OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

MEMORANDUM

August 25, 2026

TO: Natali Fani-González, President
Montgomery County Council

FROM: Marc Elrich, County Executive

SUBJECT: Executive Draft 2026 Comprehensive Water Supply and Sewerage Systems Plan

On behalf of the Department of Environmental Protection (DEP), I am pleased to transmit an update to the County's Approved 2022 Comprehensive Water Supply and Sewerage Systems Plan ("Plan" or "Ten-Year Water and Sewer Plan"). This 2026 Executive Draft Plan update is being transmitted to the County Council for review and approval. The County Council-approved plan will then be submitted to the Maryland Department of the Environment (MDE) and other State agencies for final review and adoption. This 2026 Executive Draft Plan contains policy and technical updates on the County's public water supply and sewerage systems that have changed since the 2022 comprehensive update of the Plan. The draft Plan also includes revisions to improve accessibility, such as reformatting information tables and simplifying figures. The updated 2026 Executive Draft Plan, which includes an Executive Summary, is attached as a PDF.

The following summarizes major policy updates and revisions included in the Executive draft Plan:

CHAPTER 1: OBJECTIVES AND POLICIES

- **Section II. G.2.: Special Policies for Water and Sewer Service: Community Service to Relieve Onsite System Concerns**
  - Clarifies the options for cases outside the planned public service envelope that need new main extensions for service to be addressed by either the administrative or Council review processes, as appropriate.
  - Relocates the onsite systems surveys to new Appendix G.
- **Section II.G.4.b: Special Policies for Water and Sewer Service: Private Institutional Facilities (PIF) policy; Further PIF Policy Considerations**

- Removed this section from the text. The issues raised there were largely outdated and had found no traction with policymakers.

- **Section III.A.5: General Policies for Water Supply and Sewerage Systems Facilities: Washington Suburban Sanitary District: Facility Planning**
  - Updates to reflect WSSC Water's facility planning process and current asset management and business case review practices.
- **Section III.C.d: Individual Systems: Onsite Systems Management**
  - Removes references to mandatory septic tank pump-out legislation and adds information on a proposed rebate program.
- **Section IV.A: Water and Sewerage Systems Financing: Washington Suburban Sanitary District**
  - Revises content based on WSSC Water recommendations for consistency with current practices.
- **Section IV.A.2.c: Efforts to Address Underserved and Unserved Communities**
  - Adds information on the Meadowbrook Estates sewer project funded through a U.S. EPA grant.

CHAPTERS 2–4: GENERAL BACKGROUND, WATER SUPPLY, AND SEWERAGE SYSTEMS

- Updated technical content based on input from County agencies, municipalities, and State and regional partners.

APPENDIX G: ON-SITE SYSTEM SURVEYS

- Provides a step-by-step process for onsite system surveys, documentation, and Council presentation.

ADDITIONAL DISCUSSION ISSUES

The following issues have been raised in discussions with Council staff and may also be among those discussed by Council members, agency staff, and the public. Policies addressing these issues are not included in the Executive draft Water and Sewer Plan.

- **Public service for commercial uses**. This focuses on commercial uses located outside the planned public service envelopes. The County Council chose to include a policy that MDE advised the County had not done sufficient research on the potential effects of such a policy on the WSSC Water systems and on land use near these served commercial uses. Based on MDE's comments, DEP has examined this issue further and can provide the results of this research, if requested. The Council recently deferred a category change request for a proposed commercial use: an elder care facility on Clarksburg Road in Boyds that could be affected by this policy.
- **Peripheral public service policy.** Another issue raised by the preceding category-change case in Boyds concerns the peripheral public service policy. This policy currently exists only in the Potomac Subregion area as recommended by the 2002 master plan. It

was created to address properties within or at the edge of the planned public sewer envelope that, due to zoning or other circumstances, were not eligible for public sewer service. The Council has seen cases such as this in other areas of the county, cases sometimes referred to as a "hole in the donut" situation. These are cases where a property or properties ineligible for public service are surrounded or mostly surrounded by properties within a planned public service envelope.

In at least one such case, in the Sandy Spring area, the Council chose to fill in the donut hole by allowing public service for a property despite its ineligibility under the service policies in the Plan. This raises the question of whether this policy should apply elsewhere in the county, not just in the Potomac area, or whether a similar policy, more specifically directed at donut-hole locations, should be developed.

Further, the Palatine subdivision in Potomac is currently excluded from use by the peripheral sewer service policy, due to assumed service limitations resulting from its low-pressure sewage (LPS) system. Previous deferrals of two category change cases for properties adjacent to the planned sewer envelope in Palatine prompted WSSC Water to study the LPS system to determine the system's actual limitations in serving adjacent properties. The study revealed that without significant changes to the existing Palatine LPS system, a limited number of sewer service connections could be offered to properties that satisfied the peripheral sewer system policy as being adjacent to or confronting the planned sewer service area. Allowing these adjacent properties to connect to the Palatine LPS system would require a revision to the peripheral service policy in the Plan.

- **Deferred category change decisions by county.** Related to the preceding discussion, there are several sewer service area category changes on which the Council has deferred action pending resolution of these issues.
    - **WSCCR 24-TRV-01A:** 11905 Centurion Way. Service for an existing residence
    - **WSCCR 24-TRV-03A:** 12720 Piney Meetinghouse Rd. Relief for a failed septic system
    - **WSCCR 25-TRV-05A:** 12721 Piney Meetinghouse Rd. Proposed single residence
    - **WSCCR 26-CKB-01A:** 21820 Clarksburg Rd. Proposed elder care facility

- **Abutting mains policy**: Following the Council's adoption of the Water and Sewer Plan update, MDE chose to deny approval of a section of the abutting mains policy. This section addresses a request from a property owner to transfer a single abutting mains connection right from one qualifying property to another, commonly owned property. DEP has done some research on this issue since MDE's denial. The Council deferred action on a sewer category request for this property: **WSCCR 20**-TRV-09A for 20014 Piney Meetinghouse Rd. for one single residence. The deferral was based on a discussion of the abutting mains policy.

- **Laytonsville septic system concerns.** The Town Council and Mayor of Laytonsville have contacted DEP to seek information on and a process for extending public sewer service to the town. They have cited septic system problems, especially with the older, smaller lots towards the center of town. DEP staff have had discussions with the Town's

officials and are investigating the potential size of and needs for a septic survey in response to the Town's request.

The Department of Environmental Protection will have staff from the Watershed Restoration Division available for discussions with the Transportation and Environment Committee and the full Council regarding this comprehensive update to the Plan.

Enclosures

cc:

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MONTGOMERY COUNTY

2026- 2035 Ten-Year

COMPREHENSIVE WATER SUPPLY AND SEWERAGE SYSTEMS PLAN



MONTGOMERY COUNTY 17 76 MARYLAND

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Prepared by Montgomery County Department of Environmental Protection

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EXECUTIVE SUMMARY

The 2026 - 2035 Ten-Year Comprehensive Water Supply and Sewerage Systems Plan (Water and Sewer Plan or 2026 Plan) provides updates to the adopted 2022 Plan based on the latest available data and information. It includes updated information on County policies and plans.

This 2026 Plan includes the adopted policies and plans contained in the prior Plan and in subsequent adopted Plan amendments, while removing outdated or no longer relevant material. The Department of Environmental Protection (DEP) has added updated information from several sources that reflect new information from both technical sources and related County plans. This information has been reorganized in the Plan's text, figures, and maps with the intention of making it easier to understand and follow. Technical information has been summarized and presented on both a watershed and planning area basis to allow interested parties the opportunity to focus on issues that are organized by geographic area.

The purpose of the Comprehensive Water Supply and Sewerage Systems Plan is to provide an overview of the planning policies, needs, issues and planned infrastructure related to community and individual water and sewerage systems. The plan considers public health, environmental protection, and land-use issues as they relate to water and sewerage systems in Montgomery County. It is intended to provide both background information and a planning basis for the evaluation of water supply and sewerage system needs in the county. It is also expected to allow a more thorough context for developing, analyzing, and evaluating the issues related to the review and implementation of the WSSC Water Capital Improvement Program (CIP), including the timing and funding of identified projects. It seeks to achieve this purpose by:

- Outlining planning principles and policies that relate to land-use planning, infrastructure development, public health, and environmental protection;
- Describing current conditions of the water supply and sewerage systems relative to condition, capacity, availability, and related issues;
- Identifying and prioritizing community needs for improved water supply and sewerage infrastructure;
- Identifying planning and infrastructure projects needed to address existing or projected needs.

To achieve this purpose, the Water and Sewer Plan is organized into four chapters and several appendices. These four chapters address the following major subject areas:

Chapter 1: OBJECTIVES AND POLICIES

This chapter includes an introduction to the Comprehensive Water Supply and Sewerage Systems Plan, identifying its purpose, legal context, and governance issues. It outlines the plan's goals and objectives for the orderly and cost-effective development of community water supply and sewerage systems and summarizes the Plan's structure and content. Chapter 1 describes the planning process used in Montgomery County to stage and implement water and sewer infrastructure improvements, including identification of policies and a review of the procedures for the adoption of amendments and/or modifications to the Plan. This chapter includes both general and special-condition policies that have been adopted by the County Council for the designation of community water and sewer service areas, which regulate water and sewerage system extensions, connections, and their staging.

This update of Chapter 1 includes revisions provided by the Washington Suburban Sanitary Commission (WSSC Water) for text sections related to the planning and financing of water and sewer

infrastructure by that agency. These revisions work to keep WSSC Water's updates to these functions.

Chapter 1 includes changes to sections related to special service polices addressing onsite system concerns. These revisions are primarily structural, grouping sections to improve clarity, better continuity, and less redundancy. In addition, Chapter 1 incorporates text amendments approved by the County since adoption of the 2022 Plan update. Chapter 1 also introduces new information, policy directions, and recommendations, as summarized below. (The numbering shown below corresponds to the subsections of the plan within the chapter):

II.: POLICIES FOR THE PROVISION OF WATER AND SEWERAGE SERVICE
II.G. Special Policies for Water and Sewer Service
II.G.2. Community Service to Relieve Onsite System Concerns
Clarified the options for cases outside the planned public service envelope that need new main extensions for service to be addressed by either the administrative or Council review processes, as appropriate. Also, moved step-by-step explanations about conducting individual, onsite systems surveys to new Appendix G.

II.G.3.: Community Service for Properties Abutting Community System Mains
II.G.3.a.: General Requirements
The Council revised the 2022 Plan to allow an owner who abuts an existing public main to request an extension of that main to bring it closer to their house. This policy would have allowed another non-qualifying property abutting the new extension to have service approved under the abutting mains policy. A 2022 Plan text revision from the Maryland Department of the Environment (MDE) limits these main extensions to only those cases where an onsite environmental issue exists, such as a stream or stream buffer, forest stand, or similar resource concern, that must be addressed by a main extension. Another MDE revision limits additional connections to new main extensions to cases involving failed onsite systems.

II.G.4.: Community Service for Private Institutional Facilities
(Former) II.G.4.b.: Further PIF Policy Considerations
This section was removed from the text. The issues raised there were largely outdated and had found no traction with policy makers.

III.: GENERAL POLICIES FOR WATER SUPPLY AND SEWERAGE SYSTEMS FACILITIES
III.A. Washington Suburban Sanitary District
III.A.5.: Facility Planning
This and following sections were substantially revised to acknowledge changes to WSSC's facility planning process over recent years. This new version is more focused strictly on WSSC's existing processes, including the Asset Management Program and Business Case review.

III.C.: Individual Systems
III.C.4.d.: Onsite Systems Management Program
Water and Sewer Plan Recommendation: Individual Onsite Systems Management
This recommendation has been updated to recognize where this program now stands. The County is no longer pursuing a mandatory pump out requirement. Instead, the County is launching a pilot program in fiscal year 2027 that will provide a $100 rebate to owners who have their septic tank pumped at least once every five years.

IV.: WATER AND SEWERAGE SYSTEMS FINANCING
Washington Suburban Sanitary District (Section IV.A.):
The text in the following subsections was revised based on recommendations provided by WSSC Water. These subsections included:

- Water Consumption and Sewer Usage Charges (Section IV.A.1.a.)
- Systems Development Charge (Section V.A.1.b.)
- State Funding (Section IV.A.1.c.)
- Local Service Extension Programs (Section IV.A.2.)
- Developer-Built Projects (Section IV.A.2.a.)
- WSSC Water-Built Projects (Section IV.A.2.b.)
- Service Connection Fees (Section IV.A.3)
- Aging Infrastructure Costs (Section IV.A.4.)

IV.A.2.: Local Service Extension Programs

IV.A.2.c.: Efforts to Address Underserved and Unserved Communities

Text was added that addresses the current sewer project in Meadowbrook Estates in Germantown, proceeding under a grant from U.S. EPA.

V.: PROCEDURES FOR ADOPTING AND AMENDING THE WATER AND SEWER PLAN

Discussion was added on the MDE actions to modify Chapter 1 of the Council-approved 2022 Update of the Water and Sewer Plan. This included changes to the abutting mains policy (Section II.G.3.d) and removal of a proposed special service policy for commercial uses (formerly Section II.G.5)

Chapter 2: GENERAL BACKGROUND

Chapter 2 presents general background information about the County relevant to issues involving water supply, sewerage systems, rural sanitation planning, and water resources. The chapter presents this information in two general categories: the natural environment and the cultural environment. The various characteristics of the natural environment including geology, topography, soils and water resources strongly affect water supply, sewerage, and rural sanitation needs, problems, and solutions in the County. A second group of relevant characteristics are classified as the cultural, or human-made, environment, which include patterns and density of existing and proposed residential, commercial, and institutional development; and the various legal requirements, policies, and plans that shape the cultural environment.

Some relevant information provided in Chapter 2 includes County's hydrogeological characteristics, water resources quality and programs. This chapter also identifies the cultural environment that includes the planning issues related to population projections and demographics, land-use, and development. This information aligns with the policies adopted in the County's area master plans, sector plans, and countywide functional plans pursuant to the guidance provided by Thrive Montgomery 2050. Thrive Montgomery 2050 provides broad policy recommendations paving the way for future actions, such as amendments to other plans, policies, and development rules.

Chapter 3: WATER SUPPLY SYSTEMS

This chapter contains information about the various aspects of the County's water supply systems, including water supply sources, treatment, and distribution systems. It provides background information on major water supply facilities that have been approved by various federal, state, and local agencies in to provide for the mid- and long-range water supply needs of the County and the Washington Metropolitan Region. This chapter also provides information addressing water consumption, water system transmission, storage facilities, planning, and financing issues, and projected water treatment and area distribution systems' needs.

As part of a long-term strategy to provide adequate service to increasing regional population and reducing treatment costs, this Plan recognizes the importance of protecting the quality of water supply resources.

Water Supply Service Area - Sanitary Districts:
DEP has maintained the previous Plan structure addressing the three major community water supply systems in the county individually: WSSC, Rockville, and Poolesville. These systems are examined in detail regarding their treatment, transmission and storage systems, as well as a summary of the system improvements and growth-related projects. (Chapter 3, Section I.B)

Projected Water Supply Demand and System Needs:
Information is provided on the projected needs of the major water supply systems in the County. The long-range planning is projected out up to 2045, with interim planning dates for facility requirements. Regional, Bi-County and County-wide systems needs are reviewed based on information obtained from various reports and projected population growth in these areas. This information is supported by the regional population projections (MWCOG), local land-use plans (M-NCPPC), regional water supply projections (ICPRB) and Bi-County water supply needs (WSSC). The projects and programs that are planned to address these identified needs are summarized in the text of this chapter and in the appendices to the Plan, which incorporates the project summary information for WSSC Water, City of Rockville, and the Town of Poolesville (Please refer to Chapter 3, Sections II.F through IV.F for additional information)

Data and information obtained from all three major community water supply providers in the county indicate water production and consumption trends seem to have remained stable despite population increases over the past several years.

Chapter 4: SEWERAGE SYSTEMS

Chapter 4 describes the planning basis for the sewerage systems in the County. It identifies the regional, Bi-County, and system relationships that are based on both political and geographic boundaries.

Sewerage Systems Service Area - Sanitary Districts:
The County's sewerage systems are defined according to the treatment plant service areas, sewer basins and planning areas located in the County. Similar to Chapter 3, updates to sewerage systems are structured individually based on the three major community sewerage systems in the County which include the WSSC, the City of Rockville, and the Town of Poolesville. The vast portion of the community sewer service in the county is provided by WSSC Water. The Chapter describes key policies, planning procedures, and references the Inter-Municipal Agreement (IMA) of 2012 as a significant long-range plan addressing the regional wastewater treatment needs of the region.

Sewerage Systems and Projected Needs and Programs:
An overview of the County's long-term sewerage system needs and anticipated constraints within each service area and individual sewershed are presented in this chapter. Current and/or short-term wastewater conveyance or treatment needs for all the community sewer service area in the county are programmed in their CIP (Capital Improvements Program). The CIP projects include funding and schedules for planning, design, land acquisition, and construction of facilities. These facilities often support new development in accordance with the County's approved plans and policies for orderly growth and development. Other projects are for system improvements and/or for compliance with environmental regulations and policies. A summary of some of the more significant updates, new capital projects planned and currently underway, and programs in each community service area are presented below.

- **WSSC Water:**

More than 95% of the wastewater generated in the county is managed by WSSC Water and over eighty percent of the wastewater collected in the community sewerage systems in Montgomery

County is conveyed to the Blue Plains Wastewater Treatment Plant (WWTP) in Washington D.C. for treatment. Important issues to the County relate to peak and average flow limitations to the sewers that convey flows to Blue Plains WWTP, allocated treatment capacities to the user jurisdictions, and the capital improvement projects planned for this facility. Other treatment service areas managed by WSSC Water in Montgomery County include Seneca Water Resource Recovery Facility (WRRF), Damascus WRRF, and Hyattstown WRRF.

This chapter includes a summary of the current sewerage system capacities, significant planned projects, and ongoing programs. Some of these projects, plans, and programs are developed based on latest projected wastewater productions, treatment capacity needs, and new regulatory requirements.

- **City of Rockville**

The City of Rockville is located within the Blue Plains Service Area and is served by the Blue Plains WWTP. The City does not own or operate any separate wastewater treatment facilities. The City's wastewater is ultimately delivered to the Blue Plains WWTP through WSSC Water's and DC-Water's conveyance facilities. Wastewater flows from the City of Rockville are governed through intergovernmental agreements mainly between The City of Rockville and WSSC Water.

- **Town of Poolesville**

The Town of Poolesville operates its own sewerage system, which has been in operation since 1964, and is the only publicly owned sewerage system in Montgomery County with total self-sufficiency outside the Washington Suburban Sanitary District. The existing facility serves approximately 1,900 residences. The majority of the sewer service area is within the Dry Seneca Creek watershed.

Chapter 4 reviews the needs for the sewerage system within WSSC Water service area on a sewershed basis provided by WSSC Water through their hydro-dynamic modeling of the sewerage system, identifying areas or parts of the sewerage systems requiring relief, either now or in the future.

Chapter 4 also provides a brief discussion on rural sanitation issues and includes a table which summarizes known septic system problem areas in the County. This information provides a basis for further investigations and actions to address these rural sanitation issues.

APPENDIX C

II.M.: POTOMAC PERIPHERAL SEWER SERVICE POLICY
Revised the title of the section from "Potomac Area RE-1 and RE-2-Zoned Properties" to the shown title to match discussions in the text and in documents addressing category change amendments.

APPENDIX G

This new appendix provides a step-by-step process for conducting onsite system surveys, preparing follow-up documentation, and presentation to the Council, as needed.

CHAPTER 1

OBJECTIVES AND POLICIES

CHAPTER 1: OBJECTIVES AND POLICIES

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I.: INTRODUCTION

As in any community, the residents of Montgomery County, and the businesses and institutions that serve and support them, require adequate, reliable, and safe systems for fresh water supply and wastewater disposal. The sustainability of the community's human and natural environment relies on satisfying this need daily. In Maryland, the planning and coordination for this vital service is delegated from the State to and addressed by each County through the *Ten-Year Comprehensive Water Supply and Sewerage Systems Plan*. The delegation of planning from the State to the County requires that all growth and land use tools are consistent with the County's General Plan policies, goals, and objectives, and any adopted Sector Plan, functional plan or other sub-areas plan.

I.A.: Plan Goals and Objectives

The overall goal of the *Comprehensive Water Supply and Sewerage Systems Plan* ("the Water and Sewer Plan," "the Plan," or "CWSP") is to ensure that the existing and future water supply and sewerage system needs of Montgomery County are satisfied in a manner consistent with the following specific objectives:

- Satisfy the county's water supply and wastewater disposal needs in a cost-effective manner that protects the health, safety, and welfare of residents, businesses, and institutions; and that protects or improves the quality of the environmental resources of the county, the state, and the Chesapeake Bay region.
- Establish and implement general water and sewer service policies that serve to support the goals and objectives of the County's General Plan *Thrive Montgomery 2050* and of its related local area sector and master plans. These policies emphasize the use of community systems along urban and suburban development corridors; the use of individual, onsite systems throughout lower-density, rural wedges; and consistency with the provision of other public services and facilities.
- Provide policy makers and implementing agencies with sufficient guidance and flexibility to address specific, exceptional water and sewer service issues, as needed. This recognizes that neither a master plan's service recommendations nor the Water and Plan's general service policies can anticipate every situation or circumstance involved in addressing water and sewer service needs in the county.
- Support the State of Maryland Smart Growth initiatives that direct State funding for public services and infrastructure to identified growth areas and promote the use of onsite water supply and wastewater disposal systems to limit development density in the Agricultural Reserve and lower-density wedge areas.
- Address needs and solutions, including recommendations for capital projects, of the complete community water supply and sewerage systems, from the point of withdrawal of the raw water supply to the point of final disposal or reuse of wastewater effluent, including the treatment or disposal of water and wastewater treatment by-products such as water filtration solids and biosolids (sewage sludge).
- Identify specific public health problems related to water supply and wastewater disposal throughout the county and recommend appropriate solutions, including community water and/or sewerage systems and capital projects if required. However, the cost and potential impacts of the extension of new community systems, especially in environmentally sensitive, low-density areas, requires that the County maintain an emphasis on the repair or replacement of existing onsite systems with standard onsite conventional or alternative technologies.
- Use a rebate program for septic tank pumping to promote appropriate septic system maintenance seeking to protect or enhance groundwater and surface water resources throughout areas served by septic systems.

These objectives are accomplished in this Plan with the support and cooperation of the Washington Suburban Sanitary Commission (WSSC Water), the Maryland - National Capital Park and Planning Commission (M-NCPPC), municipal governments within Montgomery County, and various County agencies. The County also seeks the support and concurrence of Prince George's County regarding bi-county issues.

I.B.: Chapter 1 Purpose
The general purpose of Chapter 1 of the Comprehensive Water Supply and Sewerage Systems Plan is to set forth the laws, regulations, and policies upon which the Plan is based. This chapter includes the general, or county-wide, legal and policy issues pertinent to Montgomery County. Other legal and policy issues that are only relevant to a specific topic, such as regional water supply planning or biosolids management, are addressed in the chapter of the Plan related to that topic.

Chapter 1 presents the legal requirements for preparation of this Plan and the responsibilities of the government agencies involved in preparing this Plan and in managing the County's water supply and sewerage facilities. The remaining sections of this chapter present and discuss the policies and procedures for the provision of water supply and sewerage service, and the policies for water and sewerage systems facilities.

I.C.: Legal Requirements
Each County in Maryland is required by State law to have a comprehensive plan that addresses water supply and sewerage system needs for at least a ten-year period into the future. The specific legal requirement is embodied in Environment Article, Subtitle 5, "County Water and Sewerage Plans," Sections 9-501 through 9-521, of the Annotated Code of Maryland and the Code of Maryland Regulations, Title 26, "Environment", Subtitle 3, Chapter 1, "Planning Water Supply and Sewerage Systems" (COMAR 26.03.01.01 - .08). This Comprehensive Water Supply and Sewerage Systems Plan fulfills this legal requirement.

The Annotated Code establishes the authority for the Water and Sewer Plan and delegates that authority to the counties. The Annotated Code also establishes the procedures by which the counties prepare, adopt, and amend their water and sewer plans. Sections 9-515 through 9-518 provide policies specific to Montgomery and Prince George's Counties which supersede other related sections of the Code. Montgomery County is required to comprehensively review and update this plan triennially (once every three years.) COMAR 26.03.01.01, *et seq.*, specifies the requirements for format and minimum contents for each county's plan. In addition to the specific legal requirements for this document, this Plan addresses numerous Federal, State, and local laws and regulations that apply to the water supply, sewerage, and rural sanitation needs of the County. Many of these additional laws and regulations are discussed in the chapters of this Plan where they are most relevant.

I.D.: Plan Structure and Content
The structure and minimum content of this *Comprehensive Water Supply and Sewerage Systems Plan* is specified by the State laws and regulations referenced in Section I.C. of this chapter. The following briefly describes the structure of the Plan and the contents of each chapter:

- **Chapter 1: Objectives and Policies** - This chapter provides the legal requirements for the Plan; the County's overall objectives for water and sewer service; the policies addressing the provision of water and sewer service from community, multiuse and individual systems; and the procedures and organizational roles through which the County and State adopt, amend, and administer this Plan.
- **Chapter 2: General Background** - This chapter provides background information on Montgomery County's natural and man-made environment relevant to the provision of water and sewer service by both community and individual systems.
- **Chapter 3: Water Supply Systems** - This chapter provides information on the County's existing water supply systems and on planning efforts to ensure that the County's mid- and long-term water supply needs are and will be satisfied in a manner consistent with public policy and the plan's objectives. Regional planning issues, as they relate to the county, are also addressed.
- **Chapter 4: Sewerage Systems** - This chapter provides information on the County's existing sewerage systems and on planning efforts to ensure that the County's mid- and long-term sewerage needs are and will be satisfied in a manner consistent with public policy and the plan's objectives. Regional planning issues, as they relate to the county, are also addressed.

- **Appendices** - The appendices provide technical or reference information to supplement the Plan's four chapters. DEP updates portions of this information more frequently than the Plan's three-year comprehensive amendment cycle. Using an appendix for this information provides a more convenient method to accomplish these updates. DEP will also post these updates on the Water and Sewer Plan webpage of its website (County Water and Sewer Plan, DEP, Montgomery County, MD).
- **Water and Sewer Service Area Category Maps** - These maps identify the water and sewer service area categories designated in this Plan for all properties within Montgomery County. Printed copies of category maps, for any specific area of the county, may be obtained from DEP. Category change actions approved between comprehensive updates of the Plan may also be viewed at the DEP webpage. This webpage also provides a link to the County's online webmap viewer which includes water and sewer category designations for county properties.

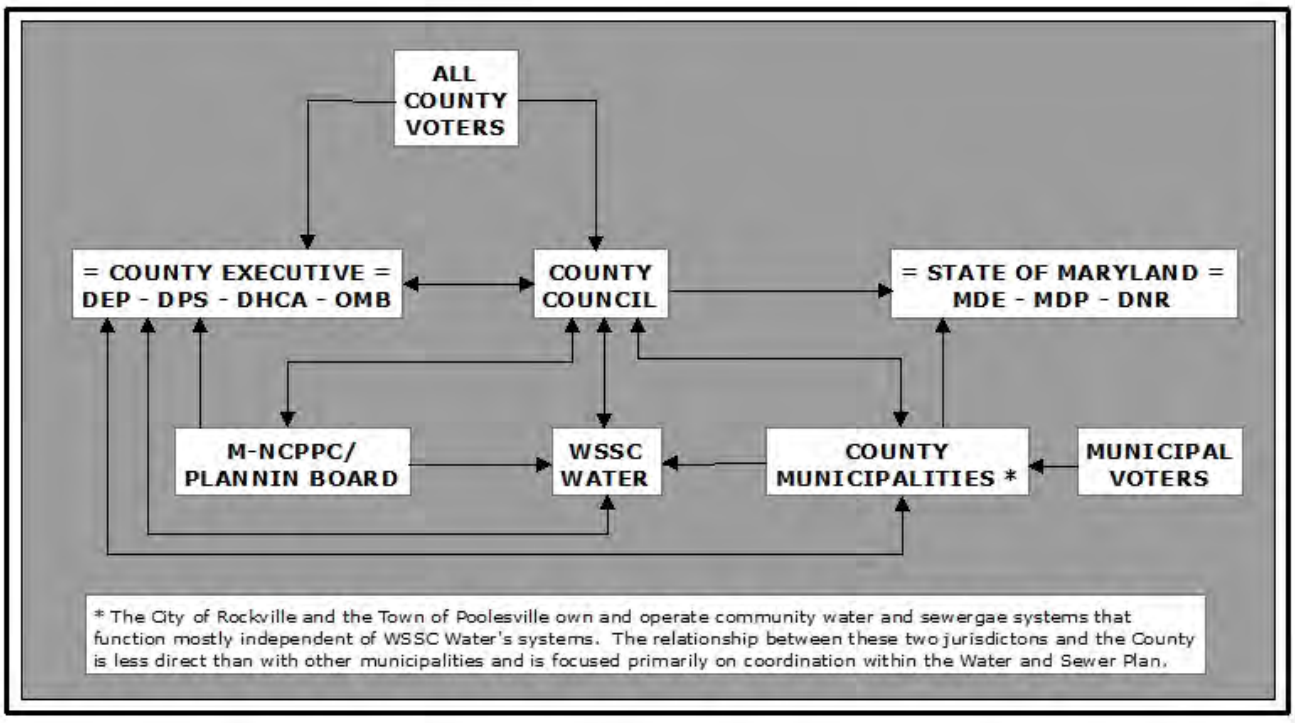
The plan text is available online through the DEP "County Water and Sewer Plan" webpage at County Water and Sewer Plan, DEP, Montgomery County, MD.

I.E.: Government Responsibilities for Water and Sewer Service

The responsibilities of planning for the availability of and providing water and sewerage service in Montgomery County are multi-jurisdictional and depend on the cooperative efforts of County, bi-county, municipal, State, and regional agencies and authorities. This is especially true regarding the use of the Potomac River, a shared raw water source for several jurisdictions, and the Blue Plains Wastewater Treatment Plant (WWTP), a regional sewage treatment facility located in the District of Columbia. These governmental agencies, and their primary responsibilities, are described in the following sections. Figure 1-F1 depicts the interrelationships of the public and the government agencies primarily involved in preparing this Plan and in managing the water supply and sewerage systems serving Montgomery County.

Figure 1-1: Government Responsibilities for Water and Sewerage System Planning

Figure 1-F1 presents the interrelationships between the public and governmental agencies as part of the water supply and sewerage system planning processes.



I.E.1.: Montgomery County Government

Under State law, Montgomery County has planning authority for the availability and adequacy of water and sewerage service and for land use planning in the county. The County government, through the County

Council, also maintains the county's land use planning and zoning authority. The County coordinates the planning and development of water supply and sewerage facilities with County goals for land use, staging, adequate facilities, capital improvements, and environmental protection. The objective is to develop this *Ten-Year Comprehensive Water Supply and Sewerage Systems Plan* (CWSP) such that existing and planned water supply and sewerage systems are consistent with County land use planning. The CWSP incorporates all or part of subsidiary plans of the municipalities, sanitary districts, privately-owned facilities, and local, State, and federal agencies which have existing, planned, or programmed development within the county. The County reviews and adopts the Water and Sewer Plan on a triennial basis, and reviews and acts on proposed plan amendments at intervals between mandated, triennial updates.

I.E.1.a.: County Council
The Montgomery County Council consists of eleven elected Council members, four elected at large and seven elected to represent their council district. The Council establishes a set of broad objectives and policies (including master plans, staging plans, and fiscal policy) to be followed in preparing the recommended Water and Sewer Plan. After receiving the triennial submission of the recommended plan from the County Executive and allowing a period for notification to public agencies and interested parties, the Council holds a public hearing on the Executive's recommended Plan. Following work sessions, the Council amends and formally adopts the Plan. The Council also receives one or more transmittals of amendments to the plan from the Executive each year. Following a public hearing, the Council acts on the proposed amendments and incorporates them, as appropriate, into the Plan. The Council similarly reviews and approves both the annual WSSC Water Capital Improvements Program (CIP) for water supply and sewerage projects and the annual WSSC Water operating budget.

I.E.1.b.: County Executive
State law requires the County Executive to prepare a comprehensive update of the *Comprehensive Water Supply and Sewerage Systems Plan* for consideration by the County Council every three years. The Executive also prepares and submits recommended Plan amendments to the Council. These amendments can include text amendments and water/sewer category map amendments. Map amendments are usually in the form of individual requests for water and sewerage service area category changes (see Section V. Procedures for Adopting and Amending the Water and Sewer Plan). The Executive transmits proposed amendments of the Plan for the Council's consideration and action one or more times each year. The Executive also transmits recommendations to the Council on:

- The proposed annual operating budget and capital improvements program (CIP) budget submitted annually by WSSC Water. The CIP budget addresses WSSC Water's major water supply and sewerage systems projects.
- The land use master plans and sector plans recommended to the Council by the County Planning Board.

Within the Executive Branch of the County government, the Executive's responsibilities are delegated to the following agencies:

I.E.1.b.i.: Department of Environmental Protection (DEP)
The Department's mission is to enhance the quality of life in our community by protecting and improving Montgomery County's air, water, and land in a sustainable way while fostering smart growth, a thriving economy and healthy communities. The Department maintains the primary functions of developing and administering the Water and Sewer Plan.

- DEP Water and Sewer Plan Administration **-** Within DEP, the Watershed Restoration Division (WRD), addresses the County's responsibilities for the management and coordination of policy development and planning of water supply and wastewater disposal systems. DEP staff develop updates and amendments to the Plan and reviews and prepares recommendations on proposed Plan amendments such as individual category change requests. DEP develops and maintains the geographic information systems (GIS) water and sewer category layers that result in the maps of the County's water and sewer service area categories. DEP issues interim update maps as necessary, based on approved Plan amendments. The County Council has delegated the authority to the Director of DEP to act under

limited circumstances on Plan amendments. The policies addressing this administrative delegation authority are provided in Section V.D.2. DEP staff conduct public hearings and meetings related to these proposed plan amendments.

DEP staff coordinate the review of WSSC Water's annual operating budget and capital improvement program (CIP) budget with the other county agencies such as the Office of Management and Budget (OMB). In administering the plan, staff are involved in a variety of programs including water quality protection, watershed management, water and sewerage capital facilities planning, development plan review, record plat approval, public health problem relief, master plan development, and related issues. DEP provides technical, policy, and research support not only to the Executive, but also to local government agencies such as the WSSC Water, the Maryland - National Capital Park and Planning Commission, and the County Council, and to regional agencies such as the District of Columbia Water and Sewer Authority, the Metropolitan Washington Council of Governments, and the Interstate Commission on the Potomac River Basin.

- DEP Related Water Quality and Resource Programs **-** Water resources protection programs serve to support drinking water source protection throughout much of the county. Most county watersheds contribute to public water supply provided by the Potomac River and the Patuxent River. DEP carries out a variety of programs to protect the county's water resources, including strategic watershed planning, water quality monitoring, watershed restoration, storm water facility maintenance, inspection and enforcement, and illicit discharge inspection and enforcement. A more comprehensive discussion of these programs is included in Chapter 2, Section II.E.

I.E.1.b.ii.: Department of Permitting Services (DPS)
Montgomery County's Department of Permitting Services (DPS) regulates new land development and building construction activities which affect storm flows, stormwater infiltration, stream base flows, and water quality. This includes sediment and erosion control and stormwater permitting, and associated plan review, inspection, and enforcement functions. DPS also issues well and septic system permits, street and storm drain permits, and administers the County's floodplain protection laws.

Within DPS, the Well and Septic Section has the responsibility delegated from the State to regulate and permit individual water supply and sewerage systems, usually wells and septic systems. The Well and Septic Section develops regulations addressing siting, testing, and permitting for these systems, currently Executive Regulation 28-93AM, "On-Site Water Systems and On-Site Sewage Disposal Systems in Montgomery County". DPS coordinates with DEP concerning cases involving public health problems caused by failing individual, onsite systems where a resolution of the problem involves the provision of community water and/or sewer service.

DPS staff administer a program which grants exemptions from WSSC Water systems development charges (SDC) for biotechnology, elder housing, and community revitalization projects (see Section IV.A.1.b.).

I.E.1.b.iii.: Montgomery County Office of Agriculture
Development and preservation issues, including water and sewer service, in the county's Agricultural Reserve requires coordination between DEP and the Office of Agriculture. The Office of Agriculture staff provide valuable information on State and local agricultural preservation programs and on individual agricultural properties seeking Water and Sewer Plan changes to support proposed development.

I.E.1.b.iv.: Department of Housing and Community Affairs (DHCA)
This Department administers grant and loan funding programs, generally from State and Federal funds, which provide financial assistance to property owners and communities seeking to repair, upgrade, or modify their water and sewer systems.

I.E.1.b.v.: Office of Management and Budget (OMB)
This Office oversees the operating and capital program budgets for County agencies, including the WSSC Water, with a primary emphasis on fiscal accountability and responsibility. OMB staff coordinate closely with DEP, WSSC Water, and County Council staff on their review of WSSC Water's budget submissions.

I.E.2.: Municipalities

State law requires that the County incorporate the subsidiary water and sewer plans of the municipalities into the County's Plan. The municipalities provide the Executive with information needed for the preparation of the recommended Plan and participate in reviewing the recommended Plan and any amendments, as appropriate. WSSC provides water and sewer service for most municipalities in the county, except as explained as follows.

Note: The following presents land use planning and zoning authorities and types of water supply and wastewater systems used for larger incorporated municipalities in Montgomery County. See Figure 1-2 for the locations of these communities.

City of Gaithersburg
Land Use Planning: M-NCPPC - Zoning: County
Water Supply & Wastewater: WSSC Water (primarily) & some onsite systems

City of Rockville (mostly outside the WSSD)
Land Use Planning: City - Zoning: City
Water Supply & Wastewater: City (primarily), WSSC Water & some onsite systems

City of Takoma Park
Land Use Planning: M-NCPPC - Zoning: County
Water Supply & Wastewater: WSSC Water some & onsite systems

Town of Barnesville
Land Use Planning: Town - Zoning: Town
Water Supply & Wastewater: Onsite systems

Town of Brookeville
Land Use Planning: Town - Zoning: Town
Water Supply & Wastewater: WSSC Water (primarily) & some onsite systems

Town of Kensington
Land Use Planning: M-NCPPC - Zoning: County
Water Supply & Wastewater: WSSC Water (primarily) & some onsite systems

Town of Laytonsville
Land Use Planning: Town - Zoning: Town
Water Supply: WSSC Water & some onsite systems. - Wastewater: Onsite systems

Town of Poolesville (outside the WSSD)
Land Use Planning: Town - Zoning: Town
Water Supply & Wastewater: Town (primarily) & some onsite systems

Town of Washington Grove
Land Use Planning: Town - Zoning: Town
Water Supply & Wastewater: WSSC Water (primarily) & some onsite systems

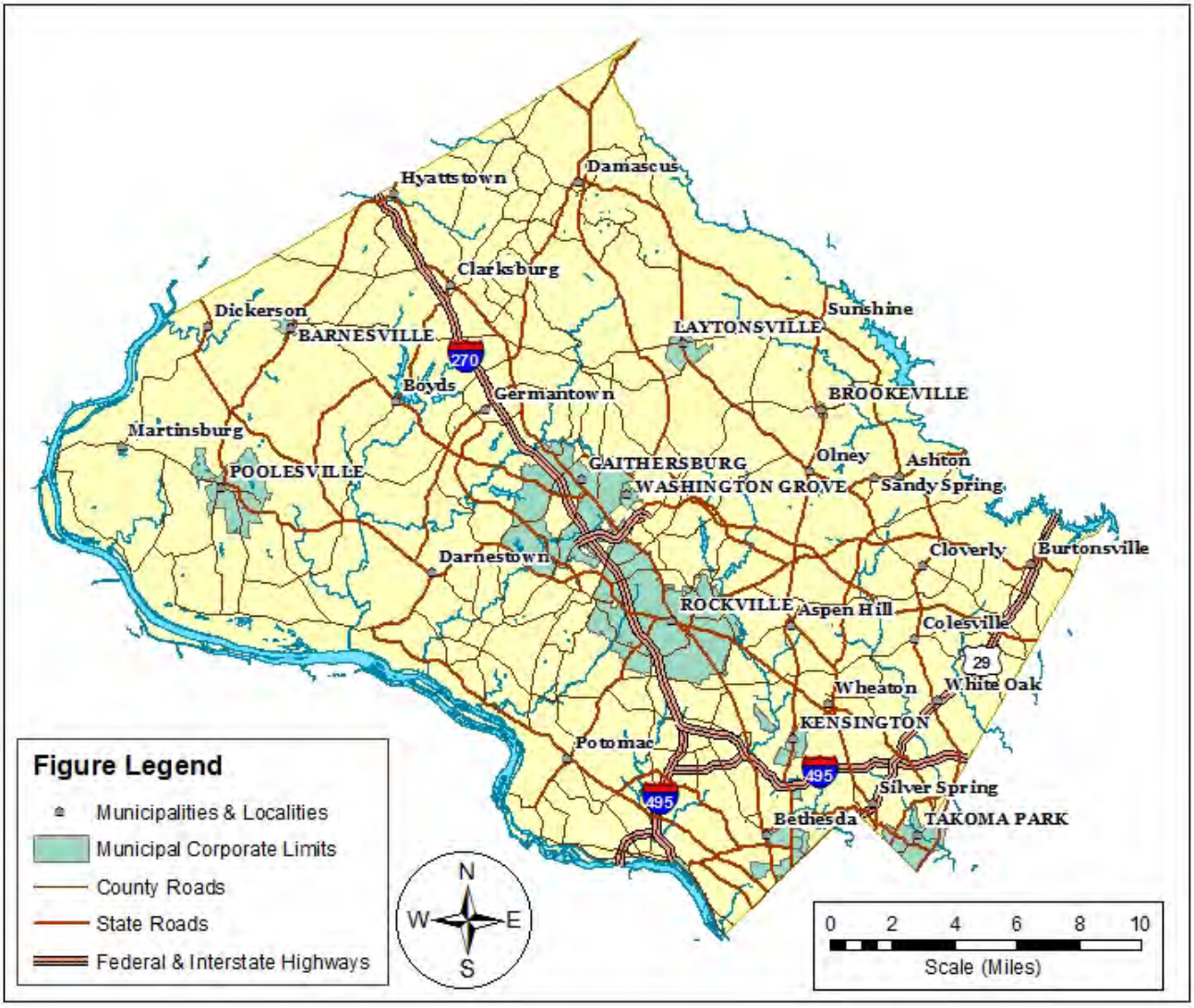
The City of Rockville and the Town of Poolesville are responsible for the operation of their own water supply and sewerage systems; some limited areas within the WSSD are served by these systems. Accordingly, the planning, design, and operation of their sanitary systems is largely independent of WSSC Water and the County. However, because of its dependence on WSSC Water sewer mains for the transmission of sewage flows to the Blue Plains Wastewater Treatment Plant, Rockville does coordinate with WSSC Water and the County on sewer service issues.

I.E.2.a.: City of Rockville

Article X of the City of Rockville's Charter designates the Mayor and Council as the Water and Sewer Board for Rockville, which grants broad authority and empowers the Board to construct, operate and maintain a water treatment plant, a water distribution system and a sanitary sewerage collection system. This authority for the operation of the water and sewerage systems includes the following:

Figure 1-2: Montgomery County Municipalities and Localities
(Source: DEP-WRD)

Figure 1-2 shows Montgomery County and its incorporated municipalities. Significant unincorporated communities (e.g. Potomac, Damascus, etc.) are also shown.



1. Employ and designate officials;
2. Purchase all supplies and materials;
3. Provide a suitable number of fire hydrants to protect City property from fire;
4. Title to all property, plants and systems;
5. Issue and sale of bonds;
6. Raise sufficient annual revenue by ordinance;
7. Pass and enforce ordinances to protect public health and to protect the water and sewerage systems;
8. Require connections of all houses, buildings and other structures to water and sewer mains within the present or future corporate limits of the City;
9. Make a reasonable charge for connection to the City's water or sewer mains;
10. May disallow construction or maintenance of private, onsite water supply or sewerage systems;
11. May extend water and sewerage systems beyond the City limits;

12. Grant the right of entry to employees in pursuit of official duties to access water or sewer installations;
13. Prohibit pollution of the City water supply system;
14. Enter into contracts with any party, Federal, State or other governmental body;
15. Levy and collect special assessment taxes upon property for special benefits.

The City of Rockville provides water and sewer service to approximately 70% of the city, or approximately 13,000 accounts. The City treats raw water from the Potomac River and delivers the potable water to its customers through its water distribution system. The City collects wastewater from its customers through its collection system and delivers it to the Blue Plains Wastewater Treatment Plant through WSSC Water and DC Water collection systems. Other properties in the city, located within the WSSD are served by WSSC Water. Rockville City Code (Section 24-1b) requires properties to annex into the City's corporate boundaries to receive community water and sewer service. Rockville's Mayor and Council ensure premium levels of service for their citizens (both residential and non-residential), including water and sewer service. Accordingly, this premium service is reserved for Rockville residents.

(The preceding provided by the City of Rockville.)

I.E.2.b.: Town of Poolesville
The Town operates a series of municipal water supply wells and a water distribution system that serves the majority of properties within the town. The Town also operates a wastewater collection system and wastewater treatment plant (WWTP) that again serves most of the properties in the town. The WWTP plant also treats sewage from the WSSC Water service areas of Jonesville and Jerusalem.

I.E.2.c.: Town of Laytonsville
The majority of properties in Laytonsville are approved for community water service from WSSC Water. Although it is within the WSSD, the town is outside of the planned community sewer service envelope.

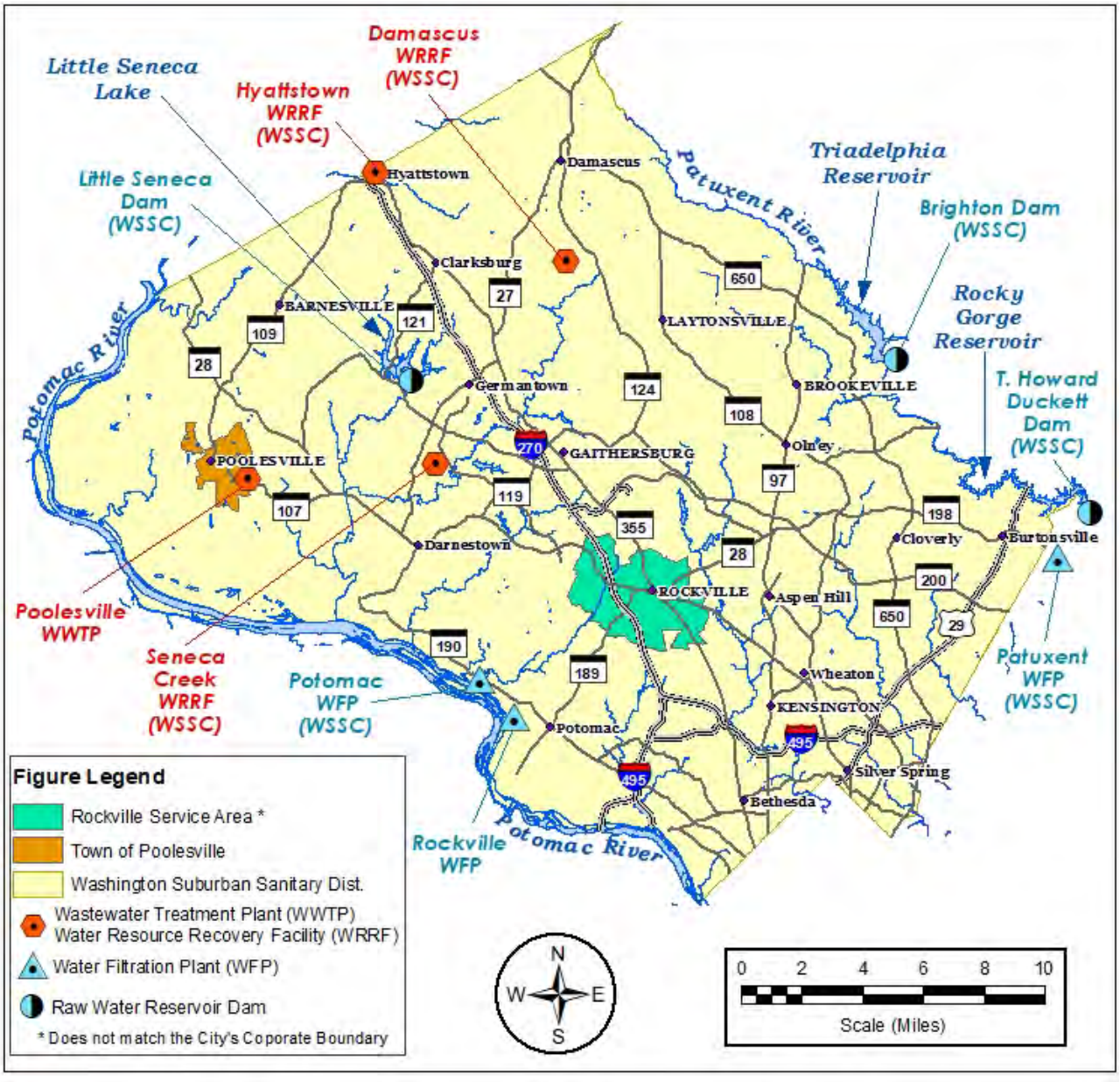
I.E.3.: Bi-county Agencies
The State of Maryland has chartered two bi-county agencies to serve Montgomery and Prince George's Counties: the Washington Suburban Sanitary Commission and the Maryland - National Capital Park and Planning Commission.

I.E.3.a.: Washington Suburban Sanitary Commission (WSSC Water, WSSC)
Established in 1918 under State legislation, WSSC Water provides community (public) water and sewerage systems throughout most of Montgomery and Prince George's Counties. The State's charter specifies the area served by WSSC Water, the Washington Suburban Sanitary District (WSSD), shown in Figure 1-3. Montgomery and Prince George's Counties each appoint three of the six commissioners who head the WSSC Water, subject to confirmation by the respective county councils. The commissioners serve staggered, four-year terms. The chairperson of the Commissioners alternates annually between Montgomery and Prince George's Counties. The WSSC Water General Manager, the chief executive for all WSSC Water operations, as well as the Inspector General and the Board Secretary, report directly to the Commissioners.

WSSC Water is responsible for the design, construction, operation, and maintenance of the community water supply and sewerage systems within the WSSD. The agency constructs and maintains water mains, pumping stations, and water storage facilities to deliver treated drinking water from the Potomac and Patuxent filtration plants to connected households and businesses. WSSC Water also constructs and maintains sanitary sewer lines, pumping stations, and force mains to collect and transport wastewater to its wastewater treatment facilities (water resource recovery facilities) and to trunk sewers connecting to the regional Blue Plains wastewater treatment facility. Water supply and sewerage system facilities constructed by private interests (e.g. developers, individual property owners), become part of the WSSC Water system for ownership and maintenance.

Figure 1-3: Washington Suburban Sanitary District (WSSD) in Montgomery County
(Source: DEP-WRD)

Figure 1-3 shows major community water supply and sewerage system infrastructure (water supply filtration plants, wastewater treatment plants, and reservoirs) within and near Montgomery County. Most of these facilities are owned and operated by WSSC Water.



WSSC Water operates and maintains approximately 5,900 miles of water mains and 5,600 miles of sewer mains throughout the WSSD. WSSC Water will face a significant challenge during the tenure of this Plan in the form of rehabilitating aging water and sewer mains within its systems, many reaching and exceeding their expected useful life. WSSC Water issues plumbing permits for water and sewer service throughout the WSSD, both within its own community service areas and for areas within the WSSD using individual, onsite systems (wells and septic systems).

WSSC Water owns and operates water supply reservoirs on the Patuxent River and on Little Seneca Creek. The Triadelphia and Rocky Gorge Reservoirs on the Patuxent River supply raw water to WSSC Water's

Patuxent Water Filtration Plant. WSSC Water uses the Little Seneca Lake Reservoir, located within Black Hill Regional Park in Germantown, to supplement flows in the Potomac River to the Potomac Water Filtration Plant during designated periods of drought. Discharges from Little Seneca Lake are coordinated through the Interstate Commission for the Potomac River Basin (see Section I.E.5.c). The agency has permits to operate and maintain water intakes and filtration plants, to withdraw and treat water from the Potomac River and the Patuxent River reservoir system for public water supply purposes. WSSC Water conducts extensive water quality analyses for the community water supply within the WSSD and provides water quality reports to its customers through federally mandated, annual Consumer Confidence Reports. These reports may also be obtained through the WSSC Water Public Communications Office or on WSSC Water's website at www.wsscwater.com.

WSSC Water operates and maintains three wastewater treatment plants, or water resource recovery facilities (WRRF), in the county:

- The Seneca WRRF on Great Seneca Creek near Germantown.
- The Damascus WRRF on Magruder Branch near Damascus
- The Hyattstown WRRF on Little Bennett Creek in Hyattstown.

The point source discharges for these facilities are controlled through NPDES permits issued by MDE. WSSC Water conducts in-plant process monitoring of water filtration and wastewater treatment processes and maintains a water quality laboratory to support these operations. WSSC Water also conducts some raw water supply monitoring at its water sources and in-stream monitoring immediately upstream and downstream of its wastewater discharge points.

WSSC Water provides data and guidance to the Executive pertaining to capacity of the water supply and sewerage systems and to engineering and fiscal aspects of system expansion. WSSC Water's functions also include reviewing and commenting on the Recommended Comprehensive Water Supply and Sewerage Systems Plan and on proposed amendments, including water and sewer service area category change requests. For category change requests, WSSC Water addresses the technical feasibility of new community service, including system transmission and treatment capacities.

WSSC Water submits an annual operating budget and an annual Six-Year Capital Improvements Program (CIP) budget to the County for interagency review and for modification and adoption by the County Council. WSSC Water prepares and submits the CIP for major community water and sewerage projects to the County as part of its responsibility to plan and finance the water supply and sewerage system. WSSC Water and the Executive work together in the preparation of relevant portions of the WSSC Water's proposed CIP and related facility plans. The County incorporates the adopted WSSC Water annual CIP and subsequent amendments as updates to the Water and Sewer Plan, which serve to substantially fulfill the fiscal planning requirements of state law and regulations. WSSC Water implements the County-approved CIP for major water and sewerage facilities by designing, constructing, operating, and maintaining water and sewerage systems and acquiring facility sites and rights-of-way. The two County Councils annually review and adopt the WSSC Water CIP and operating budgets. In the event that the two County Councils cannot agree on the capital and operating budgets, the Commission's recommended budgets are adopted by default.

WSSC Water is responsible for identifying potential environmental impacts from construction of proposed water and sewer lines and related infrastructure. Cooperating with other agencies through the Development Services Process, WSSC Water works to avoid and minimize environmental impacts of sewer line, water line, and other facility construction and maintenance activities to streams, floodplain, wetlands, parklands, and woodland buffers.

Decisions concerning the water supply and wastewater service policies adopted in this Water and Sewer Plan are the responsibility of the Montgomery County Council. Nevertheless, nothing in this Plan shall be construed to modify or supersede the independent statutory authority of WSSC Water. All determinations regarding water and sewer service availability, capacity, infrastructure acceptance, permitting, and construction approval shall be made in accordance with WSSC Water's adopted regulations, standards, policies, and Capital Improvement Program (CIP), and are subject to staffing, funding, and system capacity constraints.

I.E.3.b.: Maryland - National Capital Park and Planning Commission (M-NCPPC)
State legislation created M-NCPPC in 1927 to protect open space and to manage and control development in Montgomery and Prince George's Counties. In 1939, the Maryland District Act provided planning and zoning authority to M-NCPPC. The agency is also responsible for park land acquisition and development and maintenance of the county's park system. Ten commissioners govern M-NCPPC, five each appointed by Montgomery and Prince George's Counties. The five members of the commission for each County also serve as a separate Planning Board to facilitate, review, and administer land use planning and development matters affecting their respective counties. The Montgomery County Planning Board advises and assists the County Council in zoning, and master plan and related development issues. The Planning Board prepares draft master plans for Executive review and County Council consideration and approval. In support of the triennial update of the CWSP, M-NCPPC provides demographic information and population projections.

In carrying out its basic land use planning mission, M-NCPPC develops the County's *General Plan*, master and sector plans and functional master plans. Once approved by the County Council and adopted by the Planning Board, local area master plans, sector plans, and functional master plans amend the *General Plan*. Master plans are required to incorporate the seven Visions of the Maryland Economic Growth, Resource Protection, and Planning Act of 1992. M-NCPPC also conducts natural resource inventories necessary to support the development of land use plans. In executing its development review responsibilities, M-NCPPC evaluates proposed subdivisions and site plans for impacts on forests, specimen trees, slopes, wetlands, streams, wildlife, fisheries, and other natural features. *Thrive Montgomery 2050*, adopted in 2022, provides a comprehensive update to the county's General Plan.

The *County-wide Water Resources Functional Master Plan* (WRFMP) was prepared and adopted by M-NCPPC in 2010. The WRFMP serves as a guide for the County's *Ten-Year Comprehensive Water Supply and Sewerage Systems Plan*, other functional master plans, area master plans, and sector master plans. For more information on the WRFMP, see Section II.F.1.b and Chapter 2, Section III.A.2.

M-NCPPC provides guidance on and interpretation of land use, development, park and natural resources, and community planning issues to the County government. As required by State law (Annotated Code Sections 9-506(a)(1)(ii), 9-506(a)(2) and 9-516), this includes review and comment on the Recommended *Comprehensive Water Supply and Sewerage Systems Plan* and proposed amendments, including water and sewer service area category changes.

M-NCPPC is responsible for protecting, preserving, and managing natural resources in County parks, including streams, fish, wetlands, forests, and wildlife. Within the park system this is accomplished through a wide variety of ongoing programs including: 1) resource inventory functions; 2) reforestation; 3) wildlife and fisheries management; 4) aquatic and wetland habitat enhancement; 5) environmental and engineering review of construction plans; 6) direct performance or participation in design and construction, and construction management of proposed stormwater management facilities located on parkland, including stormwater retrofit and stream restoration projects; 7) maintenance of these facilities; and 8) water quality monitoring activities within park areas as necessary to support these specific functions.

I.E.4.: State of Maryland
The State of Maryland has delegated the responsibility to plan for the adequate provision of water and sewer service to Montgomery County. The following State agencies oversee that responsibility and other related planning and water quality programs:

I.E.4.a.: Maryland Department of the Environment (MDE)
Under State Law, the Maryland Department of the Environment (MDE) is responsible for the State's review and approval of this Water and Sewer Plan and subsequent Plan amendments. MDE adopts and administers regulations that each county must follow in the preparation of its comprehensive plan, and acts to approve, approve with modifications, or disapprove the Plan or any Plan amendment submitted by the County. As part of this process, MDE seeks guidance from the Maryland Dept. of Planning for consistency with local and State planning use goals, policies, and objectives. MDE also:

- Coordinates State grant and loan programs for major water and sewer infrastructure improvements,

- Regulates the discharge of treated wastewater into State waters, through its permit issuing and monitoring programs.
- Regulates new development using septic systems through the State's septic growth tiers law (Senate Bill 236), which places limits on the number of septic systems allowed within new rural subdivisions. For more information on the County's Growth Tiers, see Section II.E.3.

I.E.4.b.: Maryland Department of Planning (MDP)
The State's Land Use Article provides the authority to local governments to enact laws and codes to implement the State's Planning Visions (see https://planning.maryland.gov/Pages/OurEngagement/SGSubcabinet/sustainable-growth/planning-principles.aspx) across each entity's jurisdictional oversight. Such laws and codes must be consistent with the land use goals and policies of the State. Pursuant to Section 9-507 (b)(2) of the Environmental article, MDP is required to review and comment on the County's Ten-Year Comprehensive Water Supply and Sewerage Systems Plan and any amendments thereto, for consistency with all State land use planning visions, policies, and actions. Noted inconsistencies are provided to MDE for consideration prior to any plan or amendment approval, or revised permit is granted to proceed.

I.E.5.: Regional Agencies
Montgomery County's community water and sewer needs also involve agencies and jurisdictions outside the State of Maryland. The County and WSSC Water coordinate with the following agencies on the use of regional resources. These governmental agencies, and their primary responsibilities, are described as follows:

I.E.5.a.: District of Columbia Water and Sewer Authority (DC Water)
DC Water owns and operates the Blue Plains Wastewater Treatment Plant (WWTP) where the majority of Montgomery County's wastewater is treated. An independent authority of the District government, DC Water was created and began operating in 1996 under and pursuant to an act of the Council of the District entitled "Water and Sewer Authority and Department of Public Works Reorganization Act of 1996". DC Water's authorizing legislation provides, in part, for the total separation and control of funds from the District Government. The agency is governed by an eleven-member (Principal Members) Board of Directors with each member having an appointed alternate. The eleven-member Board of Directors includes six representatives from the District of Columbia, two from Prince George's County, one from Fairfax County, and two from Montgomery County,

The sewage treatment capacity at the Blue Plains WWTP for Montgomery County and Prince George's County is allocated to WSSC Water in the 2012 Intermunicipal Agreement (IMA). The 2012 IMA is an agreement signed by the governing authorities of each of the member jurisdictions and their water and sewerage agencies. Accordingly, it is signed by the Mayor of Washington D.C., the County Council President and County Executive for Montgomery County, the County Council Chair and County Executive of Prince Georges County, the Chairman of the Board of DC Water and the Chair and Vice Chair of the WSSC Water. The IMA is the definitive regional agreement that sets out the Key Principles, Governance, Permit and Treatment Responsibilities, Financial Responsibilities, Flow and Load Allocations, Management and Administrative elements for the long-term regional utilization of the shared use of the conveyance and treatment systems for these jurisdictions utilizing the Washington D.C. sewerage system. This agreement remains in force until June 30, 2111, unless amended, replaced or terminated.

I.E.5.b.: Metropolitan Washington Council of Governments (COG)
The Metropolitan Washington area includes numerous municipal, county, and state governments in Washington, D.C., Maryland, and Virginia (See Figure 1-F4.). COG is the regional organization consisting of the Washington area's 22 major local governments and their governing officials. Founded in 1957, COG provides a forum for coordinated action on issues of regional concern, including water supply and watershed protection. This includes updating the region's water emergency response plan, assisting the water utilities and local elected governments in communicating concerns to regulatory agencies, and educating the region through conferences and publications on regional drinking water issues, such as water conservation. COG staff also coordinates and maintains regional databases on Potomac River water quality, water treatment plants, and wastewater plant

discharges. COG's Environmental and Public Works Directors Committee advises the COG Board on regional policy issues associated with drinking water, water quality, and wastewater treatment.

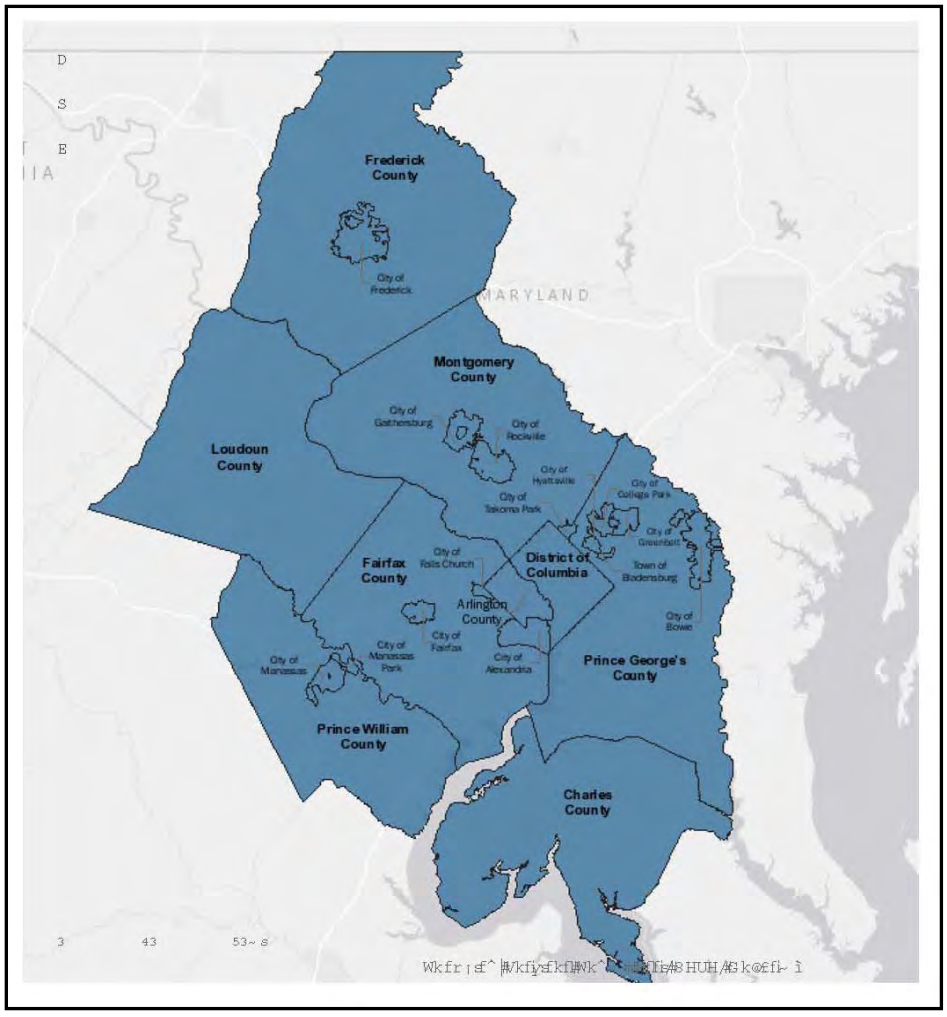
As shown in the following image, COG membership jurisdictions include:

Federal District:	Washington, District of Columbia			
In Maryland:	Town of Bladensburg	City of Bowie	City of College Park	City of Frederick
	City of Gaithersburg	City of Greenbelt	City of Rockville	City of Takoma Park
	Charles County	Frederick County	Montgomery County	Prince George's County
In Virginia:	City of Alexandria	City of Fairfax	City of Falls Church	City of Manassas
	City of Manassas Park	Arlington County	Fairfax County	Loudoun County
	Prince William County			

I.E.5.c.: Interstate Commission on the Potomac River Basin (ICPRB)
Raw water withdrawals from the Potomac River provide the majority of the county's community water supply. ICPRB was created by interstate compact and approved by Congress in 1940 to: 1) help control and prevent pollution of the waters within the Potomac drainage area; 2) cooperate with, support, and coordinate activities of public and non-public entities concerned with water and associated land resources in the Potomac River basin; 3) promote public understanding of these issues and activities, and the need for enhancement of the basin's resources; 4) conduct drought operations management support for Potomac River water resources allocation for the Washington Metropolitan Area; and 5) conduct short- and long-term water supply planning analyses. In carrying out its work, ICPRB works directly with WSSC Water, Fairfax County (Virginia) Water Authority, and the Washington Aqueduct Division of the U.S. Army Corps of Engineers.

In particular, the ICPRB Section for Cooperative Water Supply Operations on the Potomac (CO-OP) conducts drought operations management support for Potomac River water resources allocation for the Washington Metropolitan Area. In carrying out its work, CO-OP works directly with WSSC Water, the Fairfax County (Virginia) Water Authority, and the Washington Aqueduct Division of the Corps of Engineers. The CO-OP Section conducts a monthly Water Supply Outlook analyses which is provided to WSSC Water, to other water suppliers, and to other interested entities; conducts annual real-time drought operations exercises; produces water demand forecasts and resource adequacy assessments for 20-year planning horizons; maintains 24-hour water resource emergency coordination; and operates releases from the region's water supply reservoirs during drought conditions.

Figure 1-4: COG Member Jurisdictions
(Source: Metropolitan Washington Council of Governments)
Figure 1-4 shows the Metropolitan Council of Governments (MWCOG) member jurisdictions in the National Capital area.



II.: POLICIES FOR THE PROVISION OF WATER AND SEWERAGE SERVICE

The water and sewer service policies addressed in this section of the Plan provide the basis for establishing what areas of the county will use community systems service versus individual systems service. The Plan uses water and sewer service area categories both to designate areas eligible for either community or individual service and to provide a staging element for the provision of community service. These policies provide guidance not only in evaluating individual and general service area change amendments, but also in the preparation of and water/sewer service recommendations for development in the County's land use master plans.

II.A.: County Water and Sewer Systems

The following provides a brief introduction to the types of water supply and sewerage systems used in Montgomery County. More detailed information on these systems is available in later parts of this chapter and in Chapters 3 and 4.

Water supply systems consist of a source of water (whether groundwater or surface water), treatment and storage facilities, and a distribution system that provides potable water to a user's home or business.

Sewerage systems collect, treat, and dispose of sewage and industrial wastes of a liquid nature from a user's home and business. Treated sewage effluent is disposed of either to the ground (above or below ground) or to a receiving surface water, such a stream or river.

Community water and sewerage systems serve two or more individual properties; the utility—either public or private—both owns and operates the system. The community water and sewerage systems serving the county are owned and operated by the Washington Suburban Sanitary Commission (WSSC Water), the City of Rockville, and the Town of Poolesville. Community systems in the county are sometimes referred to as "public" or "city" water and sewerage systems.

Individual Systems serve a single user on the user's property; they are owned and operated by the individual user. The user may be a private individual, a business, or a public or private institution. The most common individual water supply system in the county is a groundwater well. The most common individual sewerage system in the county is a septic system. Individual wells and septic systems are often referred to as "private" or "onsite" systems.

Multiuse Systems are individual onsite systems that have a water supply or wastewater disposal design flow of 1,500 or more gallons per day (gpd). As with individual systems, multiuse systems are owned and operated by an individual, a business, or a public or private institution, and most serve a single structure on a single property. More information is available in Section III.C.5. Capacity limitations imposed by this Plan on multiuse sewerage systems in the county's agricultural (AR) Zone are addressed later in this chapter at Section III.C.5.c.

Service connections and site utilities are two parts of the same pipe that ties a structure to community water or sewer service mains. The **service connection** runs from the local water or sewer main to the customer's property line or WSSC Water easement line and may be installed by WSSC Water or by the user if constructed as part of a system extension permit (SEP) project. Once installed, it is owned and maintained by WSSC Water. The **site utility** (previously referred to as a "hookup") runs from the property line or easement line to the structure being served and is installed, owned, and maintained by the property owner. Some policies in this Plan restrict the provision of community water and/or sewer service to a single service connection only. In these cases, the term "connection" functions as shorthand for and includes both the service connection and site utility together (see Figure 1-5).

Note that a single service connection may serve more than one structure on a property. This can occur on properties where ancillary buildings (guest house, pool house, workshop, etc.) are allowed under the County's Zoning Ordinance. This applies only to more than one building on a *single* property.

Abutting service connections comprise the substantial majority of water and sewer service connections in the county. These connections, installed at a 90-degree angle to the service main, intersect the customer's property line. Some abutting sewer connections are provided from sewer manholes, allowing them to be constructed perpendicular to the manhole but at an angle of other than 90 degrees to a sewer main. WSSC Water's Development Services Code (see the link below) provides examples detailing under what conditions these sewer connections are considered abutting.

Non-abutting connections provide water and/or sewer service to properties that do not directly abut a water or sewer main. In some cases, the non-abutting connection runs further than usual through the public or WSSC Water right-of-way to reach the customer's onsite service utility. In other cases, the non-abutting connection provides service access to the customer's hookup that crosses another, intervening property by way of a private easement in order to reach the customer's property. Some non-abutting sewer connections are provided from sewer manholes, allowing them to be constructed perpendicular to the manhole at an angle of 90 degrees or greater to the outgoing sewer main. Additional details concerning the use of abutting and non-abutting service connections are provided in WSSC Water's Development Services Code (see https://www.wsscwater.com/work-with-us/codes-standards-policies-and-procedures/development-policies-procedures). The use of abutting and non-abutting service connections in the context of the Plan's special service policies is explained further in Section II.G.3.

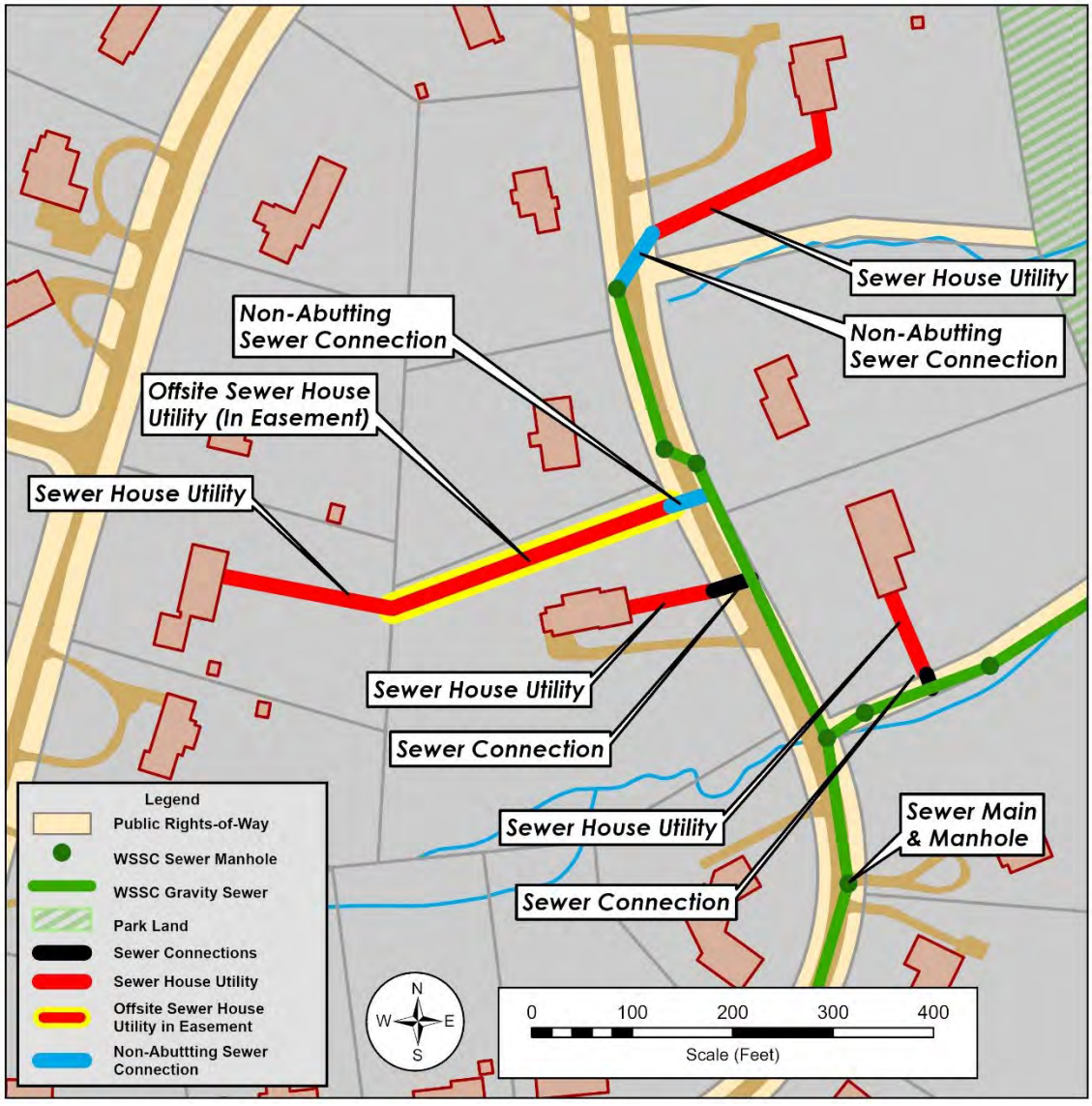
Community Service Envelopes and Service Areas

Planned Community Water/Sewer Service Envelopes: Those areas intended for community service under the County's Water and Sewer Plan's general service policies and local area master plans recommendations. Generally, this includes properties currently approved for such service and designated as categories W-1, S-1 or

S-1, S-3. Areas planned for future community service (W-4, W-5, and S-4, S-5) are included in the planned service envelopes. Some properties that have not been considered under the service area category change process and still designated as categories W-6 and/or S-6, may also be included in the planned service envelope

. **Figure 1-5: Sample House Connections and Site Utilities (Hookups)**
(Source: DEP-WRD)

Figure 1-5 provides examples of service connections and house utilities, including non-abutting service connections and offsite service utilities.



Existing Community Water/Sewer Service Areas – Those properties approved for and with access to community water/sewer service, designated as categories W-1 and/or S-1.

Planned Service Envelopes vs. Existing Service Areas –A category W-1 and/or S-1 does not always identify properties included in the planned community service envelopes. Properties located outside the planned service envelopes are typically approved for community service using one of the special service policies in the County's Comprehensive Water and Sewerage Plan (abutting mains, private institutional facilities, onsite system

failures, etc.). As such, these properties, although designated as categories 1 or 3, are exceptions to the Plan's general service policies and do not become part of the planned service envelopes.

The Plan's Glossary (Appendix A) provides additional information on these and other terms.

II.B.: County Council Authority and Responsibilities

The County Council relies primarily on the water and sewer service policies adopted in this Plan and service recommendations provided in master plans in evaluating and acting on Plan amendments. However, the scope of the Council's responsibilities goes beyond this Plan and includes issues such as the county-wide economic growth, public health and safety, transportation infrastructure, and public education. The Council has the authority and responsibility to consider such issues where they may affect its actions with respect to this Plan. Given this, the Council may reach conclusions regarding this Plan or its amendments which do not necessarily follow the policies provided in the following sections. In such cases, the Council's amendment resolution will provide an explanation of the issues involved and rationalize actions that vary from these adopted policies. Such an action by the Council will require review by and confirmation from the Maryland Department of the Environment.

II.C.: Water and Sewer Service Area Categories

To provide for the orderly extension of community water and sewer service, State regulations (COMAR 26.03.01.04) have established category designations for water and sewer service areas. The water and sewer service area categories designated in this plan serve two functions:

- They identify those areas of the county approved or planned for community water and/or sewer service and those areas intended for service by individual systems; and
- They identify a mechanism for staging community service for those areas planned for community service, consisting of the application of the service categories W-1 through W-5 and S-1 through S-5 described above to the properties within the county.

In addition, some areas of the county are noted for special service conditions or restrictions, including those specific properties where the County has approved the use of multiuse systems. Service area categories are shown on the water and sewer service area category maps are a part of this plan.

II.C.1.: Numbered Service Area Category Definitions

The County has modified the State's category definitions to more accurately reflect its planning process. All areas of the County are classified by this plan into one of the categories, except for rights-of-way for public roads, railroads, and gas and electrical transmission lines which are not assigned a category. Although defined together here, the County does not always assign matching water and sewer categories, such as W-3 *and* S-3, to a single property. A property can be designated as categories W-1 and S-6, or as W-4 and S-5, etc.

The County's water and sewer service area categories are as follows:

- **W-1, S-1** Plan definition: **Properties approved for and generally with existing access to community (public) service.** This includes some properties which have direct access to existing mains, but which are not yet connected to existing community service.
  State definition: Areas served by community systems which are either existing or under construction.
- **W-2, S-2**: *Note - Categories W-2 and S-2 are not identified in the Montgomery County Plan. Properties that would be designated as categories W-2 and S-2 are included with those designated as categories W-3 and S-3.*
  State definition: *Areas served by extensions of existing community and multi-use systems which are in the final planning stages.*
- **W-3, S-3** Plan definition: **Properties approved for community (public) service, but without existing access to community service mains.** This category generally identifies properties that will need new water and/or sewer main extensions for the provision of community service.
  State definition: Areas where improvements to or construction of new community systems will be given immediate priority and service will generally be provided within two years or as development and requests for community service are planned and scheduled. [Time estimates for categories 3 through 5 are dependent on an applicant's service request to the water and sewer utility. They do not

represent an extension planning schedule by the County or water and sewer utility*]
**Properties in Category 3 are planned for future service consideration. Service area categories are planning designations and do not represent a commitment by WSSC to provide service. Service availability is determined only after formal application, regulatory review, and capacity analysis.*

- **W-4, S-4** Plan definition: **Properties planned for future community (public) service, but which need to use private, onsite systems (wells and septic systems) in the interim.** This includes areas generally requiring the approval of CIP projects or the release of master plan staging elements before service can be provided.
  State definition: Areas where improvements to or construction of new community systems will be programmed for the three- through six-year period.
- **W-5, S-5** Plan definition: **Properties planned for future community (public) service, but which need to use private, onsite systems (wells and septic systems) on a long-term basis.** This category is frequently used to identify areas where land use plans recommend future service staged beyond the scope of the six-year CIP planning period.
  State definition: Areas where improvements to or construction of new community systems are planned for the seven- through ten-year period.
- **W-6, S-6** Plan definition: **Properties planned to use private, onsite systems (wells and septic systems), where community (public) service is not planned.** Category 6 includes areas that are planned or staged for community service beyond the scope of the Plan's ten-year planning period, and areas that are not expected for community service on the basis of adopted plans. Some areas designated as categories W-6 and/or S-6 also include properties located within the intended community water and sewer envelopes, but for which owners have not yet requested and had approved map amendments for categories 1 or 3.
  State definition: Areas where there is no planned community service either within the ten-year scope of this plan or beyond that time period. This includes all areas not designated as categories 1 through 5. ▪

The service area category definitions established by the State placed multiuse systems on a par with the category staging for community systems (*i.e.*, for W-1 and S-1: "Areas served by community *or multiuse systems* which are either existing or under construction.") The County has found it impractical to establish and use a category staging sequence for multiuse systems. The designation of categories W-1 and S-1 for sites with approved multiuse systems in rural areas, where most multiuse systems are established, led to confusion about the extent of community systems service. This Plan assigns categories for properties using multiuse systems under the standards provided above; properties approved for multiuse systems are specifically noted as such in the service area category database.

II.C.2.: Service Area Special Conditions and Restrictions

In specific cases, special conditions or restrictions are included with the service area category for a property affecting the provision of water and/or sewer service. For example, these conditions can specify the type of development suitable for community water and sewer service, specify the number of water or sewer connections allowed, or explain why community service is provided to a site outside the community water and/or sewer envelope.

The following special service conditions are examples of those used on the water and sewer service area category maps:

- *Conditional Approval*: A conditional water/sewer category change approval is pending final action (see action document for details). For example: Maintain S-6, with advancement to S-3 conditioned on Planning Board approval of a cluster option development plan. This is not to be confused with a "conditional use" under the current zoning code, formerly referred to as a special exception.
- *Single Connection-Health*: Community service is restricted to one water or sewer connection only for relief of a public health problem.
- *Single Connection-Abutting*: Community service is restricted only to one water or sewer connection under the abutting mains policy.
- *PIF*: Community service is provided for use only by a private institutional facility (PIF) (see section II.G.4).

- *Public Facility*: Community service is provided only for use by a public facility (see Section II.G.6)
- *Cluster*: Community service is limited only to properties established by a subdivision plan under an approved cluster option (RE-1, RE-2C, RNC, RC Zones).

New conditions are sometimes created to address specific situations or new policies in this plan. The condition description applied to a particular site may be general in nature and it is advisable to research specific conditions or restrictions with the Department of Environmental Protection. A comprehensive listing of mapped water and sewer category conditions and restrictions, along with explanations for each, is found in Appendix A.

II.D.: Water and Sewer Service Development Policies by Service Area Designation
The following policies govern the provision of water and sewer service under each of the County's service area categories. Throughout this section, development policies use the following defined terms with respect to community water and sewerage service:

- **Community Service is <u>Inadequate</u> -** An existing community water supply or sewerage system may be considered **inadequate** by DEP when service is prohibited by an Order of MDE, WSSC Water, or Montgomery County, due to inadequate conveyance or treatment capacity. Individual, onsite systems are then allowed subject to the General Conditions for Interim Individual Systems (see Section III.C.3.).
- **Community Service is <u>Not Available</u> -** An existing community water supply or sewerage system may be considered **not available** by DEP when, upon application for service to a utility, the utility makes a determination that it is not feasible for economic or engineering reasons to provide community service at that time. Such cases may include, but are not limited to, projects where intervening mains are to be constructed by other developers or individuals, or projects where pumped sewer service is not feasible due to excessive grades or site elevations.

  An existing community water supply or sewerage system may also be considered **not available** when DEP finds that it is an economic hardship (as in excessive onsite costs) for an individual house or other structure to be connected to the community system. In most cases this policy shall only be applicable to single residential connections or to individual structures that are the equivalent of single residential connections, not to subdivision projects. DEP may however allow exceptions for subdivisions in areas zoned for large lot development (RE-1, RE-2, and RE-2C).

Interim individual systems (wells and/or septic systems) approved under the preceding conditions are subject to the General Conditions for Interim Individual Systems (see Section III.C.3.).

Dry Community Systems: This Plan previously required the installation of dry community systems for subdivisions initially developing on interim permit wells and septic systems. The County's experience with dry community systems revealed that most, if not all dry systems lack any plans for extensions to tie into existing community systems. This Plan generally requires that all subdivisions within approved community service areas (categories 1 and 3) utilize community service, no interim permit individual service is allowed. DEP may waive this requirement on a case-by-case basis for subdivisions in areas zoned for large-lot development (RE-1, RE-2, RE-2C).

II.D.1.: Categories W-1 and S-1
Areas designated as categories W-1 and/or S-1 are intended to develop using community water supply and sewerage systems. As a general rule, **no new individual, on-site systems will be permitted** where an adequate community water or sewerage system is available. For a single, existing property, if an existing community water or sewerage system is **inadequate** or is **not available** as defined previously, then an individual water or sewerage system may be used for an interim period. Such individual systems shall be subject to the conditions established in this Plan as the General Conditions for Interim Individual Systems (see Section III.C.3.). This plan requires that all subdivisions within category 1 approved community service areas utilize community service, no interim permit individual service is allowed.

II.D.2.: Categories W-2 and S-2
Categories W-2 and S-2 are not used in this Plan (see pg. 1-21).

II.D.3.: Categories W-3 and S-3
Areas designated as categories W-3 and/or S-3 are intended to develop using community water supply and sewerage systems. However, for a single, existing property, interim individual water supply and sewerage systems may be permitted to be installed in the W-3 and S-3 service areas consistent with the General Conditions for Interim Individual Systems (Section III.C.3.). This Plan generally requires that all subdivisions within category 3 approved community service areas utilize community service, no interim permit individual service is allowed. DEP may waive this requirement on a case-by-case basis for subdivisions in areas zoned for large-lot development (RE-1, RE-2, RE-2C).

II.D.4.: Categories W-4 and S-4
Areas designated as categories W-4 and/or S-4 are intended to eventually develop using community systems. Areas so designated are included within the planned community water and sewer service envelopes. WSSC Water may begin programming required water and sewer infrastructure, including capital projects as needed. However, areas designated as category 4 are not yet approved for the actual provision of community service. Given this, individual water supply and sewerage systems may be permitted to be installed in categories W-4 and S-4 consistent with the General Conditions for Interim Individual Systems (Section III.C.3.) and with COMAR 26.03.01, 26.03.05, and 26.04.02 - .04, and County Executive Regulations 28-93AM, "Onsite Water Systems and Onsite Sewage Disposal Systems in Montgomery County". This Plan does not require the construction of dry community systems for subdivisions within areas designated as categories W-4 and S-4 which develop using individual onsite systems. DEP may recommend water and/or sewer map amendments to designate subdivisions developing on individual systems as categories W-6 and/or S-6.

II.D.5.: Categories W-5 and S-5
Areas designated as categories W-5 and/or S-5 are intended to eventually develop using community systems. Areas so designated are included within the planned community water and sewer service envelopes. WSSC Water may begin planning required water and sewer infrastructure, including capital projects as needed. However, these areas are not yet approved for the actual provision of community service. Given this, individual water supply or sewerage systems, not of an interim nature, shall be permitted to be installed in any portion of the County designated as categories W-5 or S-5, consistent with COMAR 26.03.01, 26.03.05, and 26.04.02 - .04, and County Executive Regulations 28-93AM, "On-Site Water Systems and On-Site Sewage Disposal Systems in Montgomery County". Individual systems may be installed within these areas on an indefinite basis without obligation to connect to a community system, when and if it becomes available.

This Plan does not require the construction of dry community systems for subdivisions within areas designated as categories W-5 and S-5 which develop using individual on-site systems. DEP may recommend water and/or sewer map amendments to designate subdivisions developing on individual systems as categories W-6 and/or S-6.

II.D.6.: Categories W-6 and S-6
Properties designated as categories W-6 and/or S-6 are intended to develop using individual water supply and sewerage systems; community service is not permitted. Individual systems, not of an interim nature, shall be permitted to be installed in any portion of the County so designated, consistent with COMAR 26.03.01, 26.03.05, and 26.04.02 - .04, and County Executive Regulations 28-93AM, "On-Site Water Systems and On-Site Sewage Disposal Systems in Montgomery County". Individual systems are installed on properties within these areas on a permanent basis with no expectation that they will receive service from community systems. Some areas so designated may be included within the planned community water and sewer service envelopes but have not yet received County approval for community service.

II.E.: Water and Sewer Service Planning in the Development Review Process
The provision of water and sewer service for new development is an integral part of the County's evaluation of development proposals. DEP's primary involvement in the County's development review process includes the following:

II.E.1.: Development Plan Review
The M-NCPPC Intake & Regulatory Coordination Division manages the County's Development Review Committee (DRC), an interagency group that meets regularly to review and evaluate proposed development

plans. DEP is the lead agency in the DRC regarding water and sewer service planning issues. DEP staff report to the DRC on the consistency of the water and sewer service components of development proposals with respect to the County's Water and Sewer Plan. For a development proposal to proceed to the Planning Board for consideration, DEP staff need to confirm for M-NCPPC the consistency of the development plan with the policies and service area designations in the Water and Sewer Plan. DPS and WSSC Water staff also participate in this process with a focus on onsite and community water and sewerage systems design, respectively. At the request of the County Council, the DRC also reviews and comments on concept plans for private institutional facilities seeking service area category changes in areas located outside the planned community service envelopes.

Note that certain service policies in this Plan limit or restrict the provision of community service to:

- The use of specific cluster development options (RE-1, RE-2C, and RNC Zones, for example).
- The use of TDR development options (RE-1 and RE-2 Zones, for example).
- The development of specific uses, such as for private institutional facilities (PIFs).
- A single water or sewer connection only for a specific property and may further restrict the subdivision of such properties from more than one building lot where using community service.

II.E.2.: Record Plat Review and Approval Process
A record plat legally establishes subdivided properties in the County's land records. DEP staff review record plats prior to recordation to ensure that the type of water and sewer service intended to serve the development proposed by the plat is consistent with policies and service area designations in this Plan.

II.E.3.: State Growth Tiers
In 2012, the County Council amended the County's subdivision regulations to comply with the Sustainable Growth & Agricultural Preservation Act of 2012. This update incorporated the Growth Tiers Map (see the link below), which shows the location of the four Tiers in the county.

- Tier I: Areas currently served by [community] sewer.
- Tier II: Future Growth Areas planned for [community] sewer.
- Tier III: Large Lot Development and "Rural Villages" on septic systems.
- Tier IV: Preservation and Conservation Areas. No Major subdivisions (five or more lots) on septic systems except by exemption. Montgomery County has received certification from the Maryland Department of Planning (MDP) that exempts Montgomery County from this limitation, allowing major subdivisions on septic systems. The County's Agricultural Reserve will continue to protect agriculture and limit development in the County's rural areas through Transfer of Development Rights and very low-density residential development.

Tier designations are reviewed periodically by M-NCPPC and DEP staff to address sewer service designation changes in the Water and Sewer Plan. Additional information concerning Growth Tiers and the County's Growth Tiers Map is available at M-NCPPC's website: Tiers Map - Montgomery Planning. Growth Tiers information is also available from MDP at: MONT_Map.pdf.

II.F.: General Policies for Water Supply and Sewerage Service
With few exceptions, all improved properties in Montgomery County require drinking-water supply and wastewater disposal. These services are provided either by community systems, owned and operated by public utilities (WSSC Water, Rockville, or Poolesville) or by individual, onsite systems privately-owned and -operated by the property owner and regulated by the State and the County.

The following policies provide general, county-wide guidance for the provision of both community water and sewer service and individual, private water and sewer systems. Implementation of these policies occurs in part through the designation of water and sewer service area categories in this Plan (see Section II.C.). The County Executive provides recommendations to the County Council for service area categories based on the policies included in this Plan addressing water and sewer service, land use, staging, and infrastructure.

Under specific and limited circumstances, case-by-case exceptions to these general service policies can be considered where community service is logical, economical, environmentally acceptable, and does not risk the extension of community service to non-eligible properties. The special service policies included in Section II.G. identify the conditions under which these exceptions can be considered, including public health problems, public facilities, properties abutting existing mains, etc.

Where service area category map amendments are consistent with the following general service policies, DEP may act to approve category change requests through the administrative delegation process, using the "consistent with existing plans" policy, Section V.D.2.

II.F.1.: Consistency with Comprehensive Planning Policy

This Plan provides for the systematic extension of community water and/or sewer service in concert with other public facilities to accommodate growth in areas along the higher-density development corridors as defined in the County's General Plan, *Thrive Montgomery 2050* (Thrive Montgomery 2050 - Envisioning a Sustainable Future), and in related local area master and sector plans that amend the General Plan. Individual, onsite facilities will provide water and/or sewer service in the *Thrive Montgomery 2050* wedges (outside the corridors) intended for lower-density residential and agricultural development. Guidance for the type, amount, location, and sequence of growth is contained in the comprehensive planning policies of the County as considered and adopted by the County Council.

This Plan intends that water and sewer service decisions should follow and implement the land use and development guidance established in the County's *Thrive Montgomery 2050* Plan and related local area master and sector plans. A variety of factors influence policy decisions concerning the density or type of development for an area: overall land use guidance; transportation and school capacity; environmental protection; local and county-wide housing and commercial demand; compatibility with existing development; and suitability for individual, on-site systems. The proximity of water and/or sewer mains to an area of the county, also one of these factors, should not serve as the primary driver of these water and or sewer service policy decisions. DEP staff participate in the master plan development and approval process, to address water and sewer service issues

Community water and sewerage systems provide service in areas of moderate- to high-density residential development, and to commercial, mixed use, and industrial development. The density of this development does not allow the space on individual lots needed for the use of individual, onsite wells and septic systems. The majority of developed properties in rural and low-density areas are served by onsite water supply and wastewater disposal systems, wells and septic systems. In support of the County Thrive Montgomery 2050 Plan and local area Master Plans, the presumption is that all these areas will continue to be served using onsite systems consistent with this Plan's service policies.

This Plan recognizes that some rural and low-density areas of the county have moderate-density residential, employment, or industrial zoning. These areas are planned to remain outside of community service envelopes and will be served by individual, onsite water and sewer systems. Property owners and developers will need to recognize that the use of onsite systems may not allow these properties to achieve the maximum development density theoretically allowed under these zones.

II.F.1.a.: General Plan and Local Area Master Plan Coordination

Master Plan recommendations for use of community and individual, onsite water supply and sewerage systems serve to support the master plans' land use and zoning recommendations. These recommendations are made with an understanding of the County's water and sewer service policies, as adopted in this Plan. Currently, master plans typically incorporate a statement that allows for the provision of water and sewer service within the master plan area in a manner consistent with the service policies included in the Water and Sewer Plan. This statement is intended to address *both* the general and special service policies in the Water and Sewer Plan. Where master plans make water and/or sewer service recommendations that are not in agreement with the

policies of this Plan, an explanation and justification of those recommendations is provided in the master plan and subsequently identified in future Water and Sewer Plan updates (see Section II.G.1.).

Periodically, the County will update or amend a local area master or sector plan; a process that can result in changes in recommended land use, development densities, and water and sewer service for a part or parts of that master plan area. While these issues are under consideration by the Planning Board and the County Council, the Council typically defers decision on related water and sewer service issues in this Plan pending completion of the new master plan. Additional information about coordination between master plan updates and the Water and Sewer Plan amendment processes is located at Section V.E.3.

II.F.1.b.: Consistency with the Countywide Water Resources Functional Master Plan
The County developed a Water Resources Functional Master Plan (WRFMP), which the County Council approved in July 2010. As the County continues to grow, the WRFMP will provide the land use policy and planning framework to support compliance with water quality standards, Total Maximum Daily Loads (TMDLs) and Anti-Degradation regulations. The WRFMP plan amends the General Plan and serves as a guide for the Water and Sewer Plan, other functional master plans, and area and sector master plans. In the course of developing this plan, M-NCPPC and DEP assessed the County's Water and Sewer Plan in light of the State's WRE requirements and related guidance. Portions of the Water and Sewer Plan that satisfy the WRE requirements were incorporated by reference in the WRFMP. Where the Water and Sewer Plan addresses programmatic, policy, or planning gaps, these will also be identified and addressed in the WRFMP.

II.F.1.c.: Extraordinary Service Recommendations
On occasion, the County Executive or representatives of another agency may make specific water and/or sewer service recommendations involving this Plan that are inconsistent with the County's comprehensive planning policies, or with other policies provided in this Plan. Such a recommendation/n is considered as an extraordinary service recommendation. Extraordinary service recommendations, when provided, will be accompanied by explanations showing what factors have changed significantly since the adoption of the original policies, and/or what elements of the comprehensive planning policies should be amended to more appropriately reflect current conditions or concerns. The explanation will identify what specific considerations are relevant to the individual recommendations, including as appropriate: economic and fiscal concerns; population estimates; planning; zoning and subdivision requirements; federal, state, regional, county, and municipal planning efforts; residential commercial and industrial needs; availability and adequacy of public facilities; energy conservation; water and sewage treatment capacity; engineering constraints; environmental protection; and the alleviation of public health problems.

II.F.2.: Service Policies for Residential Development
The decision to provide community water and sewer systems service, or to use individual, on-site systems, for residential development most often relies on development densities recommended by local area master plans and established by the County's Zoning Code (Chapter 59 Montgomery County Zoning Ordinance). Service policies for residential uses in areas zoned for rural and agricultural development are addressed as part of subsequent sections (see Sections II.F.3.b. and II.F.6.).

II.F.2.a.: Moderate- to High-Density Residential Development
Areas zoned for moderate to high-density residential development (zoned R-60, R-200, TMD, etc.) will generally be served by community water and sewer systems. Moderate to high-density residential development (1 dwelling unit per one-half-acre or greater densities), with smaller-sized lots, cannot provide the area required for onsite wells and septic systems; they are more efficiently served by community water and sewerage systems. Development options such as cluster or transferable development rights (TDRs) serve to further reduce lot sizes and/or increase lot densities, which reinforces the need for community systems.

This Plan strongly discourages the provision of community water service without community sewer service to areas zoned for moderate-density residential development, such as for the R-200 Zone. In the rare cases where such service is approved, the development plan must provide adequate protection for ground and surface waters as discussed in Section II.F.9.b. A relatively few older properties in these areas may still use wells and/or septic systems.

II.F.2.b.: Low-Density Residential Estate Development
The RE-1 Zone (residential estate one-acre) and RE-2 Zone (residential estate two-acre) provide for low-density residential development. This also applies to the RE-2C Zone (residential estate two-acre cluster) where the standard (not cluster) development option is used. These zones are generally presumed to use individual, onsite systems. Land zoned for residential estate development often functions as the transition between areas planned for higher-density residential development and areas planned for rural or agricultural development. The presumed use of individual, onsite systems, especially septic systems, supports master plan goals for these transition areas. In addition to providing buffers for rural development and agricultural areas, they serve to protect high-quality streams, including those used for public water supply. The distances between residences in low density areas results proportionate increases in the cost of extending community service to each lot, making the use of community systems less cost effective.

Service policies in the residential estates zones tend to be complex, due in part to available development options. Rural estate development can occur under one of three options: the standard method, the cluster method, and the transferable development right (TDR) method. The RE-1 and RE-2C Zones provide for both standard and cluster development options; the RE-2 Zone provides for only the standard development option. (Sect. II.F.9.b.

Standard Development
Development projects using the standard method will generally use individual, onsite septic systems for sewer service. Either community water service or individual, onsite wells may be used. At the lower development densities of the residential estate zones, lot sizes generally equal or exceed 1 acre. However, the use of individual, onsite systems does not necessarily guarantee a developer's ability to achieve minimum lot sizes, and accordingly, the maximum lot yield allowed under each zone. A specific site's suitability for septic systems will tend to control actual lot yields and resulting development density.

Cluster Development
The cluster development method provides potential environmental benefits, such as reduced water quality impacts due to less impervious area, than for a standard development plan, and use of dedicated open space for the preservation of sensitive environmental features. Under the cluster method option, lot sizes are expected to be smaller than under the standard method. The minimum size for RE-1 clustered lots is 15,000 sq. ft. and 25,000 sq. ft. for RE-2C clustered lots. Due to these smaller lot sizes, development occurring under this option will generally need to use community water and sewer systems to allow for cluster plans that accomplish desired environmental goals. Service area category designations under these circumstances will carry a notation limiting community sewer service for cluster development only. Local area master plans will usually provide guidance about where and under what conditions development may use the cluster method.

TDR Development
Only those properties within an overlay zone for transferable development right (TDR) receiving areas may use this development option. In these receiving areas, a developer may increase the number of residential units built on a specific site by purchasing TDRs from owners of property in the Agricultural Reserve (AR) Zone. This program, originated by Montgomery County in the early 1980s, seeks to:

- Protect and sustain the county's rural and agricultural communities.
- Provide an opportunity for compensation to rural property owners for reduced development density and lot yields.
- Direct development density from rural areas to higher-density areas with the appropriate infrastructure (roads, transit, schools, community water and sewer service, etc.).

Given the development densities proposed, properties zoned as TDR receiving areas typically require the provision of community water and sewer service. Often, the base zoning of these sites (R-60, R-200, etc.) establishes their eligibility for community service without the additional development density provided by using the TDR option. However, in cases where the base zoning of the property is **not** suitable for the provision of community service (typically the RE-1 and RE-2 zones), the provision of community service requires Planning Board approval of a preliminary subdivision plan that uses the TDR-development option. DEP may act to approve service area changes in these cases through the administrative delegation process, Section V.D.2.a.

Properties Ineligible for Cluster or TDR Development
Residential estate-zoned areas where cluster- or TDR-option development has occurred often include a mix of both large and small properties. Smaller properties, typically deeded or established before the current zoning, can lack the acreage needed to allow them to subdivide. Community service extensions provided to serve cluster and TDR development, or to serve nearby, higher-density development, may abut or be in close proximity to these smaller properties. Where the provision of community service is found to be logical, economical, and environmentally acceptable, the County may consider the provision of community service for these smaller properties that lack subdivision potential, but without the cluster or TDR development options usually required for community service.

II.F.3.: Rural Residential Development
Under the County's Zoning Code, low-density rural residential development is addressed by three zoning designations: Rural Neighborhood Cluster (RNC), Rural Cluster (RC), and Rural (R).

II.F.3.a.: Rural Neighborhood Cluster (RNC) Zone
Properties zoned RNC have two alternative development options: standard cluster and optional cluster. The choice between these options affects whether a project uses community or individual water and sewer service. The local area master plan will provide direction on the use of these cluster options.

Standard Cluster Method
The standard cluster method of development results in lower density neighborhoods on large lots. Development under the standard cluster method is presumed to use individual onsite systems, as established for the RNC Zone in the County's zoning ordinance (see prior link). Service from the community water system may be considered if the project satisfies the requirements for community water service for large-lot development (see Section II.F.2.b.).

Optional Cluster Method
Development under the optional cluster method provides for the use of smaller lots and more open space preservation than under the standard cluster method. As a result, the Zoning Ordinance calls for the use of community water and sewer service to support development under the optional cluster method. Under the optional method, community water and sewer service is provided to the areas of the site with clustered lots. In certain cases, community service is also available to larger conservancy lots, where the provision of community service is deemed appropriate due to close proximity to clustered lots. DEP and M-NCPPC staff evaluate community service for conservancy lots as part of the subdivision review process.

Areas receiving community service will be shown as categories 1 or 3, as appropriate; all other areas of the RNC-zoned site will be shown in the Plan as category 6: intended for individual systems. The Plan's service area category maps will show this demarcation between community service and individual service areas on these sites following the inclusion of the recorded lots in the County's GIS property database.

II.F.3.b.: Rural (R) and Rural Cluster (RC) Zones
Areas zoned for rural development, the five-acre Rural (R) and Rural Cluster (RC) Zones are intended for service by individual, onsite water and sewer systems. The size of lots in these zones, in addition to the distance between lots and the distance from existing community service, generally dictates the use of individual wells and septic systems.

Community water service can be considered for sites within the RC zone, as specified by the Community Water Service without Community Sewer policy to support cluster-option development (see preceding Section II.F.2.b.). Final approval for water category changes will typically require the Planning Board's approval of a preliminary plan using the cluster development option. Water service area category designations under these circumstances will carry a notation restricting community water service for cluster development only. This policy does not apply to the Rural Zone.

Areas zoned for rural cluster development often include smaller properties that lack sufficient acreage for a new subdivision. These properties can also be considered for community water service on a case-by-case basis

where such service is logical, economical, and environmentally acceptable. The community water service option for the RC Zone does not extend to community sewer service.

