Dev	Not connected to sewer.
Woodsboro Pike (5.928 Ac. W/S Rt. 194)	26-490995	Gary W & Mitzi H Smith	49I	59		W-1	No Change	S-1	S-5/Dev	Not connected to sewer.
9348 Woodsboro Pike	26-493447	Hazel Isabelle Decaro, Trustee	49I	1554		W-1	W-5/Dev	S-1	S-5/Dev	Not connected to sewer.
9329 Woodsboro Pike	26-484553	Rev Living Trust	49I	1555		W-1	W-5/Dev	S-1	S-5/Dev	Not connected to sewer.
9335 Woodsboro Pike	26-493706	David R & Danielle M Kelley	49I	2071		W-1	No Change	S-1	S-5/Dev	Not connected to sewer.
Aspen North Lot 83	27-525059	Paul E Sr & Doris M Hood	49I	2072		W-1	No Change	S-1	S-5/Dev	Not connected to sewer.
9910 Arapahoe Rd	27-532721	Amon E Jr & Peggy J Esworthy	68	142	83	W-1	W-5/Dev	S-1	S-5/Dev	No structure.
2533 Canada Hill Rd	16-347590	Lake Langanore Association Inc	68	142	47	W-1	W-5/Dev	S-1	S-5/Dev	No structure.
10333 Clark Rd	16-359106	Byung J & Kyung L Kim	371	174	1	W-1	NPS	NPS	No Change	Not connected to Myersville water.
10327 Clark Rd	16-359092	Lance A & Kimberly L Kirkpatrick	371	206	5	W-1	NPS	NPS	No Change	Not connected to Myersville water.
10319 Clark Rd	16-359076	Dale Richard Jr & Cassandra Marie Raso	371	206	4	W-1	NPS	NPS	No Change	Not connected to Myersville water.
10309 Clark Rd	16-359068	Laura B Radecki	371	206	2	W-1	NPS	NPS	No Change	Not connected to Myersville water.
Milt Summers Rd	16-354872	Paul R & Darlene M Silverman	371	206	1	W-1	NPS	NPS	No Change	Not connected to Myersville water.
Outlot A, Stormwater Parcel, A-K	16-354872	Shank Family Farm LLC	045F	10		W-4, W-1	W-5	S-1	S-5/Dev	Not connected to Myersville water or sewer.
Partnership Pb 64, Pg 82	Outlot A, PB64, PG82	A-K Partnership				PS	NPS	S-1	NPS	Not connected to Myersville water or sewer.
11 Fox Rock Dr	16-605850	Prestige Construction LLC	046D	185		W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
Parkland, Ashley, Pb 50, Pg 130	No Tax ID	Ashley Hills HOA	46A			W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
Samhill Estates Open Space	18-388324	Lake Langanore Association Inc	68	142	47	W-1	W-5/Dev	S-1	S-5/Dev	No structure.
Gas House Pky, Parcel B, Hamptons West/Creekside	27-591657	Sam Hill Estates Subdivision Homeowners Association	98	251	A	W-3	NPS	NPS	S-3 to NPS	Not connected to Myersville water or sewer.
5203 New Design Rd	01-012673	Oakdale Investments LLC	69	202		W-4	NPS (Portion)	S-4	NPS (Portion)	Not planned for water or sewer service .
5217 New Design Rd	01-012665	Tyler T Joyce	86	176	2	W-1	W-5/Dev	S-1	S-3/Dev	Not connected to water or sewer.
5229 New Design Rd	01-006592	H Bryon Gates III	86	176	1	W-1	W-5/Dev	S-1	S-3/Dev	Not connected to water or sewer.
1 Main St	16-593397	Jose Elias Arevato Romero	86	137		W-1	W-5/Dev	S-1	S-3/Dev	Not connected to water or sewer.
2875 Monument Rd	16-604694	Town of Myersville	046D	19		W-1, W-5, NPS	NPS	S-5/DEV; S/1; NPS	NPS	Not connected to Myersville water or sewer.
		Town of Myersville	046A	257		W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.

Address	Tax Account	Property Owner	TaxMap	Parcel	Lot	Water Existing	Water Proposed	Sewer Existing	Sewer Proposed	Reason
Canada Hill Parcel B, Open Space Pb 62, Pg 200	No Tax ID	Town of Myersville				W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
Canada Hill Parcel D, Recreation Area Pb 63, Pg 4	No Tax ID	Town of Myersville				W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
Parcel A & Outlot A Pb 103, Pg 38	No Tax ID	Town of Myersville				W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
Parcel C & Outlot B Pb 103, Pg 37	No Tax ID	Town of Myersville				W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
2729 Flintridge Rd	16-360228	Town of Myersville				W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
10234A Meadowridge Dr	16-359785	Town of Myersville	046A	362		W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
12A Poplar St	16-357502	Town of Myersville	046A	232		W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
45 Ashley Way	16-360457	Town of Myersville	046A	200		W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
Open Space, Ashley, Pb 50, Pg 130	No Tax ID	Town of Myersville				W-1	NPS	S-1	NPS	Not connected to Myersville water or sewer.
Right of Way (Remainder near 8817 Urbana Church Road)	None	None	96	178		W-5/Dev	NPS	S-5/Dev	NPS	Drawing error - right of way.

Table 3: Myersville Reconciliation (no longer in service area)

Old National Pike	16-347124	Wanda K Easterday	037I	52		PS	NPS	PS	NPS	Not planned for water or sewer service by Myersville.
10508 Easterday Rd	16-347116	Wanda K Easterday	037I	20		PS	NPS	PS	NPS	Not planned for water or sewer service by Myersville.
100 Stroup Way	16-599562	Ryan Legacy Builders Inc	046A	258		W-3	NPS	S-3	NPS	Not planned for water or sewer service by Myersville.
110 Stroup Way	16-599564	Lindquist Properties LLC	046A	258		W-3	NPS	S-3	NPS	Not planned for water or sewer service by Myersville.
3180 Brethern Church Rd	16-348023	Brian M & Melissa Frost Hoy	046A	121		W-5	NPS	S-5	NPS	Not planned for water or sewer service by Myersville.
3200 Brethren Church Rd	16-359343	Chad M & Elizabeth E Zamana	046A	428		W-5	NPS	S-5	NPS	Not planned for water or sewer service by Myersville.
12 Main St	16-356433	Rowland LLC	046A	515		W-4	W-1/NPS	S-1, PS (rear area)	S-1; NPS	Not planned for water or sewer service by Myersville.
12 Wolfsville Rd	16-352896	Town of Myersville	038G	223		W5, NPS	NPS	S-5; S-1; NPS	NPS	Not planned for water or sewer service by Myersville.
1025 Hunters Knoll	16-594570	Town of Myersville	37I	12		W-4	NPS	S-4	NPS	Not planned for water or sewer service by Myersville.
1000 Steeple Chase Ln	16-591029	Town of Myersville	37I	12		W-4	NPS	S-4	NPS	Not planned for water or sewer service by Myersville.
Hunters Knoll	16-594569	Town of Myersville	37I	12		W-4	NPS	S-4	NPS	Not planned for water or sewer service by Myersville.
Deerwoods HOA Park Parcel (PB 63, P 148)	None	Deer Woods HOA	46A			NPS	No Change	S-1	NPS	Not planned for water or sewer service by Myersville.

Table 4: Middletown Reconciliation (no longer in service area)

3223 Old National Pike	03-154696	Daniel Charles & Alexis Marchesiello Sassi	55	51	0001B	W-1	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
3221A Old National Pike	03-127435	Lerner Marjorie B	55	51	0001A	W-1	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
7289 Burkittsville Rd	03-158012	Natasha Lane Karmiol & Benjamin Karmiol	65	210	1	PS	NPS	PS	NPS	Not planned for water or sewer service by Middletown.
7307 Coventry Dr	03-152014	Gary Edward & Patricia Anne Mumford	65	174	204	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7306 Coventry Dr	03-152057	Patrick J & Shannon B Wiegand	65	174	104	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7303 Coventry Dr	03-151344	Orlan A & Carole S Helmick	65	161	202	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7304 Coventry Dr	03-151328	Richard & Daryl Lindstrom	65	161	102	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7326 Coventry Dr	03-155412	Clarke Edward	65	174	108	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7311 Coventry Dr	03-152030	James P & Cheryle W McKee	65	174	207	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7302 Coventry Drive	03-151301	Christopher & Karen Hopson	65	161	101	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7313 Coventry Dr	03-152049	Jayan Mundakkal Raghavan Nair & Reshmi Narayan Nair	65	174	0208A	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7322 Coventry Dr	03-155390	Robert L II & Sue A Sheffler	65	174	106	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7309 Coventry Dr	03-152022	Darren M & Christine L Eichelberger	65	174	206	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7308 Coventry Dr	03-152065	Richard T Jr & Jacqueline L Kreh	65	174	105	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7301 Coventry Dr	03-151336	Bruce D & Krista A Ecker	65	161	201	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7324 Coventry Dr	03-155404	Michael Robert Weimert & Lauren Cox	65	174	107	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7305 Coventry Dr	03-151352	Jeffrey J & Oksana Lightfield	65	161	203	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7328 Coventry Dr	03-155382	Richard E Flook	65	174	109	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7317 Coventry Dr	03-155498	David B & Debra C Tross	65	174	210	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7321 Coventry Dr	03-155455	Michael Christopher & Ashley Rebekah Owen	65	174	113	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7319 Coventry Dr	03-155463	Franco D & Michelle W Rossi	65	174	114	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7325 Coventry Dr	03-155439	Colin Andrew & Emma Redhead	65	174	111	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7323 Coventry Dr	03-155447	Douglas & Wei Lan Rodgers	65	174	112	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7315 Coventry Dr	03-155471	James O & Karen C Rudy	65	174	209	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.