II.F.4.: Service Policies for Mixed Commercial and Residential Development
Projects located in areas zoned for mixed residential and commercial development (CRN, CRT, and CR Zones) are often found in close proximity to higher-density residential areas or commercial centers. As such, they are intended for high- to moderate-development densities and will require the use of community water and sewer service to implement the uses proposed for these areas.

II.F.5.: Service Policies for Employment and Industrial Development
Most areas zoned for employment or industrial development (e.g. EOF, IL zones) are intended to develop at a density that will require the use of community water and sewer service, rather than individual, onsite systems. However, some commercial and industrial zones are located in rural communities beyond the limits of the community water and/or sewer service envelopes. These areas are presumed to use individual, onsite water supply and wastewater systems. Designations for the provision of community service or the use of individual onsite systems will be generally consistent with the type of service used for adjacent or nearby residential development, as guided by master plan development recommendations.

II.F.6.: Service Policies for Agricultural Development
Areas zoned for agricultural development, the twenty-five-acre agricultural or AR Zone (formerly Rural Density Transfer), are intended for service by individual, onsite water supply and wastewater treatment systems. This includes residential properties within these zones. The size of lots in these zones, the distances between lots, and the density and scale of development,-makes these areas suitable for the use of individual, onsite wells and septic systems. Properties in the AR Zone are typically located at substantial distances from areas served by community systems. For development within the AR Zone, this Plan limits the size of individual onsite septic systems (see Section II.C.5.c.).

II.F.7.: Service Policies for Land Uses Without Specific Zoning Classifications
Two primary land use types do not have specific zones established in the County's Zoning Ordinance: institutional uses, including schools and other public use buildings, and parklands or park facilities. Many of these uses, due to their underlying zoning, are located within the planned community water and sewer service envelopes. The Plan's special service policies, which follow (Section II.G.), address situations where community service is proposed where these uses are located or propose to locate outside the established community service envelopes.

II.F.8.: Service Policies for Incorporated Municipalities
As discussed previously, State law directs that the County include in this Plan the water and sewer service planning prepared by local municipalities. Municipalities can use zoning codes that differ from the County's. The following provides a summary of municipal water and sewer service policies for the County's incorporated jurisdictions:

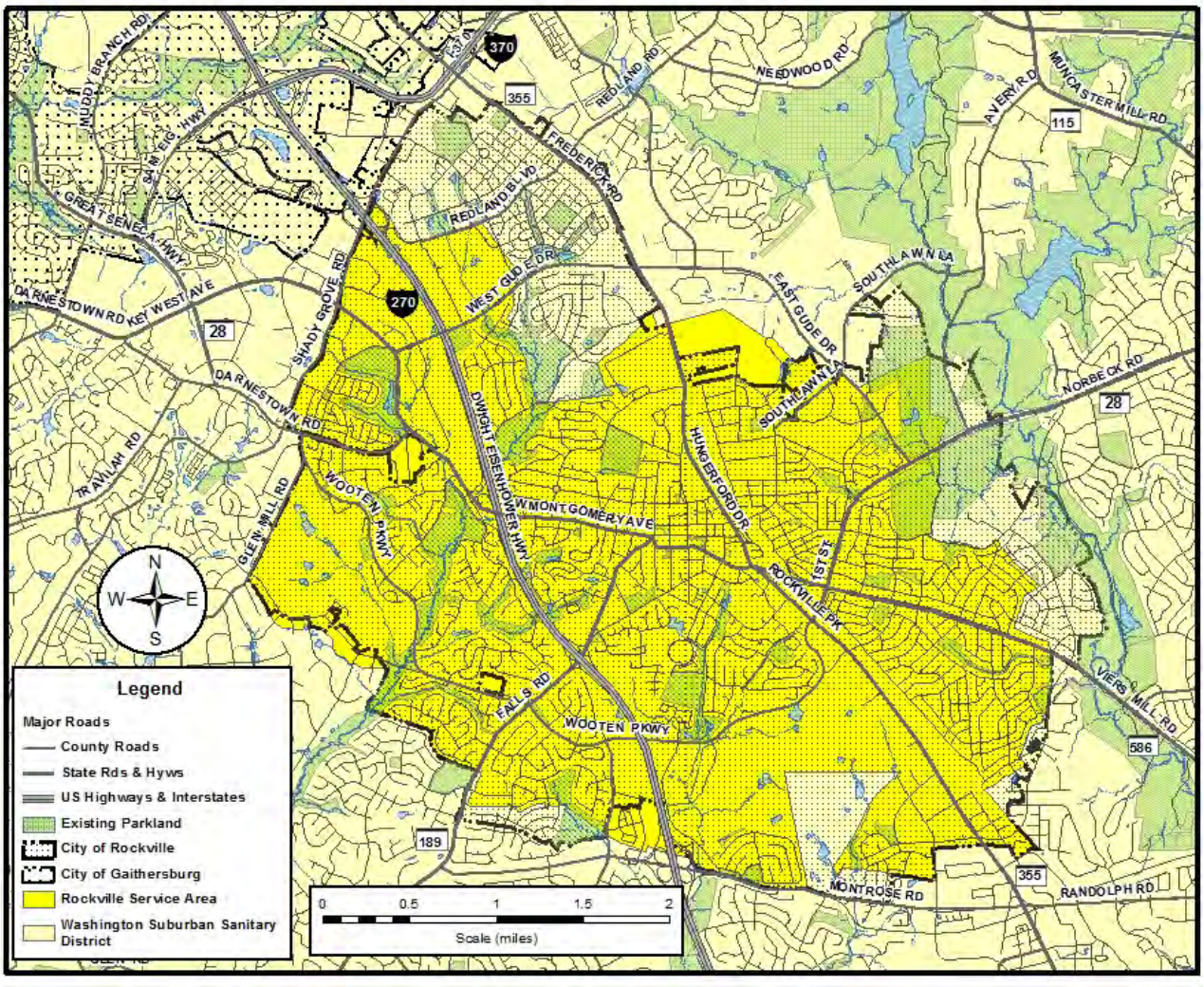
- Barnesville: The Town of Barnesville is located outside the County's planned community water and sewer service envelopes. All properties in the town use individual, onsite wells and septic systems.
- Brookeville: The Town of Brookeville is located at the northern edge of the County's planned community water and sewer service envelopes along the Georgia Avenue corridor. The Town intends that all improved properties within its limits will be served by WSSC Water community water and sewer systems.
- Laytonsville: Water service for the Town of Laytonsville is currently provided by a combination of onsite wells and community water systems. At the Town's request, the County has included the majority of the community within the planned community water service envelope. Wastewater disposal is handled by septic systems. Community sewer service is neither approved nor planned for Laytonsville.
- Poolesville: The Town of Poolesville's planned community water and sewer service envelopes include the majority of properties in the town. Exceptions include some areas zoned for rural development at the western end of the community. The provision of community service is directed by the Town's master plan which allocates new service based in part on the adequacy of the Town's community water

supply system and capacity of the wastewater collection and treatment system. The County coordinates each new service request with the Town to ensure compliance with the Town's planning efforts. The Town owns and maintains its own community water and sewer systems, independent from those owned by WSSC Water.

- Rockville: The City of Rockville plans that all properties within the city will be served by community water and sewer service. The City provides water and sewer service to approximately 70% of the city, or approximately 13,000 accounts. Other properties in the city, located within the WSSD are served by WSSC Water. The City code requires that properties that seek water and sewer service from Rockville must annex into the City. These properties must be within the maximum expansion limits (MEL) as defined by the Municipal Growth Element of Rockville's Comprehensive Master Plan, which was adopted by the Mayor and Council on December 13, 2010. (See Figure 1-6.)

Figure 1-F6: Rockville City Limits and Municipal Water and Sewer Service Area
(Source: DEP-WWPG)

Figure 1-F6 shows the community water and sewer service areas for the City of Rockville relative to the surrounding Washington Suburban Sanitary District. Also shown are the corporate limits for the city.



Water and Sewer Plan Recommendation: Community Service for Non-Annexed Properties in Rockville's Service Area

Some properties located within the City's MEL, but outside the City's corporate limits, depend on wells and septic systems. Also located outside of the WSSD, they are ineligible for community

service from WSSC Water. These properties are found in both commercial and residential neighborhoods. The City's requirement for annexation to receive community water and sewer service ensures that properties and public infrastructure meet current City standards as part of the annexation process. It can be cost prohibitive for individual properties to meet infrastructure standards; accordingly, the City and County need to initiate discussion on service for these properties to find mutually agreeable solution for extending community service.

The following municipalities are located within the County's planned community water and sewer service envelopes and are served by WSSC Water. All improved properties are either served by or approved for community service. As a result, these communities do not prepare separate water and sewer plans; instead, they rely on the County's planning efforts in coordination with WSSC Water. A relatively few older properties in these communities may still use wells and/or septic systems.

- Town of Chevy Chase
- Town of Chevy Chase View
- Village of Drummond
- Town of Garrett Park
- Village of Martin's Addition
- City of Takoma Park`
- Village of Chevy Chase Section 3
- Chevy Chase Village
- Village of Friendship Heights
- Town of Glen Echo
- Town of Oakmont
- Town of Washington Grove
- Village of Chevy Chase Section 5
- Village of North Chevy Chase
- City of Gaithersburg
- Town of Kensington
- Town of Somerset

II.F.9.: Coordinating the Provision of Community Water and Sewer Service
This Plan generally focuses more attention on policies and issues addressing community water and sewer service than it does on individual, onsite systems. While individual systems primarily affect only the project site involved within a new development, the provision of community water and/or sewer service requires broader-based planning and coordination. Water and sewer main construction may cause offsite disruptions, require easements for new main construction, and potentially affect other property owners. Larger facilities for water and wastewater transmission and treatment may be affected by decisions to provide community service to a specific part of the county. The following subsections address overarching policies for the provision of community water and sewer service.

II.F.9.a.: Providing Community Water and Sewer Service in Concert
This Plan intends that community water service will be provided wherever community sewerage service is provided. Exceptions to this policy may occur where specific limitations of the community water system make it unreasonable to provide such service, or where community sewer service has been provided to address specific policy concerns such as public health concerns (Section II.G.2.) or where properties about sewer mains (see Section II.G.3).

II.F.9.b.: Providing Community Water Service Without Community Sewer
In the mid-1980s, DEP conducted a study, "The Feasibility of Extending Public Water Service to Large Lot Development". The study concluded that community water service does not provide the same impetus for development density and lot yields as community sewer service. The study advocated the provision of community water service in areas zoned for lower-density development. In these areas, septic system suitability would still control development yields, maintaining the intent of master plan development recommendations. Community water service provides the advantages of a potable water source less prone to problems from drought and groundwater contamination and the availability of fire protection. Community water service also provides the potential for improved septic system sitting that results from eliminating setback constraints associated with water wells.

Where the provision of community water service to large lot areas promotes the land-use and development envisioned by the master plan and meets other economic and environmental standards, the approval of service and/or timing of service is appropriately handled by the adoption of water category changes as part of this Plan. Requests for water service to large lot areas may be considered for administrative approval under the "Consistent with Existing Plans" policy (Section V.D.2.a.) in cases where the Planning Board concurs that the extension of service is consistent with the land-use and development policies of the master plan.

The following policies provide the conditions that allow for the provision of community water service without community sewer service:

- Zoning: The provision of community water service without community sewer service is intended for areas zoned for lower density, "large lot" residential and rural development, and should be generally limited to those areas zoned RE-1, RE-2, RE-2C, Rural Neighborhood Cluster (RNC) standard option, and Rural Cluster (RC) cluster option.
- Master Plan Intent**:** The provision of community water service must conform to the land use policies of the applicable master plan. The policy of providing community water service to large lot areas was first adopted in the Water and Sewer Plan in 1990. Some master plans still in use, such as the *Preservation of Agriculture and Rural Open Space Master Plan (1980)*, were approved prior to the introduction of this policy. These older master plans do not specifically account for this policy in their water service recommendations. The decision to extend or restrict water service should focus on conformance with master plan land-use and development recommendations, rather than on generalized water service areas identified in these older master plans.
- Water Resources Protection: Development with community water service and septic systems must be consistent with the protection of surface and ground waters. To assure this goal, DEP may require hydrogeologic studies of proposed development projects to assess potential impacts to ground and surface water quality from the use of individual sewerage systems. In order to address concerns about the clustering of septic systems in areas where zoning permits lot sizes of less than 40,000 square feet, DEP may, through the development review process, recommend minimum or average minimum lot sizes of 40,000 square feet for new development using community water service and individual sewerage systems.
- Water Main Extensions: Water main extensions planned and constructed under the provisions of this policy should follow a pattern that supports an orderly and logical expansion of the community water system and water service envelope. “Leapfrogging,” or extending service through significant areas of land ineligible for community water service should be avoided.

II.F.10.: Community Service and Capital Projects Dependency

The provision of community water and/or sewer service to an area or to a specific site may require capital water and/or sewer projects not included in the current capital program or not otherwise identified and endorsed by this Plan. In considering individual water/sewer service area change requests, DEP will generally address such cases using one of the following alternatives:

- Dependency on WSSC Water-Financed and Constructed Capital Projects - Map amendments may be initially approved for categories W-4/S-4 or W-5/S-5, with conditional approval for categories W-3/S-3. Final advancement to categories W-3/S-3 by the Director of DEP (see Section V.E.2.) will depend on inclusion of the capital projects in the Water and Sewer Plan, either through WSSC Water's approved capital program, by a Council-approved Plan text amendment which identifies and adopts the required projects, or by other Council-approved actions.
- Dependency on Developer-Financed and Constructed Capital Projects - Map amendments may be granted for categories W-3/S-3 in cases where WSSC Water has advised that the required capital projects will be addressed by a dependency through the water and/or sewer systems expansion process (SEP) program. The approval of categories W-3/S-3 allows the development project to proceed through M-NCPPC subdivision plan review and approval and on to WSSC Water for approval. WSSC Water requires the water/sewer authorization to depend on the approval and/or construction of the required capital projects, which cannot proceed until the County Council has approved the appropriate funding through the WSSC Water CIP.

II.G. Special Policies for Water and Sewer Service

The Plan’s general service policies address water and/or sewer service issues for the majority of development recommendations found in local area master plans. However, a master plan’s general recommendations and this Plan’s general service policies cannot anticipate every possible service situation. Many of the following special service policies were developed from specific cases where the County Council, in addressing an exceptional situation, found sufficient cause to establish its action as a precedent for other similar situations that

follow. The Council adopted these policies in order to provide consistent policy guidance, rather than relying on case-by-case interpretations.

While the preceding general service policies have broad application across the county, the following special service policies usually apply only in very specific circumstances. They are nevertheless valid service policies adopted by the County Council, acting as the State's delegated authority for the Water and Sewer Plan.

II.G.1. Master Plan Recommended Exceptions
The previous discussions of the Water and Sewer Plan's service policies have noted that in order to implement specific development and land use strategies, master plans may make recommendations for water and/or sewer service that vary from this Plan's general policies. Where a master plan makes such a recommendation, it must also include an appropriate justification for the recommended departure from the general service policies. DEP coordinates closely with M-NCPPC concerning the water and sewer service recommendations developed in local area master plans. Exceptions to the general service policies are recommended in the following master plan areas:

- Burtonsville Crossroads Neighborhood Plan (2012) (refer to Appendix C, Section II.J).
- Cloverly Master Plan (1997) (refer to Appendix C, Sections II.A & II.Q).
- Damascus Master Plan (2006) (refer to Appendix C, Sections II.B & II.C).
- Olney Master Plan (2005) (refer to Appendix C, Section II.P).
- Potomac Subregion Master Plan (2002) (refer to Appendix C, Sections II.D, II.E, II.J, II.L, & II.M).
- Upper Rock Creek Watershed Master Plan (2004) (refer to Appendix C, Sections II.H).

Refer to Appendix C for details about the exceptional service policy recommendations included in each of the preceding master plans.

II.G.2.: Community Service to Relieve Onsite System Concerns
Public health concerns can result from failures of individual, onsite water supply or wastewater disposal systems. Onsite systems usually—but not exclusively—serve properties located outside the planned community service envelopes, where development is intended for service using wells and septic systems. This is consistent with the planning for and service area category designation of lower-density residential, rural, and agricultural areas.

As a result, most properties using individual, onsite systems are often in areas where relief of failures using community service is neither logical nor economical. In these cases, first consideration for mitigation of a failure will focus on onsite relief measures. A feasible onsite remedy must satisfy onsite systems permitting requirements, as verified by DPS. However, some failures do occur in areas within or near areas served by community systems. Issues involving concerns about failures of individual water supply and sewerage systems are addressed in more detail in Section III.C.4.a.

II.G.2.a.: Single Property Onsite Systems Concerns
For the majority of onsite systems failures reported to DPS, relief is provided by an onsite repair or replacement. (DPS staff typically use the term "repair" to refer to either a repair or a replacement.) However, DPS staff may determine that an onsite repair is not feasible or that the provision of community service provides a better alternative to an onsite repair. Upon documentation of that failure by the Director of DPS or a designee, community water and/or sewer service may be provided to an improved property to resolve an onsite systems failure. If a water or sewer main extension is required or if the availability of service is unclear, DEP, in coordination with WSSC Water, will evaluate whether the provision of community service is feasible. In cases where DEP determines that the provision of community service is not feasible, DEP will report this back to the DPS Well and Septic Section. DPS then determines the best possible onsite solution for the onsite systems failure. Note that the State of Maryland, typically through MDE, may also direct the use of community service to relieve an onsite system failure.

Unless a case requires consideration of the following:

1) a service area category change either by the DEP administrative delegation process or by the County Council's consideration and

2) a water or sewer main extension,

DEP may direct WSSC Water to begin and expedite the process to provide community service regardless of the existing service area category. The utility does not need to wait for the County to grant a service area change approval to plan, design, and implement community service. DEP will follow up this action with the needed category change through the administrative delegation process.

The inability of an unimproved property to allow for a permitted septic system does not provide justification to allow the provision of community service to that property alone *under this policy*.

Within the Planned Community Service Envelopes

Where DPS determines that an existing onsite system failure has occurred, the property involved may already have a category 1 or 3 service area designation. This allows WSSC Water to proceed with expediting the provision of community service. However, where a property lacks an appropriate category designation for community service, DEP may direct WSSC Water to proceed with the provision of service, as explained previously. Because the provision of community service is for a property located within an area already planned for community service, DEP may act to approve related service area changes through the administrative delegation process, under the "Consistent with Existing Plans" policy, Section V.D.2.a.

Outside the Planned Community Service Envelopes

The first consideration for relief of an existing onsite systems failure will focus on onsite mitigation measures. However, some cases occur where DPS determines that onsite measures cannot relieve the failure. In cases involving documented failures, with no reasonable onsite relief measure and with readily available community service, DEP may act to approve related service area changes through the administrative delegation process, under the "Community Service for Public Health Problems" policy, Section V.D.2.a. Readily available community service is that which allows for community service for a property using either a directly abutting or a WSSC Water-approved non-abutting service connection, not a main extension. Otherwise, onsite system failures found outside the planned community service envelopes and related service area category changes can be addressed through the administrative delegation process. However, the individual County Council members maintain an oversight authority with the administrivia delegation process and can, at their choosing, direct DEP to divert a request proposed for administrative approval to the Council for consideration. This authority also resides with the Planning Board, as a body, and the director of DEP.

In cases addressed by this policy, community service will generally be limited to a single water and/or sewer connection for existing properties. The provision of community service under this policy shall not be used as justification for the connection of nearby lots or parcels if they would not otherwise be entitled to connect to community systems.

Development and Subdivision Considerations

In areas planned to use onsite water and/or sewer systems, the County's decisions to provide community water and/or sewer service and approval for related service area changes are not intended to change existing development patterns originally based on the suitability of onsite systems use. To this end, properties outside the planned service envelopes cannot be subdivided into more than one lot where they are approved for public water and/or sewer service *under this policy*.

Onsite System Health Concerns: Summary of Category Change Actions for Single Property Cases

The following summary considers single property cases where the existing service area category does not allow for community service (categories 4, 5 and 6).

- Where Property Location is Within the Planned Community Service Envelope

	Community Service	Category Change Action	Advance Category Change Action
o	Community Service Available	Administrative action allowed	Advance approval action allowed
o	Community Service ***not*** Available	Administrative action allowed	Advance approval action ***not*** allowed

- Where Property Location is Outside the Planned Community Service Envelope

	Community Service	Category Change Action	Advance Category Change Action
o	Community Service Available	Administrative action allowed	Advance approval action allowed
o	Community Service ***not*** Available	Administrative or Council action	Advance approval action not allowed

For single property cases where community service is approved in the Plan (service area categories 1 and 3), DEP can issue a request that WSSC Water expedite community service for the property.

II.G.2.b.: Area-Wide Onsite Systems Concerns and Onsite System Surveys

In some situations, the number and/or the pattern of onsite systems failure cases could indicate broader-scale concerns rather than just an isolated, individual case. A function of this Plan is to survey and identify, as necessary, areas where future, long-term use of individual, onsite systems may be significantly constrained, and to recommend solutions for those concerns. The County will make this determination by conducting an onsite system survey, as detailed in the following section. The survey, for a limited, specified area, will consider existing onsite system records, potential physical and regulatory constraints, and the history of onsite system problems. If survey results indicate a need for community service to mitigate existing or anticipated problems, DEP can recommend establishing a special community service area. All special community service areas recommended for action under this policy require consideration and approval by the County Council. Upon the approval of a special community service area, the Council may also approve category changes, if needed, for community water and/or sewer service for that special service area under this policy.

The County's designation of a special community service area will allow property owners within these communities to take advantage of WSSC Water's expedited service process and main construction subsidies. Individual properties within an existing or pending special service area that are documented by DPS as having onsite systems failures may still be addressed using the procedures outlined in Section II.G.2.a., above.

In addition to onsite systems survey requests from individual property owners (see outside the planned service envelopes in the following section), DPS may also identify and recommend potential onsite systems survey areas to DEP.

II.G.2.c: Onsite Systems Survey Processes Within Planned Community Service Envelopes

The need for onsite system surveys for properties in areas within the planned community service envelopes is limited as the areas involved are already intended for community service. Surveys are sometimes conducted to establish an area eligible for public health subsidies from WSSC Water to help cover the cost of the extension of a water/sewer main and to expedite the planning and construction of needed main extensions. If a service area category change is needed, most aspects of the survey process can proceed as described below regarding locations outside the planned service envelopes. However, the category change action can typically be addressed by the administrative delegation process under the "Consistent with Existing Plans" policy, Section V.D.2.a., rather than requiring legislative consideration by the County Council.

II.G. 2.d.: Onsite Systems Survey Processes Outside Planned Community Service Envelopes

Onsite systems surveys are typically initiated by an individual property owner, or by a group of owners, who identify an area of concern for DEP to investigate. At least one property owner requesting a survey must demonstrate that the existing onsite system has failed, as verified by DPS. DPS must also find that the onsite system failure cannot reasonably be resolved by an onsite repair or permitted, conventional replacement of that system (deep trench, shallow trench, or sand mound), or by innovative and alternative onsite replacement systems, as they are approved for use by the State and County (e.g., graywater systems and waterless toilets). This determination may require an onsite system inspection by DPS and a qualified contractor. A previous inspection may also satisfy this requirement, if acceptable to DPS. The inability of an unimproved property to allow for a permitted well or septic system does not provide a property owner with justification to request an

onsite system health survey.

Establishing an Onsite Systems Survey Area
Once DEP accepts qualified properties for an onsite systems survey, staff will evaluate conditions of other properties in the immediate vicinity for inclusion in the survey area. Based on this evaluation, DEP will formally designate a draft survey area. Once DEP establishes a draft survey area, staff will notify all property owners prior to the beginning of the survey process. At this point, any owner may choose to formally withdraw their property from inclusion in the survey. Excluded properties may be considered for community service if they subsequently satisfy the abutting mains policy (Chapter 1, Section II.3.G).

Conducting Onsite Systems Surveys to Address Area-Wide Health Problems
The survey begins with DEP's final determination of the survey area. All participating property owners (*i.e.* those who have not withdrawn their properties from the survey) will be required to provide access to their properties for purposes of a DEP/DPS site visit. DEP and DPS staff will contact owners in advance of a scheduled site visit. DEP cannot require the owners of properties that DEP has added to a survey area to conduct septic system inspections by DPS.

Prior to finalizing the survey findings, DEP will hold a public meeting for the property owners and other interested individuals and public interest groups. Following coordination with other agencies, as needed, DEP will present its findings and recommendations in a report for consideration by the County Executive. This report will include DEP's recommendations for special community service areas and related category changes, as needed. The Executive will transmit survey findings and recommended category changes, as appropriate, to the County Council for consideration. This process is generally expected to take no more than one year, depending on agency workload, including work on other onsite system surveys.

Standard procedures for onsite system surveys are available in Appendix G to this Plan and on DEP's website at Private Well and Septic Systems | Department of Environmental Protection, Montgomery County, MD.

II.G.3.: Community Service for Properties Abutting Community System Mains
Under specific and limited circumstances, community water and/or sewer service may be provided to properties that abut an existing or approved water and/or sewer main. Except in cases where this policy specifically requires the County Council's consideration and action, DEP may grant approval for abutting service hookups through the administrative delegation process, under the "Community Service for Properties Abutting Community System Mains" policy, Section V.D.2.a.

II.G.3.a.: General Requirements
The provision of community service under this policy requires that the property, or a structure on the property, must have been established prior to the extension of the abutting water or sewer main. Residential, institutional, and commercial uses qualify as existing structures; barns, garages, or other types of outbuildings do not qualify. Satisfaction of this requirement qualifies the property for a single public service connection. Neither the construction of a building on an unimproved property, nor the addition to or replacement of an existing structure, invalidates the application of this policy. The provision of community service under this policy shall not be used as justification for the connection of nearby lots or parcels if they would not otherwise be entitled to connect to community systems.

II.G.3.b: Technical Feasibility of Service Connections

The provision of community service under this policy also requires that service from the abutting main must be technically feasible. Major water and sewer transmission mains and sewer force mains cannot support individual service connections and service utilities and therefore do not qualify as abutting properties for community service under this policy. Service from low-pressure, small-diameter sewer mains may also be restricted, depending on the type or number of users proposed. WSSC Water's current pump/pressure system policies do not permit both residential and non-residential uses (*i.e*. commercial or institutional) to connect to the same low-pressure main, requiring instead separate, dedicated mains for each separate non-residential use.

Planned Community Service Mains

The implementation of this policy applies to both existing and planned community service mains. Where a category change approval is based on new mains planned and approved by WSSC Water, actual service depends on the construction of that main by the applicant for that main. The owner of a property with a restricted abutting mains approval based on construction of a new main can independently initiate the construction of all or part of that new main.

Non-Abutting Service Connections

A non-abutting water or sewer connection may or may not allow for the provision of community service under this policy. A non-abutting connection is typically located within either a public road right-of-way or a WSSC Water main easement. Non-abutting service connections require specific approval from WSSC Water.

Where a property is outside the planned community service envelope, the associated house service utility must be located on *only* the customer's property receiving new community service. The use of an offsite service house utility in an easement crossing another intervening property is not allowed.

Policies for the use of non-abutting service connections differ between this Plan's policies and WSSC Water's policies. In this Plan, the preceding policy concerning non-abutting service connections will determine whether a property qualifies for community service under the abutting mains policy. Most often, such a property is located outside the planned community service envelope and is considered for community service only because it satisfies this special service policy. WSSC Water's policy for non-abutting service connections addresses cases involving access to a community system main where the County has already approved the property for community service. Typically, these properties are within the designated planned community service envelope. In summary:

- The Water and Sewer Plan's policy concerning non-abutting service connections affects decisions about which properties may receive community service.
- WSSC Water's non-abutting connection policy affects decisions about the best way to serve a property once the Plan has established that property for community service.

Abutting Mains Policy Exclusions

This policy will not apply in the following circumstances:

- *Private Institutional Facilities* **-** The application of this policy does **not** include the provision of community service for private institutional facilities (PIFs) located outside planned community service envelopes. These cases must be addressed separately through the PIF policy (see Section II.G.4.).
- *Limited Access Service Mains* - This policy cannot be applied in cases where the County Council has expressly restricted access to the abutting main as specified under the Limited Access Water and Sewer Mains policy (see Section III.A.1.).

II.G.3.c.: Single Connections for Only One Property

A single water and/or sewer connection only is allowed for an individual property or for a structure that satisfies the policy requirements under Section 3.a. preceding. The application of the policy is most often for a single property in the same geometric configuration that existed at the time an abutting main was approved or constructed. However, the policy does allow for exceptions, as follows:

Allowed Property Changes

A change in the property configuration due to the following circumstances does not invalidate this allowed single connection:

- Dedication of land for a public use such as a road right-of-way or park land.
- An exchange of land between a *qualifying* property and an adjacent property, qualifying or not, provided the overall number of qualifying lots—and therefore the allowed number of service connections—remains the same. Under this provision, *at least one* property must have qualified for a single

connection under this policy *before* the lot line adjustment occurred. A lot line adjustment only to acquire frontage along a main does not justify an abutting mains approval.

- The inclusion of additional contiguous, commonly owned properties, if those properties are combined through subdivision with the qualifying property into a single property. Only one single water and/or sewer connection for the entirety of the combined properties will be approved in such cases, so that the provision of community service does not promote the further subdivision of additional lots. Final approval of a category change will require the Planning Board's approval of the subdivision plan or plat assembling the properties.

Remainders of Qualifying Properties

The allowed single service connection may also be assigned to an existing property that is the remainder of a property that would have originally qualified for a single connection under Section II.G.3.a. above. For approval of single service connections, these properties must satisfy both of the following conditions:

- The residual property proposed for community service abuts the existing or approved main; and
- The allowed service connection has not been used elsewhere for the property that originally qualified for the single service connection. Community service provided elsewhere on the original property where consistent with both Water and Sewer Plan general service policies and with master plan recommendations shall not be considered to have used this one allowed service connection.

DEP may grant approval for this single connection under the administrative delegation process included in this chapter, as noted previously in Section II.G.3., provided that either:

- All of the residual properties involved are still under common ownership, or
- None of the other residual properties from the original abutting property could qualify under this policy for the allowed connection because they do not abut the subject water or sewer main.

However, DEP shall refer to the County Council any cases where two or more residual properties that could qualify for the single service connection are under different ownership. DEP will attempt to notify the owners of those qualifying properties of the pending category change request amendment and of the Council's hearing for that amendment.

Single Community Service Connections in Proposed Subdivisions

Some properties that qualify for a single community service connection under this policy will also be proposed for new subdivisions. In these cases, this policy may allow for a new lot using community service in addition to those lots approved using individual, onsite systems. Qualifying projects will need to satisfy the following conditions:

- The original property had to satisfy the general policy requirements for a single community service connection under Section II.G.3.a, preceding.
- The property in the subdivision receiving the single community service connection must receive service by either a direct connection or non-abutting connection to the water or sewer main. The conditions for the use of a non-abutting connection apply as explained in Section II.G.3.a., preceding.
- Final approval of a category change under this condition will require the Planning Board's approval of a preliminary plan that specifies the lot receiving the allowed community water and/or sewer connection.

Properties located within the Piney Branch Restricted Sewer Access Area and the Glen Hills Study Area do not qualify for this subdivision provision of the abutting mains policy concerning sewer connections. The policy is not intended to promote the creation of additional subdivision lots in these areas. A single sewer connection may be provided in a subdivision to one qualifying lot that could be served by an individual septic system.

II.G.3.d: Approval for Extensions of Existing Abutting Mains

A property owner may request DEP's approval of a new water or sewer main extension to the existing abutting main to position the main at a point perpendicular to the proposed service utility on the property. This new main extension must only be used to avoid an environmental constraint on the site (stream, forest stand, etc.) that would preclude an onsite service utility connection as described in II.A. (See figure 1-5, Page 1-19.) The new main extension cannot extend past the point where it can best provide a logical connection to the existing

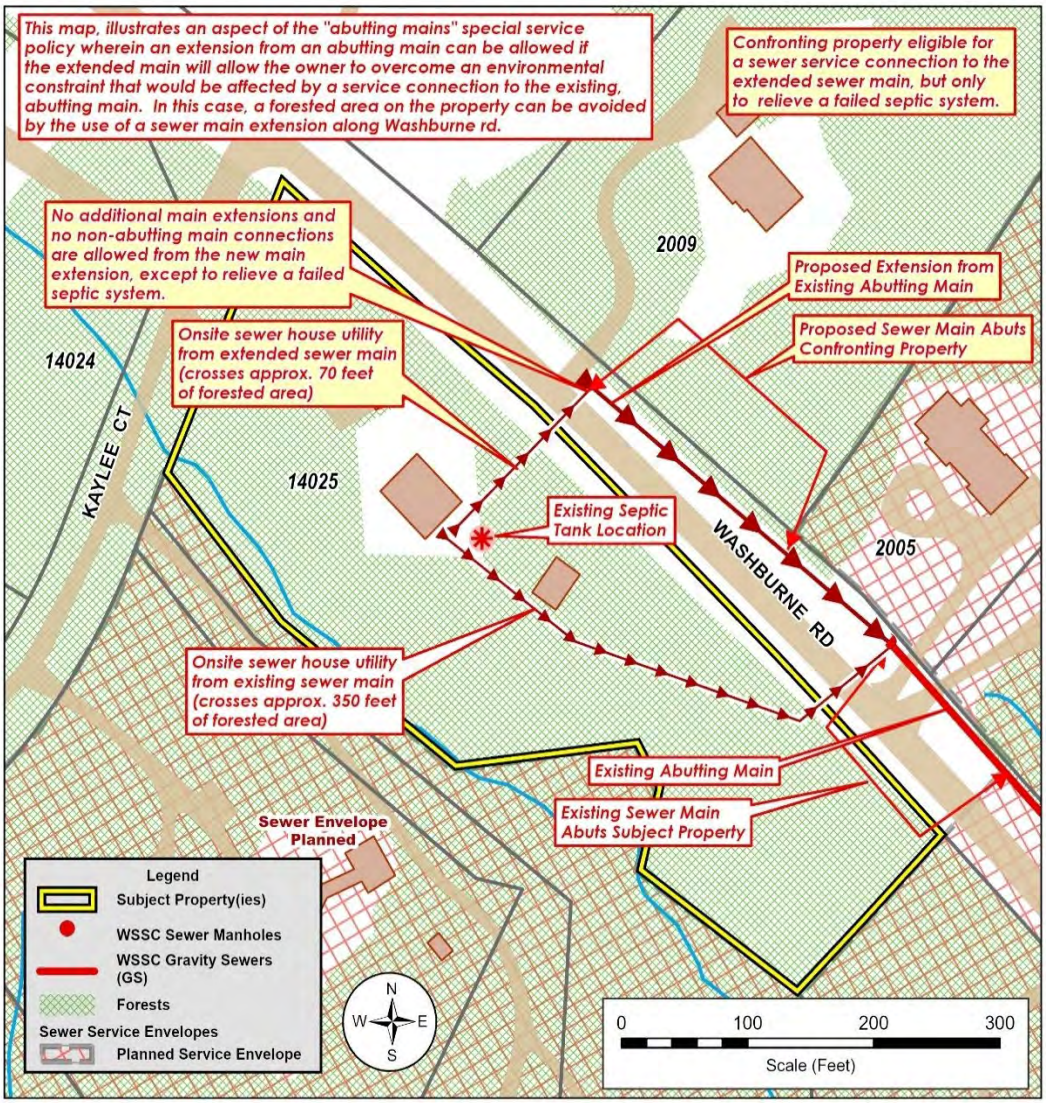
service main or in a manner consistent with Section II.A. of the CWSP (See figure 1-7, following.) DEP, DPS, and WSSC-Water will confer on these cases and determine the allowed length of the additional main extension. Any properties involved in requesting the new main extension under this policy are required to connect once public water or sewer service is available. Any additional improved properties with documented failing onsite systems or wells are eligible for connection thereafter.

When submitting a Water and Sewer Plan Amendment to MDE that uses this policy, the following information should be clearly documented:

- The location of the environmental issue(s) requiring the extension.
- Length and route from the existing abutting main to its proposed connection point such that it can provide a logical connection to the existing outfall.
- The length and route of the new main extension from the existing abutting main.
- The length and route of the secondary connection from the extended main to its connection to the onsite system.
- The location of the septic tank outfall or point of connection to the structure.

Figure 1-F7: New Extensions from Abutting Community Service Mains
(Source: DEP-WRD)

Figure 1-F7 shows an example of a new main extension from an existing abutting sewer main.



The requested main extension may offer abutting mains connections to other confronting properties, provided only that they are improved properties with a documented failing well and/or septic system or recorded building lots that the County has determined cannot be developed using a septic system or a well. If connecting, these confronting properties must be served from the extended main; no additional extensions are allowed. DEP may grant an exception to this limitation in cases where an additional main extension is needed for the relief of a documented failed onsite septic system or well. In cases where a service area category change is needed for a confronting property, the category change is not suitable for an advance action (see Section II.G.3.e.). The confronting properties will carry a notice that disallows any similar, additional main extensions.

As with the general provisions of this abutting mains policy, a property newly abutting a new main extension is limited to a single service connection from the new main if the property has a documented failing onsite system or well. Further, in such cases, the additional subdivision of the newly abutting property based on the provision of an abutting service connection is not allowed. Service connections from the extended main to other newly abutting properties with documented failing systems or wells must be direct connections from the main. Non-abutting service connections are not allowed in these cases.

II.G.3.e: Multiple Abutting Community Service Connections
In order to limit the effects of development supported by community systems in areas intended to use individual, on-site well and septic systems, the preceding "abutting mains" policies limit service to a single service connection. However, situations may occur where a reasonable accommodation can be made for more than one service connection for a subdivision site that abuts an existing or approved water or sewer main. The use of community service, particularly sewer service, may allow for an improved lot layout over that required using onsite systems.

The approval of multiple community service connections requires all of the following conditions be satisfied:

- The property proposed for subdivision qualifies for a single service connection under Section II.G.3.a. above.
- One proposed lot qualifies for a connection to community service under the basic policy. Each additional proposed building lot in the subdivision must be established on the basis of an approved onsite systems permit for a well and/or a septic system by DPS. The total number of lots approved using community service must not exceed the number of lots that would otherwise be allowed using the one allowed "abutting mains" connection plus permitted onsite systems.
- All community service infrastructure must be contained within the subdivision site; no offsite infrastructure is allowed. Easements for main extensions and offsite service utilities may be established within the project site. On-site main extensions, if required, must not make community service available to any other properties otherwise ineligible for community service.
- Final approval for a service area category change under this policy will require the Planning Board's approval of a preliminary subdivision plan for the subject site.

Category change actions considered under this subsection must be addressed by the County Council and do not qualify for consideration under the administrative delegation process.

II.G.3.f.: DEP Advance Approval of Single Abutting Connections in Categories 4, 5, and 6
DEP may direct WSSC Water to provide an allowed single water and/or sewer connection for a residential use on a property not currently designated for community service (categories 4, 5, or 6) upon confirmation of the following:

- DEP staff confirmation that the property qualifies for service under this policy, and does not require consideration and action by the County Council for approval; and
- DEP receipt of a valid category change request application for the property.

Only in such cases may DEP approve service for a residential use from an abutting main in advance of granting the actual service area category approval. Commercial and institutional uses must first receive the required service area change.

II.G.4.: Community Service for Private Institutional Facilities
This Plan defines private institutional facilities (PIFs) as buildings constructed for an organization that qualifies for a federal tax exemption under the provisions of Section 501 of Title 26 of the United States Code (Internal Revenue Service).

Private institutions, needing space to locate and grow, sometimes look to less-expensive land zoned for lower-density development. This land is often located outside of the community water and/or sewer service envelopes. The County Council adopted a special service policy addressing PIF uses with three primary goals in mind:

- To continue to support, where the provision of community service is reasonable, the county's private institutional facilities, which the Council recognizes as having an important role in their communities and for their residents;
- To provide more objective and consistent criteria in evaluating PIF cases; and
- To limit the potential impact of water and sewer main extensions constructed outside the community service envelopes for the sole purpose of supporting PIF uses.

Aspects of the Religious Land Use and Institutionalized Persons Act of 2000

The County understands the intent of the Religious Land Use and Institutionalized Persons Act of 2000 (RLUIPA). The County further accepts RLUIPA as a means of ensuring against discrimination to religious institutions in the County's land use and zoning codes. The PIF policy acts to grant opportunities for the provision of community water and sewer service for non-profit institutions (that can include religious institutions) that are not otherwise afforded to residential and commercial development in areas located outside planned public service envelopes.

Restrictions included in the PIF policy serve to limit the applicability of the policy to address appropriate development and environmental concerns, not to discriminate against any specific type of land use or institution. County zoning and land use standards still apply equally to institutional uses as they do to residential and commercial development for the same area. The County works to ensure that master plan recommendations concerning the provision of community apply in a manner consistent with both the PIF policy and RLUIPA.

PIF Sites Within the Planned Community Service Envelopes

Note that for private institutional facilities located within the planned water and/or sewer community service envelopes, service area category changes may be approved by DEP through the administrative delegation process (Section V.D.2.a.: Consistent with Existing Plans). For a specific site, the planned water and sewer service envelopes differ in some areas due to specific community water and sewer general service policies (Section II.F.) included in this Plan.

PIF Sites Outside the Planned Community Service Envelopes

The County Council will address category change requests seeking the provision of community water and/or sewer service to such facilities located outside of the planned community service envelopes on a case-by-case basis by the policies provided in the following sections. Under this circumstance, category change requests for PIF uses have specific application requirements. Refer to Section II.G.4.e. for relevant information.

The County Council has come to place greater emphasis on the review of a concept plan for projects seeking the approval of community water and/or sewer service under the PIF policy. PIF-based category change cases often propose more intense development of a site than would be expected on a property zoned for lower-density development. As a result, one of the Council's more significant concerns is the amount of impervious area proposed for the project. Typically, the Council's approval of a category change for a PIF use is based on an understanding that the PIF user's final development plan will be consistent with the concept plan considered by and acceptable to the Council, especially concerning impervious area.

The use of community service outside the planned community service envelopes can imply inconsistency with the general recommendations of local area master plans. However, many master plans are silent on the specific issue of community service related to exceptional service policies in this Plan, such as the PIF policy. The County Council typically interprets these situations as suitable for the application of this policy.

Some circumstances will result in properties that are specifically excluded from the application of this policy; see Section II.G.4.a., below.

In cases where the County Council supports a requested category change for a PIF use, the Council will typically choose to condition a category change approval on either:

- The Planning Board's approval of a preliminary subdivision plan that the Board finds to be in conformance with local area master plan recommendations; or
- The Planning Board's approval of a preliminary subdivision plan which conforms substantially with the concept plan reviewed by the County Council.

Please refer to Section V.E.2. for additional information concerning conditionally approved Water and Sewer Plan amendments, including the five- to -ten-year sunset provisions for final approval actions.

Sites Abutting Existing Water and/or Sewer Mains
For cases where existing or approved water or sewer mains abut or will abut a property, the Council may consider the approval of service area category amendments for sites with an existing PIF use and for sites proposed for a new or relocating PIF use, excluding those zoned AR (see Section II.G.4.c).

Sites Requiring New Water and/or Sewer Main Extensions
For sites where the provision of community service for a PIF use requires the construction of new water and/or sewer mains, the Council shall apply the following criteria:

- For existing PIF uses, service area category amendments may be approved for sites only where required water and/or sewer main extensions do not threaten to open undeveloped land to development contrary to the intent of the relevant local area master plan.
- For new or relocating PIF uses, service area category amendments may be approved for sites where required new water and/or sewer main extensions will not make community service available to additional properties that are otherwise not eligible for community service under the general policies of this plan.

  WSSC Water policies require that where low-pressure systems provide sewer service to a non-residential use, such as a PIF, that system must be dedicated to only one user and cannot provide service to intervening properties, whether for residential or non-residential uses. This policy will therefore allow a dedicated, low-pressure sewer main extension for a PIF use to abut properties otherwise ineligible for community sewer service.

  Care must be taken to ensure that any associated gravity outfall from a low-pressure sewer system satisfies these requirements.

  New WSSC Water wastewater pumping facilities are not allowed where their only purpose is to serve PIF uses. (See Section II.G.4.c., following.)

Consistent with the Limited Access Water and Sewer Mains policy (see Section III.A.1), water and sewer main extensions outside the acknowledged community service envelopes, where required, shall be designated "Limited Access". Where community sewer service for a PIF use will be provided by low-pressure mains, those mains WSSC Water will dedicate the main only to that PIF use and generally make them ineligible for additional service connections. This is consistent with WSSC Water's policy of requiring that non-residential pump/pressure sewer system users have systems dedicated to only that use. The County and WSSC Water may make limited exceptions to this requirement to allow for the relief of failed septic systems, where such service is technically feasible.

PIF uses may receive service from limited access water or sewer mains where the Council has specifically approved access to those mains. The provision of community service under this policy shall not be used as justification for the connection of intervening or nearby lots or parcels if they would not otherwise be entitled to connect to community systems.

Under its Systems Extension Permit (SEP) process, WSSC Water requires that all commercial and institutional service applicants construct and pay for the community systems main extensions and related facilities needed to serve their projects.

II.G.4.a.: PIF Policy Exclusions
The following circumstances restrict the application of the PIF policy in cases where community service is sought.

PIF Uses Affected by Specific Master Plan Service Policy Recommendations
This policy cannot be used to justify the provision of community service where a local area master plan specifically recommends against the use of community service for PIF uses, or for any use in general.

PIF Uses on Sites Zoned Agricultural Reserve (AR)
To help preserve the integrity of the land-use plan for the County's agricultural reserve, neither community water nor sewer service shall be used to support existing or proposed PIF uses within the Agricultural Reserve (AR) Zone. This prohibition shall apply to all PIF cases regardless of whether public service requires either new main extensions or only service connections to an existing, abutting main.

The only exception allowed to this prohibition is to allow for community service to relieve health problems caused by the failure of onsite systems, as documented by the Department of Permitting Services (DPS). In the case of a public health problem, DEP and DPS staff will need to concur that the provision of community service is a more reasonable alternative to a replacement of the failed onsite system, either by conventional or alternative technologies. WSSC Water and DEP staff will need to concur that the provision of community service is technically feasible.

Note that this Plan, with the preceding agricultural preservation goals in mind, also places limitations on the size of individual, onsite septic systems used within the AR Zone (see Section II.G.4.c).

PIF Uses in Existing Residential Structures
The Council may deny service area category amendments for PIF uses located outside the acknowledged water and/or sewer envelopes where main extensions are required for private institutional facilities seeking community service for existing residential structures. This could result in the extension of community water and/or sewer service for structures which would not otherwise be eligible for such service, and which could return to residential use.

PIF Uses Requiring New WSSC Water Pumping Facilities
In cases where more than one PIF use proposes to locate on a site requiring a pump and low-pressure main extension, WSSC Water requires that each institutional facility have a separate pump and pressure main system. The County and WSSC Water will not support the provision of community sewer service for a PIF use where that service will require a WSSC Water-owned and operated wastewater pumping station that does not also support community sewer service for other non-PIF uses consistent with the service policies of this Plan.

II.G.4.b.: PIF Policy Category Change Application Requirements
Applicants seeking category change approvals under the PIF policy need to provide the following information in addition to the category change application form:

- Name of and contact information for the proposed institutional use if that institution does not already the own the property. (Only the property owner may submit a service area category change request.)
- Statement of the institution's non-profit, federal tax-exempt status from the U.S. Internal Revenue Service.
- A concept plan for the site of the proposed institutional use that has first been considered by the M-NCPPC Development Review Committee (DRC) under that agency's concept plan review process. The County Council's consideration of the reviewed concept plan will focus on impervious area and on water and sewer main extensions. The concept plan needs to include:
    - Proposed activities, seating capacity, and auxiliary uses (day care, private school, etc.).
    - Proposed building footprints, parking and driveway areas, and other paved surfaces in sufficient detail to provide an estimate of impervious surface area. Imperviousness must be consistent with specific, established imperviousness limitations imposed by County regulations.
    - Concepts for water and/or sewer main extensions, as needed.

  The category change application needs to include a copy of the reviewed concept plan and a copy of the comments for the plan provided by the DRC agencies.

II.G.4.c.: County Council Reconsideration of PIF Concept Plan Changes
The discussion of the review of PIF policy cases (Section II.G.4.b) explains the Council's consideration of a concept development plan for the proposed PIF use, which in part is the basis for a category change approval

action. However, if the PIF user makes significant changes (prior to service being provided to the approved PIF use) to the development plan from the plan considered at the time of the Council's action, the County will require reconsideration of the original approval action by the County Council. This shall also apply for cases where the proposed PIF user changes from the original user. The M-NCPPC Planning Department will evaluate the revised concept plan with respect to the original plan and report its findings to DEP and the Council concerning significant changes that would warrant the Council's reconsideration.

II.G.5: Community Service for Public Facilities
Public facilities are defined as government-owned buildings or facilities; this includes facilities for municipal, county, state, state-chartered, and federal government agencies. Service area changes needed for community water and sewer service to serve those public facilities sited within the planned community service envelopes through the administrative delegation process (Section V.D.2.a: Consistent with Existing Plans). For locations outside the planned community service envelopes, DEP may act to approve service area changes for existing and proposed public facilities through the administrative delegation process, Section V.D.2.a: Public Facilities. The provision of community service under this policy shall not be used as justification for the connection of intervening or nearby lots or parcels if they would not otherwise be entitled to connect to community systems.

II.G.6.: Community Service for Properties Affected by Public Improvements
Community water and/or sewer service may be approved for a property where public infrastructure improvements such as road construction will directly remove, damage, or otherwise adversely affect that property's individual, onsite well or septic system. DEP shall coordinate the review of these requests, as appropriate, with the County's Departments of Transportation (DOT) and/or General Services. DEP may act to approve service area changes for these properties through the administrative delegation process, Section V.D.2.a: Public Facilities. The provision of community service under this policy shall not be used as justification for the connection of intervening or nearby lots or parcels if they would not otherwise be entitled to connect to community systems.

II.G.7.: Community Service for Community Development Projects
Community water and sewer service may be provided in support of community development projects which have previously been approved following a public hearing. Such projects may include officially designated renewal and redevelopment areas, neighborhood and community improvement programs, projects approved for productivity housing, rural village programs, historic preservation projects, and housing subsidized by Federal, State or local government, upon the recommendation of the Director of the County Department of Housing and Community Affairs. DEP may act to approve service area changes in these cases through the administrative delegation process, Section V.D.2.a: Community Development. The provision of community service under this policy shall not be used as justification for the connection of intervening or nearby lots or parcels if they would not otherwise be entitled to connect to community systems.

II.G.8.: Community Water Service for Child Lots
Community water service may be provided to support the subdivision of lots for the children of the owners of qualifying properties. Montgomery County's zoning and subdivision regulations make special provisions for the creation of these lots which are generally located in the more rural areas of the county, primarily in the Rural Cluster (RC), Rural and Agricultural Reserve (AR) Zones. The size of the lots to be considered for service under this policy is intended to be in the range of those included in the water service for large lot provisions in Section II.F.9.b:, between 1 and 5 acres. The provision of community water service must comply with existing agricultural easements applying to the property.

Approval of a service area change to allow community water service must depend on Planning Board approval of a preliminary plan for the proposed child lot. In areas zoned AR, where child lot cases are handled as minor subdivisions without the preparation of a preliminary plan, service area changes will depend on an M-NCPPC notice to DEP that the subdivision plat is ready for Planning Board approval.

Water service in these cases is generally intended to be provided from abutting water mains, although water main extensions can be considered where those extensions are consistent with the requirements for large lot development, as previously cited. The provision of community service under this policy shall not be used as

justification for the connection of intervening or nearby lots or parcels if they would not otherwise be entitled to connect to community systems.

II.G.9.: Community Service for Properties Affected by Onsite Systems Regulations Changes
Community water and/or sewer service, restricted to a single water and/or sewer connection, may be provided to a parcel or a recorded lot that meets both of the following conditions:

- The applicant must demonstrate that the lot was recorded by plat based on successful sewage percolation or water supply tests at that time, but due to change in regulation, the lot can no longer satisfy State and County regulations for individual, on-site systems; and
- Community service can be provided in a cost-effective and environmentally acceptable manner.

Prior to 1963, septic testing was not required in order to establish a recorded building lot using septic service in Montgomery County. The absence of successful test results because testing was not required does not satisfy the requirement under this policy. This circumstance cannot be used to justify the provision of community sewer service under this policy.

DEP may act to approve service area changes for properties satisfying the preceding criteria through the administrative delegation process**,** Section V.D.2.a: Individual Systems Regulations Changes. The provision of community service under this policy shall not be used as justification for the connection of intervening or nearby lots or parcels if they would not otherwise be entitled to connect to community systems.

II.G.10.: Reverse Category Changes
The County may approve "reverse" service area changes from categories 1, 3, or 4 to categories 5 or 6 in cases where development established using individual, onsite systems will be unlikely to need or have access to community service within the lifetime of the Plan. Although DEP staff shall be primarily responsible for identifying areas eligible for reverse changes, individual property owners may also seek reverse category changes. DEP may act on reverse service area category changes through the administrative delegation process (Section V.D.2.a: Consistent with Existing Plans). DEP may also act through the administrative process (Section V.D.2.c) to update service area category 1 areas to category 3, to better identify those properties without immediate access to community service.

This Plan recommends against changes from water and sewerage service area categories 1, 3, or 4 to categories 5 or 6 strictly for the following purposes:

- Avoiding the assessment of front-foot benefit charges (see Section IV.A.2.b.).
- Avoiding a DEP or DPS requirement to connect to community water and/or sewer mains, and abandon existing onsite systems, where those mains are available to provide service.

The County Council will address applications for reverse category changes for the preceding purposes.

A reverse category change may be considered through the administrative delegation process where the applicant (property owner) notifies DEP in writing that community service previously approved by the County is no longer needed.

II.G.11. Special and Restricted Community Service Areas
In addition to the preceding policies, the County may also designate specific areas for or restrict specific areas from community water and/or sewer service in order to achieve specific development goals, to promote environmental protection, or to address other specific concerns. The approved special and restricted community service areas are identified as follows (more detailed information and mapping for each affected area is provided in Appendix C):

- Darnestown Triangle Restricted Sewer Service Area (refer to Appendix C., Section II D.)
- Hyattstown Special Sewer Service Area (refer to Appendix C, Section II.F).
- Jonesville and Jerusalem Special Sewer Service Area (refer to Appendix C, Section II.G.).
- Laytonsville Restricted Water Service Area (refer to Appendix C, Section II.I).

- North Burtonsville Restricted Sewer Service Area (refer to Appendix C., Section II J.)
- Oaks Landfill Special Water Service Area (refer to Appendix C, Section II.K.).
- Piney Branch Restricted Sewer Service Area (refer to Appendix C, Section II.L.).
- Riverwood Drive Sewer Restricted Service Area (refer to Appendix C, Section II.N.).

II.G.12.: Service Area Category Database Mapping Errors
On occasion, WSSC Water has mistakenly connected community service to properties designated as service area categories 4, 5, or 6; actions inconsistent with the policies in this Plan. Most often these situations involve cases where existing mains abut and can provide service to the subject property without the need for new main extensions. The County has no intent to revoke or suspend service to properties currently receiving community service provided in error. In cases where such errors are discovered prior to the release of service however, DEP may, depending on the circumstances involved, direct WSSC Water to suspend the connection and/or plumbing permitting process prior to the actual provision of service. The provision of community service in error shall not be used either as justification for the connection of intervening or nearby lots and parcels or for the creation of additional building lots on a site already receiving community service if they would not otherwise be entitled to connect to community systems.

III.: GENERAL POLICIES FOR WATER SUPPLY AND SEWERAGE SYSTEMS FACILITIES

The preceding policy sections of Chapter 1 generally address the conditions under which the County determines an area of the county, or a specific property, receives water supply and wastewater disposal service; by community systems or by individual, onsite systems. The following sections address policies concerning the community and individual water supply and sewerage systems that provide that service.

III.A.: Washington Suburban Sanitary Commission Community Systems
As defined by the State, community systems are owned and operated by a State-designated public entity such as a municipality or county government. In the case of the Washington Suburban Sanitary District (WSSD) that encompasses most of Montgomery County (see figure 1-F3), that public entity is the State-chartered Washington Suburban Sanitary Commission (WSSC Water). Within the WSSD where new community service water and/or sewerage systems are needed to support either planned or existing development, WSSC Water is the agency responsible for the approval, permitting, construction (in certain cases), operation, and maintenance of those systems. Details about the financial processes used by WSSC Water for this purpose are presented in Section IV.

A community water supply system provides potable water to residential, institutional and commercial customers. The system generally consists of:

- A raw water source (either a surface water intake or groundwater wells) that feeds into a facility for water treatment that creates potable water.
- A system of pumping facilities, major water transmission mains, and storage facilities that move potable water from the treatment facility throughout the sanitary district.
- A system of local distribution mains with connections to provide service customers' homes and businesses.

A community sewerage system collects, treats, and safely disposes of sewage or industrial wastes of a liquid nature from residential, institutional and commercial customers. The system generally consists of:

- A system of local collection mains, with connections that accept wastewater from customers' homes and businesses, that feed into subsequently larger systems of mains. Most of these mains operate by gravity; some use individual pumps feeding into pressure sewers.
- A system of major sewer trunk transmission mains, wastewater pumping stations, and force mains (as needed) to move collected wastewater through the sanitary district to a treatment facility.
- A wastewater treatment facility designed to meet State and Federal environmental standards, with an effluent discharge either to the ground or to a receiving surface water, such a stream or river.

The following information and policies are generally related to the provision of community water and sewer service by WSSC Water. Policies specific to the community systems owned and operated by the City of Rockville and the Town of Poolesville are addressed in the sections of Chapters 3 and 4 relevant to those communities. With some exceptions, properties within these two municipalities are not part of the WSSD.

III.A.1.: Limited Access Water and Sewer Mains

In order to implement the goals and requirements of this Plan, water and sewer mains may need to traverse areas of the county not usually eligible for community water and/or sewer service. Those mains are referred to in this Plan and in Plan amendments as **limited access** mains. The properties that these limited access mains traverse or abut are not eligible for community service except where they would qualify for community service under the specific provisions of the community water and sewer service policies (Section II.G.). The proximity of existing water and/or sewer mains to a particular property is therefore neither the sole nor primary factor considered in determining eligibility for the provision of community water and/or sewer service under the general community service policies in this Plan.

A single water or sewer main may be considered as a limited access main along only part of its length. Only that part of the main located within or adjacent to properties outside the community service envelope is considered as limited access. Where the same mains traverse areas located within the community service envelope, they do not carry the limited access designation. Conditions that affect the provision of community service such as master plan recommendations, zoning, and community service policies may change over time. These changes have the potential to affect the limited access status of a specific main.

The County Council may also specifically designate water and sewer mains as limited access by an amendment to this Plan. These limited access mains traverse areas of the county normally eligible for community service under the general policies of this plan, but where such service is limited or restricted by an action of the Council. The Plan amendment will specify under what conditions community service may be provided from, or extended from, the limited access main. The County Council has identified all or part of the following water and sewer mains as limited access mains:

- Jonesville and Jerusalem Area Sewer Mains (see Appendix C, Section II.G.)
- Laytonsville Water Main Extension (see Appendix C, Section II.I.)
- Piney Branch Trunk Sewer and Tributary Mains (see Appendix C, Section II.L.)
- Riverwood Drive Sewer Extension (see Appendix C, Section II.N.)

III.A.2.: Capital Projects

The provision of community service to an area or to a specific site may require capital water and/or sewer projects not included in the current capital program or otherwise identified and endorsed by this Plan. WSSC Water capital water supply and sewerage projects include:

- Water mains 16 or more inches in diameter
- Water treatment, storage, and pumping facilities
- Gravity sewer mains 15 or more inches in diameter and sewer force mains 4 or more inches in diameter
- Sewage treatment, pumping, and storage facilities.

Developers building capital-sized water or sewer mains—of no more than 2,000 feet in length—under the System Extension Permit (SEP) process (see Section IV.A.2.) have the option of whether to include the project in the WSSC Water capital improvements program (CIP). System Development Charge (SDC) credits are available for any project designated as included in the CIP.

Capital improvement water and sewerage programs for the City of Rockville and Town of Poolesville include the types of projects described previously for WSSC Water. These municipalities also typically include local water and sewer main extension and repair projects in their CIPs as well.

In the past, new development staging recommended in master plans was coordinated with the scheduling of needed capital projects in WSSC Water's CIP. The 1994 Clarksburg Master Plan is the most recent example. Currently, this level of coordination applies more on a case-by-case basis to redevelopment and infill projects

where upgrades to existing facilities sometimes requires increased transmission capacity needs. DEP coordinates the inclusion of those required capital projects in the WSSC Water annual CIP consistent with the goals and policies of this Water and Sewer Plan.

III.A.3.: Dry Community Systems
This Plan previously required that developers install dry community water supply and sewerage systems for projects where the County intends to provide community service, but where community systems are not currently adequate or available (Section II.D). As explained in the referenced section, the County has found that the program does not achieve the intended goal of eventually connecting properties provided with dry systems to the overall community system network. Some projects from the 1970s and 1980s using dry mains have never been connected to WSSC Water's community systems. New subdivisions planning to use community systems need to provide those systems without the use of interim permit individual systems. Note that DEP may waive this requirement for subdivisions in areas zoned for large-lot development (RE-1, RE-2, and RE-2C Zones).

III.A.4.: Environmental Considerations for Community Systems Construction
Consistent with the objectives of this Plan and to the greatest extent reasonable, the planning and construction of community water supply and sewerage systems must be accomplished with the goal of protecting and mitigating potential damage to the environmental resources of the County. Community water and sewerage systems construction have the potential to disturb, damage or fragment streams and stream valleys, wetlands, steeply sloped areas, parks and woodlands, and historical and archeological sites. Wherever possible and reasonable, such disturbances should be avoided or mitigated using alternate main alignments, extra-depth or extra-shallow mains, contour mains, low-pressure/grinder pump sewerage systems, and other appropriate measures. Stream and wetlands crossings, intrusion into stream and wetland buffers, and alignments through forested areas should be avoided wherever possible and minimized where unavoidable. State laws restrict construction across and adjacent to streams within State-designated Use III and IV watersheds from seasons of the year which are critical for maintaining water quality and specific aquatic species.

In addition to the State's classification system, DEP monitors stream conditions across the county. The monitoring data provides insight into the current and historical health of the county's watersheds and indicates how the streams have changed over time. Current stream monitoring data can be accessed on the Montgomery County Watershed Health Map. (https://www.montgomerycountymd.gov/water/streams/watershed-health.html)

The need for new community systems to support development, and the potential effect of those systems on environmental resources, factors into land use planning decisions, particularly regarding community sewerage systems. This may result in land use recommendations for lower-density development in environmentally sensitive areas that do not require community systems. Environmental concerns related to community sewerage systems may also be mitigated by using central or onsite pumping systems that avoid sewer main construction along sensitive stream valleys or other environmentally sensitive areas. The use of central pumping systems is generally accepted throughout the WSSD on a limited basis, where conditions *require* their use. Central pumping facilities place increased operation and maintenance costs onto WSSC Water and can divert Systems Development Charge funding from general system improvements to developer dependent projects. WSSC Water policies allow for the use of onsite pumping (typically, grinder pumps) and low-pressure sewerage systems in limited circumstances and again, only where needed. However, the use of individual pumping systems increases the cost of providing community sewer service for each structure served, increases electrical costs and requires long-term maintenance for individual users. Some low-pressure sewerage systems can also place additional maintenance costs on WSSC Water. The County and WSSC Water have recognized that additional community service costs, including those for central and onsite pumping facilities, can be justified for purposes of environmental resource protection. Depending on the size of a project, WSSC Water may conduct a facility plan in cooperation with the County and M-NCPPC to examine community systems alternatives with respect to environmental concerns.

III.A.5.: Facility Planning
As noted in Chapters 3 and 4, in CY 2025 WSSC Water launched a new, comprehensive initiative that includes a major effort in master planning and facility planning. The purpose of this initiative is to consolidate and expand upon all past and on-going efforts associated with master and facility planning within WSSC Water and to

supplement and enhance this work to develop a comprehensive 20-year Water Master Plan for the entire water system which includes water transmission and distribution; pumping; source water supply; storage; and water treatment; and support buildings and grounds. Additionally, this effort also includes the development of a 20-Year Wastewater Master Plan which includes wastewater treatment and biosolids management, and the conveyance system. Subsequent to the completion of the Master Plans, 5 separate 10-Year Facility Plans will be developed. The Master Plans will take a system-wide approach, while facility plans will focus on specific elements of the systems. These documents will be "living" resources, regularly updated to address evolving internal and external needs.

They will serve as the foundation for recommending new CIP programs and projects, as well as for identifying improvements in operations and maintenance. Recommendations will be made annually to inform the development of WSSC Water's annual CIP budget in a logical and systematic manner.

The final Master Plans are scheduled to be completed in December 2026 and the Facility Plans are expected to be completed by December 2027.

For WSSC Water's assets that are planned, designed, constructed and maintained by WSSC Water,

III.A.5.a: Asset Management Program
Beginning in 2007, WSSC Water embarked on the development of a Utility Wide Master Plan that identified the need for a comprehensive Asset Management Program (AMP). That program was developed throughout the subsequent years and fully implemented in 2018. WSSC Water considers the AMP a working program that will undergo a continuous improvement process. The program is intended to help achieve one of WSSC Water's strategic priorities: to plan, renew and sustain its infrastructure to meet customer expectations through innovative, cost-effective technology and asset management practices. The two goals of the asset management program are to identify infrastructure needs for a period 30 years into the future; and to establish and institutionalize an asset management process within WSSC Water. The purpose of these goals is to meet the required level of service in the most cost-effective manner, at an acceptable risk, through the management of assets for present and future customers.

AMP plans are developed at the enterprise and system levels for each category and subcategory of assets. The enterprise level incorporates systems under three networks:

- Water, including water treatment; pump stations and specialty valves; transmission and distribution; and dams and reservoirs systems
- Wastewater, including wastewater pumping stations, collection, treatment, and storage systems.
- Support Services, including systems associated with land and buildings

Asset Management Plans are developed for each facility within the preceding sub-system categories. Every asset management plan contains asset registry information which is managed through use of Decision Support System modelling software. Decision Support Tools are then used in conjunction with life expectancies, life cycle costs, level of service, business risk exposure and other factors to develop strategies to maintain and replace the assets in a sustainable manner. An asset management plan generally:

- Presents a concise summary on the state of the WSSC Water infrastructure assets.
- Describes the performance of WSSC Water in meeting several Levels of Service goal metrics
- Summarizes risk and informs on the most critical assets
- Provides recommendations for prioritizing investments to sustain the infrastructure and meet WSSC Water's strategic objectives.
- Proffers plans to improve business processes and operations

The AMP is currently evolving to include:

- Updated risk and prioritization methodologies
- Streamline current Business Case Evaluation Process.
- Development of a Strategic Asset Management Plan.

- Coordination of needs identification, alternates evaluation and prioritization with the recently initiated Master and Facility Planning Program at WSSC Water.

III.A.5.b.: Interagency Coordination Through Mandatory Referrals
M-NCPPC reviews WSSC Water projects through the Mandatory Referral process, as part of a public forum, as required by State law. Although the Planning Board's decisions for mandatory referral projects are non-binding, the Board often provides recommendations that improve the compatibility of these projects with both the natural and human environment. These recommendations also provide the Board's formal position for the Council on these projects.

III.A.5.c.: Public Outreach Program
WSSC Water includes community outreach efforts throughout the facility planning process, with the goals of providing public information, encouraging community understanding, acquiring confidence and support from elected officials and the community in its planning process, and recommending alternatives. In its outreach program, WSSC Water uses meetings (citizen advisory committees), publications (brochures and newsletters), formal notices (newspaper display ads), and visual aids (static displays, slide shows, and videos).

The public outreach process also includes the opportunity for public comment as part of the mandatory referral of WSSC Water facility plans to the Planning Board as described in the preceding subsection. In this process, the Board holds an independent public hearing on the project, and provides official, non-binding comments to WSSC Water, which incorporate specific land use and policy concerns along with appropriate community concerns presented as testimony.

As addressed in the following subsection, the County Council's annual consideration of WSSC Water's capital budget provides citizens and community groups a forum for speaking directly to elected officials about both specific projects and the budget in general. In addition to the Council's public hearing, all Council deliberations in committee and as a body are open to the public.

The public outreach program is intended to improve WSSC Water's responsiveness and sensitivity to community concerns, seeking community support for addressing public health and growth management needs. WSSC Water pursues community support with the understanding that, due to competing goals, community involvement in the planning process does not always result in complete community acceptance of a proposed project. An effective planning process often includes compromises needed to achieve overall project goals.

III.A.5.d.: Development of the Capital Improvements Program
The Asset Management Program (AMP) is the driving force in the development of the Capital Improvement Program (CIP). The planning and development of new assets is developed from the program through the Project Needs Validation Process. This process begins with the identification of a "need," which may originate due to new development demands, capacity constraints, expected facility life and performance, health and safety concerns, regulatory requirements, financial efficiency and obsolescence, risk and climate resiliency issues, or other performance considerations. The need is evaluated by the Project Needs Validation Committee which decides if the information provided is sufficient to validate the need.

If a validated need has more than one alternative solution, then the project moves forward to undergo the Business Case process. The business case begins with the development of all possible and feasible alternatives to address the project need, including the "do nothing" and "status quo" alternatives for a baseline comparison. The alternatives then undergo a preliminary screening to evaluate local, State and Federal permitting and regulatory constraints, community impacts, accessibility and constructability, and cost. In some cases, WSSC Water pursues input from M-NCPPC and Montgomery County DEP before a project enters the CIP. A screening process narrows the list of candidate alternatives for a subsequent analysis that evaluates life cycle costs, risk reduction analysis, and a sensitivity analysis.

The optimum solution is then selected for recommendation and presented to the Project Needs Validation Committee for approval and placement into the proposed subsequent capital budget. A project team reviews and approves the work effort in the business case. The team includes AMP project managers, System Asset Strategy managers, Planning Division staff, Budget staff, and external stakeholders. These stakeholders can

include officials from local and County Government agencies, customers, residents, business owners, and community interest groups. Comments will be solicited and factored into the development of the business case.

If there are no alternatives, the project is reviewed for Engineering Support Program (ESP) or CIP funding availability. Due to exigencies of certain projects, exclusion of the business case process may be warranted. Such exclusions require approval from the Project Needs Planning Committee. Business cases may be comprehensive or abbreviated.

The planning process for any new facility some cases may continue after the business case is completed. Thorough and complete planning work is necessary in order to eliminate any uncertainties in the scope of the project before it is handed off to the project delivery team for execution.

III.A.5.e.: Implementation Through the Capital Improvements Program

The implementation of a facility plan is initiated by the full funding of the project in the WSSC Water CIP. Each proposed project receives a WSSC Water staff recommendation which staff transmit to the WSSC Water General Manager at the conclusion of the facility planning process. The General Manager either endorses or modifies the staff recommendation and submits the project to the WSSC Water Commissioners. The Commissioners in turn transmit the WSSC Water decision on the project to the Counties for inclusion in the CIP and the *Comprehensive Water Supply and Sewerage System Plan*.

DEP prepares any necessary amendments to the Water and Sewer Plan and includes any relevant comments on the CIP Project for the County Executive's consideration. The County Executive reviews and if necessary, modifies DEP's recommendations, then transmits the CIP amendments to the County Council. The Council conducts a public hearing on the project recommendations as part of the Water and Sewer Plan and/or the CIP adoption processes. The Montgomery County Planning Board may also review or comment on the facility plan as part of the Council's public hearing process or as part of a designated mandatory referral process.

A project's adoption in the WSSC Water CIP by the two County Councils completes the facility plan adoption process. The annual approval of the WSSC Water CIP program constitutes amendments to Chapters 3 and 4 of this Water and Sewer Plan. The CIP provides a proposed design and construction schedule for projects WSSC Water expects to implement within the six-year planning period of the CIP. The adopted CIP schedule also identifies the necessary funding sources for the project.

III.A.5.f: Advance Acquisition of WSSC Water Sites and Buffer Plantings

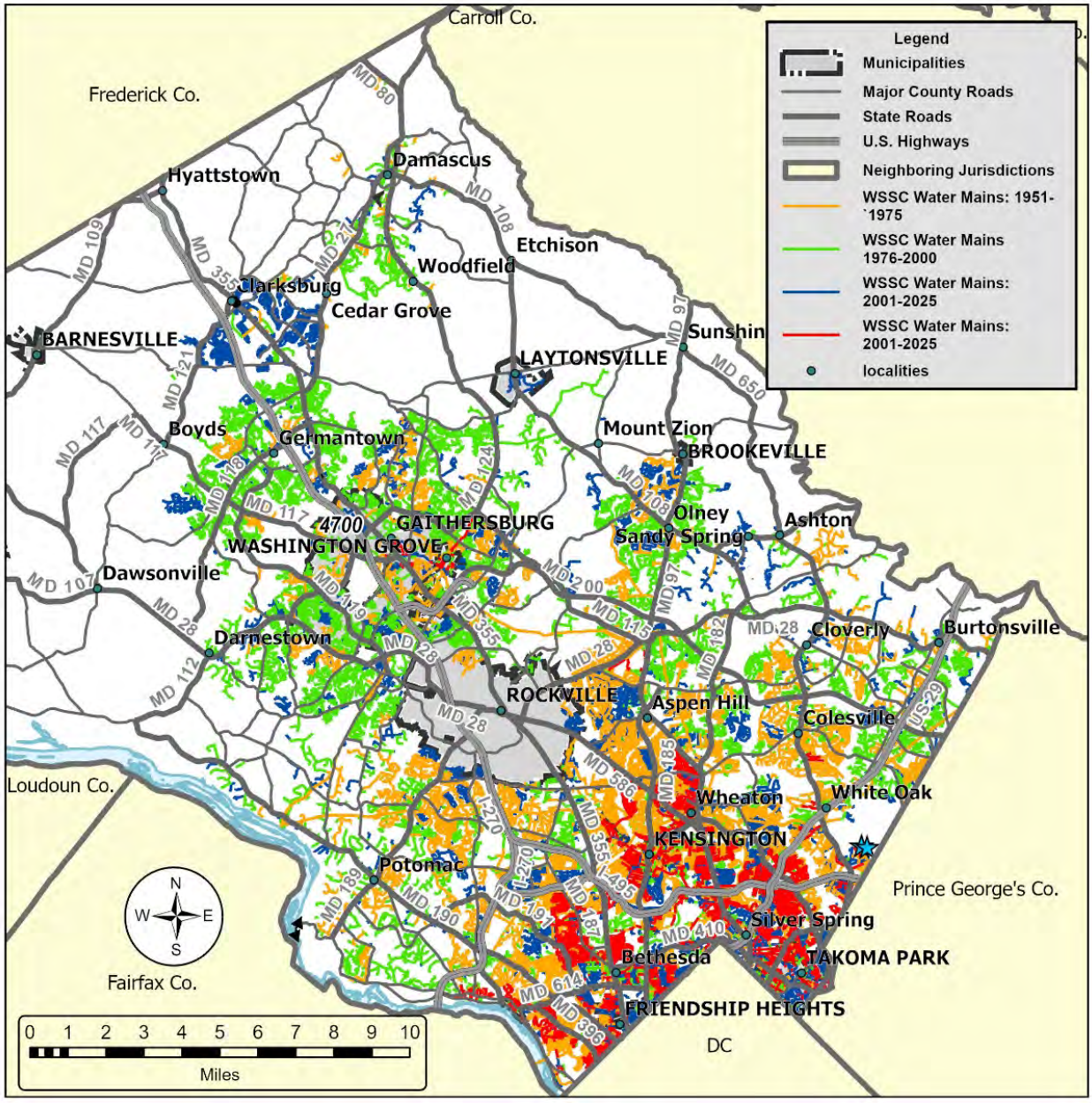
WSSC Water should proceed with planning the location of future facilities at the earliest opportunity following County approval of capital projects, including public outreach and community involvement from the impacted area. These facilities include sites for treatment plants, pump stations, storage tanks and rights-of-way for water and sewer lines. Advance acquisition of necessary sites is encouraged, through the CIP process, in areas that development potential and/or siting are identified as significant to appropriate facility planning. When WSSC Water acquires a site that needs buffering by landscaping from either present or future development, WSSC Water will develop a landscaping plan, including a public outreach effort to encourage the involvement of the impacted community.

III.A.5.g.: Repair, Replacement and Rehabilitation of Aging Community Systems

WSSC Water has recognized that the age of its community system's existing mains plays greater role in pipe breaks and failures with each passing year. (See Figure 1-F8, below.) For community water systems, WSSC Water reports that by 2025, an estimated 50 percent of the entire water distribution system will reach or exceed its estimated useful life. There are approximately 2,000 miles of cast iron pipe in the distribution system (pipes less than 16 inches in size), of which, over 85 percent will exceed their estimated useful life by 2025. As an initial step to minimize inconvenience to customers, to reduce water losses, and to mitigate potential environmental complications, WSSC Water has established procedures to quickly address water main breaks and leaks when they occur.

Figure 1-F8: Construction Year of WSSC Water Community Service Water Mains
(Source: DEP-IGAD)

Figure 1-F8 shows the age of WSSC water mains throughout the county. Generally older mains are in the south (or down-county), while newer mains are in the mid-county and to the north.



WSSC Water has long maintained a water main lining and replacement program. However, the problem of aging infrastructure needed a more strategic, long-term approach to possible solutions. In response, WSSC Water has implemented an infrastructure investment plan that provides a roadmap to refurbishing and replacing the Commission's systems over time. This program was prepared in cooperation with officials from Montgomery and Prince George's Counties. Priority areas in this program are informed annually by the Asset Management program.

III.B: Municipal Community Systems
The City of Rockville and the Town of Poolesville own and operate community water supply and wastewater systems. These municipal systems include local distribution and collection systems that are separate from those owned and operated by WSSC Water.

As previously explained, Rockville operates a water treatment plant that draws raw water from the Potomac River. The City's wastewater collection system drains to WSSC Water sewer mains for treatment at the Blue Plains Wastewater Treatment Plant.

Poolesville draws its water supply from a series of municipal wells. Wastewater treatment is provided by the Poolesville Wastewater Treatment Plan.

III.B.1.: Rockville Community Systems
Rockville's Water Resources Element (WRE), which was adopted by the Mayor and Council in December 13, 2010, supplements the water resource provisions of the Comprehensive Master Plan. The WRE assesses the adequacy of existing drinking water and wastewater infrastructure capacity to accommodate projected growth through 2040, and identifies infrastructure concerns, including diminished capacity due to aging, that may restrict predicted population and economic growth. The WRE ensures that comprehensive land use plans and future growth consider both the opportunities and limitations presented by a community's water resources. The WRE is incorporated into the City's Comprehensive Master Plan.

The 2010 WRE concluded that the City has adequate water supply and sewerage treatment facilities to meet projected demand to 2040. The WRE recommended the following actions for the water system: investigate and repair the 24-inch transmission main from the Water Plant to the distribution system; replace and/or rehabilitate aging water mains in poor condition; resolve water age concerns of the three storage tanks; ensure potable water meets or exceeds the Safe Drinking Water Federal and State laws; upgrade and expand the Water Plant, as well as activating the Glen Mill Pump Station, to produce up to 14 million gallons per day (MGD) (updated planning projections are 12 MGD); and encourage per capita reduction in water use. The WRE recommended the following actions for the sanitary sewer system: complete mapping of the entire system; continue annual camera inspection and rehabilitation, repair and/or replacement of the aging mains in poor condition; improve the accuracy of estimating the extraneous flow (infiltration and inflow) into the sewer systems; continue implementing the fats, oils and grease (FOG) abatement program; maintain access to sanitary sewer system infrastructure; and develop city-wide hydraulic models, for each of the three sanitary sewer basins, to predict wastewater flow and ensure adequate transmission capacity.

Rockville City Code (Section 24-12) requires the City to make a determination for all development, per adopted Water and Sewer Adequacy Standards, that there is adequate water and sewer capacity before a development is approved. This determination is made through Rockville's Water and Sewer Authorization (WSA) process, which is mandated by the Adequate Public Facilities Ordinance (Section 25-20-01). Applicants seeking to develop in Rockville must submit a WSA application outlining the proposed water and sewer system demands. If the public systems do not have sufficient capacity the developer is required to mitigate the deficiencies. Mitigating system deficiencies include extending public water and/or sewer mains to provide service to properties that are not proximate to existing public water and/or sewer mains. The required water and/or sewer mitigation must be approved and permitted before the development building permits are issued. Additionally, the water and/or sewer mitigation must be constructed and accepted for public service before the development occupancy permits are issued.

Rockville City Code (Section 24-37(C)(1)) requires the property owner to hire a master plumber to locate and clear sewer stoppages in sewer connections. If the stoppage is in the service connection (between the public sewer main and right-of-way line), the City will install a clean out. If the service connection is damaged the City will repair or replace it. The property owner is responsible for maintaining and repairing the service hookup (connection between the house and the right-of-way line). If a water leak is identified on a water connection, the City will determine if the leak is the water service connection (between the public water main and right-of-way line) or at the meter and will repair the leak. Otherwise, the property owner will be notified and must hire a master plumber to repair the leak.

Properties with an existing connection to Rockville's water and/or sewer systems must replace the existing service connection when the property is being redeveloped, unless the applicant demonstrates that the condition and material of the existing service connection meets current standards.

In addition to the overall City of Rockville and WSSC Water sewer flow agreements, DPW coordinates APFO/APFS review of water and sewer service with WSSC Water for private development projects in the City that are either within or near the boundary of the WSSD. This coordination provides for early identification of system improvements that will be needed to sustain long range planning goals of both WSSC Water and the City of Rockville.

III.B.2.: Town of Poolesville
Poolesville allows residential and commercial/institutional uses to connect to low-pressure mains; each connection is examined based upon use and conditions of intended use.

III.C.: Individual Systems
Individual water supply and sewerage systems are owned and operated by the user, whether for a private residence, or for a commercial or institutional use. Individual systems are also sometimes referred to as "private" or "onsite" water and sewerage systems. The majority of individual systems in the county are groundwater wells and septic disposal systems. The user of the individual system has the responsibility for its appropriate use and maintenance, and for repair or replacement should the system fail. The following sections introduce the various types of individual, onsite systems and address specific associated policy considerations. Much of the policy discussion concerning individual onsite systems and under what conditions onsite are appropriate to support development is included in Section II.F.

The Department of Permitting Services (DPS) permits and regulates individual water supply and sewerage systems through its Zoning Division, Well and Septic Section, under On-Site Systems Regulations, COMCOR 27A.001, "On-Site Water Systems and On-Site Sewage Disposal Systems in Montgomery County.". Individual systems regulations consider new development as both new structures and expansion or replacement of existing structures. .

III.C.1. Individual Water Supply Systems
An individual water supply system provides potable water to a single residential, institutional or commercial user, usually from a well located on the user's property. The system generally consists of a groundwater well with a submersible pump that connects directly to the user's home or business. The well is drilled down through rock to a depth substantially below the level of the water table. This allows the well shaft to store water for periods of increased water demand. As the pump removes water from the well shaft, groundwater flows in, replacing what has been used, although not necessarily at the same rate as it was withdrawn. The user may also require onsite water treatment and an above ground storage or pressure tank.

Most areas of the county do not require testing before drilling a new well. Permits from the County and State are required prior to drilling. A certificate of potability is required before a well is permitted to provide water for human consumption. Current standards for new development require that a user identify three well locations for each building lot, the initial well site and two reserve well sites for future use in the event of a well failure.

III.C.2. Individual Sewerage Systems
An individual sewerage system collects, treats, and safely disposes of sewage from a residential, an institutional or a commercial user, usually though an in-ground septic system located on the user's property. The first part of the system consists of a septic tank (connected directly to the user's building) where solids separate from liquid effluent and settle to the bottom of the tank. Proper septic system maintenance advises that an owner arrange for pumping solids from the tank at least once every two to five years. Liquid effluent from the tank flows into an underground drainfield, a network of trenches that distribute the effluent across a broad area below the ground surface. Aerobic bacteria in the soil below the drainfield provides the final step in the treatment process as the effluent percolates down from the drainfield. The treated effluent then flows into the water-saturated soil, also referred to as the water table.

Permitting for a new septic system requires a water table test and a percolation test. The water table test determines the depth from the surface of the ground to the water table, the soil saturated with groundwater. This is needed to insure adequate depth between the bottom of the septic system trench and the water table for aerobic bacterial treatment of effluent in the soil. Once septic effluent enters the water table, treatment by aerobic bacteria essentially stops. The percolation test determines the rate that septic effluent travels downward through the soil. If the percolation rate is too slow, effluent will back up in the system, leading to discharge to the surface of the yard or a backup into the building. If the rate is too fast (not typically a problem with soils in Montgomery County), effluent will not stay in the soil long enough for adequate treatment.

Most individual sewerage systems currently installed in the county for new development are deep-trench septic systems. Deep-trench systems are one of three types of "conventional" individual sewerage systems allowed for new development under current regulations. The other two types are shallow-trench septic systems (or shallow tile systems) and sand mound systems. In this context, new development refers to new buildings, replacement buildings, and to buildings with substantial additions. Innovative alternative (I/A) septic systems may be permitted only in order to replace failed systems. I/A systems may include elements such as more advanced first-stage treatment, aerobic treatment and/or pressure dosing systems that distribute effluent over several areas of the property on a rotating basis. Additional discussion of individual septic systems and their characteristics is in included in Chapter 4, Section V.

Not all properties outside the planned community sewer envelope are suited for the permitting and installation of an onsite septic system. State and County individual, onsite system regulations specify numerous factors can constrain the location of a septic system:

- General soil suitability: depth to water table, permeability (see the preceding discussions).
- Setbacks from existing and proposed wells and septic systems.
- New septic systems need to be downgrade (downhill) from existing and proposed wells.
- Setbacks from streams, flood plains, steep slopes, and buildings

To address nitrogen contributions to the Chesapeake Bay from septic systems, the State had previously implemented a program that uses best available technology (BAT) for nitrogen removal for all new and replacement septic systems. BAT systems are installed in the septic tank and typically use an aeration process, needing electricity to run. The State requires homeowners with BAT systems to have a contract with a maintenance company to help ensure proper operation of the system.

In November 2016, the State revised the BAT program to require universal BAT system installation only in Bay Critical Areas. No Critical Areas exist in in Montgomery County. Outside of Critical Areas, BAT systems will still be required for:

- All multiuse septic systems with a design capacity of 5,000 or more gallons per day.
- Any septic system as required by a local government in order to protect public health or the waters of the State.

State requirements for maintenance contracts and system warranties remain in effect for all BAT systems.

Acknowledging that individual systems have a finite lifetime, State and County regulations promote the sustainability of these water supply and sewerage systems by requiring the establishment of permitted areas for reserve or backup systems for a property to use when an existing system fails. As discussed in Section II.F., the policies included in this Plan intend that privately-owned, onsite facilities will provide water supply and wastewater disposal service for properties in the rural, "green wedge" areas of the County.

III.C.3.: Individual Systems with Interim Permits

Not all properties intended and approved for community water and sewer service have access to community service mains. The extension of new community service mains has become increasingly expensive, especially for individual property owners. When a property owner needs to install a new or replacement individual system under this condition, DPS issues the permit for the onsite system as an "interim" permit. Individual systems with

interim permits provide water and/or sewer service in areas where existing community systems are not adequate, not available, or not programmed to be provided within two years to six years (water and/or sewer categories 1 through 4). The following "General Conditions for Interim Permit Individual Systems" shall apply in these cases:

General Conditions for Interim Individual Systems

- Interim permit systems shall be determined by the County's DPS to be adequate, safe, and in compliance with State and local regulations, including COMAR 26.03.01, 26.03.05, and 26.04.02 - .04, and COMCOR Chapter 27A, "On-Site Water Systems and On-Site Sewage Disposal Systems in Montgomery County";
- Interim Permits for individual onsite systems shall bear a notice regarding the interim nature of the permit and stating that connection to a community system shall be made within one year after such system becomes available, and that the construction of such interim systems shall in no way impede or restrict the extension of community sewerage and water systems or create a public health hazard or nuisance in the process; and
- Provisions shall be made to locate the individual systems so as to permit a future connection to the community system in the most economical and convenient manner.
- Construction of dry community water and/or sewerage systems where interim permit individual systems are installed is no longer a requirement of this Plan. Please refer to Section III.A.3. for relevant information concerning dry community systems.

III.C.4.: Individual Water and Sewerage Systems Problems
Although designed to work for decades, individual systems will need regular maintenance, occasional repair, and eventual replacement. Ignoring needed maintenance and repairs has the potential to shorten the expected life of an individual system.

III.C.4.a.: Individual Systems Failures
When an individual, onsite system fails to function properly, the owner of that individual system has the responsibility for having it repaired or replaced. In some situations, the property owner becomes aware of a problem very quickly, such as when sewage backs up into the house. In other situations, a problem, such as a septic system installed partly within the water table, may go unnoticed for a longer time. A failure does not always require a complete system replacement to resolve; in some cases, other mitigation actions are sufficient to resolve a problem:

- A repair, such as replacing a broken pipe or a broken baffle in a septic tank.
- Improved maintenance, such as more-frequent pumping of the septic tank.
- User changes, such as better awareness of what can and cannot be put into the septic system and of clothes washing and bathing scheduling.
- Well pump failure or damage to the well head (typically by vehicles of yard equipment)
- Groundwater contamination (nitrates, hydrocarbons, bacteria, soil, etc.)

The repair and replacement of individual, onsite systems need to occur in accordance with County and State regulations, as administered by DPS.

III.C.4.b.: Aging Individual Systems
As housing stock and their individual, onsite systems age, the County makes every reasonable effort to transition these houses to new onsite systems to continue the use of onsite system service. This is consistent with master plan service recommendations and this Plan's service policies. This may place limitations on building expansions and other property improvements. However, some areas may face a potential problem in sustaining specific homes and businesses and perhaps entire neighborhoods that currently use these systems. Some of these neighborhoods, built in the 1950s and 1960s, were created using standards that allowed the use of individual systems:

- For lots that are now too small to support both wells and septic systems under current regulations.
- On soils inappropriate for septic systems under today's testing standards because of high water tables and shallow fractured rock.
- With sanitary system technologies that no longer satisfy current regulations, such as hand-dug wells, septic seepage pits and lagoons, and septic overflow pipes.

Wells installed prior to the County's current standards may have been hand-dug, may lack a protective liner (casing), or may be too shallow for adequate flows. Older wells sometimes lack an adequate separation (or setback) from buildings and septic systems.

Older onsite sewerage systems use several varieties of underground discharge structures such as seepage lagoons, dry wells, and seepage pits no longer allowed under current regulations. Some older septic systems include overflow pipes that prevented overloaded, failing systems from backing sewage up into buildings. Overflow pipes can allow untreated sewage discharges through the pipe either onto the ground surface or into drainages features such as ponds, streams or roadside swales. When discovered, overflow pipes need to be removed; and this may result in an eventual failure of the septic system.

State Individual Systems and Public Health Problems and County regulatory changes since the 1960s include requiring the identification of septic system reserve areas for future drainfields; septic system testing to avoid poor soils, shallow or fractured rock; and establishing adequate groundwater well setbacks from septic systems, structures, and water resources (streams, wetlands, etc.)

DPS may allow outdated wells and septic systems to serve existing structures provided they continue to function adequately. However, DPS has the option to require installation of a replacement well and/or septic system that satisfies current regulations in cases where:

- An existing well or septic system that suffers a failure or where such a failure is imminent.
- Property improvements (expansion or replacement of an existing structure, new swimming pool, etc.) are proposed that could constrain the location of existing or future onsite systems.
- Subdivision of an existing property served by individual, onsite systems will change property lines and affect allowed setbacks.

III.C.4.c: Individual Systems and Public Health Concerns

Existing public health concerns (as defined in this Plan) can result from the failure of existing individual, onsite systems. In addition, potential public health problems can occur where the County determines that onsite systems may not be capable of providing adequate water supply or wastewater disposal service in the future. Onsite system failures may result in problems than can affect public and environmental health due to contact with inadequately treated sewage or contaminated drinking water, or due to an inadequate drinking water supply. Existing onsite well failures typically result from an inadequate water yield or groundwater contamination. Existing onsite septic system failures are typically characterized by inadequately treated sewage on the surface of a yard or backing up into a building. Additional information on these subjects is provided in the Glossary in Appendix A.

Typically, properties served by individual systems are in areas planned for low-density development where access to community systems is not considered logical or economical. In many cases of individual system failures reported to DPS, relief is provided by an onsite repair or replacement, rather than by community service. However, in some cases where individual systems have failed, owners may not be able accomplish a repair or replacement consistent with current regulations, as determined by DPS. Changes to individual systems regulations over the past decades have resulted in improved standards for human and environmental health. However, these regulatory changes can have the potential to hinder efforts to replace existing individual systems with new systems that satisfy current standards. Section II.G.2. of this chapter discusses the conditions where community service can be used to relieve public health problems resulting from individual systems failures.

III.C.4.d.: Onsite Systems Management Program

The County has seen a shifting emphasis in community planning from major new development expansion, sometimes referred to as "green field" development, to infill and redevelopment of existing neighborhoods. A similar approach—changing emphasis from major expansion of the community service envelopes towards more neighborhood-based efforts—will be required to address the sustained use of individual, onsite systems in the Water and Sewer Plan. This will be important in areas where potential sanitation problems from aging individual systems have the potential to affect older neighborhoods and to affect rural neighborhoods where water supply and wastewater disposal service is presumed to use individual, onsite systems, rather than community water and sewerage systems. Onsite wells and septic systems all need routine maintenance to promote sustainability.

In Montgomery County, once a well or septic system is installed and operating, there will very likely be no further contact between the owner and the County government regarding that system until it has a problem or it fails. While recent years have seen an increased presence of educational information on the DPS and DEP websites, there have been no regular maintenance reminders, inspections, or testing. Accordingly, the County has initiated an onsite systems management program to promote the long-term sustainability of individual onsite wells and septic systems. The County Council approved the concept of the program as part of the 2018 update of the Water and Sewer Plan.

Improving the way in which the County government addresses rural sanitation issues and public health problem cases resulting from the failure of wells and septic systems will require approaches from several fronts. The combined efforts of several agencies will be needed, including DEP, DPS, M-NCPPC, WSSC Water, and MDE. While DPS maintains the responsibility for permitting and regulating individual systems in the County, that agency is not charged with performing systematic, long-range planning for rural sanitation systems management. Other than the designation of areas intended for service from individual systems and addressing public health cases, recent versions of the Water and Sewer Plan (prior to the 2018 update) have had little to say about rural sanitation planning. This Plan update continues the steps towards addressing that oversight.

Water and Sewer Plan Recommendation: Individual Onsite Systems Management

An onsite systems management program will be important for maintaining both human and environmental health in areas where 1) potential sanitation problems from aging individual, onsite systems have the potential to affect older neighborhoods, 2) and where rural neighborhoods are located outside the effective reach of community water and sewerage systems.

The County has worked on the development of a functioning onsite systems database that will create an inventory and maintain ongoing records of the existing wells and septic systems throughout the county. Following the database development, the County has begun an outreach program to property owners who have onsite wells and septic system. This initial outreach will direct owners to DEP's webpage for well and septic systems and provide an opportunity to register for email delivery of additional outreach information.

Furthering this effort, DEP has proposed a septic tank pump out rebate program to help encourage property owners to pump out their septic tanks at least once every five (5) years. Periodically pumping solids out of the septic tank is one of the most straightforward ways to ensure proper functioning of a septic system. This pump-out interval is a common feature of many onsite systems maintenance programs throughout the country. DEP's program proposes a partial reimbursement for the pump out cost for property owners credited from the Water Quality Protection Charge. Property owners would be eligible for a rebate only once every five (5) years. For each documented septic tank pump-out, the County will receive an impervious area reduction credit towards its Municipal Separate Storm Sewer System (MS4) Permit Program. The County expects to pilot this program in Fiscal Year 2027.

Beyond these steps, the County may consider in the future an ongoing inspection program that would require periodic inspections of onsite septic systems to try to identify potential failures before they become critical problems Another possible step in a management program would be requiring that properties connect to community systems if there is existing access to water and sewer mains and the properties are approved for community service.

Addressing the concerns of some neighborhoods that rely on individual onsite systems may require new and innovative solutions that may include, but are not limited to:

- Alternative community distribution, collection and treatment systems;
- Shared water and/or sewerage systems owned by local communities and operated by authorized agencies or utilities (see Section III.D.);
- Alternative financing for relief systems (community or otherwise), including but not limited to special assessment subdistricts, grants or loans from government resources, or utility subsidies;
- Programs to assist lower-income individuals and communities in financing required relief systems.

At the request of the County Council, the County's Office of Legislative Oversight (OLO) researched the use of onsite systems management programs throughout the country. OLO's investigation has resulted in a report to the Council titled, "Life-Cycle Regulation for On-Site Wastewater Treatment Systems" (OLO Memorandum Report 2017-5). The OLO report presents background about individual onsite systems; addresses five management models developed by the U.S. Environmental Protection Agency; presents four case studies on management systems from Florida, North Carolina, Ohio, and Virginia; and provides OLO staff observations based on the information gathered. DEP staff have supplemented OLO's efforts with a report titled "Review of Conventional Onsite Treatment System Laws and Regulation" (February 2021). This report provides a more recent and broader inventory of onsite systems management programs in Maryland, neighboring states, and more distant jurisdictions.

III.C.5.: General Policies for Multiuse Water Supply and Sewerage Systems

Most individual systems in the county serve residential uses; a typical four-bedroom house needs a septic system with a design capacity of 600 gallons per day (gpd). However, some individual systems in the county have substantially larger design capacities. This Plan identifies "multiuse systems" as individual, onsite systems having a design capacity that equals or exceeds 1,500 gpd. Multiuse systems are generally provided for commercial or institutional uses in areas ~~not~~ intended to use individual systems, not community water and sewer service.

The term "multiuse", as established by State regulations, refers to onsite systems owned and operated by a single user. Onsite systems having more than one user would more likely be classified by the State as a "shared system", as discussed in Section III.D. For the purposes of this Plan, multiuse systems include the following:

- A single water supply and/or sewerage system serving a single property;
- A single water supply and/or sewerage system serving two or more commonly-owned, contiguous properties with a common function (religious institution, nursing home, etc.);
- More than one water supply and/or sewerage system serving a single property with a cumulative design capacity of 1,500 or more gpd.

Most multiuse water supply systems use groundwater wells. Most multiuse sewerage systems are septic systems with large design capacities. Other types of multiuse sewerage systems are discussed in Chapter 4. Refer to Appendix B for the inventory and characteristics of the County's multiuse water supply and sewerage systems.

III.C.5.a.: Multiuse System Flow Requirements

Multiuse water and sewerage systems are defined by the systems' design capacity. The design capacity of a multiuse water supply system is the maximum water flow the system is designed to deliver to the user in one day. The design capacity of a multiuse sewerage system is the maximum waste flow that the system is designed to collect and either treat or store in one day. Septic tanks—the first stage in the sewage treatment system—are designed to hold at least twice the design capacity, or two days' worth of flow. The design capacity is sometimes referred to as the "peak capacity" of the system.

The County's adopted multiuse system minimum design flow requirement of 1,500 gallons per day (gpd), is more stringent than the State's minimum requirement of 5,000 gpd. The County adopted this lower flow threshold to give the County better information on the location of individual, onsite systems with capacities in excess of those required for strictly residential uses. This will help the County identify areas where several multiuse systems together may create cumulative impacts on ground and surface waters that would be difficult to evaluate on only a case-by-case basis. The identification of these systems in the plan also allows for a more comprehensive review of proposals for multiuse systems in areas where the provision of community service is not anticipated.

In some cases, DPS may allow users to reduce the size of their septic drainfields by a technique referred to as "flow averaging." This technique is used for facilities that have a substantially more intensive use on one or two days in a week, such as a place of worship. Flows from peak use days are stored and released at a slower, daily rate throughout the rest of the week. The County will still classify qualifying systems as a multiuse sewerage system based on the design flow, not the lower daily discharge flow.

III.C.5.b.: Approval and Regulation of Multiuse Systems
All multiuse systems in the County must be approved as formal map and text amendments to this Plan. Multiuse systems are identified in Appendix B of the Plan text, and on the water and sewer category and systems maps. The provision of such systems will be consistent with the protection of surface and ground waters and shall require the concurrence of the DPS. In order to ensure this protection, DEP may, upon consultation with the DPS, require hydrogeologic studies of the potential effects of the proposed systems on ground and surface water resources.

III.C.5.c.: Policy Constraints on Multiuse Sewerage Systems Capacities
The characteristics of the land on which they sit (permeability, water table depth, etc.) typically constrain the approval and use of individual septic systems. The County has established additional limitations on individual wastewater systems use in the Agricultural Reserve (AR) Zone. These limitations exist to encourage land uses that protect the environment and conform with the character of the low-density, rural nature of the County's agricultural lands, as envisioned by the Agricultural and Rural Open Space Master Plan (1980).

Design Capacity Restrictions for Sites Zoned AR
The maximum design capacity for new multiuse sewerage systems serving properties in the AR Zone must not exceed the lesser of the following capacity limits:

- No more than 4,800 gallons per day (gpd); or
- The equivalent design capacity from the potential residential development of the site under the current zoning requirement standards. The equivalent residential design capacity calculation will be based on the design capacity for a four-bedroom single-family house: 600 gallons per day (gpd), or 150 gpd per bedroom. Examples:
    - A property in the AR Zone that could accommodate 4 homes, or dwelling units (d.u.), under the zoning standards, with 4 TDRs retained, would be allowed to pursue permitting of a single multiuse sewerage system with a maximum design capacity of up to 2,400 gpd (4 d.u. x 600 gpd/d.u. = 2,400 gpd).
    - A property in the AR Zone that could accommodate 12 homes, with 12 TDRs retained, would be allowed to pursue permitting of a multiuse sewerage system with a maximum design capacity of up to 4,800 gpd. A design capacity of 7,200 gpd (12 d.u. x 600 gpd/d.u. = 7,200 gpd) for the maximum theoretical yield for the property exceeds the overall maximum design flow limit of 4,800 gpd.

Exemptions from Design Capacity Restrictions
The following systems and uses are exempt from the design capacity limits for individual, multiuse systems in the AR Zone established previously under this section.

- Small Onsite Systems – Onsite sewerage systems with a design capacity of less than 1,500 gpd, which do not qualify as multiuse sewerage systems under this Plan;

- Agricultural Uses – Permitted agricultural uses, either by right or by conditional use approval;
- Public Facilities – Publicly-owned and/or operated uses; and
- Existing System Expansion – The expansion of existing onsite sewerage systems, provided each of the following criteria are met:
    - The ownership of the property has not changed since February 14, 2006;
    - The property acreage has not been increased since February 14, 2006; and
    - The use of the property has not changed since February 14, 2006, as determined by the Department of Environmental Protection and the Department of Permitting Services. Documentation for this purpose may include permits, consent agreements, or covenants related to the establishment of the subject individual septic system.

The preceding design capacity restrictions are not intended to obstruct the replacement or repair of existing multiuse sewerage systems in the AR Zone. This Plan favors the onsite repair and replacement of multiuse systems in the AR Zone over the extension of public water and sewer service, provided that the onsite system adequately protects public health and environmental quality.

III.C.6. Non-Potable Onsite Water Supply Systems
Non-potable well water systems provide a water supply for irrigation, watering farm animals, and other activities not related to human consumption. These wells can be established in areas of the county designated as categories W-4, W-5 and W-6 with the appropriate permits from DPS and MDE. Requests for non-potable wells in areas served or intended to be served by community water supply systems (categories W-1 through W-3) are addressed by DEP on a case-by-case basis through its:

- Consideration of its consideration of onsite system exceptions for properties designated as water categories W-1 and W-3'
- Review and sign-off on State Water Appropriation and Use Permit applications.

III.C.7.: State and County Responsibilities
The State of Maryland, through MDE, has delegated much of the permitting and oversight responsibilities for individual water supply and sewerage systems in Montgomery County to DPS, specifically through the Well and Septic Section. However, the State's permit approval is still required for multiuse systems with a capacity of 5,000 or more gpd. In cases where an MDE-issued State Water Appropriation and Use Permit is required to establish a well or wastewater disposal system, DEP is responsible for the County's approval of applications to MDE for those permits.

III.D.: Shared Water and Sewerage Systems
A shared system serves two or more independently owned properties with a water supply system (water source, treatment and transmission to users) and/or sewerage system (collection from users, treatment and discharge). The components of shared systems are owned collectively by those served by the system (such as a community or homeowners association). The system is operated and maintained by a public or quasi-public agency as approved by the State and County. The concept typically involves shared systems that include small rural residential neighborhoods or two or more rural commercial and/or institutional uses. Montgomery County neither has any existing shared systems nor a mechanism to approve and establish them at this time.

IV.: WATER AND SEWERAGE SYSTEMS FINANCING

The following sections provide a summary of financing methods for the three community water supply and sewerage systems serving Montgomery County, those owned and operated by WSSC Water, the City of Rockville, and the Town of Poolesville.

IV.A.: Washington Suburban Sanitary District
The planning, design, land acquisition, and construction of water supply and sewerage system infrastructure is financed by two separate programs in the WSSD: the Major Systems and General Construction Programs.