Address	Tax Account	Property Owner	TaxMap	Parcel	Lot	Water Existing	Water Proposed	Sewer Existing	Sewer Proposed	Reason
7327 Coventry Dr	03-155420	Konrad Krzysztof Wojciechowska & Urszula J Kulak	65	174	110	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7325 Holter Rd	03-143813	John W King Jr & Debra A King	65	40	0	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7331 Holter Rd	03-143678	Jay M & Theresa S Bidle	65	124	0	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7331 Old Middletown Rd	03-143880	Richard & Stacey C Greskiewicz	65	128	0	W-5	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
7331 Old Middletown Rd	03-143880	Richard & Stacey C Greskiewicz	65	128	1	W-5	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
7321 Old Middletown Rd	03-143929	Daniel J & Erin E Coffey	65	139	0002B	W-5	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
7305 Holter Rd	03-150933	Michael J & Linda L E Young	65	120	2	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7317 Old Middletown Rd	03-140512	Donald L/E Miller & Diane M Marsden	65	139	3	W-5	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
7327 Old Middletown Rd	03-143902	Gregory J Macmaster	65	139	0002A	W-5	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
7229 Holter Rd	03-156265	Jessica M & Alex W Gretsinger	65	191	PC002	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7305 Holter Rd	03-150925	Michael J & Linda L E Young	65	120	1	W-4	NPS	S-5	NPS	Not planned for water or sewer service by Middletown.
7405 Holter Rd	03-151360	Tommy R & Donna L Shedd	65	162	1	W-4	NPS	S-1	No Change	Not planned for water service by Middletown.
7313 Old Middletown Rd	03-135195	Thomas E & Kathy L Miss	65	110	PC00A	PS	NPS	PS	NPS	Not planned for water or sewer service by Middletown.
7317 Old Middletown Rd	03-140490	Donald L L/E Marsden & Diane M Miller	65	116	0	W-5	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
7317 Old Middletown Rd	03-140490	Donald L L/E Marsden & Diane M Miller	65	116	0	W-5	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
7315 Old Middletown Rd	03-135187	Thomas E & Kathy L Miss	65	73	PC00B	PS	NPS	PS	NPS	Not planned for water or sewer service by Middletown.
3213 Old National Pike	03-145220	Glenn F Rudy & D Althea Smith	55	81	0	W-1	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
3209 Old National Pike	03-126773	Blickenstaff Singleton E Life Esta	55	85	0	W-1	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
3213 Old National Pike	03-146979	Glenn F & Doris A Rudy	55	82	0	W-1	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.
3211 Old National Pike	03-126730	Gregory T Gannon	55	0045A	0	W-1	NPS	S-1	NPS	Not planned for water or sewer service by Middletown.

Table 5: Myersville Reconciliation (now in service area)

10508 Easterday Rd	16-362182	Stephanie M Liller	037I	221		W-1	No Change	NPS	S-3/Dev	Planned for sewer service by Myersville.
10502 Easterday Rd	16-347264	Guy R & Bertha L Sigler	037I	55		W-1	No Change	NPS	S-3/Dev	Planned for sewer service by Myersville.
10416 Easterday Rd	16-355003	William Anthony Crook & Deana Sue Dietrich	37I	95		W-1	No Change	NPS	S-3/Dev	Planned for sewer service by Myersville.
9460 Myersville Rd	16-344443	Mount Sinai Properties Myesville LLC	046D	404	2	W-5	W-3/Dev	S-4; S-3	S-3/Dev	Planned for water and sewer service by Myersville.

Table 6: Middletown Reconciliation (now in service area)

Myersville Rd	03-165531	Thomas M Wiles	55	48	TRC02	NPS	PS	NPS	PS	Planned for water and sewer service by Middletown.
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Maryland DEPARTMENT OF PLANNING

April 15, 2025

Mr. Jeff White

Deputy Program Manager, Watershed Protection, Restoration and Planning Program
Maryland Department of the Environment
Water and Science Administration
1800 Washington Boulevard Baltimore, Maryland 21230

Subject: ADOPTED – Frederick County 2024 Triennial Update

Dear Mr. White:

The Maryland Department of Planning (MDP) has reviewed the above-referenced adopted water and sewerage plan update pursuant to our mandate to advise the Maryland Department of the Environment (MDE) on local comprehensive plan consistency and other appropriate matters as required by Environmental Article Section 9-507 (b)(2). The Frederick County Council made findings of consistency with the county's Comprehensive Plan (Livable Frederick Master Plan) and approved the Frederick County 2024 Triennial Update on February 20th, 2025.

MDP previously reviewed the Draft Triennial Update of the Water and Sewerage Plan and submitted a letter to MDE on August 23rd, 2024. MDP's previous comments have been addressed in the adopted version of the 2024 Triennial Update.

MDP offers an updated "Comprehensive Plan Consistency" section below to share updated findings of consistency between the adopted Triennial Update and the 2019 Livable Frederick Master Plan (LFMP) along with its accompanying Water Resources Element (WRE), "Water Resources in Frederick County", adopted January 21st, 2025.

Comprehensive Plan Consistency

Upon reviewing the Adopted Frederick County 2024 Triennial Update, the document **appears to be consistent** with the 2019 Livable Frederick Master Plan (LFMP) along with its accompanying Water Resources Element (WRE), "Water Resources in Frederick County".

Reclassification List

MDP submitted a letter to MDE during the draft review process on August 30th, 2024, providing an initial analysis of the submitted category changes while indicating that it would submit a full analysis of the category changes as part of our review of the adopted version of the triennial

update. The full analysis of the category changes within the updated reclassification list, submitted as a component of the adopted 2024 Frederick County Triennial Plan, can be found below.

Table 1

Frederick County indicates that the reclassifications submitted within Table 1 are to correct mapping errors. MDP does not make a finding of consistency for mapping errors.

Table 2

Frederick County indicates that the reclassifications submitted within Table 2 are to correct mapping errors. MDP does not make a finding of consistency for mapping errors.

Table 3

Table 3 contains properties that are no longer within the municipal service area of Myersville. The reclassifications within this table **appear to be consistent** with the *2024 Myersville Comprehensive Plan Reconciliation, an Update of the Livable Frederick Comprehensive Plan* and the *Town of Myersville Comprehensive Plan 2022-2042*.

Table 4

Table 4 contains properties that are no longer within the municipal service area of Middletown. The reclassifications within this table **appear to be consistent** with the *2024 Middletown Comprehensive Plan Reconciliation, an Update of the Livable Frederick Comprehensive Plan*, and the *Middletown Comprehensive Plan 2023*.

Table 5

Table 5 contains properties that are being added to the municipal service area of Myersville. The reclassifications within this table **appear to be consistent** with the *2024 Myersville Comprehensive Plan Reconciliation, an Update of the Livable Frederick Comprehensive Plan* and the *Town of Myersville Comprehensive Plan 2022-2042*.

Table 6

Table 6 contains a property that is being added to the municipal service area of Middletown. The reclassification within this table **appears to be consistent** with the *2024 Myersville Comprehensive Plan Reconciliation Plan, an Update of the Livable Frederick Comprehensive Plan* and the *Middletown Comprehensive Plan 2023*.

The areas affected by the amendments may or may not currently be within a Priority Fund Area or eligible for funding under the Priority Funding Area law. Also, the amendments might result in necessary changes to the jurisdiction's growth tier map.

If you have any questions concerning these comments, please email Korey Layman at korey.layman@maryland.gov.

Mr. Jeff White
April 14, 2025
Page 3

Sincerely,

A handwritten signature in dark ink, appearing to read 'J Dubow', with a stylized flourish at the end.

Jason Dubow, CC-P
Director, Research, Review and Policy Division, MDP

cc: Robin Pellicano; Nicholai Francis-Lau; Steve Alfaro, Shania Hyatt, MDE
Tony Redman, DNR
Dwight Dotterer, MDA
Joe Griffiths; and Cassandra Malloy,



Maryland

Department of the Environment

Wes Moore, Governor
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary
Suzanne E. Dorsey, Deputy Secretary
Adam Ortiz, Deputy Secretary

September 24, 2025

The Honorable Jessica Fitzwater
County Executive
Frederick County
12 East Church Street
Frederick, Maryland 21701

Dear Executive Fitzwater:

The Maryland Department of the Environment (MDE) has completed its review of the **Frederick County Spring 2025 Cycle Amendment (Amendment) to the 2024 Frederick County Water and Sewerage Plan (Plan)**. The Frederick County Council adopted the Amendment on July 15, 2025, through Resolution Numbers 25-18, 25-19, 25-20, 25-21, 25-22, 25-23, 25-24, 25-25, and 25-26. The Amendment includes multiple water and sewer category changes, a text amendment, and various map amendments.