IV.A.1.: Major Facilities Program
The WSSC Water major facilities program includes projects adopted in the WSSC Water CIP: water and sewage treatment plants, pumping stations, storage facilities, and program size mains. Program size mains are water mains 16 inches in diameter and larger and sewer mains 15 inches in diameter and larger. WSSC Water finances these projects through water supply and sewage disposal bonds, developer contributions, systems development charges (SDC), grant funds, Maryland Department of the Environment Water Quality State Revolving Loans, and other less significant sources. Debt service on bonds issued to construct program-size facilities (not attributed to growth) are paid primarily from basic water and sewer user charges. Rate-supported debt is used to fund capital projects providing general system and environmental regulation-related improvements. Capital projects which support only new system growth are constructed through the System Extension Permit (SEP) process with either SDC funds or solely financed under Memoranda of Understanding (MOU) by the Applicant/developer, or are constructed by WSSC Water with SDC funds, so that current water and sewer user rates do not support new growth. This also applies to capital projects which only in part support new growth. For the construction of major facilities, WSSC Water provides credit against SDC fees (in the amount of 50 percent of the estimated total construction fees) to the developer financing capital projects. Once the developer completes construction and WSSC Water performs a final audit, WSSC Water initiates quarterly reimbursements based on available SDC funds in the geographic area served by the facility.

In certain cases, WSSC Water may authorize a developer to not only construct, but to also maintain and operate, elements of the community system. Most often, these are private, onsite, central wastewater pumping stations serving commercial development. WSSC Water may also authorize the construction of private interim wastewater pumping stations to serve residential development pending the construction of permanent, WSSC Water-owned and -operated facilities. WSSC Water shall coordinate the approval of these private facilities with DEP prior to their authorization, especially where those facilities could appear, or have appeared, as projects in the WSSC Water CIP.

IV.A.1.a.: Water Consumption and Sewer Usage Charges
These charges are both based on metered water consumption, with the rate charged per 1,000 gallons determined by the customer's Average Daily Consumption (ADC) during the billing period. Under the conservation-oriented four-tier rate structure, customers in the lower ADC tiers pay less per 1,000 gallons than customers with usage in the higher tiers WSSC Water's quarterly bills also include account maintenance and infrastructure investment fees. These are fixed charges, based on the size of the service meter. The account maintenance fee covering the basic cost of maintaining a customer account and includes the cost of purchasing and reading meters; processing meter readings, generating, mailing and collecting bills; and providing customer services. The infrastructure investment fee contributes to infrastructure reconstruction costs.

WSSC Water uses revenue from these sources to maintain and operate the water supply and sewerage systems and to pay the principal and interest on:

- Water Supply Bonds which are issued to finance the planning, design, and construction of capital facilities: dams and reservoirs, filtration plants, water pumping stations, water storage facilities, and large supply pipelines (from water source to filtration plant and from plant to local distribution lines); and
- Sewage Disposal Bonds, which are issued to finance the planning, design, and construction of capital facilities: trunk lines, sewage pumping stations and treatment facilities (including contributions to construction costs paid to the District of Columbia Water and Sewer Authority for any construction/improvement of the regional system used by the WSSC Water).

WSSC Water reviews and establishes the water and sewer rates annually as part of its operating and capital budget process. The County Councils of both Prince George's and Montgomery Counties then must review and approve these budgets.

IV.A.1.b.: Systems Development Charge
WSSC Water assesses the Systems Development Charge (SDC) to new customers and developments within the WSSD to pay for capital improvements of the water and sewerage system to accommodate growth. Starting in July 1998, the Maryland General Assembly approved an increase in the allowed SDC fees, changes to the SDC calculation, and changes to the criteria addressing who is required to pay the charge. WSSC Water

exempts existing houses from the SDC requirement if both the house and the main providing service predate the establishment of the SDC in 1993, and no increase of the existing connections or meter are needed.

The State has authorized Montgomery County and Prince George's County to have established programs to grant exemptions from the SDC for certain project types:

- Biotechnology projects research
- Elderly housing projects
- Revitalization area projects
- Recreational and services to the youth
- Childcare and after school care.

Under this program, Montgomery County may authorize up to $500,000 in SDC exemptions annually; the County has established that each individual development project considered is eligible for a maximum exemption of $50,000 per year. The exemption program is administered by and additional information is available from the County's Department of Permitting Services (see Appendix D).

Maryland has also established a program to grant exemptions from SDC for affordable housing projects. Customers requesting SDC exemptions for proposed construction of affordable housing units submit their requests to the County, which reviews their request to determine if the proposed building(s) meets the legislative criteria for a SDC exemption established in the Annotated Code of Maryland, Article 29. Once the County determines that the designated affordable housing units qualify for this waiver, the County mails a written request to WSSC Water requesting the waiver for the applicant. WSSC Water's issuance of a waiver is solely based on the County's assertion that the units meet the SDC exemption criteria.

IV.A.1.c.: State Funding

As part of the Chesapeake Bay Program, the State of Maryland previously provided limited funding for nutrient removal at existing wastewater treatment plants. Starting in 2004, the State assesses a fee on all wastewater system users with the intent of providing a funding source for programs to reduce the effects of wastewater disposal on the Chesapeake Bay. The Bay Restoration Fund collects a fee totaling $60.00 annually from users served by wastewater treatment plants. These fees are estimated to generate annual revenues of $65.0 million for treatment plant improvements. The focus of the program will be on the 66 major facilities discharging in the Bay and its tributaries, although other facilities may also be addressed. The program also collects an annual fee of $60.00 from households using septic systems. This part of the program will generate annual revenues estimated at $12.6 million that will be used to upgrade septic systems—with its highest priority on failing systems in the Bay's Critical Areas—and to provide cover crops. The program also provides grants for service connection costs for property owners abandoning onsite septic systems and connecting to community sewer service. Funding for septic systems outside the Critical Areas (such as in Montgomery County) are a relatively low priority for the program.

Additional information on the funding of WSSC Water's water and sewerage infrastructure is available from the WSSC Water Budget Division (see Financial Information | WSSC Water).

IV.A.2.: Local Service Extension Programs

These WSSC Water programs allow for the construction of smaller, non-CIP-sized water and sewer mains, primarily along streets adjacent to or abutting users' properties. Capital-sized water and sewer main extensions up to 2,000 feet in length can be considered as local service extensions and may be funded using this method. Funds are provided primarily through developer contributions and to a lesser extent through general construction bonds. Developer financing of new water and sewer mains is required under the System Extension Permit (SEP) process. For water and sewer mains constructed by WSSC Water, the general construction bonds are financed by front foot benefit assessment charges and deficit payments

IV.A.2.a.: Developer-Built Projects

Legislation approved by the Maryland General Assembly in 1998 phased out the traditional front foot benefit assessment financing mechanism (see Section IV.a.2.b, following) for most service projects in the WSSD. This made developers responsible for designing, financing, and constructing all new main extensions serving

residential subdivisions of two or more homes, any commercial use, and any institutional facilities. The law provides for exceptions to this requirement for individual homes or properties and to relieve health hazards. The applicant then dedicates the completed mains to WSSC Water for operation and maintenance. WSSC Water refers to this system for providing non-program mains as the System Extension Permit (SEP) process.

Developers typically recoup their costs for new mains by levying a private version of the front foot benefit assessment. Private water/sewer infrastructure assessments are not regulated by either WSSC Water or the County. As with many costs and fees associated with property ownership, there is a requirement for the disclosure of the water/sewer assessment at the time of sale of a new property.

IV.A.2.b.: WSSC Water-Built Projects

WSSC's service extension program allows individual property owners, seeking to provide community service to individual residential properties not proposed for new subdivision, to have needed mains financed, designed, and built by WSSC. Cases involving individual and community-wide County-designated health problems, resulting from individual systems failures, are also eligible to use this system. Under this system, extension costs are financed through General Construction Bonds issued by WSSC to construct these local water and sewer lines. Property owners pay back the principal and interest on these bonds to WSSC through front foot benefit assessments and project deficit charges.

This process has gone largely unused during the past ten to fifteen years owing to escalating costs for these projects. Front-foot assessments from larger subdivision projects that now use the SEP program no longer subsidize extension costs for these smaller projects. Prior versions of this Plan, including the 2018 update, provide more details about this program.

IV.A.2.c.: Efforts to Address Underserved and Unserved Communities

The high costs of new water and sewer main construction often make service extensions unaffordable for most individual property owners. The excessive cost of main extensions has detrimental effects the County's water and sewer planning efforts. The lack of affordable community service tends to force homeowners towards using individual, onsite systems in areas either where the County's water and sewer planning policies intend the use of community service or where community service would relieve public health problems. Given these conditions, WSSC Water can no longer fulfill its responsibility to provide community water and sewer service to areas designated for such service by the County as applied to individual properties.

<u>Current Extension Cost Issues</u>

Legislative changes to the Public Utilities Article adopted by the Maryland General Assembly in 1998 resulted in sharply escalating main extension costs where they were financed through the WSSC Water-built extension program. Those changes moved the responsibility for water and sewer main construction and financing to developers and property owners. Under the WSSC Water-built system prior to 1998, water and sewer service extensions were financed by WSSC Water ratepayers, with a portion of the costs for most development projects recovered through the front foot assessment financing system and the remaining deficit cost charged to the applicant. Larger subdivision projects, where extensions were generally less expensive to construct per foot of new main, tended to subsidize the smaller, more expensive extensions for individual homes. With the implementation of the System Expansion Process (SEP) program, WSSC Water lost the major sources of front foot revenues. Without that subsidy, individual applicants using the WSSC Water-built extension program now bear all of the true cost of these service extensions.

The General Assembly also enacted changes in the law that eliminated the mandatory connection requirement for all homeowners with access to a newly constructed public water and sewers. This change has made it difficult to address underserved properties on a community basis because homeowners have to voluntarily agree to share in the costs of a service extension.

Applicants have found that even relatively short service main extensions have become financially prohibitive. Front foot assessment rates have not kept pace with the loss of revenues from subdivision projects and with the escalation of extension costs. As a result, front foot assessments no longer pay for new extension projects. Deficit charges, paid only by the project applicant to fill the financing gap, have risen substantially beyond the

reach of most property owners, even though WSSC Water now allows applicants to pay the deficit charge cost over time.

WSSC Water's health hazard subsidy's value has not changed since WSSC Water instituted it the 1970s, making it worth less and less over time as compared to rising extension costs. Further, WSSC Water's current policies allow front foot assessment charges to offset the health hazard subsidy, which substantially reduces or eliminates the subsidy's practical usefulness.

The fact that no new WSSC Water-built projects have been initiated in at least fifteen years highlights these extension financing problems.

System Expansion Process (SEP) projects can be used by both developers and individual property owners. For individual owners, however, the SEP program requirement that applicants provide their own engineering, project management and financing for projects can easily result in total costs in the hundreds of thousands of dollars. In some cases, extension costs have exceeded the assessed value of an individual property. The technical resources needed for these projects are also beyond the reach of most homeowners, requiring the engagement of contractors such as engineering firms. This situation has resulted in the technical and financial infeasibility of water and sewer extensions for existing houses even when service is needed.

Water and Sewer Plan Recommendation: Unserved and Underserved Communities

The extension of community water and sewer service must be a reasonably affordable and competitive alternative to individual, onsite systems for individual property owners located within those areas of the county intended by this Plan for community water and/or sewer service. The Unserved and Underserved Communities Subgroup is working to develop an alternative to the WSSC Water-Built main extension program that will seek an affordable water and sewer main extension process for individual property owners.

Unserved and Underserved Subgroup of the Bi-County Infrastructure Financing Committee

A working group of WSSC Water, Montgomery County, and Prince George's County staff began to examine the preceding issues in 2006 with the intent of finding a solution to the extension financing issue for individual property owners. The results of this effort raised many issues to the WSSC Water management, but it was felt that the issues were significant enough that a broader Bi-County–WSSC Water approach to possible solutions was needed. A new working group started in 2012 as the Unserved and Underserved Communities Subgroup, an offshoot of the WSSC Water Bi-County Infrastructure Financing Group. The subgroup examined problems with existing financing systems and concluded the following:

- That Montgomery and Prince George's counties both have thousands of properties within their planned community service envelopes that are either unserved (lacking community water and sewer service) or undeserved (lacking either community water or in most cases sewer service).
- That changes to the main extension financing system had left the WSSC Water-built main extension program broken and not workable in its current form.
- That WSSC Water and the Counties need to develop a new financing system that will again allow for affordable main extensions.
- That WSSC Water and the Counties need to reexamine and update the WSSC Water health problem subsidy.
- That all properties potentially and directly benefitting from a new main extension need to pay their fair share of the cost of that main front foot benefit assessments need to be based on all benefitting property owners (abutting the new main) paying their proportional costs.
- That WSSC Water and/or the Counties will need to subsidize costs for new extensions to existing, individual properties to assist in making them affordable.

The working group's 2014 initial report to WSSC Water and the Counties," Water and Sewer Extension Needs for Existing Neighborhoods", recommended a financing alternative identified as "subdistrict projects. Under this new concept, a County would identify a qualifying area within the planned community service envelope in need of a new water and/or sewer main extension. The need for new service may occur due to health problems in

the area or a recognized need for service on the part of property owners. Property owners in the candidate subdistrict would need to provide some level of agreement with establishing the subdistrict. On the recommendation of the County Executive, the County Council would decide to identify this area, as an extension subdistrict in the County's Water and Sewer Plan. If approved, WSSC Water would begin the process to design and build the needed main extensions.

Following the preparation of the 2014 subdistricts report, the effort to create a new extension financing system stagnated for several years. In late 2018 a new WSSC Water and bi-county working group formed to reexamine the unserved and underserved (U&U) communities issue. There was a concern that the prior subdistrict proposal would still result in unaffordable costs for new community service. This working group focused more closely on the financing issue, looking for alternate revenue sources to help offset the high costs of new main extensions. Several proposals are currently under consideration, including rate payer subsidies from WSSC Water, subsidies from County property tax revenues, and State grants and low-interest loans. However, in ongoing discussions the working group members have recognized that the subdistrict concept may still have value in organizing service extension locations and specific projects.

The workgroup developed a general implementation plan for this extension concept that includes a proposed financing system for the proposed main extensions. Implementation would have divided financial responsibilities for new main extensions between affected property owners, the Counties, and WSSC Water. State and Federal funding would also be pursued, as available. The workgroup presented its findings to WSSC Water Commissioners, both County Executives, the Princes George's County Council, and the Montgomery County Council Transportation and Environment Committee, receiving support from each.

However, at the time of this comprehensive update, the only project moving forward involve substantial financing under a grant from U.S. EPA. This project would extend public sewer service to approximately eight existing, improved lots in then Meadowbrook Estates subdivisio9n in Germantown. Several of these lots, and neighboring lots have experienced septic system failures. It has been difficult to provide septic system repairs for these lots due to their relatively small size, in the realm of 25,000 square feet.

IV.A.3: Service Connection Fees

These fees are paid with the property owner's application for a WSSC Water service connection installed between the water and/or sewer main and the customer's property line. WSSC Water uses a two-tiered connection fee system, based on whether a connection is installed either during or after water and sewer main construction. The differing fees reflect the fact that service connections are substantially cheaper to install while a new main is under construction. Adding connections to already-built mains will involve new excavations, tapping the existing main, and possibly breaking and repairing street pavement. WSSC Water's charges for "improved" connections added onto completed mains are approximately two to four times the utility's fees for "non-improved" connections built onto a main during construction. WSSC Water sets these fees based on the average cost of such connections throughout its service area.

To assist residential property owners with escalating service connection fees, WSSC Water offers a deferred payment option which allows residential customers to defer the cost of water and/or sewer service connections to their annual tax bill over a period of 23 years. For additional information and current connection fees, refer to the "Customer Service" pages on WSSC Water's website at www.wsscwater.com. MDE, through the Bay Restoration Fund (BRF), offers grants for sewer service connections for properties converting from septic system service to community sewer service. BRF funds are allocated to the County on an annual basis and can be used until the annual fund allocation runs out. Funding is coordinated through DPS.

Onsite water and sewer utilities (hookups), non-abutting (offsite) utilities, and any onsite booster, ejector, or grinder pump systems are financed solely by the property owner or developer.

WSSC Water does not regulate service connection costs on SEP projects for new customers. Further, developers are not under any obligation to offer new service connections to owners of existing properties along the right-of-way of a new SEP-built main. This presents yet another disincentive for property owners using individual, onsite systems to convert over to community service when it becomes available. Potential new customers typically cannot connect to a new SEP main until after it is completed and dedicated to WSSC Water.

As a result, WSSC Water charges these connections at its more expensive "developed area" rates. This practice also raises concerns about the Plan's now unenforced requirement that users of interim permit, individual systems (Section III.C.3.) connect to community service within one year of the time that community service becomes available.

IV.A.4.: Aging Infrastructure Costs
With growing concerns about aging water and sewer mains, WSSC has instituted an infrastructure investment fee to the agency's quarterly bills. In Fiscal Year 2026, residential customers with a 3/4-inch meter pay a $24.70 per quarter charge, or $98.80 annually which is reviewed and approved as part of the budget process. These meterr size-based fees, paid by all WSSC customers, finance the Commission's ongoing reconstruction programs to repair and replace water and sewer mains that are reaching the end of their usefulness. WSSC evaluates priorities for these programs through its Asset Management Program.

IV.B.: City of Rockville
Rockville's water and sewer systems are supported by enterprise funds (Water Fund and Sewer Fund). Rockville uses enterprise funds to account for operations financed and operated in a manner similar to private business enterprises where the cost of expenses, including both operations and capital are financed or recovered from the users of the services rather than general taxpayers. The Water and Sewer fund budgets are presented on the full accrual basis of accounting, with revenue being recognized when earned and expenses being recognized when they are incurred. It is Rockville's policy to fund current operating expenditures with current year revenues, inclusive of debt service. A five-year projection of revenue and expenditures for the Water and Sewer Funds is prepared each fiscal year to provide strategic perspective to each annual budget process. Rockville establishes annual fees and rates for the Water and Sewer Funds at levels which fully cover he total direct and indirect operating costs and all capital outlay and debt service.

Revenue for the Water and Sewer Funds is comprised of usage charges, ready-to-serve charges, capital contribution charges, miscellaneous service charges, interest, and accumulated earnings. Usage charges are billed quarterly or monthly to customers based on the size of the water meter and metered water consumption. Rockville is currently considering reconfiguring its rate structure based on class of service (i.e., single family, multi-family, non-residential) as opposed to the size of the meter. The structure will be tiered based on usage. The ready-to-serve charge is a fixed fee, based on the water meter size, and is billed quarterly or monthly. The ready-to-serve charge is increasing at a faster rate than the usage charge to support the fixed fee expenses of the infrastructure renewal programs.

Rockville City Code (Section 24-53) requires applicants to pay a capital contribution charge when making a new connection, or upsizing an existing water meter, to Rockville's water or sanitary sewer systems. The amount of the charge is established by resolution of the Mayor and Council. It provides for a partial credit if the meter is being upsized. The capital contribution charge, which must be paid before the connection is made, is intended to recover the unit cost of capacity from new or enlarged connections to the water and/or sewer systems.

The City makes payments to WSSC Water for operating and capital expenditures at the Blue Plains WWTP, which in turn WSSC Water pays to DC Water. Operating expenses are initially billed based on estimated costs and flow rates. These expenses are periodically reconciled based on actual Blue Plains operating expenses and actual wastewater flow rates. Capital expenses at Blue Plains WWTP are billed based on Rockville's treatment capacity, which is 9.31 MGD. Capital expenses within DC Water outside of the treatment plant are based upon actual flow within the sewer system. These are characterized as "Outside the Fence" projects such as the Potomac Interceptor.

The reserve policy for the Water and Sewer Funds provides for Rockville to maintain a cash reserve equal to six months of operating expenses for each fund. However, the Water and Sewer Funds are currently not compliant with this policy. Over the last ten years Rockville's significant investments to rehabilitate and replace Rockville's aging water and sewer infrastructure; as well as the significant capital investments and process improvements at Blue Plains; have outpaced the revenue. Rockville uses a sophisticated rate model to assess revenue and expenditures over a ten-year period and to establish water and sewer usage rates, as well as the ready-to-

service charges. Rockville anticipates compliance with the reserve policy by the end of FY2023 for the sewer fund and FY2024 for the water fund.

IV.C.: Town of Poolesville

The Town of Poolesville uses several methods to fund construction and operations of its water and sewerage systems. The funding mechanisms consist of combined water and sewer user fees, impact fees on new construction, and developer-funded water system extensions. The Town has adopted escalating variable water and sewer rate schedule costs, which increases with increased water usage, to cover operation and maintenance. The escalating variable water and sewer usage fees are based on metered water use and were established to promote water conservation. According to the Town of Poolesville, as of 2021, the combined water and sewer fee is $11.48 per 1,000 gallons of water used during the quarterly billing period. When revenues do not cover the cost of the system, they are supplemented with revenues from the general tax fund. The Town does not levy front foot benefit assessments. Developers are responsible for building the local water and sewer service mains. Facility expansions are funded through impact fees on new construction.

IV.D.: Individual Systems Financing

Property owners and developers using individual, onsite systems, such as wells and septic systems, pay for the planning, testing, permitting, and installation of those systems. The issue of replacing aging individual, onsite systems is discussed in more detail in Section III.C.4.b. Repair and replacement costs for individual, onsite wells and septic systems also fall to the property owner. Of concern is the property owners' ability to finance the cost of replacement systems. Currently, this is generally less costly than extending community service; however, the costs involved with drilling a new well or installing a new septic system are not inconsequential, running as much as $20,000 for a complete replacement of a deep trench septic system. The need for sand mounds, pumping systems, or advanced treatment systems (aerobic pre-treatment, dosing, etc.) may add substantially to the cost of a replacement system.

Property owners do not always plan for the costs involved in replacing an individual, onsite water and sewerage system. This is sometimes nurtured by an attitude that wells and septic systems offer "free" service to their owners, as opposed to the utility billing for community service. Also, someone who occupies a house using individual systems for only a few years may not have to consider this expense at all, handing it off instead to the next owner or the one after.

V.: PROCEDURES FOR ADOPTING AND AMENDING THE WATER AND SEWER PLAN

Under State law, the authority to adopt and amend the *Comprehensive Water Supply and Sewerage Systems Plan* resides with the Montgomery County Council. State law requires that the County Executive, working through the Department of Environmental Protection (DEP), recommend, and that the Council adopt a comprehensive update of the Water and Sewer Plan at least once every three years. Prior to this current update, the, Council approved the most recent comprehensive Plan update in 2022. The State, through MDE, completed its review and acceptance of the 2022 Plan update on March 18, 2023. At that time MDE:

- Revised requirements related to allowed main extensions under the abutting mains policy in Chapter 1.
- Deleted provisions related to the transfer of an allowed service connection under the abutting mains policy in Chapter 1.
- Removed a policy allowing for the limited provision of community service for commercial uses outside the planned community service envelopes in Chapter 1.

Although the County Council requested reconsideration of these changes, MDE maintained its decisions concerning these revisions to the Plan. This subsequent comprehensive update of the Plan:

- Maintains the allowed main extensions part of the abutting mains policy as revised by MDE.
- Excludes the transfer of an allowed connection provision of the abutting mains policy as directed by MDE.

- Excludes in its entirety the community service for commercial uses outside the planned community service envelope policy as directed by MDE.

The County also considers amendments for specific parts of the Plan on a regular basis during the time between the comprehensive updates. These amendments usually involve:

- Requests from property owners to change water and sewer service area categories. These requests comprise the majority of Plan amendments between triennial comprehensive updates.
- Proposed service area category changes originated by the County to address area-wide category changes or category map corrections.
- Final category change approvals for changes first granted a conditional approval.
- Text amendments that update either technical and informational issues or involve Council-approved policy issues.

The following sections address the processes for comprehensive Plan updates and Plan amendments.

V.A: County Election-Year Prohibition
This Plan prohibits the County Council, or any committee of the Council, from holding a public hearing for or from deliberating or acting on any comprehensive update to the *Comprehensive Water Supply and Sewerage Systems Plan* after October 31st of a year in which the Council is elected (2026,2030, etc.) until the newly elected Council has taken office in December. A similar prohibition applies to the Council's consideration of Plan amendments (see Section V.D.1.). The administrative delegation process for Plan amendments (see Section V.D.2.), conducted by DEP, is not affected by this provision, neither is an individual Council member's required review of amendments under the administrative delegation process.

V.B.: Triennial Water and Sewer Plan Comprehensive Update
The following provides an outline of the current process involved with preparing and adopting the triennial comprehensive update of the Water and Sewer Plan.

- The Preliminary Staff Draft, developed by the Watershed Restoration Division of DEP, incorporates all Plan amendments approved since the last comprehensive update, revisions suggested by DEP staff, and technical updates solicited from State, County, and municipal agencies. DEP circulates the Preliminary Staff Draft Plan to the reviewing agencies and municipalities. The comprehensive update provides an optimal opportunity to incorporate into the County's Plan the subsidiary plans of the municipalities. DEP staff address and, as necessary, incorporates agency comments into the Plan to Create the DEP Staff Draft Plan for consideration by the County Executive.
- Upon the review and concurrence of the County Executive, the update becomes the Executive Draft Plan, which is then transmitted to the County Council for its consideration. At that time, the Executive Draft Plan becomes a matter of public record.
- The County Council schedules a public hearing on the Executive Draft Plan, conducted by either the full Council or the Transportation & Environment (TE) Committee.
- After the hearing record is closed, the TE Committee holds work sessions to consider the draft plan, agency comments, and public testimony provided during the hearing process.
- The Plan with the TE Committee's changes incorporated becomes the Final Draft Plan, which the County Council, as a body, will consider for adoption.
- Once adopted, the draft becomes the Council's Approved Plan. The County Executive then has ten (10) working days to review the Council's action and, if necessary, to request reconsideration of all or part of the approved plan.
- Following the Executive's review, the County provides copies of the Council's Approved Plan to the Maryland Department of the Environment (MDE) for State review, including the Department of Planning (MDP) and the Department of Natural Resources (DNR). MDE must approve the Plan or disallow the Plan either in whole or in part within sixty (60) days of its receipt of the Council's Approved Plan. MDE is also allowed two forty-five (45) day review extensions. If MDE disallows any part of the Plan, the

County has six (6) months from the date of MDE's notification to formally challenge MDE's decision. Following the State's consideration and action, the document becomes the State's Approved Plan.

Note that starting with the Executive draft, comprehensive updates of the Plan, in its entirety, will be posted to DEP's website (see https://www.montgomerycountymd.gov/department-environmental-protection/water/water-supply-wastewater/county-water-sewer-plan).

V.C.: Water and Sewer Plan Amendments

During the time in between comprehensive triennial updates, the County considers many requests for changes, or amendments, to the Plan as explained in the following sections. As proscribed by the Plan's policies, some amendments will require consideration by the County Council (Section V.D.1). Other amendments will qualify for the administrative Delegation (AD) process managed by DEP (Section V.D.2).

Plan amendments proceed through an interagency review process that includes M-NCPPC, WSSC Water, and DPS. Other agencies contacted on an as-needed basis include but are not limited to: Montgomery County Public Schools; Prince George's County; municipalities such as Rockville, Poolesville, or Gaithersburg; and the U.S. National Park Service. DEP's intent is to provide review packets to these agencies on a quarterly basis. Agency comments on and DEP's internal review of these cases are then used to determine an appropriate action path for each amendment.

Timing for the Council and administrative processes is intended to follow the general schedules provided in the following sections. However, Plan amendments may also be considered outside the usual schedule, upon the discretion and agreement of the County Council and DEP, for those cases involving exceptional circumstances such as severe hardships, public or quasi-public facilities, and other projects of significant public interest.

The following sections provide further information on amendments to the Plan.

V.C.1.: Property Owner-Initiated Category Change Requests

Individual requests from property owners for water and/or sewer service area category changes make up the majority of Plan amendments considered between comprehensive triennial updates. Most commonly, property owners file requests with DEP seeking approval of categories 1 or 3 to allow the provision of community service where it is not currently approved given the existing categories designated in the Plan. Other requests filed have sought approval for multiuse, onsite systems (see Section III.C.5.) or for changes to existing service area restrictions (see Section II.C.2.)

Application Process for Individual Service Area Category Change Requests

Applications for service area category requests filed by the property owner may be submitted to the Department of Environmental Protection at any time of the year. Request applications and instructions are available by contacting DEP staff (see Appendix D) or the DEP category change requests webpage at https://www.montgomerycountymd.gov/department-environmental-protection/water/water-supply-wastewater/service-area-category-change-request . The documents available on this webpage include directions and requirements for filing a category change request application. An online application process is in progress.

DEP has additional application requirements for category change cases involving service area category amendments for private institutional facilities (PIFs); refer to Section II.G.4.e. Applicants filing requests for these facilities will need to refer to instructions included in the category change request instructions packet.

Category Change Application Fees

As established under Executive Regulation MCER 2-05 (Chapter 45 of the County Code) DEP requires an application fee for most category change request applications. The application fee schedule is included with each category change request instruction packet provided to potential applicants. These application fees are not intended to act as an enterprise fund, supporting the entire cost for the category change program. Certain types of requests are exempt from the application fee as detailed in the Executive Regulation and category change application instruction packet. Neither does DEP charge an application fee for properties that staff

recommend for inclusion in County-initiated general water/sewer category map amendments (see Section V.C.2).

V.C.2.: County-Initiated Area-Wide Category Map Amendments
DEP initiates, develops and recommends area-wide change amendments, usually to implement service area category changes to allow for the provision of community water and/or sewer service. These area-wide amendments are commonly referred to as general water/sewer map amendments.

Area-wide general map amendments typically address service area changes for an area on the scale from one or more blocks up to a small neighborhood. The County's long history of handling category change requests on a case-by-case (lot-by-lot, parcel-by-parcel) basis has resulted in many neighborhoods in piecemeal transition from categories 4, 5 or 6 to categories 1 or 3. These are usually areas within the planned community service envelopes as developed from the Plan's general service policies and in the related local area master plan. However, they still require specific approval for category changes that will allow for the provision of community service. DEP's long-term goal is to use general category map amendments to the greatest extent possible to reduce the number of individual map amendments (category change requests) filed by property owners and developers.

When the County Council approves the designation of a special community service area as part of the Plan, the recommendation to do so from the County Executive is typically accompanied by a general, area-wide category map amendment. Special community service areas are the result of onsite system surveys conducted by DEP and DPS to evaluate existing health problems and long-term feasibility for onsite system use in a specific area of a community. The County Council determines whether an area qualifies as a special community service area based on the results of the onsite systems survey and a recommendation provided by the County Executive. DEP prepares the map amendment for special community service areas designated as categories 4, 5, or 6. The map amendment proposes to change water and/or sewer service area categories for properties included in the designated special service area to categories 1 and/or 3 as needed. This category change action allows any of these properties to proceed with the provision of community service, regardless of whether that property has an active health problem. The purpose is to encourage the extension of community service into the designated health area before properties find a need for community service to relieve an onsite system failure.

Other general amendment cases involve a need to correct mapping or service errors and to update service area categories as determined by DEP. Mapping errors occur where the County has not correctly mapped approved service area changes. Service errors occur where either the sanitary utility (WSSC Water, Rockville, or Poolesville) has provided community service to properties not approved for community service in this Plan, or where multiuse systems exist that are not currently included in the Plan.

Plan amendments may also include updates provided by municipalities to service area categories and/or the Plan text. The County includes these updates into the Plan as directed by State law to incorporate the subsidiary plans of the County's municipalities.

V.C.3: Interim Water and Sewer Category Map Updates
DEP is responsible for preparing interim updates of the plan's service area category maps. Improvements in mapping technology resulting from the use of the County's computer-based geographic information system (GIS), TEBS-GIS, should now allow for the preparation of more up-to-date maps than the triennial updates required by the State. These interim updates are based on category change actions, map revisions and corrections, and informational updates approved since the last interim or triennial update. The interim update maps, which do not require approval by the Council, represent the County's official record for water and sewer service area categories pending the triennial updates approved by the County Council.

DEP has developed a schedule for interim updates for the service area category maps; providing comprehensive category update on an annual or semi-annual basis. Use of the GIS-based database by county agencies and its distribution to agencies such as WSSC Water and M-NCPPC will result in a significant step forward in helping to provide more up-to-date category information to the public and development industry.

V.C.4.: Text Amendments
While the majority of changes to the Plan text occur as part of the triennial update process, text amendments do occur from time to time. Text amendments of a policy nature are usually initiated by the County Council. At the direction of the Council, DEP staff develop these amendments in response to a policy issue that the Council wants to implement before the next triennial comprehensive Plan update. Examples of text amendments to the 2003 Plan included restrictions on community service for private institutional facilities (PIFs) and on multiuse system capacities, both addressing the Agricultural Reserve (AR Zone).

Text amendments may also include non-policy, informational updates to the Plan text such as updates to capital project listings, amendments that acknowledge or account for policy changes elsewhere in the Plan, and updates to WSSC Water sewage flow measurement data.

V.D: Review and Consideration of Plan Amendments
Two primary pathways are used to consider and act on Plan amendments:

- The County Council's legislative review process and
- The DEP administrative delegation review process.

For amendments requiring interagency review, DEP collects requests on a quarterly basis, with collection periods closing at the end of September, December, March and June of each fiscal year. DEP transmits packets of requested amendments to the agencies in the month following the close of each quarterly group. Agencies typically have 30 days to provide comments back to DEP. The reviewing agencies typically include the following:

- DPS, for issues concerning individual onsite systems and onsite system suitability.
- M-NCPPC, for issues concerning master plans and land use planning
- WSSC Water, for issues concerning the feasibility of providing community water and sewer service, including system transmission and treatment capacities. WSSC Water also advises DEP whether there are technical or policy issues that would complicate the provision of community service or that would make community service infeasible.
- Municipalities, on a case-by-case basis, for issues concerning local planning and infrastructure.

V.D.1.: County Council Legislative Process
The Council's legislative review process begins with DEP staff developing recommendations for these amendments, which then proceed through a review process that typically includes the DEP Director, County Executive staff, and finally the County Executive. The County Executive transmits a group or packet of requested Plan amendments to the County Council for consideration and action. The Plan's intent is that DEP will initiate this process twice each fiscal year: in the fall and in the spring.

The Council's process proceeds as follows:

- Following the receipt of the Executive's transmittal, the Council introduces the amendments and schedules a public hearing. State law requires that the County provide State and local agencies with a notice of public hearings thirty (30) days in advance of the hearing.
- For public outreach, the County Council is required to post a public notice of the hearing that must appear once at least ten days in advance of the hearing date in a newspaper of general circulation in the county. In addition to these notices, DEP provides a notice of the hearing to the amendment applicants and to other interested parties. DEP also makes reasonable efforts to notify adjacent and confronting property owners and local public interest, homeowners, civic and environmental groups.
- The Planning Board will meet to consider M-NCPPC staff recommendations for each amendment. The Board then forwards its recommendations to the County Council.
- The Council holds its public hearing, either in full session or in a meeting of the three-Council member Transportation and Environment (TE) Committee.
- Following the public hearing, the TE Committee holds a work session on the amendments where the committee members consider recommendations from the County Executive, Planning Board and

Council staff and hearing testimony. The committee then forwards a draft resolution to the full Council for consideration.

- The full Council then considers the committee recommendations, develops a final resolution of actions on the proposed amendments, and subsequently adopts that resolution.
- The Executive has ten days following adoption of the resolution to comment on the Council's action before the action is final. The Council then forwards the resolution to the Maryland Department of the Environment (MDE) for review and concurrence. (See Section V.D.3. below for information about the State's consideration of Plan amendments.

V.D.2.: DEP Administrative Delegation Process

The County Council has delegated the authority to act on Water and Sewer Plan amendments under limited circumstances to the Executive branch through the Director of DEP. DEP may act to approve or conditionally approve an amendment. This administrative authority is intended for amendments that are non-controversial with regard to Water and Sewer Plan issues and policies. As such, the authority is discretionary, and the Director of DEP may, at their discretion, defer action on any potential administrative amendment to the County Council.

Administrative public hearing actions are intended to follow a quarterly schedule, with amendments from each quarterly agency review packet proceeding through a separate administrative action. The administrative process proceeds as follows:

- DEP staff develop recommendations for these amendments, where agency reviews (M-NCPPC. WSSC Water, DPS, etc.) are consistent with administrative approval. DEP then schedules an administrative public hearing. State law requires that the County provide State and local agencies with a notice of public hearings thirty (30) days in advance of the hearing. This includes the County Council whose members must concur with the proposed administrative action.
- For public outreach, the County is required to post a public notice of the hearing that must appear once at least ten days in advance of the hearing date in a newspaper of general circulation in the county. In addition to these notices, DEP provides a notice of the hearing to the amendment applicants and to other interested parties. DEP also makes reasonable efforts to notify adjacent and confronting property owners and local public interest, homeowners, civic and environmental groups.
- The Planning Board will meet to consider M-NCPPC staff recommendations for each amendment. The Board then forwards its recommendations to DEP.
- DEP holds the public hearing conducted by either the DEP Director or by a designated a staff member from the Watershed Restoration Division (WRD). The hearing record is typically held open for one (1) week following the hearing. Most hearings are currently held remotely.
- DEP staff prepare a Statement of Action for the amendments for the Director's signature. The document provides a summary of the public hearing testimony, Planning Board recommendations, Council members comments, and category change actions. DEP then forwards the action to MDE for review and concurrence. (See Section V.D.3. below for information about the State's consideration of Plan amendments

WRD will remove from the administrative delegation process any proposed amendments actions initially recommended by staff for administrative actions and redirect them to the County Council for consideration at the direction of one or more of the following:

- The Planning Board, voting as a body.
- One or more individual Council members.
- The DEP Director.

Amendments redirected from administrative actions are typically included with the next regular semiannual transmittal of amendments from the County Executive to the County Council, and are subject to the Council's public review process, including a public hearing.

V.D.3: State Consideration of Plan Amendments
Following the Executive's review, the County provides copies of the Council's Approved Plan to the Maryland Department of the Environment (MDE) for State agency review, including the Department of Planning (MDP) and the Department of Natural Resources (DNR). Within 60 days of its receipt of the County's action. MDE must approve the amendments, disallow the amendments either in whole or in part, or declare a 45-day review extension. MDE may also require a second 45-day review extension that would require a notice from MDE to the County, the County's delegation to the General Assembly, and the Governor. If MDE has neither acted nor declared the need for a review extension by any of these three deadlines, the Plan is approved as adopted by the County Council by default. If MDE disallows any part of the amendment action, the County has 180 days from the date of MDE's notification to formally challenge MDE's decision. Once the County grants approval or conditional approval through either the Council or administrative processes, application may proceed with development plans and WSSC Water service requests at their own risk pending State concurrence of those actions.

V.D.2.a: Administrative Delegation Policies
The specific policies and procedures under which DEP may act on a proposed amendment, and the requirements for such actions, are outlined as follows. Only those amendment requests satisfying one of the following administrative policies will be considered for this process. DEP may act to approve or to conditionally approve amendments under the following policies with the concurrence of the Planning Board voting as a body, the individual Council members, and the DEP Director. DEP will not act to recommend denial of a category change request via the administrative delegation process.

Community Service Consistent with Existing Plans
DEP may act on service area category changes consistent with the recommendations of the local area master plan and the general policies of this Water and Sewer Plan as specified under Section II.F.2, *et seq*..: General Policies for Water and Sewer Service. Typically, these cases are for project sites located within the planned community water and/or sewer envelopes.

Community Service for Public Health Concerns
DEP may act on service area changes to allow community service for properties to relieve existing or anticipated public health concerns, as specified under Section II.G.2.: Community Service to Relieve Public Health Problems. Under this administrative authority, only one residential water and/or sewer connection may be provided to qualifying lots or parcels. Proposed amendments that clearly satisfy the requirements of the public health concerns policy and lack any complications or controversy, may be considered for advance action under Section V.D.2.b. Cases located outside planned water and/or sewer envelopes that require a water or sewer main extension will need to proceed through a public hearing before DEP can grant an approval action.

Community Service for Properties Abutting Community Mains
DEP may grant service area changes to allow community service for properties which abut existing or authorized water and/or sewer mains, as specified under Section II.G.3.b.: Community Service for Properties Abutting Existing Mains. Under this administrative authority, only one residential water and/or sewer connection may be provided to the whole of qualifying lots or parcels. Proposed amendments that clearly satisfy the requirements of the abutting mains policy and lack any complications or controversy, may be considered for advance action under Section V.D.2.b.

Community Service for Public Facilities
DEP may act on service area category changes for public facilities and for private buildings affected by public projects, as specified under Section II.G.5. Community Service for Public Facilities, and II.G.6, Community Service for Properties Affected by Public Improvements.

Community Service Allowed by Individual Systems Regulations Changes
DEP may act on service area category changes for properties which satisfy the specific requirements of Section II.G.9.: Community Service Due to Individual Onsite Systems Regulations Changes.

Community Service for Community Development Projects
DEP may act on service area category changes for projects defined as community development projects as specified under Section II.G.7.: Community Service for Community Development Projects.

Multiuse Onsite Systems
DEP may amend the water and sewer category maps to identify sites approved for multiuse onsite water supply and/or sewerage systems. (See Section III.C.5. for additional information on multiuse systems.) Appropriate accompanying text amendments identifying the proposed multi-use systems may be handled under the provisions of the Plan's administrative policies, Section V.D.2.c., although DEP staff will typically handle the required text amendment for a particular multi-use system through the same administrative process as is used for the related map amendment. The approval of such systems shall be consistent with the protection of surface and groundwater and shall require the concurrence of the Department of Permitting Services. In order to ensure this protection, DEP may, upon consultation with the DPS, require hydrogeologic studies of the potential effects of the proposed systems on ground and surface water resources.

V.D.2.b: Administrative Delegation Advance Action Process
Under limited circumstances, DEP may act to approve a qualifying map amendment in advance of an administrative public hearing process to help expedite straightforward cases. DEP must have received a category change request application for the subject property for an advance action to proceed. As a practice and for purposes of efficiency, DEP will generally consider these amendments later along with those proceeding through quarterly administrative hearings.

Community Service for Public Health Concerns
DEP may act on service area category changes to allow community service for properties to relieve existing or anticipated public health concerns where community service is directly available, as specified under Section II.G.2.: Community Service to Relieve Public Health Concerns. Under this administrative authority, only one residential water and/or sewer connection may be provided to a qualifying lot or parcel. DEP may provide an advance approval and request that WSSC Water expedite community service for qualifying properties. The formal administrative approval action may occur after DEP's advance approval action and, in some cases where existing community service is immediately available, after that service has been provided. DEP's advance action is in the form of a notice to WSSC Water to proceed with and expedite community service to the property, regardless of the existing service area category. Applicants may proceed with WSSC Water service requests at their own risk pending completion of the administrative action.

Community Service for Properties Abutting Community Mains
DEP may act on service area category changes to allow community service for properties which abut existing or authorized water and/or sewer mains, as specified under Section II.G.3.b.: Community Service for Properties Abutting Community System Mains. Under this administrative authority, only one residential water and/or sewer connection may be provided to the whole of qualifying properties. DEP may provide an advance approval and request that WSSC Water expedite community service for qualifying properties. The formal administrative approval action may occur after DEP has directed WSSC Water to provide community service to a property and in some cases after WSSC Water has provided that service. DEP's advance action is in the form of a notice to WSSC Water to proceed with community service to the property, regardless of the existing service area category. Applicants may proceed with development plans and WSSC Water service requests at their own risk pending completion of the administrative action.

Multiuse Onsite Systems
DEP may act in advance to amend the water and sewer category maps to identify sites approved for multiuse water supply and/or sewerage systems. Only smaller-capacity multi-use systems, those with a peak capacity of less than 5000 gallons per day (gpd), may be addressed under this authority. Advance action for text amendments identifying these multi-use systems may also be addressed under this authority. Applicants may proceed with development plans and onsite system permitting at their own risk pending completion of the administrative action.

V.D.2.c.: Administrative Delegation Staff Approval Process
DEP's action on plan amendments under the following administrative policies shall require only an interagency review, as appropriate. The approval authority resides with the DEP Director or their designee, who may directly approve the amendments. Neither a public hearing, nor interagency concurrence for administrative approval, nor County Council review and concurrence for administrative approval shall be required, unless required by the Director.

Water and Sewer Map Corrections, Revisions, and Informational Updates
DEP may amend service area categories as necessary to correct verified service area designations and other errors. These cases most often involve revisions to identify properties with existing community service not shown in the correct service area category on the category maps and to correct improperly mapped prior amendments. Informational updates for the maps addressing existing or proposed infrastructure, right-of-way dedication or abandonment, and other non-policy issues may also be approved.

Service area category changes from W-3 and W-1 and from S-3 and S-1 (approved community service areas) and vice versa may occur to reflect the actual status of community service and do not require formal approval action by either DEP staff or the DEP Director. DEP staff document these changes as needed in the service area category database.

Interim Permit Individual Systems
DEP may amend the water and sewer category maps to identify sites approved for interim onsite wells and septic systems, as specified under Section III.C.3., subheading: General Conditions for Interim Individual Systems.

Water and Sewer Service Area Category Map Interim Updates
Interim water and sewer map updates are based on approved amendments to the Water and Sewer Plan: category changes, map corrections and revisions, and informational updates. DEP updates these GIS-based maps to show these amendments on a more frequent schedule than the State's required triennial comprehensive updates, providing more up-to-date information to the public, to the development industry, and to public agencies. DEP will update the GIS database as water and sewer map amendments are approved in order to maintain an accurate and current record of the county's service area categories. DEP's administrative approval of the published maps adopts them as the interim official record of the County's approved service area categories, pending the County Council's approval of the triennial update of the plan.

Informational Plan Text Amendments
DEP may approve text amendments which provide informational updates to the Water and Sewer Plan. These may include, but are not limited to, information updates concerning approved community water supply and sewerage systems infrastructure, information concerning multi-use water supply and sewerage systems, and general background information concerning the county and its municipalities. Informational updates may relate to specific water and/or sewer service area category change requests under consideration for approval through the administrative delegation process. Text amendments for other than informational updates, or that concern policy issues, will not be included for administrative approval and will be referred to the County Council.

V.E: Plan Amendment Actions
County Council and administrative actions on Plan amendments usually fall into one of the following types:

V.E.1: Approved Amendments
An approval action adopts the proposed map or text amendment into the Plan. In some cases, the County may decide to modify the approval somewhat from the original request. An approval for a category map amendment may also include service conditions or restrictions that limit the scope of the approval. See Section II.C.2. for examples of these conditions and restrictions. An amendment approval is not formally adopted until MDE notifies the County of the agency's concurrence with the amendment. The applicant can proceed with development approvals and water/sewer service authorizations, at the applicant's risk, during the State's review period.

V.E.2: Conditionally Approved Amendments
A conditional action grants tentative approval for a proposed amendment to the Plan. The resolution or administrative action shall clearly state the condition(s) for final approval. An actual or final approval of the amendment will require that the conditions for final approval either be satisfied or be made moot. It is incumbent upon the applicant to notify DEP and document that the condition(s) for final approval has been satisfied. The DEP Director shall then grant final approval of the amendment in accordance with the original action and notify the applicant and all appropriate agencies of the change to the Plan.

The County Council's conditional approval of category change requests for private institutional facility (PIF) is typically based on the Council's review and acceptance of a concept plan for the proposed use. If the PIF user subsequently and significantly alters that concept plan (prior to the extension of service), DEP can require the Council's reconsideration of the original category change action. Upon consultation with and recommendations from M-NCPPC staff, DEP will determine when changes to the concept development plan warrant the Council's reconsideration.

Conditional Approval Expiration
Over time, circumstances affecting a Plan amendment with an outstanding conditional approval may change from those existing at the time the County acted on the amendment. These changes may include, but are not limited to, master plan land use and zoning recommendations, water and sewer service policies, and sanitary system availability. Therefore, conditional approvals granted starting in FY 2017 are valid for a period of up to five (5) years from the original date of the County's action granting the conditional approval. DEP may grant, upon the applicant's written request, an extension of up to five (5) years beyond the original five years. After this five- or ten-year period without resolution of the required conditions, DEP will prepare a final category change action that will revert the property back to its original service area categories. Once denied by DEP, reconsideration of such an amendment will require the applicant to file a new request with DEP and proceed through an appropriate review and action process. Conditional approvals adopted for County-initiated general water/sewer map amendments are exempted from this sunset policy.

V.E.3: Deferred Amendments
A deferral action places the County's consideration of a proposed Plan amendment on hold pending the completion of some other action. Actions that defer Plan amendments must clearly state the reason for deferral and what action or milestone is needed in order to reconsider the amendment. A deferral may result from the need for additional information which is not readily available to properly evaluate an amendment. A deferral can also occur to allow another process, such as a master plan or rezoning case, to proceed before making a decision on the amendment.

Deferrals typically occur in the County Council's consideration process for the following circumstances:

- *Incomplete Information:* There is a need for additional information not readily available in order to properly evaluate an amendment, such as a proposed main alignment or specifics about a proposed development plan.
- *Master Plan Revision in Progress:* There is a need to complete a master plan revision process that has the potential to affect water/sewer service recommendations and therefore the evaluation of a water/sewer service amendment. This Plan considers that a master or sector plan is "in progress" at the time the M-NCPPC staff draft of the plan is complete. Exceptions to the preceding policy are allowed where the County Council and the Planning Board concur that more expedient review and action, including administrative delegation, is appropriate for a particular amendment, and the proposed action is:
    - Consistent with existing master plan recommendations.
    - Consistent with water and sewer planning policies; and
    - Not affected by the master plan update, which is not expected to change relevant policies.
- *Other Land Use and Zoning Decisions:* There is a need to allow another process—often involving land use or zoning issues—to proceed before making a decision on the Water and Sewer Plan amendment. These can include decisions on local zoning map amendments, zoning ordinance text amendments,

and special exceptions. These decisions are either relevant to the decision on water and sewer service or could be unduly biased by the County Council's action on the issue of water and sewer service.

- *Impending amendments and comprehensive updates to the Water and Sewer Plan*

Deferral Timing

Deferral must not become the final resting place of any proposed Plan amendment. Unless a deferred amendment is withdrawn by the applicant, the County must take an action on that amendment (approval, conditional approval, or denial). Generally, the deferral period is intended to last no more than one year before an action on the amendment is anticipated. However, a one-year deferral period is a guideline, not a requirement. DEP will use this one-year time frame as a check on the status of deferred amendments. The other land use planning and regulatory processes that are frequently involved in deferred amendments do not always follow precise, predictable schedules. However, DEP will monitor the progress of deferred amendments to avoid situations where cases slip into an indefinite, unending holding pattern. Should a deferral period extend three (3) years beyond the expected time frame, and lack an expected resolution, the County Executive will recommend that the Council deny the amendment. The applicant can then file for a new amendment when conditions better favor that request.

Process Options Following Deferral

Upon resolution of the reason for a deferral, an amendment may be brought back for further consideration by the Council. To promote an orderly public process, whenever possible a previously deferred amendment should be resubmitted to the Council as part of a semiannual amendment packet from the County Executive. If a previously deferred amendment is resubmitted to the Council outside of the Executive's semiannual amendment transmittal process, then the Council shall proceed according to the following processes, as appropriate:

- *Deferred Amendments with Significant Changes:* If the details of the proposed amendment have changed (for example, the proposed water or sewer extension is changed significantly or the proposed use of the property to be served has changed) since the item last went to public hearing, then the Council must hold a new public hearing for the amendment. The Council must provide at least 15 days' notice to the reviewing agencies: DEP, DPS, WSSC Water, M-NCPPC, and MDE, and to all parties that submitted either oral or written testimony on the amendment at the Council's prior public hearing. The Council must also advertise the public hearing at least 15 days before the public hearing date. The Council may schedule a committee or Council work session on the item to occur any time after the public hearing. However, the meetings must be listed on the Council or Committee agenda at least ten days before the work session.
- *Deferred Amendments with No Significant Changes:* If the details of the proposed amendment have not changed since the item last went to public hearing (for example, the water and/or sewer alignment is the same and the applicant's plans for use of the property to receive service have not changed), then the Council is not required to hold a new public hearing. A Committee or Council meeting on this request must be listed on the Council agenda at least ten (10) days before the meeting. In addition, if more than 90 days have elapsed since a prior Council meeting on the amendment, then the Council must provide a notice of the new meeting to the reviewing agencies, to the applicant, and to all parties that submitted either oral or written testimony on the amendment at the prior public hearing. Although an additional public hearing is not required, the Council President can choose to hold a public hearing for this deferred request.
- *Deferred Amendments Qualifying for Administrative Approval:* If the resolution of the deferral issue has created conditions that satisfy the Plan's administrative approval policies (see Section V.D.2.), then DEP may recommend the amendment for administrative action. DEP will generally include qualifying amendments as part of the next available administrative hearing process. The amendment must proceed through an administrative cycle that includes preparation and review of a staff recommendation, a 30-day agency notice, a 10-day public notice, and a public hearing. Although not required, the Council's deferral decision may include a note that addresses the possibility of subsequent consideration through the administrative delegation process.

V.E.4.: Tabled Amendments

The T&E Committee or the full Council may temporarily set aside work on a proposed Plan amendment by "tabling" its consideration. The reasons for tabling an amendment are varied and not always directly related to

the substance of the water and sewer issues involved. For example, an amendment might be tabled to allow for discussions between the County or another party and the applicant, or to allow for additional research on the part of the applicant or County staff. As with deferred amendments, tabling is not intended to be indefinite and should not last for more than one (1) year without the Committee's or the Council's subsequent consideration.

V.E.5.: Denied Amendments
A decision to deny a requested Plan amendment effectively ends its consideration by the County, leaving the Plan unchanged. Unless accepted by DEP because of changed conditions, applicants may not resubmit a new application for a denied amendment for a period of one (1) year following the date of the denial action.

V.E.6.: Appeals
State law does not include a formal appeal process for the County's actions on the Plan or its amendments. The most common method of "appealing" an action is to again file the requested amendment with DEP consistent with the denial policy preceding (Section V.E.5). The County Council may request that MDE reconsider a state action on the Plan up to six months from the date of the action. MDE has no specific requirement for a response.

State law does provide for a ten-day review of the Council's actions on the Plan by the County Executive, who may then recommend for the Council's consideration any revision or amendment the Executive deems necessary. Although the State of Maryland has a review period for approval and oversight of the County's Plan amendments through MDE and MDP, the State's review does not function as an appeals process.

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CHAPTER 2

GENERAL BACKGROUND

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I. INTRODUCTION:

Chapter 2 presents general background information about the County relevant to issues involving water supply, sewerage systems, rural sanitation planning, and water resources. The chapter presents this information in two general categories: the natural environment and the cultural environment. The various characteristics of the natural environment including geology, topography, soils and water resources strongly affect water supply, sewerage, and rural sanitation needs, problems, and solutions in the County. A second group of relevant characteristics are classified as the cultural, or human-made, environment, which include patterns and density of existing and proposed residential, commercial, and institutional development; and the various legal requirements, policies, and plans that shape the cultural environment. However, it should be noted that much of the data presented in this chapter are generalized information about Montgomery County's 500-square-mile area.

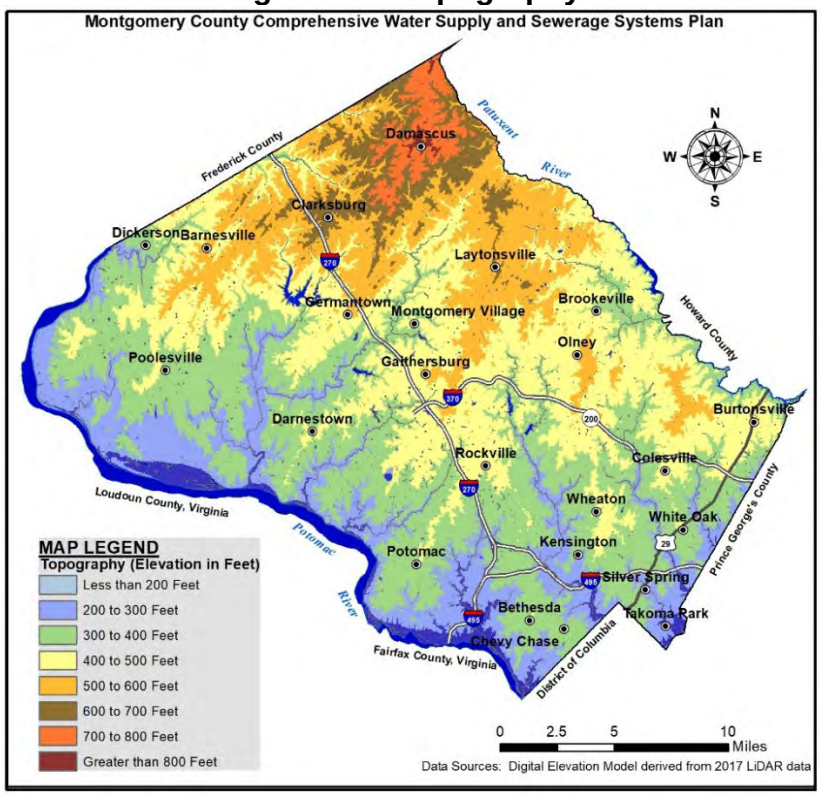
II. NATURAL ENVIRONMENT:

This section addresses natural, physical features of the County which affect the feasibility, nature, location, design, and implementation of community and individual water and sewerage systems. For example, the basic topography of the County is a significant factor in determining the location and design of water storage facilities and wastewater pumping stations and sewer lines. Soil and geological characteristics are a major factor in determining the suitability of specific areas of the County for on-site wastewater systems such as septic tanks. Other data presented are similarly relevant to the Plan's subsequent chapters.

II.A. Topography:

The general topography of Montgomery County, as illustrated in Figure 2-1, is dominated by

Figure 2-1: Topography



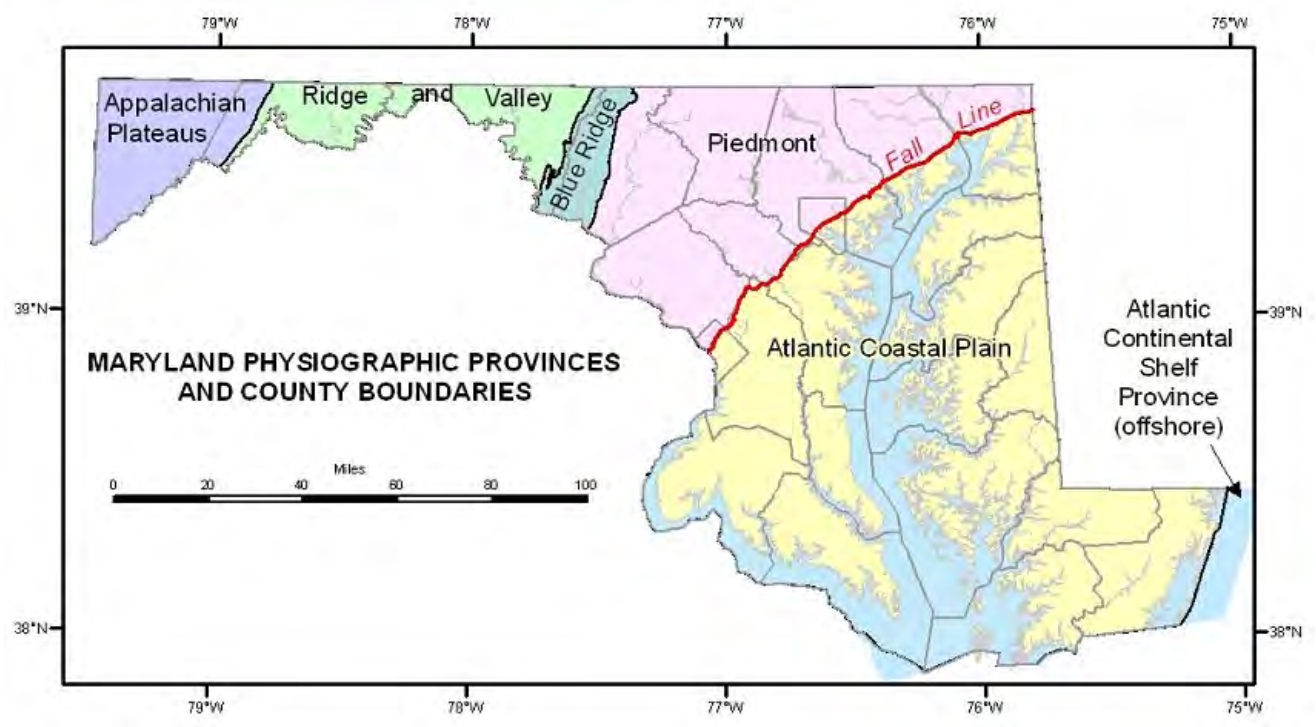
a rolling plain or "low hill" landscape. Hills are concentrated in the northern part of the County adjacent to the major stream valleys. The highest point in the County is 873 feet above sea level; the lowest point, 52 feet above sea level. The average elevation gradient is 29 feet per mile.

II.B. Climate:

Montgomery County, MD has a humid subtropical climate that is characterized by hot summers and cool winters with moderate amounts of precipitation throughout the year. Summers are generally very warm and humid, with daily maximum averaging in the mid-80s Fahrenheit. Winters are usually cool with occasional snowfall, although temperatures can dip into the low 20s Fahrenheit. Rainfall averages around 43 inches per year, making it one of the wettest counties in Maryland. On average, there are 201 sunny days per year in Montgomery County.

II.C. Geology:

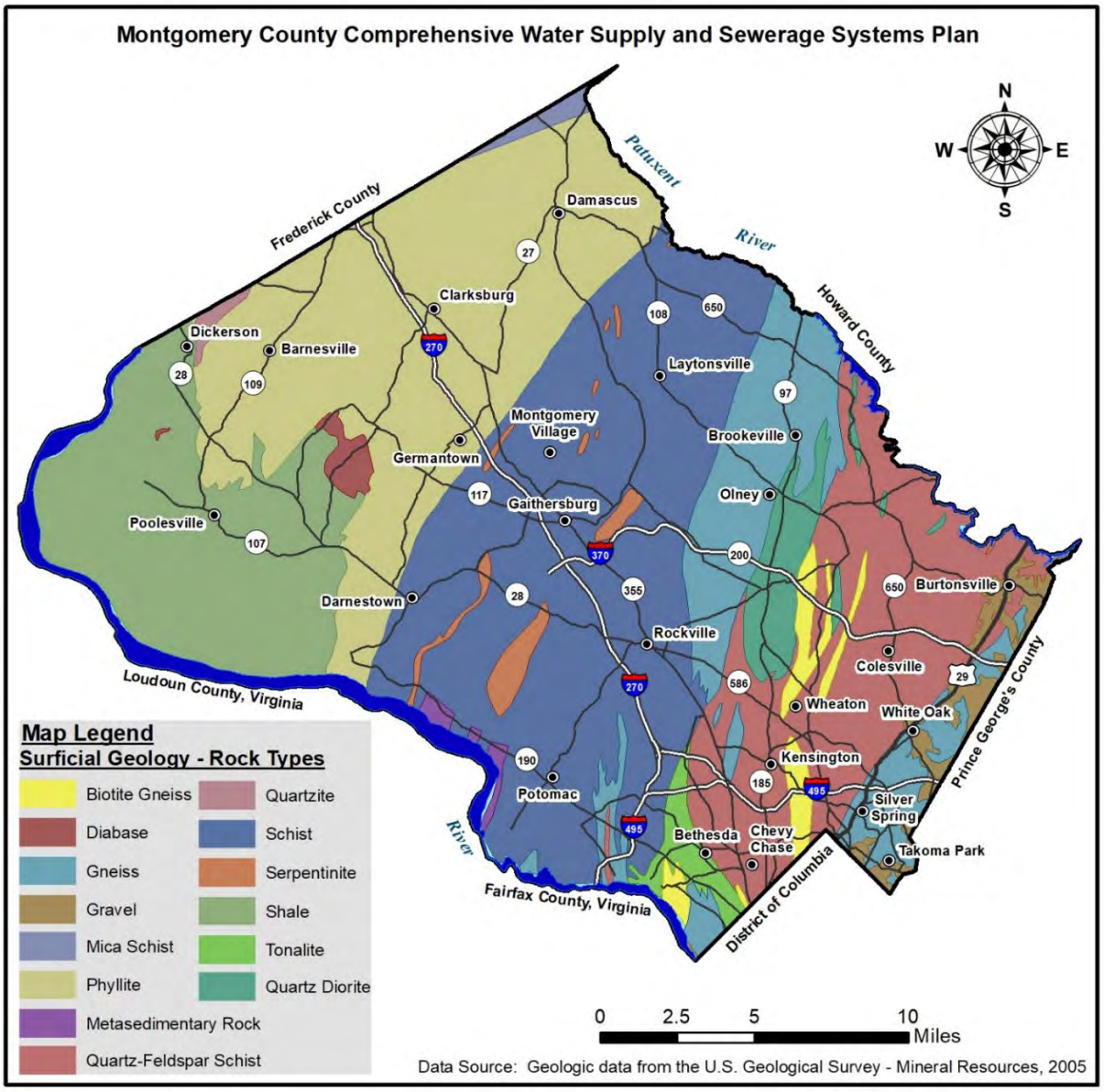
From the Atlantic coast on the east to the Appalachian Plateau on the west, Maryland has a great variety of geology and landforms. Maryland is part of six physiographic provinces (shown in the figure below). A physiographic province is a geographic area in which the geology (including lithology and structure) and climate history have resulted in landforms that are distinctly different from adjacent areas.



As shown the County lies almost entirely within the Piedmont physiographic province where the bedrock consists predominantly of metamorphic rocks of Paleozoic age.

Consolidated sedimentary rocks of Early Triassic age occupy a down-faulted basin in the western part of the County. On hills and ridges along the County's eastern border, small erosional remnants of unconsolidated Cretaceous sedimentary rocks extend westward from the Coastal Plain in Prince George's County. Please refer to Figure 2-2 for additional information.

Figure 2-2: Geologic Map



II.D. Soils:

A general description of Montgomery County soil types/groups and the areas where these soil types can be found are provided in Table 2-1.

Table 2-1: County Generalized Soils Descriptions

Soil Groups	Percent of County's Area	Description
Glenelg-Gaila-Occoquan	41%	Nearly level to strong sloping, well drained, deep and very deep soils that are loamy throughout. This soil type is found in the central part of the County and extends to the east and south. It is found on broad ridge-tops and side slopes.
Brinklow-Baile-Occoquan	16%	Nearly level to moderately steep, well and poorly drained, moderately deep soils that are loamy throughout. This soil type is found in the northern part of the County. It is found on broad ridge-tops and side slopes.
Urban land-Wheaton-Glenelg	16%	Nearly level to strongly sloping, well drained, very deep soils that are loamy throughout. This soil type is found in primarily in the Germantown area and in southern and eastern portions of the County. It is found on broad ridge-tops and side slopes.
Penn-Brentsville-Readington	14%	Nearly level to steep, well and moderately well drained, moderately deep and deep soils that are loamy throughout. This soil type is found in the western part of the County. It is found on broad ridge-tops and side slopes.
Blocktown-Brinklow-Linganore	10%	Gently sloping to steep, well drained and moderately deep soils that are loamy throughout. This soil type is found in the northern part of the County. It is found on broad ridge-tops and side slopes.
Chillum-Croom-Beltsville	3%	Nearly level to steep, well drained and moderately well drained, very deep soils. This soil type is found in the eastern part of the County along the Prince George's County line. It is found on broad ridge-tops and side slopes.

II.E. Water Resources:

The County's water resources affect many aspects of its water supply and wastewater management needs. Surface water flows, influenced by the underlying geology, have created the County's hills and valleys, establishing its watersheds. The resulting topography strongly influences the structure and alignment of wastewater collection systems and the need for various water supply pressure zones. Surface water resources provide the majority of the County's community water supply. Surface waters also receive treated flows from several water resource recovery facilities (wastewater treatment plants). Groundwater depth and availability strongly affects individual water supply and sewerage systems, municipal water systems dependent on wells (such as the Town of Poolesville), and also provides the base flow to surface waters and streams.

II.E.1. Groundwater:

Groundwater is an abundant, but finite natural resource that sustains the County's natural ecosystems. It is the source of crucial, continuous base flows to County's streams and wetlands as well as providing drinking water for about 10% of the County's residences.

As indicated previously, the County lies almost entirely within the Piedmont physiographic province where the bedrock consists predominantly of metamorphic rocks of Paleozoic

age. A good portion of the groundwater in these units occurs in the soil and weathered surface mantle which has an average thickness of 10-75 feet. Most groundwater is stored in cracks, fractures, joints, and pores of the underlying rock.
Groundwater in the Piedmont is predominantly derived from precipitation that percolates downward through the soil and rock until it reaches the water table (the point below which the ground is saturated with water). The saturated zone below the water table is called an aquifer. Most aquifers in the County are unconfined aquifers, meaning that there is no overlying impermeable layer to protect ground water from surface-based sources of contamination.

The average annual depth of the groundwater table in Montgomery County varies considerably from place to place depending on the type of geology, soil cover, soil, and the topographic situation, as well as the annual rainfall. For example, at an observation well at Fairland, in the Wissahickon schist of the eastern part of the County, average annual depth to groundwater is between 8 to 10 feet. The comparable depth at an observation well at Damascus in the Ijamsville phyllite, in a more rugged topography, is between 30-45 feet. In scattered wells in the Manassas (New Oxford) siltstones and sandstones, the water table lies at about 70-120 feet.

Due to hydrogeological characteristics, most parts of the County is not suitable for wells to cost-effectively provide enough water for municipal supply. Only the Town of Poolesville municipal water supply system depends on groundwater supply. Depending upon the host rock, groundwater well yields average from less than 1 gallon per minute to more than 25 gallons per minute. Under the County's regulations, permitted domestic wells must yield a minimum of 1 gallon per minute.

II.E.1.a. Maryland Piedmont and Poolesville Sole Source Aquifers:

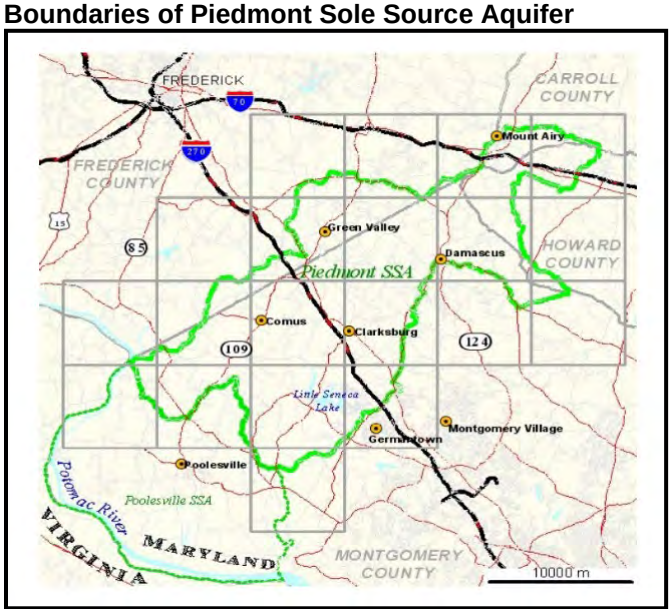
The Safe Drinking Water Act gives the U.S Environmental Protection Agency (EPA) the authority to designate aquifers which are the sole or principal drinking water source for an area, and which, if contaminated, would create a significant hazard to public health.

In August 27, 1980, EPA announced the designation of sections of western Montgomery County as part of the Maryland Piedmont Sole Source Aquifer (SSA). Many of the areas inside the Maryland Piedmont SSA is outside the County's water and sewer service area.

The EPA defines a Sole Source Aquifer (SSA) as one which supplies at least 50% of the drinking water consumed in the area overlying the aquifer. EPA guidelines also require that these areas have no alternative drinking water sources(s) which could physically, legally, and economically supply water to all who depend on the aquifer for drinking water. The Sole Source Aquifer Program provides federal overview of federally funded projects within SSA's. Projects that could potentially contaminate areas designated as SSA's cannot receive federal funds.

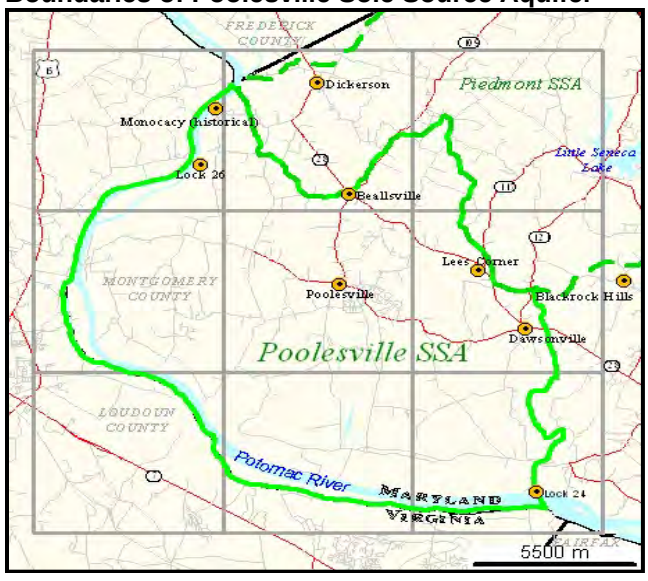
The boundaries of the Maryland Piedmont Sole Source Aquifer are shown below.

Boundaries of Piedmont Sole Source Aquifer



In 1998, the citizens of Poolesville, Maryland successfully petitioned for extending the Maryland Piedmont Sole Source Aquifer to include the Town of Poolesville as a Sole Source Aquifer. As a result, the Regional Administrator of Region III of the U.S. Environmental Protection Agency (EPA) determined that the portion of the Piedmont aquifer system that underlies Poolesville and the surrounding area in western Montgomery County, Maryland (denominated as "Poolesville Area Aquifer System") is the sole or principal source of drinking water for this area and if the aquifer system were contaminated would create a significant hazard to public health. The addition of the Poolesville Area Aquifer System to the existing SSA, shown in the following figure extended the Maryland Piedmont SSA from State Route MD28 (approximate boundary) to the Potomac River, between Little Monocacy River and Seneca Creek's confluence with the Potomac River.

Boundaries of Poolesville Sole Source Aquifer



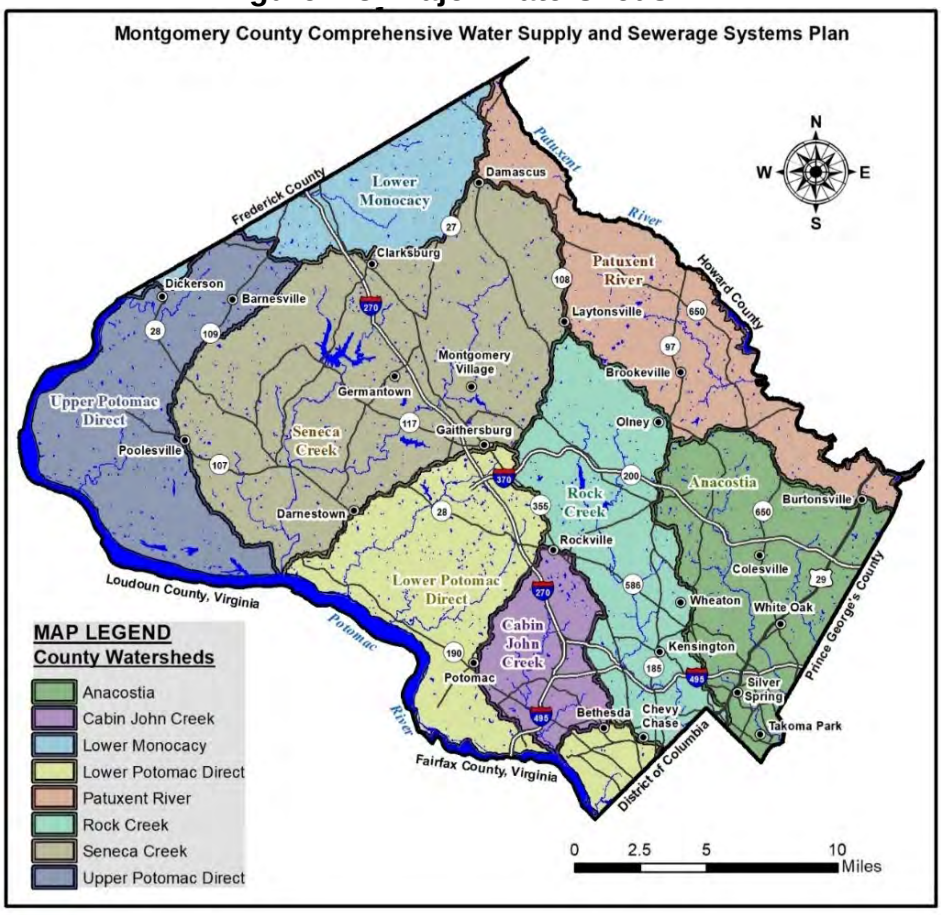
The aquifer system underlying the Poolesville area is within the Piedmont Lowland physiographic province. All municipal drinking water in the Poolesville area is supplied by groundwater which is extracted from the underlying aquifer system by a series of public water supply wells. Residents outside of Poolesville obtain their drinking water from private wells. (For more information on the SSA, see Chapter 3, section V.B.2).

II.E.2. Surface Water and Watersheds:

The County's rivers, lakes, and streams provide drinking water, recreational opportunities, and vital habitat for aquatic and terrestrial wildlife. Surface water resources from the Potomac and Patuxent Rivers provide the County's community water supply needs through WSSC Water and the City of Rockville water treatment facilities. Surface water comes from both groundwater influx, which provides the base flow in streams, and from precipitation events and related run-off from rain and snow, which provide additional flows in excess of the base flow. All water impoundments in the County, including large lakes and small ponds are human-made. The largest lakes were built for flood, stormwater control, and water supply. Ultimately, all waterways within the County flow into Chesapeake Bay.

As shown in Figure 2-3, surface waters in Montgomery County flow within 9 major watersheds, which include 1500 miles of streams flowing into four major rivers: the Anacostia, the Monocacy, the Patuxent, and the Potomac River.

Figure 2-3: Major Watersheds



The Potomac River borders the County to the west and southwest, the Patuxent River borders the County to the northeast. Twelve percent (12%) of the County drains to the Anacostia River which, in turn, drains to the Potomac River. Ten percent (10%) of the County drains to the Monocacy River which, in turn, drains to the Potomac River just upstream of the Montgomery-Frederick County border. Twelve percent (12%) of the County drains to the Patuxent River. The remaining sixty-six percent (66%) of the County drains directly into the Potomac River or one of its major tributaries within the County. The County's watersheds and their associated drainage areas are listed on Table 2-2

Table 2-2: County Watershed Drainage Areas

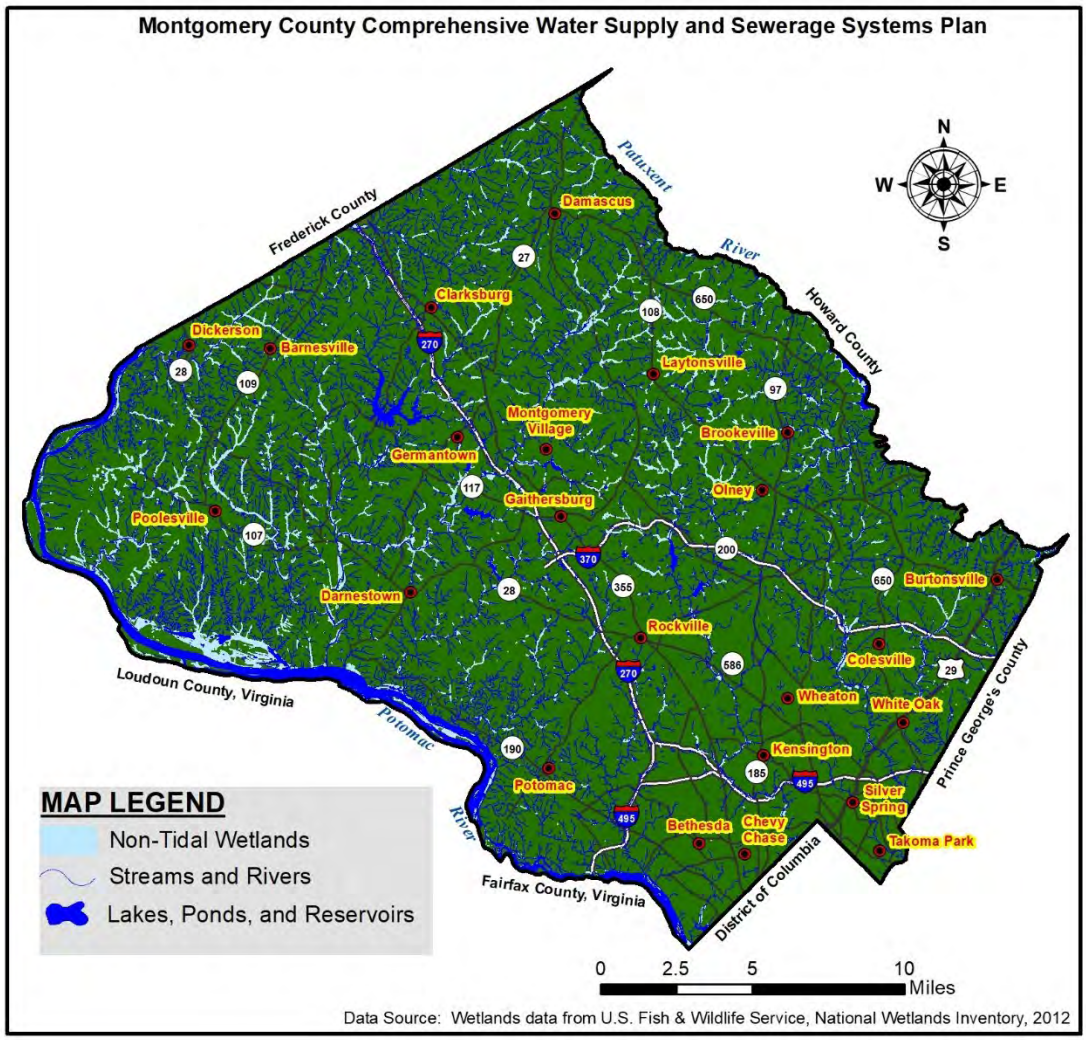
WATERSHED	ACERES	SQUIRE MILES
Anacostia River	38,864	60.72
Cabin John Creek	16,022	25.03
Lower Monocacy River	19,346	30.23
Lower Potomac Direct	39,709	62.05
Patuxent	38,515	60.18
Rock Creek	39,306	61.42
Seneca Creek	84,184	131.54
Upper Potomac Direct	39,684	62.01

The County's surface water drainage pattern provides a template for the alignment of much of its community sewer transmission main network. Most sewer mains operate by gravity and generally follow the "low flow" path downhill towards treatment or pumping facilities. This, of necessity, often requires the construction of sewer mains in close proximity to the County's rivers and streams. Surface waters also receive treated flows from the County's four publicly owned water resource recovery facilities (wastewater treatment plants) which include Seneca, Damascus, Poolesville and Hyattstown water resource recovery facilities.

II.E.3. Wetlands:

The important role of wetlands as natural filters in maintaining water quality is acknowledged at the federal, state, and local levels. It is recognized that loss of wetlands leads to decreased water quality protection, flood control, and wildlife habitat. Wetlands are vulnerable to off-site, indirect impacts such as hydrologic alterations and pollution. The County's Non-Tidal wetland areas are shown in Figure 2-4.

Figure 2-4: Non-Tidal Wetlands



Regulations regarding the definition of, and allowable impacts to wetlands, continue to evolve. Wetlands are defined by the Planning Board's *Guidelines for Environmental Management of Development in Montgomery County*, updated in July 2021, as "an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation."

Information on the location of major wetland areas in the county is available through National Fish and Wildlife Service maps. The M-NCPPC, Montgomery County Planning Department requires more accurate delineations of wetlands by a developer's engineer during the development review process. This detailed delineation is also required by federal and state agencies as a part of their wetland permit review processes.

II.E.4. State Water Use Class Designations:

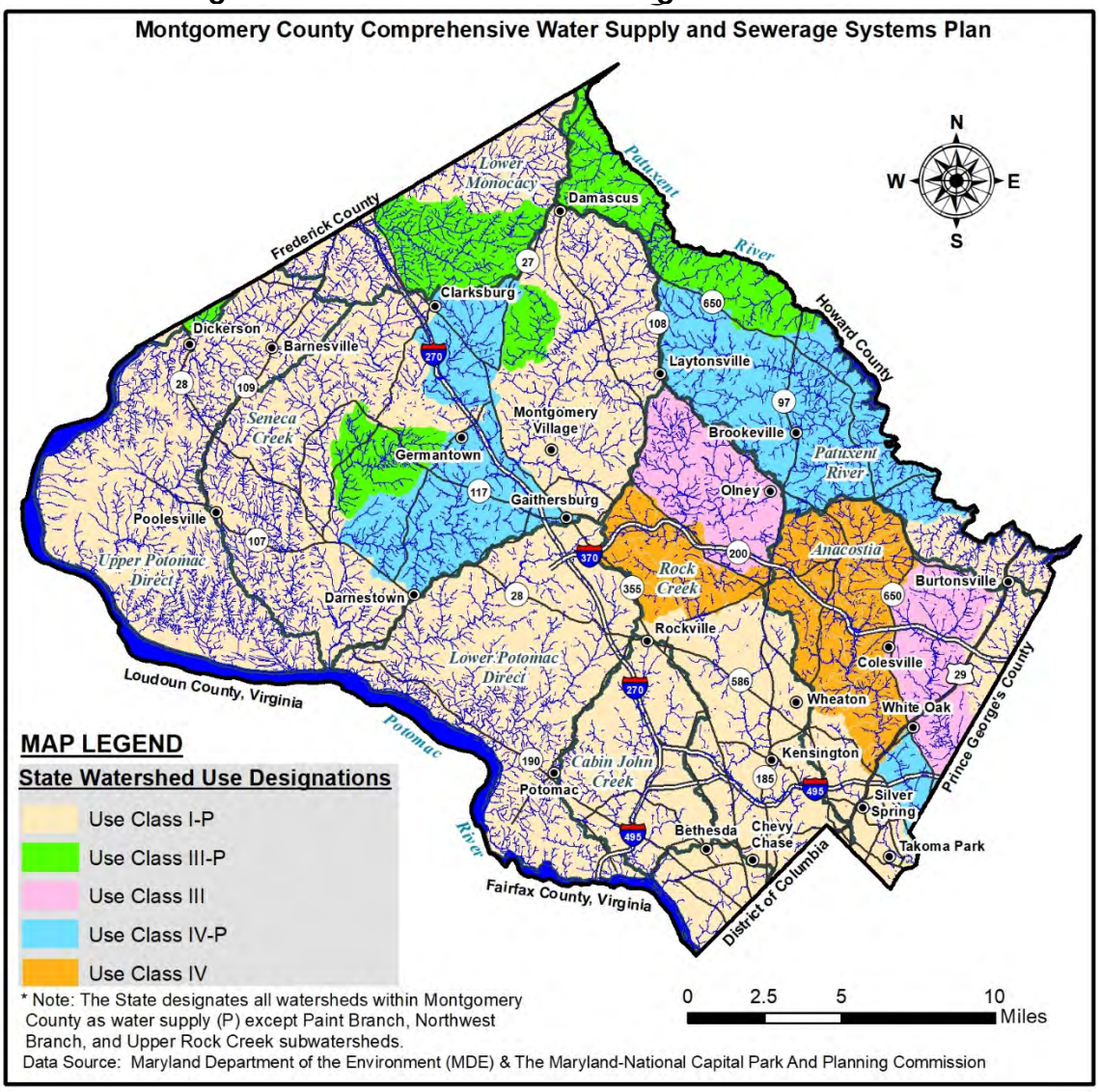
Maryland Department of the Environment (MDE) water quality standards place the surface waters of the State into water use designations with specific water quality criteria. The County's waters are covered under use designations listed below in Table 2-3 and mapped on Figure 2-5. More detailed information regarding the County's water quality conditions can be accessed at:

https://www.montgomerycountymd.gov/water/

Table 2-3: State Watershed Use Designations

Use Class Designation	Definition
Use Class III	**Natural trout waters:** Waters which are suitable for the growth and propagation of trout, and which are capable of supporting self-sustaining trout populations and their associated food organisms.
Use Class III-P	**Natural trout waters and public water supply:** Waters which include all uses identified for Use III waters and are used as a public water supply.
Use Class IV	**Recreational trout waters:** 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 (cold or warm waters).
Use Class IV-P	**Recreational trout waters and public water supply:** Waters which include all uses identified for Use IV waters and are used as a public water supply.
Use Class I	**Water contact recreation and protection of aquatic life:** 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; fishing; the growth and propagation of fish (other than trout); other aquatic life, and wildlife; agricultural water supply; and industrial water supply.
Use Class I-P	**Water contact recreation, protection of aquatic life and public water supply:** Waters which are suited for all uses identified in Use I and are used as a public water supply.
Use Class II	**Shellfish harvesting waters:** Waters where shellfish are propagated, stored or gathered for marketing purposes; and where there are actual or potential areas for the harvesting of oysters, softshell clams, hardshell clams, and brackish water clams. (*Note: There are no Use II waters within Montgomery County.*)

Figure 2-5: State Water Use Designations



II.E.5. Water Quality Programs:

Since the 1990s, Montgomery County has maintained a stream monitoring program measuring biological communities (fish and benthic macroinvertebrates), physical habitat, and other physiochemical parameters.

Fish and benthic macroinvertebrate communities are excellent indicators of water quality. They must survive and reproduce in the full range of water quality and habitat conditions that occur throughout the year. If water quality or habitat conditions are poor for too long, sensitive species cannot survive and won't be collected during sampling.

Over the course of 5-year cycles, samples are collected from all the County's sub-watersheds. The data from these samples, including the number and type of organisms found, are input into a multi-metric analysis called an Index of Biotic Integrity (IBI). Scores are generated from these IBIs categorize stream conditions as Poor, Fair, Good,

or Excellent.

- **Poor stream condition** is a combined IBI score (fish and bugs) of 0-41. Poor conditions most often occur in places where changes made by humans to the natural environment have substantially altered the structure of the biological community. These areas are often highly developed or urban and don't have good stormwater management.
- **Fair stream condition** is a combined IBI score of 42-63. These conditions occur most often in places anthropogenic stressors have impacted an area, but the area still supports viable biological communities. This condition describes many streams in suburban areas with some stormwater management, as well as areas that have had major agricultural impacts. The biological communities in fair streams are dominated by species that are tough and can survive in most conditions but may have a few organisms that are sensitive to stressors left.
- **Good stream condition** is a combined IBI score of 64-88. These conditions are often found in the less developed areas of the county, suburban areas with the latest stormwater management techniques, and areas with lots of protected land in their watershed. Many of the County's sensitive species can survive in these streams. Stream bugs like dragonflies and caddisflies are common. Fish like sculpins, darters, and longnose dace are common in these streams as well.
- **Excellent stream condition** must have a combined IBI score of 89-100. Most often, only highly forested watersheds with minimal development are in excellent condition. Here our most sensitive fish and stream bugs live. Fish like trout, shield darters, and comely shiners are found. Highly sensitive stream bugs like stoneflies and mayflies are common in these watersheds.

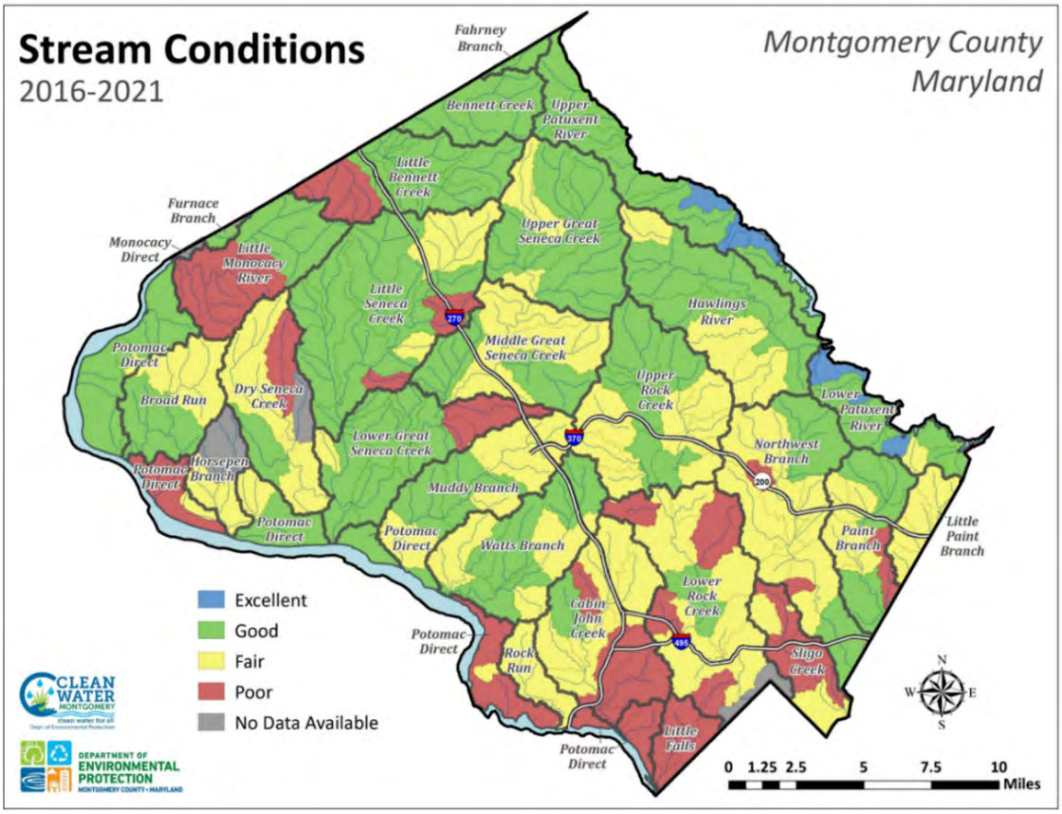
Based on the information collected and results, the County assesses and prioritizes the potential for improving conditions in degraded streams. Potential for improvements and work prioritization was based upon the degree of existing or planned watershed development and the estimated effectiveness of practical and appropriate management tools available for mitigation. The County's current ratings of stream conditions, based on biological monitoring, are shown in Figure 2-6.

The County has also long recognized the need to protect its groundwater resources. Approximately 80,000 County residents rely on groundwater as their only source of water supply.

In 2002, the DEP along with citizens, work groups, and the County Council, developed the Water Quality Protection Charge to fund the maintenance of stormwater management facilities and alleviate the dangerous impacts of stormwater pollution.

From 2003-2012, all residential properties and approximately 40% of nonresidential properties including non-profit organizations, places of worship and private schools paid the WQPC.

Figure 2-6: County's Stream Conditions



In order to meet state water quality regulatory requirements and to comply with the new State Law (Section 4-202-1 of the Environment Article of the Maryland Code), in 2013 Montgomery County expanded the WQPC to include all property owners in the County. Further, the WQPC was changed for residential properties from a flat rate to an equitable system based on how much impervious area is on the property.

II.E.5.a. County Water Quality Goals:

In November 1994, Montgomery County adopted water quality goals as follows (Montgomery County Code, Chapter 19, Article IV):

- Protect, maintain, and restore high quality chemical, physical, and biological conditions in the waters of the state in the County;
- Reverse the past trends of stream deterioration through improved water management practices;
- Maintain physical, chemical, biological, and stream habitat conditions in County streams that support aquatic life along with appropriate recreational, water supply, and other water uses.
- Restore County streams, damaged by inadequate water management practices of the past, by reestablishing the flow regime, chemistry, physical conditions, and biological diversity of natural stream systems as closely as possible.
- Help fulfill interjurisdictional commitments to restore and maintain the integrity of the Anacostia River, the Potomac River, the Patuxent River, and the Chesapeake Bay.
- Promote and support educational and volunteer initiatives that enhance public awareness and increase direct participation in stream stewardship and the

reduction of water pollution.

These goals are applied to guide the planning and implementation of the County's water resources protection programs.

II.E.5.b. Water Resources Management Programs:
Several local agencies administer coordinated programs to manage and protect County water resources. These programs help protect streams, water quality, and aquatic life by regulating and mitigating the impacts of land use change as it occurs in County watersheds. For example, requirements for stormwater management and Environmental Site Design applied at the time of new land development involve a variety of active and passive techniques to reduce the amount of surface runoff, sediment and pollutants generated and introduced into the stream system, and involve the use of small-scale stormwater management practices, nonstructural techniques, and better site planning to mimic natural hydrologic runoff characteristics and minimize the impact of development on water resources.. These measures are designed to maximize runoff infiltration into the soil profile and reduce peak runoff flows delivered to streams. They also help maintain stream base flows, limit erosion and other damage to stream habitat and aquatic resources and complement localized flood protection. Some programs regulate wells and septic systems to protect groundwater water quality. Others apply a variety of monitoring, inspection, enforcement, maintenance, and educational programs to track water quality and limit pollution discharges.

II.E.5.c. State and Federal Programs:
For most urban areas like Montgomery County, what goes into our storm drains (stormwater) makes its way into our local streams. Those streams are part of larger watersheds that lead to major rivers, like the Potomac River, and eventually the Chesapeake Bay. Because our waters are interconnected and not defined by county or state lines, the federal government regulates everything that goes through storm drain systems. The federal government regulates storm drains through a permit process called the National Pollutant Discharge Elimination System (NPDES), Municipal Separate Storm Sewer System (MS4) Permit Program.

The MS4 Permit Program was established to reduce stormwater pollution throughout the United States. The primary goal of the program is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. In Maryland, the U.S. Environmental Protection Agency (EPA) has delegated the authority for issuing all NPDES permits in the state, including the MS4 Permits, to the Maryland Department of the Environment (MDE).

The County's Permit requires prohibition of pollutants in stormwater and unauthorized discharges to the MS4, restoration of poor-quality streams by achieving required pollutant reduction, and other activities to help meet water quality protection goals. Runoff must be captured, slowed and treated by stormwater best management practices.

II.E.5.d Montgomery County’s MS4 Permit:
The Department of Environmental Protection is the lead department coordinating the County’s multi-department/agency response to meet the requirements of the MS4 Permit. The permit is a key driver of the County's strategic watershed management

program. The MS4 Permits are issued for a five-year cycle. The County's current MS4 Permit was issued on November 5, 2021, by the Maryland Department of the Environment and expires on November 4, 2026. During the permit term, the County is required to:

- Complete the restoration of 1,814 impervious acres that have not been treated to the maximum extent practicable by implementing stormwater BMPs, programmatic initiatives, or alternative control practices in accordance with the 2021 Accounting Guidance
- Show progress toward meeting the Total Maximum Daily Loads (TMDLs) Wasteload Allocations (WLAs) approved by the U.S. Environmental Protection Agency (EPA).
- Reduce trash and litter county-wide.
- Develop and implement a public outreach and education program that focuses on reducing stormwater pollution and litter
- Conduct preventive maintenance inspections of all Stormwater management facilities
- Implement laws and programs to reduce stormwater and pollution
- Submit annual progress reports to MDE.

II.E.5.e. Chesapeake Bay Protection Program:

In 1983, to directs and conducts the restoration of the Chesapeake Bay, a regional partnership was established among Maryland, Virginia, Pennsylvania, Washington D.C., the U.S. Environmental Protection Agency, and the Chesapeake Bay Commission.

Since its formation in 1983, its partners have used written agreements to guide the restoration of the nation's largest estuary and its watershed. Setting goals and tracking progress holds partners accountable for their work, while developing new agreements over time ensures our goals are aligned with the best available science to attain restoration success.

In 2009, it became clear that we needed a new agreement that would accelerate the pace of restoration and align federal directives with state and local goals to create a healthy Bay. Bay Program partners gathered input from residents, stakeholders, academic institutions, local governments and more to draft an inclusive, goal-oriented document that would address current and emerging environmental concerns.

In 2014, the Chesapeake Executive Council signed the Chesapeake Bay Watershed Agreement (amended October 5, 2022). Signatories include representatives from the entire watershed, committing for the first time the Bay's headwater states to full partnership in the Bay Program. This plan for collaboration across the Bay's political boundaries establishes goals and outcomes for the restoration of the Bay, its tributaries and the lands that surround them.

Montgomery County is a member of the Mid-Potomac Tributary Team and Patuxent River Commission which Maryland established to develop the agency/citizen/business partnerships necessary to meet this target in these Bay tributaries. Additional information on the principal government agencies which help manage the County's water resources is included in Chapter 1, Section I.E.

III. CULTURAL ENVIRONMENT:

This section presents data on projected growth and densities required for planning the public facilities addressed by this Plan. For example, the projected population of the County is a major determinant of future water supply demands and wastewater flows and needs. Projected changes in land use from rural categories to suburban and urban uses direct where community water and sewerage systems will be needed in the future. The changes can result in impervious areas, increasing peak stormwater runoff flows that affect streams and create stormwater management needs.

III.A. Legal Requirements and Other Policy Guidance:

Legal and policy guidance and requirements for water supply, sewerage, stormwater management, and rural sanitation planning are provided by Federal, State, and County governments and by regional agreements. The County government's major relevant policy vehicles are outlined below. The staging mechanisms of these policies and regulatory tools provide for managing the timing and extent of growth in the County. As an important element in growth management and staging, the Comprehensive Water Supply and Sewerage Systems Plan (CWSP) accounts for the land use plans and staging policies of individual areas of the County, for the current status of development in each area, and for the future expectations of population, employment, and housing trends. In this way, the CWSP can project the County's future water supply and sewerage systems needs and coordinate those needs with development in the County.

III.A.1. General Plan: The General Plan provides a comprehensive framework for guiding physical development and managing limited resources in the County. The main purpose of the General Plan includes:

- the general location, function, intensity, and pattern of various land uses,
- provides direction for integrating future development and redevelopment with existing development,
- addresses the relationship between human activity and the built and natural environment,
- addresses the varying needs and desires of a diverse and changing County population and economic community,
- promotes connections among all areas of the County and between the County and the region.

When Montgomery County adopted its first general plan, known as the Wedges and Corridors Plan, in 1964, much of the county was undeveloped. The 1964 Plan, as modified by "refinements" adopted in 1969 and 1993, embraced many of the principles and ideas that are still of value today. The latest comprehensive update to the General Plan, called Thrive Montgomery 2050, was approved by the County Council in October 2022. It serves as a framework for the county's growth within a thirty-year horizon. It sets a vision for the county and encompasses broad, countywide policy recommendations for land use, zoning, housing, the economy, equity, transportation, parks and open space, the environment, and historic resources. These recommendations provide guidance for future master plans, county and state capital improvement processes, and other public and private initiatives that influence land use and planning in the county.

Thrive Montgomery 2050 does not abandon or reject the wedges and corridors concept but instead modernizes it to remain relevant. Area master plans, sector plans, and countywide functional plans will remain valid until modified pursuant to the guidance provided by Thrive Montgomery 2050. Like the previous general plan, its broad policy recommendations pave the way for future actions, such as amendments to other plans, policies, and development rules. Thrive Montgomery 2050 is designed to be flexible and adaptable to changing circumstances. It is designed to provide long-term guiding principles and objectives that can deal with a constantly changing economic, social, and environmental landscape, The emphasis is on focusing growth, connecting communities, reinvigorating the eastern part of the county, and refining and recommitting to a compact footprint.

The concept of corridor-focused growth is a fundamental organizing element for Thrive Montgomery 2050, as it recognizes not only that intensively developed centers of activity and preservation of land both play a vital role in our quality of life but that neither pattern can exist without the other. This refined vision is depicted conceptually in Thrive Montgomery 2050's Growth Map (Figure 2-7).

The Growth Map reflects current land use and is representative of the location and types of growth expected through 2050. The corridors and centers shown on the map or fitting the descriptions provided below, however, may evolve over time through future approved and adopted master plans and functional master plans.

The Corridor-Focused Growth area should have the largest share of new growth. It encompasses the most developed part of the county with highest-density population and employment centers, and the infrastructure to support existing and new development.

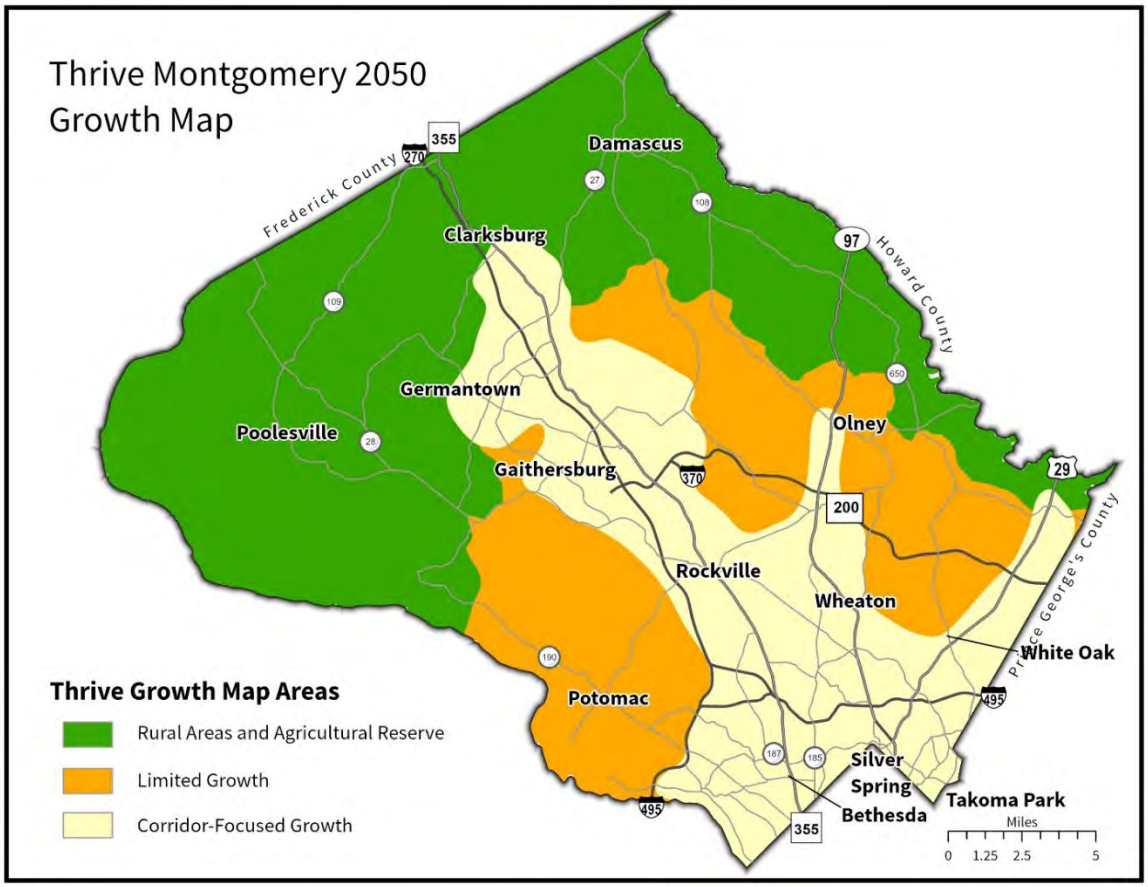
The Limited Growth area contains mainly suburban residential communities where limited, organic growth is envisioned to meet localized needs for services, provide a diverse range of housing choices, and increase racial and socioeconomic integration to achieve Complete Communities.

Rural Areas and the Agricultural Reserve will continue to be dedicated primarily to agriculture, rural open space, and environmental preservation. It can absorb some growth as agriculture evolves and existing residential communities' needs change over time. The link below provides access to the final version of the Thrive Montgomery 2050 plan.

https://montgomeryplanning.org/planning/master-plan-list/general-plans/thrive-montgomery-2050/

The General Plan is an evolving and dynamic policy document containing generalized concepts that provide the basis for more specific area master plans, functional plans, and sector plans. Each of these master plans, sector plans, and functional plans, after approval by the County Council and adoption by the M-NCPPC, constitutes an amendment to the General Plan. Master plans can provide specific water and sewer policies which are then implemented by the CSWP. As the county's longest-range and most visionary document, the General Plan provides a broad image for the county's evolution and establishes a framework to make that vision become a reality. It is specific enough to provide clear guidance for realizing its vision, while retaining enough flexibility to respond to unforeseeable circumstances as they arise.

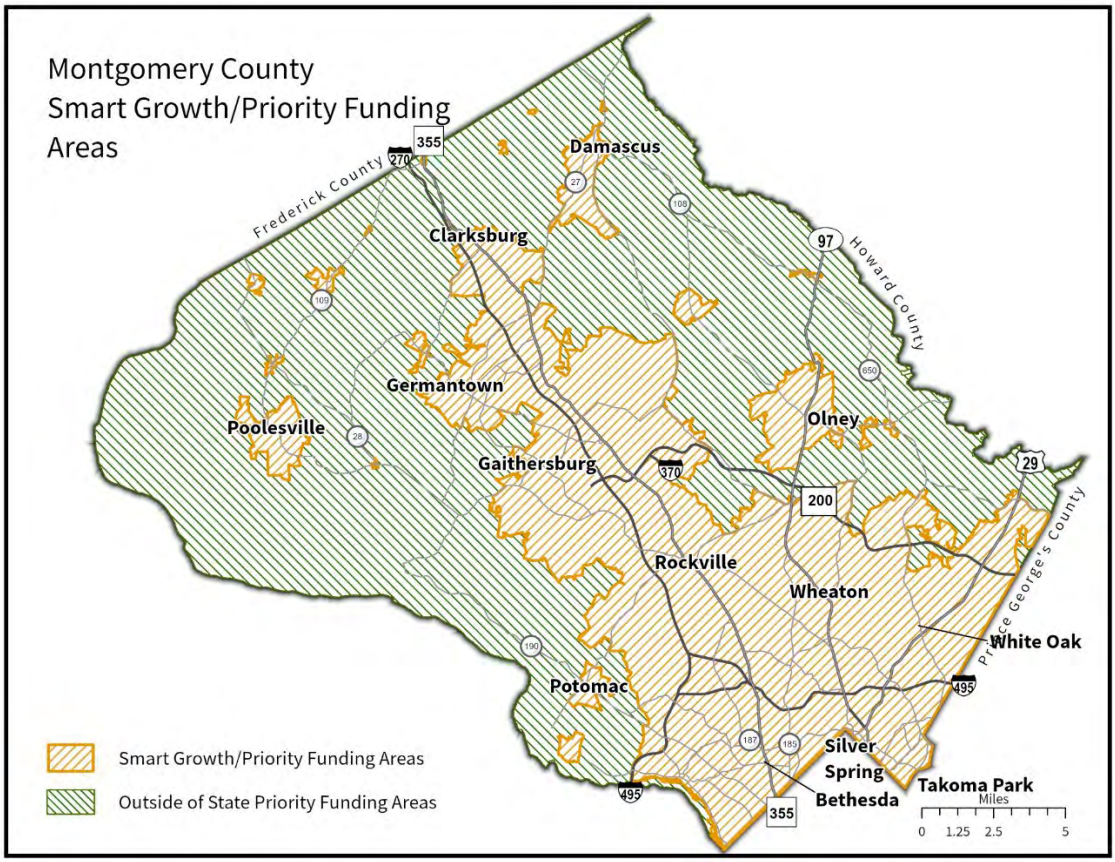
Figure 2-7: Thrive Montgomery 2050 Growth Map



One of the main objectives of the CSWP is to plan for community service to implement and reinforce the updated Wedges and Corridors Concept in Thrive Montgomery 2050. Wedge preservation policies are complemented by the limitation of community water and sewer service, except as may be necessary to resolve public health problems and permit limited expansion of existing settlements.

The Wedges and Corridors concept reinforces and coordinates closely with Maryland's Smart Growth program. Under the Smart Growth Priority Funding Areas Act of 1997, the program's purpose is to limit sprawl development by directing State funding to areas where local governments want State investment to support future growth: higher-density development areas, redevelopment areas, and municipalities identified as Priority Funding areas. The legislation covers growth-related projects under most State programs that encourage or support growth and development. These can include highways, water and sewer construction, economic development assistance, and State leases or construction of new office facilities. In practice, State funding for water and sewer infrastructure in Montgomery County is primarily focused on improvements to water filtration and water resource recovery facilities. In following the guidance of the General Plan and its accompanying local area master and sector plans, this Water and Sewer Plan supports the Smart Growth program. The County's designated State Smart Growth/Priority Funding areas are shown in Figure 2-8.

Figure 2-8: Smart Growth Areas



III.A.2. Water Resources Element for the General Plan: The Water Resources Element (WRE) is one of several major new local planning requirements added to state law in 2006. Section 1.03 (iii) of Article 66B of the Annotated Code of Maryland mandates that all Maryland counties and municipalities that exercise planning and zoning authority prepare and adopt a water resources element in their comprehensive plans.

The purpose of the Water Resources Element is to ensure that future County and municipal comprehensive plans and opportunities and limitations presented by local and regional water resources. WREs are intended to improve local jurisdictions' contribution to the protection of state land and water resources; to the protection of public health, safety and welfare; and to meeting local and state smart growth policies. It provides a link between the Land Use Plan and plans for the provision of drinking water supplies, wastewater treatment and discharge and capacity and stormwater management.

The County fulfilled its WRE requirement with the Water Resources Functional Master Plan (WRFMP), which amends the County's General Plan. The approved and adopted WRFMP provides information on County water and sewer service capacity in light of planned growth to 2030, summarizes an estimate of nutrient loadings on watersheds for existing and future conditions, and identifies policies and recommendations that are needed to maintain adequate drinking water supply and wastewater treatment capacity to

2030, and meet water quality regulatory requirements as the County continue to grow. The WRFMP, plus other related documents, can be accessed online at:

http://www.montgomeryplanning.org/environment/water_resources_plan/index.shtm

III.A.3. Staging Plans and Policies: Guidance for the staging of development is contained in the General Plan, in the Annual Comprehensive Planning Policies Report, in various master plans, and in policies developed to guide the administration of the Adequate Public Facilities Ordinance.

III.A.4. Adequate Public Facilities Ordinance: The Adequate Public Facilities Ordinance (an adjunct to the Subdivision Ordinance) places conditions on the County Planning Board's subdivision or recordation of land based on the availability of existing and programmed public facilities, such as transportation systems, water and sewerage systems, schools, police, fire and health facilities.

III.A.5. Capital Improvements Program: The Capital Improvements Program (CIP) is the document through which the County government decides the extent and timing of the provision of its public facilities. This is a six-year planning document that identifies the extent, timing, and funding of approved capital projects. The water supply and sewerage systems capital planning originate at WSSC Water with coordination with County agencies. This WSSC Water CIP is reviewed and approved jointly by both Prince George's and Montgomery County councils. Appendix A provides a listing and brief description of currently approved capital water supply and sewerage systems projects throughout the County.

III.B. Land use and Zoning:

The amount of land in Montgomery County is fixed; how it is used is not. Every piece of land in the County is subject to zoning laws that determine how the land can be used and what public facilities and amenities are needed to provide service to the community. The County Council is the final authority on land use matters. The Council approves changes in the Zoning Ordinance.

The land area of the County is approximately 505 square miles, or about 323,000 acres. The county is populated by one million people and projected to gain an additional 200,000 residents in the next 25 years. It has settled into a slower growth phase as dwindling supplies of developable land and burdened transportation capacity no longer sustain rapid growth. Only 18 percent of the County is available for development on undeveloped land.

The pattern of residential growth in the County has basically followed the Wedges and Corridors Concept since the adoption of the General Plan. Figures 2-F9 and 2-F10 represent the geographic distribution of households, population densities, and general boundaries of the latest community water and sewer envelopes. Approximately 97% of the population in Montgomery County is served by community water and approximately 93% of the population in Montgomery County is served by community sewer.

Figure 2-9 –Zoning and General Community Water Service Envelope

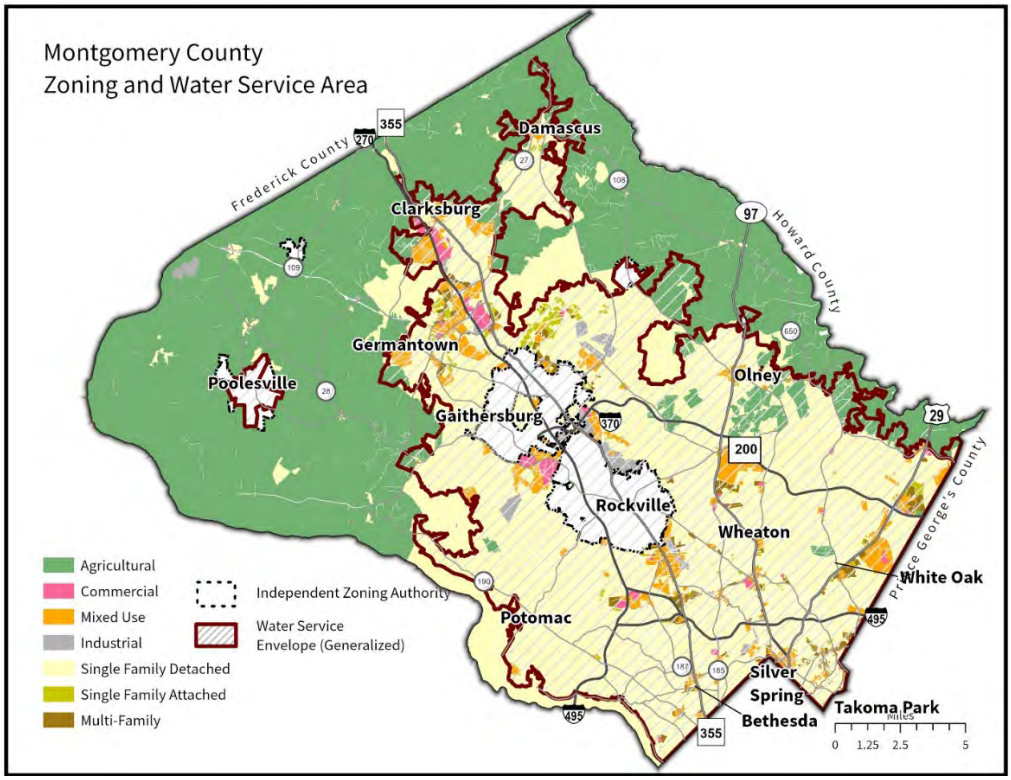
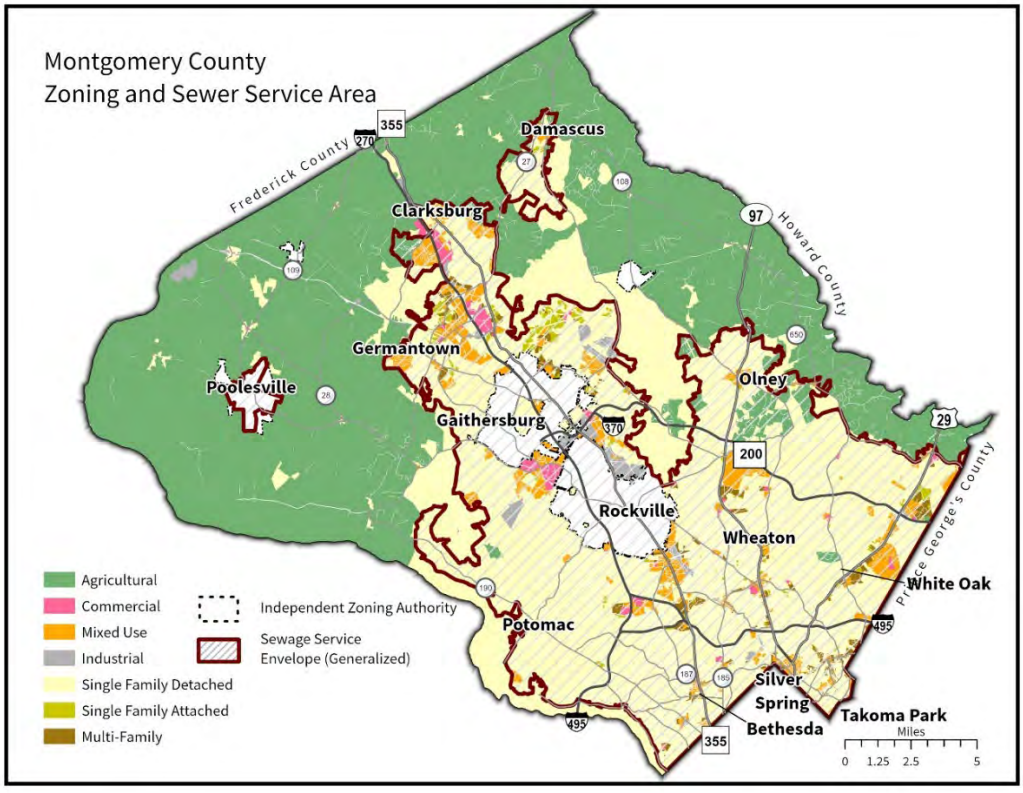


Figure 2-10 –Zoning and General Community Sewerage Service Envelope

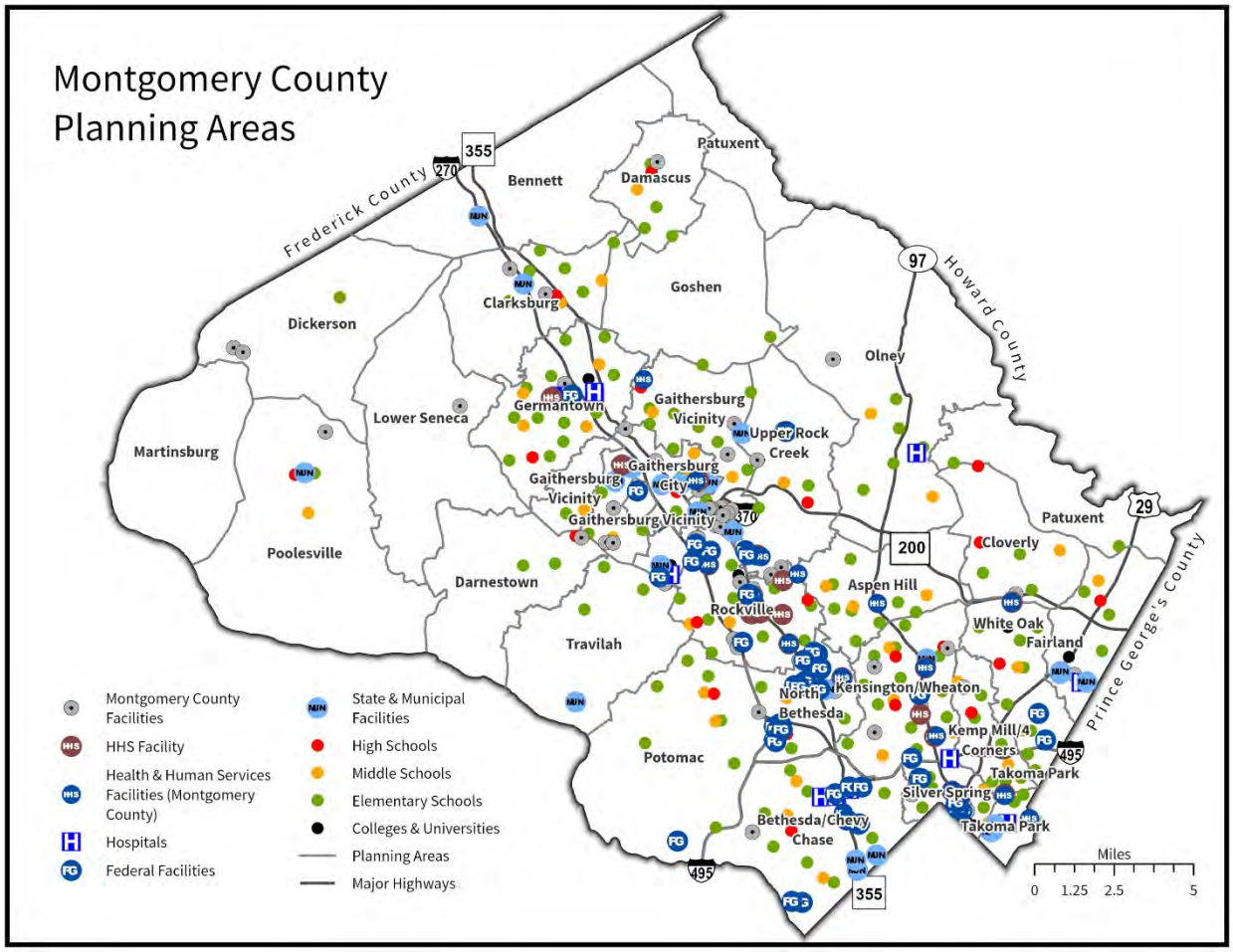


III.B.1 Planning Areas:

The Montgomery County Planning Department is responsible for developing master plans for development and analyzing various types of information to help public officials plan for Montgomery County's future. Each community within Montgomery County has a master plan that creates a comprehensive view of land use trends and future development.

Plans recommend land uses, zoning, transportation, schools, parks, libraries, and fire and police stations as well as address housing, historic preservation, pedestrian and trail systems and environmental issues. The County's Planning Areas are shown in Figure 2-11. Also, shown in Figure 2-11 are major public institutions and facilities such as public schools, hospitals, and major government complexes. A listing of all major public institutions and facilities can be found in Appendix E.

Figure 2 – 11: M-NCPPC Planning Areas



III.C. DEMOGRAPHICS:

Population dynamics and forecasting is one of the main factors in developing plans for the County's future water supply and sewerage system needs. In cooperation with the Metropolitan Washington Council of Governments (MWCOG), the Research and Special Projects Division of M-NCPPC produces long-range forecasts of population, employment and housing for Montgomery County and areas within the County. Forecasts are based on analysis of data from a variety of sources, including local development, population and economic trends; models of the Washington, D.C. area population and economic base; and published state and federal statistical resources.

The latest forecasts (Round 10.0 Cooperative Forecasting) of population, households, and employment were developed and published by MWCOG in June 2023 through a cooperative process involving the Council of Governments, its member jurisdictions, the Baltimore region, the states and other planning agencies.

Table 2-4 includes a summary of Population, households and at-place (place of work) employment data for Montgomery County produced through Round 10 Cooperative

Forecasting. Data is presented in five-year increments from 2020 (Base Year) through 2050. For the most current population forecasting publications or to obtain additional details on MWCOG Round 10 Cooperative Forecasting, please refer to the following link:
https://www.mwcog.org/documents/2023/11/03/cooperative-forecasts-employment-population-and-household-forecasts-by-transportation-analysis-zone-cooperative-forecast-demographics-housing-population/

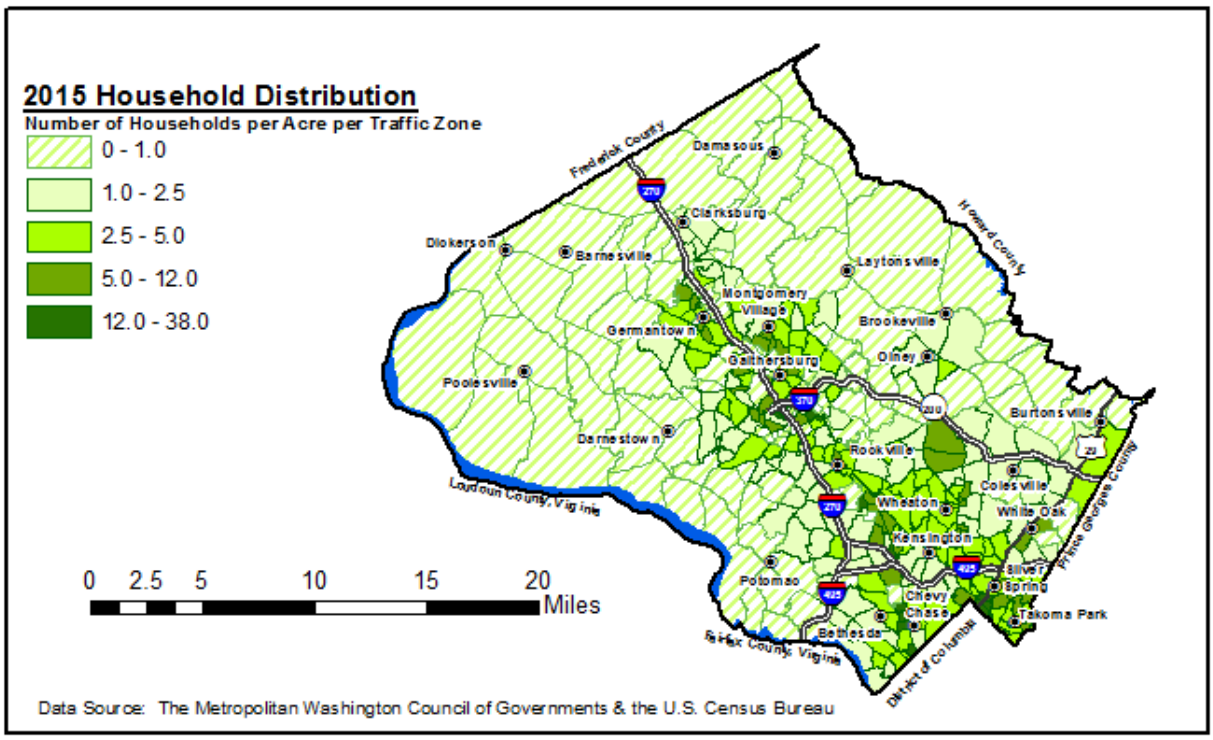
Also, for a more specific population trends in different jurisdictions or planning areas within Montgomery County, please refer to:
https://montgomeryplanning.org/tools/research/forecasting/

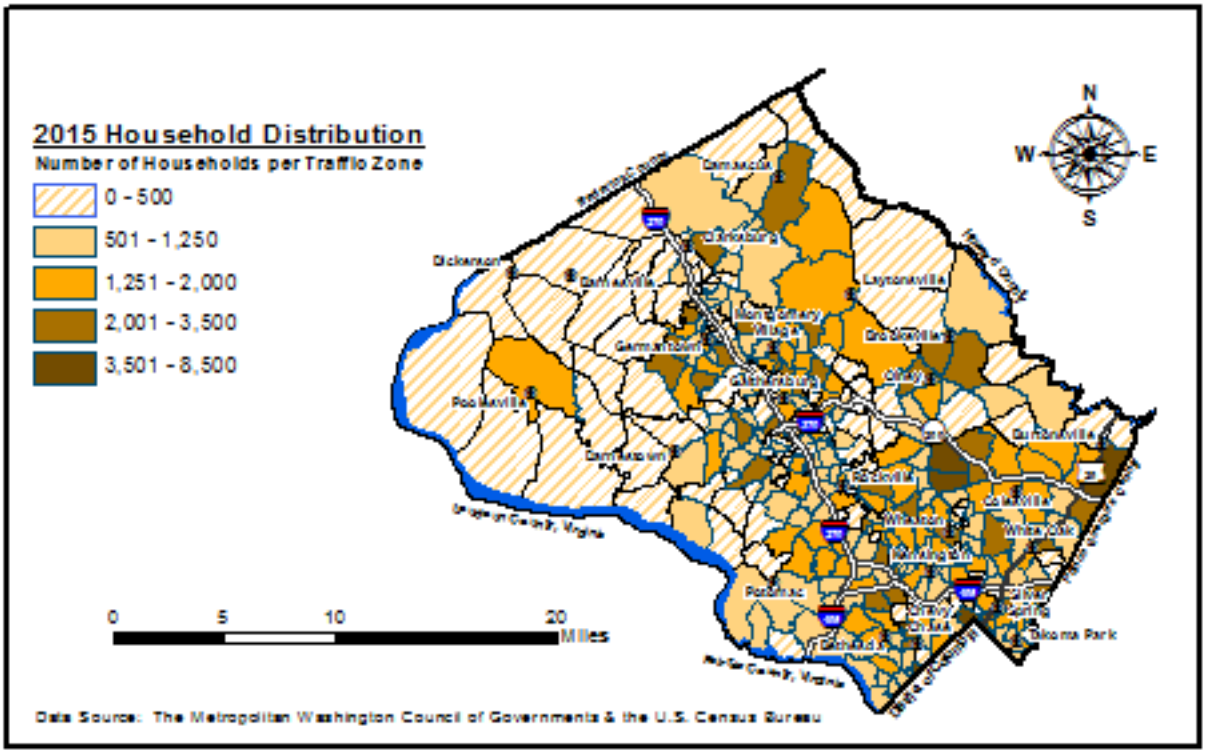
Table 2-4: County-Wide Population, Household and Employment Forecasts

Year	2020	2025	2030	2035	2040	2045	2050
Total Population	1,061,200	1,083,000	1,118,000	1,153,900	1,189,600	1,222,200	1,250,700
Households	386,600	398,400	416,500	434,100	450,000	463,200	474,300
At-Place Employment	493,600	522,900	545,600	568,300	591,000	613,800	636,500

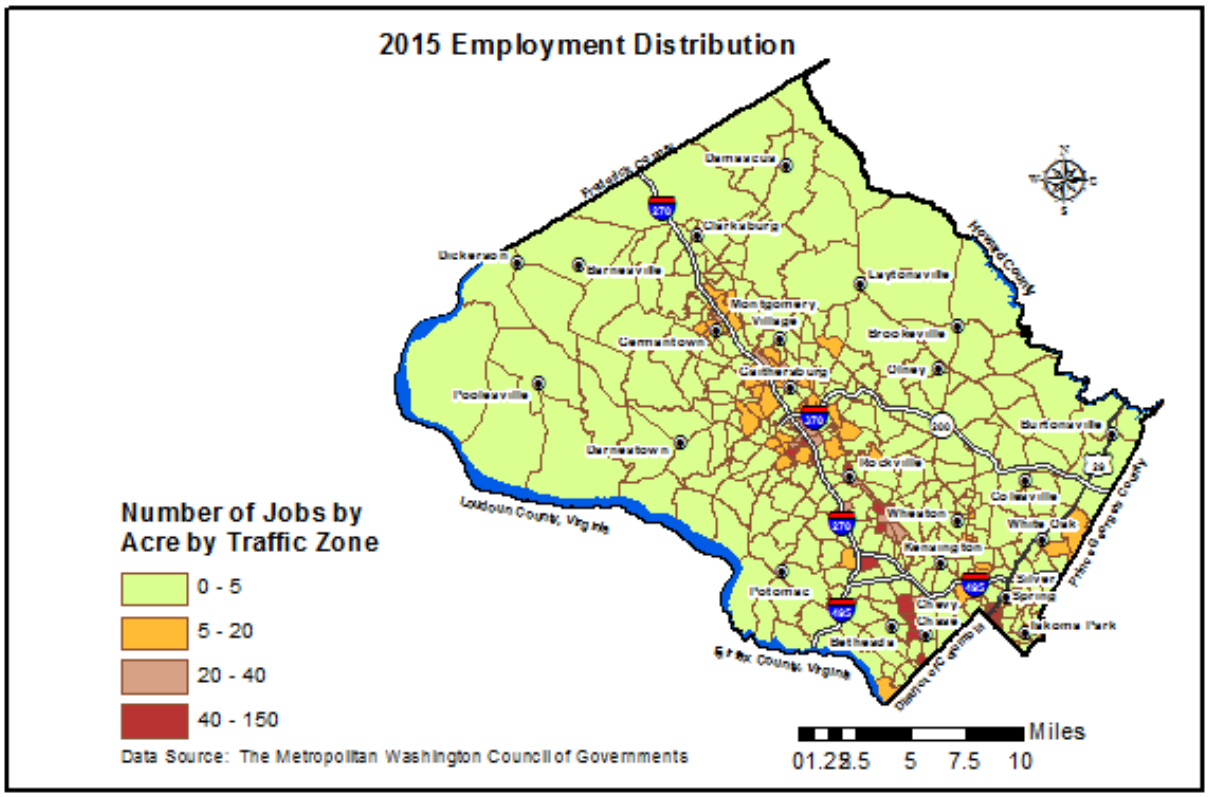
Note: "Total Population" includes all residential population from households and institutions.
Source: Round 10 Forecast (M-NCPPC, Research and Technology Center, & MWCOG – June 2023)

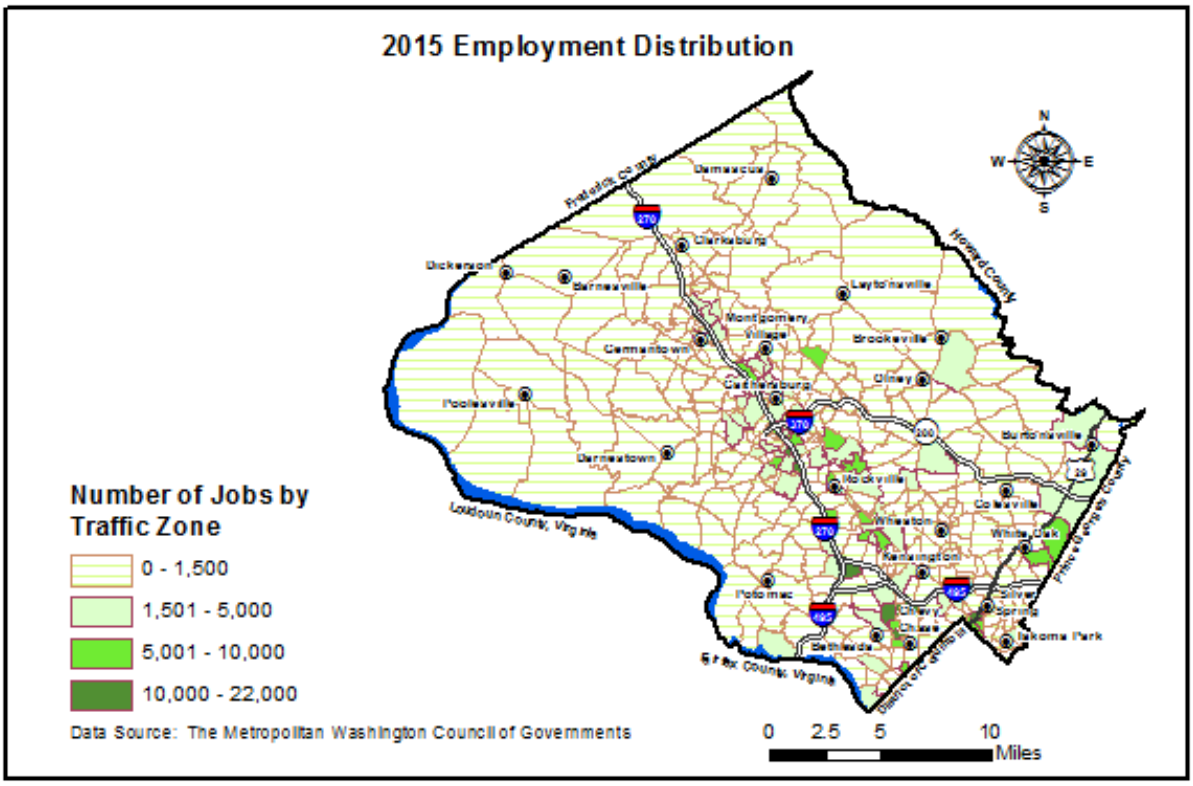
As shown in the following figures and consistent with past trends, the I-270 Corridor is expected to lead all other planning areas in household population growth over the 2015 to 2045 forecast period, both in the rate of growth and in actual household population. Most of this population growth will occur in areas with sanitary service from existing or proposed community water and sewerage systems.





Also, the distribution of employment locations in the County has followed the Wedges and Corridor pattern of the General Plan, as illustrated in the following figures.


2015 Employment Distribution
Number of Jobs by Acre by Traffic Zone
0 - 5
5 - 20
20 - 40
40 - 150
Data Source: The Metropolitan Washington Council of Governments
Miles
0 1.25 2.5 5 7.5 10
Frederick County
Howard County
Prince George's County
Loudoun County, Virginia
Fairfax County, Virginia
District of Columbia
Damascus
Clarksburg
Dickerson
Barnesville
Laytonsville
Montgomery Village
Germantown
Brookeville
Gaithersburg
Olney
Poolesville
Burtonsville
Darnestown
Rockville
Colesville
Wheaton
White Oak
Kensington
Potomac
Silver Spring
Chevy Chase
Takoma Park
Bethesda


2015 Employment Distribution
Number of Jobs by Traffic Zone
0 - 1,500
1,501 - 5,000
5,001 - 10,000
10,000 - 22,000
Data Source: The Metropolitan Washington Council of Governments
Miles
0 2.5 5 10
N
W
E
S
Frederick County
Howard County
Prince George's County
Loudoun County, Virginia
Fairfax County, Virginia
District of Columbia
Damascus
Clarksburg
Dickerson
Barnesville
Laytonsville
Montgomery Village
Germantown
Brookeville
Gaithersburg
Olney
Poolesville
Burtonsville
Darnestown
Rockville
Colesville
Wheaton
White Oak
Kensington
Potomac
Silver Spring
Chevy Chase
Takoma Park
Bethesda

The darkest patterns indicate the highest concentration of jobs. Traffic zones with more than 5,000 jobs are generally located in the Urban/Suburban Ring and in the I-270 Corridor. In the Ring, the highest concentrations are in the four central business districts, the City of Rockville, and the Rock Spring and West Farm office/industrial park areas. Employment is generally intense throughout the I-270 Corridor and centered along I-270 for the most part, with the Airpark to the northeast the most distant intensive location. In addition, the larger town and the satellite communities of Olney and Damascus have significant numbers of jobs, generally providing goods and services to local residents.

CHAPTER 3

WATER SUPPLY SYSTEMS

CHAPTER 3: WATER SUPPLY SYSTEMS

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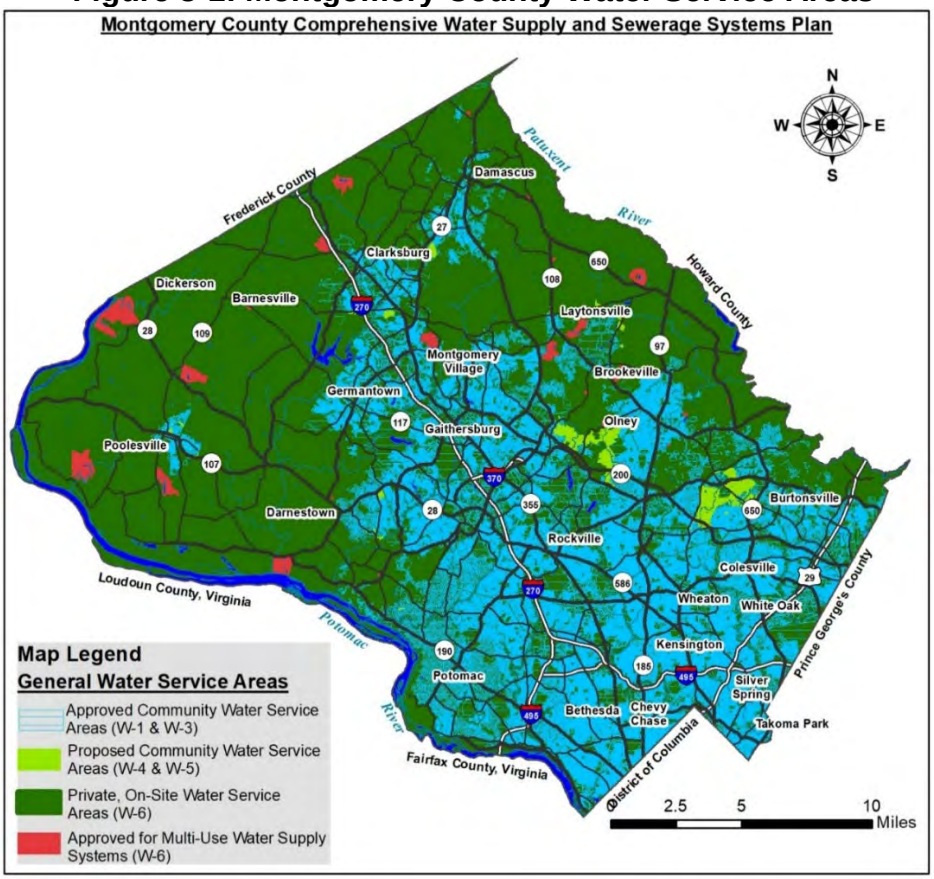
I: INTRODUCTION

This chapter addresses the County's water supply, demand, treatment, and distribution system. It provides background information on major water supply facilities that have been approved by various federal, state, and local agencies in to provide for the mid- and long-range water supply needs of the County and the Washington Metropolitan Region. This chapter also provides information addressing water consumption, water system transmission, storage facilities, planning, and financing issues, and projected water treatment and area distribution systems' needs. As part of a long-term strategy to provide adequate service to increasing regional population and reducing treatment costs, this Plan recognizes the importance of protecting the quality of water supply resources.

I.A: Water Service Area Categories:

As discussed in Chapter 1, this Plan classifies all areas of the county into one of five category designations for water service areas. The categories range from areas currently served by community systems (W-1), to areas where improvements to or construction of new community systems will be planned in the future (W-3, W-4, and W-5), to areas where there is no planned community service (W-6). Note that in practice, Montgomery County does not use category W-2, which the State uses to designate areas where community water system projects are in the final planning stages. Montgomery County does not find this planning designation useful due to its short duration relative to that of this Planning document. Figure 3-1 shows a generalized distribution of water service area categories throughout the county. For additional detailed information on water service categories, please refer to Chapter 1 section II.D.

Figure 3-1: Montgomery County Water Service Areas



I.B: Sanitary Service Areas:

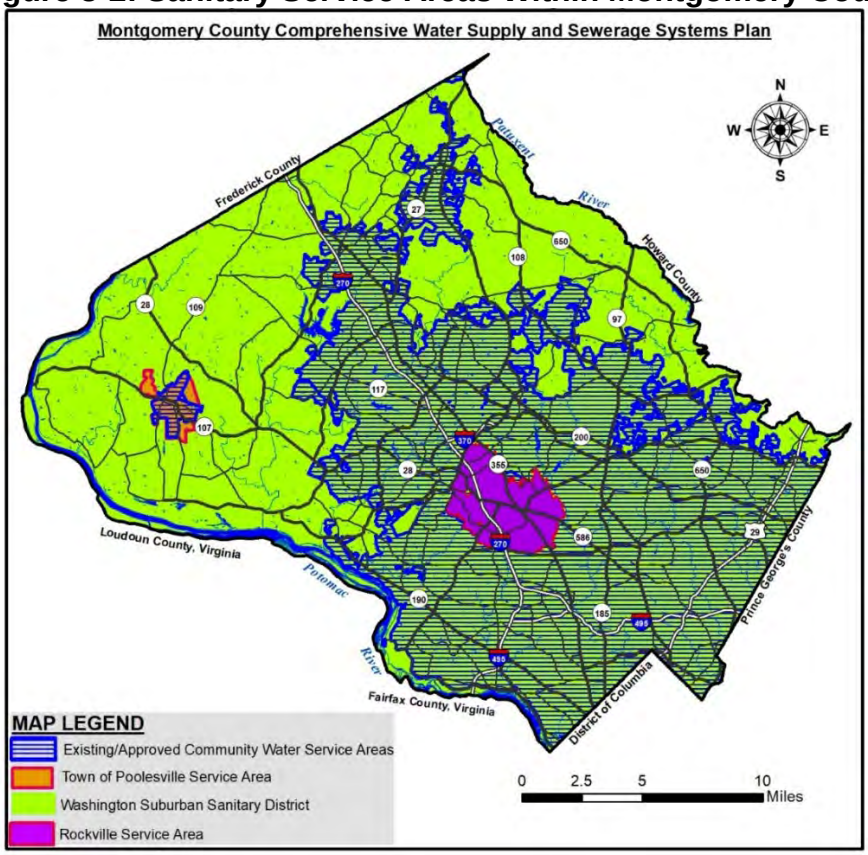
Guided by the policies included in this Plan, the provision of community water service within Montgomery County generally follows the patterns initially established by the County's General Plan Thrive Montgomery 2050 for land use and development. The General Plan is further refined by area master plans u. Community water and sewer service was initially established and planned for the southern part of the county, sometimes referred to as the "urban ring" that follows the Interstate 495 Capital Beltway. Community service then extends north along three major transportation corridors planned for higher density development:

- The U.S. Route 29 (Colesville Road/Columbia Pike) corridor to Burtonsville.
- The State Route 97 (Georgia Avenue) corridor to Olney.
- The U.S. Interstate 270/State Route 27 (Ridge Road) corridor to Clarksburg and Damascus.

County water service policies also allow for some limited provision of community service to lower-density areas adjacent to and between these major corridors.

The County is divided into three publicly owned and operated sanitary service areas or districts. As shown in Figure 3-2, these districts are: The Washington Suburban Sanitary District (WSSD), the largest system, serving most of the county; and two smaller municipal districts, one owned and operated by the City of Rockville and the other by the Town of Poolesville. Each district has its own designated water supply source(s), water treatment facilities, and water distribution systems; these districts also manage wastewater services. Information for the districts serving Rockville and Poolesville was provided primarily by those municipalities and incorporated into this Plan consistent with State law.

Figure 3-2: Sanitary Service Areas Within Montgomery County



This chapter addresses each of these districts independently, starting with the WSSD, with a primary focus on community water systems and service. Within each sanitary district, some properties are served by individual, on-site systems, rather than community systems. Most of these individual systems are within the WSSD, though they are not served by WSSC Water. Information on individual, on-site systems, or rural sanitation service (individual wells), follows at the end of this chapter.

II: WASHINGTON SUBURBAN SANITARY DISTRICT (WSSD)

The WSSD, established by State law in 1918, includes most of Montgomery and Prince George's counties, and encompasses a total area of approximately 1000 square miles in both counties. Although the WSSD covers the majority of Montgomery County, it does not provide community water and sewer service everywhere within the district.

Community service in the WSSD depends on surface water supply from two major rivers: The Potomac River and the Patuxent River. Elsewhere, primarily in the western and northeastern parts of the county, water service depends on individual, on-site systems, which utilize groundwater resources. Under an agreement with WSSC Water, Frederick County supplies community water service to the Rattlewood Golf Course, operated by the Montgomery County Revenue Authority and located at the northernmost tip of the county, approximately 4-1/2 miles north of Damascus. The community water supply is provided by three groundwater wells located in Frederick County in the Mill Bottom water supply system.

II.A: Government Responsibilities:

The responsibilities for planning for and providing water service within the WSSD are multi-jurisdictional and depend on the cooperative efforts of municipal, County, WSSC Water and regional authorities. This is especially true with regard to the Potomac River, a shared raw water source for several jurisdictions. These agencies include the following:

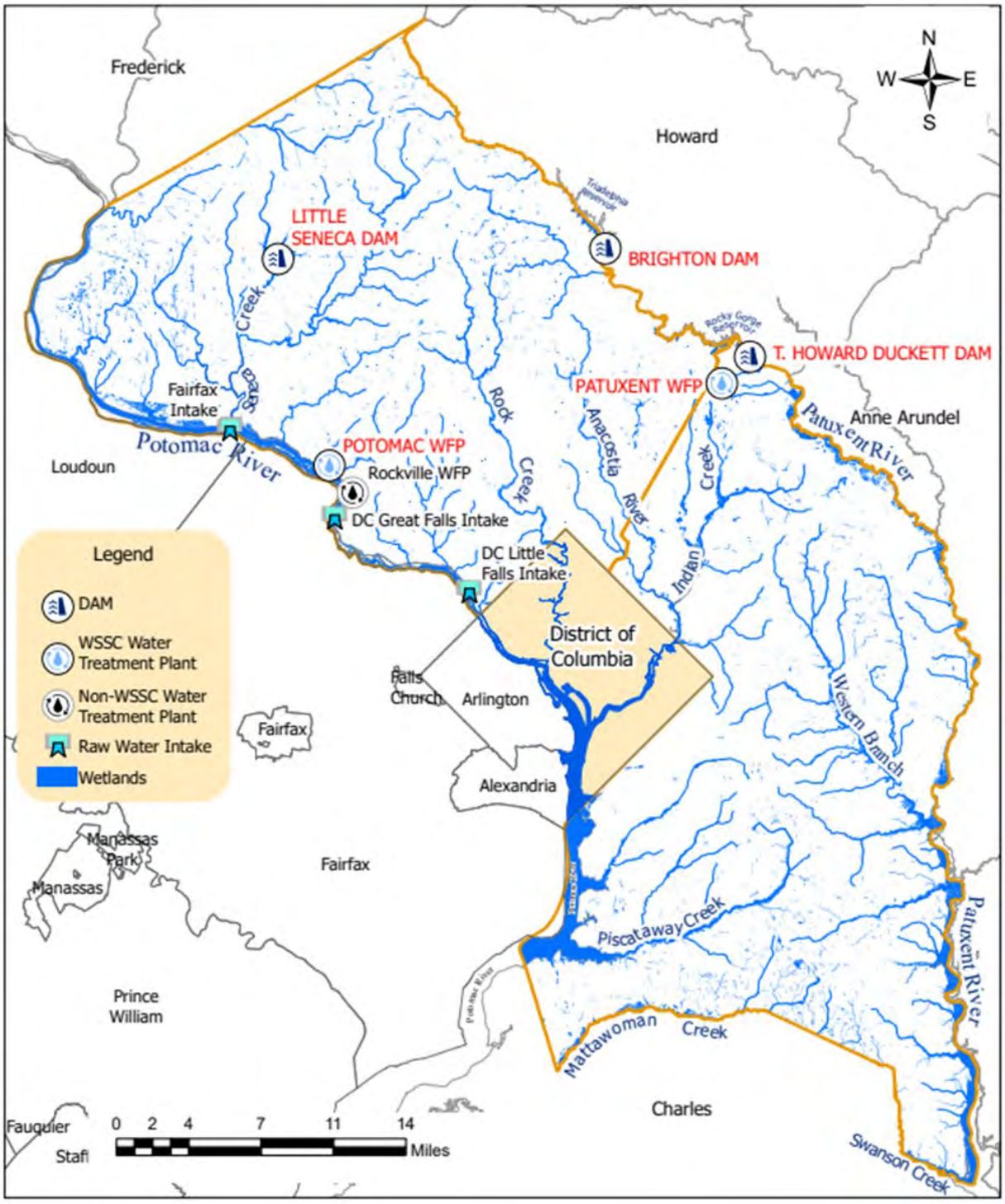
- Montgomery County Government:
  - Department of Environmental Protection (DEP)
  - Department of Permitting Services (DPS)
- Washington Suburban Sanitary Commission (WSSC Water)
- Maryland - National Capital Park and Planning Commission (M-NCPPC)
- Interstate Commission on the Potomac River Basin (ICPRB)
- Metropolitan Washington Council of Governments (COG)
- State of Maryland:
  - Department of the Environment (MDE)

These agencies, and their primary responsibilities and programs, are described in detail in Chapter 1, Section I.E.

II.B: Water Supply Sources:

Community water service in the WSSD depends on surface water supplied from the Potomac and Patuxent Rivers on opposite sides (west and east) of the county as shown in Figure 3-3.

Figure 3-3: WSSC Water Surface Water Supply Sources



II.B.1: Potomac River: The Potomac River is the larger of the two sources of surface water supply for Montgomery County. The river forms the northwestern boundary of the WSSC Water service area and serves as the source of drinking water to many communities in Maryland, Virginia, West Virginia, and Washington D.C. The Potomac River supplies over 40 billion gallons of water annually to the bi-county area of Montgomery and Prince George's Counties. WSSC Water withdraws water from the Potomac River at Watkins Island, approximately two miles upstream from Great Falls.

In the Metropolitan area, the Potomac River is also a major water source for Washington, D.C. (supplied by the Washington Aqueduct Division [WAD] of the U.S. Army Corps of Engineers), and the Fairfax County Water Authority (Fairfax Water). The WAD withdraws water from the river at Great Falls and at Little Falls; and Fairfax Water withdraws water from the Virginia side of the river near Great Seneca Creek and the Seneca Pool. In addition, there are three other significant water intakes located a short distance upstream of the WSSC Water intake: Loudoun Water, Frederick County, and the City of Rockville.

Three impounded water supplies are intended to supplement flows directly to the Potomac River during severe drought when the flow in the river is low. The Jennings Randolph Reservoir is located near Bloomington, Maryland, on the North Branch of the Potomac River on the Maryland state boundary with West Virginia, 200 miles upstream from the WSSC Water Potomac intake. This reservoir was completed in 1981 and provides 30 billion gallons of raw water storage with 13 billion gallons currently allocated to water supply. The Washington Metropolitan Area (WMA) water suppliers (WSSC Water, Fairfax Water, and DC Water) have purchased ownership of this storage capacity from the Federal government. The remaining capacity is for flood control and water quality purposes. The Jennings Randolph Reservoir (formerly, the Bloomington Reservoir) is owned and operated by the U.S. Army Corps of Engineers (COE).

The Savage River Reservoir in Garrett County is owned and maintained by the Upper Potomac River Commission who operates it with guidance provided by the COE. It is used to supply local needs and supplement releases from Jennings Randolph for the WMA water suppliers, which contribute 80 percent of its operating and maintenance costs.

The third impoundment, Little Seneca Reservoir, built solely for water supply in 1985, is located near Boyds, Maryland in north central Montgomery County, and impounds 4 billion gallons of raw water. WSSC Water owns and operates the reservoir and dam in a joint venture similar to the Jennings Randolph Reservoir.

The costs to operate and maintain these reservoirs are shared and are stipulated within cost-sharing agreements with the parties noted above. Releases from this reservoir are coordinated through the Interstate Commission on the Potomac River Basin (ICPRB) in consultation with the water utilities.

II.B.2: Patuxent River: The Patuxent River forms the northeastern border of Montgomery County with Howard County and serves as another major source of water supply for the two counties owned and maintained by WSSC Water. There are two water supply impoundments along the Patuxent River owned and operated by WSSC Water; the Triadelphia and the T. Howard Duckett Reservoirs, created by the Brighton and T. Howard Duckett Dams, respectively. They are used mainly for water supply (10.65 billion gallons), with additional excess capacity (1.25 billion gallons).

The Triadelphia Reservoir dam is located at Brighton Dam Road in Montgomery County northeast of Olney and Brookeville and has a storage capacity of 6.45 billion gallons. The T. Howard Duckett dam is located approximately two miles northwest of Laurel, in Prince George's County. The resulting T. Howard Duckett reservoir, located north of Laurel, Burtonsville and Spencerville, has a storage capacity of 5.5 billion gallons. Table 3-1 lists the existing impounded water supplies along the Patuxent River, which are also shown on Figures 3-3 and 3-4.

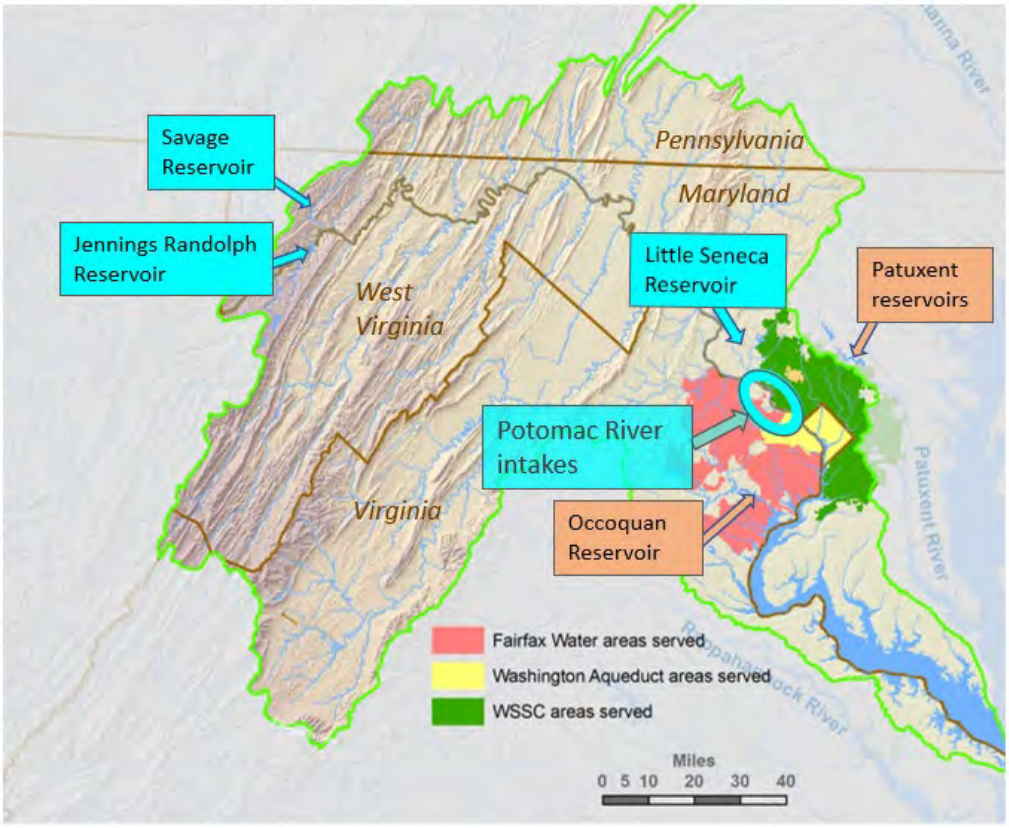
Table 3-1: Inventory of Existing Impounded Water Supplies

Source	Potomac River		Patuxent River
Owner Name	**US COE: Jennings Randolph Reservoir**	**Public: [A] Little Seneca Lake (Little Seneca Dam)**	**WSSC: Triadelphia Reservoir (Brighton Dam) AND T. Howard Duckett Reservoir [E] (T. Howard Duckett Dam)**
Crest Elevation (above sea level) [F]	1,514 feet	385 feet	Triadelphia:350 - 366.45 feet T. Howard Duckett: 270 - 286.45 feet
Spillway Length	210 feet	300 feet	Triadelphia: 234 feet T. Howard Duckett: 189 feet
Total Length of Dam	2,130 feet	600 feet	Triadelphia: 995 feet T. Howard Duckett: 840 feet
Height of Crest Above Stream Bed	250 feet	77 feet	Triadelphia:66.45 feet T. Howard Duckett: 125.45 feet
Flooded Area at Crest Elevation	1,218 acres at 1,514’	467.5 acres at 385’	Triadelphia: 513.6 acres at 350’ and 815.5 acres at 366.4’ T. Howard Duckett: 402.acres at 270’ and 623.acres t 286.4’
Shore Line Length at Crest Elevation	N/A	N/A	Triadelphia:19 miles T. Howard Duckett: 35 miles
Area of Land Owned	4,454 acres	606 acres	Triadelphia:3,909 acres T. Howard Duckett 3,143 acres
First Overflow of Dam Crest	N/A	1985	Triadelphia:1944 T. Howard Duckett 1955
Capacity of Reservoir [G]	**13.0 billion gallons (BG) [I]**	**3.92 billion gallons (BG)**	Triadelphia: 5.18 to 6.45 billion gallons [B] T. Howard Duckett: 4.84-to-5.49-billion-gallon [C] **Total Capacity = 10.65 (11.9 [D]) billion gallons**
Safe Yield	**155 MGD**	**N/A**	**45.3 MGD[H]**
Average daily withdrawal	**140 MGD[J]**	**N/A**	**45.99 MGD**

A Financed by WSSC, Army Corps of Engineers, and Fairfax County Water Authority.
B Normal storage is 5.8 billion gallons; capacity is 6.45 billion gallons.
C Normal storage is 4.8 billion gallons; capacity is 5.5 billion gallons.
D Normal storage is 10.65 billion gallons; capacity is 11.9 billion gallons.
E AKA T. Howard Duckett Reservoir
F The first values represent pool elevations of the reservoirs, the second values represent the elevation of the top of the spillway.
G Water levels are typically kept 3.0 feet below mean pool levels.
H Based on a Hydrological Study as presented in the 1996 Hydraulic Capacity Evaluation for the Patuxent WFP
I 13.0 BG allocated to water supply; 29.4 BG of raw water storage.

J Based on 1999, 2002, and 2010 drought operations reports by ICPRB.

Figure 3-4: Major Water Supply Reservoirs Serving the Washington Region



II.C: Water Supply Sources Programs and Policies:

The use of water supply sources in the Washington Metropolitan region is managed and protected through a number of federal and regional programs and agreements. The following includes a brief description of some of these programs and policies currently in place.

II.C.1: Regional Drought Management in the Potomac River Basin: In order to provide regional service during drought conditions and ensure that there is adequate flow in the Potomac River to meet the 100 MGD environmental flow-by at the Little Falls dam, the Cooperative (CO-OP) Section of the Interstate Commission of the Potomac River Basin (ICPRB) coordinates releases from the Jennings Randolph Reservoir, located near Bloomington, Maryland, on the North Branch of the Potomac River, and the Little Seneca Reservoir in Montgomery County. These two sources of water augment the Potomac River during periods of extreme low flow in the Washington Metropolitan area during times of severe drought. The agencies that have intakes for their water treatment plants on the Potomac River which are considered to be a part of the Regional Water Supply system during a drought include: WSSC Water, Fairfax Water, and the Washington Aqueduct Division (WAD) of the Corps of Engineers that serve the District of Columbia, Arlington, and a small portion of Fairfax County. The City of Rockville, Frederick County, the Town of Leesburg, and Loudoun Water also draw their water supply needs from the Potomac River upstream of the above intakes.

There are several agreements among the region's utilities describing how the water supply is coordinated, planned allocated and used during drought conditions for the betterment of the entire metropolitan region. The following include a listing of these Potomac River regional drought agreements in chronological order.

- ***Low Flow Allocation Agreement (LFAA) -1978***
  Signatories: State of Maryland**,** State of Virginia**,** District of Columbia**,** U.S. Army Corps of Engineers**,** WSSC Water, and Fairfax Water Authority **(**FCWA).

  Major Provisions: This agreement establishes allowable withdrawals among major water users of the Potomac River during periods when there is not sufficient supply to allow unrestricted withdrawals. As a result of the 1982 Regional Water Supply Agreements, the chance of invoking the LFAA is projected to be less than 5 percent during a repeat of the worst drought of record.

- ***Amendment to Potomac River Low Flow Allocation Agreement (1982)***
  Signatories: State of Maryland**,** State of Virginia**,** District of Columbia**, and** U.S. Army Corps of Engineers.

  Major Provisions: This amendment to the LFAA provides for releases from the Jennings Randolph and Savage Reservoirs and Little Seneca Lake to be subject to the allocation formula of the LFAA. Most importantly, as long as there are legally enforceable Regional Water Supply Agreements, the 1988 freeze provision of the LFAA will be inoperative. The 1988 freeze provision would have limited Fairfax Water, WSSC Water, and District of Columbia withdrawal ratios to 1988 actual levels unless a water supply agreement was reached. Since the District of Columbia is the largest withdrawer of water, the District would have attained a disproportionately large share of water versus need over time. The Regional Water Supply Agreements are predicated on all water users obtaining water as needed and sharing resources.

- ***Water Supply Coordination Agreement (1982)***
  Signatories: WSSC Water, District of Columbia, Fairfax County Water Authority District of Columbia, Corps of Engineers, and ICPRB.

  Major Provisions: This agreement establishes the precedents that the major water suppliers will operate systems in a coordinated manner during a drought and that water withdrawal will be based on need, not on the relative share paid for water storage facilities. This agreement also identifies the CO-OP section of the Interstate Commission of the Potomac River Basin (ICPRB) as the agency to administer provisions of the Drought Related Operations Manual, such as issuing long-range water supply projections and directing releases from Jennings Randolph and Little Seneca lakes during drought. The water utilities fund the activities of the CO-OP section as follows: WSSC Water - 50 percent, FCWA - 20 percent, and DC - 30 percent.

- ***Agreement for Future Water Supply Storage Space in the Bloomington Reservoir (1982)***
  Signatories: WSSC Water, District of Columbia, Fairfax Co. Water Authority, and Corps of Engineers.

  Major Provisions: This agreement entitles the District of Columbia, the Fairfax Water and WSSC Water to 36.78 percent of Jennings Randolph Reservoir storage capacity known as future supply. The Metropolitan Areas share equals 13.37 billion gallons when the reservoir is full. In return, the three non-federal signatories were required to pay 27.4% of the construction cost (local share estimated at $54.2 million, includes interest over 50 years), and are required to pay 34.75% of the cost of major repairs and 28.56% of the annual operation and maintenance costs. The amount of water not allocated for water supply is used for water quality improvement in the North Branch of the Potomac River. Water Quality releases upstream also indirectly benefit local jurisdictions by delaying the time when low flows are experienced in the Washington area. The WMA water utilities fund the capital, operations, and maintenance costs for the water supply storage in the Jennings Randolph Reservoir.
  Note: The Maryland Potomac Water Authority (MPWA) was created in 1978 to coordinate local governments in the acquisition of water storage of the Jennings Randolph Reservoir. However, the Novation Agreement of 1982 which provided for purchasing of storage by the District of Columbia, Fairfax Water and WSSC Water transferred the function of the MPWA to the other three parties.

- ***Bloomington Payment Agreement (1982)***
  Signatories: WSSC Water, District of Columbia, and Fairfax Co. Water Authority. District of Columbia.

Major Provisions: This agreement delineates the three major water users individually responsible to pay for the Jennings Randolph water supply in the agreed ratios. This agreement was necessitated because the Corps of Engineers required that payments had to be guaranteed. The District of Columbia was unable to make such a guarantee because their budget must be approved annually by Congress. Under the provisions of the agreement, should a user default in payment, another user can make the payment and sue the defaulter for payment plus penalty. In addition, the defaulter loses right to use Jennings Randolph water supply while in default.

- ***Little Seneca Reservoir Cost Sharing Agreement (1982)***
  Signatories: WSSC Water, District of Columbia, and Fairfax County.

  Major Provisions: This agreement establishes the cost shares and payment mechanisms to fund construction of Little Seneca Reservoir in Montgomery County. Capital and operating and maintenance cost were distributed according to the following ratios: WSSC Water 50%; District of Columbia 40%; and Fairfax County Water Authority 10%.

Savage Reservoir Maintenance and Operation Cost Sharing Agreement (1982)
Signatories: WSSC Water, District of Columbia, Fairfax Co. Water Authority, Allegany County, Md., and Upper Potomac River Commission (UPRC).

Major Provisions: This agreement addresses water releases from the Savage Reservoir, which has relatively high pH values, were intended to neutralize releases from the Jennings Randolph Reservoir, which has relatively low pH values due to drainage from mines upstream. This dilution effect can be viewed as additional water supply gained without requiring local funds for the construction of the Savage Reservoir. The signatories exclusive of the UPRC have agreed to fund the annual operations and maintenance, and replacement and repair costs of Savage Reservoir according to the following percentages: Fairfax Water 16%; District of Columbia 24%; WSSC Water 40%; and Allegany County 20%. (See the preceding discussion of the reservoir for additional information.)

- ***Metropolitan Washington Water Supply Emergency Agreement (1994)***
  Signatories: WSSC Water, District of Columbia, Arlington, Fairfax, Loudoun, Montgomery, Prince George's and Prince William Counties, Towns or Cities of Alexandria, Bowie, College Park, Fairfax, Falls Church, Gaithersburg, Greenbelt, Manassas, Rockville, Takoma Park, and Vienna, Council of Governments, Fairfax Co. Water Authority, and Loudoun Co. Sanitation Auth.

  Major Provisions: This agreement establishes three plans for coordinating regional actions in the event of emergencies that affect water supply from the Potomac River to the Washington Metropolitan Region. The first plan provides a regional response mechanism for health-related emergencies in the Washington Aqueduct Division system. The second plan provides a mechanism for emergencies that affect more than one of the utilities that withdraw raw water from the Potomac River. The final plan describes the routine planning and cooperative operating procedures which have significantly reduced the risk of drought affecting the region's water supply. Background information describing the conditions leading up to the plan and the procedures for updating it is also provided.

- ***Metropolitan Washington Water Supply and Drought Awareness Response Plan: Potomac River System (2000)***
  Signatories: WSSC Water, District of Columbia, Arlington, Fairfax, Loudoun, Montgomery, Prince George's and Prince William Counties, Towns or Cities of Alexandria, Bowie, College Park, Fairfax, Falls Church, Gaithersburg, Greenbelt, Manassas, Rockville, Takoma Park, and Vienna, Council of Governments, Fairfax Co. Water Authority, and Loudoun Co. Sanitation Auth.

  Major Provisions: This COG plan provides implementation steps during drought conditions for the purpose of coordinated regional response. The Plan consists of two interrelated components: a regional year-round

plan emphasizing wise water use and conservation; and a water supply and drought awareness and response plan. The water supply and drought awareness plan contains four stages:

- Normal: Wise Water Use Program
- 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.

II.C.2: Regional Drought Operations:

During times of declared drought, the regional water supply system will operate according to the Drought Operations Manual of the 1982 Water Supply Coordination Agreement. Operating rules and procedures for reducing the impacts of severe droughts in the Potomac River for the Washington Metropolitan Area Water Suppliers are as follows:

- Make the most efficient use of all water supply facilities, including but not limited to the Potomac River, Jennings Randolph Reservoir, Occoquan Reservoir, Triadelphia Reservoir, T. Howard Duckett Reservoir, and Little Seneca Reservoir to meet all water supply needs for the Washington Metropolitan Area.
- Maintain the probability of invoking the Restriction Stage of the Potomac River Low Flow Allocation Agreement at less than 5 percent during a repeat of the historical low stream flow record.
- Maintain the probability of entering the Emergency Stage of the Potomac River Low Flow Allocation Agreement at less than 2 percent with full reservoirs on June 1 of any year.
- Maintain the probability of not refilling any reservoir used for Washington Metropolitan Area water supply to 90 percent of useable capacity by the following June 1 at less than 5 percent during a repeat of the historical low stream flow record.
- Maintain flows in the Potomac River below Seneca Pool as agreed to by the signatories to the Potomac River Low Flow Allocation Agreement.
- Minimize conflict between normal utility operations and drought operations.
- Provide consistency with the requirements of the Potomac River Low Flow Allocation Agreement.

The underlying principle in this operating procedure is to reduce unneeded reservoir releases by making larger releases only as necessary to meet potable water supply needs. The capability of existing suppliers can be substantially extended in this manner. The Water Supply Coordination Agreement for cooperative system management is the critical element which allows the users to obtain the maximum benefits of existing resources and reduce water wastage.

During a drought, WAD and the CO-OP Section of the ICPRB play key roles in determining the operation of the Regional Water Supply System. The WAD is charged with determining when to declare alert, restriction, or emergency drought stages under the LFAA. If a restriction or emergency stage is declared, the WAD allocates each user's fair share of withdrawal based on previous usage. The CO-OP Section is responsible for coordinating water withdrawals to make the most efficient use of all water supply facilities. To accomplish this objective, the CO-OP produces forecasts of water supply and need, and determines how much water the WSSC Water and FCWA should be withdrawing from non-Potomac River supplies on a daily basis. The CO-OP, in consideration of the needs of the WAD, WSSC Water, and FCWA, also directs releases from Jennings Randolph Reservoir and Little Seneca Reservoir.

Water Supply Agreement of 1982 - The Water Supply Coordination Agreement (WSCA) was executed in 1982 by the Washington Metropolitan area (WMA) major water suppliers, Washington Suburban Sanitary Commission (WSSC Water), Fairfax Water (FW), and U.S. Army Corps of Engineers' Baltimore District Washington Aqueduct Division (WA), along with the District of Columbia and the Interstate Commission for the Potomac River (ICPRB). The agreement provides the framework for operating the three independent water systems under a cooperative arrangement to maximize the water supply from the Potomac River for the mutual benefit of the parties helping to ensure a resilient supply during droughts.

In addition to the WSCA, the parties also executed other agreements to share the capital and operating costs for three reservoirs including WSSC's Little Seneca Reservoir. The combination of cooperative operations under the WSCA and the water storage in the shared reservoirs help to ensure a reliable water supply for the WMA.

At the time the WSCA was signed and with storage provided by the reservoirs including Little Seneca Reservoir, which was completed in the fall of 1984, there was a consensus that WMA raw water supply needs would be sufficient with projected demands and a recurrence of the drought of record through at least the year 2020. Due to on-going efficiencies in plumbing fixtures and appliances, water usage has been less than what had been forecasted over the last three decades, extending the sufficiency of existing storage facilities well beyond 2020.

Under the terms of the WSCA, every five years the ICPRB develops a Washington Metropolitan Area Water Supply Study which evaluates future water demand and future water supply in the region. That planning horizon extends out to 25 years. In 2015 and again in 2020, the study concluded that, under a repeat of conditions similar to severe historic droughts and without including potential impacts from climate change, *"by 2035 the current water supply system will experience considerable stress, with mandatory water use restrictions required in the WMA. By 2040 there is likelihood that storage in the Little Seneca Reservoir will become exhausted."* The water demand forecasts were based on the latest available demographic projections by the Metropolitan Washington Council of Governments.

In response to the 2015 Water Supply study, the CO-OP utilities funded a follow-up study by the ICPRB to identify and evaluate water supply strategies to meet future challenges of growing regional demand for water including consideration of potential impacts of climate change on water resources. This study, completed in 2017, considered both structural and operational measures to increase water supply capacity to meet the future regional need water supply needs and to implement operational changes to optimize the existing resources. Structural alternatives included the potential future use of quarries in Maryland and Northern Virginia for raw water storage. The Travilah Quarry in Montgomery County is one potential storage location. Operational strategies include expanded and coordinated operation of existing and planned water supply facilities and improved flow forecast models for the Potomac River. The work effort to explore and obtain Federal Funding assistance and the general planning effort subsequently began upon the completion of the above studies. Subsequently, the ICPRB published the 2020 WMA Water Supply study in September 2020. The study reaffirmed the need for supplemental storage to mitigate drought flows in the Potomac River stating, "Under all the 2040 Lower Flow scenarios, the addition of Travilah Quarry is necessary to avoid system failure in a severe drought." Beyond 2040, the benefits of additional raw water storage from quarries will persist, but further population growth and climate change impacts on the Potomac and Patuxent Rivers may necessitate more storage or alternative solutions. The impacts of climate change will continue to be evaluated as more information is available to gauge the impacts of climate change on hydrology. The estimated total project cost could be upwards of $1 billion. The effort to explore and obtain federal funding assistance and to perform general planning began soon

afterwards by the ICPRB, WSSC Water, and other CO-OP utilities. In August 2021, an application for federal funding assistance under the Water Resource Development Act (WRDA) 7001 process was submitted for the completion of a Feasibility Study to further evaluate and support the recommendation of the regional planning efforts. Projects under the WRDA program are completed by the local Districts of the U.S. Army Corps of Engineers and are the first step of many that will be required in the WRDA program to eventually obtain the remaining federal funding assistance required to execute the project. The funding for the feasibility study was authorized by Congress in the Fall of 2022 and appropriated in the Spring of 2024. Subsequently, the Baltimore District of the US Army Corps of Engineers has entered into an agreement with MWCOG on behalf of the regional water utilities. There will be a local cost share with the federal government for the 3-year, $3M feasibility study. The study was put on pause in 2025 due to a change in the distribution of the federal and local cost share, the requirement of additional appropriations from Congress, and a change in the Army Corps policies in conducting feasibility studies. The revised cost split was resolved in late 2025 and additional appropriations were approved in January 2026. The revised policies indicate now that the study will require a 35 percent design be completed on the recommended alternative. Therefore, due to the complex nature of any long-term solution, the Army Corps will now focus only on short-term solutions to strengthen regional water supply resiliency. WSSC Water will be exploring alternative project delivery methodologies to move this initiative forward in developing a regional long-term solution in partnership with the other regional water utilities.

II.C.3: Potomac River Environmental Flow-By: As a heavily used water resource, the Potomac River requires careful management to ensure its value for the utilities which draw its water and the health of its natural ecosystem. Part of the purpose of the preceding group of agreements is to ensure that the river has an adequate flow-by through and downstream from the Washington region sufficient to maintain its biological health, even under severe

drought conditions. These agreements are consistent with a minimum recommended flow-by of 100 million gallons per day (Potomac River Environmental Flow-by Study, T1981) to support the biological health of the river system.

II.C.4: Potomac Water Filtration Plant Source Water Assessment: MDE and WSSC Water completed a source water assessment (SWA) for the Potomac River and WSSC Water Water's water filtration plant in 2002. The SWA addressed issues involved with the quality and safety of the raw water the plant draws from the river for treatment and does not directly address finished water quality. From its findings, the SWA recommended the development and implementation of a source water protection plan for the Potomac Plant and for other similar facilities which draw their source water from the river. The SWA predicted the following potential improvements as a result of the successful implementation of such a plan:

- Reducing the solids loading to the plant,
- Reducing the magnitude and frequency of high pH, high natural organic matter (NOM) events which result from algal, phytoplankton, and macrophyte activities in the Potomac and its tributaries,
- Improving protection from pathogens including *Cryptosporidium* and *Giardia*,
- Reducing the number and severity of taste and odor episodes which occur in the WSSC Water system, and
- Reducing ammonia levels and chlorine demand in the raw water.

Following the completion of the SWA, WSSC Water actively worked with other utilities and relevant governmental agencies to establish the Potomac River Basin Drinking Water Source Protection Partnership (Partnership). The Partnership was formed in 2004. The Partnership is a voluntary organization of drinking water suppliers and government agencies working to protect drinking water sources, thereby safeguarding both public health and the environment. Partnership member agencies (as of 2016) include:

- Berkeley County Public Service Water Authority, West Virginia
- City of Frederick, Maryland
- City of Hagerstown, Maryland
- City of Rockville, Maryland
- DC Water
- District of Columbia Department of Energy & Environment
- Fairfax County Water Authority
- Frederick County, Maryland
- Interstate Commission on the Potomac River Basin
- Loudoun Water, Virginia
- Maryland Department of the Environment
- Pennsylvania Department of Environmental Protection
- Town of Leesburg, Virginia
- United States Environmental Protection Agency, Region III
- United States Geological Survey
- Virginia Department of Environmental Quality
- Virginia Department of Health
- Washington Aqueduct Division, U.S. Army Corps of Engineers
- Washington County, Maryland
- Washington Suburban Sanitary Commission
- West Virginia Department of Health and Human Resources
- West Virginia Department of Environmental Protection

WSSC Water has actively worked within the Partnership framework to develop a strategy of outreach and environmental programs to protect the Potomac River drinking water supply, which serves more than 4 million people. The Partnership is implementing a strategy to advance source water protection by leveraging workgroups and active discussions during its meetings. This strategy aligns with recommendations from source water assessments conducted across the Potomac and addresses emerging source water protection issues.

In 2016, the Partnership's highest priorities included improving knowledge about chemical contaminants in the Potomac watershed, enhancing regional spill response measures, and advancing source water protection efforts focused on both toxic and non-toxic algae. In light of the West Virginia Elk River MCHM spill and the North Carolina Dan River coal ash spill in 2014, several utility members in the Partnership, together with MWCOG, retained a consultant to update the 2002 SWA data of potential point-source contaminants upstream of the D.C. metropolitan area water intakes. The Partnership plans to use this data to update their understanding of upstream risks, and to prioritize both outreach efforts to upstream contaminant owners and early warning and response efforts. The Partnership also plans to implement further improvements to cooperative spill response, based on lessons learned during an exercise with the Colonial Pipeline and the response to an actual latex spill in the upstream North Branch Potomac River in 2015. Finally, much national attention has been given recently to toxic algal blooms, arising from nutrient pollution, that annually affect drinking water systems around the county. While such blooms have not been commonly observed in the Potomac River, the Partnership recognizes the severe risk such blooms

present to the safety of drinking water. Thus, the Partnership is devoted to advancing source water protection activities that prevent and minimize impacts of toxic and non-toxic algal blooms.
Within separate workgroups, the Partnership also continues to monitor other high priority issues such as emerging contaminants, pipeline safety, road salts, water quality standards, stormwater, engaging upstream stakeholders and forests protection. Since 2013, the Partnership has been tracking results of sampling by water utilities in the Potomac River Basin for the third round of Unregulated Contaminant Monitoring Rule (UCMR3); a workshop was held in October 2013. The urban issues workgroup recently sponsored an information session on chloride trends in urban-affected watersheds. Utility members in the Partnership are also supporting a project under Water Research Foundation and U.S. Endowment for Forestry and Communities to evaluate benefits to upstream forest protection on drinking water quality and treatment costs.

II.C.5: Patuxent Reservoirs Watershed Protection Agreement:
The Patuxent Reservoirs Watershed Protection Group (PRWPG) was formed by agreement in October 1996 to protect the long-term biological, physical, and chemical integrity of the Triadelphia and T. Howard Duckett Reservoirs and the contributing 132 square mile watershed. This group consists of a Policy Board and a Technical Advisory Committee (TAC). Signatories to the agreement include Montgomery County, Howard County, Prince George's County, the Montgomery and Howard Soil Conservation Districts, the M-NCPPC, and WSSC Water. To protect the Patuxent Reservoirs Watershed, those signatories have developed and continue to implement a multi-barrier watershed

management approach to assure the integrity of a continued supply of high quality, potable water at reasonable cost.

An Action Plan was initially written to begin implementing the multi-barrier watershed management approach. The plan listed action items in three categories: data analysis and collection tasks, implementation tasks, and public information tasks. In 2003, the PRWPG adopted a revised action plan. This revised action plan, titled Performance Measures and Goals for Priority Resources, represented a continuation of the commitment to coordinate protection efforts in coming years. This Plan contains goals, performance measures, implementation items, and a timeline to achieve each goal for six priority resources selected by the TAC. Those priority resources include the following:

1. Reservoir/water supply
2. Terrestrial habitats
3. Stream systems
4. Aquatic biota
5. Rural character and landscapes
6. Public awareness and stewardship

Since then, the signatories and support agencies have successfully accomplished many tasks including:

- Expanded reservoir and tributary water quality monitoring necessary for status and trends analysis
- Developed a GIS-based watershed loading model linked to a reservoir eutrophication model to predict changes in reservoir water quality based on changes in watershed land cover characteristics
- Implemented an inter-agency funded, local-cost share program for streamside agricultural best management practices. This program was recently updated and expanded to attract greater participation.

- Established a network of programs and contacts through local agencies, schools, and citizen groups for more effective public outreach on watershed awareness and reservoir protection
- Established riparian forest buffers along reaches of the Reddy Branch and the Hawlings River.
- Completed the watershed restoration project for Cherry Creek in Howard County.
- In recognition of the interagency accomplishments, the US EPA awarded the PRWPG its Clean Water Partner for the 21st Century in 2003.

The member agencies regularly evaluate the program progress to date, the establishment of quantifiable measures to judge success in protecting priority resources, the feasible rates of projects and control strategies implementation, and the need to revise or add additional goals. Many important studies have been completed since the PRWPG was formed. For example, in 2008, PRWPG completed the Sediment Study and the Forest Management and Recreation Use Study. In 2009, an Interim Watershed Management Report was prepared.

In 1998, MDE identified both reservoirs as impaired by nutrients and identified Triadelphia Reservoir as impaired by sediment; consequently, MDE determined that the reservoirs were unable to achieve State water quality standards for their designated uses. To address these impairments, the EPA approved Total Maximum Daily Loads (TMDLs) for both reservoirs in November 2008. A phosphorus TMDL was established for each reservoir, and a sediment TMDL was established for Triadelphia Reservoir (29% reduction required). Significant phosphorus load reductions are required (58% for Triadelphia Reservoir, 48% for T. Howard Duckett Reservoir) to meet Maryland's water quality standards.

In 2016, an assessment was completed estimating the progress made from 2000-2015 towards achieving the pollutant reduction goals specified in the TMDLs for the reservoirs. Urban stormwater management and agricultural best management practices (BMPs) were tallied and modeled pollutant load reductions were generated. Pollutant load estimates were also derived for land use changes, such as land converted from agricultural to residential land uses. Refer to the table below for progress towards achieving the TMDL goals.

Pollutant	TMDL Goal	Progress to Date	Gap Remaining
Total Phosphorus (Rocky Gorge Reservoir)	**58%**	**10%**	**48%**
Total Phosphorus (Triadelphia Reservoir)	**48%**	**17%**	**31%**
Sediment (Triadelphia Reservoir)	**29%**	**8%**	**21%**

The 1982 "Water Supply Coordination Agreement" also affects the use of the Patuxent River's reservoirs relative to the agreement's Drought Operations Manual. See Section II.C.1 for additional information.

II.D - Water Treatment Facilities:

WSSC Water operates two water filtration plants in its sanitary district which provide water treatment for Montgomery County. These plants draw "raw" or untreated water from the Potomac and Patuxent Rivers and process it into "finished" water suitable for public consumption based on the latest Federal and State drinking water quality standards. Location of these plants and their current capacities and other information are provided in Figure 3-3 (previously shown) and Table 3-2.

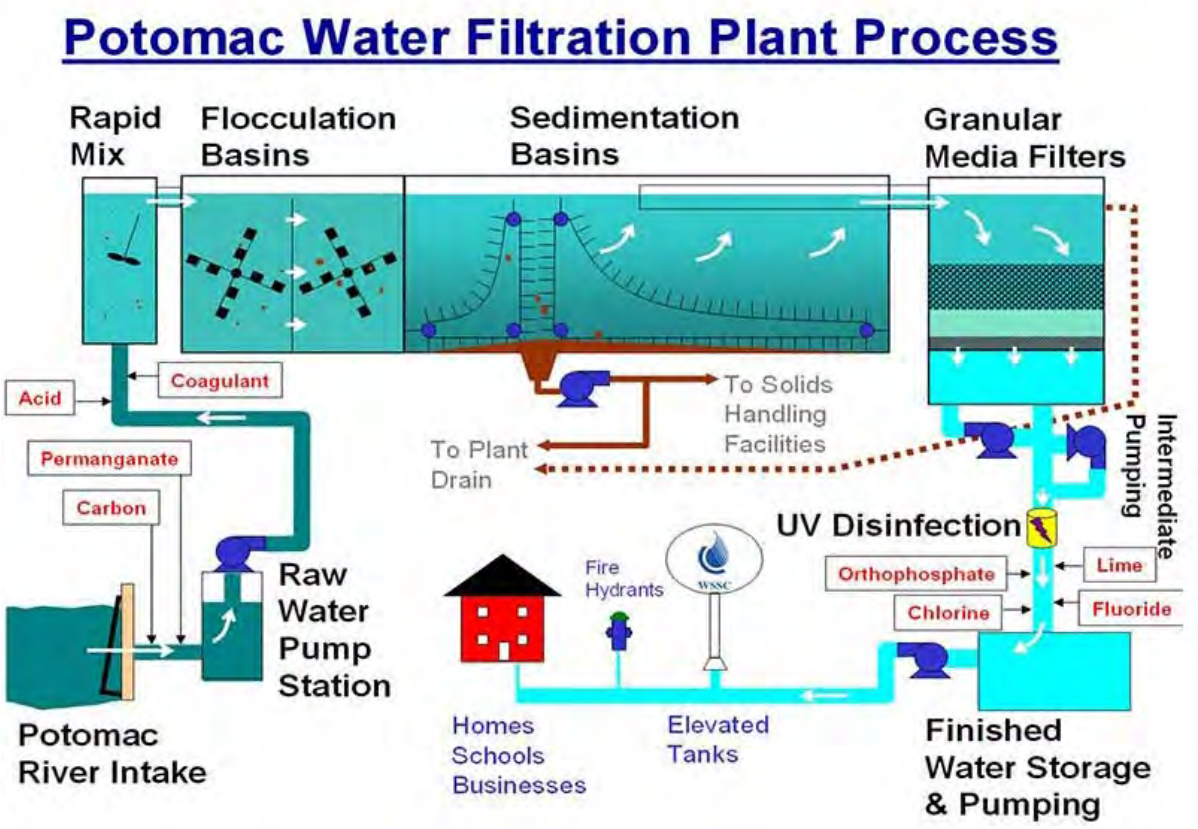
Table 3-2: WSSC Water Treatment Facilities

Facility Owner/Operating Agency Plant Location & Coordinates	Water Source Treatment Type	Rated Plant Capacity Average Production Maximum Peak Flow Storage Capacity *	Sludge and/or Filter Backwash	Status/Comments
Potomac Filtration Plant WSSC Water River Road N439,000/E727,000 (Montgomery County)	Potomac River Conventional treatment including coagulation (either polyaluminum chloride or ferric sulfate), flocculation, sedimentation, filtration, ultraviolet disinfection (UV), chlorination, fluoridation, and pH adjustment (hydrated lime) and orthophosphate for corrosion control. Seasonal Low pH Enhanced Coagulation using sulfuric acid addition prior to coagulation to minimize chlorine disinfection byproduct formation (typically employed from May to October).	Capacity: 288 MGD Production: 117 MGD Peak Flow: 144 MGD storage: 23.3 MG	Much of the solids volume originating from the Potomac River and treatment processes are re-moved through the solids handling facility and are then land-applied.	Various treatment processes have recently been renovated and upgraded. These include: • UV Disinfection Facility • Backwash Pumping Station • Intermediate Pumping Stations (IPS) • Lime Feed Facilities • Upgrade of Sulfuric Acid System • Ferric Sulfate and Caustic Soda Feed Systems • Sedimentation Basin Equipment Upgrades • Filter Underdrain Replacement (32 filter units)
Patuxent Filtration Plant WSSC Water Sandy Spring Road N, 39.0979/W 76.9002° (Prince George's County)	Patuxent River (T. Howard Duckett Reservoir) coagulation (polyaluminum chloride), flocculation, sedimentation, filtration, chlorination, fluoridation, and lime adjustment of pH and orthophosphate for corrosion control, and ultra violet disinfection.	Capacity: 72.0 MGD Production: 42 MGD Peak Flow: 63 MGD Storage: 15.5 MG	Sludge/filter backwash is treated at a new on-site solids handling facility and hauled off site for disposal at a landfill.	Phase II improvements to the treatment facilities have been completed. Improvements include: • Construction of an on-site residual handling facility to manage residual solids. • Construction of a 6th treatment train, two new filters, and the addition of UV reactors on all 12 individual filters.

See Figure 3-3 for the locations of these facilities.
* Production and Peak Flow values are based on calendar year 2023 data.

II.D.1 - Potomac Water Filtration Plant: This facility, located on River Road (Route 190) at Lake Potomac Drive, two miles upstream from Great Falls, serves both Montgomery and Prince George's Counties. The plant draws water from the Potomac River just downstream from the mouth of Watts Branch. The Potomac Water Filtration Plant has a State-permitted maximum intake capacity of 300 million gallons per day (MGD), and a rated treatment capacity of 288 MGD. However, the plant

generally operates in a range of 105 to 150 MGD. The diagram below shows the Potomac Water Filtration Plant treatment process.



Anticipating future demand, WSSC Water has studied and is currently implementing various treatment process improvements at the plant to reliably meet the projected demands and updated drinking water quality standards.

II.D.2 - Patuxent Water Filtration Plant: This facility is located on Sandy Spring Road (Route 198) at Sweitzer Lane near Laurel in Prince George's County, approximately one-half mile east of the Montgomery County border. The plant primarily serves Prince George's County, but its effective reach extends west into Montgomery County to approximately Georgia Avenue (Route 97). The plant draws water from the T. Howard Duckett Reservoir on the Patuxent River. In 2005, WSSC completed a comprehensive replacement and expansion of the aging critical components of the Patuxent WFP. Anticipating a need to improve water supply system redundancy in the WSSD, WSSC Water completed a second phase of improvements at the plant in 2017. The Phase II of the Patuxent (WFP) Implementation project included improvements to the treatment processes, resulting in a nominal treatment capacity of 72 MGD, and the ability to provide up to 110 MGD of emergency treatment capacity. Phase II of the Patuxent Implementation project was completed in early 2025. With its completion of a new raw water pipeline, the full emergency treatment capacity at the plant could be fully realized. Most of the plant's processed water is gravity fed into the transmission and distribution system in Prince George's County. Pumping and transmission capacity also exists to provide approximately 12 MGD to the Montgomery High Zone and 36 MGD to the Montgomery Main Zone.

II.E - Water Distribution and Storage Systems:

WSSC Water delivers finished drinking water from its treatment plants to consumers throughout the WSSD in Montgomery County by a series of pumping facilities and transmission mains. Providing adequate water service also requires strategically located elevated water storage facilities serving sections of the county. The following sections discuss these distribution and storage systems.

II.E.1 - Water Service Pressure Zones:

The WSSD within Montgomery County is divided into separate pressure zones. These are grouped into two major zones, as shown in Figure 3-5. The Montgomery County Main Zone serves the northern part of the county, and the Montgomery County High Zone serves the southern part. The division between these two major pressure zones traverses the county west to east through western Potomac, Travilah, Rockville, Norbeck, Cloverly, and Fairland. Each of the major zones consists of several smaller pressure zones as shown in Table 3-3. The Montgomery County Main Zone also provides service to pressure zones in Prince George's County.

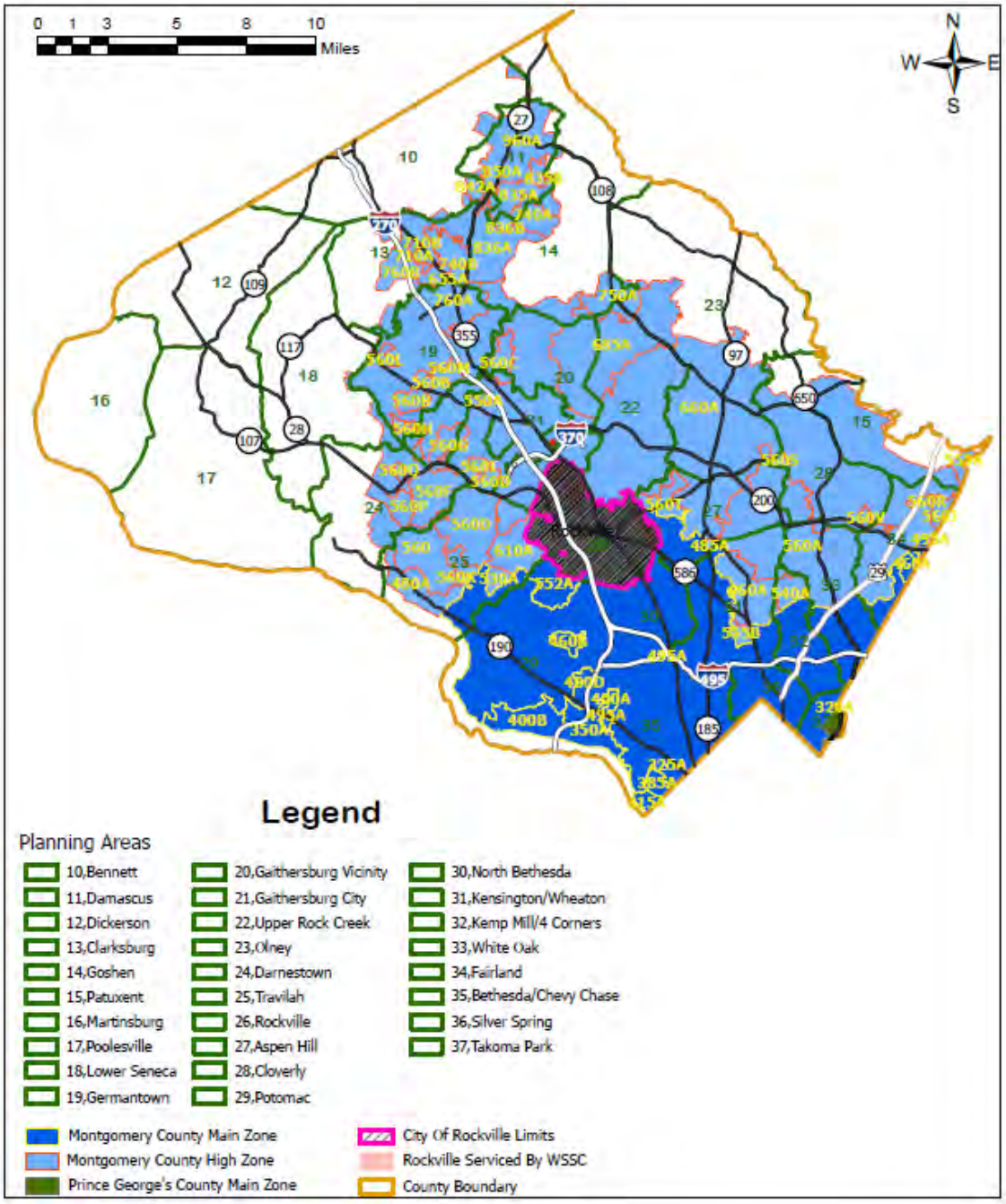
TABLE 3-3: WSSC Water Major Water Pressure Zones in Montgomery County

Main Pressure Zones	Served Local Zone	Normal Hydraulic Grade	Primary Water Supply Source
Montgomery County Main Zone Potomac Plant	Montgomery Co. Main Zone	495 feet	Potomac Plant
	Cabin John Zone	350 feet	Montgomery County Main Zone
	Falls Road Zone	552 feet	Montgomery County Main Zone
Montgomery County High Zone Potomac Plant	Colesville Zone	560 feet	Shady Grove Zone
	Shady Grove Zone	660 feet	Potomac and Patuxent Plants
	Air Park Zone	685 feet	Shady Grove Zone
	Laytonsville Zone	750 feet	Air Park Zone
	Brink Zone	760 feet	Shady Grove Zone
	Cedar Heights Zone	836 feet	Brink Zone
	Damascus Zone	960 feet	Cedar Heights Zone
Prince George's County Main Zone*	N/A	320 feet	Potomac and Patuxent Plants

There is a small portion of Takoma Park served by the Prince George's County Main Zone Pressure Zone

WSSC Water divides areas of the county into water pressure zones based primarily on ground elevations. Each pressure zone must have its own source or sources of supply (storage), transmission systems (i.e., pumping stations or pressure-reducing valves and transmission mains), and storage facilities to transport water from the sources to the points of use. A water supply source for a pressure zone is usually a storage tank and/or another adjacent pressure zone. Water supply to zones at higher elevations must be pumped, while water supply to lower elevations must be controlled by pressure regulation valves. Each zone's water supply is kept at a pressure that ensures enough quality and quantity for consumers. The water system in each zone may also serve nearby zones. Due to the large area and many pressure zones in the County, having backup support is crucial. This is achieved through interconnected pressure zones, two water sources, and storage facilities. Table 3-5 shows the hydraulic grade and primary water supply for the main zones, including which zones depend on each other. WSSC creates new pressure zones and adjusts boundaries based on projected development and system improvements. The current layout of major pressure zones in Montgomery County is shown in Figure 3-5.

Figure 3-5: WSSC Water Pressure Zones and MNCPPC Planning Areas



II.E.2 - Water Pumping Stations: Community water service in the Montgomery County portion of the WSSD relies partly on pumping systems. All finished water from the Potomac Plant must be pumped, and the plant's output cannot exceed its pumping capacity. The Potomac Plant Main Zone Pumping Station has a pumping capacity of 249 MGD; the High Zone pumping station provides a pumping capacity of 88 MGD. The Patuxent Main Zone Pumping Station has a capacity of 36 MGD; the Patuxent Plant High Zone Pumping Station has a capacity of 12 MGD. Most of the water from the Patuxent Water Filtration Plant is pumped, but some flows by gravity into the county. In addition to the pumping stations at the filtration plants, other stations throughout the county help maintain the

required water pressure in higher elevation zones (see Figure 3-6). The capacities of water pumping facilities are listed in Table 3-4.

Figure 3-6: WSSC Water Distribution System and Facilities

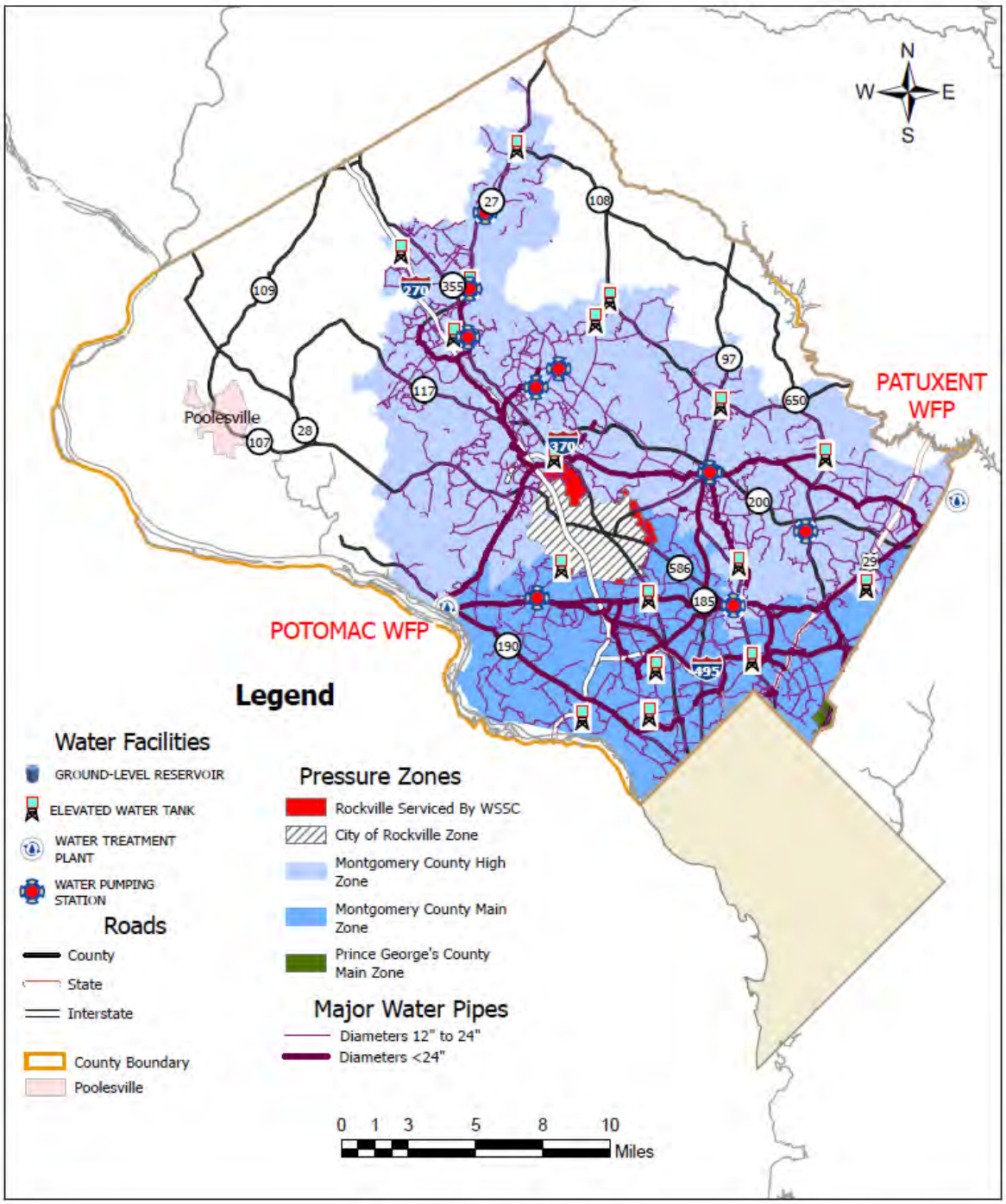


Table 3-4: WSSC Water Pumping Facilities

MAJOR PRESSURE ZONE	Pumping Station and Capacity
Montgomery County Main Zone	**Potomac Plant, 249 MGD** **Patuxent Plant, 37.4 MGD** Falls Road, 7.8 MGD
Montgomery County High Zone	**Potomac Plant, 88.0 MGD** **Patuxent Plant, 12.0 MGD** Air Park, 5.4 MGD Laytonsville, 3.0 MGD Brink, 8.0 MGD Cedar Heights, 4.5 MGD Colesville, 5.0 MGD Goshen Road, 10.0 MGD Neelsville, 10.8 MGD New Brink*, 13.0 MGD Norbeck, 15.0 MGD Wheaton, 25.5 MGD

**New Brink WPS serves as a redundant pump station to the Neelsville WPS.*

II.E.3 - Water Transmission Mains: Major water transmission mains move finished water from WSSC Water's pumping stations into the various pressure zones, to their associated storage facilities, and ultimately to the smaller, local distribution mains which serve customers. These mains generally decrease in diameter as they progress through the system from supply to the point of consumption, depending upon their relationship with other elements of the network. Major transmission lines (over 12 inches in diameter) are shown in Figure 3-6. Transmission mains leading from the Potomac WFP consist of 48-inch, 66-inch, and 96-inch diameter lines in Prince Georges County. In 2015, construction was completed on the 84-inch Potomac Bi-County Supply Main in Montgomery County. This project significantly increased transmission capacity from the Potomac WFP to Prince George's County. Transmission lines leading from the Patuxent WFP consist of 20-inch, 24-inch, 30-inch, and three 42-inch lines.

II.E.4 - Water Storage Facilities: Associated with each water pressure zone are water storage facilities. These finished water storage facilities are important elements of the water distribution system, performing the following essential functions:

- Provide equalization storage during periods of peak water demand in order to reduce peak loads required on sources of water supply, filtration plants, pumping stations, and transmission pipelines.
- Provide an essential reserve capacity in meeting fire service demand and provide water pressure during short-term interruptions caused by localized power failures or the need for system repairs.
- Provide "cushions" to pump against while maintaining pressures within the distribution system in certain cases. The cushioning effect of stored water helps prevent damage to piping and other water distribution appurtenances arising from inadvertent surges in pumped water pressure and resultant damage from "water hammer" effects.
- Reduce capital costs required for relatively expensive transmission mains by strategic placement of adequate storage facilities.

- Permit the use of pumping equipment during periods of off-peak electrical demand.
- Provide better stabilized system flow rates and pressures over entire water service areas.

The determination of how much storage capacity each pressure zone and each individual facility requires varies widely between utilities. There are no national standards for determining acceptable levels for each of these storage purposes. WSSC Water has set its storage standards based on the generally accepted levels of reliability and risk. WSSC Water designs its water storage facilities to meet the following three storage volume criteria:

- **Equalization Storage:** Meets hourly fluctuations in demand, satisfying all hourly demands in excess of the maximum day demand.
- **Fire Protection Storage:** Provides high flow rates for fire protection required during a major fire automatically without the reliance on mechanical pumping systems, preventing substantial drawdowns or reversals in water system pressure.
- **Emergency Storage:** Maintains service during emergencies such as pipeline breaks, power outages, and equipment failure, providing 4 hours of maximum day demand.

In light of more recent operational, water quality and foreseen drinking water regulations with more stringent standards; WSSC Water has recently reevaluated and revised its criteria for water storage facilities. The revised storage volume criteria may be generally summarized as follows:

- **Equalization Storage:** 15% of the maximum day demand.
- **Fire Protection Storage:** 0.63 Million Gallons.
- **Emergency Storage:** 4 hours of maximum day demand.