WS-25-01: Vista Pointe LLC (Ferris & Brylawski)

Tax Map 091F, Parcel 0099 and Tax Map 091I, Parcel 0240. Reclassification of 71.43 acres from Planned Service (Water and Sewer, 11-20 years) to W-4/Dev, S-4/Dev (Concept Evaluation Phase, 4-6 years).

WS-25-02: Washco Jefferson Village, LLC (Jefferson Village)

Tax Map 0084, Parcel 0065. Reclassification of 9.41 acres from W-5/Dev, S-5/Dev (Mid-Range Plan Phase, 7-10 years) to W-3/Dev, S-3/Dev (Preliminary Design Phase, within 3 years) and adds depiction of a well symbol on the Water Infrastructure Map.

WS-25-03: LAM Properties LLC (Valley School)

6023 Fair Oaks Drive, Tax Map 076F, Parcel 0472. Reclassification of 0.94 acres from W-5/Dev, S-5/Dev (Mid-Range Plan Phase, 7-10 years) to W-4/Dev, S-4/Dev (Concept Evaluation Phase, 4-6 years).

WS-25-04: SJP Jefferson 1 LLC (Jefferson Exchange)

6126 Jefferson Pike, Tax Map 0076F, Parcel 0091. Reclassification of 19.75 acres from W-4/Dev, S-4/Dev (Concept Evaluation Phase, 4-6 years) to W-3/Dev, S-3/Dev (Preliminary Design Phase, within 3 years).

WS-25-05: Division of Planning & Permitting (Ballenger Creek Park)

5346A, 5346B & 5420 Ballenger Creek Pike, Tax Map 0076, Parcel 0447 (Portion of Lot 1 and all of Lot 2) and a portion of Parcel 503. Reclassification of 77.76 acres from W-5/Dev, S-5/Dev (Mid-Range Plan Phase, 7-10 years) to W-3/Dev, S-3/Dev (Preliminary Design Phase, within 3 years) (With no change to existing W-1 or W-3/Dev classification for the properties).

WS-25-06: Division of Planning & Permitting (South Frederick Corridors Plan)

Reclassification of 60 properties from No Planned Service (water and sewer) to Planned Service (water and sewer, within 11-20 years) and one (1) property from W-1,S-1 (Existing Service) to No Planned Service (water and sewer) in an area totaling 1,139 acres and a Text Amendment to Chapter 1, Policies and Procedures. See attachment for more details.

WS-25-07: Division of Planning & Permitting (Clover Hill)

Reclassification of 87 properties totaling approximately 25.31 acres from W-1,S-1 (Existing Service) to W-5/Dev (Mid-Range Plan Phase, 7-10 years) (no change to sewer). See attachment for more details.

WS-25-08: Division of Planning & Permitting (Braddock Heights)

Reclassification of 8 properties totaling approximately 3.23 acres from W-1 (Existing Service), No Planned Service (sewer) to No Planned Service (water) (no change to sewer). See attachment for more details.

WS-25-09: Division of Planning & Permitting (Infrastructure Maps)

Various updates to the Water and Sewer Infrastructure Maps to reflect current development and infrastructure status. See attached list for more details.

Maryland Department of Planning Findings

The Maryland Department of Planning (MDP) has reviewed this water and sewerage amendment pursuant to its mandate to advise the Maryland Department of the Environment (MDE) on local comprehensive plan consistency and other appropriate matters as required by Environment Article Section 9-507 (b)(2) and following the Land Use Article Section 1-303 and 1-304.

MDP has advised MDE the following:

1. These changes seem to be consistent with local comprehensive plans as noted below:
 - a. WS-25-01: Brunswick Forward (2023)
 - b. WS-25-02: Livable Frederick Master Plan (2019)
 - c. WS-25-03: Livable Frederick Master Plan (2019)
 - d. WS-25-04: Livable Frederick Master Plan (2019)
 - e. WS-25-05: Livable Frederick Master Plan (2019)
 - f. WS-25-06: South Frederick Corridors Plan (2024)

- g. WS-25-09: Livable Frederick Master Plan (2019)
- 2. MDP does not review mapping errors thus MDP will not be providing comments on the amendments below:
 - a. WS-25-07: Mapping Error
 - b. WS-25-08: Mapping Error

If there are comments or questions regarding MDP's review, MDE encourages the County to contact MDP. See enclosed MDP's comments and contact information.

MDE Review and Action

MDE has reviewed the proposed amendment in accordance with §9-507 of the Environment Article, Annotated Code of Maryland and its findings are listed below. These findings and any actions required by the county, or recommended to the County, have been included and taken into consideration in MDE's final decision.

1. Water Treatment Plant Capacity

City of Brunswick Water Treatment Plant

The City of Brunswick Water Treatment Plant (WTP) has a capacity of 2.0 million gallons per day (MGD) and an existing demand of about 0.59 MGD. Case WS-25-01 will add 700 equivalent dwelling units (EDUs) at 175,000 gallons per day (GPD) to the City of Brunswick WTP, increasing demand to 0.77 MGD (39% capacity). There is adequate capacity at the City of Brunswick WTP.

Cambridge Farms Water Treatment Plant

The Cambridge Farms WTP has a capacity of 0.062 MGD and an existing demand of 0.042 MGD. Case WS-25-02 will add 47 EDUs at 11,750 GPD to the Cambridge Farms WTP, increasing demand to 0.054 MGD (86.7% capacity). The County is reminded that any water system operating at 80 percent or more of its permitted capacity must submit a Capacity Management Plan to MDE.

New Design Water Treatment Plant

Cases WS-25-03 (1.5 EDUs), WS-25-04 (145 EDUs), WS-25-05 (1 EDU), and WS-25-06 (2,699 EDUs) will add a total of 711,625 GPD to the New Design WTP. The New Design WTP has a capacity of 25 MGD and an existing demand of about 6.54 MGD. These cases will increase demand to 7.25 MGD (29% capacity). There is adequate capacity at the New Design WTP.

2. Wastewater Treatment Plant Capacity

City of Brunswick Wastewater Treatment Plant

The City of Brunswick Wastewater Treatment Plant (WWTP) has a capacity of 1.4 MGD and a 3-year (2021-2023) average flow of 0.53 MGD. Case WS-25-01 will add 700 EDUs at 175,000 GPD to the City of Brunswick WWTP, increasing demand to 0.7 MGD (50% capacity). There is adequate capacity at the City of Brunswick WWTP.

Jefferson Wastewater Treatment Plant

The Jefferson WWTP has a capacity of 0.3 MGD and a 3-year (2021-2023) average flow of 0.137 MGD. Case WS-25-02 will add 47 EDUs at 11,750 GPD to the Jefferson WWTP, increasing demand to 0.149 MGD (49% capacity). There is adequate capacity at the Jefferson WWTP.

Ballenger-McKinney Wastewater Treatment Plant

Cases WS-25-03 (1.5 EDUs), WS-25-04 (145 EDUs), WS-25-05 (1 EDU), and WS-25-06 (2,699 EDUs) will add a total of 711,625 gallons per day (GPD) to the Ballenger-McKinney WWTP. The Ballenger-McKinney WWTP has a capacity of 15 MGD and a 3-year (2021-2023) average flow of 6.43 MGD. These cases will increase demand to 7.14 MGD (47% capacity). There is adequate capacity at the Ballenger-McKinney WWTP.

3. Climate Resiliency

Please be advised that based on MDE's Digital Flood Insurance Rate Maps, properties from Cases WS-25-05 (5420, 5346A & 5346B Ballenger Creek Pike), WS-25-06 (7117 A-E English Muffin Way, 4105 New Design Rd, 4317, 4126, 3760, 4120 & 4120B Buckeystown Pike), and WS-25-09 (10201 Taneytown Pky, 8450 Liberty Rd, & 5601 Manor Woods Rd) appear to be located in Flood Zones AE (floodway) and X (0.2% Annual Chance Flood Hazard). The Quantum Water Storage Tank and Waterline, North Seton Ave Waterline, and DePaul Street Waterline projects are also located in Flood Zone AE. The property owners should follow local floodplain ordinances and Federal Emergency Management Agency's guidelines and standards. It is advised that the county consider climate resiliency for this property, which could include but is not limited to the following steps (<https://toolkit.climate.gov/>):

- a. Explore Hazards: Identify climate and non-climate stressors, threats, and hazards and how they could affect assets (people and infrastructure).
- b. Assess vulnerability and risks: Evaluate assets vulnerability and estimate the risk to each asset.
- c. Investigate options: Consider possible solutions for your highest risks, check how others have responded to similar issues, and reduce your list to feasible actions.
- d. Prioritize and plan: Evaluate costs, benefits, and capacity to accomplish each action integrating the highest value actions into a stepwise plan.
- e. Take action: Move forward with your plan and check to see if your actions are increasing your resilience with monitoring.

The County is advised to contact Matt Smith at matthewv.smith@maryland.gov or Eileen Gladd at eileen.gladd@maryland.gov for additional information regarding the regulatory requirements for Floodplains and Storm Surges.