When designing and siting a proposed water storage facility, WSSC Water staff first consider the need for elevated, gravity-fed storage within a pressure zone. Elevated storage provides advantages over ground-level, pumped storage in terms of greater system reliability and faster response time to flow demands. Because elevated storage structures have a greater potential for affecting the visual landscape of a neighborhood, WSSC Water designs and constructs facilities in an architecturally desirable manner to minimize the impact on the surrounding neighborhood. In rare cases, ground-level or below-ground-level storage may provide gravity-fed storage to a pressure zone, but only where sufficiently high ground elevations exist which allow for such facilities. WSSC Water develops siting studies for water storage facilities with the involvement of local community. WSSC Water traditionally locates water storage facilities within or at the periphery of the community water service envelope, which minimizes both transmission costs and intrusion into areas not intended for community service.

WSSC Water's efforts to develop aesthetically pleasing storage facilities are widely recognized. Examples of this practice in both Montgomery and Prince Georges County include the Germantown Elevated Storage Tank--or the "Big Blue Ball"-- on the Montgomery College campus, which is painted to resemble the Earth as seen from space; and the Airpark Tank near Montgomery Village in eastern Gaithersburg, which is designed to resemble a cluster of farm silos and the Patuxent Wildlife Research Center elevated water storage tanks which blend in with the natural setting of the environment. WSSC Water currently has 27 water storage facilities distributed throughout Montgomery County. Including the water storage reservoirs at the Potomac and Patuxent Filtration Plants, total available storage capacity is approximately 127 million gallons. The capacity of individual public potable storage facilities is indicated on Table 3-5. The locations of WSSC Water's water storage facilities are shown in Figure 3-6.

Table 3-5: WSSC Water Storage Facilities Serving Montgomery County

ZONE	Water Storage Facility and Total Capacity (MGD)
MAIN ZONE	Alta Vista Standpipe, 0.5 MGD Bradley Hills Standpipe 1, 2.5 MGD Bradley Hills Standpipe 2, 2.6 MGD Cabin John Elevated Tank, 0.5 MGD Falls Road Standpipe, 3.2 MGD North Woodside Standpipe, 7.5 MGD Wall Lane Standpipe, 2.5 MGD Wheaton Reservoir 1, 4.0 MGD Wheaton Reservoir 2, 4.0 MGD Wheaton Reservoir 3, 15.0 MGD Wheaton Reservoir 4, 10.28 MGD
HIGH ZONE	Air Park Elevated Tank, 2.0 MGD Brink Elevated Tank, 1.0 MGD Brink Reservoir, 10.0 MGD Cedar Heights Reservoir, 2.5 MGD Clarksburg Elevated Tank, 1.0 MGD Colesville Elevated Tank, 2.2 NGD Colesville Reservoir, 1.0 MGD Damascus Elevated Tank, 1.5 MGD Germantown Elevated Tank, 2.0 MGD Glenmont Elevated Tank, 0.5 MGD Goshen Road Reservoir, 4.0 MGD Hampshire Greens Elevated Tank 1, 1.25 MGD Hampshire Greens Elevated Tank 2, 1.25 MGD Hampshire Greens Elevated Tank 3, 1.25 MGD Laytonsville Elevated Tank, 05 MGD Olney Elevated Tank, 1.5 MGD Shady Grove Elevated Tank, 3.0 MGD
TREATMENT PLANTS	Potomac Plant Reservoirs, 19.3 MGD Patuxent Plant Reservoirs, 18.4 MGD
TOTAL	**126.8 MGD**

I.E.5 - Distribution System Interconnections: WSSC Water serves or has system interconnections with the jurisdictions shown in Table 3-6. Some of these jurisdictions have agreements with WSSC Water for water supply as an everyday supply, and/or for emergencies only and/or to meet peak demands.

Over the past several years, Howard County has expressed interest in increasing its allocation. The County's current interconnection is located along Montgomery Street in Laurel. Howard County is requesting consideration of a second interconnection located on Route 29 in Montgomery County in the Burtonsville area. The second interconnection would be served by WSSC's Montgomery County High Zone; whereas, the existing interconnection is served by the Prince George's County Main Zone. WSSC Water is working with the County to evaluate the feasibility of this request and extent allowable and to determine what infrastructure improvements would be required. The cost for any required improvements would be the responsibility of the County**.**

Table 3-6: Interconnections with the WSSC Water System

Jurisdiction	Allocation	Average Withdrawal [C]
City of Bowie [A]	Not specified (Emergency)	Not currently metered
Charles County	6.4 MGD	0.5 MGD
Howard County [B]	5.0 MGD	4.3 MGD
City of Rockville	8.0 MGD (Emergency)	Negligible
DC Water	Not specified (Emergency)	Negligible

A - Within Prince George's County.
B - Howard County has expressed interest in increasing their allocation and adding a new interconnection in the Burtonsville vicinity. WSSC Water is working with the County to evaluate the feasibility of this request and extent allowable.
C - Average metered consumption for calendar year 2023.

In June 2022, WSSC Water and Charles County executed Addendum No. 1 to the 1987 Water Supply Agreement. This addendum allows for a second water interconnection to be located along South Crain Highway (US Route 301). The allocation at the original Bealle Hill Road interconnection will remain at 1.4 MGD and the allocation at the new interconnection is not to exceed 5.0 MGD. Both of the interconnections are served by the Prince George's County High Zone but are located in different pressure zones. The new interconnection requires Charles County to extend WSSC Water transmission mains to the County border which will be designed and constructed by the County, and reviewed, approved, and inspected by WSSC Water.

II.E.6 - Water Supply System Redundancy: This plan promotes general water supply system improvements where large water pressure zones, such as the Montgomery County Main Zone and the Montgomery County High Zone, have equal and adequate protection from prolonged major service interruptions. Interruptions, such as the 1977 filtration plant outage that caused a 15-hour shutdown and 2.5 days of partial service, or major transmission main breaks, can significantly reduce water service to WSSC customers. To address this, WSSC designed the water delivery system so some pressure zones can support adjacent zones. This mutual backup capability is achieved through interconnected pressure zones, two water sources, and storage facilities.

There are limited interconnections between the District of Columbia and WSSC Water systems in Montgomery and Prince George's Counties. However, the size, number, and water treatment capacities of these interconnections are not enough to meet all water demands during emergencies. Currently, no interconnections provide significant redundancy from outside the WSSC Water service area.

In 2016, the Metropolitan Washington Council of Governments (MWCOG) conducted a Regional Water System Redundancy Study with water systems in the D.C. Metropolitan Area. The study aimed to identify infrastructure improvements to enhance reliability through increased raw and treated water

interconnections. Similarly, the ICPRB highlighted the need for water supply redundancies in its 2015 and 2020 studies, recommending both structural and operational solutions as detailed in Section II.F.2.

II.F - Projected Water Demand and Supply System Needs:

A critical role of the County's Water and Sewer Plan is not only addressing current water supply needs but also projecting and adequately planning for future water needs based on Montgomery County's growth forecasts and historic water demand. The following sections provide the basis for,

and determination of, future community water demand in the County. The Plan also provides a summary of the major capital facilities needed to satisfy that projected demand.

II.F.1 - Overall Water Supply System Demand: Table 3-7 presents WSSC's daily average and maximum water production levels since 2000. Based on analysis of the latest water production and consumption data, WSSC Water has developed the following water demand per unit to be used for growth projections and planning water system improvements:

- Single-Family Dwelling Unit (SFDU):----------147.6 gallons per day (gpd)
- Employees:----------38.7 gpd
- Multi-Family Dwelling Unit (MFDU):----------128.2 gpd

Table 3-7: WSSC Historic Water Production

Year	Average Production (MGD)	Maximum Day Production (MGD)	Ratio
2000	162.0	200.8	1.24
2001	167.4	253.2	1.51
2002	164.8	221.8	1.35
2003	164.3	206.5	1.26
2004	168.1	210.4	1.25
2005	171.9	226.2	1.32
2006	169.2	224.9	1.33
2007	172.4	222.8	1.29
2008	162.7	251.1	1.54
2009	163.0	210.0	1.29
2010	175.4	232.8	1.33
2011	169.4	225.4	1.33
2012	163.9	226.2	1.38
2013	158.6	205.7	1.30
2014	161.7	205.0	1.27
2015	164.9	200.0	1.21
2016	164.7	208.6	1.27
2017	162.7	209.7	1.29
2018	163.0	212.9	1.31
2019	162.7	202.8	1.25
2020	161.1	222.2	1.38
2021	162.8	201.6	1.24
2022	159.7	199.5	1.25
2023	159.0	194.6	1.22
2024	163.6	213.4	1.30
2025	167.2	211.8	1.27

Note: Data includes all of the WSSC service area (Montgomery and Prince George's Counties)
MGD: Million Gallons/ Day
Source: WSSC Water- Planning Division – February 2026

WSSC has prepared water demand projections through the year 2045 for Montgomery County (**Table 3-8**), using MWCOG/M-NCPPC Round 9.2 population forecasts and current water use factors for single-family dwelling units, multi-family dwelling units, and employees.

Table 3-8: Projected Average Daily Water Demands for Montgomery County

Calendar Year	Main Zone	High Zone	Total
2025	48.4	39.1	87.5
2030	50.6	40.9	91.5
2035	52.1	42.6	94.7
2040	53.3	44.3	97.6
2045	54.2	45.9	100.1

Note: Based on Round 9.2 Growth Forecasts and Per-Unit Production:
- *Single-Family Dwelling Unit (SFDU): 159 gallons/day (gpd)*
- *Employees: 31 gpd*
- *Multi-Family Dwelling Unit (MFDU): 103 gpd*

Source: WSSC Water Planning Division (2022 Water Production Projections)

To account for hourly variation in consumption and for the use and refilling of water storage facilities, consumption criteria must span at least a 24-hour time period. To account for seasonal variations, the criteria specifies the 24-hour period of greatest projected consumption within a given year, generally referred to as the maximum day consumption. The specific numbers are obtained by multiplying the average daily consumption for the year and the maximum day factor and distributing the result over a typical 24-hour consumption pattern. The maximum day demand factor is the ratio of the peak day demand to the average day demand and is used in sizing the capacity of the water system facilities. The current maximum day demand factor used by WSSC Water is 1.43 for system wide facilities, based on a 20% probability exceedance. Table 3-9 lists WSSC Water's daily average and maximum water production projections and planned capacity for the Washington Suburban Sanitary District.

Table 3-9 Projected Average Daily Water Demands WSSD

Calendar Year	Projected Average Demand (MGD)	Projected Maximum Demand (MGD)	Planned Average Capacity (MGD)	Planned Emergency Capacity (MGD)*
2025	170.0	228.0	252	290
2030	183.7	243.9	355	393
2035	188.5	250.5	355	393
2040	192.9	256.4	355	393
2045	196.9	261.8	355	393

**: This is planned or available treatment capacity at both Potomac and Patuxent treatment facilities serving the WSSD (both Montgomery and Prince George's counties). The Potomac Plant is currently undergoing construction to meet the Consent. The Patuxent Plant and raw water supply delivery system recently underwent upgrades to increase its capacity to 72 MGD (nominal) and 110 MGD (emergency).*

NOTE: The above data is based on the 2022 Water Production Projections report by WSSC Water Planning Division.

As shown in the preceding table, total water consumption is anticipated to increase in the future as the population increases. Estimated water consumption at full development represents the average consumption expected when all parcels of land are developed to the extent allowed under current zoning classifications. Since zoning classifications for individual parcels may change and the

consumption factors used may also change, the full estimated development needs for production may change and are not shown in the preceding table.

The water demand projections noted above are based on the 2022 Water Production Projections Report. The 2022 update accounts for the local, regional, and national trends in per capita consumption which has been steadily declining due to water-saving fixtures and appliances. The rate of decline may shorten over time as market saturation occurs with plumbing upgrades to existing homes.

II.F.2 - Projected Water Supply System Needs:

WSSC Water's standard practice to address the projected water supply system needs within the WSSD is based on and in response to immediate, medium, and long-term needs and will be included in the WSSC Water's annual Capital Improvement Program (CIP). This includes projects related to needs assessment, planning, and project implementation involving facility upgrade and expansion.

WSSC Water uses several methods to fund the construction and operation of the water system needs. Detailed information concerning WSSC's funding methods is included in Chapter 1, Section IV.A. The current WSSC Water CIP budget document, and those for some prior years, are available through WSSC Water's budget webpage at: https://www.wsscwater.com/budget

II.F.2.a - Projected Source Water and Treatment Facility Needs:

The following sections include brief descriptions of WSSC's Water's major current and planned studies and facility needs as published in the current Capital Improvement Program.

- **Potomac WFP Consent Decree Program:** The Consent Decree (CD) was Entered by the U.S. District Court of Maryland on April 15, 2016. Under the terms of the CD WSSC Water is required to "undertake short-term operational changes and capital improvements at the Potomac WFP that will enable WSSC Water to reduce significantly the pounds per day of solids discharged to the River" (CD Section II. Paragraph 6.i); and to plan, design, and implement long-term "upgrades to the existing Plant or to design and construct a new plant to achieve the effluent limits, conditions, and waste load allocations established by the Maryland Department of the Environment (the Department) and/or in this Consent Decree, and incorporated in a new discharge permit to be issued by the Department" (CD Section II. Paragraph 6.ii). The CD required WSSC Water to submit a Draft Audit Report and Draft Long-Term Upgrade Plan to the Citizens and the Department by November 15, 2016, and final reports to the Citizens and the Department by January 1, 2017. The Final Audit and Long-Term Upgrade Plan Reports were submitted to the Citizens and the Department on December 29, 2016. The Department reviews the Audit Report and selects recommended improvements in operations, monitoring, and waste tracking, along with select capital projects that can be completed no later than April 1, 2020 and that are necessary to achieve the goals identified in CD Section IV. Paragraph 24. Additionally, the work required to implement the Long-Term Capital Improvements Project(s) shall be fully implemented in accordance with the schedule set forth in the Long-Term Upgrade Plan. WSSC Water shall be subject to a lump-sum stipulated penalty in accordance with the CD for failure to implement the Long-Term Capital Improvement Project(s) by January 1, 2026. The Potomac WFP Consent Decree Program provides for the planning, design, and construction required for the implementation of Short-Term Operational and Long-Term Capital Improvements at the Potomac Water Filtration Plant (WFP) to allow WSSC Water to meet the new discharge limitations identified in the Consent Decree.
- **Potomac WFP Main Zone Pipeline:** The primary purpose of this project is to provide redundancy to facilitate extended shutdowns for periodic maintenance, inspections, and repairs and to mitigate

the risk to plant operations due to failure of any one of the finished water mains. The existing 78-inch PCCP main, which was installed in 1967, is the primary feed to the 96-inch Montgomery County Main Zone pipeline and the 66-inch River Road pipeline. The existing 48-inch PCCP main, which was installed in 1962, serves as only a partial backup to the 78-inch line, since it is not adequately sized to meet the current summer season demands. Furthermore, the existing mains are nearing the end of their useful lives and the 78-inch main alone cannot meet the projected 2040 maximum day demands of 210 MGD. The 78-inch main and the 48-inch main together could convey 210 MGD; however, relying on both pipes to meet future demands would decrease the redundancy and reliability of WSSC Water's system. The redundancy, process improvement, and rehabilitation/replacement work recommended by the Potomac WFP Main Zone Redundancy Business Case Evaluation (CDM Smith, May 2021), undertaken as part of WSSC Water's Asset Management Program, provides value to the customer by minimizing the risk of failure and ensuring a safe and reliable supply of up to 210 MGD

of water in order to meet the current and future needs of the WSSD. This project provides for the planning, design, and construction of redundant finished water discharge mains, water pumping station upgrades, and other process improvements at the Potomac Water Filtration Plant (WFP) to ensure a safe and reliable water supply. This work includes the following: two new 54inch discharge pipes from the Main Zone and High Zone pumping stations that will feed into a new 84-inch discharge main that runs to the 96-inch and 66inch main wye connections on River Road; the addition of two new pumps in the High Zone pumping station to serve the Main Zone; a new 66-inch suction pipe to serve the new pumps in the High Zone pumping station; other modifications to the High Zone pumping station, including surge protection modifications and electrical upgrades; and replacement of the existing 78-inch and 48-inch PCCP discharge mains, which are nearing the end of their useful lives, after the new 84-inch redundant discharge main is in place.

- **Potomac Submerged Channel Raw Water Intake:** This study is to develop alternatives and examine the construction of a new submerged channel raw water intake in the Potomac River. This raw water intake would serve as an alternate to the existing Potomac intake at the river channel's bank below the plant at the C&O Canal National Park. The implementation of this project would provide for several objectives including:

    - Provide an additional barrier against drinking water contamination (particularly Giardia cyst and Cryptosporidium oocysts) by drawing better and more consistent and stable raw water quality.
    - Enhancing plant operational reliability by avoiding the current problems associated with ice and vegetation blocking the existing bank withdrawal.
    - Provide desired operational redundancy during emergency situations.
    - Provide significant treatment cost reduction associated with solids handling and transportation, chemical use, and energy consumption.

    The relevancy and schedule of this project is currently being evaluated in light of the Secondary Water Source Feasibility Study mentioned in Section II.C.2 since the recommended solution may potentially provide for the same benefit as this project.

- **Patuxent Raw Water Pipeline:** The raw water supply facilities were hydraulically limited to 72 MGD with all pumps running at the Rocky Gorge Pumping Station. In order to convey more than 72 MGD of raw water, a new raw water pipeline was required. A fourth raw water pipeline from the Rocky Gorge Pumping Station to the Patuxent Water Filtration Plant and modification/expansion of the Rocky Gorge Pumping Station was recently constructed and allows for a firm raw water pumping transmission capacity of 110 MGD. These improvements, in

conjunction with expansion of the Patuxent Water Filtration Plant, will give the Plant a firm nominal capacity of 72 MGD, with an emergency capacity of 110 MGD. This project provides for the planning, design, and construction of approximately 2.5 miles of new 48-inch diameter raw water pipeline from the Rocky Gorge Raw Water Pumping Station to the Patuxent Water Filtration Plant (Plant), cleaning of the existing water lines, and replacement of valves. The construction of the fourth raw water main was completed in 2025.

- **Source Water Protection:** Several efforts share the objective of protecting the source water in order to maintain a reliable water source. WSSC is an active participant in source water partnerships for both the Potomac River and Patuxent Reservoirs. WSSC works closely with the Interstate Commission on the Potomac River Basin, which is an advisory, non-regulatory interstate compact agency of the Potomac Basin states. Additionally, a project to update the 2002 Potomac River Source Water Assessment by identifying upstream potential chemical contaminants is anticipated was completed in 2016. WSSC also completed an Oil Spill Emergency Response Study in 2014 with the knowledge of the

  Colonial Pipeline river crossing just a few miles upstream of the Potomac Water Filtration Plant's intake. Additionally, as noted above, WSSC Water and its ICPRB CO-OP partners are working on the planning work and funding opportunities involved with the Regional Water Supply resiliency project which includes the use of the Travilah Quarry as a raw water reservoir for emergency use.

- **Water Supply Planning for Drought and Spills:** Drought and Spill planning and future water supply needs are previously presented in II.C. of this Chapter.

II.F.2.b Projected Transmission, Storage, Pumping, Distribution System Needs:

This section includes brief descriptions of and explanations for major projects that are either currently underway or planned to address the water distribution system needs in the Montgomery County High Zone and Main Zone.

o **Large Diameter Water Pipe & Large Valve Rehabilitation Program**: WSSC Water has approximately 1,031 miles of large diameter water main ranging from 16-inches to 96-inches in diameter. This includes 335 miles of cast iron, 326 miles of ductile iron, 35 miles of steel, and 335 miles of PCCP. Internal inspection and condition assessment is performed on PCCP pipelines 36inches and larger in diameter. Of the 335 miles of PCCP, 140 miles are 36-inch diameter and larger. The inspection program includes internal visual and sounding, sonic/ultrasonic testing, and electromagnetic testing to establish the condition of each pipe section and determine if maintenance repairs, rehabilitation, or replacement are needed. The planning and design phase evaluates the alignment, hydraulic capacity, and project coordination, among other factors, in an effort to re-engineer these pipelines to meet today's design standards. The design effort includes the preparation of bid ready contract documents including all needed rights-of-way acquisitions and regulatory permits. The constructed system is inspected, and an as-built plan is produced to serve as the renewed asset record. In order to minimize the risk associated with inoperable large valves and possible water outages, the large valve inspection and repair program was initiated to systematically inspect, exercise, repair, or replace any of the nearly 1,500 large diameter valves and vaults located throughout the system. Utility Wide Master Plan (December 2007); 30 Year Infrastructure Plan (2007); FY'24 Water Network Asset Management Plan (May 2022). The purpose of this program is to plan, inspect, design, and rehabilitate or replace large diameter water transmission mains and large system valves that have reached the end of their useful life. Condition assessment and/or corrosion monitoring is performed on metallic pipelines, including ductile iron, cast iron, and steel, to identify lengths of pipe requiring replacement or rehabilitation

and cathodic protection. The PCCP Inspection and Condition Assessment and Monitoring Program identifies individual pipe segments that require repair or replacement to assure the continued safe and reliable operation of the pipeline. The program also identifies extended lengths of pipe that require the replacement of an increased number of pipe segments in varying stages of

deterioration that are most cost effectively accomplished by the replacement or rehabilitation of long segments of the pipeline or the entire pipeline. Rehabilitation or replacement of these mains provides value to the customer by minimizing the risk of failure and ensuring a safe and reliable water supply. The program includes installation of Acoustic Fiber Optic Monitoring equipment in order to accomplish these goals in PCCP mains.

- **Water Reconstruction Program**: The program's projected work units and expenditure levels for FY'24 are as follows: design and construction of main replacement and associated water house connection renewals, 27 miles - $69.3M; cathodic protection - $2.9M; design and construction of large water service replacements - $8.9M; emergency contracts at depots - $5.5M; pipe armoring - $0.6M. Note: The specific mix and type of water main reconstruction may vary in any given year depending on the nature and priority of the work to be addressed. The program level may be adjusted in future years based upon the results of the Asset Management Plan. Based upon the prioritization and recommendations in the FY'24 Enterprise Asset Management Plan, the number of miles of water main replacement should begin to ramp back up by approximately 5 miles per year. Flow studies, water system modeling, and field surveys are routinely conducted. The annual Buried Water Assets System Asset Management Plan identifies the business risk exposure of the water distribution system. FY'24 Enterprise Asset Management Plan (May 2022). The purpose of this program is to renew and extend the useful life of water mains, house connections, and large water services. Portions of the water system are more than 80 years old. Bare cast iron mains, installed generally before 1965, permit the build-up of tuberculation which can reduce flow and cause discoloration at the customer's tap. Selected replacement is necessary to supply water in sufficient quantity, quality, and pressure for domestic use and firefighting. As the system ages, water main breaks are increasing. Selected mains are chronically breaking, and other mains are undersized for the current flow standards. Replacement, rehabilitation via structural lining, and the addition of cathodic protection to these mains provides added value to the customer. Galvanized, copper, and cast-iron water mains, as well as all other water main appurtenances including meter and PRV vaults are replaced on an as needed basis when they have exceeded their useful life.

- **Pleasant's Property Water Main Extension**: This project provides for the planning, design, and construction of 2,320 feet of 16-inch water main to serve the Pleasant's Property in the Montgomery County High Zone.

- **White Oak Water Mains Augmentation**: Existing water mains in this portion of the Montgomery County Main Zone will be upsized to provide adequate capacity to serve domestic and fire flow needs for three new developments in the White Oak area: Washington Adventist Hospital, Viva Global LifeSci Village, and FDA White Oak Master Plan. The project will also provide additional looping and redundancy to the 495A Pressure Zone. This project provides for the planning, design, and construction required for the replacement of 7,015 feet of 4- to 20-inch water mains along Cherry Hill Road, Gracefield Road, and Powder Mill Road.

- **Viva White Oak Water Main**: This project will provide new water mains to serve the Viva White Oak development and growth in the vicinity. The project will also provide additional looping and

redundancy to the 495A Pressure Zone. This project provides for the planning, design, and construction of 8,900 feet of 16-inch water main to serve Viva White Oak and the vicinity.

- **Lead Reduction Program**: The Lead and Copper Rule (LCR) is a key public health mandate designed to protect communities from the dangers of lead exposure in drinking water. WSSC Water has a long-standing commitment to ensuring customer safety and is dedicated to not only meeting but exceeding the LCR's requirements. WSSC Water's Lead Reduction program outlines WSSC Water's proactive strategy to eliminate lead from its water systems, minimize health risks, and ensure compliance with the enhanced regulations that took effect on October 16, 2024.

  WSSC Water has been actively engaged in lead mitigation for decades, having removed all known lead pipes from its distribution system in the early 2000s. However, the new LCR revisions primarily focus on identifying and addressing lead in both public and private service lines. To prepare, WSSC Water has reviewed approximately 478,500 plumbing records spanning over 100 years and created a comprehensive inventory of service line materials. In October 2024, WSSC Water launched an online tool for customers to check the material of their service lines and provide information to identify unknown pipes.

  Lead exposure, particularly in young children and pregnant women, can result in serious health issues, including developmental and behavioral problems, decreased IQ, and increased risks of heart disease and high blood pressure in adults. Reducing lead exposure by replacing all lead service lines is essential to protecting public health.

  WSSC Water's Lead Reduction Program prioritizes the replacement of lead and galvanized service lines using a risk-based approach. The program will focus on vulnerable communities and high-risk properties, including homes with young children and schools. Licensed plumbers will be used for private-side replacements, while WSSC Water will manage replacements on the utility side. The program aims to replace all lead service lines within five years.

  WSSC Water is launching a comprehensive outreach campaign to inform customers about the dangers of lead exposure and promote participation in the identification and replacement program. Community meetings, direct communications, and a dedicated website will provide guidance and support to customers throughout the process.

  The total program cost is estimated at $204.9 million over a five-year period, covering verification and replacement for both private and utility-owned lines. Of this, $77 million is allocated to private-side replacements, with the remainder supporting utility-side work and program management. WSSC Water will continue to seek external funding opportunities, including federal grants and state funding, to fully support the program.

- **Online Water Quality Monitoring System (OWQMS)**: WSSC Water expanded its online water quality monitoring system to create a more representative network of monitoring stations capable of enhancing surveillance and response. In addition, a Water Quality Information Management System (WQIMS) has been developed to consolidate and more effectively utilize the data generated from the monitoring network. Despite the effectiveness of the existing customer complaint system in capturing and categorizing customer complaints, the WQIMS significantly increases WSSC Water's ability to respond to fluctuations in water quality and potential contamination events by integrating real-time water quality data with customer-level alerts. This

integrated Surveillance and Response System (SRS) creates a more proactive management approach to better protect public health and safety.

II.F.2.c - Programs for Sustained Water Conservation and Waste Reduction:

WSSC Water has a variety of programs to promote water conservation. These efforts include:

- **Water Conservation Plan** MDE requires WSSC Water to prepare a Water Conservation Plan as a condition of the Water Appropriation Permit for the Potomac Water Filtration Plant. The objective of this Water Conservation Plan is to provide an overview of the water conservation initiatives undertaken by WSSC as required in the Water Appropriation Permit. WSSC published an updated Water Conservation Plan in 2022.

  This Water Conservation Plan follows the guidelines and format presented in MDE's *Guidance for Maryland Public Water Systems and Best Management Practices for Improving Water Conservation and Water Efficiency* published in 2010 and the U.S Environmental Protection Agency's *Water Conservation Plan Guidelines* published in 1998.

  WSSC Water's conservation goals are also based on long term water resources management and infrastructure funding policy. The goals will enable the most efficient use of the existing water resources and save valuable resources over the long term, while providing safe and reliable drinking water to the community. WSSC's Water Conservation goals include:

  - Conducting an annual water audit to account and control water loss
  - Improving the utilization and extending the life of existing facilities
  - Improving drought or emergency preparedness
  - Educating customers about the value of water
  - Protecting and preserving water resources while promoting environmental stewardship and sustainability

- **Annual Water Audit and Water Loss Reduction Plan:** As a condition of the water appropriation permits for the Potomac and Patuxent Water Filtration Plants, WSSC Water is required to prepare an annual water audit. This audit identifies the amount of water produced, water used, and non-revenue water. The audit is prepared in conformance with American Water Works Association (AWWA) Manual M36, Water Audits and Loss Control Programs, as required by the Maryland Department of the Environment. The condition of the permits requires that if the percent non-revenue water exceeds 10%, then an annual Water Loss Reduction Plan must be submitted. In 2024, the AWWA upgraded its annual water audit reporting format to include a new dashboard that now includes many key performance indicators helpful to water utilities in identifying potential sources and associated costs with non-revenue water. These metrics include unit rates of real losses (system leakage) and apparent losses (metering inaccuracies, theft, and data handling errors) as well as unit rate costs associated with such losses. It should be noted that AWWA no longer accepts percent water loss as one of these metrics. Upon completion of the water audit, WSSC Water prepares the annual Water Loss reduction Plan, which has also recently undergone a re-formatting into a spreadsheet reporting tool prepared by the Maryland Department of the Environment. WSSC Water is taking a proactive approach to reduce its non-revenue water. Methods to minimize such losses include:

  - Dedicating a leak detection crew to each service area.
  - Conducting inspections of small-diameter ferrous pipes using various leak detection tools and technologies.

- Maintaining a Pre-stressed Concrete Cylinder Pipe (PCCP) Management Program to detect and repair leaks on PCCP transmission mains 36" and larger.
- Utilizing satellite-based leak technology to conduct aerial scans.
- Implementing a meter infrastructure replacement program to replace large meters.
- Utilizing a zero-discharge flushing truck to reduce water waste during cleaning of water mains.
- Developing an application to compile data from planned and unplanned potable water discharges.

- **Public Outreach and Education Programs:** WSSC Water offers an information and water conservation education program that targets all customer groups. WSSC Water also lists water conservation practices in bill inserts to customers and in full detail on its website. As a core partner of the MWCOG Water Use it Wisely conservation campaign, WSSC Water has a history of working closely with the community to promote areas where water can be conserved and used efficiently. WSSC Water also uses social media and an email listserv to connect with readers and encourage water conservation.

- **Plumbing Code:** Federal regulations require the installation of water saving fixtures (e.g., toilets, shower heads, and sink faucets) in new installations and in all applications where plumbing fixtures are being replaced. In 2007, the WSSC Plumbing Code incorporated the International Plumbing Code (a model code) that enables greater regulatory consistency with surrounding jurisdictions and employs the latest federal regulations and industry standards for water conservation. Approximately every 2 to 3 years WSSC Water publishes and updated version of the Plumbing and Fuel Gas Code, with the most recently updated version published in 2021.

- **Rate Structure:** WSSC bills for water and sewer usage based on a 4-tier inclining block rate structure, which is based on Average Daily Consumption (ADC) in each metered billing period. Customers pay a higher cost as water consumption increases from one tier to the next. In this way, the rate structure encourages conservation. WSSC adopted this new rate structure effective July 1, 2019 after conducting a comprehensive Cost of Service study, evaluating and ranking public policies for rate design, and receiving input from the public.

II.F.3 - Cross-Connection Control Program:

The WSSC operates a Cross-Connection Control Program to minimize the risk of contamination to the public and private water distribution systems. Federal and State regulations require this program be administered by suppliers of water to community water systems.

a. Backflow - Contamination is possible at various end use plumbing fixtures and water utilizing equipment due to backflow unless *backflow preventers* are installed to eliminate the condition.

b. New Plumbing Systems - New plumbing systems shall have the proper level of backflow prevention as mandated and inspected through the permitting and inspection processes currently required by the WSSC Water Plumbing Code. Typically, water supplied to utilizing equipment with a high degree of hazard requires installation of a testable backflow prevention assembly to isolate that equipment and only allow water to flow into (and not back from) that hazard.

c. Follow Up Enforcement – Testable backflow preventers require annual testing by property owners to ensure the assembly is functioning within acceptable parameters. WSSC Water employs two methods to ensure program compliance:

i. Administrative – WSSC Water will utilize an interactive database with the capacity to send reminders and/or trigger greater enforcement actions where tracked backflow prevention

assembly testing is not kept current.

ii. **Inspections** – WSSC Water will utilize field inspections to ensure required testing is being performed and to visually inspect for system alterations or deficiencies that result in unprotected water outlets and issue corrective directives accordingly.

II.F.4 – Water Supply Master Plan and Facility Planning:

WSSC Water completed a Water System Master Plan in 2016 in which the overall capital needs of its finished water delivery system were examined within a 30-year timeframe. This included water treatment, water transmission, storage, pumping and distribution. The plan also addressed existing and future treatment, storage, pumping, and transmission, needs. A re-evaluation is underway and expected to be completed by the end of FY 2026. The results of the 2016 Master Plan identified that, in general, the system performs well and demonstrates that previous investments in transmission have built a robust and reliable distribution network. Improvements were identified to further increase the system reliability under outage conditions and the ability to serve areas from multiple sources, which will be critical to continued good service while major replacement projects are under construction and demand increases in the future.

Starting in CY 2025, WSSC Water launched a new, comprehensive initiative that includes a major effort in water master planning and facility planning. The purpose of this is to consolidate and expand upon all past and on-going efforts associated with water master and facility planning within WSSC Water and to supplement and enhance this work to develop one comprehensive Master Plan for the entire water system which will encompass water transmission and distribution;; pumping;; source water supply;; storage and water treatment;; and support buildings and grounds.

The 20-Year Master Plan will take a system-wide approach, while the 10-Year Facility Plans will focus on specific elements of the systems. The Facility Plans will cover each part of the water system, including support buildings and grounds, and will consolidate and expand on past and ongoing efforts into a single document for each element. These documents will be "living" resources, regularly updated to address evolving internal and external needs.

They will serve as the foundation for recommending new CIP programs and projects, as well as for identifying improvements in operations and maintenance. Recommendations will be made annually to inform the development of WSSC Water's annual CIP budget in a logical and systematic manner.

The final Master Plan is scheduled to be completed in December 2026, and the Facility Plans are expected to be completed by December 2027.

II.F.5 - Financing the Water Supply System

WSSC Water uses several methods to fund the construction and operation of the water supply system. Detailed information concerning WSSC Water's funding methods is included in Chapter 1, Section IV.A of this Plan. The current CIP budget document, and those for some prior years, are available through WSSC Water's budget webpage at: https://www.wsscwater.com/budget.

III: ROCKVILLE SERVICE AREA

The City of Rockville (Rockville) owns and operates its own water supply system, separate from the WSSC Water community system, from source water to distribution. Rockville provides community water service to an area located within the corporate limits of Rockville and outside the designated limits of the Washington Suburban Sanitary District (WSSD). Properties located within Rockville's maximum expansion limit (MEL) and outside the WSSD are eligible to receive water service from Rockville upon annexation into corporate City limits of Rockville. The approximate boundaries of the Rockville Service Area are shown in Figures 3-7 and 3-8

Figure 3-7: Rockville Water System Regional Context

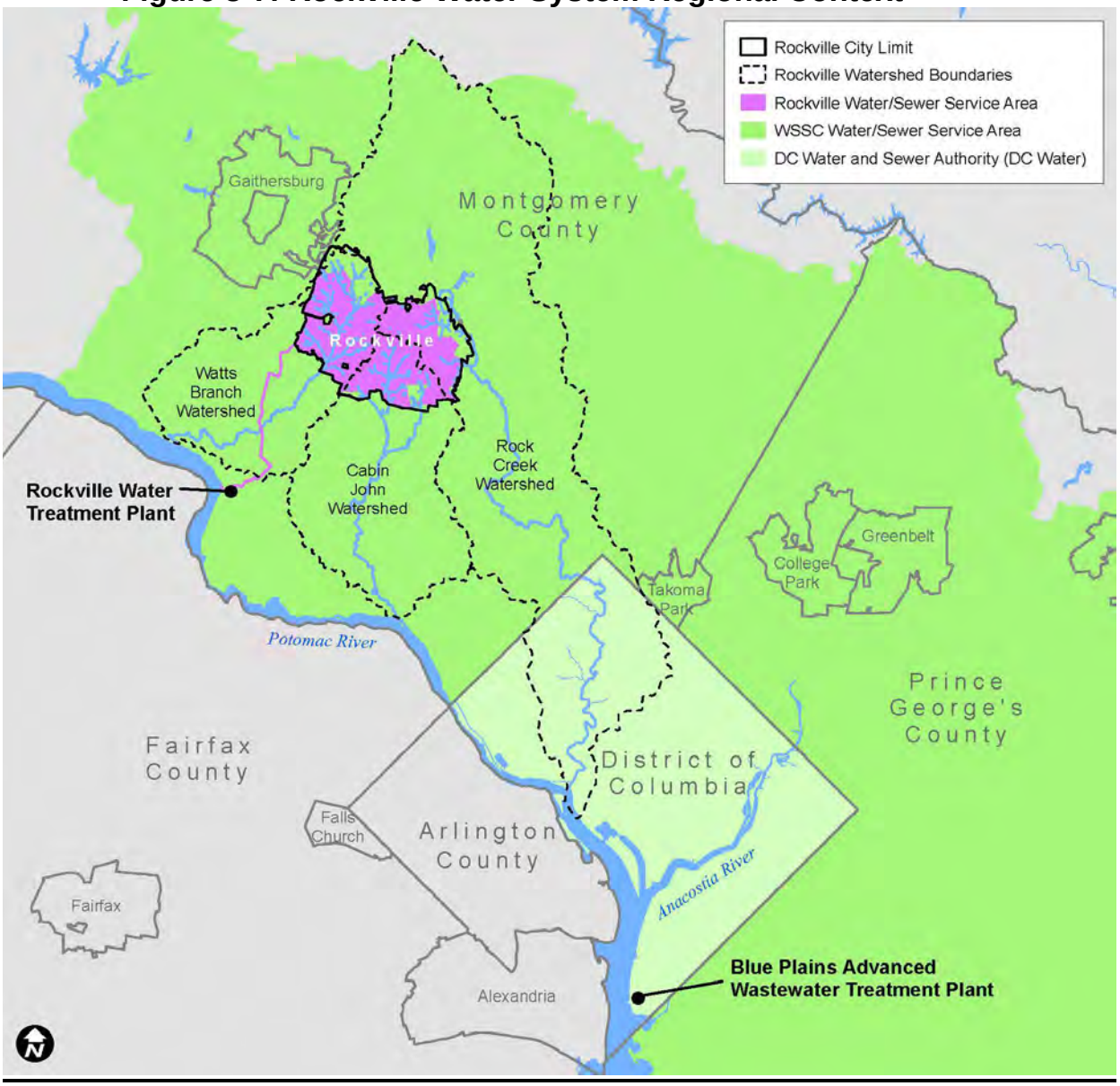
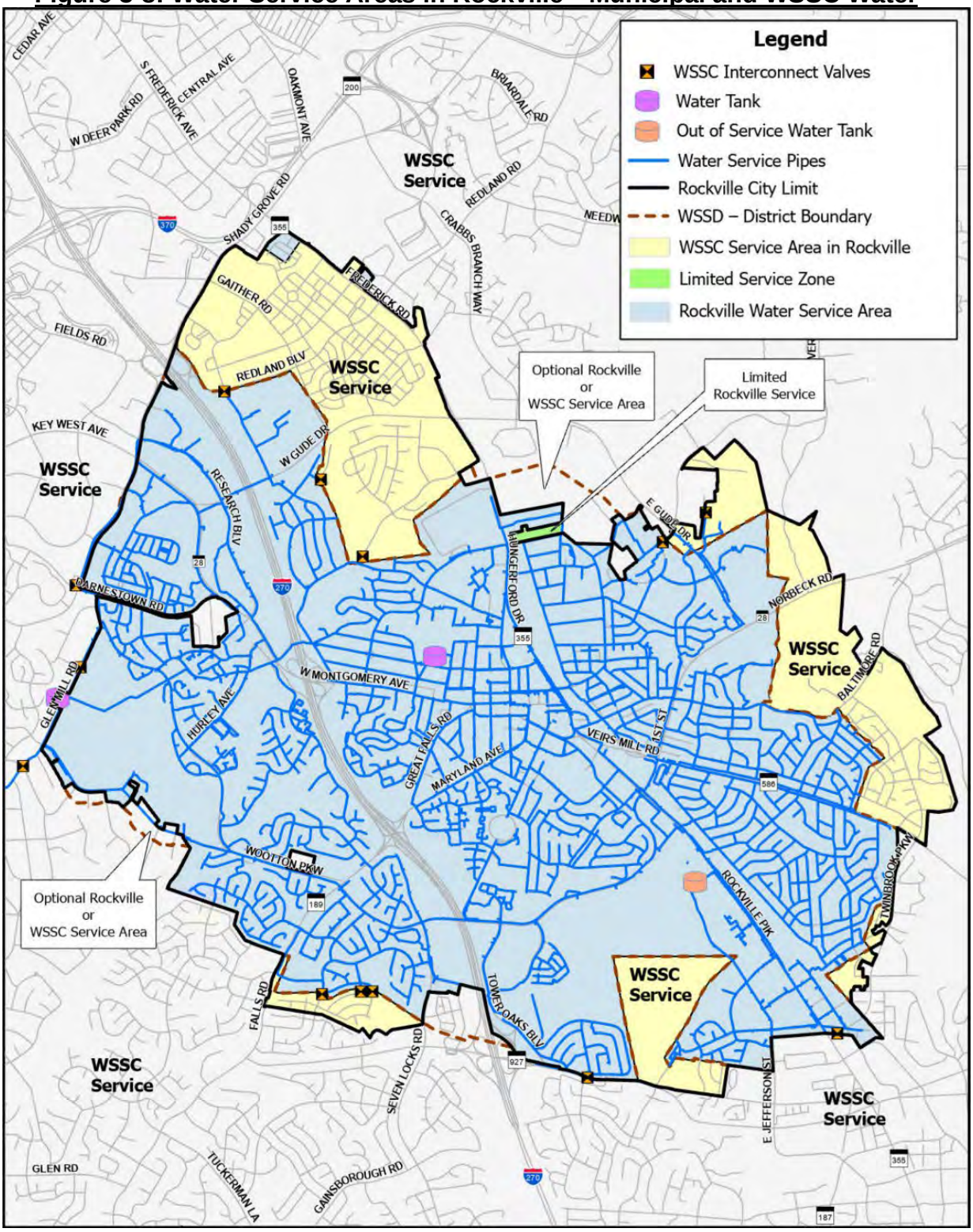


Figure 3-8: Water Service Areas in Rockville—Municipal and WSSC Water



III.A: Service Policies

Approximately 70 percent of Rockville residents and businesses receive their water from the City's Filtration Plant and distribution system. The remaining 30 percent receive water from WSSC Water. Periodically, Rockville's corporate boundary changes through property annexations. Historically, most annexations were driven by the property's location outside the WSSD. By code, Rockville provides water and sewer service only to properties located within its corporate limits. Accordingly, Rockville requires that properties located within the MEL, and outside of both the corporate limits and the WSSD must annex into Rockville to receive public water and sewer. (See Figure 3-8).

III.B: Water Supply Source

Rockville draws raw water from the Potomac River at an intake structure located on the east bank of the river at Sandy Landing Road on the C&O Canal, approximately 0.8 miles southeast of Swains Lock and five miles southwest of the city. Aside from several interconnections with WSSC Water's water supply system (see Section II.E.3.), this facility functions as Rockville's only water supply source.

Rockville received its first Water Appropriation and Use Permit from the State of Maryland in 1958. The State issued this permit for a daily average of 5.5 mgd and a maximum daily withdrawal of 8.0 mgd. In May 2002, the State issued a Water Appropriation and Use Permit to Rockville increasing the daily average to 7.1 mgd and increasing the maximum daily withdrawal to 12.1 mgd. In 2014, the State issued Rockville a Water Appropriation and Use Permit that mirrored the 2002 permit. This permit is set to expire in 2026. The City is now in the process of applying for its subsequent Water Appropriation and Use Permit for the same withdrawal rates.

III.C: Water Source Policies and Drought Management

Because they share a common raw water source; the Potomac River, Rockville and WSSC Water also share some of the same policies and agreements affecting their use of the river, especially during drought events. Rockville abides by the 1978 "Low Flow Allocation Agreement" when the restriction stage is declared in the Washington Metropolitan area as required by Maryland Department of the Environment (MDE) Water Management Administration. Rockville is accorded the same status as WSSC Water, under the Maryland Drought Monitoring and Response Plan. Rockville is also a signatory of the 1994 "Metropolitan Washington Water Supply Emergency Agreement" and the COG Drought Management Plan (See Section II.B.). Notwithstanding, Rockville has an agreement, executed in 2010, with WSSC Water allowing Rockville to request as much as 8 MGD of water from the WSSC Water system to respond to emergencies and to meet peak demands. Rockville's water supply system benefits from water supply releases from the Jennings Randolph Reservoir and Little Seneca Lake.

III.D: Water Treatment Facility

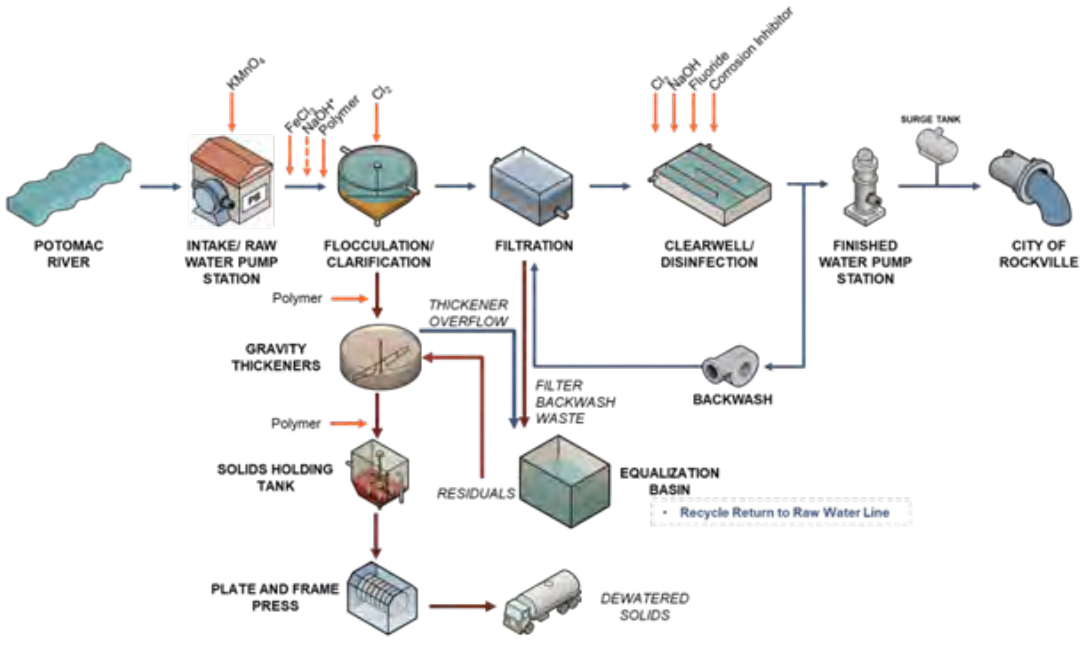
The Rockville Water Filtration Plant (WTP) is owned and operated by the City of Rockville located on Sandy Landing Road, at N433,000/E734,500. It withdraws from the Potomac River and has an intake capacity of 14 MGD and a treatment capacity of 8 MGD. Due to nearly flat water demands during recent years, the City has no plans within the next several years to expand the treatment capacity of its Water Treatment Plant. Consistent with regional and national trends in the water industry, the average daily production has even declined from 4.88 MGD in 2011 to 4.34 MGD in 2020 and the average maximum daily production has decreased from 7.5 MGD in 2011 to 6.56 MGD in 2020. Additional information on City's Treatment Plant is included in Table 3-10.

Table 3-10: Rockville Service Area Water Treatment Facility

Facility Owner	City of Rockville
Operating Agency	City of Rockville
Plant Location & Coordinates	Sandy Landing Road N433,000/E734,500
Water Source	Potomac River
Treatment Type/Process	sodium hydroxide, ferric chloride, flocculation, filtration, chlorination, fluoridation
Rated Plant Capacity	8.0 MGD
Plant Current Average Production	4.7 MGD
Maximum Peak Flow	8.0 MGD
Storage capacity	11.2 MG
Sludge Disposal	land application
Current Status/Comments	Expansion to 12 mgd capacity approved in 2011. Interconnections with WSSC Water allow the City to draw up to an additional 8 mgd from WSSC Water in emergencies.

Between 1996 to 2004 Rockville implemented multiple CIP projects to upgrade its then 40-plus-year old Water Filtration Plant to meet the 1986 amendments to the Safe Drinking Water Act of 1974. Although the main objectives of most of these projects were to update the old plant and to meet higher EPA standards, Rockville also designed and implemented these projects to meet projected higher water demand. Since 2009 Rockville continued to implement CIP projects primarily to meet EPA's Stage 2 Disinfectants and Disinfection Byproducts Rule, but also to continue to upgrade the now 60-year-old Plant. These projects are addressed under Section III.E.5. A schematic diagram of the City of Rockville Treatment Process is shown in Figure 3-9.

Figure 3-9 City of Rockville Treatment Process



Rockville may pursue a modification to the Water Treatment Plant which would allow Rockville to periodically discharge spent water back to the Potomac River. This will require approval from MDE. In 1996 Rockville began operating its water plant as a "zero discharge" water plant as directed by MDE. Before 1996, the plant discharged sediment-laden water back to the Potomac River, as WSSC Water is still allowed to do today. When the Potomac River is experiencing continuous high turbidity, which mixes a high amount of sediment with water coming into the plant, the filter press that removes the sediment can become over-taxed. Because of the zero-discharge regulation, the entire plant ceases operations until the situation is resolved. Also, during times of rapidly changing raw water quality, the plant can be filled quickly with water that has not had the proper chemical dosages. This will immediately shut down the plant. The plant staff will then recirculate this inadequately treated water through the treatment train until the water has been determined to meet all regulations for finished water. During these times of filter press shut down or plant shut down, Rockville purchases water from WSSC Water to supply potable water to its customers. An alternative solution is for MDE to remove the zero-discharge designation and to allow Rockville to periodically discharge spent water back to the Potomac River, like WSSC Water.

III.E: Water Supply Distribution and Storage System

Rockville maintains its own water distribution system, supplying water service to residents, businesses, and institutions within the Rockville corporate limits and outside the WSSD. The major elements of that system are as follows.

III.E.1: Pumping and Major Transmission Facilities

Treated water leaving the Rockville Water Filtration Plant is pumped through 30,096 feet of 24-inch prestressed, steel cylinder, concrete pipe before it enters the distribution system at Glen Mill Road and Veirs Drive. In 2006 Rockville constructed a pump station on Glen Mill Road to meet projected growth demands of the water system. However, similar to the overall Washington Metropolitan area, Rockville's per capita demand is decreasing and accordingly Rockville has not experienced growth of the water demand as previously anticipated. Therefore, the existing Water Filtration Plant is still capable of providing water to meet peak water demand for Rockville customers. Rockville has only one primary water service pressure zone (Main Zone) with three smaller pressure zones (Tower Oaks, Rockville Pike and Twinbrook Zone) controlled by pressure reducing valves and no intermediate pumping stations. The major distribution system consists of 24-inch, 20-inch, and 16-inch trunk mains. (See Figure 3-8.)

III.E.2: Water Storage Facilities

The City has three potable water storage facilities ranging in capacity from 0.2 to 8.0 million gallons (MG) with total storage capacity of 11.2 MG. One of the storage tanks, Talbot Street Tank (1 MG), was removed from service in 2014. Therefore, Rockville no longer includes the 1.0 MG of storage in the capacity determination. The capacities of individual public potable storage facilities are indicated in Table 3-11.

Table 3-11: Water Storage Facilities - City of Rockville

Storage Facility	Capacity (Million Gallons)
Carr Avenue Tank	3.0
Filter Plant Clearwell	0.2
Hunting Hill Tank	8.0
Talbot Street Tank*	0.0
Total	**11.2**

**Removed from service in 2014. Talbot Street tank has been disconnected from the system and will be demolished in the future.*

III.E.3: Water System Redundancy

Existing interconnections with the WSSC Water's water system are listed on Table 3-12. These interconnections serve primarily to increase the flow for available fire protection and to serve as an automatic emergency water source. In 2016 WSSC contacted Rockville to explore disconnecting some of the interconnections along Glen Mill Road and to date, no action has been taken. The maximum allowable withdrawal from WSSC Water is 8 mgd based on Rockville's 2010 agreement with WSSC Water. Since 2010, Rockville's withdrawals from the WSSC Water system have ranged from 0.1 MG to 568 MG; with the lower withdrawal amounts typically associated with intermittent WTP outages and the larger withdrawal amounts typically associated with prolonged WTP outages for plant upgrades or significant system failures resulting in prolonged water purchase. In 2010 Rockville withdrew approximately 568 MG during a three-month period, while Rockville repaired its 24-inch transmission main. Rockville typically uses WSSC Water to support planned outages to make improvements at the WTP. Occasionally, Rockville uses WSSC Water during non-planned outages at the WTP, which occur when system components fail or during a significant water main break.

Table 3-12: Existing Interconnections with WSSC Water - City of Rockville

Diameter Size (Inches)	Location
12	Redland Rd. and Piccard Dr.+
10	College Pkwy. north of Nelson St.
8	Wintergreen Terr. and Larkspur Terr.
12	Southlawn La. south of E. Gude Dr.+
16	Rockville Pk. and Rollins Ave.*
12	Montrose Rd. and Farm Haven Dr.
8	Dead end of Rothgeb Drive*
6	Canterbury Way and WSSD Boundary
8	Stratton Dr. and Dunster La.
12	Glen Mill Rd and Mary Knoll Dr.**
24	Glen Mill Rd. and Circle Dr.**
24	Glen Mill Road and Lakewood Drive**
24	Glen Mill Rd. and Lloyd Rd.**
24	Glen Mill Rd. and Pheasant Drive**
24	Glen Mill Rd. and Valley Drive**
6	Dunster Lane and WSSD Boundary
12	Shady Grove Rd. and Darnestown Rd.+

** Piped connection is physically abandoned*
***WSSC Water may remove the interconnection in the future*
+ Pressure reducing valve at this location

III.E.4: Projected Water Demand

The average daily production for 2025 was 4.25 mgd with a maximum day of 5.86 mgd. The average daily production for 2015 was 4.03 mgd with a maximum day of 6.47 mgd. By comparison, the average daily production in 2015 was 4.03 mgd with a maximum day of 6.47 mgd. These figures demonstrate that water production has remained stable over the last decade, even as Rockville's service population has trended upward.

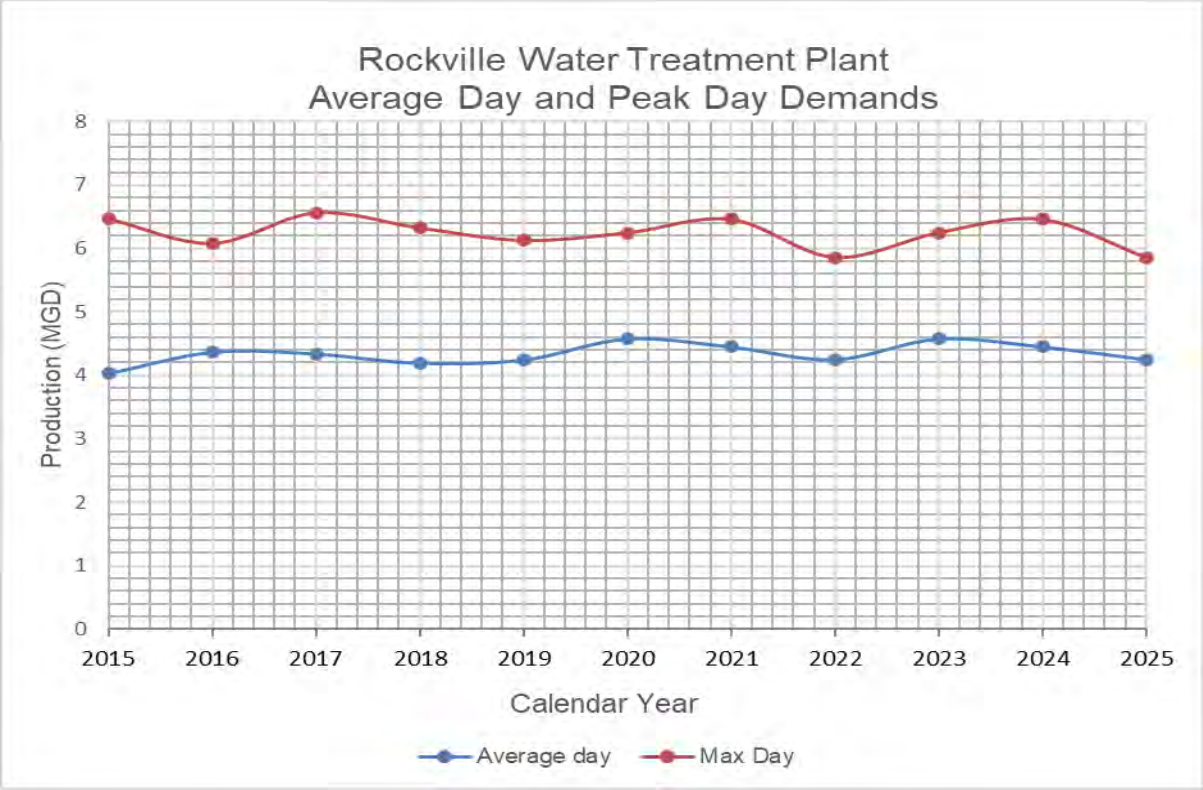


Table 3-13 shows the following information: population projections for that part of Rockville outside the WSSD (Rockville's service customers), projected water demands, and planned water plant capacity. To provide spatial resolution, the water demand projections are based on development data provided by the Metropolitan Washington Council of Governments (MWCOG). The amount of water expected to be used by new developments is based on historical water usage trends from the City's billing records and water audits between the years 2021-2023. In addition, input from the City Planning Department was used to adjust the forecasts to accommodate new developments within the City's growth area.

Table 3-13: Projected Water Supply Demands and Planned Capacity City of Rockville

Calendar Year	**Population**	**Projected Daily Average**	**Projected Daily Maximum**	**Planned Capacity (mgd)** Daily Maximum
2017*	49,700	4.48	6.85	8.0
2040**	69,000	5.20	7.86	8.0 ***

Source: Water demand projections are based on development data provided by the Metropolitan Washington Council of Governments (MWCOG). The amount of water expected to be used by new developments is based on historical water usage trends from the City's billing records and water audits between the years 2021-2023
Note: Average peaking factor of 1.51 was used based on WTP production records from 2019 to 2023.
**Actual*
*** Included in the demand projects is an estimated employment population of 83,136 in 2040.*
**** City to monitor demand and assess need for expansion if demands increase more than anticipated.*

The average day demand for 2024 was 4.48 mgd with a maximum day demand of 6.85 mgd, both slightly above the average and maximum daily production rates noted above (4.45 and 6.46 mgd respectively). The average daily demand is projected to be 5.2 mgd in 2040 with the maximum daily demand projected to be 8.0 mgd in 2040, which meets the currents existing plant capacity.

III.E.5: Projected Water Supply System Needs

City of Rockville, through proactive capital project planning, consistently undertakes improvements for our water systems. Driven by a clear set of goals—including adhering to stringent federal and State regulations, ensuring infrastructure reliability, addressing aging assets, and strategically supporting current and future development demands—Rockville consistently anticipates and plans for necessary upgrades.

Water Treatment Plant (WTP) upgrades have been a recurring focus, including projects between 1996 and 2004 to modernize the plant to meet amendments to the Safe Drinking Water Act and handle increased demand. Further upgrades were implemented since 2009, particularly to comply with the EPA's Stage 2 Disinfectants and Disinfection Byproducts Rule, which became effective for the City in 2013. More recent completed construction projects include the WTP Electrical, Roof, and HVAC Upgrades and new security infrastructure as part of the SCADA Cybersecurity project.

In the water distribution system, an ongoing effort involves the Water Main Rehabilitation Program, including rehabilitation or repair 1 percent of water mains each year. The City has also historically begun replacing aging water meters. This program evolved into the broader Water Meter Replacement and AMI Implementation. City's 2040 comprehensive also recommended addressing lead service lines in the distribution system.

To strategically address aging infrastructure and proactively prepare for more stringent environmental regulations, Rockville is prioritizing the development of comprehensive Master Plans. The FY26-FY30 CIP reflects this focus through the inclusion of a Water Distribution System Master Plan, designed to optimize the long-term performance and sustainability of the distribution network. Additionally, the Water Treatment Facility Master Plan is nearing completion and will be instrumental in guiding capital project decisions for both immediate and future needs.

III.E.6: Water Supply System Capital Improvements:

Investments are planned to address aging infrastructure, comply with environmental regulations, and maintain reliability. Specific projects in the FY26-FY30 CIP or long-range plans include:

- **Water Treatment Plant (WTP):**
  - Water Treatment Plant Safety Improvements, including changing from chlorine gas to bulk sodium hypochlorite for disinfection.
  - Water Treatment Plant Sludge Dewatering Replacement
  - Water Treatment Plant Security Improvements
  - WTP Facility Master Plan and Water Regulatory Compliance
  - WTP Sludge Dewatering Replacement.
  - WTP Clarifier Improvements.

In addition, a Water Treatment Facility Master Plan is in the process of being completed for the City of Rockville's Water Treatment Plant (WTP). This plan covers near-term and long-term needs at the WTP. The master plan identifies the need for several major upgrades to the WTP's key water treatment processes, including clarification, sedimentation, filtration, and advanced treatment (specifically for emerging contaminants like PFAS), and residuals handling.

Feasibility studies are being conducted as part of the WTP Facility Master Plan and Water Regulatory Compliance to evaluate these interrelated process upgrades. These studies aim to determine the best treatment strategy for each process to meet regulatory requirements and future

water demands. Other improvements and projects identified or considered based on the master plan and related assessments include:

- o Raw Water System Improvements.
- o Finished Water Safety and Electrical Improvements at the Plant and potentially the Distribution System.
- o Chemical System Improvements
- o Disinfection, Glen Mill Pump Station and High Service Pump Station Assessment and Enhancement.
- o Installation of PFAS Treatment Process

- **Water Distribution System:**
  Improvements and current program related to City's water distribution include:

  - o **Water Main Rehabilitation Program:** A major focus is the Water Main Rehabilitation & Improvement program, a sustainable program that aims to rehabilitate or replace all water main pipes in the system on a 100-year cycle, which equates to 1 percent per year. This program aims to improve fire flows, improve localized water quality by removing old pipes, and over time, decrease the number of water main breaks. Initially, the focus is on removing severely tuberculated cast iron water mains and replacing them with lined ductile iron water mains. As of FY 2024, this program had funded the replacement of 24.6 miles of water mains. The FY26-FY30 Capital Improvement Program (CIP) includes the Water Main Rehab & Improvement project, which is fully funded and includes state and federal funding from the Maryland Department of the Environment (MDE) Drinking Water State Revolving Fund (DWSRF) program. Tasks within this program also include inspecting and assessing the 24-inch transmission main, rehabilitating existing tuberculated pipes, valves, vaults, and appurtenances, increasing the diameter of undersized pipes, and connecting dead-end pipe segments. Other projects include:

    - Lead and Copper Regulatory Compliance
    - Water Treatment Plant and Distribution System SCADA Improvements
    - Water Distribution System Master Plan

  - o **Water Meter Replacement Program:** The City plans to replace its aging water meters by implementing an Advanced Metering Infrastructure (AMI) program. This AMI project, included in the FY26-FY30 CIP, seeks to achieve accurate metering, enable monthly billing, improve leak detection, and provides customers with access to their usage data.

  - o **Water Storage Facilities:** Rehabilitation projects have been implemented for tanks like Hunting Hill and Carr Ave. The Talbot Street Tank was removed from service in 2014 and is planned for demolition and removal.

III.E.7: Financing Water Systems

Information on the City's water systems financing is included in Section IV.B of Chapter 1. Additional information on Capital Program for the City of Rockville is available at:
https://www.rockvillemd.gov/951/Budget-Financials

IV: TOWN OF POOLESVILLE:

The Town of Poolesville, located in western Montgomery County (see Figure 3-1), has operated its own community water supply, storage, and distribution system since 1964. It is the only community water supply system in the County which relies on groundwater for its source water supply. Poolesville's water supply system serves only residences, businesses, and institutions within the town, forming a sanitary district concurrent with the Town's corporate limits and exclusive from the WSSD.

IV.A: Water Supply Source:

The Town presently has 10 municipal groundwater wells in operation, which have a combined total average constant sustainable yield per day of 728 gallons per minute (gpm), or 1,048,320 gpd (assumes 24 hours pumping).

All of Poolesville's wells are equipped with flow regulating valves and have been set to specific pumping rates to ensure that each wells' major water bearings zones are not dewatered. These rates were determined by continuous 30-day pumping of individual wells during drought conditions and do not take into account any interference that may occur between wells if they were pumped simultaneously for 30 days.

Poolesville's groundwater quality is typically good and requires minimal treatment. Recent testing has identified several wells with PFAS compounds. Wells #2 and #3 were taken offline in 2023 until charcoal activated carbon filtration units could be installed. Both wells were brought back online in 2024. Six other wells have PFAS concentrations slightly above the 4PPT regulation. Design is underway to tie wells together and create centralized treatment plants. Wells 4 & 14 have been fully constructed but have PFAS compounds also and will have filtration units installed. Grant funding has been applied for to facilitate the project.

All wells are treated with chlorine, as mandated by the Safe Water Drinking Act. In addition, well #2 utilizes a cartridge filtration unit due to signs of possibly being under the direct influence of surface water. Well #7 & 9 are tied together for one point of entry and are equipped for radon and uranium removal.

The Town currently withdraws groundwater from the New Oxford Formation aquifer and has four watersheds within its corporate boundaries: Horsepen Branch, Broad Run, Dry Seneca Creek, and Russell Branch. In 2008, MDE issued the Town new Water Appropriation and Use (WAU) permits for the Horsepen Branch, Dry Seneca Creek, Broad Run and Russell Branch watersheds. The total of the four watershed appropriation permits is 650,000 gpd for an annual daily average and 910,000 gpd for the daily average of the month of maximum use.

According to MDE, on a yearly basis the Town has a total daily average of 651,000 gpd (452 gpm) of groundwater theoretically available within the corporate boundaries. The permitted groundwater yields for both the Horsepen and Russell Branch watersheds are essentially "tapped out." The Dry Seneca Creek and Broad Run watersheds have an additional 52,500 gpd (36 gpm) and 92,500 gpd (64 gpm) of available groundwater supply on a daily average basis, respectively.

The Town wells and available groundwater supply per watershed are described on Tables 3-T14 and 3-T15, respectively, and are mapped in Figure 3-10.

Figure 3-10 Poolesville Community Water Supply Systems

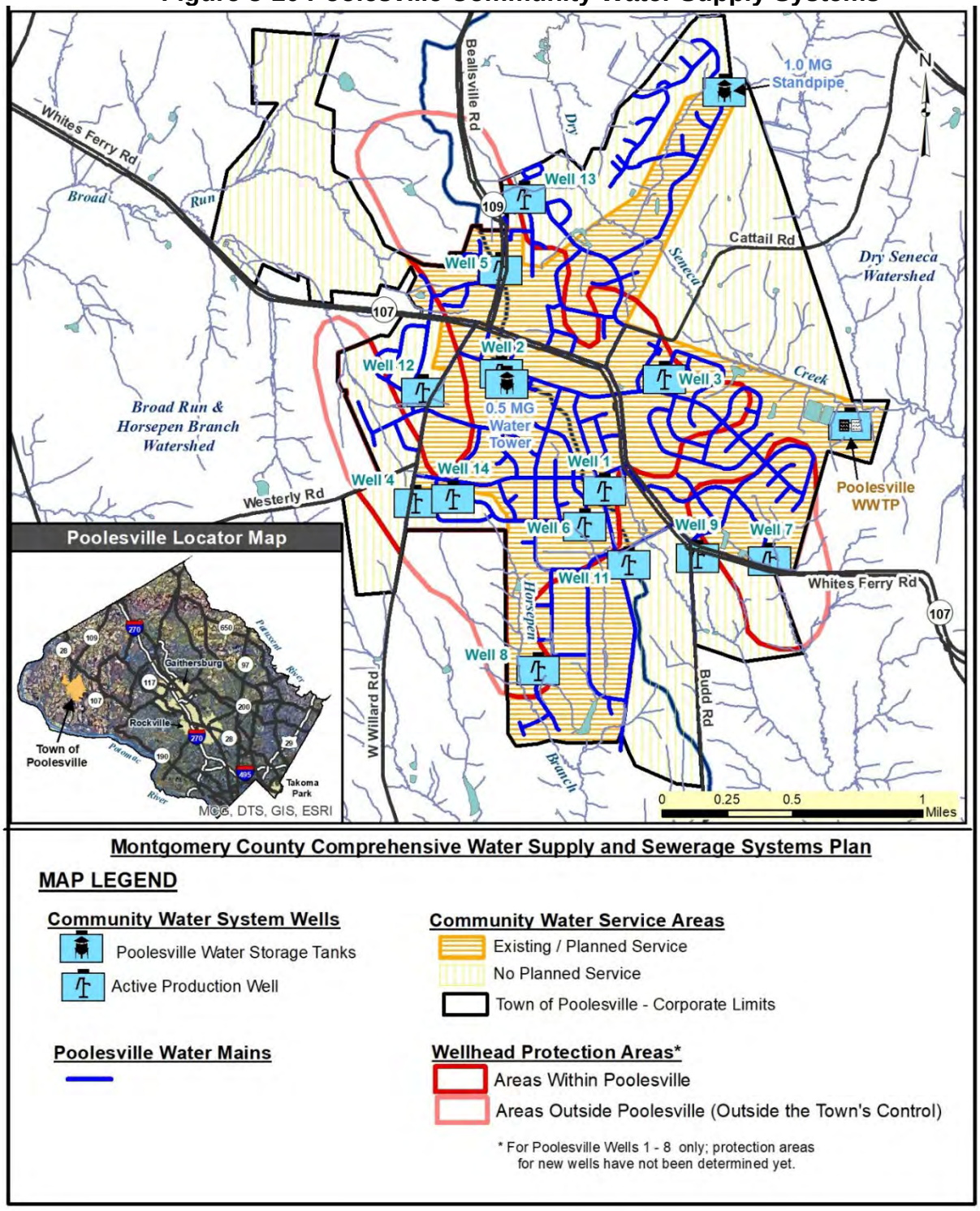


Table 3-14: Available Groundwater Supply by Watershed – Town of Poolesville

Watershed - Community System Wells	Area (Acres)	Theoretically Available Groundwater (gpd)	Ave. Daily Allocation (gpd)	Max. Monthly Average Allocation (gpd)	Potential Well Yields (gpd)	Ave. Daily Remaining Available Groundwater (gpd)
Horsepen Branch Wells 2,4,6 8,11&14	588	149,00	293,00	388,000	597,600	0
Broad Run Well 12	551	140,000	47,500	66,600	66,600	92,500
Dry Seneca Creek Wells 3, 5, & 13	973	247,000	194,500	273,400	303,400	52,500
Russell Branch Wells 7,& 9	450	115,000	115,000	182,000	359,000	0
Totals	**2,562**	**651,000**	**680,000**	**910,000**	**1,326,600**	**145,000**

Table 3-15: Inventory of Existing Community System Wells – Town of Poolesville

MDE Appropriation Permit	Well Name or Number	Coordinate Location	Depth (Feet)	Diameter (Inches)	Ave. Constant Sustainable Yield (gpm) [A]	Potential Daily Yield (gpd) [B]	Water Quality
#M01970G007 (10)	2	N477,190 E682,120	453	6	100	144,000	Good
#M01970G107 (01)	3	N477,190 E685,030	285	6	60	86,400	Good
#M01970G007 (10)	4	N477,000 E680,000	600	6.5	40	50,400	Good
#M01970G107 (01)	5	N479,350 E681,850	500	6	100	144,000	Good
#M01970G007 (10)	6	N474,000 E684,000	500	6	110	187,200	Good
#M01970G207 (01)	7	N543,500 E687,500	700	8	45	72,000	Good
#M01970G007 (10)	8	N472,000 E637,500	500	8	65	86,400	Good
#M01970G207 (01)	9	N534,100 E1,198,275	800	8	125	179,600	Good
#M01970G007 (11)	11	39.132923-77.406878	1,200	8	100	144,000	Good
#M02004G006 (01)	12	39.142113-77.421577	466	8	72	108,000	Good
#MO2004G003 (01)	13	39.153584-77.415215	500	8	51	93,600	Good
#M01970G007 (13)	14	N:1192536.19 E:535288.11	500	8	35	50,400	Good
TOTAL	NA	NA	NA		**903**	**1,300,320**	NA

[A] *Based on well yield data and pump tests performed by the Town. Source: Town of Poolesville.*
[B] *Assumes 24 hours of pumping per day.*
[C] *The Town removed Well #10 from service due to iron bacterial contamination.*
Note: Well number 2 through number 13 are within New Oxford Formation Aquifer.

IV.B: Source Water Protection Programs:

Poolesville's groundwater is generally of high quality. It meets all current drinking water standards and requires minimal treatment before it reaches the tap. In recent years, the Town has developed protective legislation to reduce the threat to groundwater from contamination arising from stationary sources. A threat from mobile sources of contamination will always remain from tank trucks carrying such products as gasoline, home heating fuel and pesticides. Appropriate contingency plans for this occurrence have been developed as part of the Wellhead Protection Plan and Emergency Response Plan. The Town will continue to develop one or more additional well fields as far removed from potential sources of contamination as possible. Further, the Town will pursue abandonment of In-Town private well and septic systems to limit this as a potential source of groundwater contamination. The Town views their Wellhead Protection Area as all land within the corporate boundaries and, in some cases, extending beyond the corporate limits. The Wellhead Protection Plan ensures a degree of certainty that the present planning process that reviews new development applications and changes in use provides protection for the Town's water supply.

Naturally occurring alpha emitters have been found in Poolesville's ground water, as well as in other area communities using ground water across the nation. Alpha emitters are naturally occurring radioactive elements in the earth's crust, and radioactive decay products. The most common alpha emitters in drinking water are radium, radon and uranium. Most of the radionuclides in drinking water occur naturally and are not considered a public health concern at very low levels. Due to the presence of some higher concentration of alfa emitters in Poolesville groundwater supply, the Town has installed uranium treatment systems on three of its wells and is planning to install additional radon removal systems in the future. The Town of Poolesville monitors for alfa emitters and the results are reported to MDE on regular basis. The Town's drinking water quality meets State and Federal regulatory compliance levels for Alpha Emitters and the results are published in the Town's Annual Water Quality Report.
PFAS compounds have been detected in several wells. Charcoal activated filtration units have been successfully installed on wells with elevated levels above 25PPT. The other wells with lower reported levels have until 2029 to be in compliance with EPA regulations.

The U.S. EPA has designated the Town's groundwater supply as part of a Sole Source Aquifer. Please refer to Section V.B.2. on this Chapter for additional information.

IV.C: Water Distribution System:

The Town of Poolesville has one pressure zone maintained by nine well pumps and two storage facilities. These two water storage facilities have a combined capacity of 1.5 million gallons. The storage facilities provide the Town with several days of capacity to respond to unexpected and non-catastrophic events such as well pump malfunction or water line breaks (see Figure 3-T8). The one-million-gallon ground level standpipe storage tank has a booster pump station with a capacity of 1500 gpm. Under normal operating conditions, the standpipe tank operates via gravity. The Town has approximately 140,000 feet of water mains ranging in diameter from 1" to 16".

IV.D: System Redundancy:

The Town of Poolesville currently has no immediate means of obtaining additional water supply other than the Town's existing wells. The two closest potential connection points with the WSSC Water's water system are located in Darnestown along Route 28 and south of Darnestown along River Road and are a considerable distance (approximately seven and twelve miles, respectively) from Poolesville (no planning has been initiated to provide for future interconnections). The Potomac River, a possible source of surface water, is located approximately 4 miles from the Town.

Although the Town does not have an alternate source, redundant wells have been drilled and placed in service beyond the allowable withdrawal permit in the event of a watershed being contaminated or any

other catastrophic event that might impact a portion of the well system. The Town is considering additional redundant wells in preparation for potential climate changes.

IV.E: Projected Growth and Water System Demand:

The Town's current 10-year Master Plan, adopted in December 2024, establishes a population not to exceed 6,500 in the foreseeable future Any additional residential construction shall be based on a calculation of three hundred twenty-five (325) gallons per day per residence.

In 2024 the Town developed Water Capacity Management Plan and is coordinating with the Maryland Department of the Environment. Table 3-16 summarizes the Town of Poolesville's past and projected population along with projected water supply demands and planned capacity for the town.

Table 3-16: Projected Water Supply Demands and Planned Capacity Town of Poolesville

Design Year	Total Population	Served Population	Unserved[C] Population	GPCD[A] (gallons)	Average[D] Capacity (MGD)[B]	Peak Monthly Demand
2025	6,000	5,980	20	100	0.650	0.910
2030	6,500	6,480	20	100	0.650	0.910
2035	6,500	6,480	20	100	0.650	0.910

[A] Gallons Per Capita Per Day (GPCD) for the year 2020 based on actual data. Future GPCD projections estimated by the Town.
[B] For planning purposes, the Town estimates the peak monthly demand to be 1.5 times the average monthly demand.
[C] Unserved population utilizes private, individual wells.
[D] The Town of Poolesville's water capacity is permitted and capable of meeting the total expected population growth of 6,500 residents. To ensure an adequate water supply for current and future residents, the Town expanded the water supply capacity to meet future needs prior to the allocation of water taps and new Development. The actual average daily demand for 2019 was 505,288 gallons per day (GPD) and a peak monthly demand of 571,149 GPD. It is anticipated that by 2030, the Comprehensive population cap not to exceed 6,500 residents will be met and the capacities and demand will be approximately 650,000 GPD with a peak monthly demand of 910,000 GPD.

IV.F: Projected Water Supply System Facility Needs:

To provide system redundancy with climate change projections, the Town is considering bringing additional redundant wells online. Consideration will be given to easements outside of the municipal boundary or potentially annexing land. Additional information is provided in Table 3-17.

TABLE 3-17 - Immediate, 5, and 10-Year Priorities for Water Supply Development Town of Poolesville

Description	Location	Fiscal Year	Estimated Costs	Project Status Construction Start
Redundant Wells	Unknown	Open	Unknown	Immediate Priority
Wel l#15 & Well House	Cattail Rd	Open	$1,250,000	Five and Ten Year Period Projects

The 1.5-million-gallon storage capacity currently provided in the Town is sufficient to serve the ultimate population. The Town is in the process of identifying additional wells to provide redundancy in the water supply for existing residents. Table 3-17.

IV.G: Financing Water Systems:

Information on the Town's water system financing is included in Section IV.B of Chapter 1. Additional information on Capital Program for the Town of Poolesville is available at:
https://poolesvillemd.gov/wp-content/uploads/2020/07/FY2021-Budget-BUDGET-CAP-BUDGET5-27-2020-FINAL-FINAL.pdf

V: INDIVIDUAL WATER SUPPLY SYSTEMS AND RURAL SANITATION

In the more rural, less-densely populated parts of Montgomery County, residents, businesses and institutions depend primarily on groundwater supplied by wells for their water supply. Approximately 80,000 County residents rely on groundwater for their only source of water supply. The areas dependent on groundwater wells form an irregular crescent starting in the southwestern part of the county, sweeping around to the west, then north of Clarksburg and around Damascus, then south and east along the Patuxent River watershed (see Figure 3-11). The county has approximately 20,000 individual wells in use. Ground water wells are used not only for potable water supply, but also for uses such as irrigation, industrial processes, and ground water monitoring. Most wells are located in areas outside of the community water service envelope. However, Figure 3-11 shows that some wells may be found within areas planned for community systems, often where community water systems have not yet been constructed.

Of the wells within the county, only Poolesville's municipal wells are part of a community water supply system. This Plan refers to private or non-municipal wells as "individual water supply systems," consistent with State law. Some larger individual water supply systems are referred to as "multiuse systems." (See Section V.D.).

Some information concerning wells and rural water supply systems that might logically be included in the following sections of Chapter 3 is consolidated in Chapter 1 with similar information concerning individual sewerage systems. One of the intents of this update of the Water and Sewer Plan is to start focusing attention on individual systems and concerns regarding rural sanitation. For the time being, Chapter 1 of this Plan provides a more convenient venue for these issues.

V.A: Groundwater Supply Geologic Conditions:

All of the bedrock in the county is fractured to some extent, some formations more than others. Wells that intercept fractures usually provide the best groundwater yields. However, fractures do not normally extend great distances, and there is little or no interconnection between adjoining basins or sub-basins. Drainage divides for surface streams also define the boundaries for subsurface water movement. The flow in streams following the dissipation of storm flows is known as base flow and represents the gradual discharge of groundwater to the surface.

Most of Montgomery County is located in the Piedmont physiographic province. A thin section of Coastal Plain sediments overlays the crystalline rocks of the Piedmont formations in the area east of U.S. Route 29. The crystalline rocks of the Piedmont are chiefly phyllites and schist. In the southwestern portion of the county, red and gray siltstone and sandstone sedimentary formations overlay the crystalline rock. Most of the area underlain by schists or Coastal Plain sediments have already been developed on the WSSC Water or Rockville public water systems. Remaining areas in these geologic units are within the proposed water service envelope or are planned for relatively low-density development.

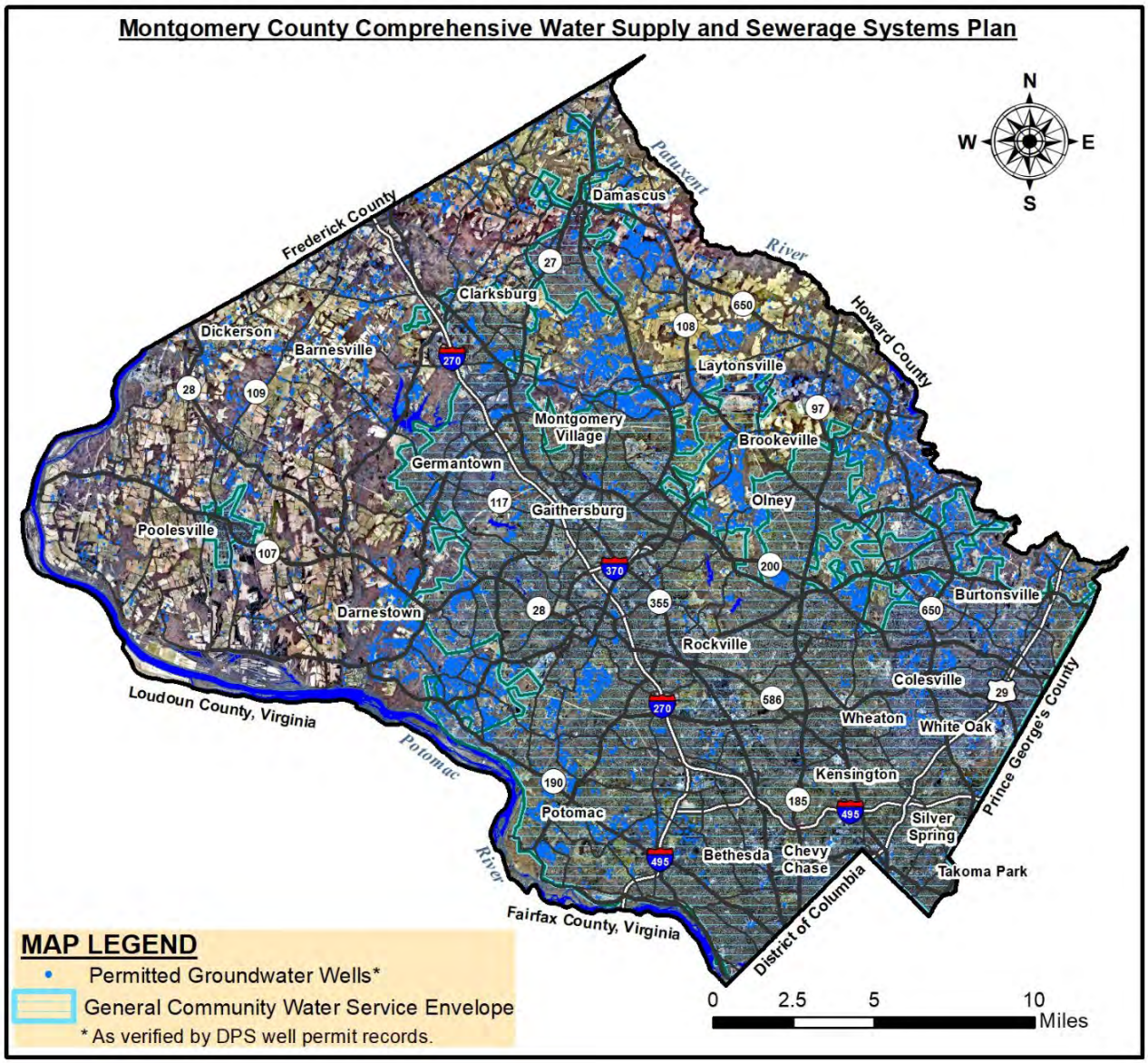
Moderately shallow soils with bedrock outcrops, particularly in stream valleys, characterize the Phyllite rock underlying the western and northwestern portions of the county. Although these areas have some of the lowest well yields of any area of the county, these yields are generally adequate for individual dwellings and businesses. Water quality is considered good; it seldom requires treatment for use, and there are no known areas of widespread pollution though localized pollution is a problem in some areas.

The southwestern portion of the county is characterized by sedimentary deposits of shale, sandstone and siltstone, which provide the source of water for the Town of Poolesville. The Town uses all the

water withdrawn from the sedimentary area for potable use. These sedimentary deposits, along with the phyllite areas, are not considered good aquifers from the standpoint of yield. Water in the sedimentary rock strata is chiefly found in fractures and crevices. Since the soil and overburden above the bedrock is thin, it offers little opportunity for groundwater storage. The yield of wells in this area can decline dramatically during extended drought periods, as has been experienced by the Town of Poolesville. During normal rainfall periods, well yields remain constant and adequate.

The water in the sedimentary area tends to be hard and mildly alkaline. Occasionally iron and/or manganese need to be removed for aesthetic reasons. The water quality in this area is similar to water quality in other sedimentary areas of Maryland and Virginia that have primarily rural agricultural land uses and is generally considered to be good.

Figure 3-11: Permitted Groundwater Wells



V.B: Groundwater Regulations and Protection Programs:

The following programs regulate the establishment and use of groundwater wells and protect the county's groundwater resources.

V.B.1: Well Permitting - The County's Department of Permitting Services (DPS), Well and Septic Section, is responsible for the administration and enforcement of County and State laws and regulations governing on-site, individual water supply systems. This authority is delegated from the State's Department of the Environment (MDE). Relevant regulations are included in COMAR 26.03.01, 26.03.05, and 26.04.02 -.04, and in County Executive Regulation 28-93AM "On-Site Water Systems and On-Site Sewage Disposal Systems in Montgomery County."

DPS accomplishes these responsibilities by:

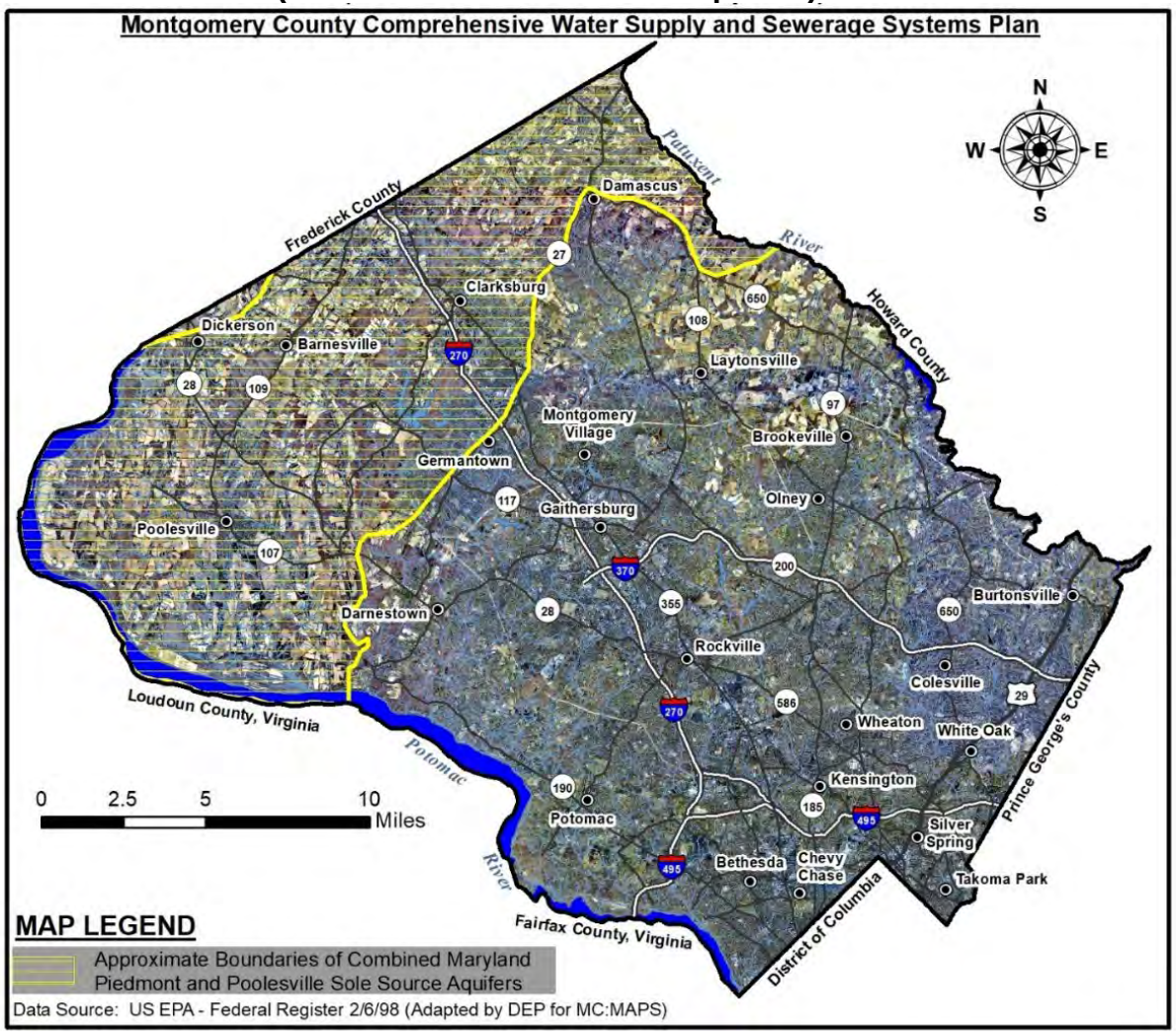
- Reviewing preliminary plans and record plats for properties served by on-site systems.
- Issuing permits for and inspecting the construction of new and replacement wells. In most areas of the county, wells are drilled without preliminary monitored by DPS. The capacity of drilled wells is checked by a draw test prior to final permitting.
- Sampling water supplies for potability. New wells for potable uses are normally sampled for nitrates, coliform bacteria, and turbidity.
- Responding to complaints about onsite systems.

On-going well monitoring is done when some subsequent licensure or approval is required, such as childcare licenses, group or nursing homes, food service facilities, or swimming pools. There are no requirements for ongoing monitoring of wells used solely for single family residences. A typical residential demand is often calculated at 500 GPD per average single-family residence for septic system design purposes. COMAR regulations require a well yield of at least one gallon per minute (or 1,440 gallons per day) and at least 500 gallons of water to be available during one two-hour period each day.

MDE maintains a permitting authority for commercial, institutional, and residential subdivision projects though its Water Appropriation and Use permit. This permit is also required for wells for non-potable uses such as irrigation or commercial uses. As the County authority responsible for water and sewer service planning, DEP reviews and signs off on these permits to ensure that they comply with the Water and Sewer Plan.

V.B.2: Sole Source Aquifer - The Sole Source Aquifer Program, established under Section 1424(e) of the Federal Safe Drinking Water Act of 1974, authorizes the Administrator of the U.S. Environmental Protection Agency (EPA) to designate aquifers as the "sole or principal" source of drinking water for an area. The program provides for EPA review of projects receiving federal financial assistance planned for the sole source aquifer area to determine their potential for contaminating the aquifer and creating a significant hazard to public health. EPA may approve, disapprove, or approve conditionally with modification of a project using federal funds. In 1980 and 1998, EPA designated some of parts of western Montgomery County as Sole Source Aquifer and included the Piedmont and Poolesville sole source aquifers. The approximate boundaries of combined Piedmont and Poolesville sole source aquifers is shown in Figure 3-12. For more information on the sole source aquifers, see Chapter 2, section II.E.1.

Figure 3-12: US EPA Sole Source Aquifers in Montgomery County (Piedmont and Poolesville Aquifers)



V.C.: Ground Water and Well Problems:

Individual ground water wells fail for a variety of reasons:

- Contamination of the ground water from an onsite or offsite source, including but not limited to fuel leaks and spills, bacteria from leaking septic systems, and nitrates from fertilizers.
- Contamination of the well from bacteria.
- Inflow to the well from a surface water or shallow ground water source.
- Failure of the submerged well pump or water treatment systems.
- Structural failure of the well, especially older, shallow, hand-dug wells.
- Insufficient ground water flow into the well.

For the majority of areas located outside the planned community water service envelope, DPS addresses these problems with onsite solutions, such as water treatment systems, equipment repairs

or replacement, well disinfection, and replacement wells. In areas with available community water service DPS will typically recommend connection to the community water system.
Some of the preceding problems, particularly ground water contamination, have the potential to affect not just one well, but also surrounding wells. In such cases, DPS may recommend a joint well survey of the affected area with DEP, especially where community water service is in close proximity.

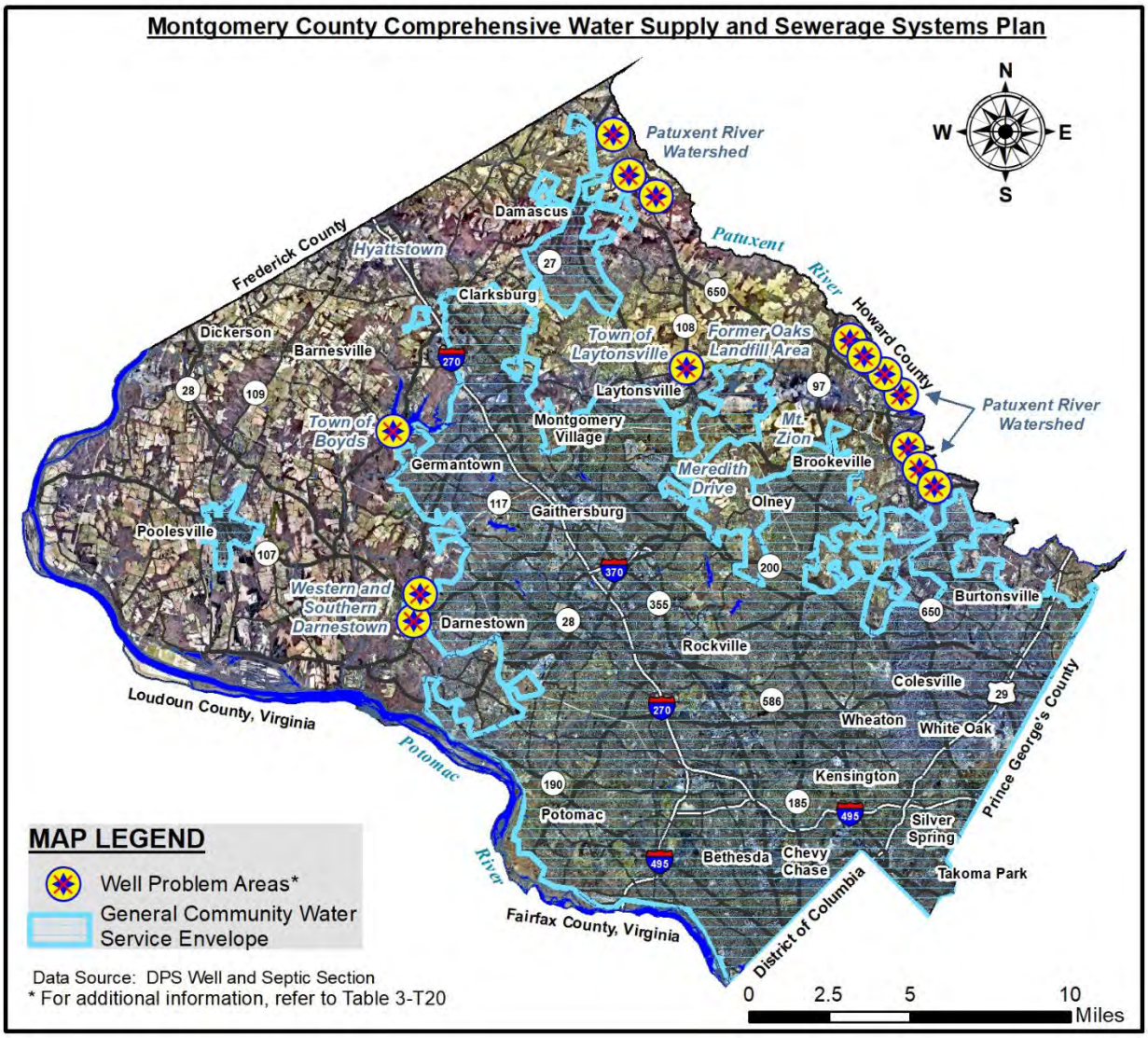
Although DPS does not currently maintain a comprehensive database of well yields and contamination problems throughout the county, the agency has provided information concerning groundwater problem areas based on staff experience as identified in Table 3-18 and are identified on Figure 3-13.

Table 3-18: Groundwater and Well Problem Areas

Location	Problem	Potential Solutions	Actions Taken
Town of Boyds	polluted aquifer	▪ community water service ▪ individual GAC filters	DPS is addressing well problems in this area as they come forward.
Town of Laytonsville	polluted aquifer (hydrocarbons and nitrates)	▪ community water service ▪ individual GAC filters ▪ handle old wells properly	The Town requested approval for community water service, which the County approved in the Plan in 2001. A WSSC Water community water system is completed and in service to the town and nearby properties. However, residents and businesses have been slower to connect to the system than anticipated. More coordination with the Town government may be needed to help move water service forward in the community.
Patuxent River Watershed: ▪ northeast of Damascus ▪ Between Routes 108 and 97	low well yields	Not Applicable	DPS requires pre-testing of wells for adequate yields in these areas. Some areas have limited access to community water service.
Western & Southern Darnestown	elevated nitrate levels	Not Applicable	DPS has required advanced treatment on larger, multi-use septic systems in this area. Properties near Routes 28 and 112 have access to community water service.

Additional information on well problems, relief measures, and County service policies is found in Chapter 1, Section III.C.1.

Figure 3-13: Well Problem Areas



V.D.: Multiuse Water Supply Systems:

As described in Chapter 1(Section III.B.5.), multiuse water supply systems are defined as individual, on-site water systems with a capacity of 1,500 or more gallons per day (gpd). Because of their greater potential for impacts on ground water resources and neighboring wells, these systems require approval in the Water and Sewer Plan. These facilities are generally large-capacity well water systems, although some facilities use more advanced treatment systems. Almost all depend on groundwater for their water supply. DEP coordinates the Water and Sewer Plan amendments for these systems with DPS. Appendix B includes a listing of the multiuse water supply facilities in Montgomery County approved in this Plan.

For a multiuse water supply system with capacities of 5,000 or more gpd, review and approval from MDE is also required. MDE mandates semi-annual operations reports for systems of this size.

CHAPTER 4

SEWERAGE SYSTEMS

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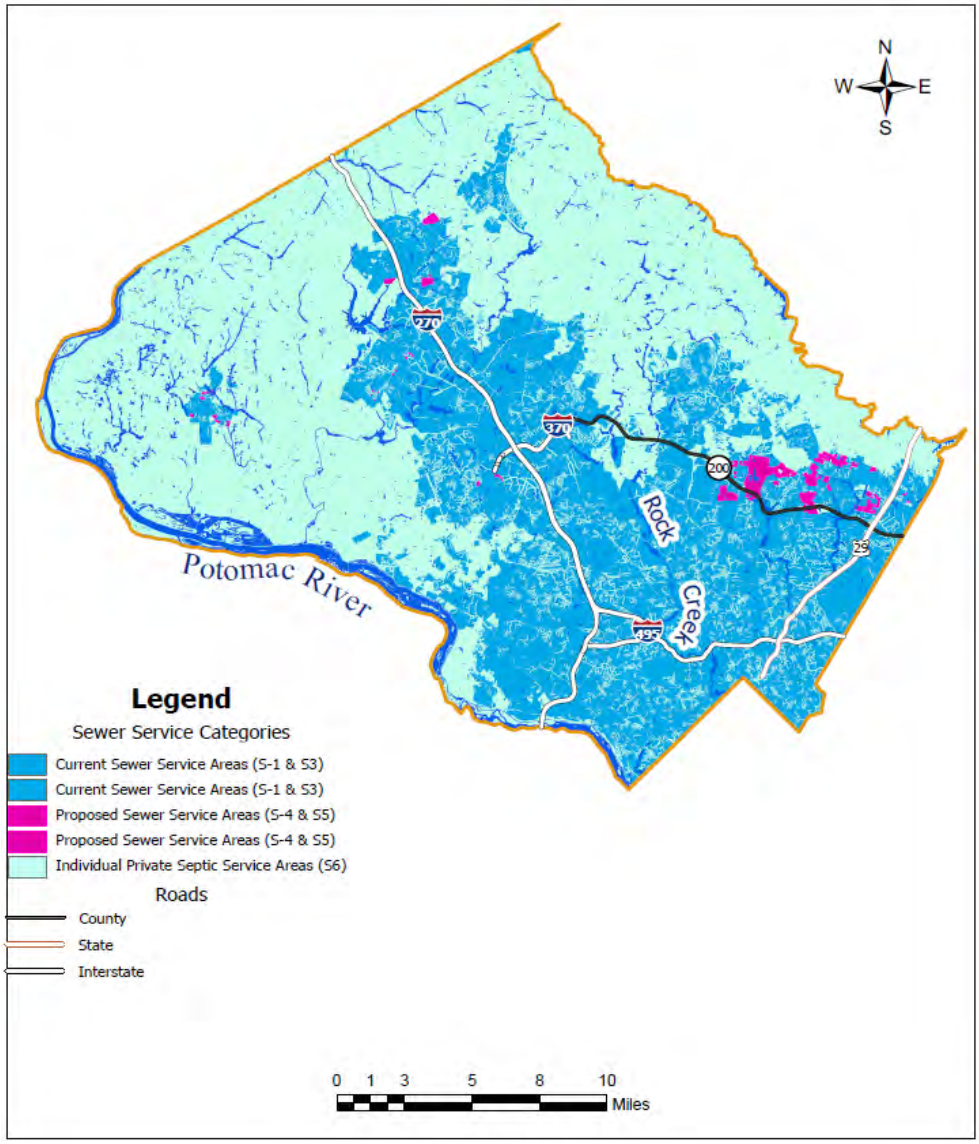
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INTRODUCTION AND BACKGROUND:

This Chapter describes the County's existing and planned community and private, individual sewerage systems. It incorporates components and related discussions of major programs, policies, and issues concerning sewerage systems serving the residents and businesses in Montgomery County. It also projects sewerage collection/conveyance and treatment system need.