4. Water Resources Element

There is an updated Water Resources Element (WRE) guidance. The 2022 update

WRE guidance can be found at the following link:

<https://planning.maryland.gov/Pages/OurWork/RRP/envr-planning/water-resources-mg/2022/2022-guidance-update.aspx>

The 2022 guidance includes best practices for protecting receiving waters and for integrating climate change and equity considerations into local water resource planning. By updating the WRE, a required element of local comprehensive plans, jurisdictions will identify recommendations and strategies necessary for ensuring community resilience and sustainability, which can inform and be informed by, project and policy needs for county water and sewer plan updates.

In accordance with §9-507(a) of the Environment Article, Annotated Code of Maryland, the Department hereby **approves the Spring 2025 Cycle Amendment to the 2024 Frederick County Water and Sewerage Plan**. See the enclosed table and maps below.

This action completes MDE's review, as required by §9-507 of the Environment Article, Annotated Code of Maryland. If you need further assistance, please contact Robin Pellicano, Division Chief, at (410) 537-4215, toll-free at (800) 633-6101, or by e-mail at robin.pellicano@maryland.gov.

Sincerely,



Jeff White, Acting Manager
Watershed Protection, Restoration, and Planning Program
Water and Science Administration

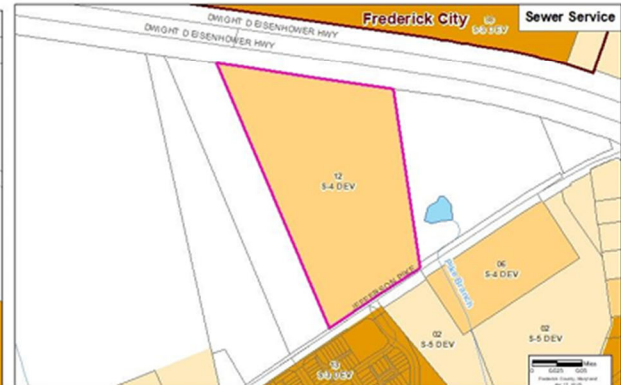
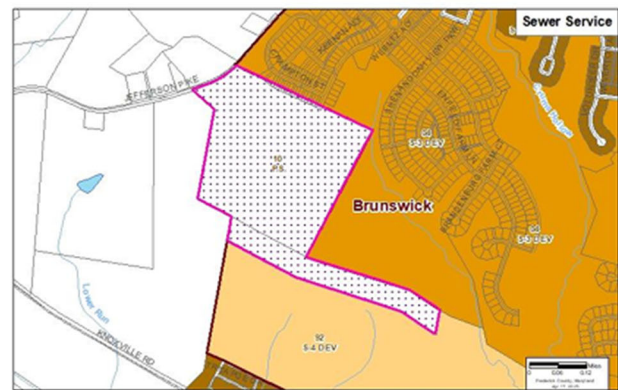
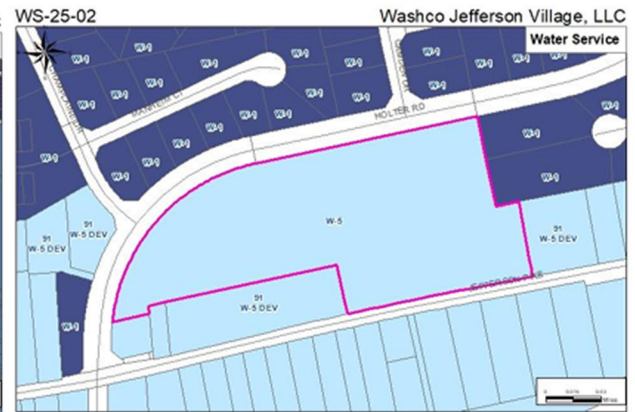
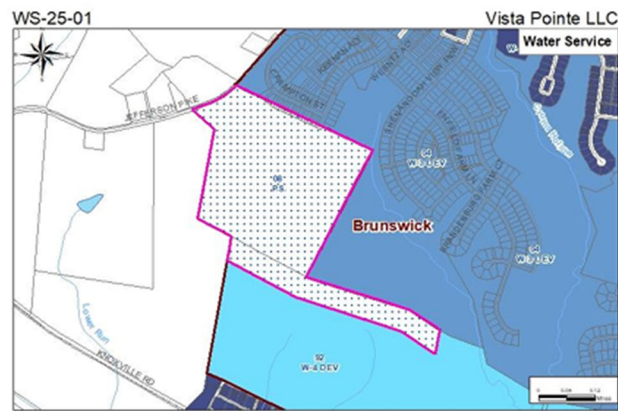
Enclosures

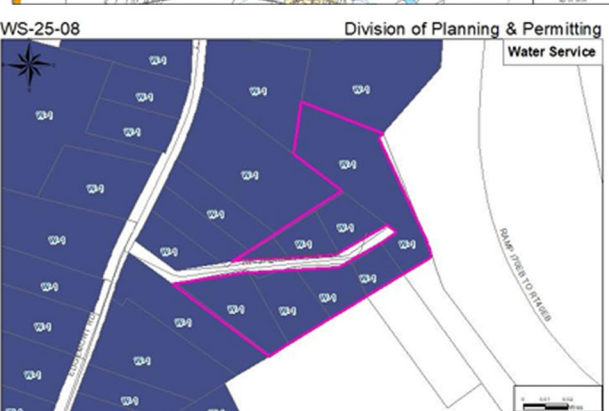
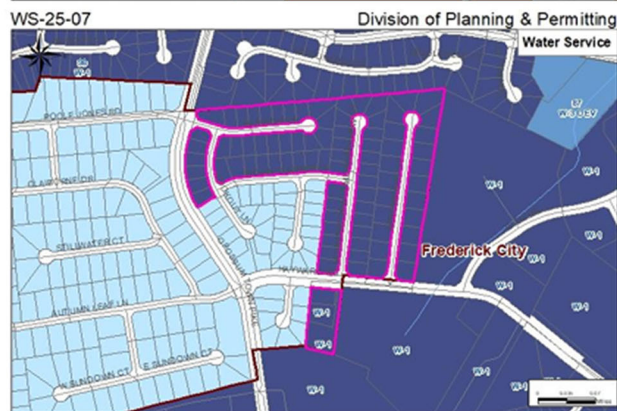
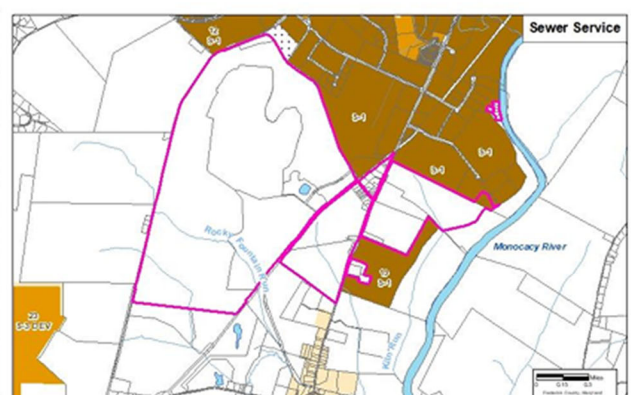
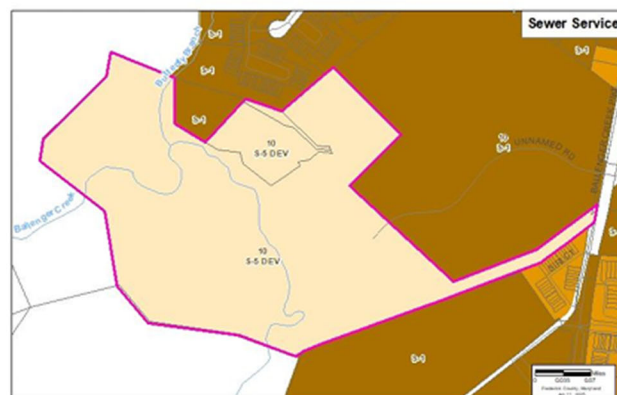
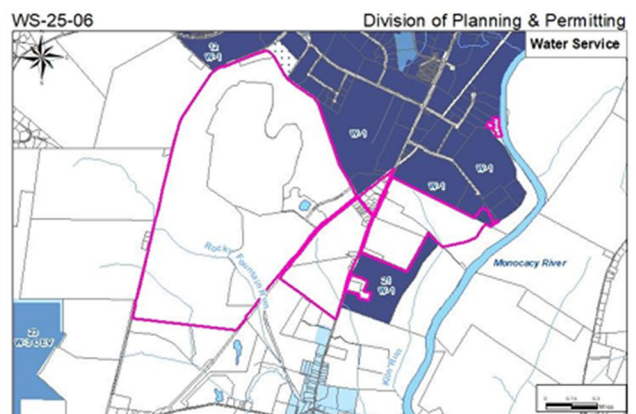
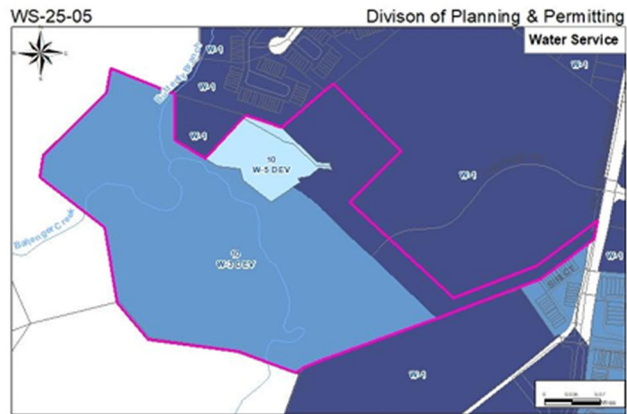
cc: Kimberly Gaines, Director, Livable Frederick Planning & Design (LFPD), Frederick County
Karin Flom, Principal Planner, LFPD, Frederick County
Andrew Stine, Principal Planner, LFPD, Frederick County
Jason Dubow, Director, Research, Review and Policy Division, MDP
Matthew Smith, Stormwater, Dam Safety, and Flood Management Program, WSA, MDE
Eileen Gladd, Stormwater, Dam Safety, and Flood Management Program, WSA, MDE