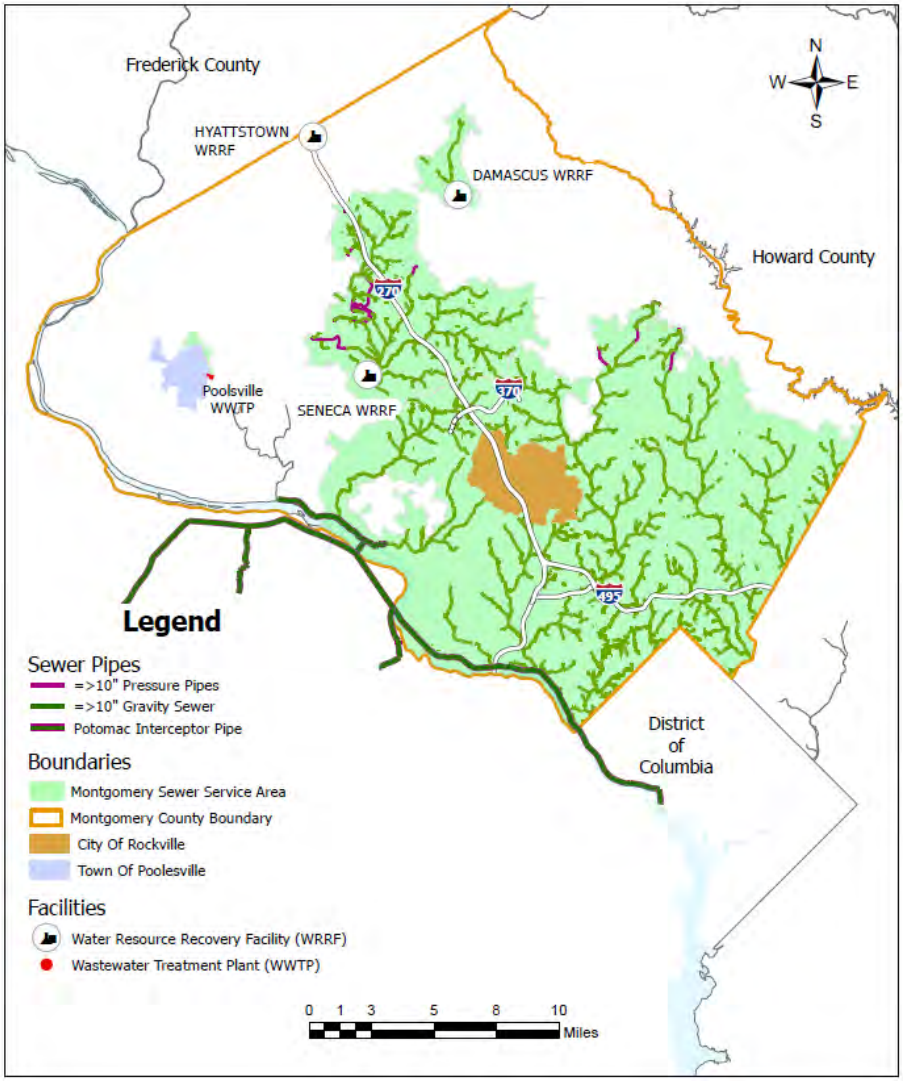
Sewer Service Categories: As discussed in Chapter 1, this Plan classifies all areas of the County into one of five category designations for sewer service areas. The categories range from areas served by community systems (S-1) to areas where improvements to or construction of new community systems will be planned in the future (S-3, S-4, and S-5) to areas where there is no planned community service (S-6). (In practice, Montgomery County does not use category S-2, which designates areas where community sewerage system projects are in the final planning stages.) Figure 4-1 shows a generalized distribution of sewer service area categories throughout the County. For additional detailed information on sewer service area categories, please refer to Chapter 1 Section II.

Figure 4-1: Montgomery County Sewer Service Area Categories



A sewer service area can be defined by a sewage system operating authority, and/or by a geographic or structural separation of a group of related treatment and transmission facilities. The County is divided into three publicly-operated and largely separate sanitary service areas or districts: The Washington Suburban Sanitary District (WSSD), the largest system, serving most of the County; and two smaller municipal districts operated by the City of Rockville and the Town of Poolesville. (See Figure 4-2.)

Figure 4-2: Community Sewerage Systems

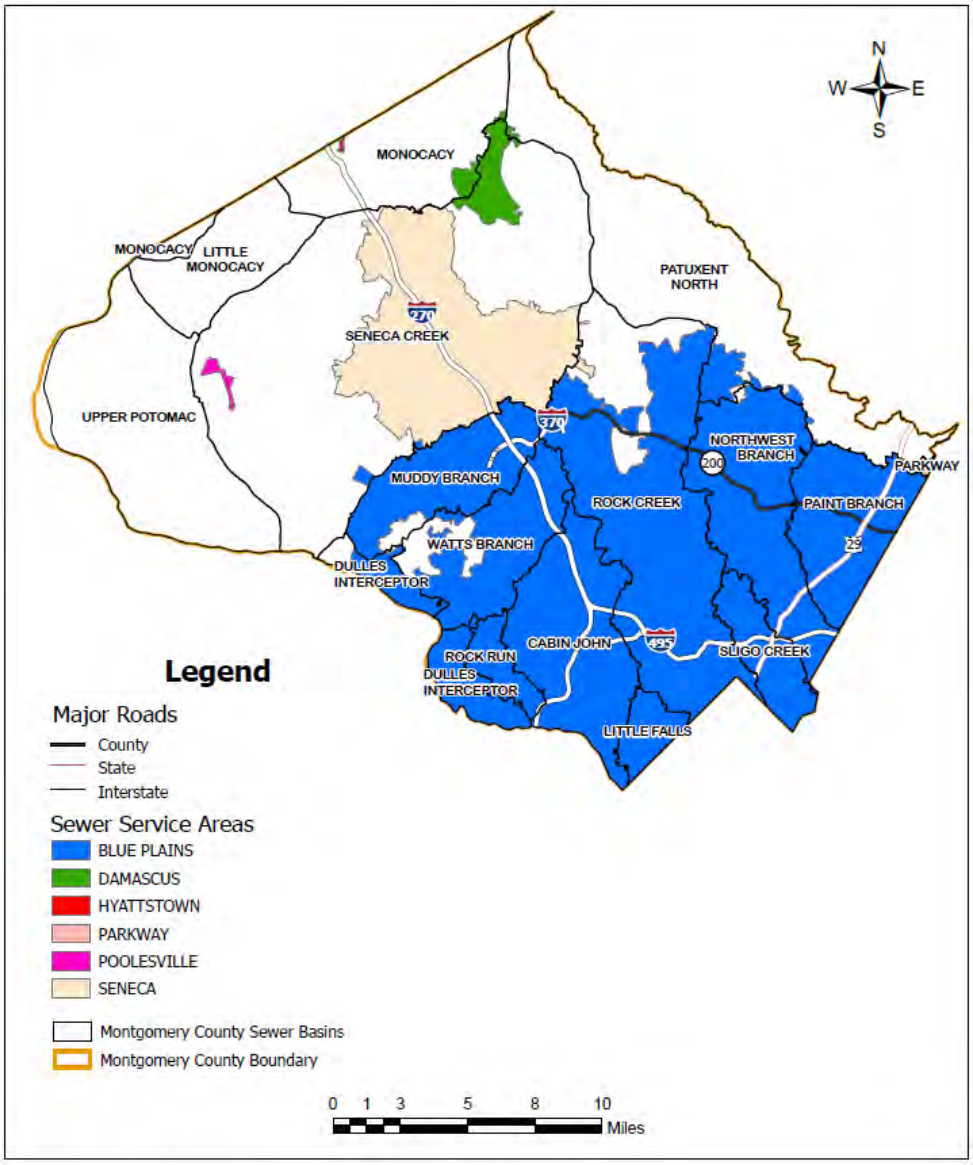


Each service area is served by its own sewage collection and transmission systems. Sewage from the WSSD is treated at several local plants operated by WSSC and at one regional facility, the Blue Plains Wastewater Treatment Plant (WWTP), located in the District of Columbia. Flows from Rockville Service Area eventually enter the WSSD system for transmission to and treatment at the Blue Plains WWTP. The Town of Poolesville's treatment plant, for the most part, serves only the town itself. Information for the City of Rockville Service Area and the Town of Poolesville has been provided primarily by those municipalities and is incorporated into this Plan consistent with State law.

Some properties within each service area are served by individual, on-site systems, rather than community systems. Information on individual on-site systems follows at the end of this chapter. Based on function, there are two components to a wastewater management system: collection/conveyance facilities and treatment/recovery facilities. A wastewater treatment service area is a geographic region

comprised of a section of one or several sewer basins (watersheds), where both collection/conveyance and treatment/recovery are provided. Presently five community wastewater treatment service areas provide service within Montgomery County: Blue Plains, Seneca, Damascus, Hyattstown, and Poolesville. Except for the Town of Poolesville, which is largely independent from WSSD, the rest of community wastewater service areas are within the WSSD. It should also be noted that the Rockville Service Area (RSA) is located within the Blue Plains service area. Figure 4-3 shows the areas served by each of these five wastewater treatment service areas. *(Note: Not shown in the map is a golf course receiving community sewer service through the Mill Bottom WWTP located in Frederick County near Interstate 70. The golf course is operated by the Montgomery County Revenue Authority and is located at the northernmost tip of the County, directly north of Damascus. No other properties in Montgomery County in the vicinity of the golf course are eligible to receive community sewer service.)*

Figure 4-3: Community Wastewater Treatment Service Areas

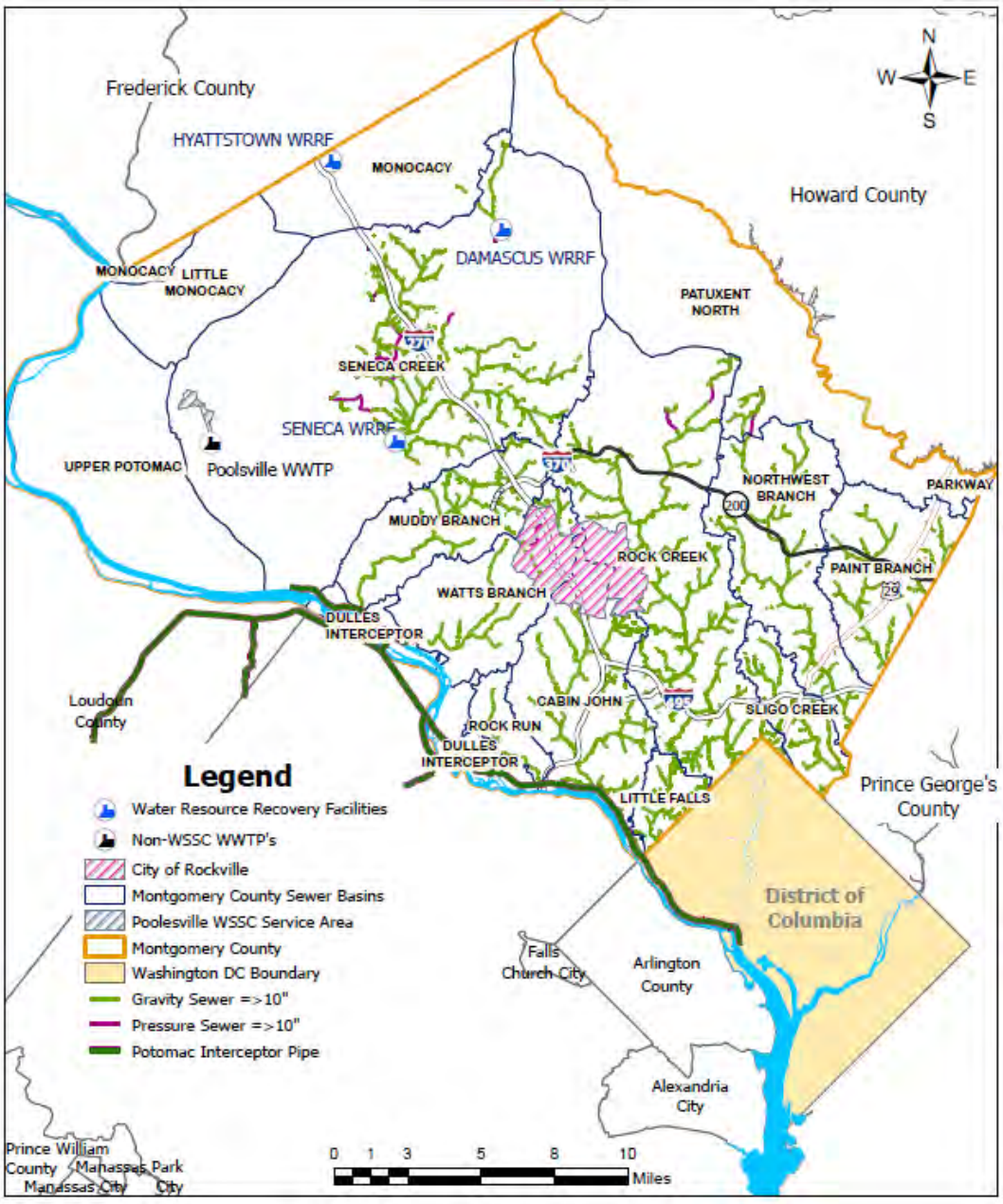


The County is bounded by two rivers: The Potomac to the southwest and the Patuxent to the northeast. Most of the County's streams flow into the Potomac River, either through local tributaries, such as Watts Branch, Rock Creek, Cabin John Creek, and Great Seneca Creek, or through watersheds that drain to two major tributaries outside the County: The Anacostia and Monocacy Rivers. The southeastern part

of the County, south of Olney and east of Georgia Avenue, drains toward the Anacostia River, and includes the Sligo Creek, Northwest Branch, Paint Branch, and Little Paint Branch watersheds. Portions of the northwest part of the County drains toward the Monocacy River, and include the Little Monocacy River, Bennett Creek, and Little Bennett Creek watersheds. The northeastern part of the County, along the border with Howard County, drains toward the Patuxent River.

To take advantage of gravity to the greatest extent possible, sewage collection and conveyance systems generally follow streams and waterways within various drainage basins. Because of this, the sewer basins (or sewersheds) in this chapter are often referred to by the name of their related watershed (e.g., Watts Branch, Seneca Creek, etc.). Through major trunk lines and pumping facilities, the sewage flows from individual sewersheds are collected and conveyed for treatment to a wastewater treatment/recovery plant. The major drainage basins in the County are shown in Figure 4-4.

Figure 4-4: Major Drainage Areas in the County



The County is also divided into 27 land use planning areas, each forming a cohesive district bounded by a major highway or natural border such as a stream valley. These planning areas have been established by legislative action of the County Council.

The planning areas in the County are shown in Figure 4-5.

Figure 4-5: Planning Areas in the County



All of the County's community sewerage systems, wastewater treatment service areas, sewersheds, and planning areas contained in each community sewerage systems, are listed in Table 4-1.

Table 4-1: Montgomery County Sewer Service Areas

Community Sewerage Systems	Treatment Plant Service Area	Sewer Basins (Watershed) Served	Planning Areas
WASHINGTON SUBURBAN SANITARY DISTRICT (WSSD)	BLUE PLAINS SENECA DAMASCUS HYATTSTOWN POOLESVILLE*	-Muddy Branch -Rock Creek -Watts Branch -Cabin John Creek -Rock Run -Little Falls Branch -Sligo Creek -Paint Branch -Northwest Branch -Portions of Monocacy River and Patuxent (Damascus and Hyattstown)	Aspen Hill.....(PA 27) Bethesda-Chevy Chase.....(PA 35) Cloverly - Norwood.....(PA 28) Colesville - White Oak.....(PA 33) Fairland - Beltsville.....(PA 34) Gaithersburg Vicinity.....(PA 20) Gaithersburg & Washington Grove..(PA 21) Germantown.....(PA 19) Kemp Hill Four Corners.....(PA 32) Kensington - Wheaton.....(PA 31) North Bethesda - Garrett Park.....(PA 30) Olney.....(PA 23) Patuxent Watershed Conservation..(PA 15) Potomac -Cabin John.....(PA 29) Rockville.....(PA 26) Silver Spring.....(PA 36) Takoma Park.....(PA 37) Travilah.....(PA 25) Upper Rock Creek Watershed.....(PA 22) Darnestown.....(PA 24) Clarksburg.....(PA 13) Gaithersburg Vicinity.....(PA 20) Gaithersburg & Washington Grove..(PA 21) Germantown.....(PA 19) Damascus.....(PA 11)
CITY OF ROCKVILLE	BLUE PLAINS	Portions of Cabin John, Watts Branch and Rock Creek	Rockville.....(PA 26)
TOWN OF POOLESVILLE	POOLESVILLE	Portions of both Seneca Creek and Potomac River	Poolesville.....(PA 17)

* The Poolesville WWTP serves the communities of Jonesville and Jerusalem within WSSD.
Note: See Figure 4-5 for detailed information on the relationships between sewer basins (Watershed) and planning areas in the Blue Plains and other treatment plant service areas.
Portions of Seneca Creek, Patuxent, and Monocacy River

I. THE WASHINGTON SUBURBAN SANITARY DISTRICT:

The Washington Suburban Sanitary District (WSSD), established by State law, includes most of Montgomery and Prince George's Counties, encompassing a total area of approximately 1,000 square miles. Within Montgomery County, areas excluded from the WSSD include most of the City of Rockville and the Town of Poolesville. Sewer service areas managed by the WSSC Water within Montgomery County include the areas served by the Blue Plains, Seneca, Damascus, and Hyattstown collection and treatment systems. WSSC Water also manages a small portion of the WSSD that is served by the Poolesville WWTP (Jonesville and Jerusalem areas). The City of Rockville, also part of the Blue Plains service area, manages its own collection and conveyance systems, but relies on Blue Plains for treatment of the wastewater generated in this area. The Town of Poolesville manages its own sewerage system, including collection, conveyance and treatment systems within the Town's boundaries.

Guided by policies specified in this Plan, the provision of community sewer service within Montgomery County generally follows the patterns established by the County's General Plan for development, "On Wedges and Corridors." Community service is established and planned for the central and southern

part of the County, following three major transportation corridors of higher density development in these areas:

- The U.S. Route 29 (Columbia Pike) corridor to Burtonsville,
- The Georgia Avenue (State Route 97) corridor to Olney.
- The U.S. Interstate 270/State Route 27 (Ridge Road) corridor to Clarksburg and Damascus.

Elsewhere, primarily in the western and northeastern areas of the County, wastewater disposal service generally depends on individual, on-site systems, which discharge their effluent for treatment in private on-site septic systems.

I.A. Government Responsibilities:

The responsibilities for water supply planning within the WSSD are multi-jurisdictional and benefit from the cooperative efforts of municipal, County, State, Federal, and regional authorities. This is also true with regard to the Blue Plains WWTP, a wastewater treatment facility jointly used by several area jurisdictions. The agencies assisting in these planning efforts include the following:

- Montgomery County Government
  - Department of Environmental Protection (DEP)
  - Department of Permitting Services (DPS)
- Washington Suburban Sanitary Commission (WSSC Water)
- Maryland - National Capital Park and Planning Commission (M-NCPPC)
- District of Columbia Water and Sewer Authority (DC WATER)
- Metropolitan Washington Council of Governments (COG)
- State of Maryland
  - Department of the Environment (MDE)
  - Department of Planning (MDP)

These agencies, and their primary responsibilities and programs, are described in more details in Chapter 1, Section I.E.

I.B. Programs and Policies:

The following pages provide an overview of the major policies and programs relating to WSSC Water's role and functions in providing sewer services within Montgomery County's portion of the WSSD.

- **Facility Planning, Project Development and Project Approval Processes:**

Information on WSSC Water Facility Planning process is consolidated in Chapter 1, Section III.A.5.

- **Interjurisdictional Agreements:**

Montgomery County is benefitted by the shared use of several wastewater conveyance and treatment systems. The Washington Metropolitan Area has two major regional sewerage facilities that serve the region. These facilities include are the Potomac Interceptor (PI) sewer and the Blue Plains WWTP. The shared use of these facilities has been governed by a series of regional agreements dating to the 1950's. Other shared facilities are localized within Montgomery County. The following is a summary of major Intermunicipal agreements with shared facilities affecting the flow of wastewater and available treatment capacity for Montgomery County.

  - **Blue Plains Intermunicipal Agreement (IMA) -** The parties to the Blue Plains Intermunicipal Agreement (IMA) include the District of Columbia, the D.C. Water and Sewerage Authority (D.C. Water), Montgomery and Prince George's counties, Maryland; WSSC Water, and Fairfax County, Virginia. This agreement is a regional contract defining the responsibilities of the signatories for managing the finances and operations for

wastewater collection and treatment services and related biosolids management for the Blue Plains Service Area. The agreement was revised and updated in 2012 in order to provide an updated and relevant document for present and future issues. The Agreement called the "the 2012 IMA":

- Defines the rights, obligations and responsibilities of the signatories regarding the use and management of facilities for wastewater transmission and treatment and for biosolids management.
- Allocates average and peak flows to the major interceptor sewers leading to the Blue Plains WWTP.
- Allocates the Blue Plains WWTP treatment capacity.
- Arranges for sharing among the signatories' capital facility costs in proportion to capacity allocation and for sharing facility operating costs in proportion to actual flow.
- Defines the process of making future planning decisions.
- Provides a mechanism for continuing coordination, cooperation and communication among the signatories.
- Supports a continuing water quality monitoring and evaluation program. Incorporates all applicable regional agreements for the joint use of the Blue Plains WWTP.

o **WSSC Water - Rockville Agreements -** The City of Rockville's sewage collection system conveys flows to six different interconnections with WSSC Water pipelines for ultimate delivery to Blue Plains WWTP. The city's use of WSSC conveyance facilities has been defined through several transmission agreements. A 1956 agreement provides for the City to discharge a peak flow of 6.8 MGD into the Cabin John Basin; the City's negotiated capacity in the Cabin John basin downstream of Booze Creek increases to 8.0 MGD. A 1966 agreement provides for a maximum discharge of 8.0 MGD to the Watts Branch Basin. The City of Rockville is also permitted to discharge a peak flow of 9.84 MGD into the Rock Creek Basin. In 1975, the City of Rockville and WSSC executed a treatment capacity agreement which specified that WSSC Water would provide up to an additional 0.4 MGD per fiscal year of treatment capacity to Rockville from the WSSC Water's proportionate share of Blue Plains WWTP capacity, up to a total annual average City flow of 9.31 MGD. The City acknowledges that it has not purchased sufficient peak capacity in all sewers to convey an annual average of 9.31 MGD to the Blue Plains Wastewater Treatment Plant.

o **WSSC Water - Poolesville Agreements -** A 1984 agreement between WSSC Water and the Town of Poolesville allows WSSC Water to discharge a maximum quarterly average daily flow of 20,000 GPD from the Jonesville and Jerusalem communities just north of the town in the WSSD into the Poolesville WWTP for treatment.

■ **Sewer Sizing Policies:**

WSSC Water's Design Manual provides both general and specific sewer design criteria and designates its Development Services Division with the responsibility for sizing new sewer mains from new development. In general, sewer systems are designed for ultimate flow within the drainage area unless it is determined that the County's land use policies allow for a lesser requirement.

For sewers serving a large area within a sewer basin, the computerized hydraulic models are utilized. Normally, sewer systems are designed to function by gravity. In certain circumstances gravity sewers may be allowed to flow under a slight surcharge condition but will be determined on a case-by-case basis.

■ **Alternatives to Gravity Sewer Service:**

Where gravity sewers are not feasible, WSSC Water may consider the use of wastewater pumping stations with an associated force main, or low-pressure sewers with individual grinder pumps located

at each property. Pumping systems may be allowed if there are no receiving gravity sewers lower in a drainage basin or where the construction of gravity mains needed to connect with the existing gravity sewage system is either uneconomical or environmentally unacceptable as determined solely by WSSC Water.

- **Low Pressure Sewer Systems (LPSS):**

The design and construction of low-pressure sewer systems with grinder pumps is based on a specific number of homes to be served and the location (elevation) of each of the grinder pumps. Since the system receives flow from numerous pumps and because the wastewater is ground into a slurry, the system must function properly to allow each pump to operate within its normal operating range and to ensure the flow in each low-pressure pipe achieves a required flushing velocity to prevent build-up of solids with the pipelines. In order for the system to function properly, it is designed based on two pre-approved pump manufacturers as noted within the Development Services Code. It is the responsibility of each homeowner or developer to supply the grinder pump. These pumps have a specific pump characteristic curve, which will allow each pump to operate properly and not cause excessive pressure in the system which may prevent other pumps from operating normally. Therefore, the specified pumps must be installed, maintained, and replaced in-kind (when necessary) in a satisfactory manner by the homeowner.

Low pressure sewer systems are the least preferred method of sewer service to customers. Although grinder pumps are equipped with alarms that notify the homeowner of equipment malfunctions; the alarms are not fail-safe and conditions could exist whereby a sewage back-up within the home occurs without the homeowner being warned in advance. Back-ups could also arise from the homeowner's lack of proper grinder pump maintenance. Grinder pumps should be checked by the homeowner regularly for proper operation by a qualified service provider on a regular basis. Grinder pump maintenance is an added expense to the homeowner. Since grinder pumps operate from the electricity supplied from each individual home, homeowners must be cognizant that during power outages they should not use faucets, toilets, tubs and showers to avoid sewage back-ups in their home unless they have a back-up power source such as a portable or whole-house generator. Without such a power back-up, it can be extremely inconvenient during long power outages. The cost of electricity and generator power sources is an added expense to the homeowner. The life of a grinder pump varies and depends partly on the homeowner's level of maintenance. Pumps will have to be replaced periodically at the homeowner's expense. Replacing the grinder pump with another model different than what was originally specified can lead to system problems not only for the homeowner but potentially for other grinder pumps connected to the same pipe network since the pumps are designed to work in unison. This has been rectified with a change to the WSSC Plumbing and Fuel Gas Code provided a plumbing permit is obtained to replace the pump. A replacement pump that operates at a lower shut-off head than the previous pump could cause the pump output to be less or shut-off when many pumps within the system are running. Conversely, a replacement pump that operates at a higher shut-off head than the previous pump could affect other grinder pumps within the network by reducing their output. Both conditions could cause sewage back-ups within homes. Low pressure sewer systems that contain long distances of pipeline between the pumps and the outfall into the closest gravity sewer can result in long-detention times of sewage within the pressure sewer. This can create odorous conditions at the outfall and a nuisance to nearby homeowners. In summary, it is incumbent upon each individual homeowner to properly install, maintain and replace their grinder pump to maximize the reliability of the low-pressure sewers. Although it may cost less to construct low pressure systems with grinder pumps, publicly-owned centralized pumping stations are considered to provide a higher level of service to the WSSC customer due to redundant pumps, emergency back-up power, and shorter pipeline detention times.

As a result of the above issues, WSSC Water has established procedures on selecting grinder pumps in lieu of more conventional systems. The Development Services Code currently governs the use of grinder pumps in the WSSD.

- Establishes that grinder pumps can only be used when gravity service or service via a centralized wastewater pumping station are not feasible.
- Establishes that a Grinder System Review Committee reviews, on a case-by -case basis, development projects proposing the use of grinder systems.
- Requires that an applicant/engineer provide sewer service alternatives analysis for WSSC review for development proposed with 50 or more grinder pumps.
- Clarifies and documents current WSSC Water practice regarding the use of grinder systems for non-residential customers.
- Provides procedures established to minimize and mitigate the potential for odor problems in grinder systems.

■ **Wastewater Flow Analysis:**

Flow projections are based on the County's adopted land use plans and approved service areas for future growth and are in accordance with the County's latest master plans for development. The projected future flows are estimated in proportion to population projections with an allowance for planned commercial and industrial growth and factors such as infiltration (extraneous groundwater) and inflow (water discharged into sewer systems from roof leaders, area drains, etc.). WSSC Water is responsible for conducting wastewater flow measurements and flow analysis for all areas within the WSSD. Various aspects of WSSC's flow management system are discussed in the following sections.

o **Flow Monitoring:** WSSC Water's program for field monitoring of sewage flows provides continuous data on the status of peak and average wastewater flows throughout the system. The current monitoring system consists of permanent stations which telemeter flow data to a central computer. One hundred-eighteen permanent sewer flow monitors and ten permanent rain gauges have been installed throughout the various sewer basins in Montgomery County. In addition, WSSC Water uses temporary flow meters which can be installed at various locations for special studies. The following table presents permanent flow meter and gauge locations for all the sewer basins are shown in Table 4-2.

Table 4-2: WSSC Montgomery County Sewer Meters and Rain Gauges by Watershed

Sewer Basin	Flow Meters	Rain Gauges	Billing Meters
Cabin John	13	1	5
Little Falls	5	0	1
Muddy Branch	4	0	1
Northwest Branch	8	0	0
Paint Branch [1]	4	1	1
Rock Creek	33	3	5
Rock Run	2	0	1
Seneca Creek [2]	17	4	1
Sligo Creek [1]	9	0	0
Watts Branch	6	1	2
Total	101	10	17

[1]Montgomery County only
[2] Includes Magruder Branch (Damascus) and Jonesville/Jerusalem (Poolesville)

The Planning Division within the Engineering and Construction Department at WSSC Water tracks the status of unconnected sewer commitments by geographic area (basin), type of future connection (residential, commercial, etc.), estimated average daily flow contribution, and expected connection date. This information is used to then calculate remaining available treatment capacity in a particular service area, and to assist in projecting future wastewater flows at various points in the conveyance system. The tracking also checks for future additional flow on the basis of authorizations granted by the WSSC Water plumbing permits and actual hookups.

- **Flow Reporting and Tracking:** WSSC Water generates the following reports on a regular basis:

  - Semiannual Available Capacity Report – WSSC Water produces a bi-annual available capacity report for its wastewater treatment service areas. The report presents the results of the tracking of plumbing permits, hookups, and outstanding authorizations in a wastewater treatment plant service area to determine whether existing wastewater flows and future committed flows approach wastewater treatment plant capacity.
  - Capacity Management Plans –The Maryland Department of the Environment (MDE) has issued guidelines for the development of Wastewater Capacity Management Plans for those jurisdictions that control the allocation of wastewater. These management plans are useful planning tools to ensure that the water utilities have adequate capacity to serve proposed developments and accommodate future growth within the service areas. A Wastewater Capacity Management Plan must be submitted to MDE if the most recent three-year average flow is over 80% of its permitted capacity or if it is anticipated to exceed 80% in the following year.
  - Flow Projections for Montgomery County Sewer Service Areas – This report is prepared every 5 years with the latest completed in 2022. Forecasts are broken down by treatment facility and are based on the latest demographic projections provided by MWCOG. The data is first assimilated by M-NCPPC.
  - Unit Flow Factor Report for the WSSC Water Service Area – This report is updated every 5 years with the latest being completed in 2020, and presents current unit flow factors to be used in developing the wastewater flow projections. It includes evaluation of the prior winter's water consumption for various user categories to detect any trends in projected sanitary flow. This report includes a reasonable allowance for unit infiltration/inflow based on rainfall and groundwater level probability analyses.

- **Computerized Modelling of the Wastewater Conveyance System -** To meet the Consent Decree requirements, computerized models were created and adjusted to estimate how peak wastewater flows affect the current system. These models helped identify where the system lacks capacity for current or future needs, plan sewer upgrades, and guide future system development.

  The sewer basin models only included sewers of 10 inches in diameter and greater and also some 8-inch diameter lines required for model connectivity or where recurrent capacity-related overflows (at the time of the Consent Decree settlement) occurred. The piping network in the models were developed from the asset registry information within the WSSC Water Geographic Information System (GIS). Once the networks were developed, the models were then calibrated for existing dry weather conditions as well as for historic wet weather events in recent history. Future flows were developed based on demographic projections provided by MWCOG.

  The models were not updated until after all Consent Decree-related construction within each sewer basin was completed. Beginning in 2017, WSSC Water began sequentially updating and re-

calibrating the models to all-pipe models, following behind the construction work in each basin. To-date there are 8 more sewer basin models to complete. Simulations include dry weather, 2-year Storm and 10-year storm events for both existing and future conditions. The output of these simulations is utilized to identify capacity constraints and to recommend solutions to mitigate against any constraints.

These models are also utilized to determine the impacts of proposed new developments on the conveyance system. WSSC Water developed a new regulation to stipulate how the models will be used as part of the development review process as part of the Hydraulic Planning Analyses (HPA) conducted under WSSC Water's Development Services Division. Under Regulation 11.165 the stipulated procedure is used to determine the impact of significant proposed development (generating 100,000 gallons or greater base sanitary flow) on the downstream CIP-size (15 inches in diameter and above) sewer system and wastewater conveyance facilities under significant wet weather conditions. The procedure also establishes requirements for proposed development connecting into or upstream of CIP-size trunk sewers or wastewater pumping stations above projected overflows based on existing dry weather flow and the 2-year WSSC design storm.

■ SYSTEM MAINTENANCE PROGRAMS

As part of its hydraulic sewer basin modelling efforts, WSSC Water evaluates the projected future wastewater flows, based on the demographic projections provided by MWCOG and determines the impacts these flows may have on the entire wastewater conveyance and treatment systems and if they will require mitigation against any capacity constraints. This work is on-going and will be included within the master and facility planning efforts discussed below.

In its CIP, WSSC Water has programmed certain relief and improvement projects for existing sewer lines, as well as numerous sections of developer extension projects, which add CIP-sized sewer lines to serve developments. The main future challenges for the sewer system are keeping the aging system in good condition, meeting stricter environmental rules, and running it efficiently while keeping costs low.

Managing a wastewater collection, treatment and transmission system poses several challenges. Numerous health, regulatory, environmental and economic factors are under continual review at the State, County and regional levels. Some of these challenges are discussed further in this section.

o Infiltration and Inflow

Infiltration can be defined as groundwater that enters the sewer from the groundwater table through holes in the pipe, poor joints, cracked pipes, and manhole walls. During precipitation events, such as rainfall and snowfall, the groundwater table may rise above the elevation of the sewer allowing the water to seep into the pipe.

Inflow can be defined as flow that enters the sewer system during precipitation. Inflow can typically enter the sewer through perforated manhole covers, unsealed manhole covers, catch basins, areaways and roof drains. The WSSC Water wastewater system is separate from the stormwater system, meaning only wastewater is collected. Some other municipal systems combine wastewater and stormwater flows.

Elimination of the infiltration and inflow (I/I) is necessary so that the sewers can adequately convey only the collected wastewater to the wastewater treatment plant. This extraneous flow can significantly reduce the capacity of a sanitary sewer system. Infiltration and inflow can also

impact the capacity of other conveyance and treatment facilities. Simply stated, treatment of the wastewater that needs to be treated is the goal of reducing I/I.

The Federal Water Pollution Control Act, (also known as the Clean Water Act), was established in 1948. In 1972, amendments to the Clean Water Act set objectives to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Other amendments to the Clean Water Act may be found in Section 2.4.1, Federal Law. The 1972 amendment to the Clean Water Act required that applicants for related grants perform an analysis demonstrating the existence or nonexistence of excessive I/I in each sewer system tributary. Each portion of the analysis is directed toward the acquisition of a federal construction grant for completion of the subsequent step. The federal government required that I/I studies be performed in three phases:

- The Infiltration/Inflow analysis must identify the presence, quantity and type of infiltration and inflow in a sewer system basin or service area. The analysis requires an overview of an entire basin to determine whether excessive infiltration/inflow conditions exist and, if so, whether they are cost effective to remove. Those areas determined to have excessive I/I conditions then proceed to the second phase of the study.
- The Sewer System Evaluation Survey (SSES) helps pinpoint specific sewer lines and defects causing extra flow. The SSES consists of several steps to narrow the search:

    1. Flow Monitoring
    2. Early morning isolation and measurement of the infiltration component
    3. Physical inspection of manhole structures
    4. Smoke testing and dyed water flooding of suspected inflow sources
    5. Subsequent cleaning and televising of qualifying sewers to inspect the I/I sources

The SSES will determine the location, flow rate and cost of correction for each definable element of the total I/I problem. A report on the Evaluation Survey and a program of rehabilitation to correct the excessive infiltration/inflow must then be submitted.

- As a result of the SSES, a cost-effective analysis determines recommendations for I/I source repairs under the third phase of the study. Infiltration/Inflow Analyses and Sewer System Evaluation Surveys were conducted in the following basins of Montgomery County between 1974 and 2020 (with the most recent studies in parentheses):
    - Northeast Branch (2012)
    - Patuxent North (2000)
    - Rock Creek (2000)
    - Rock Run (2012)
    - Cabin John (2006)
    - Watts Branch (2012)
    - Little Falls (2012)

- **Sanitary Sewer Overflows:**

Sanitary sewers serve a vital function in the transport of wastewater from the customer to the treatment plant. Wastewater either flows by gravity or is pumped to the nearest wastewater treatment plant. WSSC Water's wastewater collection system is comprised of over 5,655 miles of sewer line and fifty-three wastewater pumping stations. Sanitary sewer overflows (SSOs) can occur from a number of causes. An overflow occurs when wastewater backs up in the line and eventually over tops the surface opening of a manhole. There are a number of possible causes of SSOs including grease buildup in the sewer line, tree root penetration, pipe deterioration, undersized sewer lines, excessive infiltration of groundwater or inflow from stormwater, and power outages or mechanical failure at wastewater pumping stations.

The greatest number of WSSC Water's overflows are due to blockages caused by grease, tree roots, or other foreign objects. Less than one percent are caused by "wet weather," i.e. the inflow of storm water. Montgomery County DEP and WSSC Water are fundamentally committed to excellence in the safeguarding of public health and the protection of the environment and has aggressively implemented a number of programs to minimize future sanitary sewer overflows.

- **MDE Reporting Requirements for SSOs**
  WSSC Water follows the Code of Maryland Regulations COMAR 26.08.10 for all SSO reporting

- **USEPA- Consent Decree on SSOs Background**
  In December 2005, the Washington Suburban Sanitary Commission (WSSC) entered into a Consent Decree with the U.S. Environmental Protection Agency (EPA), the State of Maryland and four Citizen Groups on an action plan to significantly minimize, and eliminate where possible, sanitary sewer overflows (SSOs). The Citizens Groups were the Natural Resources Defense Council (NRDC), the Anacostia Watershed Society (AWS), the Friends of Sligo Creek (FOSC), and the Audubon Natural Society. On January 19, 2006, the Court entered the First Amendment to the Consent Decree to add Patuxent Riverkeeper to the definition of Citizens Groups. The sanitary sewer system is being inspected and rehabilitated. The agreement estimates approximately $1.3 billion in improvements to the WSSC's wastewater collection system, provides $4.4 million for additional environmental improvement projects and includes a $1.1 million civil penalty.

  The following provides a short description of the requirements within each article of the remedial measures section of the Consent Decree and progress made to date. Because of the specific nature of the language, the text has not been substantially altered from the original Consent Decree:

Article 1: Collection System Characterization Report

The WSSC shall submit a Map of the Collection System, identification of sewer basins that contribute flow to the Collection System, identification of sanitary sewer discharges (SSDs), and cause and conditions that contributed to SSDs. Each year in the Annual Report, WSSC Water will submit an SSD Update Map and Report for the preceding year.

Progress to Date:

- Submitted Map and Report of the collection system showing the past 5 years of SSOs.
- Submitted SSD Update Map and Report in 10 Annual Reports.

Article 2: Collection System Evaluation

The WSSC shall perform Collection System Evaluations (CSEs). The CSE is to include Sewer System Evaluation Surveys (SSESs) on the SSES basins, and other inspections of the Non-SSES Basins and the implementation of a WSSC Trunk Sewer Inspection Program. The WSSC shall perform SSESs in nine sewer basins in eight years. The WSSC shall conduct a Trunk Sewer Inspection Program of all Sewers Segments 15-inches in diameter and larger. The WSSC shall evaluate the condition of sewer segments that are less than 15 inches in diameter and have been in service for more than 20 years by performing Closed Circuit Television (CCTV) and manhole inspections in the Non-SSES basins. Semi-annual and annual water quality monitoring will be conducted in all sewer basins. The WSSC must CCTV any sewer segment of the collection system where an SSD has occurred.

Progress to Date:

- The Collection System Evaluations and the SSESs for nine basins shown in the following table have been completed.

Table 4-3 – Summary of SSES Basins

SSES Basins	Status
Beaverdam	Regulators approved on June 8, 2011
Broad Creek	Regulators approved on December 6, 2006
Cabin John	Regulators approved on April 19, 2010
Little Falls	Regulators approved on February 14, 2013
Northeast Branch	Regulators approved on February 14, 2013
Parkway	Regulators approved on August 13, 2013
Piscataway	Regulators approved on March 20, 2012
Rock Run	Regulators approved on February 14, 2013
Watts Branch	Regulators approved on February 14, 2013

- Water Quality Monitoring Plan was submitted and approved by MDE and EPA. Conducted 34 (annual/semiannual) rounds of the Water Quality Sampling Reports as of March 31, 2025.
- Inspected 825.21 miles of sewer as part of the initial Trunk Sewer Inspection Program. The Initial Program is 100% complete. Completed inspection of 17,218 manholes as part of the program. Phase II of the Trunk Sewer Inspection Program is 100% complete. As part of Phase II, 746.45 miles were inspected, and 16,182 manholes were inspected. Phase III, 745 miles were inspected, and 16,244 manholes were inspected by December 2020. Phase IV started in the third quarter of 2021. As of December 31, 2024, 63.7% of Phase IV is complete.
- CCTVing was conducted on all segments where SSO's have occurred.
- CCTV'd and cleaned 1,145.23 miles (100% complete) of sewer in the non-SSES basins.

Article 3: Fats, Oils, & Grease (FOG)

WSSC has developed and maintains a Food Service Establishment ("FSE") database based on Health Department databases, including a field for the compliance status of each FSE. WSSC continues to implement a Fats, Oils, and Grease (FOG) permit program for all grease generating FSEs. WSSC has performed baseline inspections of all FSEs within 5 years of the EPA and the MDE approval of the Modified FOG Program, and issue permits to all FSEs within 5 years. WSSC has reported on the effectiveness of the FOG control program.

Progress to Date:

- FOG Permit and Modified FOG Program Plan were submitted and approved by MDE and EPA. Updates of the implementation of the approved changes to the FOG Program are submitted annually.
- Plumbing Code approved. Implemented on May 1, 2007.
- The WSSC adopted new grease abatement regulations November 1, 2008.
- FOG permitting began on May 15, 2007. As of November 29, 2010, the WSSC issued 100% of the permits (5,149) and submitted certification to the MDE and the EPA.
- Submitted updated FOG Map in 19 annual reports.
- Submitted certification on the required completion of the 10%, 25%, 40%, and 55%. Submitted 100% Baseline Inspections on May 18, 2012. Inspected over 8,000 FSE's as part of the baseline inspections.
- Submitted and received approval from the EPA and the MDE on modifications to the FOG program, specifically the Modified FOG Program Plan and the FSE Discharge Permit.

- Submitted and obtained approval from the MDE and the EPA, for an extension to the permit deadlines. New deadlines were:
    - Issue 60% of all permits by December 30, 2009 – complete
    - Issue 100% of all permits by December 30, 2010 – complete
    - Complete all baseline inspections by June 7, 2012 – complete
    - Submit report to the MDE and the EPA on the effectiveness of the FOG Program by December 7, 2012 - complete
- The FOG Control Program Effectiveness Report was submitted on November 28, 2012.

WSSC receives new FSE listings from the Health Department on an annual basis. Current total of FSEs in database are 15,165. WSSC issues permits to qualifying FSEs within 30 days of permit application. There have been 10,296 permits issued through December 31, 2024. Of the 10,296 permits issued, 4,711 FSEs are either no longer active in the database because they are out of business, or a permit was issued and after further review was not required.

- 100% of FSEs have been issued permits (10,296/10,296).

Article 4: Flow Monitoring

The WSSC shall perform flow monitoring to identify portions of the Collection System that may not have sufficient capacity to accommodate present or anticipated future flows, to plan sewer improvements, and to make determinations regarding future development of the Collection System. The WSSC shall maintain existing network of 120 flow monitors and 11 rain gauges.

Progress to Date:

- Submitted map identifying all locations of rain gauges and flow meters.
- Submitted certifications that the WSSC has complied with Article 4.B.1-8.

Submitted updated map in the Annual Reports. Currently there are 239 flow monitors, 39 levels sensors, and 25 rain gauges.

Article 5: Collection System Modeling

The WSSC shall use a computer model of the Collection System to identify portions of the Collection System that may not have sufficient capacity to accommodate present or anticipated future flows, to plan sewer improvements, and to make determinations regarding future development of the Collection System. Computer modeling of at least 965 miles of sewer will be completed within five years.

Progress to Date:

- The Collection System Modeling was completed on August 17, 2007. The modeling requirement was completed ahead of the Consent Decree requirements.
-

Article 6: Sewer Basin Repair, Replacement, Rehabilitation Plans (SR^3) and Schedules

The WSSC shall prepare a SR^3 Plan for each sewer basin in the Collection System after completion of all sewer evaluations. The WSSC shall consider the following improvements as examples of work to be included and performed in the SR^3 Plans:

- Reduction of inflow and infiltration
- Installation of larger replacement Sewer Segments or relief Sewer Segments
- In situ lining of Sewer Segments
- Rebuilding of manholes
- Enhanced cleaning schedule for roots and grease
- Repair of structural defects and poor alignment

All rehab work must be completed within ten years (December 7, 2015). Second Amendment requires Appendix A-1 work to be complete by February 9, 2022. Appendix A-2 work must be complete within 365 days of receipt of permit for IDIQ contracts and 765 days without IDIQ contract.

Progress to Date

- All SR3 Plan work is complete in all basins.

Table 4-4 – Summary of SR3 Plan Work

Submittal Date	SR3 Plans	Regulatory Approval of Plan	Estimated Sub. Completion *(updated 6/5/2017)*	Actual Basin Completion
11/15/2011	Beaverdam Branch	7/10/2012	9/2019	6/29/2020
6/26/2009	Broad Creek	4/19/2010	10/2017	8/4/2020
8/17/2009	Cabin John	4/19/2010	5/2017	3/25/2020
6/2/2011	Dulles Interceptor	7/10/2012	12/2015	12/29/2015
6/2/2011	Horsepen Branch	7/10/2012	05/2017	10/06/2015
7/16/2010	Lower Anacostia	12/20/2010	01/2017	8/28/2018
12/3/2010	Mattawoman	10/20/2011	03/2015	7/10/2015
6/2/2011	Monocacy	7/10/2012	10/2015	10/6/2015
6/2/2011	Muddy Branch	7/10/2012	01/2018	9/24/2019
6/26/2009	Northwest Branch	4/19/2010	11/2017	12/1/2020
5/22/2009	Oxon Run	4/19/2010	1/2019	12/9/2021
3/8/2010	Paint Branch	7/28/2011	12/2018	12/21/2021
6/2/2011	Patuxent Center	7/10/2012	9/2014	10/2/2014
6/26/2009	Rock Creek/*Patuxent North	4/19/2010	4/2017	5/31/2019
6/2/2011	Seneca Creek	7/10/2012	2/2017	5/3/2019
5/22/2009	Sligo Creek	4/19/2010	4/2017	4/12/2021
6/2/2011	Western Branch	7/10/2012	6/2017	7/27/2021
6/21/2012	Piscataway	11/5/2012	11/2017	10/1/2020
12/13/2012	Little Falls	8/13/2013	6/2017	12/6/2021
12/13/2012	Watts Branch	8/13/2013	9/2020	12/30/2020
12/13/2012	Rock Run	8/13/2013	2/2017	2/28/2020
1/24/2013	Northeast Branch	8/13/2013	1/2020	12/07/2021
3/27/2013	Parkway	8/13/2013	11/2017	9/10/2020

Article 7: Performance Assessments

The WSSC shall conduct a Performance Assessment of the work performed under Article Two and Six to determine the effectiveness of the evaluations and corrective actions performed in each basin. The assessment must include an evaluation of the number and causes of SSDs and Building Backups, quantify the reduction of Inflow/Infiltration (I/I) in each Sewer Basin that is the subject of an SSES, determine whether the WSSC Water has adequately prioritized rehabilitation work, evaluate the type and effectiveness of the Preventive Maintenance and Proactive Maintenance practices, and evaluate the effectiveness of the frequency of Preventive Maintenance and Proactive Maintenance practices.

Progress to Date:

All Performance Assessments (PA) were completed by August 2023.

Table 4-5 – Summary of Performance Assessments

Basin Name	Start PA	End PA (Deadline)	Submit PA
Patuxent Center	10/2/2014	4/2/2016	7/1/2016
Mattawoman	7/10/2015	1/10/2017	4/10/2017
Horsepen	10/6/2015	4/6/2017	7/5/2017
Lower Anacostia	8/28/2018	2/28/2020	5/28/2020
Beaverdam	6/29/2020	12/29/2021	3/29/2022
Broad Creek	8/4/2020	2/4/2022	5/5/2022
Parkway	9/10/2020	3/10/2022	6/8/2022
Piscataway	10/1/2020	4/1/2022	6/30/2022
Northwest Branch	12/1/2020	6/1/2022	8/30/2022
Sligo Creek	4/12/2021	10/12/2022	1/10/2023
Western Branch	7/27/2021	1/27/2023	4/27/2023
Northeast Branch	12/7/2021	6/7/2023	9/5/2023
Oxon Run	12/9/2021	6/9/2023	9/7/2023
Paint Branch	2/28/2020	6/21/2023	9/19/2023

Article 8: Illegal Stormwater Discharges

WSSC shall through the use of CCTV and smoke and dye testing during the performance of the Collection System Evaluations actively seeks to identify and eliminate Illegal Stormwater Discharges.

Progress to Date:

- Procedure for enforcement strategy is complete.
- Eight Illegal Stormwater Discharges have been identified thus far and all corrective actions are complete.

Article 9: Information Management Systems

The WSSC shall maintain an Information Management System which will include an MMIS and GIS system to track sanitary sewer discharges (SSDs) and identify sources.

Progress to Date:

- Submitted certification that the Information Management System complies with the minimum requirements.
- Submitted 19 annual certifications that the WSSC has complied with Article 9.

Article 10: Pump Stations

The WSSC shall continue to implement a Pump Station Preventive Maintenance Program and periodically review and update Pump Station standard operating procedures. WSSC must submit 30-, 90- or 180-day reports for Pump Station related sanitary sewer discharges (SSDs). The WSSC shall submit Facility Plans for Anacostia and Broad Creek. Every 5 years the WSSC shall reevaluate its Pump Stations to assure that each Pump Station is of sufficient size and capacity to handle expected wastewater flows.

Progress to Date:

- Submitted 19 annual certifications that the WSSC has complied with Article Ten, for review and update of the Pump Station Standard Operating Procedures.

- Completed 47 Pump Station reevaluations for the first five years in February 2009. Submitted the Pump Station Capacity Evaluation Report in the 2010 Annual Report. The subsequent reevaluation report was submitted with the Annual Report for 2015. Capacity Analysis III was submitted with the 2020 Annual Report. Capacity Analysis IV is underway and will be submitted with the Annual Report.
- Anacostia WWPS Storage Facility Plan Final Construction was complete on December 30, 2013.
- Broad Creek WWPS Facility Plan Substantial Completion was achieved on January 31, 2020.

Article 11: Collection System Operation and Maintenance Plan

The WSSC has submitted a comprehensive Operation and Maintenance Plan for the Collection System, including its Gravity Sewer Segments, Force Mains, Pump Stations, and components to provide for the proper operation and maintenance of equipment. The WSSC shall evaluate the collection system using the criteria set forth in the Consent Decree within 5 years of implementing the O & M Plan in Phase I and II. In Phase III, every five years the WSSC will clean additional sewers that reach at least 21 years of service during the prior 5 years and are not cleaned as part of Phase I and II.

Progress to Date:

- Operations and Maintenance Plan was submitted and approved by the MDE and the EPA.
- Phase I Sewer Segment Cleaning in Non-SSES Sewer Basins is 100% complete. (1,145.23 miles cleaned)
- Phase II Sewer Segment Cleaning in the SSES Basins is 100% complete. (1,540 miles cleaned)
- Phase III Sewer Segment Cleaning is 100% complete as of March 2, 2017. (353.2 miles cleaned)
- Phase IV commenced in 2017, estimated 285 miles were identified. All accessible Phase IV segments were cleaned by March 20, 2022. (281.5 miles)
- Phase V commenced in 2022, estimated 245.6 mile were identified. 112 miles have been cleaned as of December 31, 2024.

Article 12: Emergency Response Plans (ERPs)

The WSSC developed and implemented Emergency Response Plans (ERPs) to adequately respond to the occurrence of SSDs and Buildings Backups.

Progress to Date:

- ERPs were submitted and approved by the MDE and the EPA
- Submitted revised ERPs in the Annual Reports
- Submitted 19 annual certifications stating the WSSC has complied with elements of the approved ERPs annually.

Article 13: Reporting and Record Keeping

The WSSC shall provide the following information for Sanitary Sewer Discharges (SSDs):

- Verbal reports of all SSDs within 24 hours to the MDE
- A written report for all SSDs within five days to the EPA and the MDE
- Post all written reports on the WSSC web site within 10 days

Progress to Date:

- Submitted 19 annual certifications stating the WSSC has complied with the requirements of Article 13, B.1-2, and C-F.
- Building Backup reports are submitted quarterly.

o **Supplement Environmental Projects (SEP)**

The WSSC shall purchase Patuxent Reservoir Buffer Properties and Easements for Water Supply Protection. The WSSC has finalized and signed a Memorandum of Understanding (MOU) with the Maryland Environmental Trust (MET). Under the MOU, MET will develop outreach tools, contact landowners, bring promising prospects to the WSSC, negotiate terms, record deeds, and monitor land in perpetuity. The WSSC will assist MET in targeting landowners by assisting with GIS, public outreach, and appraisals.

In addition, the Western Branch WRRF shall denitrify by methanol or Micro C 3000 or appropriate carbon source addition to the treatment stream during the next three winter seasons. The winter season is defined as November through March.

Progress to Date

- The Patuxent Reservoir Land Acquisition SEP scope of work was approved by the MDE and the EPA. The SEP was completed by December 7, 2010.
- The Western Branch WWTP denitrification SEP was completed March 31, 2007, and approved by the MDE and the EPA on September 24, 2007.

o **Amendments to Consent Decree**

The parties to the Consent Decree have entered a First Amendment to the Consent Decree to add the Patuxent Riverkeeper to definition of “Citizen Groups” (as described therein). The First Amendment was lodged with the U.S. District Court and approved on January 19, 2006.

The parties to the Consent Decree have entered a Second Amendment to the Consent Decree to provide a schedule for completion of Delayed Work (as described therein). The Second Amendment was lodged with the U.S. District Court and approved on June 29, 2016.

The parties to the Consent Decree have entered a Third Amendment to the Consent Decree to modify Appendix A-1, and A-2 (as described therein). The Third Amendment was lodged with the U.S. District Court on March 15, 2023. As a non-material modification under the Consent Decree, Court approval of the Third Amendment is not required.

o **MDE Reporting Requirements for SSOs**

Furthermore, the State of Maryland has placed new emphasis on its requirement to report all SSOs to the Department of the Environment (MDE) within twenty-four hours of their occurrence, as well as the need to notify the public whenever an SSO has any significant potential to affect public health or the environment. MDE has provided guidance suggesting that wastewater utilities need to work closely with local environmental and health departments to identify any such potential impacts and to notify the public when warranted. WSSC Water, in conjunction with Montgomery and Prince George's Counties, has developed procedures for this coordination and public notification.

■ Infiltration and Inflow (I/I) Control Program:

Infiltration of groundwater into aging, defective or damaged sewers and the inflow of water from sources such as direct connections of roof leaders, area drains, drains from springs and swampy areas, and manhole covers may contribute to sewage collection system overloading or may deplete the capacities of wastewater conveyance and treatment facilities.

WSSC Water reviewed its collection system data and is aware of excessive I/I in several of the sewer basins in the WSSD. Over the past several years, WSSC Water performed comprehensive sewer studies in the County’s sewer basins and the resulting recommendations from the studies included corrective actions for specific problems identified in manholes and sewer pipelines. Work is currently

ongoing throughout the County to repair, replace and rehabilitate deteriorating elements of the system through the Sewer Reconstruction Program.

The I/I control program also directly supports renewed federal initiatives for controlling Sanitary Sewer Overflows (SSOs) which include facility and manhole overflows as well as basement back-ups. Using I/I assessment techniques, WSSC Water explores the causes for each SSO event, and seeks resolutions to prevent future occurrences. Survey tools deployed during I/I or related work (physical inspection of manholes, TV inspection of sewers) yield rehabilitation recommendations which are implemented in the Sewer Reconstruction Program. In this manner, WSSC Water routinely detects and corrects leaking as well as non-leaking structural defects.

- **Industrial Pretreatment Program:**

WSSC implements a federally mandated pretreatment program, the Industrial Discharge Control Program (IDCP). The IDCP has four primary goals:

- To monitor and control the discharge of industrial waste into the sanitary sewer system.
- To prevent the discharge of pollutants which will interfere with the operation of wastewater treatment plants, including interference with sludge use and disposal.
- To prevent the discharge of pollutants which will pass through the treatment works or otherwise be incompatible with such works.
- To improve opportunities to recycle and reclaim municipal and industrial wastewater and sludge.

The program also helps protect WSSC Water personnel and sewerage systems by regulating the discharge of toxic, corrosive, and other prohibited substances into the sanitary sewer. IDCP requirements apply to all industrial users within the WSSD and include those industrial users whose wastewater is treated at the District of Columbia Water and Sewer Authority's Blue Plains Advanced Wastewater Treatment Plant (WWTP). WSSC Water regulates industrial users in the WSSD through a variety of activities including field investigations, wastewater monitoring, permitting, compliance reviews, and enforcement measures. To comply with WSSC Water discharge limitations, some industrial users are required to install pretreatment equipment to treat their wastewater prior to discharging it to WSSC's sanitary sewers. In some cases, the equipment may be relatively minor (e.g., silver recovery units or oil/water separators); in other cases, the required level of pretreatment can be extensive (e.g., pH neutralization and dissolved air flotation).

WSSC Water achieves the pretreatment program's goals by performing the following primary functions:

- **Investigation/Monitoring** – WSSC Water conducts on-site investigations of industrial users, evaluating industrial user processes, chemical usage, types and volumes of wastes generated, potential for slug discharges, and methods of waste disposal. Compliance monitoring is conducted independently of the industrial user to determine whether their discharges meet WSSC Water standards and any applicable federal standards. Grab and composite samples of the industrial user's process wastewater are collected using manual and automatic sampling methods. Analytical results are then compared to WSSC Water limits and any applicable federal standards to determine the industrial user's compliance status.
- **Discharge Permit Applications** -- Discharge permit applications are sent to industrial users to determine if they should be permitted through the IDCP. WSSC Water issues discharge authorization permits to those industries qualifying as significant industrial users (categorical and non-categorical). The discharge permits authorize industrial users to discharge their process wastewater to WSSC Water's sanitary sewer system, specifying discharge limitations, restrictions and self-monitoring requirements. The permitted industrial user is required to perform monitoring of its wastewater discharges and report the results to WSSC Water. IDCP staff review the user industry's self-monitoring reports to determine compliance with its

authorized discharge limitations. This review also assures that the sample collection, preservation, and analyses performed by, or on behalf of, the industrial user are conducted in accordance with approved methodologies and that the results accurately represent the industry's discharges.

- **Enforcement Action** – WSSC Water takes enforcement actions against those industrial users who violate discharge limits or fail to comply with other regulatory requirements. Enforcement actions can include notices of violation, civil citations with monetary penalties, directives, administrative orders, and termination of water/sewer service.
- **Data Management** -- Through its pretreatment program, WSSC Water maintains electronic and hardcopy files and databases of information on industrial users. This information includes the results of industrial investigations, analytical data from the industrial user as well as WSSC, permit information (including limitations and special conditions), and enforcement actions taken against violators. WSSC recovers a portion of the pretreatment programs costs through an annual fee assessed to the permitted industrial users. The varying annual fees are based on the anticipated level of effort associated with the industrial users within specific industrial categories. In addition to activities associated with regulating industrial users, WSSC also evaluates the wastewater characteristics of its wastewater treatment plants (Damascus, Parkway, Piscataway, Seneca and Western Branch. *It should be noted that WSSC refers to its wastewater treatment plants (WWTP) as water resource recovery facilities* (WRRF). On an annual basis WSSC also conducts sampling of the influent and effluent of each plant for EPA designated priority pollutants. The analytical data is used to develop local limits for industrial users and to evaluate treatment plant compliance with water quality standards. WSSC is also required to report its monitoring results for each treatment plant to the Maryland Department of the Environment.

■ **Fats, Oils and Grease (FOG) Program:**

WSSC Water implemented a FOG Program that is aimed at controlling fats, oils, and grease discharges from Food Service Establishments (FSEs) and to educate the public about proper disposal of FOG from their homes. Based on the Environmental Protection Agency's (EPA's) records, it has been estimated that FOG contributes to 40-60% of all Sanitary Sewer Overflows (SSO's) nationwide. WSSC Water's current percentage is approximately 28%, with the vast majority occurring in residential neighborhoods. Although WSSC Water implemented a FOG Program in the 90's, a late 2005 mandate allowed the program to grow and become more formal.

The creation of the modern WSSC Water FOG Program was necessitated by the Sanitary Sewer Overflow Consent Decree negotiated with the United States Department of Justice, the Environmental Protection Agency, and the Maryland Department of the Environment. The Consent Decree includes requirements to proactively inspect all food service establishments (FSEs) within the WSSC Water service area and take appropriate enforcement action against those facilities which do not comply with WSSC Water's Plumbing and Fuel Gas Code with regard to the installation of treatment devices and compliance with discharge standards. Overflows caused by FOG blockages are a primary area of focus for the FOG Program.

The basics of this Program include monitoring and controlling the discharge of fats, oils, and grease from FSEs, investigating sanitary sewer blockages and overflows caused by FOG discharges, and initiation of enforcement action to ensure appropriate corrective measures are taken. Staff performs investigation, permitting, and monitoring activities to ensure compliance with Federal, State, and WSSC discharge requirements by FSEs and other WSSC non-domestic customers. Program staff also perform customer outreach and provide compliance assistance to regulated customers, and they also administer necessary billing functions associated with the recovery of costs for FOG Program implementation. Staff ensures that all periodic FOG-related activities are reported to the appropriate State and/or Federal agencies (via the Utility Services Division) as required by the Consent Decree.

When an FSE receives a County Health Department license to operate, it also must be reviewed for potential fats, oils and/or grease discharges of a measurable (greater than 0.01%) quantity. WSSC Water determines if the FSE is exempt from the standard, is to only follow "Best Management Practices" (BMPs) for compliance or must install a grease abatement system (GAD) to complement the required BMP practices. Examples of FSEs required to have GADs include, but are not limited to restaurants, cafeterias, hotel kitchens, church kitchens, school kitchens, hospital cafeterias, bars, convenience stores, food courts in shopping centers, ice cream parlors, specific types of coffee shops, small dairy shops, deli counters, food stores, and catering service kitchens.

The FSE must comply with the WSSC Water Plumbing and Fuel Gas Code in all aspects of FOG production, capture and treatment/disposal at its facility. WSSC Water's FOG staff will outline the regulatory requirements applicable to the FSE upon an initial inspection of the site.

Since GADs must be maintained to be effective, WSSC Water also monitors the disposal practices of the FSEs, including their use of contractual FOG disposal companies and waste haulers. WSSC does not clean, collect, store nor dispose of FSE FOG produced from the FSE's GAD. It is the full responsibility of the FSE to acquire the licensed and certified FOG collection and disposal contractor or company.

- **Wastewater Treatment System Requirements - General Provisions:**
  In addition to discharge and construction permit requirements on existing and new treatment plants administered by the State of Maryland, Montgomery County shall review and approve all new facilities and all significant modifications to existing facilities within the County. All new community and multi-use treatment systems and points of discharge shall be specifically delineated in this Plan prior to the issuance of final construction and discharge permits by the State of Maryland. In addition, the County government may require stricter levels of treatment where warranted by projected receiving water quality impacts resulting from the discharge. These requirements also apply to all individual systems exceeding 1,500 gallons per day average daily flow and all individual systems of any size requiring a groundwater or surface water discharge permit, except heat pump discharges. Permit applicants have the burden of adequately demonstrating to the County that the proposed facilities will not have a significant, detrimental impact on the surrounding community or receiving waters.

  Proposed modifications to existing treatment facilities, including both system upgrading and expansion, are also subject to the County's approval. This includes any proposed community multi-use or individual system treatment facility or discharge point modification which requires a State construction and/or discharge permit. Any modifications requiring MDE's review and approval shall also require prior incorporation of the proposed modification in this Plan, as either a text amendment or as an adopted capital improvement program (CIP) project. Specific proposals for new or modified facilities shall be submitted to the Director of DOE with supporting documentation as required by the Director.

I.C. Existing and Planned Sewerage Systems and Projected Needs:

The sewage collection and conveyance system within the WSSD consists of approximately 5,700 miles of gravity and force mains ranging from 6 to 102 inches in diameter and 52 wastewater pumping stations, including 25 stations in Montgomery County. This section presents an overview of the County's long-term sewerage system needs and anticipated constraints within each service area and individual sewershed. The anticipated wastewater system needs and constraints on the major components of WSSC Water's conveyance and treatment facilities are planned and programmed in the WSSC Water CIP (Capital Improvements Program) to address the County's current and/or short-term wastewater conveyance or treatment needs. The CIP projects include funding and schedules for

planning, design, land acquisition, and construction of facilities. These facilities often support new development in accordance with the County's approved plans and policies for orderly growth and development. Other projects are for system improvements and/or for compliance with environmental regulations and policies.

Flow projections within the WSSD are based on the County's latest adopted master plans and demographic projections for development and approved service areas for future growth. Based on the Maryland-National Capital Park and Planning Commission (MNCPPC) household and employment growth estimates, WSSC Water develops flow projections to determine the approximate time a planning decision for each facility should be made. Wastewater flow forecasts are developed from detailed analyses of existing flow records and projected additional future flow based on projected demographics, wastewater flow per household and per employment, and other factors such as infiltration (extraneous groundwater) and inflow from rainfall. Population forecasting and flow projection are based on the best available data at the time the planning is conducted. WSSC Water re-evaluates actual conditions, project needs, etc. before implementing proposed projects. The latest projected flows for individual sewered basins in Montgomery County are provided in the latter sections of this Plan. WSSC Water's evaluation of the County's long-range sewerage system needs are based on these projections.

"Planned Sewerage Systems" refers to those projects which have been approved and programmed in a relevant CIP. A summary of capital projects planned and currently underway to upgrade and expand the sewerage systems serving the County and/or to address facility maintenance needs are listed in the current CIP budget document and are available through WSSC's budget webpage at: https://www.wsscwater.com/budget

- **Master Planning and Facility Planning**: WSSC Water's standard practice to address the projected wastewater system needs within the WSSD is based on and in response to immediate, medium, and long-term needs and will be included in the WSSC Water's annual CIP. This includes projects related to needs assessment, planning, and project implementation involving facility upgrade and expansion.

  Beginning in 2025, WSSC Water embarked on a new comprehensive approach, whereby it initiated a major wastewater master planning and facility planning effort. The purpose of this is to consolidate and expand upon all past and on-going efforts associated with wastewater master and facility planning within WSSC Water and to supplement and enhance this work to develop one comprehensive 20-Year Master Plan for the entire wastewater system which includes conveyance, treatment, and biosolids management. The basis of the Master Plan will be system-wide, while the 10-Year Facility Plans will be specific to each of the above elements of the systems. The objective is that the plans will be living documents that are meant to be continuously updated on a regular basis, and as new internal and external needs arise. The documents will become the basis for which recommendations will be made for the development and creation of new CIP programs and projects; as well as operation and maintenance improvements, to be executed in a logical and systematic approach. Recommendations will be made annually in advance of WSSC Water preparing its annual CIP budget.

  The final Master Plan will be completed by December 2026 and the Facility Plans will be completed by December 2027.

- **Project Needs Common to all Sewer Basins:** Trunk Sewer Reconstruction Program - The Trunk Sewer Reconstruction Program provides for the inspection, evaluation, planning, design, and construction required for the rehabilitation of sewer mains and their associated manholes in environmentally sensitive areas (ESAs). This includes both trunk sewers 15-inches in diameter and greater, along with associated smaller diameter pipe less than 15-inches in diameter. The

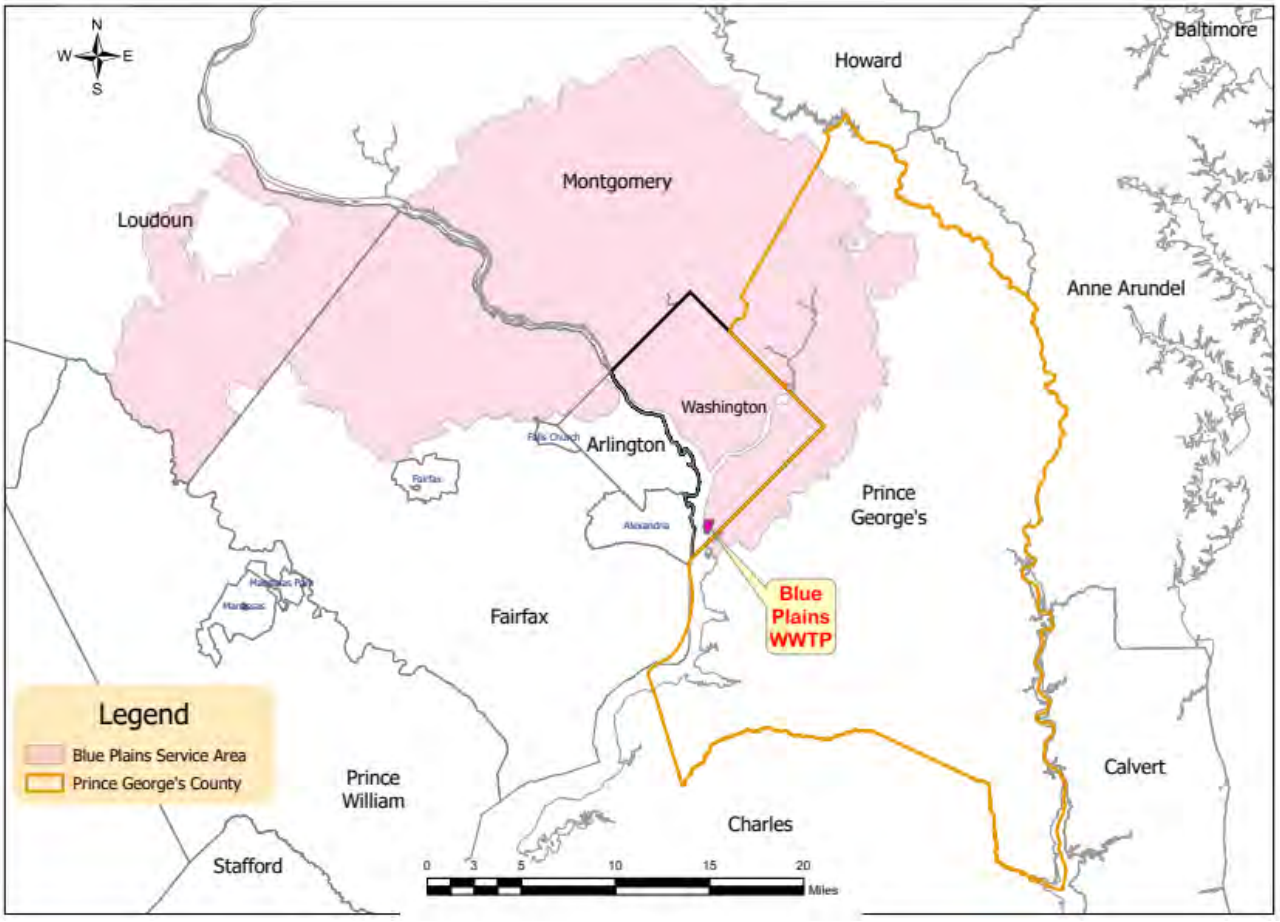
smaller diameter pipe is included due to its location within the ESA. The program also includes planning, design, and construction for the prioritized replacement of force mains.

Sewer Reconstruction Program - This program provides for comprehensive sewer system rehabilitation in residential areas of sewer mains less than 15-inches in diameter and sewer house connections, addressing infiltration and inflow control, and exposed pipe problems. This program does not include any major capital projects (e.g. CIP size relief or replacement sewers). These are funded separately in the CIP.

I.C.1. Blue Plains Service Area:

Approximately 84.5% of the municipal wastewater generated in Montgomery County is treated at the Blue Plains WWTP, a facility located along the Anacostia and Potomac Rivers in Washington, D.C. and operated by DC Water. The regional service boundary for the Blue Plains WWTP is depicted in Figure 4-6. The County's flow contribution to the Blue Plains WWTP accounts for approximately 28.6% of the total flow at the facility. The Blue Plains service area also includes the Rockville Service Area. More detailed information on the City of Rockville's sewerage systems is included in Section II of this Chapter.

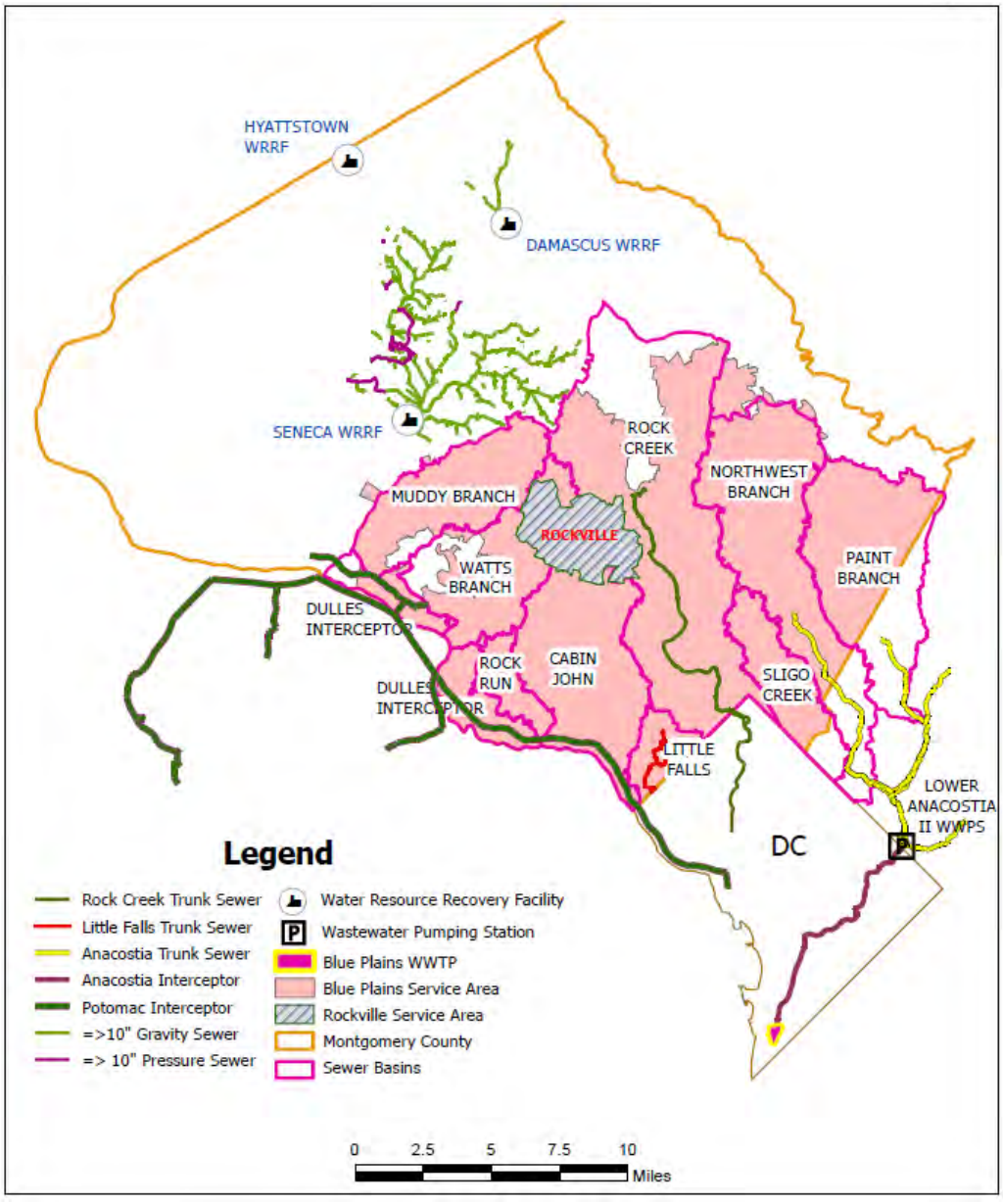
Figure 4-6: Blue Plains Regional Boundaries



I.C.1.A. Blue Plains Service Area Collection and Conveyance Systems:

The principal sewer lines which convey the County's wastewater to the Blue Plains WWTP include the Potomac Interceptor (PI), the Maryland-Upper Potomac Interceptor (MUPI), the Maryland Spur, the Rock Creek Trunk Sewers, the Little Falls Trunk Sewer, and the Anacostia Trunk Sewers. The general location and the sewer basins served by these major sewer lines are shown in Figure 4-7.

Figure 4-7: Blue Plains Service Area in Montgomery County



All the major sewer lines transmitting flows to the Blue Plains WWTP are subjected to annual average and peak flow limitations identified in the Intermunicipal Agreement (IMA) of 2012. The IMA annual average and peak flow limitations for the above sewer lines are listed in Table 4-6.

Table 4-6: Average Basin Flows and IMA Limitations for the Montgomery County Portion of the Blue Plains Service Area

Sewer Basin	Receiving Interceptor	IMA Annual Average Flow Limit (MGD)	IMA Peak Flow Limit (MGD)
Muddy Branch	PI	8.4	28.3
Cabin John	MUPI & PI	16.4	60.3
Rock Run	PI	1.3	5.6
Watts Branch	PI	5.8	16.5
Little Falls	UPI	7.6	20.8
Rock Creek	RCTS	33.5	56.6
Other Basins*	Anacostia & PI	N/A	N/A
Total to Blue Plains WWTP		N/A	N/A

* Other Basins include flows from Anacostia and direct connections to the Potomac Interceptor.
Please Note:

- All data includes flows from the City of Rockville.
- Anacostia is a Bi-County Basin and capacity is available to both Counties on first come-first served basis.
- Flows from Montgomery County to the Anacostia Trunk Sewer are from the Northwest Branch, the Paint Branch, and the Sligo Creek Sewer basins.

(PI = Potomac Interceptor, MUPI = Maryland Upper Potomac, RCTS = Rock Creek Trunk Sewer NA = Not Analyzed or Not Applicable)

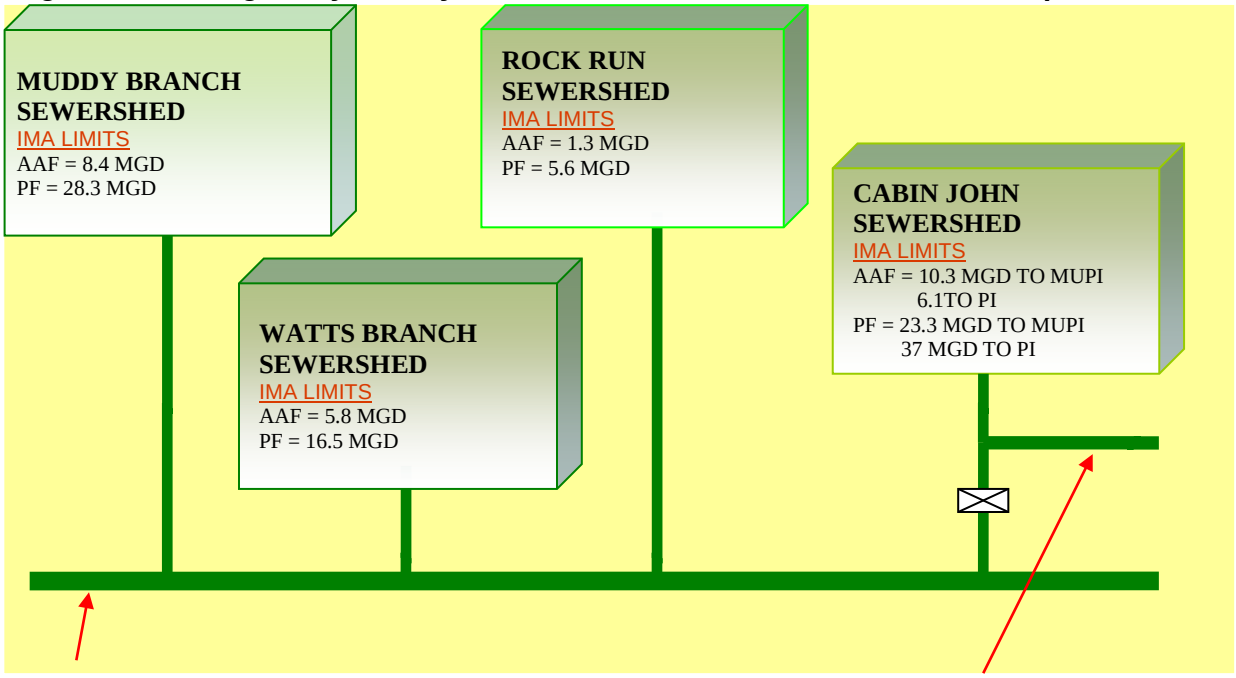
Potomac Interceptor and Tributary Sewersheds:

In June 1960, the U. S. Congress authorized the U.S. Corps of Engineers to design and construct the Potomac Interceptor (PI), an interceptor sanitary sewer to connect Dulles International Airport with the District of Columbia system. The PI system was built with sufficient transmission capacity to provide sewer service for projected community growth and development in the adjacent areas in the States of Maryland and Virginia. Because of the original purpose of this sewer, it is also referred to as the "Dulles Interceptor" by some of its user jurisdictions. The PI was completed in 1963 and consists of 42 miles of sewer line. DC Water is charged with the operation and maintenance of the interceptor, paid for as defined in the Intermunicipal Agreement (IMA) of 2012.

The Potomac Interceptor receives wastewater from various sewerage basins (sewersheds) along the length of its main stem, including flow from several basins in Montgomery County, and drains into the Upper Potomac Interceptor Relief Sewer (UPIRS) in the District of Columbia. To take full advantage of its hydraulic capacity and to control the flow, the PI has been interconnected at several locations with other principal sewers such as the Maryland-Upper Potomac Interceptor (MUPI). Sewersheds served within Montgomery County by the PI include the Muddy Branch, Watts Branch, and Rock Run basins. The Maryland Upper Potomac Interceptor (MUPI) is the upstream continuation of DC Water's Upper Potomac Interceptor (UPI) in the District where it carries flow principally from the Cabin John sewershed. Flows in excess of the MUPI's capacity are diverted to the PI through the PI-MUPI interconnection.

Flows from the County's sewersheds to the PI are regulated through the Intermunicipal Agreement (IMA) of 2012. Figure 4-8 is a schematic of the Potomac Interceptor and the tributary sewersheds from Montgomery County along its main stem. Also shown are the IMA flow limitations. Existing and projected flows from various sewersheds in Montgomery County to the PI relative to the IMA flow limitations are also discussed in this section.

Figure 4-8: Montgomery County Wastewater Flows to the Potomac Interceptor



All sewage flows are in millions of gallons per day (MGD)
AAF = Annual Average Flow and PF = Peak Flow (2012 IMA)

In 2022, a consultant, under Contract with MWCOG, on behalf of the IMA parties, updated and recalibrated the sewer hydraulic model for the Potomac Interceptor. The hydraulic model of the PI is used to adequately characterize the existing flows in the interceptor and evaluate the capacity of this vital regional sewerage facility. The model's analyses indicate that the PI has enough capacity to convey flows to Blue Plains for the following 25 years, The PI dynamic hydraulic model will be useful as a tool to evaluate and plan various strategies for managing future wastewater flows in the basins that contribute flows to the PI.

On-going inspections conducted by DC Water of the entire Potomac Interceptor system indicated the need for rehabilitation of numerous sections of the interceptor due to deterioration caused by corrosion, soil loads, wear, leakage, and other factors. Following its inspections and condition assessments, DC Water is performing a targeted major rehabilitation to improve performance and prolong the life of the 60- year-old system. The project will provide for rehabilitating segments of the Potomac Interceptor which accepts flows from Montgomery County as well as from Virginia's Fairfax and Loudoun Counties. Since DC Water is charged with the operation and maintenance of the interceptor, this rehabilitation project is managed by DC Water and funded by jurisdictional users defined in the Intermunicipal Agreement (IMA) of 2012.

Numerous projects to rehabilitate the Potomac Interceptor is included in the DC Water FY 2027 – FY 2032 Capital Improvement Program. These projects provide funding for planning, design, permitting, and construction for multiple portions of the Interceptor throughout its length. Based on the FY 2027 estimate, the total 6-year WSSC share for the Potomac Interceptor projects is estimated to be $128 million. The WSSC Water share of the costs is based on funding agreements for Multi-Jurisdictional Use Facilities defined in the Intermunicipal Agreement (IMA) of 2012. Under the IMA, capital cost shares are based on allocated capacity to the total capacity; for this project the cost share will be determined by the IMA parties for each location where work is to be performed. As DC Water refines the project scope and schedules the estimated costs will

likely change. Please refer to the latest Adopted DC Water Capital Improvement Program for additional information and details.

In January 2026, a portion of the Potomac Interceptor, known as the Rock Run Section collapsed due to pipeline corrosion and caused a significant sanitary sewer overflow into the Potomac River for several weeks until the by-pass pumping system was fully operational. As of the date of this edition, WSSC Water is working closely with DC Water to determine the cost implications to WSSC Water. In March 2026, DC Water has indicated that although the flow has been restored within the broken main, it may take up to 9 months to complete the permanent repair

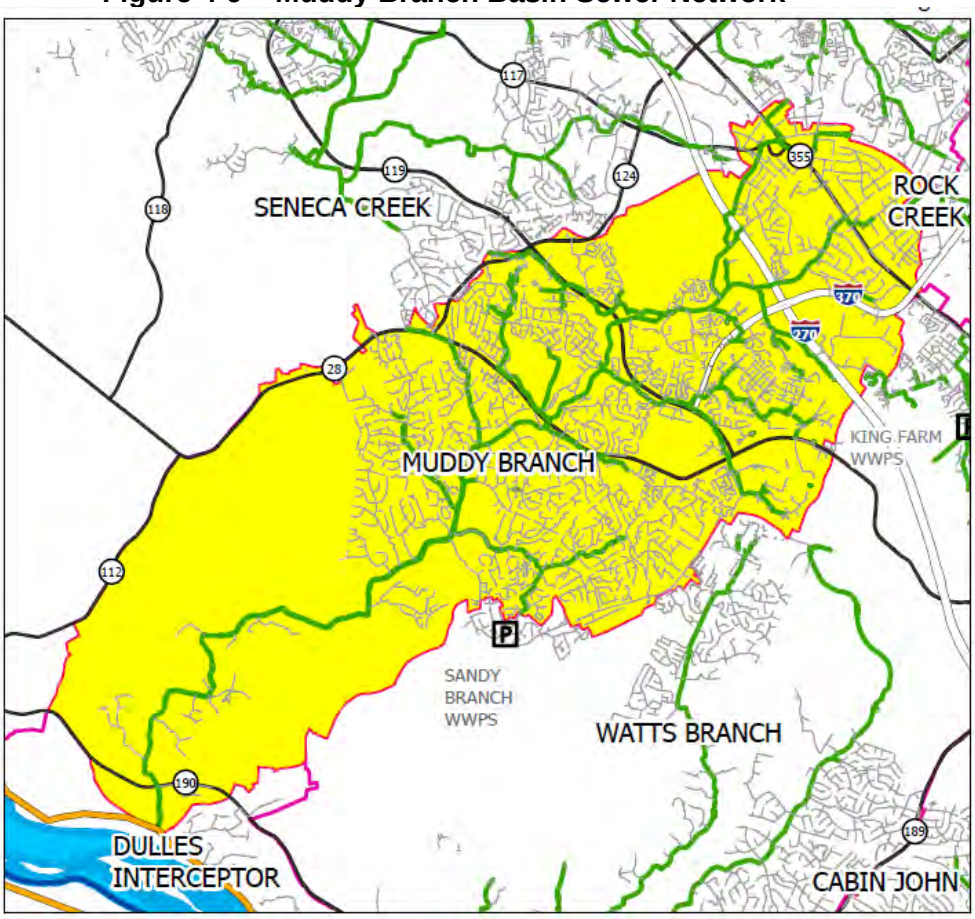
The following sections provide a general basin-by-basin description of existing and planned sewerage systems and projected needs for the sewersheds in Montgomery County served by the Potomac Interceptor.

Muddy Branch Basin:

The Muddy Branch Basin is a medium sized basin located in the western-central portion of Montgomery County.

Collection and Conveyance Systems: Flow from the basin is collected in a series of collection sewers flowing southwest toward the connection point with the Potomac Interceptor. The Muddy Branch Basin boundary and the sewerage systems layout of the sewer lines are shown in Figure 4-9. There are no wastewater pumping stations located in the Muddy Branch Basin.

Figure 4-9 – Muddy Branch Basin Sewer Network



A skeletonized computer model of the Muddy Branch Basin was developed to identify improvements as outlined in Article 6 of the Consent Decree. In 2021, WSSC Water updated the sewer model to include all WSSC Water maintained gravity sewers and low-pressure system sewers. The updated all-pipes model was calibrated using recent flow monitoring and rainfall data. The modeling effort does not predict any overflows in the Muddy Branch Basin under peak wet weather flows. Based on the modeling results, a summary of the predicted flows from the Muddy Branch Basin to Potomac Interceptor are detailed on Table 4-7.

Table 4-7 - Modeled Muddy Branch Basin Flows

Muddy Branch Basin	Average Dry Weather Flow (MGD)	Peak Flow with 10-year Storm (MGD)
Existing	7.74	24.8
Future (Year 2045)	8.58	25.76

At the Muddy Branch connection location, the flow limitations to the Potomac Interceptor as outlined in the IMA are as follows: 8.4 MGD under Annual Average flow and 28.3 MGD under Peak Flow. Based on the results of the updated model, flows to the PI at Muddy Branch are below the peak flow limitations outlined in the IMA.

Muddy Branch Basin Projected Needs: To address high flows in the basin, WSSC Water is working with a consultant to conduct a holistic, basin-wide optimization evaluation of the Muddy Branch Basin. The optimization includes consideration of system capacity enhancements (including conveyance, pumping and treatment), wet weather storage, I/I reduction, flow control, flow diversion and treatment wet weather capacity alternatives. The evaluation encompasses the use of intelligent algorithm software to evaluate thousands of possible solutions. The results of the analysis will be used to inform the System-Wide Wastewater Master Planning effort currently underway.

The following CIP projects are included in the WSSC Water CIP to address needs in the Muddy Branch Basin:

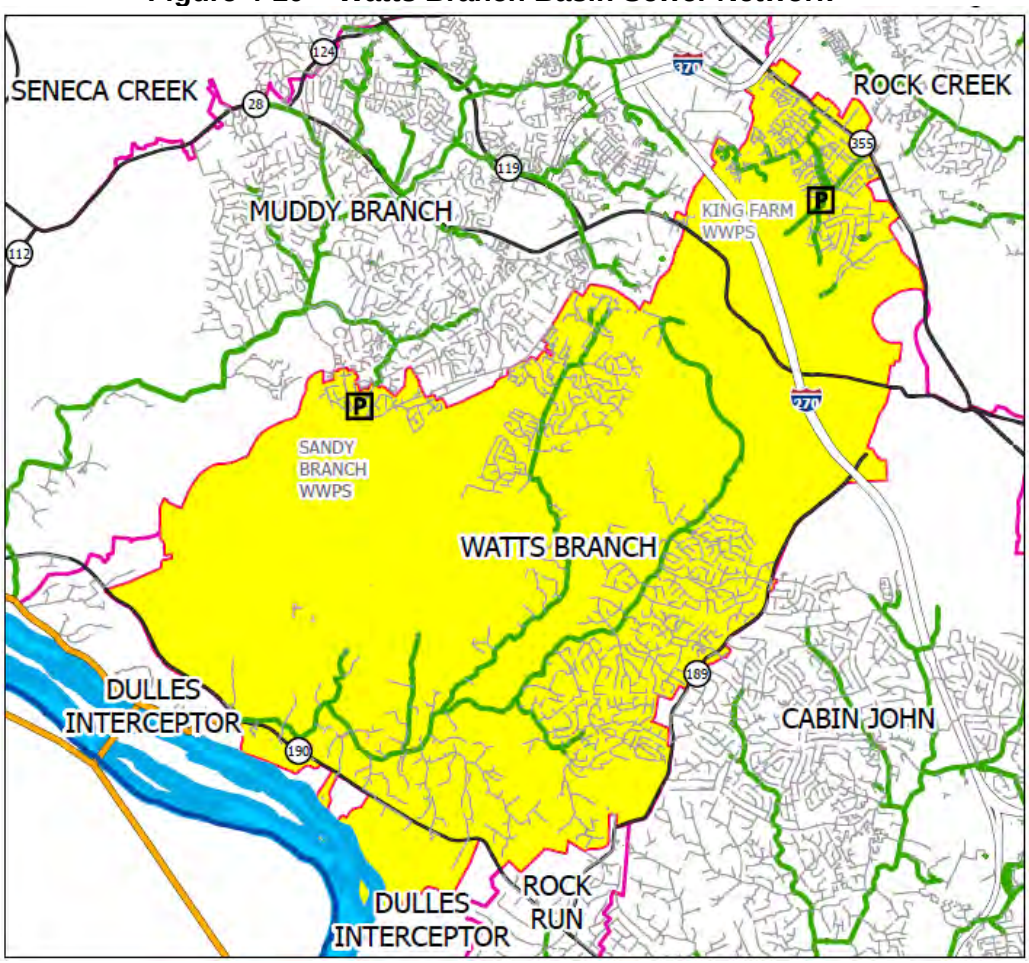
- Johns Hopkins Medical Research Park Sewer Main (S-85.23) - This project provides for the planning, design, and construction of approximately 12,390 feet of 15-inch diameter or larger sewer mains to serve the Johns Hopkins Medical Research Park and vicinity. This work will extend service to the new development and replace existing sewer mains downstream of the development.

Watts Branch Basin:

The Watts Branch Basin is a medium sized basin located in the western-central portion of Montgomery County. The Muddy Branch Basin borders the Watts Branch Basin to the northwest.

Collection and Conveyance Systems: Flow from the basin is collected in a series of collection sewers flowing southwest toward the connection point with the Potomac Interceptor. The Watts Branch Basin boundary and the sewerage systems layout of the sewer lines are shown in Figure 4-10.

Figure 4-10 – Watts Branch Basin Sewer Network



There are two sewer pump stations in the Watts Branch Basin - the Sandy Branch WWPS and the King Farm WWPS. The King Farm WWPS receives flow from sewered areas located in the northern part of the basin and discharges into WSSC sewers downstream from the City of Rockville.

Wastewater Pump Station	Ex. Dry Weather Flow (MGD)	Existing Peak Flow (MGD)	Future Dry Weather Flow (MGD)	Future Peak Flow (MGD)	Safe Capacity (MGD)[1]	Maximum Capacity (MGD)[1]
Sandy Branch	0.187	0.6	0.195	0.634	0.37	0.49
King Farm	0.827	2.74	1.38	3.213	4.6	6.5

1.The Safe and Maximum capacities are based on pump tests conducted in 2022

A skeletonized computer model of the Watts Branch Basin was developed to identify improvements as outlined in Article 6 of the Consent Decree. In 2022, WSSC Water updated the sewer model to include all WSSC Water maintained gravity sewers and low-pressure system sewers. The updated all-pipes model was calibrated using recent flow monitoring and rainfall data. The modeling effort does not predict any overflows in the Watts Branch Basin under peak wet weather flows. Based on the modeling results, a summary of the predicted flows from the Watts Branch Basin to Potomac Interceptor are detailed on Table 4-8.

Table 4-8 - Modeled Basin Flows

Watts Branch Basin	Average Dry Weather Flow (MGD)	Peak Flow with 10-year Storm (MGD)
Existing	5.62	16.65
Future (Year 2045)	6.7	18.4

At the Watts Branch connection location, the flow limitations to the Potomac Interceptor as outlined in the IMA are as follows: 5.8 MGD under Annual Average flow and 16.5 MGD under Peak Flow. Based on the results of the updated model, flows to the PI at Watts Branch are above the peak flow limitations outlined in the IMA under both existing and future conditions.

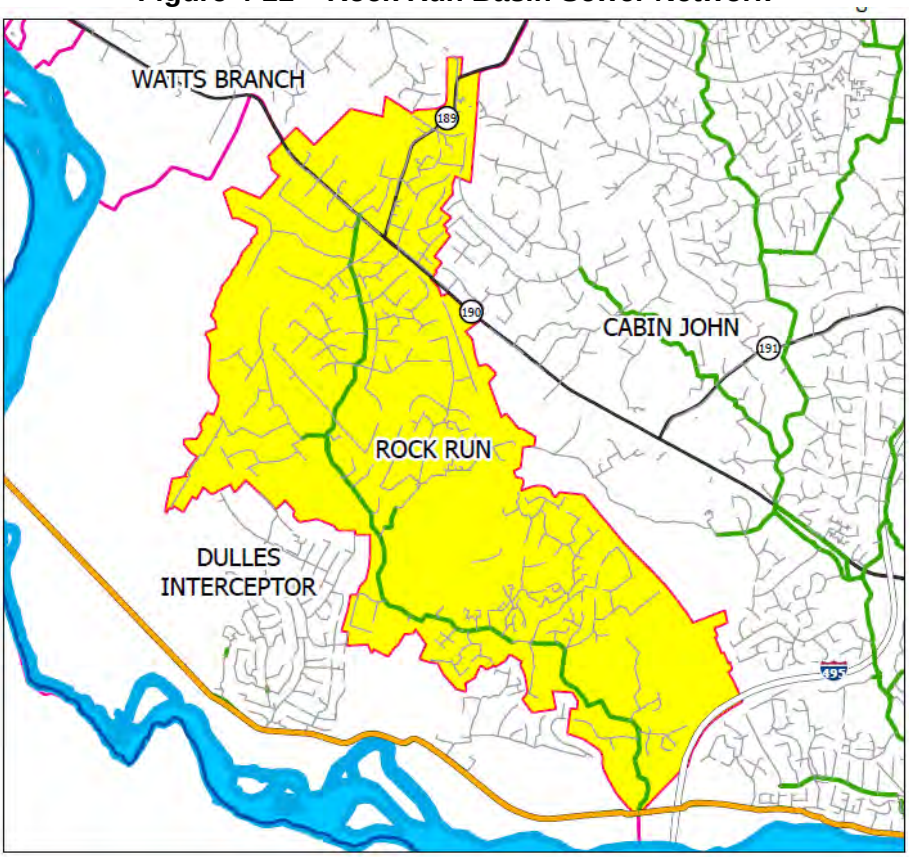
Watts Branch Basin Projected Needs: To address high flows in the basin, WSSC Water is working with a consultant to conduct a holistic, basin-wide optimization evaluation of the Watts Branch Basin. The results of the analysis will be used to inform the System-Wide Wastewater Master Planning effort currently underway.

Rock Run Basin:

The Rock Run Basin is a small basin located in the southwestern portion of Montgomery County. The Rock Run Basin borders the Watts Branch Basin to the south.

Collection and Conveyance Systems: Flow from the basin is collected in a series of collection sewers along Rock Run flowing south toward the connection point with the Potomac Interceptor. The Rock Run Basin boundary and the sewerage systems layout of the sewer lines are shown in Figure 4-11. There are no wastewater pumping stations located in the Rock Run Basin.

Figure 4-11 – Rock Run Basin Sewer Network



A skeletonized computer model of the Rock Run Basin was developed to identify improvements as outlined in Article 6 of the Consent Decree. In 2021, WSSC Water updated the sewer model to include all WSSC Water maintained gravity sewers and low-pressure system sewers. The updated all-pipes model was calibrated using recent flow monitoring and rainfall data. The modeling effort does not predict any overflows in the Rock Run Basin under peak wet weather flows. Based on the modeling results, a summary of the predicted flows from the Rock Run Basin to Potomac Interceptor are detailed below:

Table 4-9 - Modeled Rock Run Basin Flows

Rock Run Basin	Average Dry Weather Flow (MGD)	Peak Flow with 10-year Storm (MGD)
Existing	0.78	5.79
Future (Year 2045)	0.788	5.87

At the Rock Run connection location, the flow limitations to the Potomac Interceptor as outlined in the IMA are as follows: 1.3 MGD under Annual Average flow and 5.6 MGD under Peak Flow. Based on the results of the updated model, flows to the PI at Rock Run are above the peak flow limitations outlined in the IMA under both existing and future conditions.

Rock Run Basin Projected Needs: To address high flows in the basin, WSSC Water is working with a consultant to conduct a holistic, basin-wide optimization evaluation of the Rock Run Basin. The results of the analysis will be used to inform the System-Wide Wastewater Master Planning effort currently underway.

Maryland-Upper Potomac Interceptor:

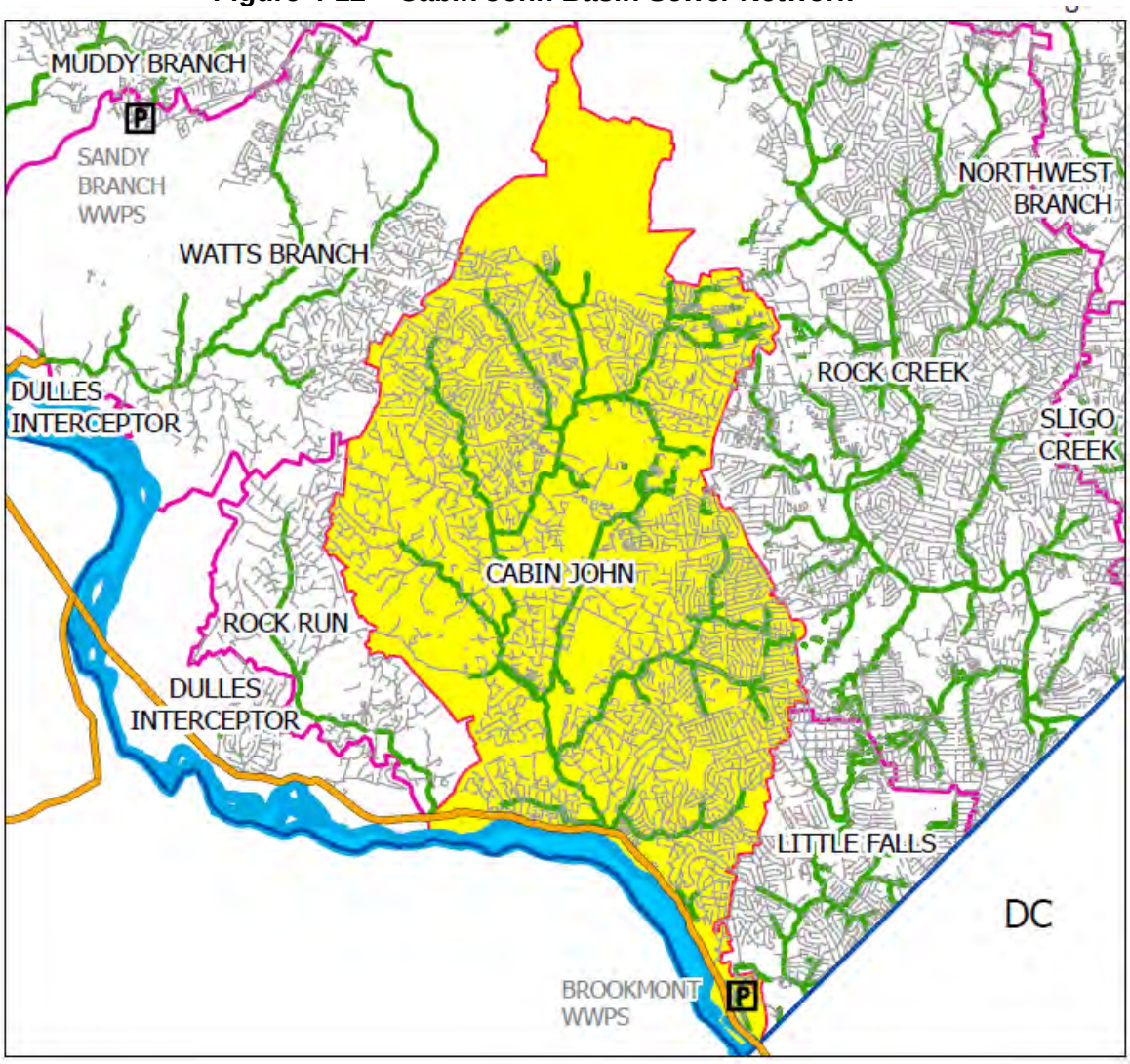
The Maryland-Upper Potomac Interceptor (MUPI) receives wastewater from the Cabin John basin, including parts of the City of Rockville, and from several mini-sewer basins within the Cabin John area along the Potomac River. The MUPI has a maximum capacity of 18.7 MGD. A 30-inch sewer line connects the MUPI to the PI just downstream from where wastewater from Cabin John Trunk Sewer discharges to the MUPI. When flow from the Cabin John Basin reaches the MUPI's maximum capacity, an automatic valve diverts the excess flow to the Potomac Interceptor. Both the MUPI and the PI drain into the Upper Potomac Interceptor (UPI) and Upper Potomac Interceptor Relief Sewer (UPIRS) in the District of Columbia.

Cabin John Basin:

The Cabin John Basin is a medium sized basin located in the southwestern portion of Montgomery County. The Cabin John Basin is bordered by the Watts Branch Basin to the north and the Rock Run Basin to the west. Muddy Branch Basin borders the Cabin John Basin to the northwest.

Collection and Conveyance Systems: Flow from the basin is collected in a series of collection sewers flowing south toward the connection point with the Maryland Upper Potomac Interceptor and the Potomac Interceptor. The Cabin John Basin boundary and the sewerage systems layout of the sewer lines are shown in Figure 4-12. There are no wastewater pumping stations located in the Cabin John Basin.

Figure 4-12 – Cabin John Basin Sewer Network



A skeletonized computer model of the Cabin John Basin was developed to identify improvements as outlined in Article 6 of the Consent Decree. In 2022, WSSC Water updated the sewer model to include all WSSC Water maintained gravity sewers and low-pressure system sewers. The updated all-pipes model was calibrated using recent flow monitoring and rainfall data. The modeling effort does not predict any overflows in the Cabin John Basin under peak wet weather flows. Based on the modeling results, a summary of the predicted flows from the Cabin John Basin to the Maryland Upper Potomac Interceptor (MUPI) and the Potomac Interceptor are detailed in Table 4-10.