**Summary of the Frederick County Adopted Spring 2025 Cycle
Amendments to the 2024 Frederick County Water and Sewerage Plan**

Case No.	Applicant	Request	Council Action	MDE Action
WS-25-01	Vista Pointe LLC (Ferris & Brylawski)	Planned Service to W-4/Dev,S-4/Dev	Approve W-4/Dev,S-4/Dev	Approve
WS-25-02	Washco Jefferson Village, LLC (Jefferson Village)	W-5/Dev,S-5/Dev to W-3/Dev,S-3/Dev	Approve W-3/Dev,S-3/Dev	Approve
WS-25-03	LAM Properties LLC (Valley School)	W-5/Dev,S-5/Dev to W-4/Dev,S-4/Dev	Approve W-4/Dev,S-4/Dev	Approve
WS-25-04	SJP Jefferson 1 LLC (Jefferson Exchange)	W-4/Dev,S-4/Dev to W-3/Dev,S-3/Dev	Approve W-3/Dev,S-3/Dev	Approve
WS-25-05	Division of Planning & Permitting (Ballenger Creek Park)	W-5/Dev,S-5/Dev to W-3/Dev,S-3/Dev (with no change to existing W-1 or W-3/Dev)	Approve W-3/Dev,S-3/Dev	Approve
WS-25-06	Division of Planning & Permitting (South Frederick Corridors Plan)	60 properties from No Planned Service (water and sewer) to Planned Service (water and sewer), one property from W-1,S-1 to No Planned Service (water and sewer), and a Text Amendment to Chapter 1	Approve Planned Service (water and sewer), No Planned Service (water and sewer) for one property, and Text Amendment	Approve

WS-25-07	Division of Planning & Permitting (Clover Hill)	W-1,S-1 to W-5/Dev, (no change to sewer)	Approve W-5/Dev	Approve
WS-25-08	Division of Planning & Permitting (Braddock Heights)	W-1, No Planned Service (sewer) to No Planned Service (water), (no change to sewer)	Approve No Planned Service (water)	Approve
WS-25-09	Division of Planning & Permitting (Infrastructure Maps)	Various updates to the Water and Sewer Infrastructure Maps to reflect current development and infrastructure status	Approve updates to Water and Sewer Infrastructure Maps	Approve





WS-25-06 Property List:

Attachment #1: Property List (WS-25-06)

No.	Property Owner	Premises Address	Tax Account	Current Sewer	Prop. Sewer	Current Water	Prop. Water	Land Use	Zoning
1	Leslie Curtis Poe	4310 Buckeystown Pike, Frederick, MD 21704	01-032674	NPS	PS	NPS	PS	RurR	R1
2	Brayan W Galeas Acosta	4213 Lime Kiln Rd, Frederick, MD 21703	01-001981	NPS	PS	NPS	PS	RurR	R1
3	Steven & Christine Muir	4314 Buckeystown Pike, Frederick, MD 21704	01-004654	NPS	PS	NPS	PS	RurR	R1
4	Don Pepe Contractors Inc	4210 Lime Kiln Rd, Frederick, MD 21703	01-001965	NPS	PS	NPS	PS	RurR	R1
5	Vince & Antoinette Flook	4224 Lime Kiln Rd, Frederick, MD 21703	01-001817	NPS	PS	NPS	PS	RurR	R1
6	Roscoe G Bartlett, Jr. & Ellen Louise Baldwin Bartlett (Trustees)	4219 A Lime Kiln Rd, Frederick, MD 21703 4219 B Lime Kiln Rd, Frederick, MD 21703	01-001973	NPS	PS	NPS	PS	RurR	R1
7	Philip & Barbara Switzer	4205 Lime Kiln Rd, Frederick, MD 21703	01-009346	NPS	PS	NPS	PS	RurR	R1
8	Brenda Tam	4202 Lime Kiln Rd, Frederick, MD 21703	01-004069	NPS	PS	NPS	PS	RurR	R1
9	Katie McGivern	4100 Buckeystown Pike, Frederick, MD 21704	01-013130	NPS	PS	NPS	PS	RurR	R1
10	Shakir Lynch	4042 Buckeystown Pike, Frederick, MD 21704	01-007688	NPS	PS	NPS	PS	RurR	R1
11	Melissa Hairr & James King	4034 Buckeystown Pike, Frederick, MD 21704	01-002392	NPS	PS	NPS	PS	RurR	R1
12	Rachel Fay Brown	4326 Buckeystown Pike, Frederick, MD 21704	01-002686	NPS	PS	NPS	PS	RurR	R1
13	Joaquin Amaya Cruz	4028 Buckeystown Pike, Frederick, MD 21704	01-014714	NPS	PS	NPS	PS	RurR	R1
14	Magda Cuenca & Peter Rodriguez	4318 Buckeystown Pike, Frederick, MD 21704	01-012371	NPS	PS	NPS	PS	RurR	R1
15	Adrian Lainez	4328 Buckeystown Pike, Frederick, MD 21704	01-014749	NPS	PS	NPS	PS	RurR	R1
No.	Property Owner	Premises Address	Tax Account	Current Sewer	Prop. Sewer	Current Water	Prop. Water	Land Use	Zoning
16	Reynaldo Alvarado & Maria Lourdes Hernandez Chavez	4228 Buckeystown Pike, Frederick, MD 21704	01-005561	NPS	PS	NPS	PS	RurR	R1
17	Bonnie Miller	Lime Kiln Rd	01-009532	NPS	PS	NPS	PS	RurR	R1
18	John & Ruth Webb	4216 Lime Kiln Rd, Frederick, MD 21703	01-012959	NPS	PS	NPS	PS	RurR	R1
19	Bernard & Terri Sellers	4200 Lime Kiln Rd, Frederick, MD 21703	01-013912	NPS	PS	NPS	PS	RurR	R1
20	Colin Kutz & Caitlin Leahy	4218 Buckeystown Pike, Frederick, MD 21704	01-004956	NPS	PS	NPS	PS	RurR	R1
21	Gerald & Diana Tibbs	4130 Buckeystown Pike, Frederick, MD 21704	01-012029	NPS	PS	NPS	PS	RurR	R1
22	Daniel & Brittany Shaw	4306 Buckeystown Pike, Frederick, MD 21704	01-008234	NPS	PS	NPS	PS	RurR	R1
23	Brothers General Contracting	4201 Lime Kiln Rd, Frederick, MD 21703	01-009443	NPS	PS	NPS	PS	RurR	R1
24	Micas LLC	4330 Buckeystown Pike, Frederick, MD 21704	01-014757	NPS	PS	NPS	PS	RurR	R1
25	William Duley	4302 Buckeystown Pike, Frederick, MD 21704	01-009915	NPS	PS	NPS	PS	RurR	R1
26	Don Pepe Contractors Inc.	4210 Lime Kiln Rd, Frederick, MD 21703	01-001965	NPS	PS	NPS	PS	RurR	R1
27	Shannon Summers	Buckeystown Pike	01-010247	NPS	PS	NPS	PS	RurR	R1
28	Bonnie Miller	4204 Lime Kiln Rd, Frederick, MD 21703	01-013181	NPS	PS	NPS	PS	RurR	R1
29	Kitty V Poole Revocable Trust	4322 Buckeystown Pike, Frederick, MD 21704	01-004948	NPS	PS	NPS	PS	RurR	R1
30	Bonnie Miller	4209 Lime Kiln Rd, Frederick, MD 21703	01-006959	NPS	PS	NPS	PS	RurR	R1
31	Brothers General Contractors LLC	4324 Buckeystown Pike, Frederick, MD 21704	01-002694	NPS	PS	NPS	PS	RurR	R1
32	Edin Ruperto Delcid Cedillo	4136 Buckeystown Pike, Frederick, MD 21704	01-007343	NPS	PS	NPS	PS	RurR	R1
33	Abel Galindo Jimenez	4220 Lime Kiln Rd, Frederick, MD 21703	01-015192	NPS	PS	NPS	PS	RurR	R1
34	Patricia Fowler & Alta Kraft	4038 Buckeystown Pike, Frederick, MD 21704	01-007696	NPS	PS	NPS	PS	RurR	R1

No.	Property Owner	Premises Address	Tax Account	Current Sewer	Prop. Sewer	Current Water	Prop. Water	Land Use	Zoning
35	Ayu & Michael Limbacher	4222 Buckeystown Pike, Frederick, MD 21704	01-013386	NPS	PS	NPS	PS	RurR	R1
36	Gerald & Diana Tibbs	4102 Buckeystown Pike, Frederick, MD 21704	01-002732	NPS	PS	NPS	PS	RurR	R1
37	Hannah McBee & Claire Winik	4308 Buckeystown Pike, Frederick, MD 21704	01-032666	NPS	PS	NPS	PS	RurR	R1
38	Alexander Smith & Heather Wagner	4226 Buckeystown Pike, Frederick, MD 21704	01-007017	NPS	PS	NPS	PS	RurR	R1
39	Bonnie Miller	Lime Kiln Rd	01-013203	NPS	PS	NPS	PS	RurR	R1
40	Samuel Snow	7117 C English Muffin Way, Frederick, MD 21703	01-007521	NPS	PS	NPS	PS	OS	RC
41	Lucille Philleo	7117 English Muffin Way, Frederick, MD 21703	01-008315	NPS	PS	NPS	PS	OS	RC
42	Kerri Stevens	7117 B English Muffin Way, Frederick, MD 21703	01-005812	NPS	PS	NPS	PS	OS	RC
43	Samuel Snow	English Muffin Way	01-007548	NPS	PS	NPS	PS	OS	RC
44	Roscoe G Bartlett, Jr. & Ellen Louise Baldwin Bartlett (Trustees)	7117 E English Muffin Way, Frederick, MD 21703	01-011839	NPS	PS	NPS	PS	OS	RC
45	Lisa & Deanna Kraus	7117 D English Muffin Way, Frederick, MD 21703	01-005529	NPS	PS	NPS	PS	OS	RC
46	Peter Shepherd & Alina Pankova	7117A English Muffin Way, Frederick, MD 21701	01-006231	NPS	PS	NPS	PS	OS	RC
47	Roscoe G Bartlett, Jr. & Ellen Louise Baldwin Bartlett (Trustees)	4317 Buckeystown Pike Frederick, MD 21704	01-015605	NPS	PS	NPS	PS	IC, IN	AG
48	Shannon & Timothy Viverette	4101 Buckeystown Pike, Frederick, MD 21704	01-007319	NPS	PS	NPS	PS	IC, IN	AG
49	Howard & Virginia Crum	4007 Buckeystown Pike, Frederick, MD 21704	01-013904	NPS	PS	NPS	PS	IN	AG
No.	Property Owner	Premises Address	Tax Account	Current Sewer	Prop. Sewer	Current Water	Prop. Water	Land Use	Zoning
50	Argos USA LLC	"E/S Rt 15 S/Lime Kiln Nr. Lime Kiln"	01-000101	NPS	PS: IC, IN NPS: OS	NPS	PS: IC, IN NPS: OS	IC, IN, OS	AG, RC
51	APIF Maryland LLC	4001 Buckeystown Pike, Frederick, MD 21704	01-026313	NPS	PS	NPS	PS	IN	AG
52	Roscoe G Bartlett, Jr. & Ellen Louise Baldwin Bartlett (Trustees)	4317 Buckeystown Pike, Frederick, MD 21704	01-001906	NPS	PS: IC, IN NPS: OS	NPS	PS: IC, IN NPS: OS	IC, IN, OS	AG, RC
53	Howard & Virginia Crum	4005 Buckeystown Pike, Frederick, MD 21704	01-045954	NPS	PS	NPS	PS	IN	AG
54	Nevins & Desiree Bartlett	Catoctin Mountain Highway	01-001876	NPS	PS	NPS	PS	IC, IN	AG
55	Dudrow Industrial Park LLC	4423B Buckeystown Pike, Frederick, MD 21701 (Outlot for Parkland)	01-005030	S-1, NPS	NPS	W-1, NPS	NPS	IC, OS	RC
56	Argos USA LLC	4120 Buckeystown Pike, Frederick, MD 21704 4120 B Buckeystown Pike, Frederick, MD 21704	01-000136	NPS	PS	NPS	PS	MM	MM
57	5703 Urbana Pike LLC	4126 Buckeystown Pike, Frederick, MD 21704	01-000128	NPS	PS	NPS	PS	MM, RurR	AG, MM
58	Argos USA LLC	4105 New Design Rd, Frederick, MD 21703	01-021508	NPS	PS	NPS	PS	LI, MM	AG, MM
59	YBC Investors LLC	New Design Road	01-046071	NPS	PS	NPS	PS	MM	MM
60	Jorgensen Family Foundation Inc	3760 Buckeystown Pike, Adamstown, MD 21710 (E/S Buckeystown Pike N/S Buckeystown Pike)	01-045709	NPS	PS	NPS	PS	LI, RurR	AG
61	Argos USA LLC	No Address	N/A	NPS	PS	NPS	PS	MM	ROW

WS-26-06 Text Amendment to Chapter 1, Policies and Procedures:

PS – Planned Service

A classification assigned during the Comprehensive Planning Process to an area or property shown on the Comprehensive Plan for growth utilizing publicly-owned community water and/or sewer systems, or within a Community Growth Area of a community to be served by public water and sewer in the County Comprehensive Plan, within the 11–20-year time frame. Properties within this classification have designations other than Agricultural/Rural, ~~or~~ Natural Resource, or the Open Space Form Designation on the County Comprehensive Plan. This classification may also be assigned through the piecemeal application process by a staff-initiated application with regard to location of infrastructure generally or reclassification of properties to implement the Comprehensive Plan, or if the property no longer meets the requirements of its current classification. Additionally, this classification may be assigned through the piecemeal application process to provide service to areas where the Health Department determines access is necessary to solve an existing health-related problem.

S-5/W-5 – Mid-Range Plan Phase

A classification assigned through the Comprehensive Planning Process where improvements to, or construction of, publicly owned community sewerage or water systems are planned within the 7–10-year time period. Except as provided below, properties requesting this classification shall meet the following criteria:

1. Have a land use plan designation other than Agricultural/Rural, ~~or~~ Natural Resource, or the Open Space Form Designation on the County Comprehensive Plan. As per the policy for PS-Planned Service, this classification may be assigned through the piecemeal application process to provide service to areas where the Health Department determines access is necessary to solve an existing health-related problem.

S-4/W-4 – Concept Evaluation Phase

A classification assigned through the piecemeal application process to properties designated residential, commercial, or industrial, or in general, a category other than Agricultural/Rural, ~~or~~ Natural Resource, or the Open Space Form Designation on the County Comprehensive Plan, and where improvements to, or construction of, publicly-owned community sewerage or water systems are planned within the 4–6-year time period. As per the policy for PS-Planned Service and S-5/W-5, this classification may also be assigned through the piecemeal application process to provide service to areas where the Health Department determines access is necessary to solve an existing health-related problem. Properties requesting this classification shall meet the following criteria:

WS-25-07 Property List:

Attachment #1: Property List (Case WS-25-07)