Table 4-10 - Modeled Cabin John Basin Flows

Cabin John Basin	Average Dry Weather Flow (MGD)[1]	Peak Flow with 10-year Storm (MGD)
Existing	2.72 / 9.41	28.9 / 17.4
Future (Year 2045)	4.29 / 9.45	32.0 / 17.4

1. *The first number represents the flows to the PI. The second represents to flow to the MUPI.*

At the Cabin John connection location, the flow limitations to the Potomac Interceptor as outlined in the IMA are as follows: 6.1 MGD under Annual Average flow and 37.0 MGD under Peak Flow. The flow limitations to the Maryland Upper Potomac Interceptor as outlined in the IMA are as follows: 10.3 MGD under Annual Average flow and 23.3 MGD under Peak Flow. Based on the results of the updated model, flows to the PI and the MUPI at Cabin John are below the peak flow limitations outlined in the IMA under both existing and future conditions.

Cabin John Basin Projected Needs: The following CIP projects are included in the WSSC Water CIP to address needs in the Cabin John Basin:

- Rose Village Sewer Main (S-103.17) - This project provides for the planning, design, and construction of approximately 1,728 feet of 30-inch to 33-inch diameter sewer main to serve the Rose Village development. These sewers will replace existing sewer mains
- Erickson Bethesda Sewer Main (S-151.02) - This project provides for the planning, design, and construction of 3,600 feet of 15-inch to 18-inch diameter sanitary sewer adjacent to the new development and 330 feet of 36-inch diameter sanitary sewer south of River Road to serve the Erickson Bethesda development.

Rock Creek Basin:

The Rock Creek Basin is a large narrow basin located in the southwestern portion of Montgomery County. The Rock Creek Basin borders the Watts Branch Basin to the south.

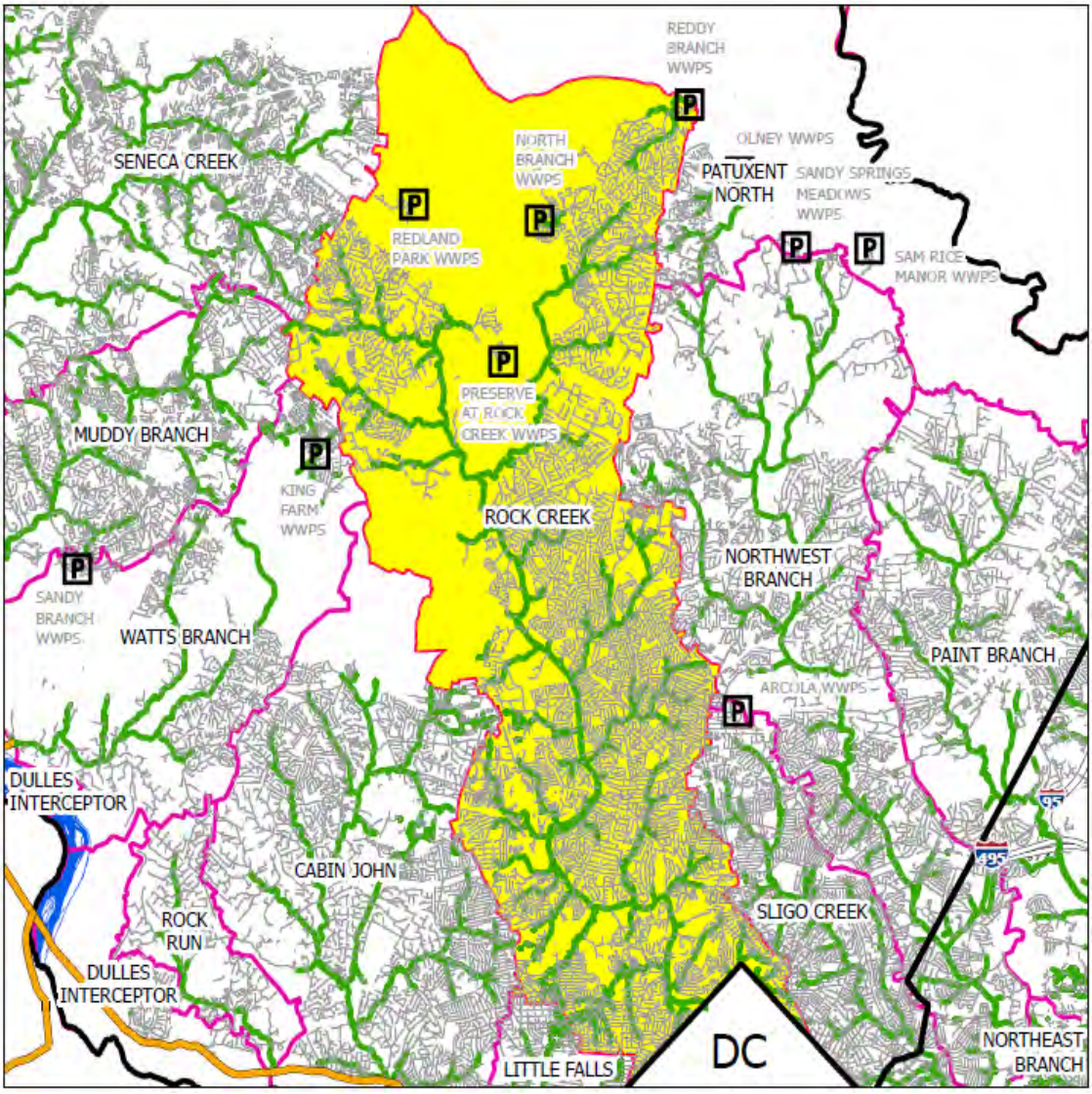
Collection and Conveyance Systems: Flow from the basin is collected in a series of collection sewers along Rock Creek flowing south toward the connection point with the Potomac Interceptor. There are four sewer pump stations in the Rock Creek Basin - the Redland Park WWPS, the North Branch WWPS, the Reddy Branch WWPS, and the Preserves at Rock Creek WWPS. In addition, there is a pumping station at the Rock Creek Storage Facility in the basin. The Facility is used to divert some flow from the interceptor to a storage basin during wet weather events in order to reduce peak flows and maintain the Blue Plains IMA flow allocations. After flows subside, the volume stored is pumped back into the interceptor.

Wastewater Pump Station	Ex. Dry Weather Flow (MGD)	Existing Peak Flow (MGD)	Future Dry Weather Flow (MGD)	Future Peak Flow (MGD)	Safe Capacity (MGD)[1]	Maximum Capacity (MGD)[1]
Redland Park	0.056	0.141	0.070	0.1408	0.23	0.30
North Branch	0.161	0.75	0.24	0.75	1.04	1.41
Reddy Branch	0.81	2.7	1.21	2.72	2.0	2.8
Preserves at Rock Creek	0.03	0.081	0.018	0.09	0.042	0.084

1. The Safe and Maximum capacities are based on pump tests conducted in 2022

The Rock Creek Basin boundary and the sewerage systems layout of the sewer lines are shown in Figure 4-13.

Figure 4-13 – Rock Creek Basin Sewer Network



A skeletonized computer model of the Rock Creek Basin was developed to identify improvements as outlined in Article 6 of the Consent Decree. In 2022, WSSC Water updated the sewer model to include all WSSC Water maintained gravity sewers and low-pressure system sewers. The updated all-pipes model was calibrated using recent flow monitoring and rainfall data. Based on the modeling results, a summary of the predicted flows from the Rock Creek Basin to DC Water's Rock Creek Trunk Sewers and for the basin as a whole.

Table 4-11 - Modeled Rock Creek Basin Flows

Rock Creek Basin	Average Dry Weather Flow (MGD) [1]	Peak Flow with 10-year Storm (MGD) [2]
Existing	22.21 / 24.61	55.12
Future (Year 2045)	25.56 / 28.50	56.7

1. *The first number represents the flows to the DC Water Main Interceptor. The second represents flows for the basin as a whole.*
2. *Peak flows represent flows to the DC Water Main Interceptor.*

The modeling effort predicts two overflows under future (2045) 10-year storm conditions in the northern part of the basin. The predicted overflows occur immediately upstream of Reddy Branch pump station as the peak inflow to the pump station exceeds the safe pumping capacity causing the gravity network upstream to back up. The Reddy Branch WWPS is in the planning phase to complete a preliminary engineering design for the replacement and rehabilitation of the existing WWPS along with addressing the flooding issue and replacing the existing force main.

The flow limitations to the Rock Creek Main Interceptor are outlined in the IMA as follows: 33.5 MGD under Annual Average flow, and 56.6 MGD under Peak Flow. Based on the results of the updated model, flows to the Main Interceptor are just above the peak flow limitations outlined in the IMA under future conditions.

Rock Creek Storage Facility: In 1983, the "Rock Creek Transmission Relief Facility Plan" provided for relief of existing surcharging and overflows in the Rock Creek sewers. This study recommended the construction of the Rock Creek Storage Facility, which WSSC built in 1991 just south of Randolph Road. This facility offloads and stores excess peak flows from the trunk sewers; the stored wastewater is gradually returned to the trunk sewers during times of lower flow.

The storage facility is operated manually. During high wet weather conditions, flows from the trunk sewer can be diverted to the facility's wet well. Once flow enters the wet wells it is pumped to storage. The five equal-capacity storage basins have a combined storage volume of 6 million gallons.

The storage facility provides flexibility in meeting the IMA peak flow limit of 56.6 MGD. It has been determined by WSSC that the Rock Creek Storage Facility provides an additional 24 MGD to the IMA peak flow limit of 56.6 MGD (1994 WSSC Strategic Sewer Study).

Rock Creek Basin Projected Needs: The following CIP projects are included in the WSSC Water CIP to address needs in the Rock Creek Basin:

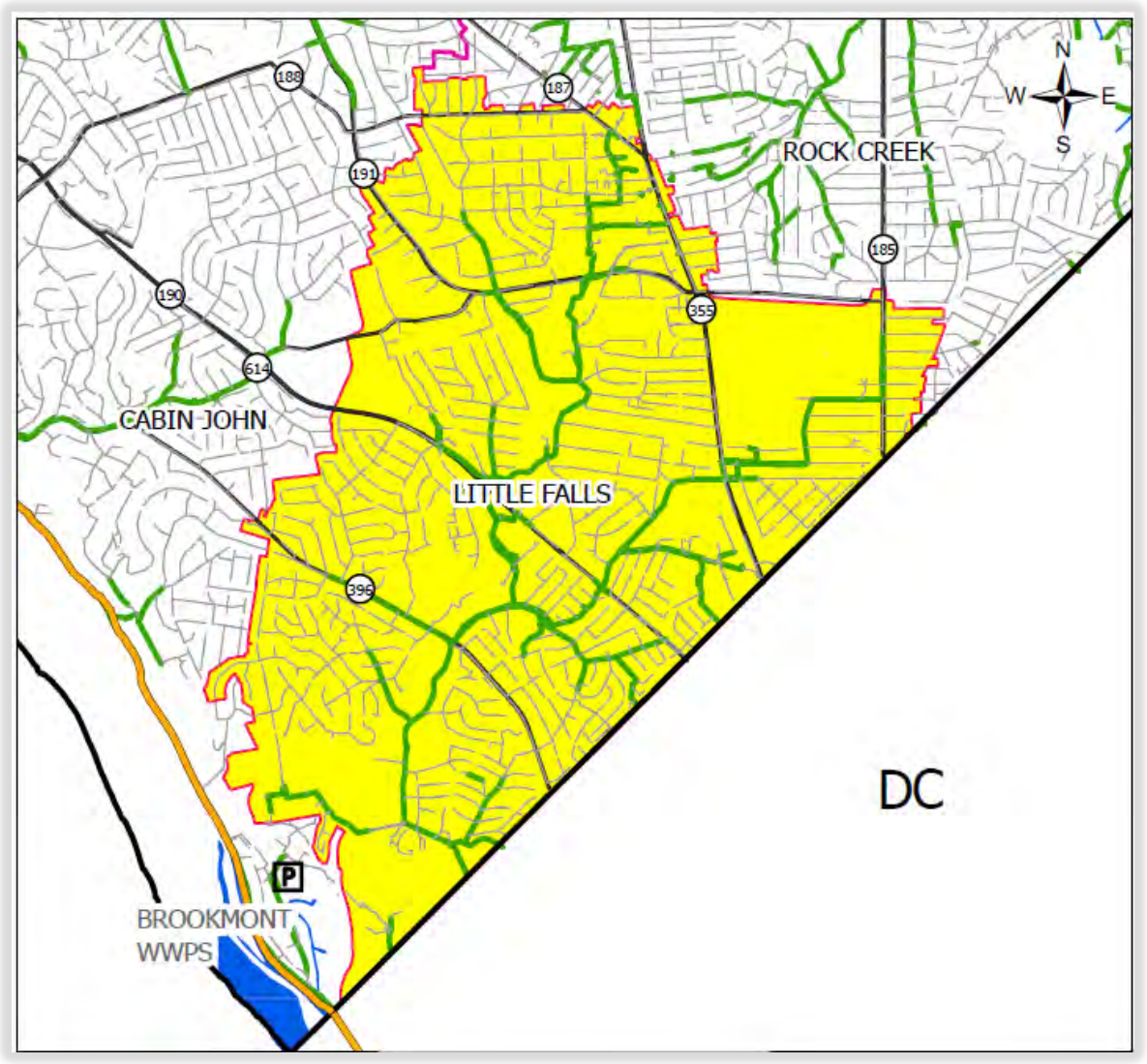
- Reddy Branch WWPS and Force Main (S-61.02) – The existing Reddy Branch WWPS and 16-inch Force Main were constructed in 1971 and have reached the end of their useful lives. This project provides for the planning, design, and construction of the modifications to the Reddy Branch WWPS and replacement of the approximately 12,800 feet of force main. The existing pump station is subject to flooding and there are safety concerns with equipment operation. Replacement of the existing force main is in accordance with an initiative to prioritize replacing force mains that have reached their anticipated life expectancy.

Little Falls Basin:

The Little Falls Basin is relatively small and substantially developed. The basin encompasses the southern portions of the communities of Bethesda and Chevy Chase, near the District of Columbia.

Collection and Conveyance Systems: The Little Falls Trunk Sewer receives wastewater from the Little Falls basin and conveys it into the Upper Potomac Interceptor Relief Sewer (UPRIS) in the District of Columbia, where these flows are treated at the Blue Plains WWTP. Flows from the Little Falls Trunk Sewer into the UPRIS are regulated by the 2012 Blue Plains IMA. Figure 4-14 shows the Little Falls Basin boundary and its major sewer lines.

Figure 4-14 – Little Falls Basin Sewer Network



The Brookmont Pumping Station is used to divert wastewater flows into Little Falls Basin.

Wastewater Pump Station	Ex. Dry Weather Flow (MGD)	Existing Peak Flow (MGD)	Future Dry Weather Flow (MGD)	Future Peak Flow (MGD)	Safe Capacity (MGD)[1]	Maximum Capacity (MGD)[1]
Brookmont	0.003	0.011	0.004	0.012	0.13	0.157

1. *The Safe and Maximum capacities are based on pump tests conducted in 2022*

A skeletonized computer model of the Little Falls Basin was developed in 2009 to identify improvements as outlined in Article 6 of the Consent Decree. WSSC Water is currently working to update the sewer model to include all WSSC Water maintained gravity sewers and low-pressure system sewers.

Little Falls Basin Projected Needs: None at this time.

Anacostia Interceptor System:

This sewerage system originated in the 1930's and is one of the oldest within the WSSD. Sewer service is presently provided to more than 80 percent of the Anacostia River Basin in Montgomery County, encompassing an area of about 39 square miles, and including communities in the following planning areas: Fairland - Beltsville, Colesville - White Oak, Cloverly - Norwood, Kemp Mill - Four Corners, Takoma Park, Silver Spring, Kensington - Wheaton, Aspen Hill, and Olney. Nearly all of the sewered portion of Eastern Montgomery County is situated within the upper reaches of the Anacostia River Basin. The Paint Branch sewer basin includes the watersheds of both Paint Branch and Little Paint Branch.

Existing Systems – The Anacostia Interceptor System receives wastewater from both Prince George's and Montgomery Counties. The wastewater collection system consists of a network of trunk sewers reaching up along Sligo Creek, and Long, Northwest, Little Northwest, Buckhorn, Hollywood, Paint, and Little Paint Branches. The wastewater flows by gravity down the basin through Prince George's County to the Anacostia Pumping Station near the District of Columbia adjacent to the Anacostia River. From there, the wastewater is pumped through a force main to a gravity sewer parallel to the Anacostia River, then on to the Blue Plains WWTP for treatment. WSSC's use of the tributaries to Anacostia Interceptor System is governed by both the 2012 IMA and the Bi-County Agreement.

Anacostia Storage Facility: The Anacostia Storage Facility was constructed in June 2013 near the Anacostia No. 2 WWPS and has a volume of 7 MG. The facility is designed to temporarily store excess wastewater from the Anacostia interceptor systems when flows exceed the 199 million gallons per day (MGD) limit, typically during heavy wet weather events, before being sent to DC Water's wastewater system The storage facility includes five storage cells. Weirs and sluice gates control the wastewater flow between cells. The facility is designed to use the head in the storage tank to drain a portion of wastewater flow through the force main to minimize re-pumping. Valves on the influent and effluent lines control the flow to and from the storage facility.

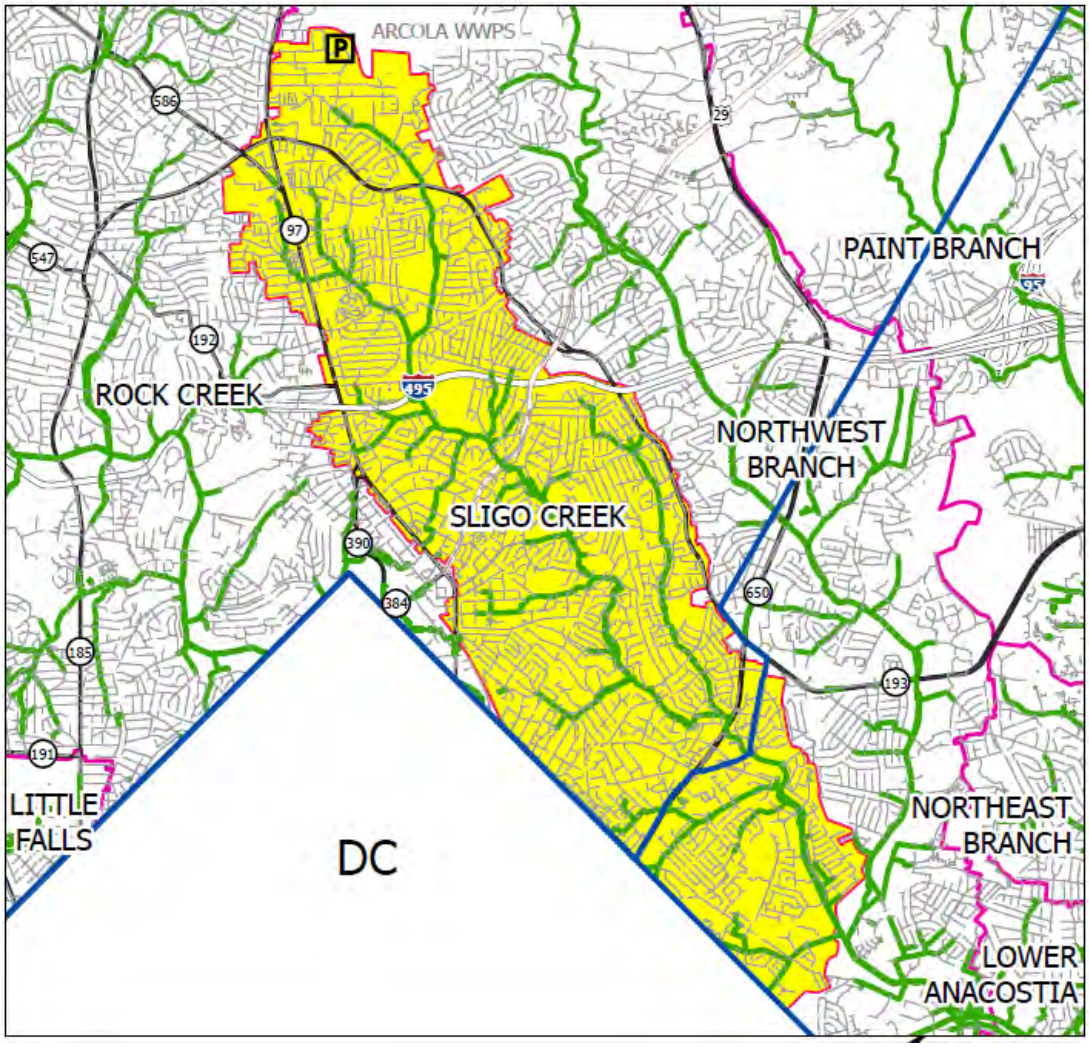
Major sub-basins served by the Anacostia Interceptor System in Montgomery County include Paint Branch, Northwest Branch, and Sligo Creek. A brief description of the sewerage systems in each of these three sub-basins follows.

Sligo Creek Basin

The Sligo Creek Basin is a medium-sized basin, primarily located in Montgomery County, with the southern quarter of the basin is located in Prince George's County.

Existing Systems: Wastewater collection service is provided by a system of trunk sewers which extends up into the basin along Sligo Creek. Flow in the basin generally flows to the southeast to the Northwest Branch Basin, eventually flowing to the Anacostia No. 2 WWPS. The Sligo Creek Basin boundary and the sewerage systems layout of the sewer lines are shown in Figure 4-15.

Figure 4-15 – Sligo Creek Basin Sewer Network



The Arcola WWPS is located in the Montgomery County portion of the Sligo Creek Basin. The Arcola WWPS and associated force main are currently under design for replacement.

Wastewater Pump Station	Existing Dry Weather Flow (MGD)	Existing Peak Flow (MGD)	Future Dry Weather Flow (MGD)	Future Peak Flow (MGD)	Safe Capacity (MGD)[1]	Maximum Capacity (MGD)[1]
Arcola WWPS	0.013	0.094	0.015	0.135	0.146	0.157

1. The Safe and Maximum capacities are based on pump tests conducted in 2022

A skeletonized computer model of the Sligo Creek Basin was developed in 2009 to identify improvements as outlined in Article 6 of the Consent Decree. The model is currently in the process of being updated to an all-pipes version.

Sligo Creek Basin Projected Needs: The following CIP projects are included in the WSSC Water CIP to address needs in the Sligo Creek Basin:

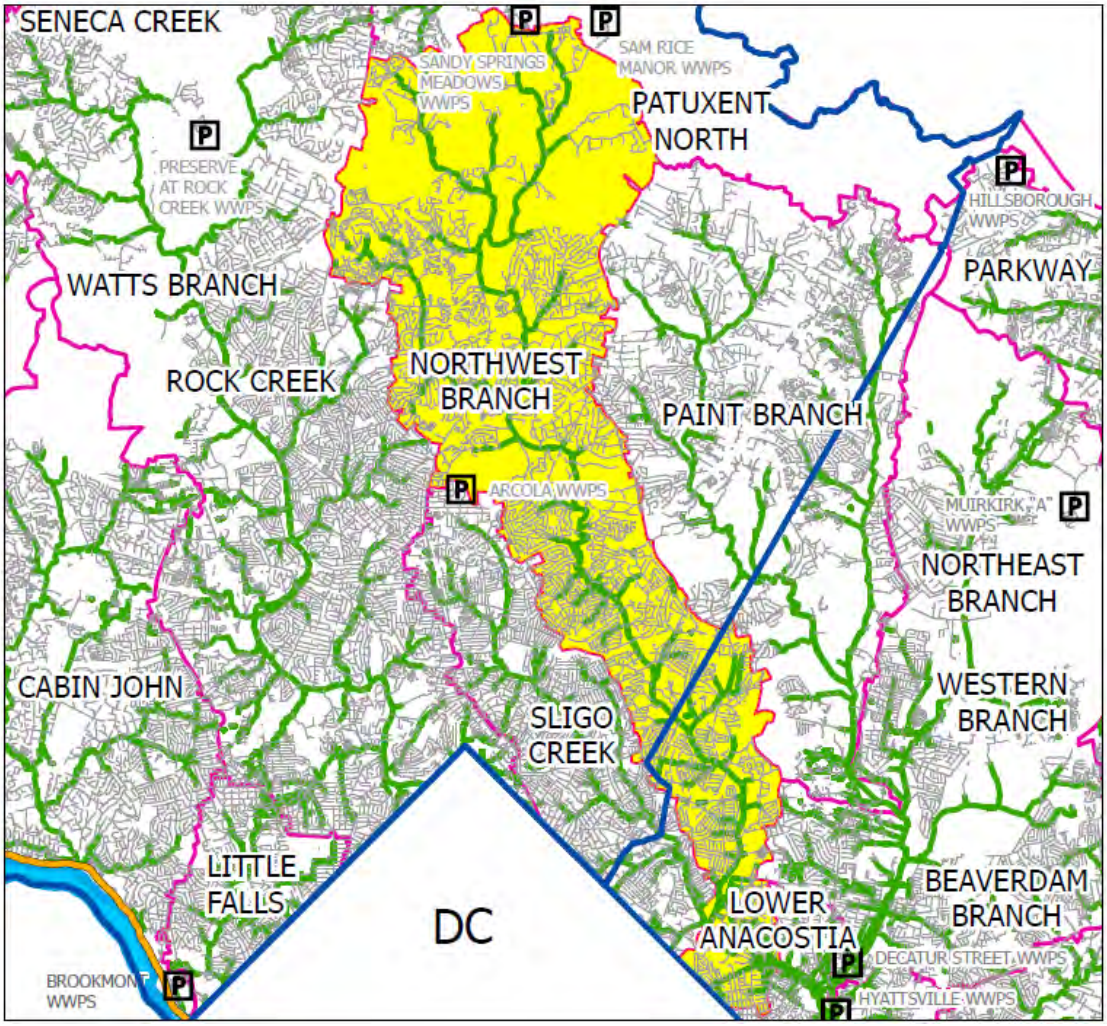
- Arcola WWPS and Force Main (S-36.01) – The existing Arcola WWPS and Force Main were constructed in 1961 and have reached the end of their useful lives. This project provides for the planning, design, and construction of the modifications to the Arcola WWPS and replacement of the force main. The rehabilitation will replace both pumps, maintaining the pumping station's 0.17 MGD capacity. The existing 1,300 linear feet of 4-inch force main will be replaced. In addition, replacement of all electrical and mechanical components, piping assets, and the HVAC system are included.

Northwest Branch Basin

The Northwest Branch Basin is a large basin, primarily located in Montgomery County. The southern quarter of the basin is located in Prince George's County. The portion of the basin in Montgomery County is located inside the Beltway and is developed with primarily high-density residential and commercial properties.

Existing Systems: Wastewater collection service is provided by a system of trunk sewers which extends up into the basin along the Northwest Branch of the Anacostia River. Flow in the basin generally flows to the southeast to the Lower Anacostia Basin, eventually flowing to the Anacostia No. 2 WWPS. The Northwest Branch Basin boundary and the sewerage systems layout of the sewer lines are shown in Figure 4-16.

Figure 4-16 – Northwest Branch Basin Sewer Network



There are three sewer pump stations in the Northwest Branch Basin - the Olney WWPS, the Sandy Springs Meadows WWPS, and the Sam Rice Manor WWPS. The existing 20-inch Olney Force Main is under design for replacement with a 24-inch main.

Wastewater Pump Station	Ex. Dry Weather Flow (MGD)	Existing Peak Flow (MGD)	Future Dry Weather Flow (MGD)	Future Peak Flow (MGD)	Safe Capacity (MGD)[1]	Maximum Capacity (MGD)[1]
Olney	0.8	1.56	0.88	1.566	4.7	5.25
Sandy Springs Meadows	0.02	0.08	0.021	0.08	0.128	0.16
Sam Rice Manor	0.018	0.07	0.018	0.07	0.098	0.104

1. The Safe and Maximum capacities are based on pump tests conducted in 2022

A skeletonized computer model of the Northwest Branch Basin was developed in 2009 to identify improvements as outlined in Article 6 of the Consent Decree. The model is currently in the process of being updated to an all-pipes version.

Northwest Branch Basin Projected Needs: The following CIP projects are included in the WSSC Water CIP to address needs in the Northwest Branch Basin:

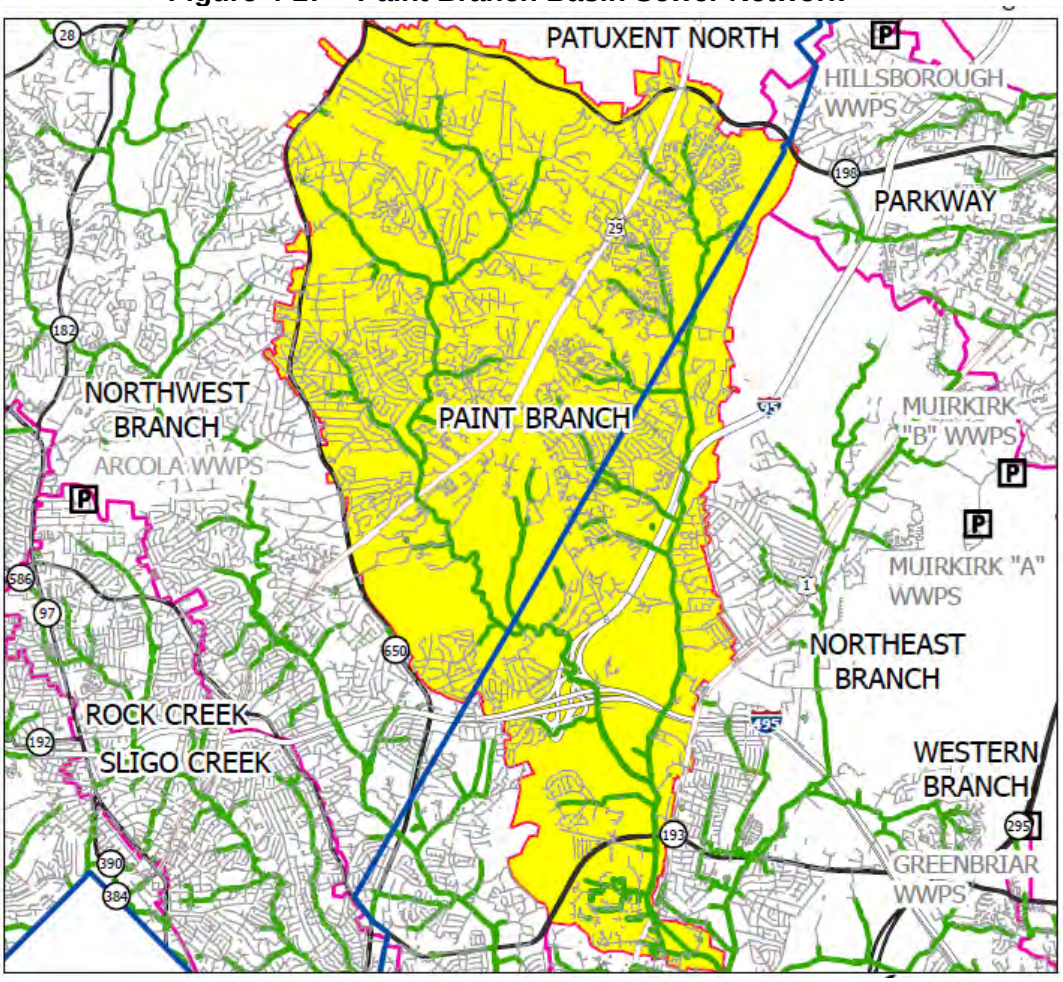
- Sam Rice Manor WWPS and Force Main (S-63.08) – The existing Sam Rice WWPS and Force Main were constructed in 1977 and have reached the end of their useful lives. The station does not meet current standards and is in jeopardy from encroaching streambank erosion. Replacement of the existing force main is in accordance with an initiative to prioritize replacing force mains that have reached their anticipated life expectancy. This project provides for the planning, design, and construction of the modifications to the Sam Rice Manor WWPS and replacement of the force main. This project will enhance existing infrastructure by building additional capacity in order to meet existing and/or future demand. The project will involve the relocation of the pump station and the replacement of the existing 3,500 linear feet of 4-inch force main.

Paint Branch Basin

The Paint Branch Basin is split almost equally between Montgomery and Prince George's Counties. The northern half of the basin is located in Montgomery County and includes the White Oak area.

Existing Systems: Wastewater collection service is provided by a system of trunk sewers which extends up into the basin along Paint Branch and Little Paint Branch. Flow in the basin generally flows to the south to the Northeast Branch Basin, eventually flowing to the Anacostia No. 2 WWPS. The Paint Branch Basin boundary and the sewerage systems layout of the sewer lines are shown in Figure 4-17. There are no wastewater pumping stations located in the Paint Branch Basin.

Figure 4-17 – Paint Branch Basin Sewer Network



A skeletonized computer model of the Paint Branch Basin was developed to identify improvements as outlined in Article 6 of the Consent Decree. In 2023, WSSC Water updated the sewer model to include all WSSC Water maintained gravity sewers and low-pressure system sewers. The updated all-pipes model was calibrated using recent flow monitoring and rainfall data. The modeling effort does not predict any overflows in the Paint Branch Basin under peak wet weather flows. Based on the modeling results, a summary of the predicted flows from the Paint Branch Basin to Northeast Branch Basin are detailed below:

Table 4-12 - Modeled Paint Brach Basin Flows

Paint Branch Basin	Average Dry Weather Flow (MGD)	Peak Flow with 10-year Storm (MGD)
Existing	11.2	30.9
Future (Year 2045)	13.5	33.5

Paint Branch Basin Projected Needs: The following CIP projects are included in the WSSC Water CIP to address needs in the Paint Branch Basin:

- Viva White Oak Sewer Main (S-118.09) - This project provides for the planning, design, and construction of 4,175 feet of 15-inch to 24-inch diameter sewer main to serve Viva White Oak and vicinity.

I.C.1.B. Blue Plains Service Area Treatment Facility:

All the wastewater generated in the Blue Plains Service Area is treated at the Blue Plains Wastewater Treatment Plant (WWTP) located in Washington D.C. D.C. Water owns, operates, maintains, and is responsible for the design and construction of all projects at the plant.

The Blue Plains WWTP has been the primary wastewater treatment facility for the Washington Metropolitan Area since its original construction in 1938. The facility has been improved and expanded over the years to provide better quality effluent and to increase capacity for population growth in the plant's service area. The principal jurisdictions using the Blue Plains facilities include: The District of Columbia; portions of Arlington, Fairfax and Loudoun Counties in Virginia; and most of Montgomery and Prince George's Counties in Maryland. The utilities serving these jurisdictions pay their proportionate share of capital and operating costs based on their treatment capacity allocation and actual flow to the plant. The use of this treatment plant is governed by the Blue Plains Intermunicipal Agreement (IMA) of 2012.

The Blue Plains WWTP receives approximately 84.5% of the wastewater generated in Montgomery County. As shown in Figure 4-7, this service area encompasses much of the central and eastern part of the County which includes Beaverdam Branch, Northeast Branch, Northwest Branch, Paint Branch, Sligo Creek, Lower Anacostia, and Oxon Run Basins.

The current total annual average allocated capacity at the Blue Plains WWTP is 370 MGD, the design capacity of this plant. Table 4-13 summarizes the actual flows received at Blue Plains during 2024 from each jurisdiction.

Table 4-13: 2024 Monthly Average Wastewater Flows to the Blue Plains WWTP

2024	Total Flows to Blue Plains (MGD)	District of Columbia Flows (MGD)	WSSC Flows (MGD)	All Other Jurisdiction Flows (MGD)
January	338.1	150.9	137.9	49.3
February	294.9	120.4	130	44.5
March	323.3	141.5	134.7	47.1
April	310.3	133.7	134.7	41.9
May	290.5	120.4	124.8	45.3
June	264	109.2	113.2	41.6
July	262	115	105.7	41.3
August	274	121.4	110	42.6
September	261.8	115.1	104.8	41.9
October	239.6	93.5	105.4	40.7
November	238.4	95	103.6	39.8
December	250.7	101.7	107.8	41.2
Annual Daily Average	**279.0**	**118.2**	**117.7**	**43.1**
IMA Allocation	**370.0**	**152.5**	**169.6**	**47.9**

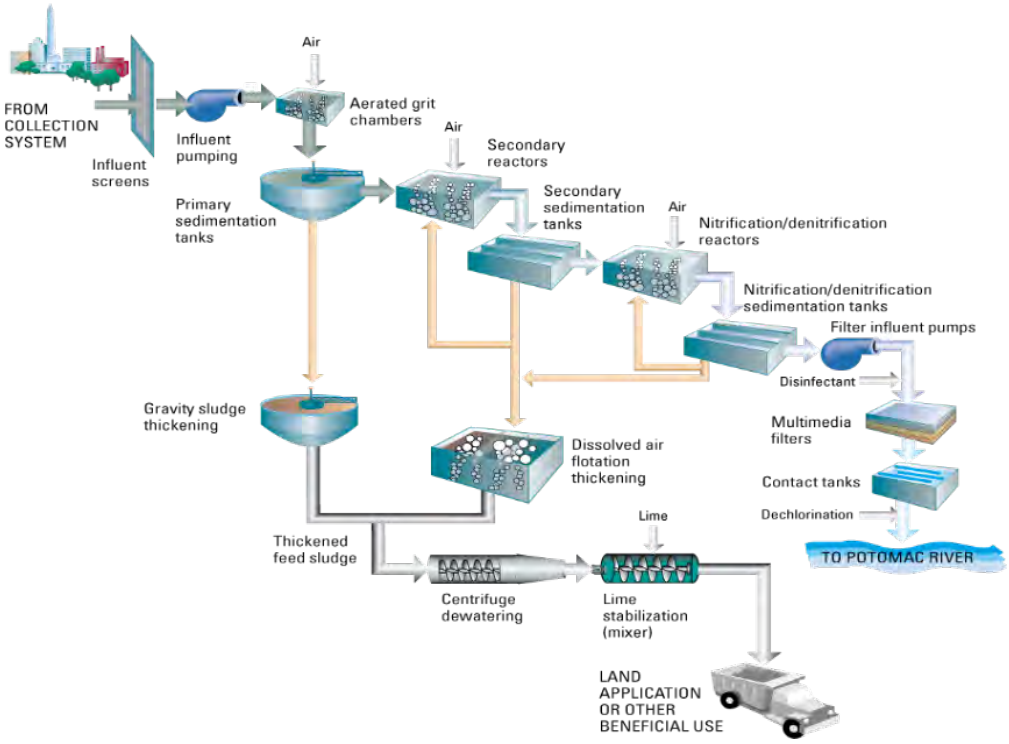
Source: DC Water Monthly Report

Notes: 1- WSSC use of allocated flow capacity is limited to 163.6 MGD due to diversion of nitrogen and phosphorus load allocations (loads associated with 6 MGD) to the WSSC's Seneca Water resource recovery facility.

2- The Allocated Flow Capacity of 47.9 MGD for other jurisdiction include wastewater from Fairfax and Loudoun counties, Dulles Airport, Town of Vienna, and other small users.

The unit processes employed at the Blue Plains WWTP includes the followings and are shown schematically below.

- **Primary Treatment:** Screening, grit removal, primary clarification with metal salt addition for phosphorus removal
- **Secondary Treatment:** Activated sludge, addition of metal salts for phosphorus removal and secondary clarification
- **Advanced Treatment:** Nitrification with chemical addition, final clarification and filtration, denitrification
- **Disinfection:** Chlorination with sodium hypochlorite
- **Dechlorination:** Sulfur Dioxide
- **Solids Conditioning:** Centrifuge and belt filter dewatering
- **Solids Handling:** Land application by outside contractors and incineration at Fairfax County. Also, recent additions to Solids Handling include:
    - Thermal Hydrolysis – the first application in the U.S., and largest in the world;
    - Anaerobic Digestion – resulting in a 50% reduction and improvement to Class A of residual biosolids; and;
    - Combustion Turbines – generating 30% of the WWTP's electric power needs from the digester gas.



A summary of capital projects planned and currently underway to upgrade and expand the wastewater treatment plants serving the County and/or to address facility maintenance needs are listed in the current CIP budget document and are available through WSSC's budget webpage at: https://www.wsscwater.com/budget.

Based on data from all five publicly owned wastewater treatment plants serving Montgomery County, as presented in Table 4-14, the approximate daily average of wastewater generated in Montgomery County during the past few years has been about 94 MGD. ((*It should be noted that WSSC refers to its wastewater treatment plants (WWTP) as water resource recovery facilities* (WRRF). As shown in

Figure 4-7, the Blue Plains WWTP receives approximately 85 percent of all community-system wastewater generated in Montgomery County.

Table 4-14: Wastewater Generated in Montgomery County in 2024*

Service Area	Treatment Facility	Daily Average Flow Treated (MGD)
Blue Plains	Blue Plains WWTP	79.836**
Seneca	Seneca WRRF	13.68
Damascus	Damascus WRRF	0.876
Hyattstown	Hyattstown WRRF	0.004592
Poolesville	Poolesville WWTP	0.502
TOTAL	**All Treatment Facilities**	**94.898**

* Community systems only.
** Montgomery County's flows to Blue Plains WWTP have been approximated within 5% margin of error. The main reason for this approximation is that sewersheds (Anacostia) within Blue Plains Service Area receive wastewater flows from both Montgomery and Prince George's counties.
Note: *WSSC refers to its wastewater treatment plants (WWTP) as water resource recovery facilities* (WRRF).

Blue Plains Service Area Projected Wastewater Flows:

Projected flows based on forecasted population and other flow factors for Blue Plains service area are summarized in Table 4-15. This data, produced by WSSC Water, is based on MWCOG's Round 10.0 Cooperative demographic forecasts and WSSC Water's latest wastewater flow factors. As shown in this table, the County's projected wastewater treatment needs within the Blue Plains service area will be met well beyond the year 2050.

Table 4-15: WSSC Water Projected Flows and Available Treatment Capacity in the Blue Plains Service Area

Service Area	2025 Projected Flows[1] MGD	2030 Projected Flows[1] MGD	2035 Projected Flows[1] MGD	2040 Projected Flows[1] MGD	2045 Projected Flows[1] MGD	2050 Projected Flows[1] MGD
Anacostia [2]	67.25	69.06	71.45	72.95	74.30	75.69
Cabin John [3]	12.45	12.82	13.67	14.22	14.60	14.97
Little Falls	4.70	5.00	5.08	5.21	5.32	5.42
Muddy Branch	8.07	8.33	8.60	8.72	8.90	9.17
Rock Creek [3]	25.87	27.29	28.39	30.02	31.37	32.36
Rock Run	0.78	0.78	0.79	0.79	0.79	0.79
Watts Branch [3]	5.94	6.12	6.31	6.50	6.68	6.89
Other Prince George's County Flows [4]	8.48	8.68	9.01	9.40	9.78	10.13
BLUE PLAINS PROJECTED TOTAL FLOWS [5]	**133.53**	**138.08**	**143.29**	**147.80**	**151.74**	**155.42**
Allocated Treatment Capacity - MGD	169.6	169.6	169.6	169.6	169.6	169.6
Available Treatment Capacity - MGD	**36.07**	**31.52**	**26.31**	**21.80**	**17.86**	**14.18**

1 - Projected Average Flows based on WSSC sanitary sewer model and MWGOG Round 10.0 Demographic Projections
2 - Anacostia Flows include flows from Prince George's County

3 - Includes flows from the City of Rockville
4 - Includes flow from Oxon Run sewer basin
5 - Does not include flows from smaller basins directly connected to the Potomac Interceptor

Blue Plains Service Area Projected Needs:

Blue Plains WWTP: Liquid Train Projects, Part 2 - This project provides funding for WSSC Water's share of Blue Plains liquid train projects. This initiative consists of 25 individual projects identified and prioritized by DC Water as part of their capital program. Projects with significant spending in FY25 include: upgrades to the grit, screening, and primary treatment systems; upgrading effluent filters; replacing/upgrading the primary clarifier mechanical components; improvements to the headworks influent structures; nitrification reactors/sedimentation upgrades; liquid process rehabilitation; and liquid processing PM.

Blue Plains WWTP: Plant-wide Projects - This project provides funding for WSSC Water's share of Blue Plains plant-wide projects for which construction began after June 30, 1993. There are 28 DC Water capital program projects covered by the WSSC Water capital project. Current projects with significant spending in FY25 include: electrical system upgrades (TZ); floodwall construction (JF); plant-site drainage improvements (OE); plant-wide program management (AL); plant-wide steel pipe painting (EI); chemical system/building upgrades (PF); and other miscellaneous projects. Starting in FY'26 will be electrical monitoring (IC). Starting in FY28 are implementation of solar power at Blue Plains phase 2 (XP) and control system replacement (GW).

Blue Plains: Pipelines & Appurtenances
This project provides funding for WSSC Water's share of Blue Plains-associated projects which are generally situated “outside the fence” of the treatment plant. There are 30 projects from the DC Water capital program under this project. Major projects in FY25 include: rehabilitation of various portions of the Potomac Interceptor (LZ); reactivation of the Anacostia FM/GS (PJ); on-going construction of the Potomac River Tunnel (CZ); renovations to the central office facility (COF) and central maintenance facility (CMF) at Blue Plains (HJ and HK); and various on-going rehabilitation projects on major sewers including the AFM, RCMI, Oxon Run and influent sewers to Blue Plains (RC and RD).

Blue Plains WWTP: Biosolids Management - This project provides funding for WSSC Water's share of the Blue Plains biosolids processes for which construction began after June 30, 1993. There are 11 projects from the DC Water capital program that are covered by the WSSC Water capital project. The projects that make up the majority of the FY25 anticipated spending include: biosolids blending development center (I3); additional centrifuges for pre-digestion dewatering (LD); biosolids process rehabilitation (RM); upgrades to the solids processing building/DSLF (XZ); and rehabilitation of the dewatered sludge loading facility (XD). Starting in FY'28 are planned upgrades to the DAF facility (XY).

I.C.2. Seneca WRRF Service Area:

The Seneca Service Area includes substantial portions of the Great Seneca Creek and Little Seneca Creek watersheds and serves the communities of Gaithersburg, Germantown and Clarksburg (see Figure 4-X). The Great Seneca Creek watershed is the largest watershed in Montgomery County with a drainage area of approximately 128 square miles. A rolling, hilly topography is characteristic throughout this drainage basin and steep slopes are found along some of the principal stream valleys. The I-270 corridor is the major development corridor extending from Bethesda to Clarksburg. For the most part, the areas within the watershed outside the I-270 corridor are low density residential and agricultural land uses, and are largely served by individual, on-site septic systems.

Until 2003, most of the wastewater generated in Seneca Basin was conveyed to the Blue Plains WWTP for treatment via a pumpover to the Muddy Branch sewerage system and was technically considered as part of the Blue Plains Service Area. The expansion of the Seneca WRRF from 5.0 MGD to 20.0

MGD provided for the treatment of all the wastewater generated in this basin and the transfer of flows to Blue Plains WWTP was discontinued. The facility design for Seneca WRRF expanded capacity to 26.0 MGD. This was enabled by a transfer of 6 MGD of nitrogen and phosphorus load allocation from WSSC's allocation at the Blue Plains WWTP.

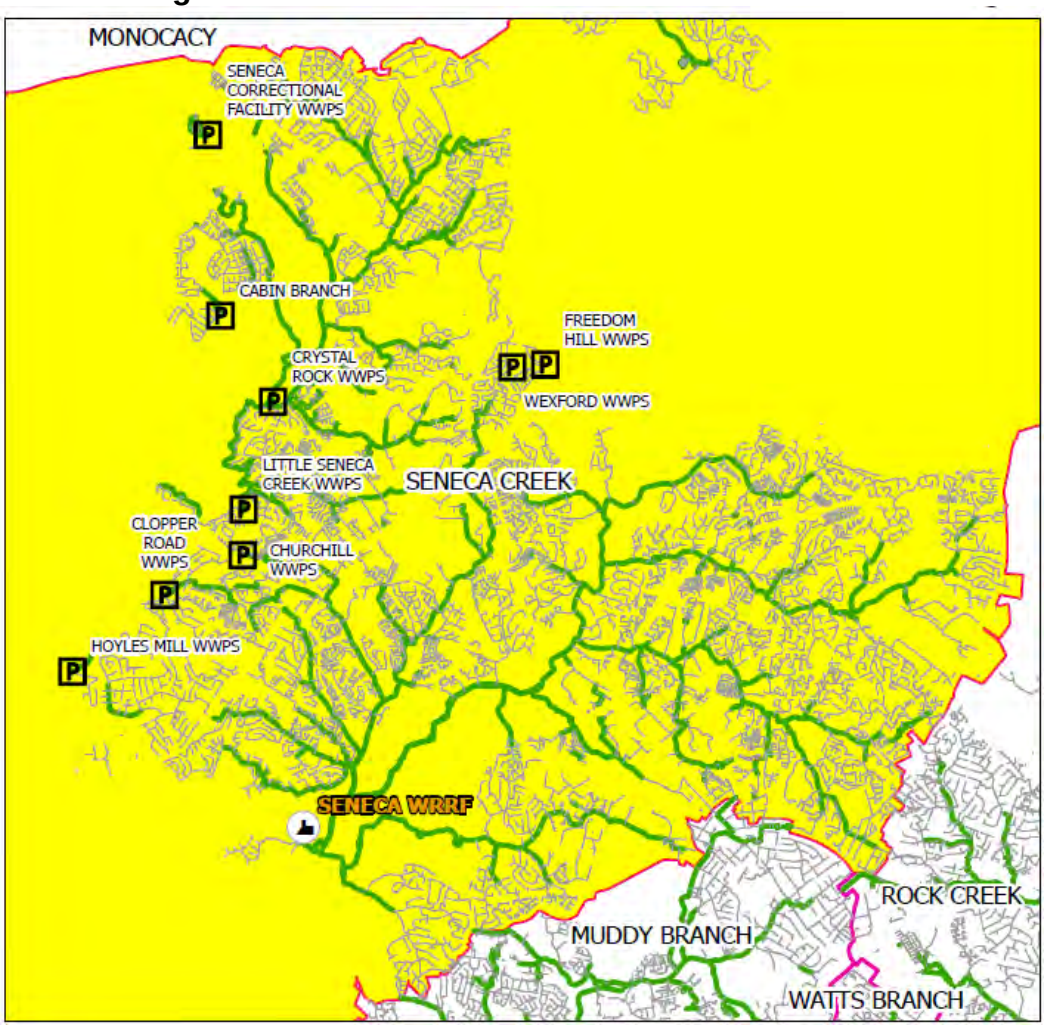
The removal of Seneca flows from the Blue Plains service area provided many benefits for the sewerage systems in Montgomery County and the Washington Suburban Sanitary District (WSSD). These benefits include:

- Minimizing the length of new and relief sewers required, with associated environmental and community benefits.
- Alleviating capacity constraints in the Muddy Branch sewer system.
- Relieving capacity and flow limitations in the Potomac Interceptor.

I.C.2.A Seneca WRRF Collection and Conveyance Systems:

Sewerage service is presently provided by a system of trunk sewers which reaches up into the Basin along Great Seneca Creek and Long Draught, Whetstone, Cabin, and Gunners Branches. The Seneca Creek Basin boundary and the sewerage system layout in the Great Seneca portion of the Seneca Creek Basin are shown in Figure 4-18.

Figure 4-18 – Seneca Creek Basin Sewer Network



As listed in Table 4-16, there are eleven wastewater pump stations in the Seneca Creek Basin. The Crystal Rock WWPS was constructed to relieve projected flows to the Little Seneca Creek WWPS. The projected growth in the area has not yet occurred, and flows continue to be conveyed through the 24-inch diameter sewer to be pumped by the current Little Seneca Creek WWPS.

The Little Seneca Creek WWPS and Force Main are under design for replacement. The Redland Park WWPS is in the planning phase for replacement or rehabilitation. The Cabin Branch WWPS is a new pumping station that has been in service since 2019. The Clarksburg Miles WWPS is a developer-built pumping station.

Table 4-16 Seneca Creek Basin Wastewater Pump Stations

Wastewater Pump Station	Ex. Dry Weather Flow (MGD)	Existing Peak Flow (MGD)	Future Dry Weather Flow (MGD)	Future Peak Flow (MGD)	Safe Capacity (MGD)[1]	Maximum Capacity (MGD)[1]
Churchill	0.258	0.557	0.382	0.557	1.0	1.56
Clopper Road	0.674	1.667	0.981	1.675	1.8	3.1
Crystal Rock	N/A	N/A	0.449	N/A	23.85	26.1
Little Seneca Creek	2.95	8.041	6.265	9.284	8.1	9.6
Freedom Hill	0.057	0.15	0.072	0.15	0.37	0.43
Hoyles Mill	0.301	0.966	0.436	0.982	2.19	2.47
Redland Park	0.056	0.141	0.070	0.1408	0.23	0.30
Cabin Branch	0.0407	0.133	0.184	0.307	0.93	1.36
Clarksburg Miles	0.007	0.046	0.262	0.94	0.94	1.18
Seneca Correctional Facility	0.0346	0.052	0.061	0.0516	0.7	0.9
Wexford	0.205	0.621	0.359	0.642	1.08	1.79

1. The Safe and Maximum capacities are based on pump tests conducted in 2022

A skeletonized computer model of the Seneca Creek Basin was developed to identify improvements as outlined in Article 6 of the Consent Decree. In 2021, WSSC Water updated the sewer model to include all WSSC Water maintained gravity sewers and low-pressure system sewers. The updated all-pipes model was calibrated using recent flow monitoring and rainfall data. The modeling effort does not predict any overflows in the Seneca Creek Basin under peak wet weather flows. Based on the modeling results, a summary of the projected flows for the Seneca Creek Basin are listed in Table 4-17.

Table 4-17 - - Modeled Seneca Creek Basin Flows

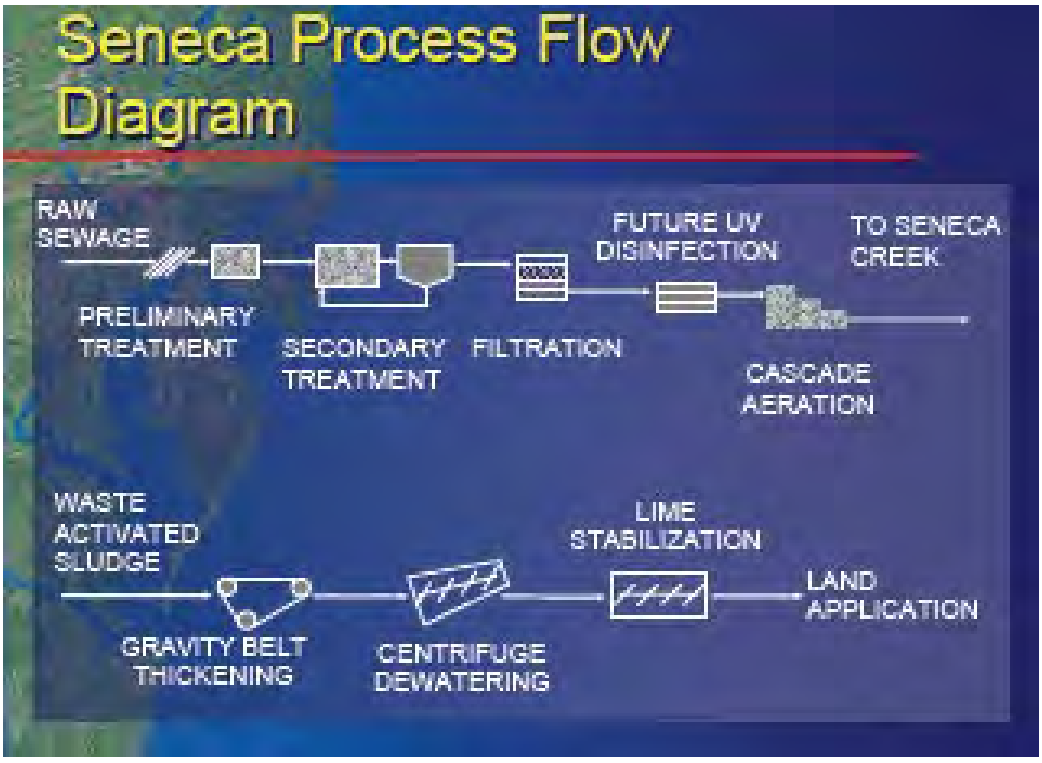
Seneca Creek Basin	Average Dry Weather Flow (MGD)	Peak Flow with 10-year Storm (MGD)
Existing	16.5	38.0
Future (Year 2045)	19.7	39.8

I.C.2.B. Seneca WRRF Service Area Treatment Facilities:

The permitted capacity of the Seneca WRRF is 26 MGD. Based on recent flows, the most recent 36-month rolling annual average (RAA) flow to the plant was 13.6 MGD, 52% of permitted capacity. Predicted and existing dry weather flows are projected to remain below the 80% capacity threshold for the plant (20.8 MGD).

Since January 2015, the Seneca WRRF operates as an ENR (Enhanced Nutrient Removal) Facility employing the following unit processes:

- Preliminary treatment: Course bar screening at the Influent Pumping Facility (IPF), and fine bar screening and grit removal at the Preliminary Treatment Facility (PTF)
- Advanced treatment: ENR (enhanced nutrient removal) utilizing the Bardenpho process with Methanol Addition (External Carbon) for Nitrification/De-Nitrification (5 basins). Phosphorus removal by chemical addition of Aluminum Sulfate (Alum).
- Final Clarification (4 clarifiers). Dual media (sand and gravel) gravity filtration (20 filters). Post aeration of final effluent
- Disinfection: Provided by Ultraviolet Light (UV) system (added in 2007 replacing chlorination/de-chlorination)
- Chemical Addition: Methanol for Nitrogen removal. Aluminum Sulfate for Phosphorus removal.
- Alkalinity adjustment and pH control if needed (acid and caustic addition)
- Solids Conditioning: Gravity Belt thickeners & centrifuge dewatering (both with polymer addition). Stabilization by mixing with Lime (Calcium Oxide).
- Solids Disposal: Land application by contractor of approximately 1700 wet tons per month average.



Seneca WRRF Service Area Projected Needs: The following CIP projects are included in the WSSC Water CIP to address needs in Seneca WRRF Service Area:

- Ashford Woods WWPS and Force Main (S-83.07) – This project provides for the planning, design, and construction of a 0.42 MGD wastewater pumping station and 2,160 feet of force main to serve development.

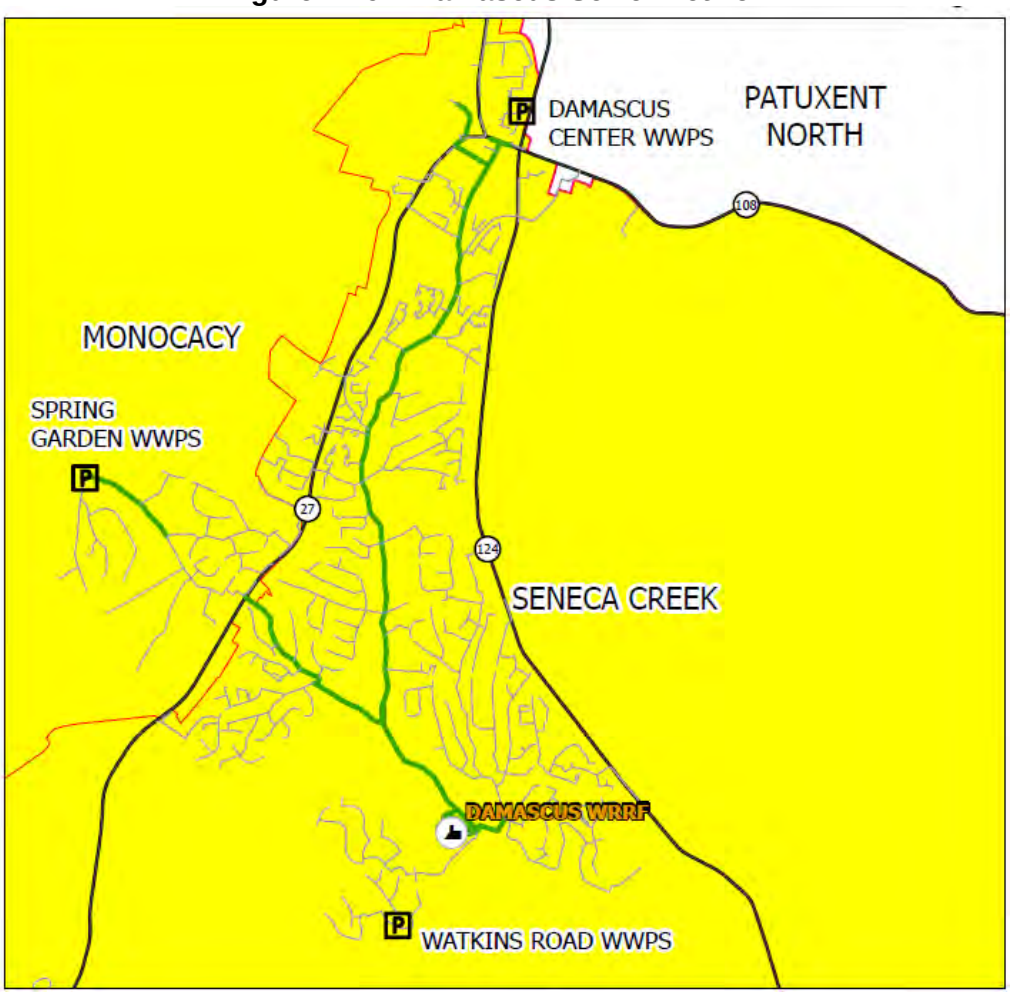
I.C.3. Damascus WRRF Service Area:

The Damascus Service Area is centered along the ridges of three major drainage basins in upper Montgomery County which include the headwaters portions of Seneca Creek, Patuxent River, and the Monocacy watersheds. Even though most of the Damascus Service Area is within the Seneca Creek Basin, it is not connected to the sewer network that drains into the Seneca WRRF system because of considerable distance between Damascus and Germantown. Most of the existing service area lies within the Magruder Branch Valley between Routes 27 and 124.

I.C.3.A. Collection and Conveyance Systems:

Much of the sewerage system in Damascus Service Area was constructed in early 1970's. The Magruder Branch Trunk Sewer transports wastewater from the collection system to the Damascus Water Resource Recovery Facility (WRRF). The trunk sewer follows Magruder Branch from near Main Street in the Damascus commercial center downstream to the Damascus WRRF influent pump station, located near Log House Road. The trunk sewer capacity varies along its length from 3.25 MGD to 18.24 MGD (Damascus Sewerage Facility Plan). The influent pumping station which conveys the collected wastewater into the treatment plant has a 5.0 MGD capacity (Little Seneca Creek Sewerage Facility Plan, 1982). These capacities are consistent with the peak flow needs of the system. The Damascus Service Area sewerage system network is shown in Figure 4-19.

Figure 4-19 – Damascus Sewer Network



As shown in Table 4-18, there are three wastewater pump stations in the Damascus Service Area - the Damascus Town Center WWPS, the Spring Gardens Estates WWPS, and the Watkins WWPS.

Table 4-18 – Damascus Service Area Wastewater Pump Stations

Wastewater Pump Station	Ex. Dry Weather Flow (MGD)	Existing Peak Flow (MGD)	Future Dry Weather Flow (MGD)	Future Peak Flow (MGD)	Safe Capacity (MGD)[1]	Maximum Capacity (MGD)[1]
Damascus Town Center	0.03	0.21	0.04	0.24	0.25	0.37
Spring Gardens Estates	0.17	1.05	0.2	1.12	0.57	0.70
Watkins	0.02	0.11	0.02	0.11	0.13	0.14

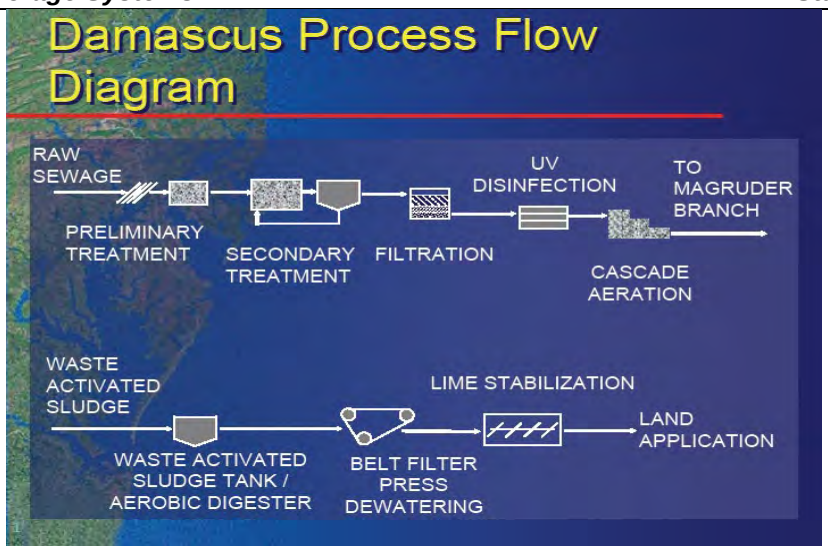
1. The Safe and Maximum capacities are based on pump tests conducted in 2022

The Damascus Town Center WWPS is in the final stages of design for its replacement. Construction is projected to be completed by 2026. The Spring Gardens WWPS is also in the design phase for its planned replacement.

I.C.3.B. Damascus WRRF Treatment Facilities:

The Damascus WRRF is located approximately six miles upstream of the Great Seneca Creek Trunk Sewer. The original 0.75-MGD Damascus WRRF was built in 1974 as a temporary, secondary treatment plant to replace poorly functioning septic systems and allow new commercial and residential development in the area. In 1979 the plant was upgraded to include filtration and tertiary processes for the removal of phosphorus. In 1990, to provide additional treatment as Damascus grew and flow increased, the plant was re-rated by MDE to a 0.90 MGD facility. To provide adequate treatment capacity for future growth, the "Damascus Area Facilities Plan" in 1989 identified the need for additional treatment capacity at the Damascus WRRF and recommended that the interim plant be replaced with a permanent facility with a permitted average annual flow capacity of 1.5 MGD. The new 1.5 MGD plant, completed in 1999, provides treatment capacity for the Damascus Service Area. Since January 2014, Damascus WRRF has been operating as an ENR (Enhanced Nutrient Removal) facility. The upgraded plant employs the following treatment processes:

- Preliminary treatment: Channel grinders at the Influent Pumping Facility (IPF), and fine bar
- screening and grit removal at the Preliminary Treatment Facility (PTF)
- Secondary Treatment: Extended aeration (4 aeration basins), Bardenpho (MLE), Activated Sludge Process, and Secondary Clarification (2 clarifiers)
- Advanced treatment: ENR (enhanced nutrient removal) utilizing the Bardenpho process with external carbon addition for Nitrification/De-Nitrification (4 basins). Phosphorus removal by chemical addition of Aluminum Sulfate (Alum). Final Clarification (2 clarifiers). Dual media (sand and gravel) gravity filtration (4 filters). Post aeration of final effluent
- Disinfection: Ultraviolet Light (UV) system
- Chemical Addition: External Carbon for Nitrogen removal. Aluminum Sulfate for Phosphorus removal. Alkalinity adjustment and pH control if needed (acid and caustic addition)
- Solids Conditioning: Belt Filter Press dewatering (with polymer addition). Stabilization by mixing with Lime (Calcium Oxide).
- Solids Disposal: Land application by contractor of approximately 90 wet tons per month average



Sewage collection and treatment needs in the Damascus service area are provided based on anticipated development and land use patterns recommended in the Damascus Master Plan. WSSC evaluated long term (year 2010) wastewater collection and treatment needs in this service area in 1983 through the "Damascus Sewerage Study". The study concluded that the collection and conveyance systems in the Damascus service area have adequate capacity to handle the projected flows at least through the year 2010. In 1989, WSSC conducted the "Damascus Sewerage Facility Plan," estimating the projected 2010 annual average and peak wet weather wastewater flows for the Damascus service area to be approximately 1.50 MGD and 4.3 MGD, respectively. The findings were based on the existing flow factors and the M-NCPPC Intermediate Fall 1986 Population Forecast.

Based on recent flows, the most recent 36-month rolling annual average (RAA) flow to the plant was 0.8 MGD, 54% of permitted capacity. Predicted and existing dry weather flows are projected to remain below the 80% capacity threshold for the plant (1.2 MGD).

Damascus Service Area Projected Needs: Projected flows based on demographic forecasts and other flow factors for the Damascus Service Area indicate that existing treatment facility will handle all expected wastewater flows from this service area at least until 2045 as shown in Table 4-19.

Table 4-19 - Damascus Service Area - Projected Wastewater Flow

Year	Projected Flow (MGD)	Available Capacity (MGD)
2015	0.88	1.5
2045	0.97	1.5

Note: The 2045 demographic forecast for Damascus Service Area includes 285 Household, 407 Employment, and a population increase of 751.

The following CIP projects are included in the WSSC Water CIP to address needs in the Damascus Service Area:

- Damascus Town Center WWPS Replacement (S-94.13) - This project provides for the planning, design, and construction of a 0.416 MGD wastewater pumping station, approximately 2,100 linear feet of gravity sewer, and 2,100 linear feet of force main. The new WWPS and associated force main and gravity sewer will provide service to the existing and future Damascus Town Center service area.

The existing pumping station, which is over 45 years old, was originally built as a privately owned facility and did not conform to WSSC Water standards. The pumping station was taken over by WSSC Water in the late 1970s. It has reached the end of its useful life and replacement parts are obsolete. Additionally, the capacity of the pumping station must be increased to accommodate the future service area in accordance with the Maryland-National Capital Park & Planning Commission Damascus Master Plan.

- Spring Gardens WWPS Replacement (S-94.14) - This project provides for the planning, design, and construction of a 1.3 MGD wastewater pumping station, 7,500 linear feet of force main, and 900 linear feet of gravity sewer. The relocated wastewater pumping station and force main will provide service to the existing and future Spring Gardens service area. The existing pumping station and force main are over 45 years old and have reached the end of their useful lives. Additionally, the existing capacity of the pumping station must be increased to accommodate build-out of the service area and therefore it must be replaced with a new facility rated at 1.3 MGD.

I.C.4. Hyattstown WRRF Service Area:

The Hyattstown Service Area includes the Hyattstown Historic District, located along Frederick Road (Route 355) between Hyattstown Mill Road and Frederick County. The Hyattstown community consists of approximately fifty residential and commercial structures. In 1997, Montgomery County and WSSC agreed to build a community wastewater collection and treatment system to resolve chronic, long-term public health problems in Hyattstown resulting from failed septic systems. This sewerage system was primarily intended to be limited to the existing historic Hyattstown community, with an allowance for some growth within this area in conformance with the existing zoning and historic district designation. In 1998, the Montgomery County Council also approved community service for the Hyatt Center. Portions of this property, which abut the historic district, are located in both Montgomery and Frederick Counties, and the shopping center itself is located in Frederick County. The County Council approved sewer service for this site located outside Hyattstown historic district, due to the potential for this facility's septic systems to contaminate domestic wells in Hyattstown located downgrade from the shopping center. WSSC completed construction of the treatment plant in 1999.

I.C.4.A. Collection and Conveyance System:

The wastewater collection system uses a conventional gravity sewer line located primarily within the existing right-of-way of Frederick Road (Route 355) and consists of approximately 2,500 feet of 8-inch diameter PVC piping. This system will handle all expected wastewater flows from the Hyattstown community for the foreseeable future.

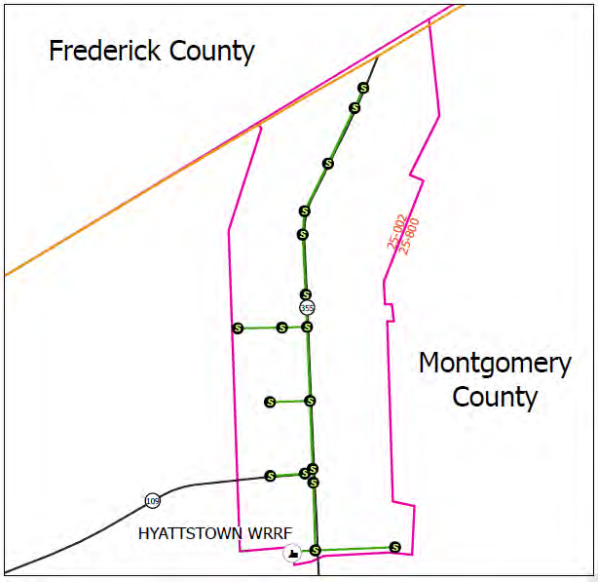
In 2022, WSSC Water developed an all-pipes sewer model of the Hyattstown Sewer Basin. Flow monitoring data was not available in the Hyattstown Service Area. Thus, peak wet weather flows for the model were developed as outlined in the WSSC Pipeline Design Manual. The modeling effort does not predict any overflows in the Hyattstown Basin under peak wet weather flows. Based on the modeling results, a summary of the projected flows in the service area are detailed in Table 4-20.

Table 4-20 – Projected Hyattstown Flows

Hyattstown Basin	Average Dry Weather Flow (gpd)	Peak Flow with 10-year Storm (gpd)
Existing	5,175	20,500
Future (Year 2045)	12,900	28,500

The Hyattstown WRRF Service Area sewerage system network is shown in Figure 4-20. There are no wastewater pumping stations located in the Hyattstown Sewer Basin.

Figure 4-20 – Hyattstown Sewer Network



I.C.4.B. Treatment Facility:

The Hyattstown WRRF consists of a prefabricated, 15,000 gallons per day (gpd) package treatment plant with extended aeration that discharges treated effluent to Little Bennett Creek. The construction of the treatment facility was completed in 1998. The existing treatment facility will handle all expected wastewater flows from this sewerage system for the foreseeable future.

Hyattstown WRRF is a small packaged Secondary Treatment plant designed for 15,000 gallons per day and typically averages about 5,000 to 6,000 gallons per day. The new plant employs the following treatment processes:

- Preliminary treatment: Course bar screen and Basket Strainer before grinder pumps
- Secondary Treatment: Extended Aeration Activated Sludge Process (2 basins), with Secondary Clarification
- Disinfection: Ultraviolet Light (UV) system
- Solids Disposal: Liquid Solids stored on site, pumped out & transferred to Damascus WRRF for solids processing in 4,000-gallon loads about every other month.

A physical condition assessment of the Hyattstown WRRF was conducted in 2022 to quantify the condition of process mechanical, structural, electrical, and instrumentation assets within each unit process onsite. It was determined that most of the assets at the Hyattstown WRRF are nearing or have exceeded their expected useful life. Some structures/assets present a risk of catastrophic failure if not replaced or rehabilitated within a timely manner.

WSSC Water reported that the Hyattstown WRRF runs inefficiently compared to WSSC Water's other WRRFs. The cost/MGD of wastewater treated at the Hyattstown WRRF is greater than any of WSSC Water's other WRRFs. In 2024, WSSC Water's Asset Management Division conducted a comprehensive business case evaluation of several different wastewater treatment alternatives to determine the course of action that best meets the long-term needs of WSSC Water and its ratepayers to treat wastewater from the Hyattstown Historic District. The result of the business case indicated that the best option was to replace the existing plant with enclosed biofilters.

Hyattstown Sewer Basin Projected Needs: Design of a project to replace the existing Hyattstown WRRF with an enclosed biofilter treatment system is currently underway. Final design is expected by Fall 2026, with construction of the new facility expected to be complete by the end of 2028.

II. ROCKVILLE SERVICE AREA:

The City of Rockville owns and operates an independent sewerage collection system within the corporate city limits. The City is responsible for planning, design, construction, and financing the sewage collection system. All of the City's flow is conveyed from the Rockville Service Area sewers through the WSSC Water's sewer system and the DC Water's Potomac Interceptor (PI) to the Blue Plains WWTP for treatment.

The City provides community sewerage service to an area located within the corporate limits of Rockville and outside the designated limits of the Washington Suburban Sanitary District (WSSD). Properties located within the City's maximum expansion limit (MEL) and outside the WSSD are eligible to receive sewer service from Rockville upon annexation into the corporate limits of Rockville. The City of Rockville provides sewer service to approximately 70% of Rockville. The remainder of Rockville is located within the WSSD and receive sewer service from WSSC water.

II.A. Intergovernmental Agreements:

The City's use of WSSC Water's conveyance facilities has been defined by several transmission agreements. A 1956 agreement allows the City to discharge a peak flow of 6.8 mgd into the Cabin John Basin. The City has also purchased 8.0 mgd peak capacity for a portion of the Cabin John sewershed below Booze Creek. A 1966 agreement with WSSC Water allows for a maximum discharge of 8.0 mgd to the Watts Branch Basin. The City is also permitted to discharge a peak flow of 9.84 mgd into the Rock Creek Basin. In 1975, the City and the WSSC Water executed an agreement specifying that WSSC Water would provide 9.31 mgd of WSSC Water's total treatment capacity at Blue Plains WWTP. Rockville acknowledges that the City has not purchased sufficient peak capacity in all sewers to convey 9.31 mgd to the Blue Plains WWTP. Furthermore, the 1975 agreement provides that the WSSC Water may rent treatment capacity at Blue Plains not needed by the City.

In addition to the overall City of Rockville and WSSC Water sewer flow agreements, DPW coordinates APFO/APFS review of water and sewer service with WSSC Water for private development projects in the City that are either within or near the boundary of the WSSD. This coordination provides for early identification of system improvements that will be needed to sustain long range planning goals of both WSSC Water and the City of Rockville.

II.B. Financing Sewerage Systems:

Information on the City's sewerage systems financing is included in Section IV.B of Chapter 1. Additional information on Capital Program for the City of Rockville is available at:
https://www.rockvillemd.gov/951/Budget-Financials

II.C. Collection and Conveyance Systems:

The City's flow collection system consists of approximately 148 miles of sewer mains in the Watts Branch, Cabin John and Rock Creek Basins (see Figure 4-21). The City's system has a total of fourteen interconnections with the WSSC Water sewerage system. These include five WSSC Water inflows into the City's system and nine outfalls into WSSC Water's systems conveying flow to the Blue Plains Advanced Wastewater Treatment Plant in the District of Columbia. Six of these outfalls are major interconnections with WSSC, of which four of these major outfalls are metered.

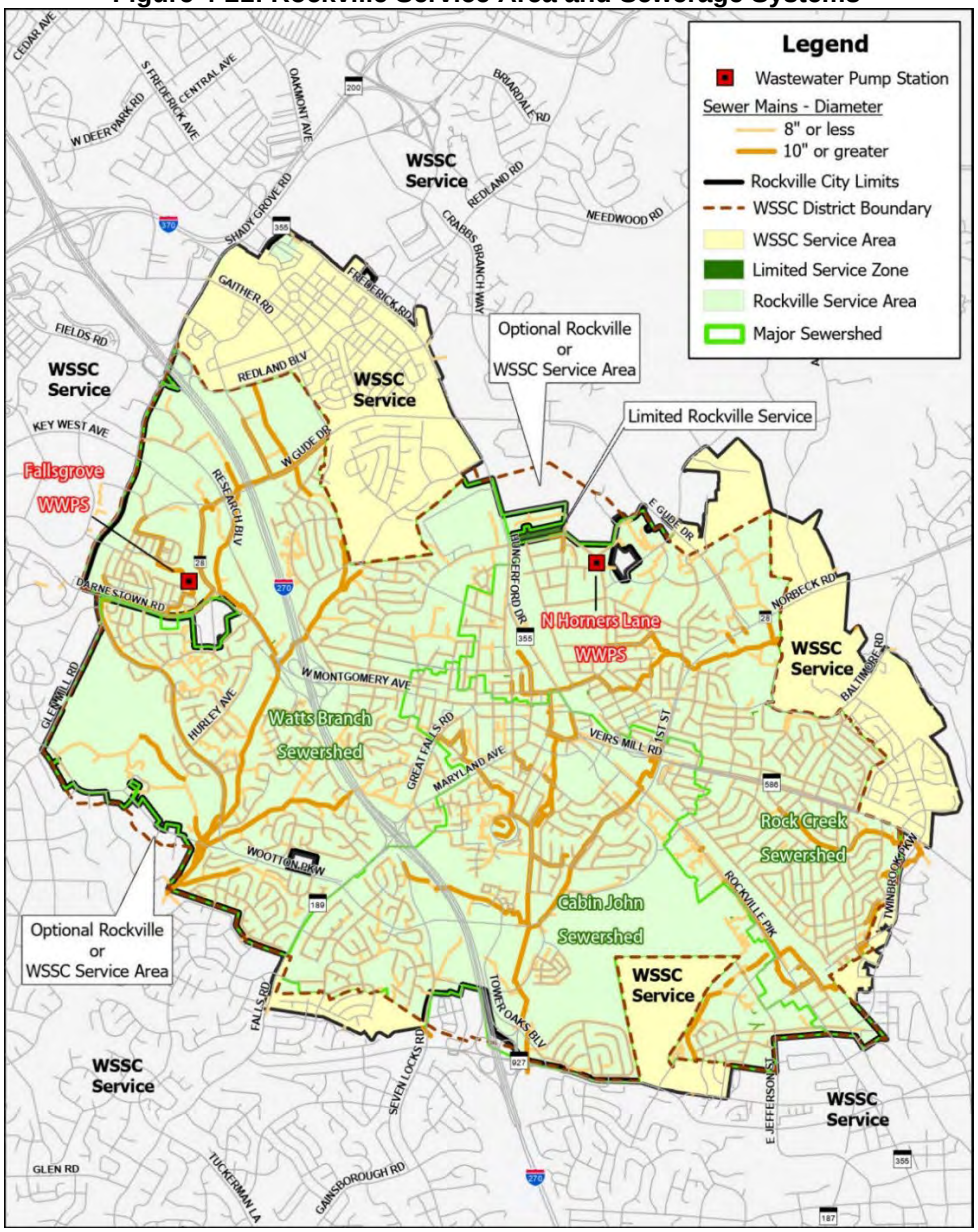
As listed in Table 4-21, the City has two wastewater pumping stations. One is located at the corner of Frederick Avenue and North Horners Lane and the second is located in the Fallsgrove community on Route 28.

Table 4-21 – Rockville Service Area Wastewater Pump Stations

Wastewater Pump Station	Average Dry Weather Flow (mgd)[1]	Estimated Peak Flow (mgd)[2]	Minimum Safe Capacity (mgd)[3]	Maximum Capacity (mgd)[4]
North Horner Lane	0.033	0.132	0.26	0.52
Fallsgrove	0.434	1.596	0.76	1.52

1: The average dry weather flows are based on estimated flow using flow factors from 110 properties with a mix of residential and light industrial uses for the North Horners WWPS and from 591 properties with a mix of residential, office, and retail uses for the Fallsgrove WWPS
2: The Estimated Peak Flows are based on Maryland Peak Flow Curve
3: The Minimum Safe Capacities are determined to be at least half of the Maximum Capacities assuming one pump out of service at each of the duplex pump stations.
4: The Maximum capacities were determined with drawdown testing in June of 2017.

Figure 4-21: Rockville Service Area and Sewerage Systems



Projected flows based on forecasted population and other flow factors for the City of Rockville are summarized in Table 4-22. The average and peak flows include the total flows from Watts Branch, Cabin John, and Rock Creek basins and are within Rockville-WSSC Water agreed flow limitations for ultimate delivery to the Blue Plains WWTP.

Table 4-22: Projected Wastewater Flows from the City of Rockville

Year	Average Flow - MGD	Peak Flow - MGD
2024	6.46	16.13
2040	6.76	16.9

Note:

- The agreements between the City and WSSC Water only specify peak sewage flow limitations for each sewer basin; the average flows limitation is for the City as a whole, not for each basin.
- The City's allowed peak flow downstream of Booze Creek is 8.0 mgd.
- In 2017, 0.477 mgd of Average Wastewater Flow was diverted from the Cabin John Basin to the Rock Creek Basin with the completion of the City's East Rockville Sanitary Sewer Capacity Improvement project.
- Peak flows are based on a historical peaking factor of 2.5 times the average wastewater flow.
- 2040 projections are from Rockville's Water Resources Element (WRE). The 5-year average flow (CY2019-CY2024) was 6.46 mgd.

Total projected Average Wastewater Flow for 2040 is 6.76 mgd per the Water Resources Element of the City of Rockville's 2040 Comprehensive Plan adopted August 2, 2021.

The City of Rockville has two wastewater CIP projects in the adopted FY2026 Budget: Blue Plains Wastewater Treatment Plant and Sewer Rehabilitation and Improvements. The Blue Plains Wastewater Treatment Plant CIP project funds the City's share of the capital improvements within the DC-Water and WSSC Water conveyance systems and the City's share of capital improvements at the Blue Plains Wastewater Treatment Plant. The City does not control the projects within these systems and facilities, so therefore has no control over the spending.

The Sewer Rehabilitation and Improvements CIP project funds the rehabilitation, repair, and/or replacement of the City's sanitary sewer infrastructure including sewer mains and the public portions of sewer laterals. The City considers three factors when assessing the sanitary sewer infrastructure: the physical condition, the capacity to safely convey wastewater without surcharge or overflow, and the proximity to other City programmed work.

Rockville inspects its sanitary sewer infrastructure using comprehensive closed-circuit television (CCTV) condition assessments performed in a preventive maintenance program. The CCTV assessment provides a visual assessment to rate the condition of the sewer. The highest scoring (poorest condition) sewer segments are prioritized for rehabilitation, repair or replacement depending on the need. Excessive maintenance issues identified by Operations and Maintenance staff (such as repeated sewer backups) are also considered.

The City supplements its CCTV inspections with a system wide screening using the Sewer Line Rapid Assessment Tool (SL-RAT) on a biannual basis. The SL-RAT tool utilizes sound waves to screen individual sewer segments for potential blockage conditions. Assessing the sewer in this fashion allows the City to focus its cleaning efforts on the segments with the greatest need for maintenance and proactively reduces the potential for mainline blockages and sanitary sewer system overflows.

Sewer laterals are replaced as part of a rehabilitation program within areas that are known to have been originally constructed with low quality materials. Other sewer laterals are replaced on an as-need basis when their condition results in service disruptions for customers

Through flow monitoring and hydraulic modeling, the City assesses the capacity of the sewer system to determine its ability to safely convey wastewater flow. Sewer pipes that are at the highest risk for surcharging or overflow are prioritized for rehabilitation, repair, and/or replacement.

Sewer infrastructure close to stream restoration and stormwater management facility improvement projects are also prioritized to allow the sewer rehabilitation, repair, and/or replacement work to take advantage of construction access created for other programmed work within Environmentally Sensitive Areas.

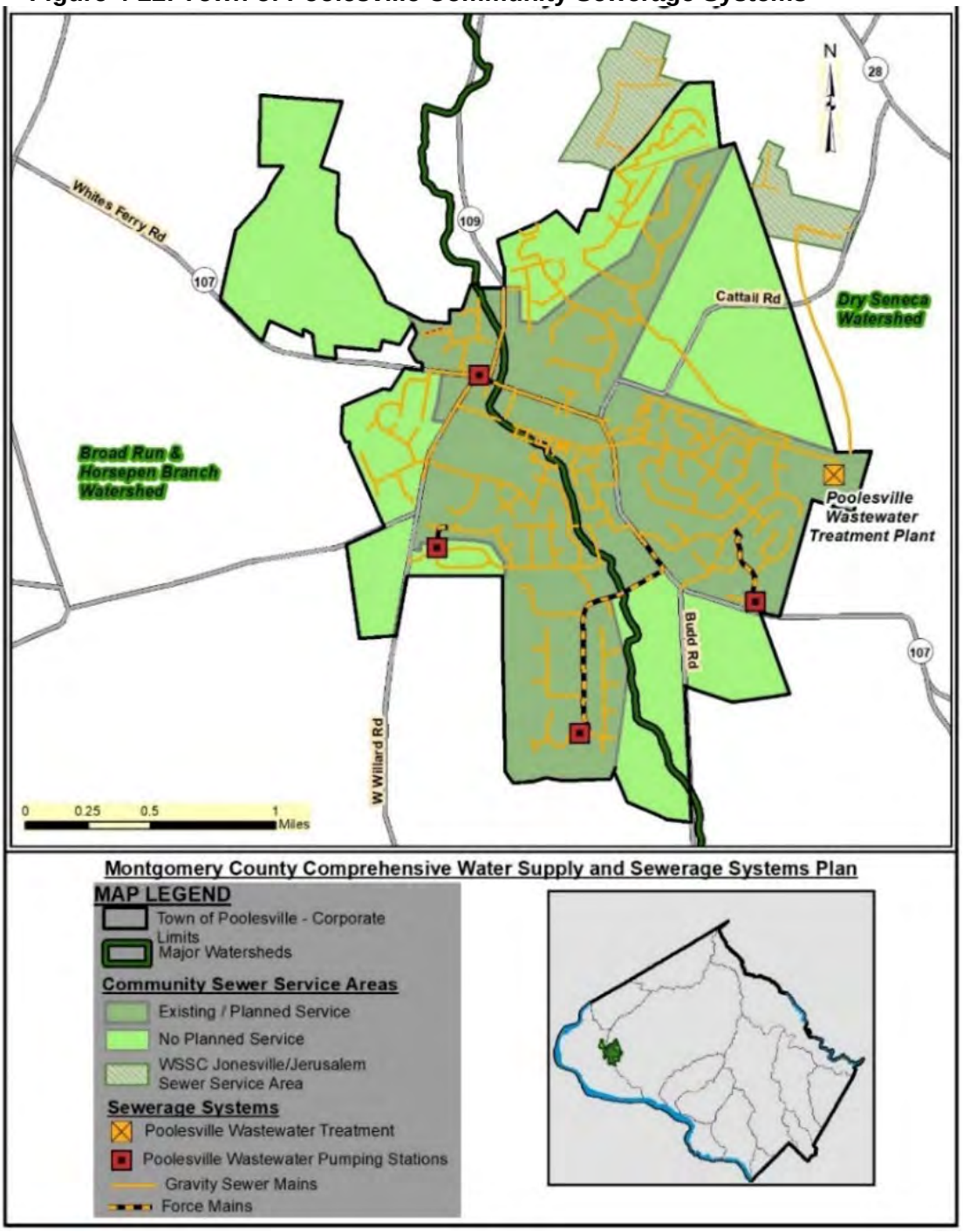
II.D. Treatment Facilities:

Rockville is located within the Blue Plains Service Area and is served by the Blue Plains WWTP. The City does not own or operate any separate wastewater treatment facilities. The City's wastewater is ultimately delivered to the Blue Plains WWTP through WSSC Water's and DC-Water's conveyance facilities. Rockville owns 9.31 mgd treatment capacity of WSSC Water's 169.9 mgd allocated treatment capacity. The use of these facilities is governed through several agreements, as described previously.

III. TOWN OF POOLESVILLE SERVICE AREA:

The Town of Poolesville operates its own sewerage system, which has been in operation since 1964, and is the only publicly owned sewerage system in Montgomery County with total self-sufficiency outside the Washington Suburban Sanitary District. The existing facility serves approximately 1,900 residences. The majority of the sewer service area is within the Dry Seneca Creek watershed.

Figure 4-22: Town of Poolesville Community Sewerage Systems



III.A. Intergovernmental Agreements:

A 1984 agreement between WSSC Water and the Town of Poolesville allows WSSC Water to send up to 20,000 gpd of wastewater from the Jonesville/Jerusalem area, located within in the WSSD, to the Poolesville WWTP. A review of more recent WSSC Water flow monitoring for Jonesville/Jerusalem area has shown wastewater flows in the system regularly exceeding the 20,000 GPD agreement limits.

In 2021, WSSC Water provided DEP with recent sewage flow records for the sewerage system serving these communities. These records show that sewage flows periodically exceed the 20,000 GPD limit in the agreement with the Town. WSSC Water staff believe that these excessive flows result from infiltration and/or inflow into the system and are conducting an investigation into the problem. Pending the outcome of WSSC Water's investigation and possible mitigation actions, the County may need to consider additional sewer connection restrictions in this service area, establishing a moratorium on new connections except for cases involving septic system failures. Another option is for WSSC Water and the Town to renegotiate the original flow agreement to allow WSSC Water additional treatment capacity at the Poolesville WWTP for this service area. (Please refer to Appendix C, Section II.G of this Plan for additional information).

III.B. Infiltration and Inflow (I&I) Control Program:

Since 2004, the Town has been aggressively eliminating Inflow and Infiltration (I&I) from the sewer collection system. The initial I&I elimination program consisted of several repairs in the sewer sections located in the oldest parts of Town and included a total relining of terracotta mains and public portion of the laterals located in the Wesmond Subdivision. This initial program took several years to complete and at a cost of over 2.2 million dollars.

Phase 2 of the I&I elimination program covered the total relining of "transite" mains and public portions of the laterals in the Westerly subdivision. This project cost over 2.4 million dollars and was completed in the Spring of 2015. Phase 3 consisted of installing "top hats" on laterals in mains that had been previously relined in the downtown commercial areas of Town. Phase 4 consisted of the rehabilitation of various manholes throughout the system. This work was completed I 2024.

The Town continues to actively identify I&I and have recently deployed real time smart meters in a series of manholes that operate via satellite and allow operators and engineers to monitor. I & I identification and removal is an ongoing endeavor, and the Town is committed to using the latest technology to assist.

WSSC Water owns and operates sewer lines from the Jonesville and Jerusalem areas that may contribute to additional I & I to the WWTP.

III.C. Financing Sewerage Systems:

Information on the Town's sewerage system financing is included in Section IV.C of Chapter 1. Additional information on Capital Program for the Town of Poolesville is available at: https://poolesvillemd.gov/wp-content/uploads/2020/07/FY2021-Budget-BUDGET-CAP-BUDGET-5-27-2020-FINAL-FINAL.pdf.

III.D. Collection and Conveyance Systems:

The Town's sewerage collection system consists of 140,000 linear feet of 6- to 18-inch diameter gravity sewers, 5,700 linear feet of 4- to 8-inch diameter force mains, and six permanent pumping stations ranging in capacity from 75 to 600 gallons per minute (see Figure 4-22). Flows from two areas north of the town within the WSSC, Jonesville and Jerusalem, are also conveyed to the town's sewerage system. A combined low-pressure and gravity sewerage system in these areas conveys flows to an outfall sewer feeding into the Town's treatment plant. These mains are owned and

maintained by WSSC.

The Town operates six wastewater pump stations to convey wastewater to its wastewater treatment plant. Various capacities of these pump stations are listed in Table 4-23.in the Damascus Service Area - the Damascus Town Center WWPS, the Spring Gardens Estates WWPS, and the Watkins WWPS.

Table 4-23 – Town of Poolesville Service Area Wastewater Pump Stations

Wastewater Pump Station	Average Dry Weather Flow (MGD)[1]	Estimated Peak Flow (MGD)[2]	Safe Capacity (MGD)[3]	Maximum Capacity (MGD)[3]
Stoney Springs	0.02	0.04	0.0864	0.108
Elgin Road	0.005	0.09	0.16128	0.2016
Fisher Avenue	0.031	0.12	0.2304	0.288
Hunters Run	0.15	0.22	0.6912	0.864
Seneca Chase	0.01	0.05	0.5419	0.864
Oxley Farm	0.0025	0.01	0.16128	0.2016

1: The average dry weather flows are based on actual 2019 flow data.
2: The estimated peak flows are based on actual 2019 data.
3: The Safe and Maximum capacities are based on 80% and 100%, respective, of the run time of the pumps recorded during 2019.

III.E. Treatment Facilities:

Poolesville WWTP with NPDES Permit MD0023001, located at 18901 Fisher Avenue, Poolesville, Maryland 20837 (Coordinates Longitude 77° 23' 33.40" and North Latitude 39° 8' 26.23") effluent discharging through Outfall 001A to the Dry Seneca Creek. The Town of Poolesville owns and operates a permitted 750,000 gallon per day Wastewater Treatment Plant (WWTP) with a hydraulic capacity of 2,000,000 gallons per day. This sequence batch reactor type facility was upgraded in 2024 to a biologically enhanced nutrient removal (ENR) system. A flow equalization tank, denitrification filtration building with denite filters and methanol building were constructed.

The facility processes also chemically precipitate and remove phosphorus through aluminum chloralhydrate addition. The unit processes employed at the WWTP includes:
Primary Treatment - Grinder, chemical addition, rotary filter screen, compactor
Secondary Treatment - Activated sludge process (including nitrification) and clarification occur within the same reactor
Advanced Treatment - Anoxic treatment, denitrification filtration
Disinfection - Ultraviolet Irradiation
Solids Conditioning - Two stage aerobic digestion, chemical conditioners (polymer), belt filter press
Solids Disposal - Land fill

III.F. Wastewater Capacity Management Plan:

The Town of Poolesville has developed a Wastewater Capacity Management Plan. The Plan utilizes a three-year rolling average of discharge flows from the WWTP to determine the available capacity for development allocation. By January 31 each year, the Town is required to develop and submit to the MDE a Municipal Sewage Capacity Report. The reports will include the three most recent years of flow data contained in the Discharge Monitoring Reports. To determine the annual average flow, the monthly average flow for each month will be averaged with the other monthly averages.

According to the MDE, use of an estimated 250 gallons per day (gpd) per single-family dwelling or 100 gpd per person is a common practice. Considering this typical domestic usage, the Town's allocation of 325 gallons per day per household is calculated to include an allowance for Infiltration and Inflow(I&I).

The Town has recently approved the construction of 117 residential units within the next three years. The Town uses 325 gallons per day for each unit for estimating flows to the WWTP. Based on the above numbers, within the next ten years the wastewater flows to the Town's WWTP will be increased by an additional 38,025 gallons per day

Based upon 3.2 persons per single family house. The following methodology will be used to manage wastewater capacity and to control the distribution of capacity to avoid burdens to the system and to maintain sufficient set aside to accommodate the system.

Calculate the past three-year averages
Add the number of allocated (not connected) sewer connections that the local government has provided a written commitment
Subtract this sum from the permitted 750,000 gpd

The remaining balance is the **net available wastewater capacity** This capacity allocation will be based on 325 GPD/household.

IV. BIOSOLIDS MANAGEMENT:

Biosolids is a term adopted in recent years to refer to the municipal wastewater solids formerly referred to as sewage sludge. These solids are the residuals from the primary, secondary, tertiary, and enhanced nutrient removal treatment processes at wastewater treatment plants. The residuals are usually thickened and dewatered into a "cake" that generally consists of about 20-30 percent solids. Both federal and state regulations define the stabilization or pathogen reduction techniques required to allow these solids to be recycled as biosolids. The most common methods to cycle biosolids are generally as soil amendments and fertilizers. Industrial pretreatment regulations help to ensure that metals and/or toxics are not significant components of biosolids. Both the EPA and MDE strongly support the beneficial reuse of biosolids.

Biosolids are defined by State law as solid waste. The significance of this designation is that MDE requires the County to report on the planning and management of biosolids in the County's Solid Waste Management Plan. This Plan is contained in the following sections of this document for the purpose of continuity, since biosolids are a biproduct of wastewater treatment and must be managed as part of the wastewater treatment plant operations.

Piscataway Bioenergy - WSSC Water recently began operating the Piscataway Bio-Energy facility. As described above, the facility consists of cake receiving; thermal hydrolysis pre-treatment; mesophilic anaerobic digestion; de-watering operations; side stream treatment; gas cleaning/recovery; and combined heat & power processes and equipment. It will provide a reduction in operations, maintenance, chemicals, biosolids transportation, and biosolids disposal costs. It will also enhance existing operating conditions and reliability while continuing to meet all permit requirements and ensure a continued commitment to environmental stewardship at WSSC Water sites. The Piscataway Bio-Energy facility began operation in late 2024, processing all biosolids from the Piscataway WRRF. Biosolids generated from all WSSC Water operated treatment plant are currently being transported to the Bio-Energy facility.

IV.A. Biosolids Production in Montgomery County:

As described in previous sections of this Chapter, approximately 85% of all the wastewater generated in Montgomery County is treated at the Blue Plains WWTP in the District of Columbia. The remaining 15% is treated at the treatment plants within Montgomery County. These plants include the Seneca WRRF, Damascus WRRF, and Poolesville WWTP. (*It should be noted that WSSC refers to its wastewater treatment plants (WWTP) as water resource recovery facilities (WRRF).* An estimated total of 80 wet tons per day (wtpd) of biosolids are produced from the treatment of the wastewater at the three mentioned WRRFs in the County. A small amount of biosolids (less than 1 wtpd) generated at the Hyattstown Water Resource Recovery Facility are transferred to the Damascus WRRF to be included in biosolids processing. The approximate biosolids production for each treatment plant is included in Table 4-24.

Table 4-24 – Montgomery County Biosolids Production

Treatment Service Area	Daily Production (wtpd)
Seneca WRRF	68
Damascus WRRF	4
Poolesville WWTP	4

WSSC is responsible for the management of the biosolids generated from the Seneca and Damascus WRRFs. WSSC Water pays for a share of the biosolids generated at Poolesville WWTP based on the flow into the facility from a portion of the WSSC Water service area in Montgomery County. The quantity of biosolids generated at Blue Plains from Montgomery County is estimated in proportion to

the wastewater flow from Montgomery County that flows to the Blue Plains WWTP. Wastewater flows from Montgomery County makes up approximately 25-30% of the total flow to the Blue Plains. Based on 2024 data, the approximate quantity of biosolids production at the Blue Plains WWTP from Montgomery County wastewater is estimated to be 120 wet tons per day (wtpd).

IV.B. Biosolids Disposal and Reuse:

Generally, most of the biosolids from the WSSC Water treatment plants in Montgomery County (Seneca, Damascus, and Hyattstown WRRFs), are reused through land application program on farmlands. Biosolids that are land applied are subject to requirements of State-issued sewage sludge utilization permits and the nutrient management plans that set the application rates based on site specific conditions. The locations of the permitted sites are determined by the contractor that manages the material. The procurement process requires that each bidder have the necessary permitted sites to manage the biosolids generated at the respective utility. Historically, these sites have been on the Eastern Shore, Frederick, Howard, Carroll, and Prince George's, and Montgomery counties in Maryland; or in Virginia and Pennsylvania. Permitted land application sites for biosolids in Montgomery County are listed in Table 4-25. The land application sites in Montgomery County receive biosolids generated from a number of wastewater treatment plants in the surrounding area including the Seneca and Damascus.

Table 4-25 - Permitted Land Application Sites of Biosolids in Montgomery County

Permit Number	Expiration Date	Property Location
2020-SAG-5066	08/17/2026	Dickerson
2020-SAG-5370	04/17/2026	Poolesville

Source: Maryland Department of the Environment

As part of a significant long-range program to improve the biosolids management practices at the Blue Plains WWTP, the DC Water completed major facility improvements to its solids treatment facilities in 2017. The improvements included thermal hydrolysis pasteurization, anaerobic digestion and dewatering using belt presses. The facilities reduce the mass of solids by converting a significant portion into methane gas. Methane gas is beneficially reused onsite to generate electricity and heat energy for heating the pasteurization processes and digesters.

All the biosolids generated at the Blue Plains WWTP are currently beneficially reused through a diverse recycling program including land application to improve the soil for agricultural production on farms and commercial marketing as organic fertilizer and soil amendment. Even though the DC Water is responsible for the Blue Plains Biosolids Management Program, other parties and stakeholders such as WSSC Water may be involved in planning and the decision-making process.

Similar to biosolids processing practice at Blue Plains Treatment Plant, WSSC Water has also recently completed the construction of a $271M Bio-Energy Project at Piscataway WRRF in Prince George's County. The construction of this facility began in spring 2019 and was completed in spring 2025. The facility processes all of the biosolids generated from all wastewater treatment plants within WSSC Water service area which include both Montgomery and Prince George's counties. The main purpose of this facility is to process biosolids in a manner that is environmentally beneficial and is also economically feasible. The facilities include a central bio-energy project comprised of thermal hydrolysis, mesophilic anaerobic digestion, dewatering and combined heat and power facilities. Some of the environmental and economic benefits include:

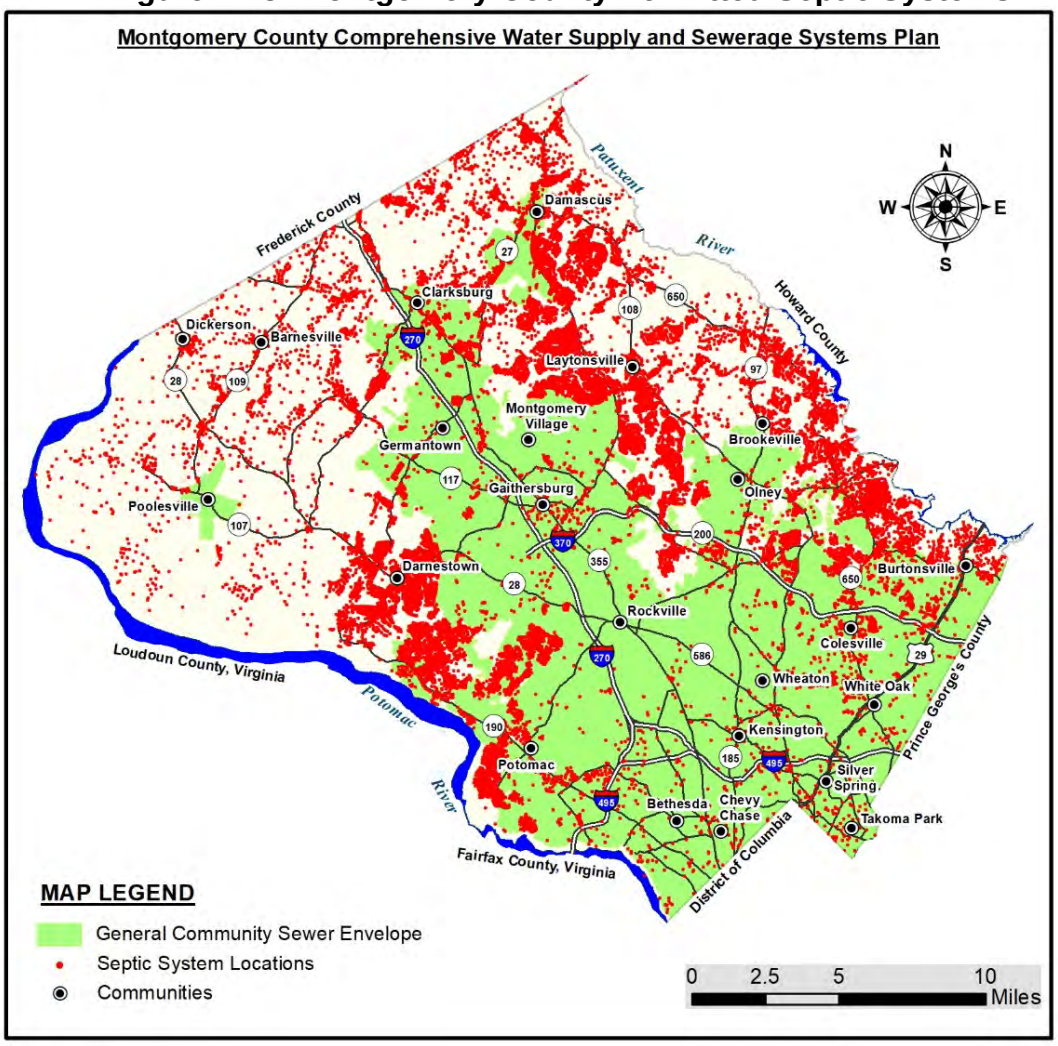
- Significant reduction in biosolids quantity.
- Production of digester gas as renewable fuel which will be used to produce heat and electric power.
- Producing high quality (Class-A) biosolids which can be used more widely than the Class-B biosolids currently produced.