No.	Premise	Owner	Tax ID	Land Use	Zoning
1	8101 Arrowhead Ct	Kerry & Lucinda Verbeek	28-557140	LDR	R-3
2	8102 Arrowhead Ct	Paul & Barbara Biddinger	28-556926	LDR	R-3
3	8103 Arrowhead Ct	Christopher & Lisa Caro	28-557132	LDR	R-3
4	8104 Arrowhead Ct	Luisa Miranda	28-556934	LDR	R-3
5	8105 Arrowhead Ct	Woodward & Nancy Davies	28-557124	LDR	R-3
6	8106 Arrowhead Ct	Kouadio Camille Konan & Ahouman Camille Monnet Konan	28-556942	LDR	R-3
7	8107 Arrowhead Ct	Robert & Teresa Heister	28-557116	LDR	R-3
8	8108 Arrowhead Ct	John & Ashley Corcoran	28-556950	LDR	R-3
9	8109 Arrowhead Ct	Ramona Turner	28-557108	LDR	R-3
10	8110 Arrowhead Ct	Miranda Temple	28-556969	LDR	R-3
11	8111 Arrowhead Ct	Michael McLaughlin & Annelise Nentwick	28-557094	LDR	R-3
12	8112 Arrowhead Ct	Mark & Debra Disney	28-556977	LDR	R-3
13	8113 Arrowhead Ct	Darrell & Laurel Batson	28-557086	LDR	R-3
14	8114 Arrowhead Ct	Keller Rivera	28-556985	LDR	R-3
15	8115 Arrowhead Ct	Amanda Aguilar	28-557078	LDR	R-3
16	8116 Arrowhead Ct	Thomas & Mary Sue Schrider	28-556993	LDR	R-3
17	8117 Arrowhead Ct	Aaron & Kathryn Miller	28-557051	LDR	R-3
18	8118 Arrowhead Ct	Mario Enrique Flores & Rocio Stephanie Pena Segovia	28-557000	LDR	R-3
19	8119 Arrowhead Ct	Kenneth Moore & Barbara Lawson	28-557043	LDR	R-3
20	8120 Arrowhead Ct	Thomas & Lucille Croker	28-557019	LDR	R-3
21	8121 Arrowhead Ct	Michael & Kathryn Dissinger	28-557035	LDR	R-3
22	8122 Arrowhead Ct	Brooks & Sherry Yetter	28-557027	LDR	R-3
23	7337 Hayward Rd	Mark & Shelley Sunkel	28-598346	LDR	R-5
24	7339 Hayward Rd	Daryl Whittington	28-561237	LDR	R-5
25	7341 Hayward Rd	Unified Community Connections	28-561229	LDR	R-5
26	7204 Indian Summer Ln	David & Linda Sterling	28-537654	LDR	R-5
No.	Premise	Owner	Tax ID	Land Use	Zoning
27	7206 Indian Summer Ln	Darryl & Jennifer Brenzel	28-537662	LDR	R-5
28	7208 Indian Summer Ln	Vonn & Jessica Holt	28-537670	LDR	R-5
29	7210 Indian Summer Ln	Brien Jones & Thanh T. Trinh	28-537689	LDR	R-5
30	7212 Indian Summer Ln	Thomas & Carrie Kurdt	28-537697	LDR	R-5
31	7214 Indian Summer Ln	Ryan & Tiffany Dinsmore	28-537700	LDR	R-5
32	7216 Indian Summer Ln	Elmer Vidon Torres & Salena Martinez Torres	28-537719	LDR	R-5
33	7218 Indian Summer Ln	Brett & Sandra Chaney	28-537727	LDR	R-5
34	8214 Lookout Ln	Thomas & Aubrey Mohler	28-547781	LDR	R-5
35	8216 Lookout Ln	Daniel & Stephanie Ervin	28-547773	LDR	R-5
36	8217 Lookout Ln	Kenneth & Laura Skipper	28-547692	LDR	R-5
37	8218 Lookout Ln	Judith Eyler	28-547730	LDR	R-5
38	8219 Lookout Ln	Jasmyne & Kevin Barbour	28-547684	LDR	R-5
39	8220 Lookout Ln	Antonia Martinez Sanchez	28-547749	LDR	R-5
40	8222 Lookout Ln	Clifford & Irene Morris	28-547757	LDR	R-5
41	8224 Lookout Ln	Carl & Roslyn Martin	28-547765	LDR	R-5
42	8201 Morning Dew Ln	Manuel & Jackelyn Salmero	28-535147	LDR	R-5
43	8202 Morning Dew Ln	Richard & Luceil Padron	28-545681	LDR	R-5
44	8203 Morning Dew Ln	Diego Gomez-Morales & Amparo Morales	28-535139	LDR	R-5
45	8204 Morning Dew Ln	Harry & Nancy Beard	28-534264	LDR	R-5
46	8205 Morning Dew Ln	Brian & Jami Biernacki Pritchard	28-538219	LDR	R-5
47	8206 Morning Dew Ln	Kathy Rohrer	28-535112	LDR	R-5
48	8207 Morning Dew Ln	Donald & Richelle Putman	28-533918	LDR	R-5
49	8208 Morning Dew Ln	Harold & Carla Martz	28-535104	LDR	R-5
50	8209 Morning Dew Ln	Shannon Butts	28-543840	LDR	R-5

No.	Premise	Owner	Tax ID	Land Use	Zoning
51	8210 Morning Dew Ln	Ronald Patterson	28-544499	LDR	R-5
52	8211 Morning Dew Ln	Lisa Sichert	28-535120	LDR	R-5
53	8212 Morning Dew Ln	Tony Nghia & Hong Ly	28-535090	LDR	R-5
54	8213 Morning Dew Ln	Viola Carroll	28-534728	LDR	R-5
55	8214 Morning Dew Ln	Timothy & Sheryl Fast	28-535082	LDR	R-5
56	8215 Morning Dew Ct	John & Donna Barr	28-535228	LDR	R-5
57	8217 Morning Dew Ct	Cheryl Pyles	28-535236	LDR	R-5
58	8218 Morning Dew Ct	Tyler Snoots & Megan Linthicum	28-535163	LDR	R-5
59	8219 Morning Dew Ct	Mark Dagro	28-535244	LDR	R-5
60	8220 Morning Dew Ct	Ryan & Kelley Schisler	28-535171	LDR	R-5
61	8221 Morning Dew Ct	Robert & Elida Bassett	28-535252	LDR	R-5
62	8222 Morning Dew Ct	Timothy Cannon	28-535198	LDR	R-5
63	8223 Morning Dew Ct	Michael Wolford	28-535260	LDR	R-5
64	8224 Morning Dew Ct	Ralph & Margaret Feaga	28-535201	LDR	R-5
65	8225 Morning Dew Ct	Eric & Diane Gallagher	28-537581	LDR	R-5
66	8226 Morning Dew Ct	Robert & Elizabeth Morcock	28-537549	LDR	R-5
67	8227 Morning Dew Ct	Valerie Funderburk	28-537573	LDR	R-5
68	8228 Morning Dew Ct	Alta Sherman	28-537557	LDR	R-5
69	8229 Morning Dew Ct	Nathan & Lisa Rector	28-537565	LDR	R-5
70	7202 Rainbow Ln	Christopher Wareing & Genevieve Clarke	28-547722	LDR	R-5
71	7204 Rainbow Ln	Andrew & Deborah Zoulis	28-547714	LDR	R-5
72	7205 Rainbow Ln	Steven & Nadia Jennings	28-547676	LDR	R-5
73	7206 Rainbow Ln	Jeffrey Matrone & Holly Arthur	28-547706	LDR	R-5
74	7207 Rainbow Ln	Kenneth & Peggy Sue Garst	28-547668	LDR	R-5
75	7208 Rainbow Ln	Norman & Melissa Ross	28-547935	LDR	R-5
76	7209 Rainbow Ln	Laura & David Wright	28-548079	LDR	R-5
77	7210 Rainbow Ln	Elizabeth Kisse & Mary Horton	28-547943	LDR	R-5
78	7211 Rainbow Ln	Janet Sappington	28-548060	LDR	R-5
79	7212 Rainbow Ln	Kyra Szugye	28-547951	LDR	R-5
No.	Premise	Owner	Tax ID	Land Use	Zoning
80	7213 Rainbow Ln	Stephen & Deborah Tuel	28-548052	LDR	R-5
81	7214 Rainbow Ln	Sharew & Megan Hailu	28-547978	LDR	R-5
82	7215 Rainbow Ln	William Shoemaker	28-548044	LDR	R-5
83	7216 Rainbow Ln	Andrew & Denise Brown	28-547986	LDR	R-5
84	7217 Rainbow Ln	Donald & Diane Colville	28-548036	LDR	R-5
85	7218 Rainbow Ln	Patrick Younkens & Jesse Nisley	28-547994	LDR	R-5
86	7219 Rainbow Ln	Community Living Inc	28-548028	LDR	R-5
87	7220 Rainbow Ln	Steven Hall & Kathleen Myers	28-548001	LDR	R-5

LDR = Low Density Residential; R-3, Low Density Residential; R-5, Medium Density Residential

WS-25-08 Property List:

Attachment 1 – Reclassification List WS-25-08

No.	Premise	Owner	Tax ID
1	5009 Whispering Pines Ln	Robert & Martha Berberich	24-446581
2	5013 Whispering Pines Ln	Robert Keller III	24-457621
3	5009 Whispering Pines Ln	Robert & Martha Berberich	24-446603
4	5005 Whispering Pines Ln	Paige Crawford (Trustee)	24-457613
5	5014 Whispering Pine Ln	Boris Medrano & Morella Bautista	24-447456
6	5018 Whispering Pines Ln	Jeffrey Jay Masters	24-458989
7	5017 Whispering Pines Ln	Daysi Velasquez & Celio Reyes	24-462854
8	5021 Whispering Pines Ln	Carl & Joyce Huddleson	24-450759

WS-25-09 Map Amendments:

Attachment 1: List of Water Infrastructure Map Amendments

No.	Type	Name	Change	System	Premise	Tax ID	Tax Map & Parcel
Frederick County Systems							
1	Booster Pump Station	Harvest Ridge Booster Pump Station	Add (Existing)	Samhill	13624Z Primavera Dr	18-591358	0089/0263
2	Elevated Water Storage Tank	Libertytown West Water Storage Tank	Add (Existing)	Libertytown West	Woodsboro Rd	08-604704	0051/0019
3	Water Treatment Facility	Libertytown West Water Treatment Plant	Add (Existing)	Libertytown West	Woodsboro Rd	08-604704	0051/0019
4	Well	Well Site B (FR 813218)	Remove (Not in Service)	N/A	Plat Book 68, Page 134	N/A	0791/0287
5	Well	Well Site A (FR 813070)	Remove (Not in Service)	N/A	Plat Book 59, Page 84	N/A	0791/0287
6	Elevated Water Storage Tank	Urbana High School Water Storage Tank	Remove (No longer exists)	New Design	3471A Urbana Pike	07-219237	0096/0242
7	Elevated Water Storage Tank	Alpine Water Storage Tank	Move (Location Change)	New Design	Outlot 1 of Alpine, located off of proposed Alplands Court	27-519237	0078/0715
8	Well	Well (Unknown)	Remove (Not in Service)	N/A	5153 Intercoastal Ct	09-308814	088B/0181
9	Booster Pump Station	Pinehurst Booster Pump Station	Change (Existing)	New Design	Within Lakeridge Dr (Private ROW)	27-516645	0069/0000
10	Ground Water Storage Tank	N/A	Remove (Does Not Exist, Not Proposed)	N/A	Symbol is located in the vicinity of Sugarloaf Parkway & Urbana Pike intersection	N/A	N/A
11	Booster Pump Station	Quantum Booster Pump Station	Add (Proposed)	New Design	Manor Woods Road	01-005391	0094/0003
No.	Type	Name	Change	System	Premise	Tax ID	Tax Map & Parcel
12	Elevated Water Storage Tank	Ballenger 2 Water Storage Tank	Add (Existing)	New Design	6004 Fair Oaks Dr	23-457660	076F/0563
13	Booster Pump Station	Fountaindale Braddock Booster Pump Station	Change (Existing)	Fountaindale/Braddock	4653 Granite Dr	03-152626	0066/0368
14	Water Treatment Plant	White Rock Water Treatment Plant	Add (Existing)	White Rock	9325 White Rock Ave	21-418277	0047/0042
15	Elevated Water Storage Tank	White Rock 1 Water Storage Tank	Add (Existing)	White Rock	6090A Blue Stone Cir	21-418269	0047/0042
16	Elevated Water Storage Tank	White Rock 2 Water Storage Tank	Add (Existing)	White Rock	6090A Blue Stone Cir	21-418269	0047/0042
17	Water Treatment Plant	New Design Water Treatment Plant	Add (Existing)	New Design	850 New Design Rd	01-006037	0109/0076
18	Water Pump Station	New Design Water Pump Station	Add (Existing)	New Design	850 New Design Rd	01-006037	0109/0076
19	Ground Water Storage Tank	New Design 1 Ground Water Storage Tank	Add (Existing)	New Design	850 New Design Rd	01-006037	0109/0076
20	Ground Water Storage Tank	New Design 2 Ground Water Storage Tank	Add (Existing)	New Design	850 New Design Rd	01-006037	0109/0076
21	Well	N/A	Remove	Previous Private System	5601 Manor Woods Rd	01-000152	0094/0070
22	Elevated Water Storage Tank	N/A	Remove	Previous Private System	5601 Manor Woods Rd	01-000152	0094/0070
23	Water Treatment Plant	N/A	Remove	Previous Private System	5601 Manor Woods Rd	01-000152	0094/0070

No.	Type	Name	Change	System	Premise	Tax ID	Tax Map & Parcel
24	Elevated Water Storage Tank	Quantum Water Storage Tank (Potable)	Add (Proposed)	New Design	5601 Manor Woods Rd	01-000152	0094/0070
25	Elevated Water Storage Tank	Quantum Water Storage Tank (Cooling)	Add (Proposed)	New Design	5601 Manor Woods Rd	01-000152	0094/0070
26	16-Inch Water Line	Quantum Water Line (Cooling, Lines A5 and A4 on the APFO LOU)	Add (Proposed)	New Design	5601 Manor Woods Rd	01-000152	0094/0070
27	Elevated Water Storage Tank	Copperfield Water Storage Tank	Add (Existing)	Copperfield	4838 PRUSSMAN WAY	14-592455	0084/0293
28	Well	3 Well Symbols associated with former Point of Rocks system	Remove (Not in Service)	Point of Rocks (Former)	N/A	N/A	N/A
29	Water Treatment Plant	3 WTP Symbols, former Point of Rocks System	Remove (Not in Service)	Point of Rocks (Former)	N/A	N/A	N/A
Municipal Systems							
30	Elevated Water Storage Tank	K Street Elevated Water Storage Tank	Add (Existing)	City of Brunswick	501 E K St	25-476379	092G/1371
31	Elevated Water Storage Tank	Cooper Proposed Elevated Water Storage Tank	Move (Proposed)	City of Brunswick	Souder Road (move from 25-490940 to NW Corner 12-295316)	12-295316	092D/0121
32	Ground Water Storage Tank	Storage Tank 1 (500,000 gal.)	Add (Existing)	Town of Emmitsburg	Across road from WTP (8585 Crystal Fountain Rd)	N/A	N/A
33	Ground Water Storage Tank	Storage Tank 2 (140,000 gal.)	Add (Existing)	Town of Emmitsburg	Across road from WTP (8585	N/A	N/A
No.	Type	Name	Change	System	Premise	Tax ID	Tax Map & Parcel
34	Well	Well 4 (FR1997G032)	Add (Existing)	Town of Emmitsburg	Crystal Fountain Rd) South side Hamptons Valley Rd, approximately 1,460 ft SW of the WTP	N/A	N/A
35	16-Inch Water Line	Water Treatment Plant Line Replacement	Add (Proposed)	Town of Emmitsburg	WTP/GST to Town	N/A	N/A
36	Water Treatment Plant	Emmit Gardens Water Treatment Plant	Add (Proposed)	Town of Emmitsburg	21 Park Dr	05-160820	009A/1863
37	18-Inch Water Line	18-Inch Raw Water Line (Kellerton)	Move (Proposed)	City of Frederick	Kellerton Phase II	N/A	N/A
38	Elevated Water Storage Tank	Kellerton Elevated Water Storage Tank	Add (Proposed)	City of Frederick	Kellerton Phase II	N/A	N/A
39	Reservoir	City of Frederick Liganore Water Treatment Plant	Remove (Existing) pre-sedimentation incorreced marked	City of Frederick	Liganore Road	13-297053	0078/0001
40	Water Pumping Station	Ballenger Creek Interconnect Water Pumping Station	Add (Existing)	City of Frederick	315 Ballenger Center Dr	02-232456	077D/1122
41	Water Treatment Plant	Foxfield Water Treatment Plant	Add (Proposed)	Town of Middletown	Coblentz Rd	03-135632	055I/0054
42	Water Treatment Plant	Well 15 Water Treatment Plant	Add (Existing)	Town of Middletown	7320 Holter Road	03-161021	065E/0216

No.	Type	Name	Change	System	Premise	Tax ID	Tax Map & Parcel
43	Water Treatment Plant	Brookridge Water Treatment Plant	Add (Existing)	Town of Middletown	3007 Marker Rd (formerly 400 Knoll Side Place)	03-607793	055G/0098
44	Water Treatment Plant	Deerwoods Water Treatment Plant	Add (Existing)	Town of Myersville	111A Deerwoods Pl	N/A	N/A
45	Water Treatment Plant	Ashley Water Treatment Plant	Add (Existing)	Town of Myersville	49A Fox Rock Dr	16-361860	046A/0011
46	Well	Pleasant Walk Rd Spring Supply	Change 7 Existing well symbols to 7 existing spring symbols	Town of Myersville	Myersville Watershed	N/A	N/A
47	Well	Creamery Park Well	Remove (Not in Service)	Town of Walkersville	30 E Pennsylvania Ave	26-487382	049H/1439
48	Well	Two well symbols	Remove (Not in Service)	Town of Walkersville	Pennsylvania Ave at Portis Ct	26-487390	049H/1424

Attachment 2: List of Sewer Infrastructure Map Amendments

No.	Type	Name	Change	System	Premise	Tax ID	Tax Map & Parcel
Frederick County Systems							
1	Wastewater Treatment Plant	Monrovia Wastewater Treatment Plant	Remove (Not in Service)	Monrovia (Former)	5153 Intercoastal Ct	09-308814	088B/0181
2	Sewage Pump Station	Westridge Sewage Pump Station	Change & Move (Existing, Move to Constructed Location)	Ballenger-McKinney	7176 Dolomite Rd	13-607124	068E/0193
3	Sewage Pump Station	Ceresville Sewage Pump Station	Add (Existing)	Ballenger-McKinney	8450 Liberty Rd	28-538995	058G/0202
4	Sewage Pump Station	Urbana South Sewage Pump Station	Add (Proposed)	Ballenger-McKinney	N/A (s/s Bennett Creek, east of I-270)		
5	Sewage Pump Station	Bloomfields Sewage Pump Station	Add (Existing)	Ballenger-McKinney	2500 Mayapple Lane	Plat Book 111, Page 13	N/A
6	Sewage Pump Station	Urbana Interim Pump Station (MH41)	Remove (Not in service)	Ballenger-McKinney	3179 Urbana Parkway	07-238959	0096/0258
7	Sewage Pump Station	Quantum Sewage Pump Station	Add (Existing)	Ballenger-McKinney	Happy Landing Road	01-605688	0094/0070
8	Wastewater Treatment Plant	N/A	Remove	Previous Private System	5601 Manor Woods Rd	01-000152	0094/0070
Municipal Systems							
9	Sewage Pump Station	Rutters Sewage Pump Station	Add (Existing)	Town of Emmitsburg	10201 Taneytown Pky	05-158680	009A/0008
No.	Type	Name	Change	System	Premise	Tax ID	Tax Map & Parcel
10	20-Inch Sewer Line	20-Inch Sewer Line	Remove (Existing) 8-Inch Sewer Incorrectly Mapped as 20-Inch	City of Frederick	Between 63 and 67 Thomas Johnson Drive	N/A	N/A
11	18-Inch Sewer Line	West Patrick Street 18-Inch Sewer Line	Add (Existing)	City of Frederick	West Patrick Street	N/A	N/A
12	Points of Discharge	East WWTP	Add (Existing)	Town of Middletown	East WWTP (7320 Holter Rd)	03-161021	065E/0216