V. INDIVIDUAL WASTEWATER DISPOSAL SYSTEMS AND RURAL SANITATION

In the more rural, less-densely populated parts of Montgomery County, residents, businesses, and institutions depend primarily on individual septic systems for their wastewater disposal needs. Septic systems typically provide primary treatment in an underground septic tank, and then discharge the remaining effluent to the ground for biologic treatment.

The areas dependent on septic systems generally coincide with the County's well service areas, forming an irregular crescent starting in the southwestern part of the County, sweeping around to the west, then north towards Clarksburg and around Damascus, then south and east along the Patuxent River watershed (see Figure 4-23). Most septic systems are located in areas not served by the community sewerage systems, the lower-density "wedges" referred to in the County's General Plan, "On Wedges and Corridors." However, older septic systems are also found scattered throughout the County's community sewer systems service area, often where development occurred before community systems were available. Larger individual sewerage systems are referred to as "multiuse systems." For additional information on Individual Systems in the County please refer to Chapter 1, Section III.B. of this Plan.

Figure 4-23: Montgomery County Permitted Septic Systems



V.A. Septic Systems Permitting:

The County's Department of Permitting Services (DPS), Well and Septic Section —under authority delegated from the Maryland Department of the Environment (MDE) —is responsible for the administration and enforcement of County and State laws and regulations governing onsite, individual sewerage systems. Relevant State regulations are included in COMAR 26.03.01, 26.03.05, and 26.04.02 -.04. The County's regulations are included in COMAR Chapter 27A, ," On-Site Water Systems and On-Site Sewage Disposal Systems in Montgomery County."

DPS fulfills these responsibilities by reviewing preliminary plans and record plats for properties served by individual, on-site systems; by issuing permits for and inspecting the construction of new and replacement systems; and by responding to complaints concerning on-site systems. Testing a property for new septic systems involves two tests:

- The water table test to determine the probable highest level of water-saturated soil. The water table test can only be done the late winter through early spring when the water table is at its highest level. The duration of the water table testing season depends on overall precipitation conditions for the preceding year or years. Dry conditions, particularly prolonged droughts, can require DPS to shorten the duration of the water table testing season.
- The percolation test to determine the speed at which fluids percolate through the soil. The percolation test may be done at almost any time of the year. However, if a water table test is required for a site the percolation test must follow a successful water table test.

As part of these testing procedures, DPS also checks for shallow, fractured rock. Additional regulatory constraints may also affect finding a suitable location for a septic system on a property.

Under the County's current on-site system regulations, new construction (a new structure or a significant expansion of an existing structure) may use only trench or sand-mound septic systems that satisfy COMAR Chapter 27A. New lots are usually required to have sufficient area that satisfies testing standards for an initial drainfield and three reserve drainfield areas for later use. New lots using sand mound septic systems and existing lots installing replacement septic systems are required to have space for an initial drainfield and two reserve areas.

More background information on individual, on-site wastewater disposal systems is included in Chapter 1 of this plan.

V.B. Septic System Concerns:

The following circumstances are among those that may indicate inadequate functionality, operational failure, and/or site constraints of a septic system which may also contribute to public health concerns:

- The presence of inadequately treated sewage rising to the surface of the ground or backing up into a building;
- A frequent need to pump out a septic system in order to keep overflows or backups from happening;
- Evidence of a sewerage system discharging inadequately treated sewage into ground or surface waters, drainfields constructed within the water table or on fractured bedrock, or an overflow pipe that allows the surface discharge of inadequately treated sewage;
- An existing building that can be served only by a sewage holding tank;
- A structure, previously served by an on-site system, that cannot be rebuilt because of a failure to locate a replacement on-site system that satisfies current permitting requirements.

In addition, the expectation that existing onsite septic systems cannot be replaced to support existing development once they fail, can present anticipated public health concerns.

V.B.1. Aging and Replacement of Individual Sewerage Systems:

Individual systems regulations have changed over time resulting in changes to individual systems standards and technologies. Each regulatory change has provided for individual systems that are safer for both the human and natural environment.

Older individual sewerage systems may:

- Use several varieties of outdated underground discharge structures such as seepage lagoons, dry wells, and seepage pits.
- Have overflow pipes that prevented overloaded, failing systems from backing up sewage into buildings. Unfortunately, this allowed for sewage discharges onto the ground surface through the overflow pipe, some into drainages such as roadside stormwater swales.
- Have been installed on soils inappropriate for septic systems under today's testing standards because of conditions such as high-water tables and shallow fractured rock.

The County may allow outdated wells and septic systems to serve existing structures provided they continue to function adequately. However, DPS has the option to require a replacement septic system that satisfies current regulations in cases where:

- An existing septic system suffers a failure or where such a failure is imminent.
- Overflow pipes need to be removed, which may result in an eventual failure of the septic system.
- Property improvements (expansion or replacement of an existing structure, new swimming pool, etc.) are proposed, including cases where original permit records are not available.
- Subdivision of an existing property served by individual, onsite systems will change property lines and affect allowed setbacks.

V.B.2. Site and Areas with Sustainability Concerns for Septic Systems:

Site suitability and sustainability concerns for septic systems are not always limited to a single lot or parcel. Soil properties such as slow percolation rates, shallow water table or bedrock, etc. can affect a larger area and involve many properties. Areas where evidence shows that there are existing or potential concerns with septic systems that may affect several properties are designated and inventoried as areas of potential public health concerns in this Plan.

As existing housing stock and the individual onsite systems depend on age, the County may face potential concerns in sustaining not just specific homes and businesses, but parts of neighborhoods that currently use these systems. Some of these neighborhoods, built in 1950s and 1960s, were created:

- On lots that are now too small to support both wells and septic systems under current regulations. A typical residential septic system needs at least 10,000 sq. ft. of land for initial and reserve field areas. Septic systems in the Patuxent River Watershed, with its water supply reservoirs, require 70 percent more reserve area than elsewhere in the County.
- On sanitary system technologies that no longer satisfy current regulations (seepage pits, sewage lagoons, overflow pipes, etc.).

Although DPS does not currently maintain a comprehensive database of septic concerns throughout the County, that agency has provided information concerning areas of potential concerns based on staff experience and are shown on Figure 4-24. The areas with sustainability concerns for septic systems in the County with additional information are also listed in Table 4-26.

Figure 4-24: Areas with Septic System Sustainability Concerns in Montgomery County

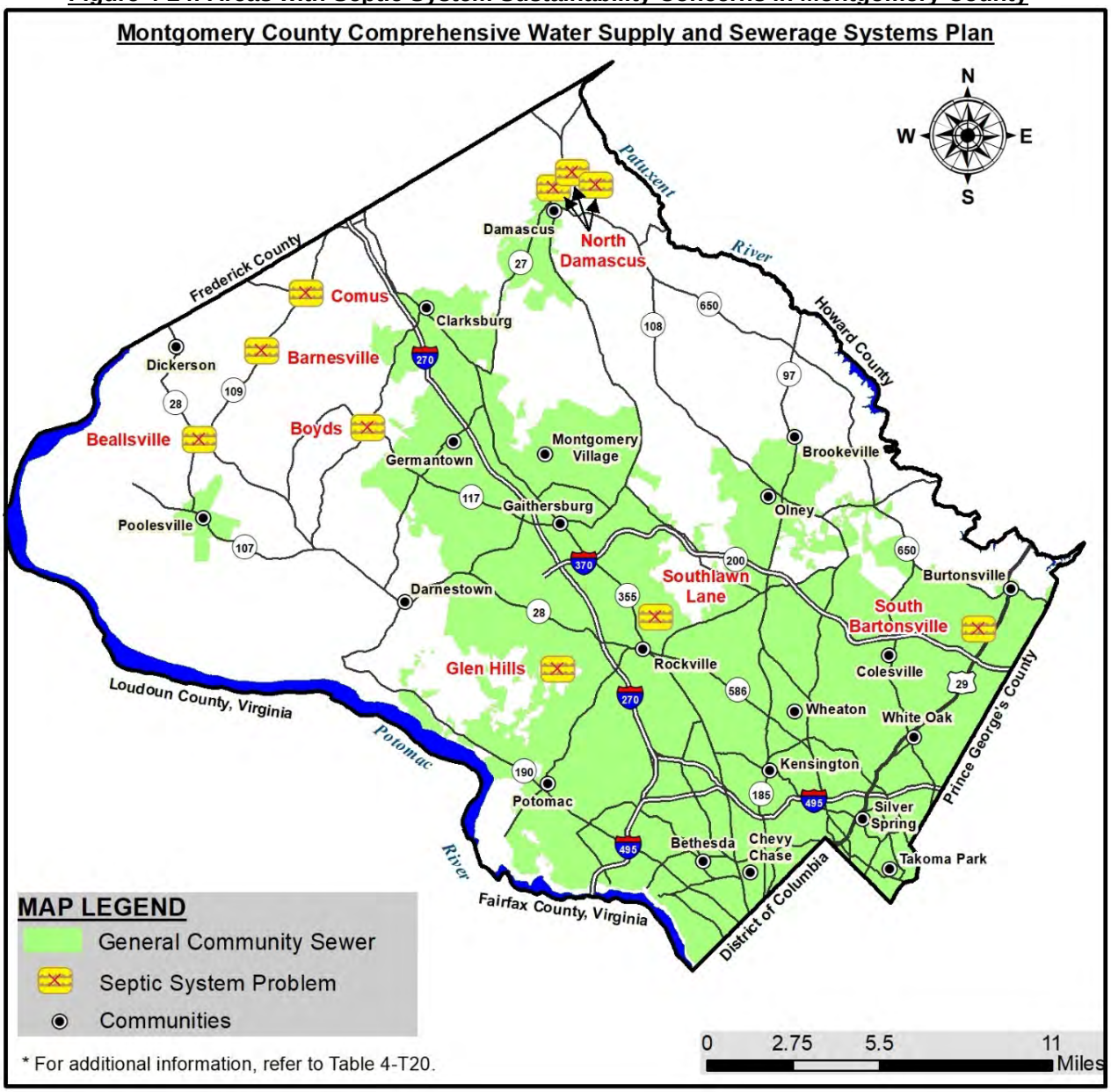


Table 4 -26: Communities with Existing and Potential Septic System Sustainability Concerns

Location	Problem	Potential Solutions	Recommendations/Actions Taken
Town of Boyds	▪ failing septic systems, some on relatively small lots	DPS recommends: ▪ community sewer service	The provision of community sewer service will require further investigation by DEP and DPS. Sewer extension issues to this part of the County could have dramatic effects on development demand.
South Burtonsville: Miles Rd., Duvall Rd., Tolson Pl., and Maple Hill Rd.	failing septic systems	▪ community sewer service	DEP continues to approve sewer category change requests within this area. The development of a new residential subdivision along Miles Rd. has brought new sewer mains into the area, expanding the availability of public service.
Clarksburg Historic District	failed septic systems, poor soils unsuited for septic system use, relatively small property sizes	▪ community sewer service	DEP continues to coordinate sewer service extension proposals with WSSC, DPS and DGS. Service extensions and pumping facilities may need to be coordinated with community sewer service for new development in the Ten Mile Creek watershed.
Damascus: Gue Rd., Howard Chapel Dr., Ridge Rd. and adjacent areas	failing septic systems - unable to repair	DPS recommends: ▪ community sewer service	Properties in the vicinity of Ridge Rd. and Tune Ave. have been approved for community sewer service. Extension costs and community cooperation appear to be deterrents to implementing needed low-pressure systems to relieve these problems. The approval and extension of community to service to other, more distant neighborhoods (Gue Rd., Howard Chapel Dr.) pose greater challenges in terms of required sewer infrastructure. Sewer service for these areas could require specific septic system and sewer systems facility studies.
Glen Hills - southwest side of Rockville	failing septic systems, poor soils	▪ community sewer service ▪ innovative/alternative on-site systems	Based on a study of septic systems in the neighborhood conducted DEP, in March 2016 the County Council revised sewer service policies for this area to match policies applied to RE-1-zoned areas elsewhere in the County. The neighborhood had been subject to a more restrictive service policy resulting from the 2002 Potomac Subregion Master Plan.
Southlawn La. - Northeast side of Rockville	failing septic systems, poor soils	Rockville DPW and County DPS recommend community sewer service	Rockville conducted a feasibility study to provide sewer service to the community in this area. Public sewer was not constructed due to lack of commitment from private property owners to annex into Rockville and pay for sewer extension. However, in 2013 Rockville constructed and put into service a water main to improve public water to the community. Abutting properties could receive service once they annex into Rockville City limits.
Rural communities: • Barnesville • Beallsville • Comus (Slidell Rd.)	failing septic systems - unable to repair	DPS recommends: ▪ community sewer service ▪ innovative/alternative on-site systems	These communities are beyond the reach of the County's existing and proposed community sewerage systems.
Frederick Road N. of Comus Road	Failing septic systems, poor soils, small property sizes	▪ community sewer service	The provision of community sewer service will require further investigation by DEP and DPS.

V.B.3. Individual Systems Maintenance Program:

In Montgomery County, once a well or septic system is installed and placed into operation, there will very likely be no further contact between the owner and the County regarding the operation and maintenance of that system until it fails.

An onsite systems management program will be important for maintaining both human and environmental health in areas where 1) potential sanitation problems from aging individual, onsite systems have the potential to affect older neighborhoods, 2) and where rural neighborhoods are located outside the effective reach of community water and sewerage systems.

The County has worked on the development of a functioning onsite systems database that will create an inventory and maintain ongoing records of the existing wells and septic systems throughout the county. Following the database development, the County has begun an outreach program to property owners who have onsite wells and septic system. This initial outreach will direct owners to DEP's webpage for well and septic systems and provide an opportunity to register for email delivery of additional outreach information.

Furthering this effort, DEP has proposed a septic tank pump out rebate program to help encourage property owners to pump out their septic tanks at least once every five (5) years. Periodically pumping solids out of the septic tank is one of the most straightforward ways to ensure proper functioning of a septic system. This pump-out interval is a common feature of many onsite systems maintenance programs throughout the country. DEP's program proposes a partial reimbursement for the pump out cost for property owners. Property owners would be eligible for a rebate only once every five (5) years. For each documented septic tank pump-out, the County will receive an impervious area reduction credit towards its Municipal Separate Storm Sewer System (MS4) Permit Program. The County expects to pilot this program in Fiscal Year 2027. Additional information on Individual Systems Maintenance Program can be found in Chapter 1, Section III.C.4.d.

V.B.4. Multiuse Sewerage Systems:

As described in Chapter 1, multiuse sewerage systems are individual, onsite wastewater disposal systems with a design capacity of 1,500 or more gallons per day GPD). Multiuse systems require both category map and text amendments in this Plan. Multiuse sewerage with capacities on 5,000 or more GPD also requires review and approval by the Maryland Department of the Environment. These facilities are generally large-capacity septic systems, although some facilities use more advanced treatment systems. DEP coordinates Plan approvals for these systems with DPS. Appendix B includes a listing of the multiuse sewerage facilities in Montgomery County approved in this Plan.

Most multiuse sewerage systems are standard septic systems with large design capacities. Other types of multiuse sewerage systems include:

- Spray irrigation systems – These systems often work well with a seasonal use such as a golf course. Any flows generated over the colder part of the year must be stored for later spray application during the growing season.
- Small wastewater treatment plants - A few facilities, such as the Mirant Generating Station in Dickerson and the Bretton Woods Country Club in western Potomac, operate what are essentially small wastewater treatment plants. (Because these facilities serve and are owned by an individual user, this Plan still classifies them as individual systems.)
- Surface water discharge systems - A few facilities also operate using a direct surface water discharge, rather than subsurface groundwater discharge. The Mirant generating facility and the County's Resource Recovery Facility, also in Dickerson, release treated effluent to the Potomac River via a State issued discharge permit (NPDES). Other multiuse systems use low-

pressure dosing systems, aerobic pre-treatment systems, etc.

All of these are characterized as multiuse systems, despite their differences in treatment methods, because of how they are owned and operated, by what type of facility they serve, and finally because of their size.

In 2006, the County Council adopted multiuse sewerage systems capacity limitations for properties located within the County's AR Zone (then the RDT zone). The limitations are intended to keep the size of non-residential development in the County's agricultural reserve area consistent with the generally smaller scale uses typically associated with development presently allowed by zoning in the agricultural zone. Refer to Chapter 1, Section III.C.5 for additional information.

Appendix A

GLOSSARY

I: INTRODUCTION

To understand the policies governing the provision of water and sewerage service in the county, it is helpful to understand the definitions of terms used throughout this text. The following includes relevant definitions – many taken from the State regulations governing planning of water supply and sewerage systems (COMAR 26.03.01.01) – used in this Plan:

II. TERMS AND EXPLANATIONS

Best Available Technology (BAT) System
An aeration system used in a septic tank to improve Nitrogen removal from septic systems. Maryland Dept. of the Environment (MDE) regulations require installation of BAT systems for new septic system service and for some replacement septic systems within Bay Critical Areas. Within Montgomery County, located outside of any established Critical Areas, the County's Dept. of Permitting Services determines the need for BAT systems for new and existing septic systems.

Capital Contribution Charge (City of Rockville only)
A fee paid by new users of Rockville's water and sewerage systems, which the City uses to finance the capital cost of sanitary systems growth and improvements.

Capital Improvements Program (CIP)
Provides for the programming of planning, design, land acquisition, and construction on a yearly basis for major water and sewerage facilities. These facilities include project such as water filtration plants, sewage treatment plants, major water and sewer transmission mains, pumping stations, and storage facilities. The adopted WSSC CIP is incorporated annually into the County's CIP when approved by the Montgomery and Prince George's County Councils. Community system capital budgets are available as follows:

- WSSC: The current CIP budget document, and those for some prior years, are available through WSSC's budget webpage at https://www.wsscwater.com/budget.
- City of Rockville: Capital program information is available at http://www.rockvillemd.gov/index.aspx?NID=1071.
- Town of Poolesville: Capital program information is available at http://www.poolesvillemd.gov/296/Budget.

Community Service Envelopes and Service Areas
Planned Community Water/Sewer Service Envelopes –Those areas intended for community service under the County's Water and Sewer Plan's general service policies and local area master plans recommendations. Generally, this includes properties currently approved for such service and designated as categories W-1, S-1 or S-1, S-3. Areas planned for future community service (W-4, W-5, and S-4, S-5) are included in the planned service envelopes.

Note that not all properties located within the planned community service envelope are currently approved for such service and designated categories 1, 3, 4 or 5. Most requests for service area category changes seeking community service are granted through case-by-case consideration. As a result, some properties designated as W-6 and S-6 may also be within the planned service envelopes because they have never had requests filed for a category change. Also see the "Planned Service Envelopes vs. Existing Service Area" discussion following.

Existing Community Water/Sewer Service Areas – Those properties approved for and with access to community water/sewer service, designated as categories W-1 and/or S-1.

A variation of the existing service areas could be considered as an approved service area. This would add those properties designated as service area categories W-3 and S-3 to the Existing Service Areas.

The majority of properties within existing service areas are connected to community systems. However, some properties continue to use individual, onsite systems even though community service is available. Note that some properties within existing service areas are located outside of the planned service envelopes; please see the following discussion.

Planned Service Envelopes vs. Existing Service Areas – Every property that is approved for and has access to community service (W-1, S-1) becomes part of the existing water/sewer service areas. However, a category change approval for such a property does not necessarily make it part of a planned service envelope.

Properties located outside the planned service envelopes are typically approved for community service (categories 1 or 3) through one of the special service policies in the County's Comprehensive Water and Sewerage Plan (abutting mains, private institutional facilities, onsite system failures, etc.) or under another justification as determined by the County Council. As such, these properties, although designated as categories 1 or 3, are exceptions to the Plan's general service policies and do not become part of the planned service envelopes.

This distinction is important in the Potomac Subregion Master Plan area where the master plan recommends the use of a peripheral sewer service policy, addressing properties located at the edge of the planned sewer envelope. Again, properties approved for S-1 or S-3 under this service policy do not add to or become part of the planned service envelope. This was intended to avoid a domino effect that could eventually extend sewer service well beyond the limits of the planned service envelope.

Community Sewerage System
A publicly owned system serving two or more individual properties, for the collection and disposal of sewage or industrial wastes of a liquid nature, including various devices for the treatment of the sewage and industrial wastes. The community sewerage system is often referred to as the public sewerage system, or as public sewer service, in other documents.

Community Water Supply System
A publicly owned source of water and a distribution system, including treatment and storage facilities, serving two or more individual properties. The community water supply system is often referred to as the public water system, or as public water service, in other documents.

Ejector Pump and Grinder Pump
Onsite pumping systems are used to move sewage flows uphill to a point where the flow can then move by gravity to a transmission main or onsite treatment system. An ejector pump is used to lift sewage from the lower floors of a building to a gravity outfall on the property. A grinder pump typically feeds into a small-diameter, low-pressure main. Grinder pumps may be used as part of a larger low-pressure sewerage system that serves anywhere from a few houses to an entire subdivision. WSSC's grinder pump, low-pressure system policies require that a low-pressure sewerage system, for a non-residential use, is dedicated to only that user. No other grinder pumps are allowed to tie in.

Existing Service Area
An area that is currently served; individual properties within the area are generally connected to the community system.

Front-Foot Benefit Assessment (FFBA)
An annual charge levied on properties abutting water and sewer mains in the Washington Suburban Sanitary District that partially pays for the extension of local service mains financed by general construction bonds. Additional information is provided in Chapter 1, Section IV.A.2.b. and in Chapters 3 and 4 of this Plan.

Ground Water Well (or Water Well)
A well supplies water to a single residential, institutional or commercial user, usually from a well located on the user's property. The primary focus of this Plan is on wells used for potable water supply. However, other wells are sometimes used for purposes such as irrigation, watering of livestock, industrial processes, and geothermal heating and cooling. The system generally consists of a groundwater well with a submersible pump that connects directly to the user's home or business. The well is drilled down through rock to a depth substantially below the level of the water table. This allows the well shaft to store water for periods of higher water demand. As the pump removes water from the well shaft, groundwater flows in replacing what has been used, although not necessarily at the same rate. The user may also require on-site water treatment and an above ground storage/pressure tank.

Holding Tank
A tank, buried under the surface of a user's yard, for the purpose of holding sewage until it is pumped out by a licensed septic hauler. A holding tank is typically used in cases where no other individual, onsite septic system can be used and where community sewer service is not available. Holding tanks are used only to serve existing buildings and are not allowed for new construction or expansion of an existing structure. Depending on usage, a holding tank will fill and need to be pumped out every two to four weeks. No useful sewage treatment occurs in the holding tank, as it would in a septic tank.

Individual, Onsite Sewerage System
A single system of piping, treatment tanks or other facilities serving only a single property and disposing of sewage or individual wastes of a liquid nature, in whole or in part, on or in the soil of a property. Typically, an individual sewerage system in the county is a septic system. Septic systems treat sewage through the use of a septic settling tank and subsurface drainfields which discharge their effluent to the ground. Microorganisms in the soil continue to treat the effluent as the effluent percolates through the soil profile.

Individual, Onsite Water Supply System
A single system of piping, pumps, tanks, or other facilities utilizing a source of ground or surface water to supply (potable water) to a single property. The most common individual water supply system in the county is a groundwater well. Wells use a pump to draw groundwater stored in the well shaft into the user's house or business.

Interim Individual Water Supply or Sewerage System
An individual system established within an existing or planned community service area for an interim period only and intended to be abandoned and replaced by community service within one year of the availability of community service.

Limited Access Water and Sewer Mains
Limited access water and sewer mains traverse or abut properties which this Plan designates as generally ineligible for community water and/or sewer service, either by the general policies in this Plan or by a specific action of the County Council restricting service.

Multiuse Water Supply and Sewerage Systems
Individual on-site systems, whether owned or operated by an individual or group of individuals under private or collective ownership, serving a group of individuals, and having a treatment capacity of 1,500 gallons or more per day (gpd). Multiuse water supply systems utilize a source of ground or surface water to provide potable water, and consist of wells, piping, pumps, tanks, and/or other facilities. Multiuse sewerage systems collect and dispose of sewage and consist of various devices for the treatment and discharge of sewage. For the purposes of this plan, multi-use systems include the following:

- A single water supply and/or sewerage system serving a single property;
- A single water supply and/or sewerage system serving two or more commonly-owned, contiguous properties with a common function (religious institution, nursing home, etc.); and
- More than one water supply and/or sewerage system serving a single property with a cumulative capacity of 1,500 or more gpd.

Municipal Service Area
(See "Sanitary Districts" below.)

Municipal Well
A groundwater well that provides water for a community water supply system. In Montgomery County, only the Town of Poolesville uses municipal wells to provide a potable water supply to its customers.

Onsite System Failures
Individual, onsite system failures can result from causes such as age, contamination, insufficient maintenance, of structural problems. The following situations are among the most common that constitute an onsite systems failure:

- The presence of inadequately treated sewage rising to the surface of the ground or backing up into a building, resulting from a hydraulic overload of the septic tank and/or the drainfield. Proper septic system operation typically requires tank pumping every two to five years for preventative maintenance.
- Evidence of a septic system discharging inadequately treated sewage into ground or surface waters. This includes problems such as drainfields constructed within the water table, constructed on fractured bedrock, or constructed with an overflow pipe. Overflow pipes typically allow the discharge of inadequately treated sewage from the septic system into a drainage feature such as a swale, pond, or stream. Failures may also result from structural problems involving the septic tank or drainfields.

- A well with inadequate water quantity yield. (State minimum standard is 1 gallon per minute.)
- A well with inadequate water quality, resulting from either an inflow of surface water or contamination of the groundwater source.
- A well that does not satisfy current regulatory standards, including hand-dug wells, wells without adequate sleeves/casing, etc. A structural failure of the well may result, such as a side wall collapse

An excessive need to pump out a septic tank, usually on the order of several times in a year, to keep the septic overflows or backups from happening, can also signal a septic system failure. Other excessive actions indicating a septic failure may include curtailing the use of laundry, kitchen, and/or bathroom facilities to prevent overflows or backups. These situations can be considered as temporarily mitigated failures in that the property owner has intervened to prevent the failure from causing a public health problem (see below).

Relief measures for individual, onsite system failures generally fall into one of three categories:

- Onsite Repair – The repair of an onsite well or septic system typically involves a straightforward process that does not require DPS to issue a permit. Repairs can include replacing a broken pipe or septic tank baffle, clearing a clogged pipe, or replacing a pump. Repairs may also involve an improved maintenance schedule or the use of practices compatible with onsite systems.
- Onsite Replacement – An onsite systems replacement occurs where a major component of the well and/or septic system no longer functions as intended. A replacement will require DPS to issue a new permit for a new well, septic tank, and/or septic drainfield. Some septic system drainfield replacements can be considered as single replacements, where one new drainfield is feasible, but without the identification of reserve areas for future use. A full replacement for a septic system includes a new drainfield and an approved reserve area for future drainfields.
- Community Service – Community service is provided, if feasible, either where community service is already planned or where DPS determines that no reasonable onsite relief measure is feasible.

Public Health Problems – Existing and Potential
Individual, onsite well and septic system failures may result in problems than can affect public and environmental health due to contact with inadequately treated sewage or contaminated drinking water, or due to an insufficient drinking water supply.

Existing Public Health Problems: The determination by DPS that a property suffers from the failure on an onsite well or septic system to function as originally designed. Solutions for failed onsite systems may require a new well or septic system permit. New septic system permits are required for the replacement of the septic tank and/or drainfield or pit. In other cases, a repair, such as the replacement of a broken pipe, or change in use or maintenance, may suffice to address the failure.

Potential Public Health Problems: The expectation, based on a determination by the County, that the replacement of existing onsite wells and/or septic systems may not be capable of supporting existing development, resulting in future public health problems. Early identification of areas or neighborhoods where these conditions exist may result in corrective measures that will help to avoid future individual systems failures.

Sanitary District
The entire area where the responsibility of providing community water and sewer service as identified in this plan falls to a single agency. The Washington Suburban Sanitary District (WSSD), which encompasses most of Montgomery and Prince George's Counties, is served by the WSSC as defined in State laws establishing WSSC Water. Two areas within the County are excluded from the WSSD:

- The Rockville Municipal Service Area, served by the City of Rockville's community water and sewerage systems; this service area does not always coincide with the City's corporate limits. (See Chapter 1, Section II.F.8.)
- The Poolesville Municipal Service Area, coincides with the Town of Poolesville corporate limits and is served by the Town's community water and sewerage systems.

Septic System
An underground system that collects, treats, and safely disposes of sewage from a residential, an institutional, or a commercial user, most often on the user's property. The first part of the system consists of

a **septic tank** (connected directly to the user's building) where solids separate from liquid effluent and settle to the bottom of the tank. Liquid effluent from the tank flows into an underground **septic drainfield**, a network of trenches that distribute the effluent across a broad area below the ground surface. Aerobic bacteria in the soil below the drainfield provide the final step in the treatment process as the effluent percolates down from the drainfield. The treated effluent then flows into the water table.

Several different types of septic system are in use throughout the county. For additional information, please refer to Chapter 1, Section III.C.2.

Sewer Service Area
That area served, or potentially served, by a system of sanitary sewers connected to a treatment plant, or, in a very large system, sub-areas as delineated by the County.

Special Water or Sewer Service Area
An area designated by the County Council where the provision of community water and/or sewer service is approved to provide relief for existing failures and/or potential health problems. Special service areas may be located either within or outside the planned community service envelopes.

Systems Development Charge (SDC)
A fee paid by new users of the WSSC's water and sewerage systems which WSSC uses to partially fund the capital cost of water and sewer system growth and improvement.

Water Service Area
That area served, or potentially served, by a single distribution system under control of a single utility, or, in a very large system, sub-areas as delineated by the County.

Water/Sewer Service Connection
The portion of the service pipe for a structure located between the local service main and the property line, or between the main and the sanitary easement for the main. Within the WSSD, the house connection is the responsibility of the WSSC. Additional details concerning the use of abutting and non-abutting service connections are provided in WSSC Water's Development Services Code: Ch. 11.155 Development Services Code | WSSC Code of Regulations.

> Abutting Service Connection: A service connection constructed at a right angle to a service main running directly to the customer's property line. Some abutting sewer connections are provided from sewer manholes, allowing them to be constructed perpendicular to the manhole but at an angle of other than 90 degrees to the sewer main.
>
> Non-Abutting Service Connection: A service connection used by WSSC in cases where an existing community system water or sewer main does not directly abut a customer's property. They are typically used in cases where an intervening property blocks access to the main, or where a service connection, built at a 90 -degree angle to the main providing service, will not intersect with the user's property line. Some abutting sewer connections are provided from sewer manholes, allowing them to be constructed perpendicular to the manhole and not at an angle of 90 degrees to the sewer main. Additional information and an illustration are provided in Chapter 1, Section II.A. & Figure I-F4.

Water/Sewer Site Utility
The portion of the service connection for a structure located between the property line and the structure served. A single water or sewer site utility may serve more than one structure on a given property. In exceptional cases, site utilities may also be located within an easement on an adjacent property; these site utilities are installed in some cases where WSSC Water allows service from a non-abutting connection." Within the WSSD, the site utility is the responsibility of the property owner. Water and sewer site utilities were formerly referred to as "hookups."

Water/Sewer Service Area Category
The water and sewer service area categories designated in this plan serve two functions:

- They identify those areas of the county approved or planned for community water and/or sewer service and those areas intended for service by individual systems; and

- They identify a mechanism for staging community service for those areas planned for community service, consisting of the application of the service categories W-1 through W- 5 and S-1 through S-5 described above to the properties within the county.

In addition, some areas of the county are noted for special service conditions or restrictions, including those specific properties where the County has approved the use of multi-use systems. Service area categories are shown on the water and sewer service area category maps which are a part of this plan.

III. WATER/SEWER SERVICE AREA CATEGORY CONDITIONS AND RESTRICTIONS

The following special service conditions and restrictions are used on the County's water and sewer service area category maps and in the service area category database: Space limitations on most map presentations require the use of shortened notes, as provided in the following table, to represent somewhat more involved, corresponding concepts.

III A.: Water and Sewer Service Area Category Conditions and Restrictions

The following conditions and restrictions apply to both water and sewer categories:

- Abutting Dry Main: A dry water or sewer main, intended for future community service, abuts this property. The main is not currently in service as it is not connected to the community water or sewerage system.
- Affected by Public Improvements: Community water or sewer service is provided where public infrastructure improvements such as road construction will adversely affect the property's individual, on-site well or septic system. *
- Cluster: Community water or sewer service is limited to properties established under an approved cluster option only (RE-1, RE-2C, RC Zones) *.
- Conditional Approval: A conditional water or sewer category change approval was granted for this property. A final action is pending. See action document for specific final categoruy change approval requirements and details.
- Deferred: A decision on a requested water or sewer category change is pending before the Council (see action document for details).
- Health-Predates CWSP/Envelope: Community water or sewer service, addressing a public health problem, existed prior to the service envelope established in the Water & Sewer Plan. *
- Interim OnSite System: The property is approved for an interim (non-permanent) permit well or septic system. The interim permit requires that the property connect to community service within one year of teat service becoming available.
- Multiuse System: The property is approved for a multiuse (large capacity) on-site water supply or wastewater disposal system. The multiuse system has a design capacity of at least 1,500 gallons per day. An inventory of multiuse water supply and sewerage systems is provided as Appendix B in the Water and Sewer Plan.
- No Hookup Allowed-Abutting: Community water or sewer service cannot be provided from the main abutting this property. The service hookup, allowed for the original abutting parcel, was approved for another qualifying property.
- Onsite System Reg. Changes: Community water or sewer service is provided to a property affected by changes to on-site water supply systems regulations. *
- Other (Contact DEP): Other or multiple service conditions or restrictions apply to this property; please contact DEP staff for additional information.
- PIF: Community water or sewer service is provided for use only by a private institutional facility (PIF) only; see action document. *
- PIF-Specified User: Community water or sewer service is provided for use only by a private institutional facility (PIF) only. The approval action further restricts service to only a single, specified user; service for any other user is not allowed without a subsequent amendment to the Water and Sewer Plan. *
- Predates CWSP/Envelope: Community water or sewer service existed prior to the service envelope established in the Water & Sewer Plan. *
- Predates Master Plan: Community water or sewer service was provided or committed prior to current master plan recommendations and/or community service policies. *
- Public Facility: Community water or sewer service is provided only for use by a public facility. *

- RNC Optional Cluster: Community water or sewer service is limited to properties established under an approved RNC Zone optional cluster method only. Properties not approved for community service (open space and some conservancy lots) retain category W-6. *
- Single Hookup-Abutting: Community water or sewer service is restricted to one water hook up only under the abutting mains policy. *
- Single Hookup-Health: Community water or sewer service is restricted to one water hook up only for relief of a public health problem. *
- TDR: Community water or sewer service is limited to properties established under an approved TDR development option only. *
- Utility Service Error: Community water or sewer service is provided due to a service error by the utility. *

III.B.: Water Service Area Category Conditions and Restrictions

The following conditions and restrictions apply only to water categories:

- Oaks Agreement: Community water service provided under the County's agreement with local property owners to provide water service in the vicinity of the Oaks Sanitary Landfill near Laytonsville. *Single Hookup-Child Lot: Community water service is provided for a child lot only. * (Child lots are sometimes allowed in low-density areas for the child of the owner of a larger property.)

III.C.: Sewer Service Area Category Conditions and Restrictions

The following conditions and restrictions apply only to sewer categories:

- Non-Standard Onsite System: This property is approved for a non-standard, individual onsite septic system (alternative or innovative system, substandard system, holding tank).
- Piney Br. Sewer Agreement: Community sewer service is provided under the conditions of the Piney Branch Restricted Sewer Access Policy, as established by a covenant including the Piney Branch Sewer Agreement. *
- Piney Br. Single Property: Community sewer service is provided for a single existing property under the conditions of the Piney Branch Restricted Sewer Access Policy. No subdivision or resubdivision of the property is allowed without a subsequent amendment to the Water and Sewer Plan. *
- Potomac Peripheral Sewer Service: Community sewer service is provided for properties at the edge of the master plan's recommended sewer service envelope. This designation does not create an expansion of the recommended sewer envelope. *
- Single Hookup-Piney Br. Abutting: Community sewer service, restricted to only a single sewer hookup, is provided under the abutting mains provision of the Piney Branch Restricted Sewer Access Policy. The provision of this sewer hookup cannot be used to promote subdivision or resubdivision of this property. *

* *The provision of community service under this policy shall not be used as justification for the connection of intervening or nearby lots or parcels if they would not otherwise be entitled to connect to community systems.*

Appendix B

MULTIUSE WATER AND SEWER FACILITIES

MONTGOMERY COUNTY COMPREHENSIVE WATER SUPPLY AND SEWERAGE SYSTEMS PLAN
Appendix B: Multiuse Water and Sewer Facilities
Staff Draft 2026 - 2035 Plan

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I. INTRODUCTION

The State requires that the County approve and inventory multiuse water supply and sewerage systems in the Water and Sewer Plan. This Plan defines multiuse systems as individual onsite systems, whether owned or operated by an individual or group of individuals under private or collective ownership, serving a group of individuals, and having a treatment capacity of 1,500 gallons or more per day (gpd). The County's minimum system capacity requirement is more stringent than the State's minimum 5,000 gpd requirement. This is intended to help identify where "smaller" multiuse systems may have cumulative impacts on groundwater resources. Figure B-F1 is a map showing the general distribution of multiuse systems in the county.

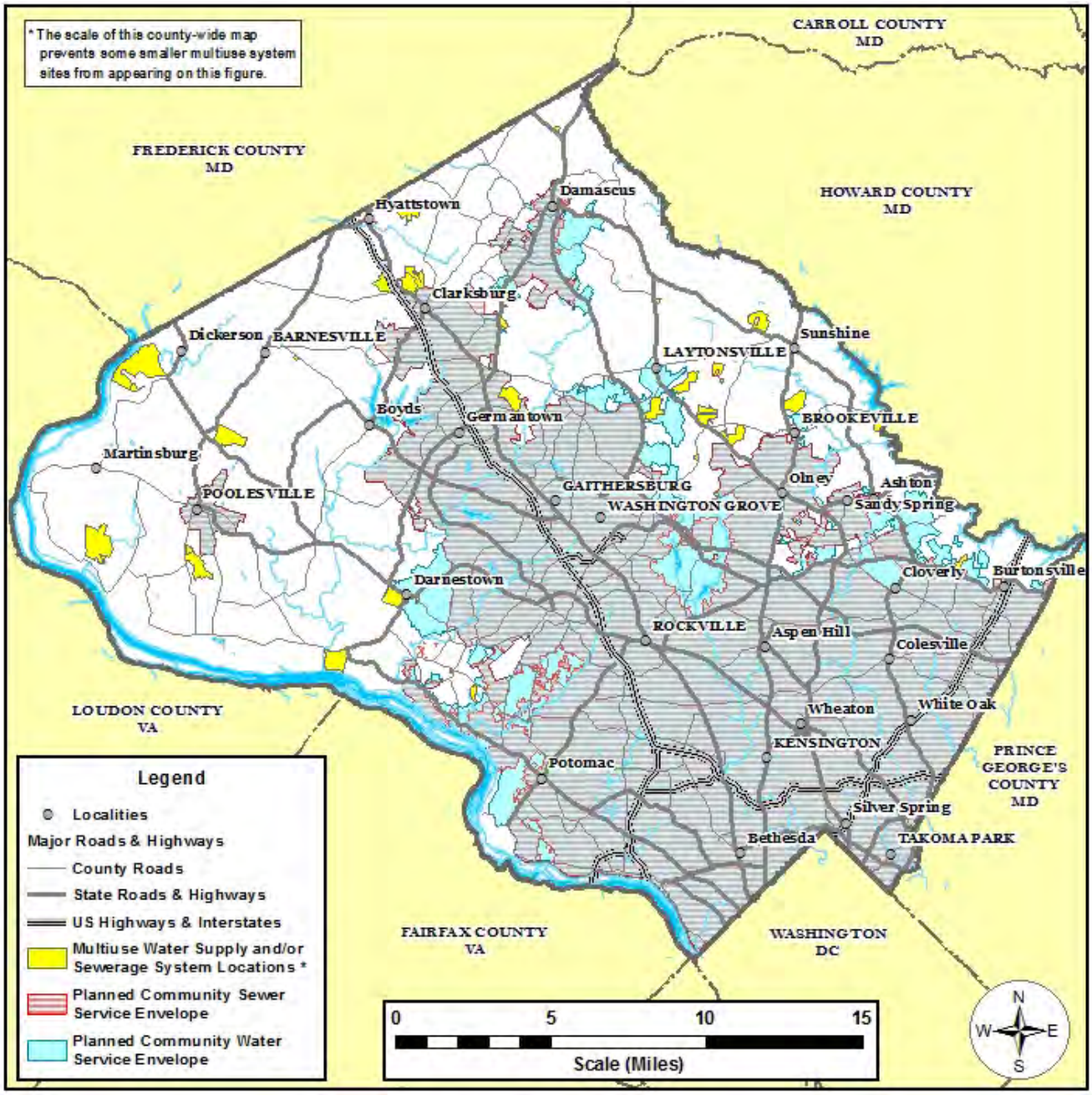
Multiuse water supply systems utilize a source of ground or surface water to provide potable water, and consist of wells, piping, pumps, tanks, and/or other facilities. Most often in Montgomery County, multi-use water systems use groundwater wells. Multiuse sewerage systems collect and dispose of sewage and consist of various devices for the treatment and discharge of sewage. These are usually large-capacity septic systems. For the purposes of this Plan, multiuse systems include the following:

- A single water supply and/or sewerage system serving:
  - a single property; or
  - two or more commonly-owned, contiguous properties with a common function (religious institution, nursing home, etc.); and
- More than one water supply and/or sewerage system serving a single property with a cumulative capacity of 1,500 or more gpd.

This appendix compiles available information on the multiuse water supply and sewerage systems in the county. Note that in some cases, a site with a multiuse sewerage system uses community water service and *vice versa*.

Figure B-1: Multiuse Systems Locations in Montgomery County

1Figure B-1 illustrates the location of sites with multiusde (large-capacity) onsite water supply and/or sewerage systems within the county. These are shown relative to the plannerd community water and sewer service envelopes.



II.: INVENTORY OF EXISTING AND APPROVED MULTIUSE WATER SUPPLY AND SEWERAGE SYSTEMS

This section provides an inventory of known multiuse water supply and sewerage systems in Montgomery County and their known characteristics. These systems are organized by the type of use: public facilities (governmental) and private facilities, both commercial and institutional,

II.A.: PUBLIC FACILITIES

DARNESTOWN ELEMENTARY SCHOOL
Owner/operator: Montgomery County Public Schools (MCPS)
15030 Turkey Foot Rd., Darnestown
Sewer note: 5000-gallon. Septic tank. 6 out of 8 original seepage pits in use. No reserve area established.

Water Supply System:
Served by WSSC Water community water supply system.

Sewerage System
Treatment: 5000-gllon septic tank, soil absorption via seepage pits
Design capacity: 4,500 GPD
Ground discharge. Permit not required

FEDERAL REGIONAL CENTER
Owner/operator: U.S. Government – Federal Emergency Management Agency (FEMA)
5321 Riggs Rd., Mt. Zion
No comments

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: not specified on permit.
Design capacity: 10,000 GPD
Surface water discharge: Hawlings River. Permit 93-DP-2542
Coordinates: N500,864 / E770,000

LAYTONSVILLE ELEMENTARY SCHOOL
Owner/operator: Montgomery County Public Schools (MCPS)
21401 Laytonsville Rd. (MD 108), Laytonsville
Converted to community water service, June 2014.
Notes: for Sewer: Original system consisted of one seepage pit. No other records for the system found. In 1988 a reserve area was established and reduced by 25% due to unpermitted grading by B.O.E. (2014-2015 school year: 429 students & 56 staff). MCPS is currently working with DPS on a septic system repair.

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: not specified on permit.
Design capacity: 10,000 GPD
Surface water discharge: Hawlings River. Permit 93-DP-2542
Coordinates: N500,864 / E770,000

LAYTONSVILLE GOLF COURSE
Owner/operator: Montgomery. County. Revenue Authority.
7130 Dorsey Rd., Laytonsville
No comments

Water Supply System
Source: groundwater

Sewerage System
Treatment: septic tank, soil absorption via low-pressure dosing system
Design capacity: 4,900 GPD
Ground discharge. Permit not required.

LITTLE BENNETT REGIONAL PARK – CAMPGROUND
Owner/operator: M-NCPPC Parks Dept.
23701 Frederick Rd. (MD 355) - Clarksburg

Sewer: The park maintenance facility, part of this system, has been approved for community sewer service, but has not been switched over to community sewer service.

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: septic tank, soil absorption via drainfields
Design capacity: 7,000 GPD
Ground discharge; permit not required.
Coordinates: N718,000 / E518,000

LITTLE BENNETT REGIONAL PARK – GOLF COURSE
Owner/operator: M-NCPPC Parks Dept
25900 Prescott Road, Clarksburg
Sewer note: Adjacent driving range at 26001 Prescott Rd. has flow of 500 gpd to septic system

Water Supply System
Source: Groundwater

Sewerage System
Treatment: septic tank, soil absorption via drainfields
Design capacity: 5,000 GPD
Ground discharge; permit not required.

MARYLAND NATIONAL GUARD
Owner/operator: State of Maryland
5115 Riggs Road, Mt. Zion
Community water service via WSSC Water available (category W-1).

Water Supply System
Source: Groundwater

Sewerage System
Treatment: septic tank, with soil absorption via sand filter
Design capacity: 3,000 GPD
Discharge: tributary to Hawlings River
Coordinates: N500,614 / E771,311

MONOCACY ELEMENTARY SCHOOL
Owner/operator: Montgomery Country Public Schools (MCPS)
18801 Barnesville Rd., Dickerson
Sewer: No records of permitted system found. Notes in file indicate the system consists of tank(s) and seepage pits and there is no reserve area, when the system fails, they will have to go a holding tank. 2014-2015 school year: 161 students & 22 staff

Water Supply System
Source: Groundwater
Treatment: Chlorination

Sewerage System
Treatment: Septic tank, soil absorption via seepage pits
Design capacity: unknown
Ground discharge; no permit record

NIH ANIMAL FARM
Owner/operator: National Institutes of Health (NIH))/US Department of Health and Human Services
22763 Elmer School Rd., Poolesville
Water: Facility Study Proposed

Water Supply System
Source: groundwater
Treatment: Chlorination. Disposal: None
Rated Capacity: ..... 151,000 GPD
Average Production: ..... 42,000 GPD
Maximum Peak Flow:.... 59,000 GPD
Storage Capacity: ..... 150,000 gal. (elevated storage)
Coordinates: N472,000 / E66 5,000

Sewerage System
Treatment: activated sludge
Design capacity: 10,000 GPD
Surface water discharge: Broad Run. Permit no. 91-DP-2529
Coordinates: N471,066 / E664,523

POOLESVILLE GOLF COURSE
Owner/operator: Montgomery County. Revenue Authority.
16601 West Willard Rd., Poolesville
No comments

Water Supply System
Source: groundwater

Sewerage System
Treatment: Stabilization lagoon, soil absorption and evaporation via spray irrigation
Design capacity: 8,000 GPD
Ground discharge; permit not required.
Coordinates: N469,910 / E680,408

RESOURCE RECOVERY FACILITY
Owner/operator: Mont. Co. DEP & Northeast Maryland Waste Disposal Authority
21204 Martinsburg Rd., Dickerson
No comments

Water Supply System
Source: groundwater
Treatment: Chlorination. Disposal: None.
Rated Capacity: ..... 144,000 GPD
Average Production: ... 144,000 GPD
Maximum Peak Flow:.... 72,000 GPD
Storage Capacity: ..... 15,000 gal.
Coordinates: N498,300 / E670,050

Sewerage System
Treatment: Package treatment plant, with neutralization tank, dual media filter
Design capacity: 122,400 GPD
Surface water discharge: Potomac River via PEPCO discharge canal. Permit not required
Coordinates: N498,300 / E670,050

II.B.: PRIVATE FACILITIES: COMMERCIAL

BLUE MASH GOLF COURSE
Owner/operator: Same
5821 Olney Laytonsville Rd. (MD 108), Laytonsville
No comments

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: spray irrigation (growing season only); ground discharge

Design capacity: 5,000 GPD
Surface discharge permit issued by MDE

BRETTON WOODS RECREATION CENTER
Owner/operator: International Monetary Fund
15700 River Road, Seneca
No comments

Water Supply System
Source: Ground water
Rated capacity: .....1,500 GPD
Average production:.....
Maximum flow:.....
Storage capacity:

Sewerage System
Treatment: activated sludge
Design capacity: .....15,000 GPD
Surface water discharge: Unnamed Tributary to Potomac River. Permit no. 23-DP-2754 (NPDES MD0064777)
Coordinates: N452,200 / E706,500

DICKERSON GENERATING STATION
Owner/operator: GenOn Mid-Atlantic LLC (formerly Mirant Mid-Atlantic)
21230 Martinsburg Rd., Dickerson
Facility formerly owned by PEPCO.

Water Supply System
Source: Potomac River
Treatment: Clarification, filtration, & chlorination. Disposal: Hauled out
Rated capacity: .....56,000 GPD
Average production:.....26,000 GPD
Maximum flow:.....56,000 GPD
Storage capacity: .....none
Coordinates: N520,000 / E668,000

Sewerage System
Treatment: Activated sludge
Design capacity: 10,000 GPD
Surface water discharge: Potomac River via discharge canal. Permit: MD002640
Coordinates: N501,800 / E669,992

FALL CREEK FARM
Owner/operator: Ruppert Nurseries*
23601 Laytonsville Rd. (MD 108), Laytonsville
Notes: Proposed facility: Approved preliminary plan 1-05090, 1,900 GPD
*Formerly Yesteryear Farm Country Inn

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: spray irrigation (growing season only); ground discharge
Design capacity: 5,000 GPD
Surface discharge permit issued by MDE

FOUR STREAMS GOLF COURSE
Owner/operator: Members Club at Four Streams, Inc.
19501 Darnestown Rd. (MD 28), Beallsville
No comments.

Water Supply System,
Source: groundwater

Sewerage System
Treatment: Septic tanks and soil absorption via subsurface fields with low pressure distribution.
Design capacity: 2,750 GPD
Ground discharge; permit not required

JOHNSON'S FLORIST & GARDEN CENTER

Owner/operator: DK Property Holdings LLC
5011 Olney Laytonsville Rd. (MD 108), Laytonsville
Sewer note: Expansion proposed for animal kennel

Water Supply System
Source: groundwater.

Sewerage System
Treatment: Septic tanks and soil absorption via drain fields
Design capacity: 2,000 GPD*

LAYTON VILLAGE SHOPPING CENTER

Owner/operator: same
6830 Laytonsville Rd. (MD108), Laytonsville
Notes: 2-building strip shopping center. Community water service is available but not connected (water category W-1).

Water Supply System
Source: groundwater.

Sewerage System
Treatment: septic tanks, aerobic treatment unit, soil absorption via drain fields
Design capacity: 2,500 GPD
Ground discharge; permit not required

LAYTONSVILLE VETERINARY PRACTICE & SUNDOWN KENNEL

Owner/operator: Same
5910 Sundown Rd. - Laytonsville
Notes: Formerly the Sundown Road Veterinary Clinic.

Water Supply System
Source: Groundwater
Treatment: None. Disposal: None
Rated capacity: ..... 1,500 GPD
Average production: ..... 1,500 GPD
Maximum flow: ..... 1,500 GPD
Storage capacity: ..... none
Coordinates: N507,000 / E763,000

Sewerage System
Treatment: septic tank, soil absorption via drain fields
Design capacity: ..... 1,500 GPD
Ground discharge; permit not required.
Coordinates: N507,000 / E763,000

MONTGOMERY COUNTRY CLUB

Owner/operator: Same
20908 Golf View Dr., Laytonsville
No comments

Water Supply System
Source: groundwater
Treatment: none. Disposal: none

Sewerage System
Treatment: septic tanks, soil absorption via drain fields with a low-pressure dosing distribution system
Design capacity: .....8.000 GPD
Ground discharge; permit not required.
Coordinates: N498,500 / E762,800

POTOMAC OAK CENTER*
Owner/operator: Travilah Oak LLC
12940-12960 Travilah Rd., Potomac
Shopping center
Note: Replacement septic system installed **Previously "Glenvilah Center."*

Water Supply System
Source: groundwater

Sewerage System
Treatment: Septic tanks with aerobic treatment, soil absorption via drainfields
Design capacity: .....5,000 GPD
Ground discharge; permit not required.

SENECA HIGHLANDS HARRIS TEETER GROCERY STORE
Owner/operator: Same
14101 Darnestown Rd. (MD 28), Darnestown
Notes: For sewer: Addition of aerobic treatment and additional reserve areas allowed an expansion from 3,200 gpd to 4,000 gpd in 2005.

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: Aerobic treatment unit, septic tank, soil absorption via deep drain fields
Design capacity: .....4,000 GPD
Ground discharge; permit not required.
Coordinates: N464,000 / E717,000

SMOKEY GLEN FARM BARBEQUERS
Owner/Operator: 16407 Riffleford Rd., Gaithersburg
Notes: For sewer: Four additional septic systems are planned to replace existing portable units.

Water Supply System

Sewerage System

II.C.: PRIVATE FACILITIES: INSTITUTIONAL

ARMENIAN YOUTH CENTER OF GREATER WASHINGTON
Owner/operator: Same
Darnestown Rd. (MD 28), Darnestown
Notes: For water: Water category W-3. For sewer: Proposed facility for 6,500 GPD; MDE groundwater discharge permit required

Water Supply System
Will be served by WSSC Water community water supply system.

Sewerage System
Pending facility.

THE BARNESVILLE SCHOOL
Owner/operator: Same
21830 Peach Tree Road, Barnesville
Notes: For water: Expansion to 4,200 GPD is proposed. For sewer: Expansion to 0.0042 mgd proposed for school expansion to 280 staff/students

Water Supply System
Source Groundwater
Treatment: none. Disposal: none
Rated capacity: ..... 4,200 GPD
Average production: .....
Maximum flow: .....
Storage capacity: .....
Coordinates: N504,000 / E698,000

Sewerage System
Treatment: septic tank, soil absorption via drain fields
Design capacity: ..... 3,100 GPD
Ground discharge; permit not required.
Coordinates: N503,500 / E700,500

CAMP BENNETT
Owner/operator: Central Union Mission
20501 Georgia Ave. (MD 97), Brookeville
Church camp

Water Supply System
Source: groundwater

Sewerage System
Treatment: septic tanks and soil absorption via drain fields.
Design capacity: 4,640 GPD
Ground discharge; permit not required.

CAMP BRIGHTON WOODS
Owner/operator: Girl Scout Council of the National Capital
120 Brighton Dam Rd., Brighton
Sewer: Lodge #3 approval pending reserve area establishment.

Water Supply System
Source: groundwater

Sewerage System
Treatment:
Design capacity: 2,980 GDP total
Lodge # 1- 2000 gpd, lodge #2 – 980 gpd,
Ground discharge; permit not required.

CAMP FRIENDSHIP/CAMP SONSHINE –
Owner/operator: Carol Jean Cancer Foundation
16819 Damascus Road (MD 108), Sunshine
No comments

Water Supply System
Source Groundwater
Treatment: none. Disposal: none
Rated capacity: ..... 10,000 GPD
Average production: .....
Maximum flow: .....
Storage capacity: .....
Coordinates: N510,000/E770,600

Sewerage System
Treatment: septic tank, soil absorption via drain fields
Design capacity: 10,000 GPD
Ground discharge; permit not required.
Coordinates: N510,000 / E770,600`

CEDAR RIDGE COMMUNITY CHURCH
Owner/operator: Same
2430 Spencerville Rd. (MD 198), Spencerville
Sewer: Interim septic system; site approved for community sewer service, category S-3.

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: Septic tank, soil absorption via low pressure dose trenches
Design capacity: .....2,800 GPD
Ground discharge; permit not required.

DARNESTOWN PRESBYTERIAN CHURCH
Owner/operator: Same
15120 Turkey Foot Rd., Darnestown
Sewer: Three existing systems serve the sanctuary building (*capacity not known), an education building, and a residence. Proposed expansion of the existing onsite system for the sanctuary to a design capacity of 2,400 GPD. Project is pending DPS approval.

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Existing systems:
Design Capacity: at least 1,700 MGD*
Ground Discharge
Permit not required

Proposed system:
Design Capacity: 1,490 GPD
Ground Discharge
Permit not required

Total with proposed system:
Design Capacity: 3.190 GPD
Coordinates N523,448 / E1,231,277

FIRST BAPTIST CHURCH OF DAMASCUS
Owner/operator: same
8850 Damascus Rd. (MD 650), Damascus
Sewer: Preliminary plan approved for proposed church expansion. 3080 gpd, low pressure dose trench system to be installed

Water Supply System
Church served by WSSC Water community water system. (Parsonage served by existing, non-multiuse well.)

Sewerage System
Data?

EMMANUEL SEVENTH DAY ADVENTIST CHURCH
Owner/operator: Same
18800 New Hampshire Ave (MD 650), Brinklow
Formerly Brinklow Seventh Day Adventist Church.

Water Supply System
Source: groundwater

Sewerage System
Treatment: septic tank, soil absorption via drain fields
Design capacity: 4,000 GPD
Ground discharge; permit not required.

GARDEN OF REMEMBRANCE MEMORIAL PARK
Owner/operator: Garden of Remembrance Memorial Park., Inc.
14321 Comus Rd., Clarksburg

Water Supply System
Source Groundwater
Treatment: none. Disposal: none
Rated capacity: ..... 1,500 GPD
Average production.....:
Maximum flow: .....
Storage capacity: .....
Coordinates: N516,100/E713,000

Sewerage System
Treatment: septic tank, soil absorption via drain fields
Design capacity: ..... 1,500 GPD
Ground discharge; permit not required.
Coordinates: N515,100 / E714,300

GLENSTONE II MUSEUM
Owner/operator: Glenstone Foundation (private)
12100 Glen Rd., Potomac
Note: Water: WSSC Wate community water service approved and is the primary water supply system for this facility, with wells as back up.

Water Supply System
Source Groundwater
Treatment: filtration, softening, chlorination, pH control. Disposal: backwash to public sewer
Rated capacity: ..... 58,000 GPD
Average production: ..... 9,500 GPD
Maximum flow: ..... 19.000 GPD
Storage capacity: ..... 6,000 gal.
Coordinates: N506,100 / E1,241,000

Sewerage System
Served by WSSC Water community sewer system

HAMPSHIRE VIEW BAPTIST CHURCH
Owner/operator: Same
360 Ednor Rd., Norwood
Formerly Wheaton Independent Baptist Church
Water note: Interim facility; community water service dependent on main extension to Hampshire Greens site (water category W-3).

Water Supply System
Source Groundwater
Treatment: none. Disposal: none
Rated capacity: .....
Average production: .....
Maximum flow: .....
Storage capacity:

Sewerage System
Served by WSSC Water community sewerage system.

KINGDOM HALL OF JEHOVAH'S WITNESSES
Owner/operator: Same
16825 New Hampshire Ave. (MD 650), Cloverly.

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: septic tank and soil absorption via drain fields
Design capacity: .....2,000 GPD
Ground discharge; permit not required

JOHN WESLEY UNITED METHODIST CHURCH
Owner/operator: Same
22420 Frederick Rd. (MD 355), Clarksburg

Water Supply System
Served by WSSC Water community water system.

Sewerage System
Treatment: septic tank and soil absorption via drain fields
Design capacity: .....2,000 GPD
Ground discharge; permit not required.

MONTGOMERY EVANGELICAL FREE CHURCH
Owner/operator: Same
19100 Muncaster Rd., Redland

Water Supply System
Source Groundwater
Treatment: none. Disposal: none
Rated capacity: .....
Average production: .....
Maximum flow: .....
Storage capacity:

Sewerage System
Treatment: septic tank and soil absorption via drain fields
Design capacity: .....2,250 GPD
Ground discharge; permit not required.

MONTGOMERY UNITED METHODIST CHURCH
Owner/operator: Same
28325 Kemptown Rd. (MD 80), Damascus

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: septic tank and soil absorption via drain fields
Design capacity: .....1,500 GPD
Ground discharge; permit not required.

NEW HOPE PRESBYTERIAN CHURCH
Owner/operator: Same
17930 Bowie Mill Rd., Olney

Water Supply System
Source Groundwater
Treatment: none. Disposal: none
Rated capacity: .....
Average production: .....
Maximum flow: .....
Storage capacity: .....
Coordinates: N480,000 / E777,000

Sewerage System
Treatment: septic tank, soil absorption via low-pressure dosing system
Design capacity: .....2,100 GPD

Ground discharge; permit not required.
Coordinates: N480,000 / E777,000

POTOMAC VALLEY ASSEMBLY OF GOD
Owner/operator: Same
22901 Ridge Rd. (MD 27), Clarksburg
No comments.

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: septic tank, soil absorption via drain fields
Design capacity: .....3,500 GPD
Ground discharge; permit not required.

SENECA ACADEMY
Owner/operator: same
15601 Germantown Rd. (MD 118), Darnestown
Note: Formerly The Circle School

Water Supply System
Source Groundwater
Treatment: none. Disposal: none
Rated capacity: ..... 3,750 GPD
Average production:.....
Maximum flow:..... 3,750 GPD
Storage capacity: .....none
Coordinates: N465,700 / E714,700

Sewerage System
Treatment: anaerobic treatment tanks, soil absorption via drain fields
Design capacity: .....3,750 GPD
Ground discharge; permit not required.
Coordinates: N465,200 / E715,200

SPENCERVILLE SEVENTH DAY ADVENTIST CHURCH
Owner/operator: same
16325 New Hampshire Ave. (MD 650), Cloverly

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: 6000-gallon septic tank, soil absorption via drain fields
Design capacity: .....3.000 GPD
Ground discharge; permit not required.
Note: Church seeking community sewer service.

TRI-COUNTY BAPTIST CHURCH
Owner/operator: Same
Damascus Rd. (MD 108), Damascus

Water Supply System
Source Groundwater
Treatment: none. Disposal: none
Rated capacity: ..... 4,500 GPD
Average production:.....
Maximum flow:..... 4,500 GPD
Storage capacity: .....none
Coordinates: N525,500 / E754,700

Sewerage System
Treatment: septic tank, soil absorption via drain fields with dosing/resting system
Design capacity: .....4,500 GPD
Ground discharge; permit not required.
Coordinates: N525,100 / E755,300

UPPER SENECA BAPTIST CHURCH
Owner/operator: Same
23401 Davis Mill Rd., Cedar Grove
Our records show that the new address of this property is 23425 Davis Mill Road

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: 2500-gallon septic tank and soil absorption via drain fields
Design capacity: .....1,500 GPD
Ground discharge; permit not required.

VISITATION CATHOLIC CHURCH & MARY OF NAZARETH CATHOLIC SCHOOL
Owner/operator: Catholic Archdiocese of Washington
14139 Seneca Rd. (MD 112), Darnestown
Formerly The Darnestown School
Sewer: Construction of a church on the site has used up remaining allowed septic capacity

Water Supply System
Served by WSSC Water community water supply system.

Sewerage System
Treatment: septic tank, soil absorption via drain fields
Design capacity: .....20,000 GPD
Ground discharge; permit not required.
Coordinates: N462,000 / E716,000

WESTBROOK AND HICKORY GROVE GROUP HOMES
Owner/operator: Brooke Grove Foundation
Slade School Rd., Sandy Spring
Water & Sewer: Separate systems serving several structures on one site. A portion of the overall Brooke Grove Foundation site has access to and is served by community water and sewer service. Future connections to community systems are planned.

Water Supply System
Source Groundwater
Treatment: chlorination, pH control. Disposal: none
Rated capacity: .....10,500 GPD
Average production:.....
Maximum flow:.....
Storage capacity: .....none
Coordinates: N480,000 / E780,900

Sewerage System
Treatment: septic tank, leach fields
Design capacity: 10,500 GPD
Ground discharge; permit not required.
Coordinates: N480,150 / E780,900

Appendix C

EXCEPTIONAL SERVICE POLICIES AND RECOMMENDATIONS

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I. INTRODUCTION

Discussions of the Water and Sewer Plan's service policies have noted that in order to implement specific development and land use strategies, a master plan may recommend policies for water and/or sewer service that vary from this Plan's general policies. (See Chapter 1, Sect. II.G.1. & II.G.11.) When a master plan makes such a recommendation, it includes an appropriate justification for the recommended departure from the general service policies. DEP staff coordinate closely with M-NCPPC staff with regard to the water and sewer service recommendations developed in local area master plans.

In addition, the County may also designate specific areas for or restrict specific areas from community water and/or sewer service in order to achieve specific development goals, to promote environmental protection, or to address other special concerns

These exceptional policy and recommendation areas are scattered widely throughout the county. The following sections consolidate and summarize these areas into a more convenient format as a part of this Plan. For additional information concerning these issues, please refer to the master plans and County Council resolutions cited below.

II. SPECIFIC SERVICE AREAS

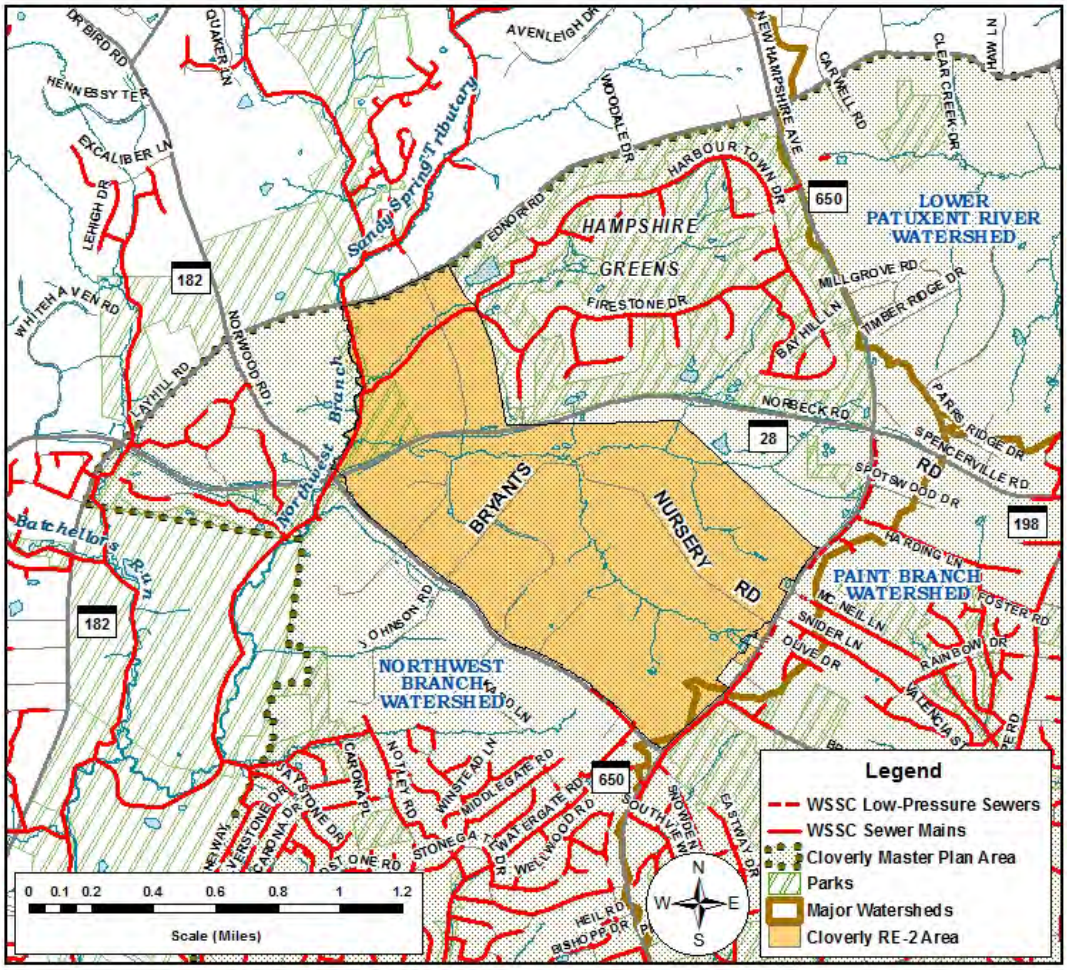
The following sections identify and explain the areas in the county where exceptional water and/or sewer service policies apply.

II.A. CLOVERLY AREA RE-2 ZONE

Restricted Community Sewer Service Area: Established by the 1997 Cloverly Master Plan

Figure C-1: RE-2 Zone in the Cloverly Master Plan Area

Figure C-1 shows an area zoned RE-2 in the Cloverly Master Plan area not generally intended for community sewer service except under special circumstances.



Subject Area: Area zoned RE-2 bounded by Norwood Rd., New Hampshire Ave. (MD 650), Hampshire Greens subdivision, and Northwest Branch.

Service Recommendation & Comments: The master plan recommends against community sewerage systems serving residential, commercial, or institutional development except to relieve public health problems, or to address other specific Water and Sewer Plan policies. The Council has previously interpreted that this recommendation may allow for, but does not necessarily guarantee, the approval for community sewer service

for cases involving the Plan's special service policies, such as public health problems, properties abutting sewer mains, and private institutional facilities (PIFs). (See Figure C-1.)

II.B: DAMASCUS AREA GRANDFATHERED PROPERTIES

Special Community Sewer Service Area: Recommended by the 2006 Damascus Master Plan

Subject Area: Older, smaller properties zoned RE-1, RE-2, & RE-2C at the edge of the 1985 recommended sewer envelope; generally, along Ridge Rd. and Woodfield Rd.

Service Recommendation & Comments: Included within the master plan's recommended community sewer envelope are several clusters of older properties that are generally smaller than that allowed by the current zoning. The age and size of these properties led DEP staff to believe that they present the potential for public health problems in the future, as existing, often undocumented, septic systems fail and owners lack adequate space to replace them. These properties were chosen for inclusion in the recommended sewer envelope in part because of their close proximity to existing or proposed community sewer service areas. Their inclusion in the Damascus sewer service envelope will allow owners to pursue community sewer service before their septic systems fail.

The extension of community sewer service to these areas is primarily intended to maintain the existing housing stock and development patterns. This recommendation will result in community sewer service becoming available for a few vacant properties included in these neighborhoods. However, community sewer service is not intended to promote substantial new development in these areas, especially the wholesale redevelopment of existing neighborhoods.

Note that the Damascus Master Plan area includes many more properties with similar circumstances except that they lack close proximity to community sewer service. One of the challenges the County will face here and in other rural areas involves how to address failing septic systems in these communities.

II.C: DAMASCUS AREA RE-2C ZONE

Restricted Community Sewer Service Area: Recommended by the 1985 and 2006 Damascus Master Plans

Subject Area: Generally south of Damascus Rd. (Rte. 108) between Woodfield Rd. (MD 124) and Great Seneca Creek.

Service Recommendation & Comments: The master plan recommends against the provision of community sewer service for much of the RE-2C zoned area around Damascus, regardless of whether that development is using the RE-2C cluster option. Community sewer service is available under this zone only where included in the master plan's recommended service envelope. To increase residential development in the vicinity of the Damascus Town Center, the 2006 master plan recommended rezoning of some RE-2C properties to RNC that were located at or near the edge of the 1985 recommended sewer envelope. Development on these rezoned sites is intended to use the optional cluster method, with the provision of community water and sewer service required. (See Figure C-2)

II.D: DARNESTOWN TRIANGLE

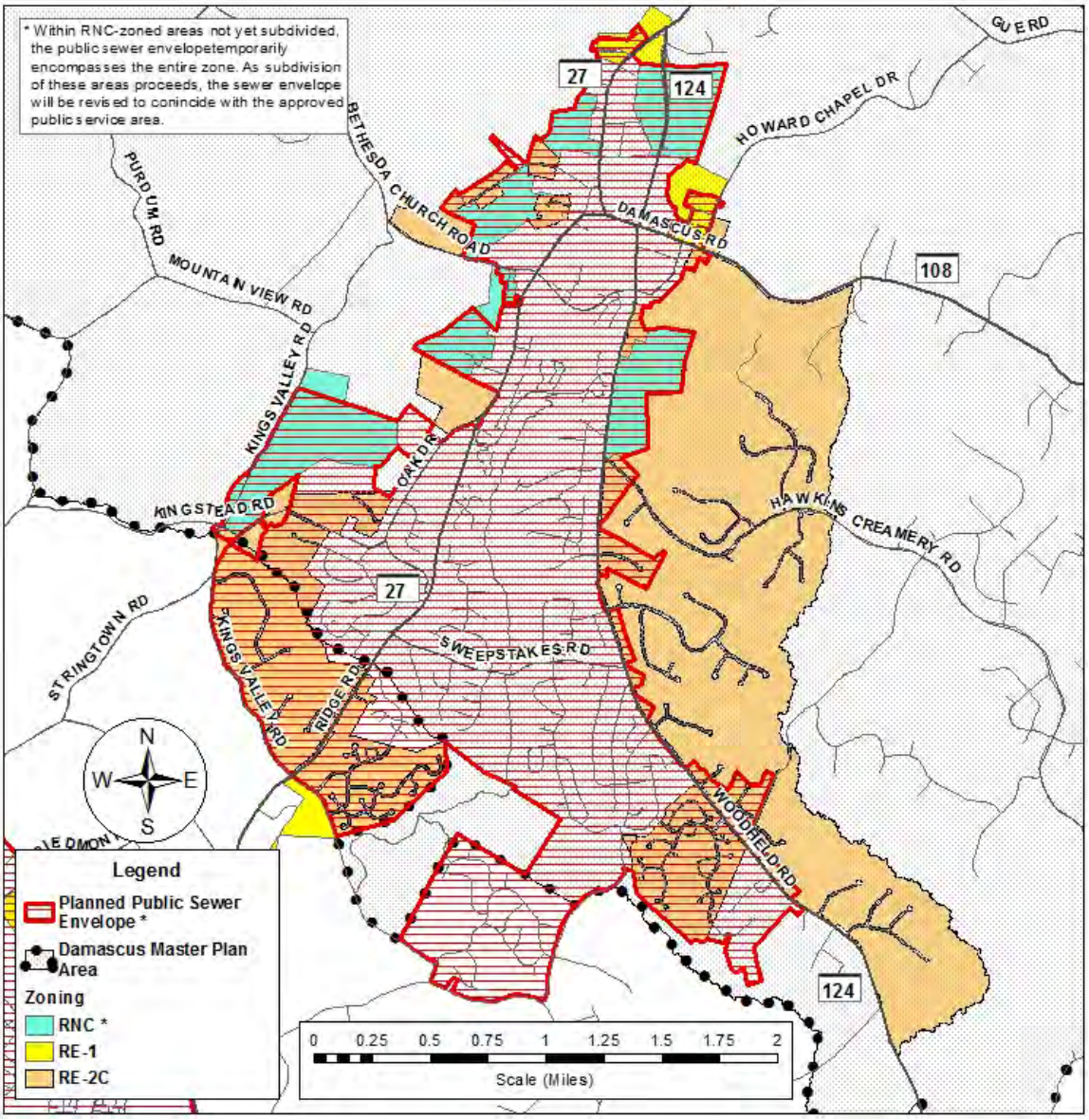
Restricted Community Sewer Service Area: Recommended by the 1980 and 2002 Potomac Subregion Master Plans

Subject Area: The R-200-zoned, triangular-shaped area bounded by Darnestown Rd. (Rte. 28), Jones La., and Turkey Foot Rd. (See Figure C-3)

Service Recommendation & Comments: Although zoned for half-acre development that would usually require community sewer service, the master plan recommends against the provision of community sewer service in this area, except to relieve public health problems or to provide single sewer hookups to properties which satisfy the "Abutting Mains" policies (See Chapter 1, Sections II.G.1. & II.G.2.)

Figure C-2: Damascus Area RE-2C Zone

Figure C-2 shows the planned community sewer envelope in the Damascus area. The figure identifies limited areas zoned RE-2C that are included within this envelope.



II.E: GLEN HILLS STUDY AREA

Sewer Service Policy Area: Established by Council Resolution No. 18-423 (3/8/16)

Subject Area: Residential development zoned RE-1 as identified in the Glen Hills Area Sanitary Study.

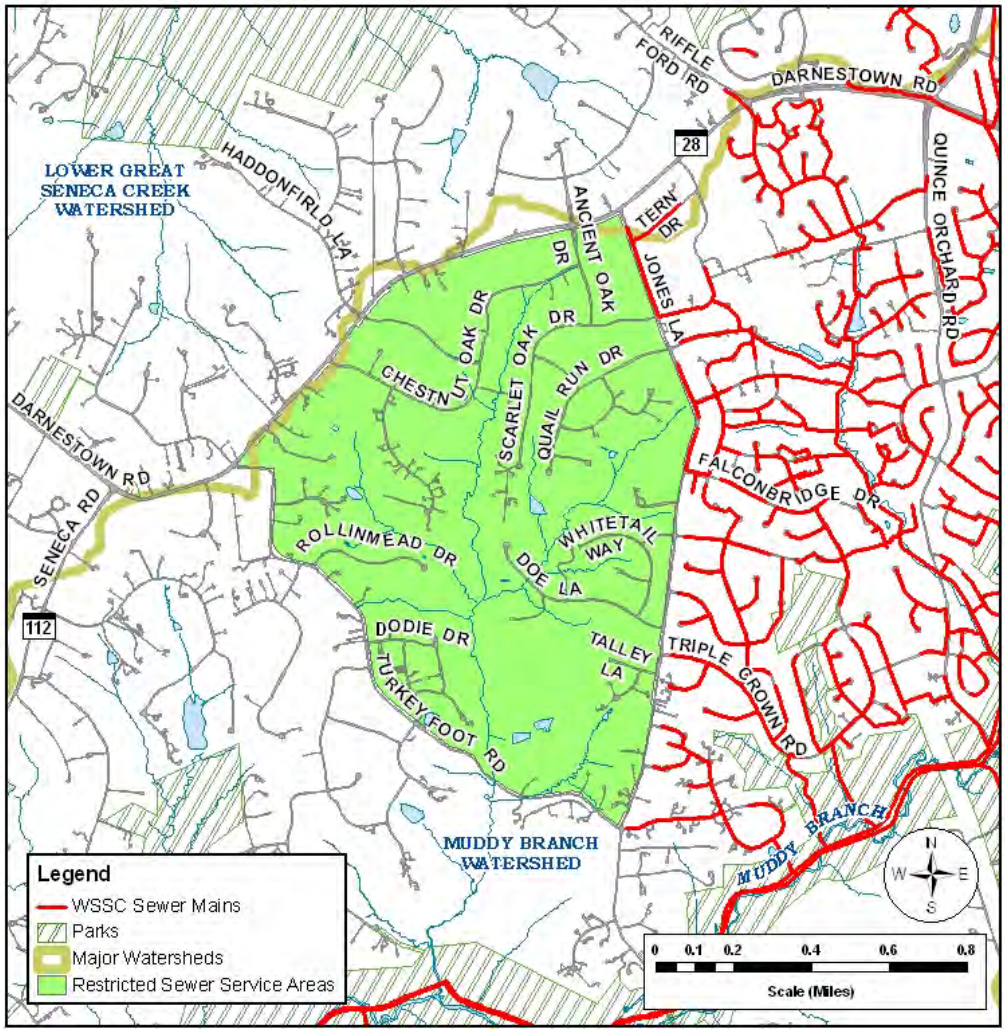
Service Recommendation & Comments: In March 2016, the County Council adopted Resolution No. 18-423 that established sewer service policies for the Glen Hills area, as shown below (see Figure C-4). These service policies resulted from a study of general septic system suitability in the area conducted by DEP. This study had been recommended by the 2002 Potomac Subregion Master Plan. Pending the Council's consideration of the study's results, the provision of new community sewer service in the Glen Hills area was limited to properties with septic system failures documented by DPS

The Council's 2016 resolution established the following sewer service policies for the study area:

- The use of individual, onsite septic systems is the primary wastewater disposal method consistent with the area's standard-type development under the RE-1 Zone.

Figure C-3: Darnestown Triangle Restricted Sewer Service Area

Figure C-3 shows an aera zoned R-200 located west of Jones La. in the Potomac Subregion Master Plan area. Contrary to this Plan's general sewer service policies, the master plan recommends against the provision of community sewer service within this area



- Community sewer service can be considered only under the following conditions for:
    - Properties in need of relief from public health problems resulting from documented septic system failures (Sections II.G.2.a.).
    - Properties included within a specifically designated special sewer service area (Section II.G.2.b.). The septic system survey process used to establish these areas is outlined in the Council's resolution and in Chapter 1, Section II.G.2.b: Area-Wide Onsite Systems Concerns, *et seq*. The research conducted for the Glen Hills Area Sanitary Study will allow DEP to streamline the survey process for properties in these neighborhoods. Once DEP has established a survey area, an Executive recommendation for the Council concerning that area is expected within approximately three (3) months. A decision by the Council is generally expected within three months after that.

      DEP will give a higher priority for surveys that include properties located within Review Areas (RAs) established in the Glen Hills Study and those with documented septic system problems. DEP will give a lower priority to survey areas outside of RAs or where DPS has not identified existing septic problems.

      The County has approved one special sewer service area in Glen Hills for part of the South Overlea Drive Septic Survey Area. The County Council under CR 18-888 (July 25, 2017)

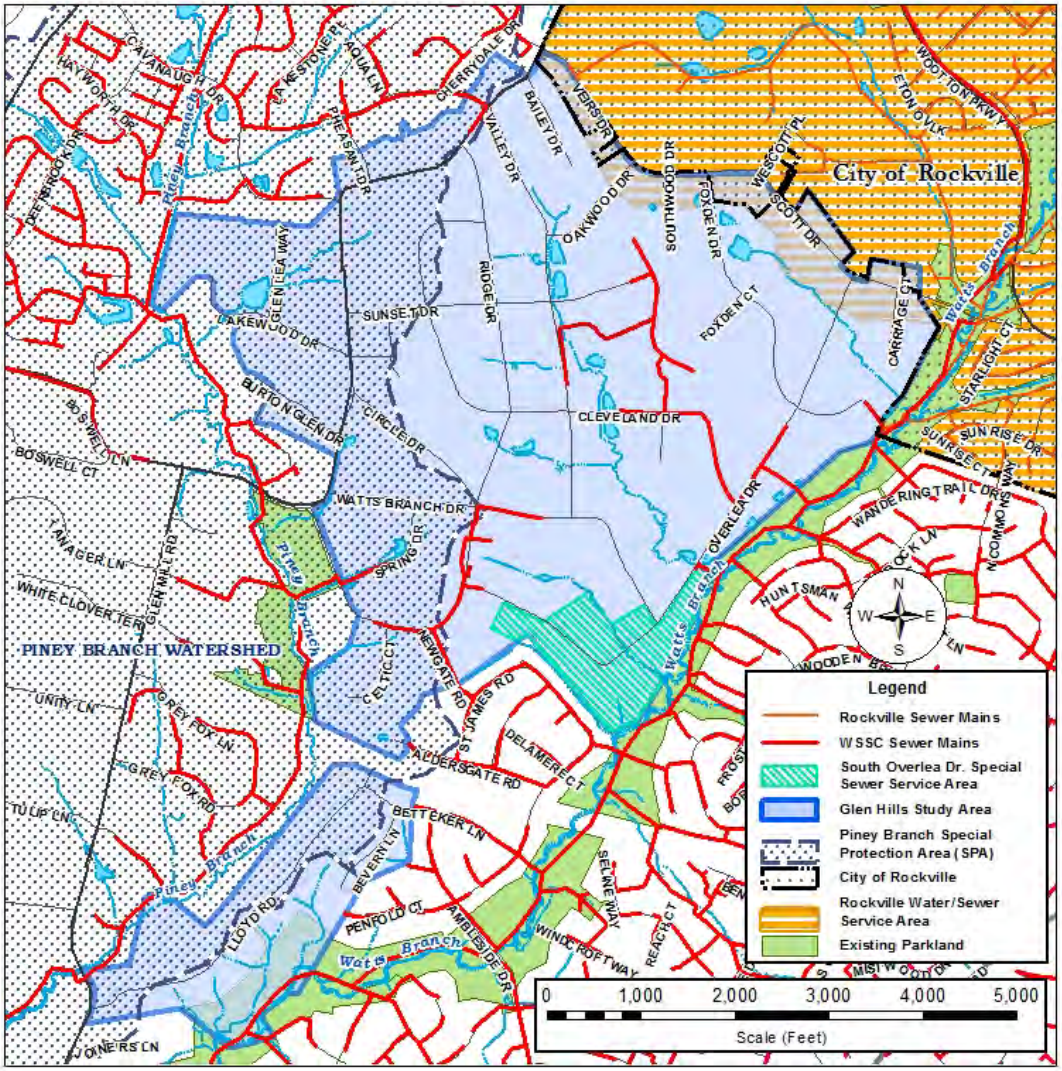
acted to include 16 of 24 properties surveyed by DEP and DPS within a special sewer service area.

The County Council's 2018 action to approve this Plan update changed the County's approach to the consideration of area-wide health problems where they are located outside the planned community service envelope. Establishing a septic system survey requires the inclusion of at least one property that has a DPS-documented septic system failure (see Chapter 1, Sections II.G.2.b. – d.).

- Properties that abut existing or planned sewer mains and that satisfy the requirements of the "abutting mains" policy (Section II.G.3.)
- Properties at the edge of the Potomac Master Plan planned public sewer envelope, that abut and/or confront properties within the envelope, consistent with the Potomac area peripheral sewer service policy. (Consistent with this policy however, properties at the periphery of the planned sewer envelope within the Piney Branch watershed and at the periphery of the City of Rockville's planned service area are excluded.)

Figure C-4: Glen Hills Sewer Service Policy Area

Figure C-3 shows an aera located southwest of and outside the City of Rockville zoned RE-1. The provision of community sewer service in this area is subject to the Glen Hills area sewer service policy. The limits of the Piney Branch special protection area are also shown.



- Properties within the study area and within the Piney Branch subwatershed that satisfy the requirements for community sewer service under the Piney Branch restricted sewer service policy (Section II.G.11.b.).

Property owners shall not use the provision for a single sewer hook-up under any of the four Glen Hills area sewer policy provisions cited above to support subdivision or resubdivision of existing properties into more than one lot.

II.F: HYATTSTOWN HISTORIC DISTRICT

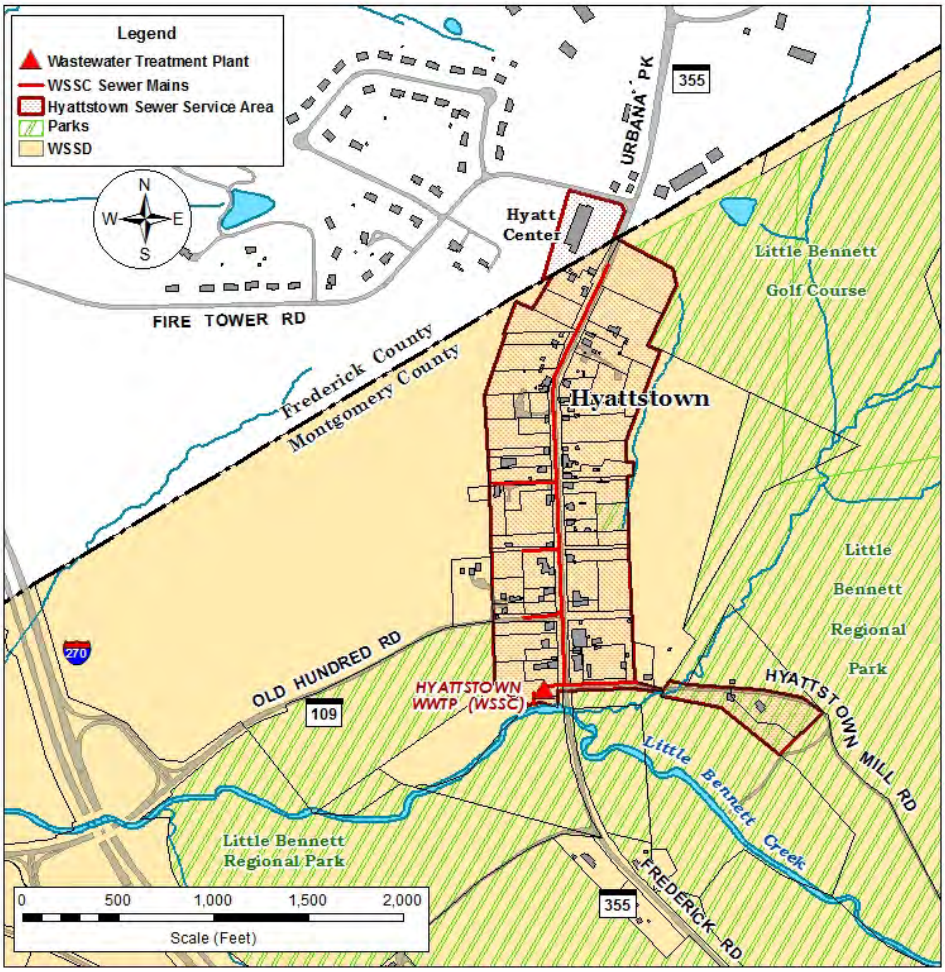
Special Community Sewer Service Area: Recommended by the 1994 Clarksburg Master Plan and Hyattstown Special Study Area. Established by Council Resolution No. 13-89 (4/4/95)

Subject Area:

- Properties zoned R-200 and NR-0.75 in the community of Hyattstown
- Nearby portion of Little Bennet Regional Park, east of Hyattstown along Hyattstown Mill Rd.
- Adjacent commercial development at the Hyatt Center in Frederick County

Figure C-5: Hyattstown Special Sewer Service Area

Figure C-5 shows the community sewer service area recommended in the 1994 Clarksburg Master Plan for the Hyattstown community. This service area extends north along Frederick Rd. from Hyattstown Mill Rd. and is zoned R-200 and NR-0.75.



Service Recommendation & Comments: The County approved the provision of community sewer service to the Hyattstown area in 1994, as part of the Clarksburg Master Plan. Sewer service was needed to relieve chronic, ongoing septic problems in the community, some of which had required condemnation of specific properties. In order to provide this service, WSSC constructed the Hyattstown Wastewater Treatment Plant near the intersection of Frederick Road (Rte. 355) and Old Hundred Road (Rte. 109). The provision of community sewer

service in this area is restricted to the Hyattstown Historic District, with only one allowed exception. The County Council subsequently approved the provision of community sewer service to the commercial Hyatt Center site located adjacent to the Montgomery County limits in Frederick County. The septic system for that facility had failed and had the potential to affect wells in the Hyattstown community.

Hyatt Center is a commercial site located adjacent to and north of the historic district, partially within Frederick County. This action addressed public health problems resulting from the failure of the center's septic system, which had the potential to affect potable water wells in Hyattstown. (See Figure C-5.)

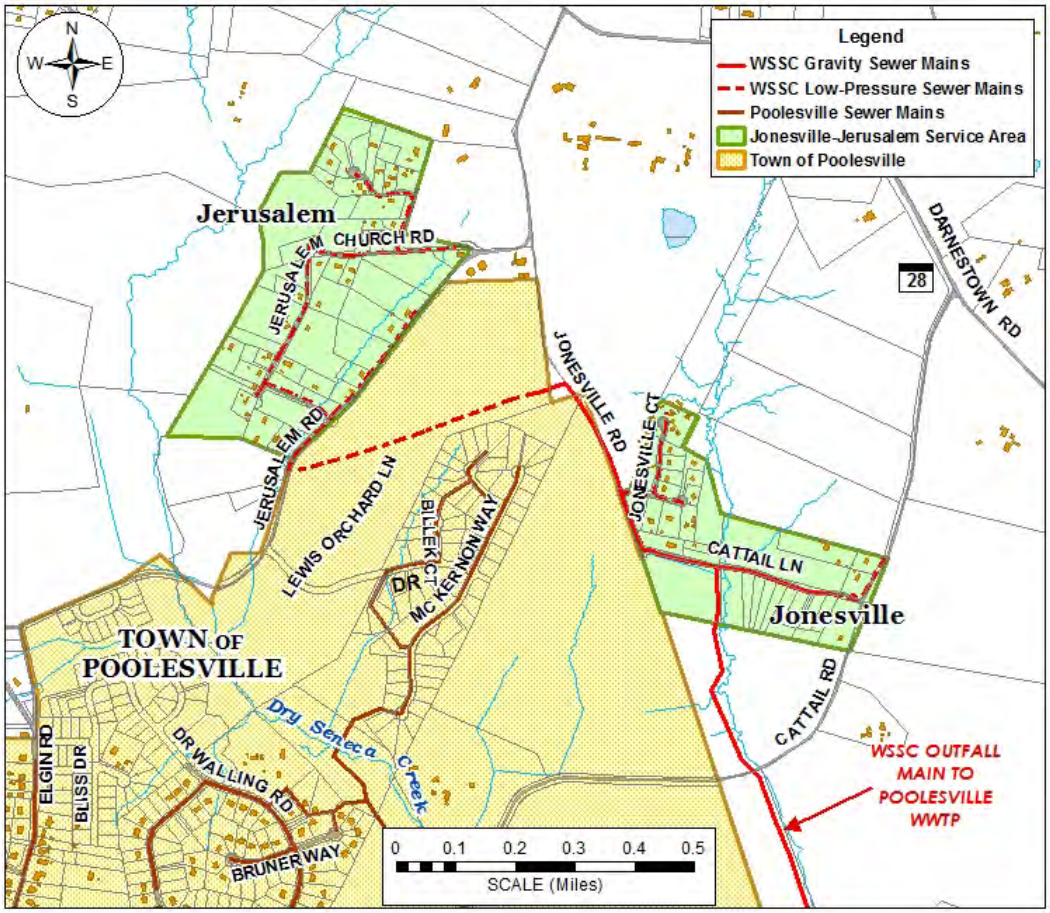
II.G: JONESVILLE AND JERUSALEM COMMUNITIES

Special Community Sewer Service Area: Established by Council Resolution No. 10-941

Subject Area: RMH-200-zoned properties at the north end and outside of the Town of Poolesville.

Figure C-6: Jonesville and Jerusalem Special Sewer Service Area

Figure C-6 shows the unincorporated communities of Jonesville and Jerusalem on the north side of the Town of Poolesville. These communities are served by WSSC Water community sewerage systems via the Poolesville WWTP in response to public health concerns about septic systems.



Service Recommendation & Comments: The County approved the provision of community sewer service to these two neighborhoods in the vicinity of the Town of Poolesville to relieve public health problems associated with failing septic systems (see Figure C6). The County also found it difficult to replace and upgrade the neighborhoods' substandard housing stock because of relatively small lots and inadequate septic suitability of the ground. The special service area is restricted to the areas zoned RMH-200. Under a 1984 agreement with the Town, located adjacent and to the south, WSSC has an allocation of 20,000 gallons per day (gpd) treatment for this service area at the Town's wastewater treatment plant. Due to topographic constraints, properties in much of the service area require the use of grinder pumps and low-pressure sewer mains to receive service. The provision of community sewer service to these communities has allowed for the relief of numerous failed

septic systems and for the ongoing renovation and replacement of housing stock. Some limited subdivision of existing parcels has also occurred in these communities using community sewer service. Sanitary service in the Jonesville/Jerusalem area does not include community water service, either from WSSC or from Poolesville; these areas depend on individual wells.

DEP's analysis in 2002 of WSSC's flow monitoring of the Jonesville/Jerusalem system showed that existing and committed flows, combined with anticipated flows (accounting for a single connection for each of the remaining, existing houses and vacant properties in the service area), will use 90- to 93-percent of the allotted 20,000 gpd treatment capacity. This Plan must ensure that adequate capacity in the negotiated WSSC allocation remains to address potential public health problems, as it is unlikely that the Town will have available or be willing to provide additional sewage treatment capacity for WSSC in the future. Therefore, community sewer service will support existing development and the limited development of existing, vacant properties in the special service area; but will not support further multiple-lot subdivision of existing properties. WSSC shall provide new community sewer service in the Jonesville/Jerusalem service area only under circumstances which, as of October 2001, satisfy one of the following conditions:

- A single permitted sewer connection previously approved by the WSSC (this condition may allow for more than one connection for an existing property);
- A single sewer connection for an existing house or its replacement; or
- A single sewer connection for an existing, vacant property.

These restrictions generally preclude the use of community sewer service for subdivision purposes. However, there remain a few properties where the ground is suited for new septic systems. This policy does not prohibit the approval of development plans using septic systems or a mix of community service and septic systems. Under sewer category S-1, DEP will need to approve exceptions for the installation of septic systems in this area.

During the historic precipitation in 2018 and 2019, the system experienced high amounts of I/I and resulted in exceedances of the allotted treatment capacity under the agreement. These exceedances continued periodically up until 2021. At this time WSSC began the planning work to investigate the I/I and developed a sewer rehabilitation plan for the sanitary sewers. This was subsequently completed in 2024. Since then, the precipitation has been below normal, and therefore it has been difficult to ascertain the amount of I/I. Additionally, since 2021 the flows into the Town have reduced but again, it is uncertain to what extent the role the dry weather played. The Town has also experienced lower flows from its service area and has indicated it may have excess capacity that it may be able to provide WSSC Water through an amendment to the agreement.

Recent development proposals within the service area have prompted the need for WSSC Water to develop a hydraulic sewer model of the entire system to determine its hydraulic capacity and to ascertain how many more connections could occur. Additionally, WSSC Water will also evaluate the ultimate build-out of the service area in order to develop future flow projections if it is going to request the Town for additional treatment capacity. It is anticipated that this work may be completed by June 2026. Pending the outcome of the sewer modelling, the County may need to consider additional sewer connection restrictions in this service area, establishing a moratorium on new connections except for cases involving septic system failures. Or lift any restrictions if all parties agree to an increased allocation. Another option is for WSSC Water and the Town to renegotiate the original flow agreement to allow WSSC Water additional treatment capacity at the Poolesville WWTP for this service area.

II.H: LAYTONIA RE-1 ZONE

Special Community Sewer Service Area: Recommended by the 2004 Upper Rock Creek Master Plan

Service Recommendation & Comments: Provide community sewer service to existing and proposed public facilities for the Pope Farm Nursery, Laytonia Recreational Park, and Muncaster Recreational Park. (See Figure C-7.)

II.I: LAYTONSVILLE

Restricted Water Service Area: Established by Council Resolution No. CR 14-857 (5/8/01); modified by Resolution No. 16-237 (7/10/07).

Subject Area: Areas zoned AR adjacent to or near the Town of Laytonsville. (See Figure C-8.)

Service Recommendation & Comments: In considering the possible extension of community water service to the Town of Laytonsville, the County Council expressed strong concerns about the potential annexation and development demand created by such service, particularly with regard to properties zoned for agricultural preservation adjacent to the town. In May 2001, under CR 14-857, the Council acted to permanently restrict the provision of community water service from any properties in the town currently zoned Agriculture and from any properties adjacent to or near the town within the county zoned RDT (now zoned AR). Although the Plan's policies generally preclude community water service to properties zoned for one unit per 25-acre density, the Council's intent is to withhold the provision of community water service from these properties regardless of their future zoning if annexed into the town and rezoned. The Council did allow for the provision of service to a portion of one Agriculture-zoned property in the town occupied by a commercial horticultural nursery.

Figure C-7: Laytonia Area RE-1 Public Facility Sewer Service Areas

Figure C-7 illustrates the locations of public facilities planned for community sewer service in the Laytonia area northeast of Muncaster Mill Rd. between Airpark Rd. and Woodfield Rd.

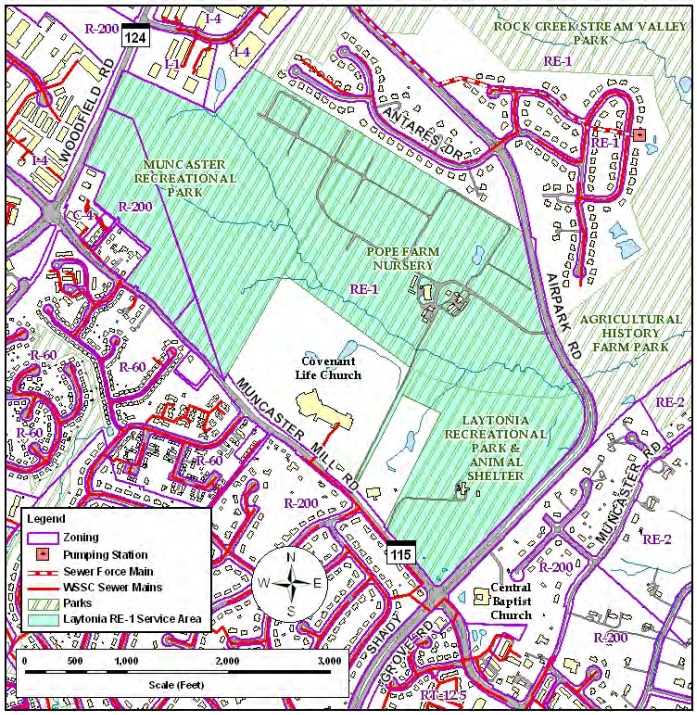
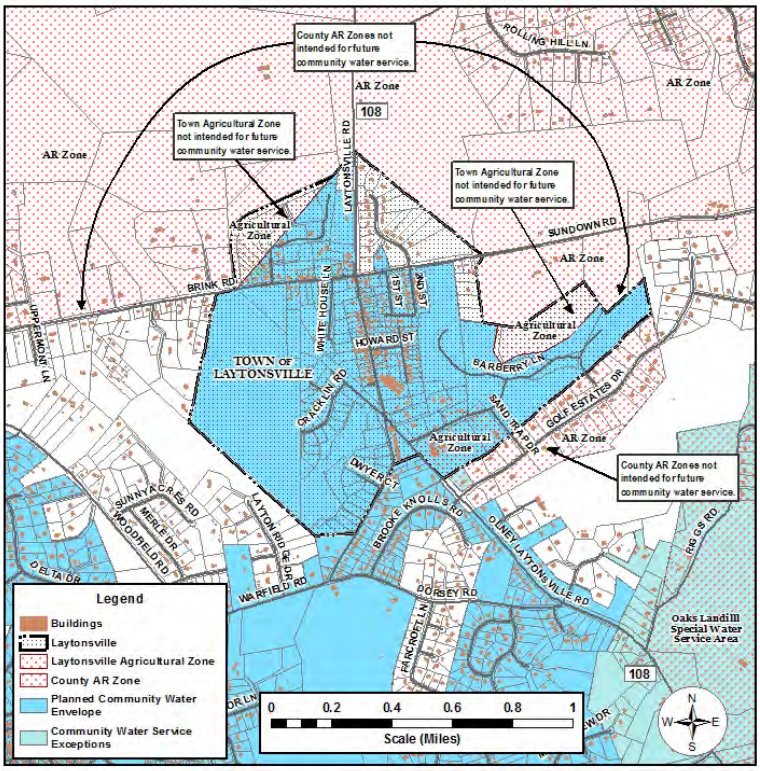


Figure C-8: Restricted Water Service Areas in and Near Laytonsville

Figure C-8 b illustrates the planned community water service areas within and near the Town of Laytonsville. Also shown are areas zoned for agricultural development near and within the Town that are excluded from community water service.



II.J: NORTH BURTONSVILLE

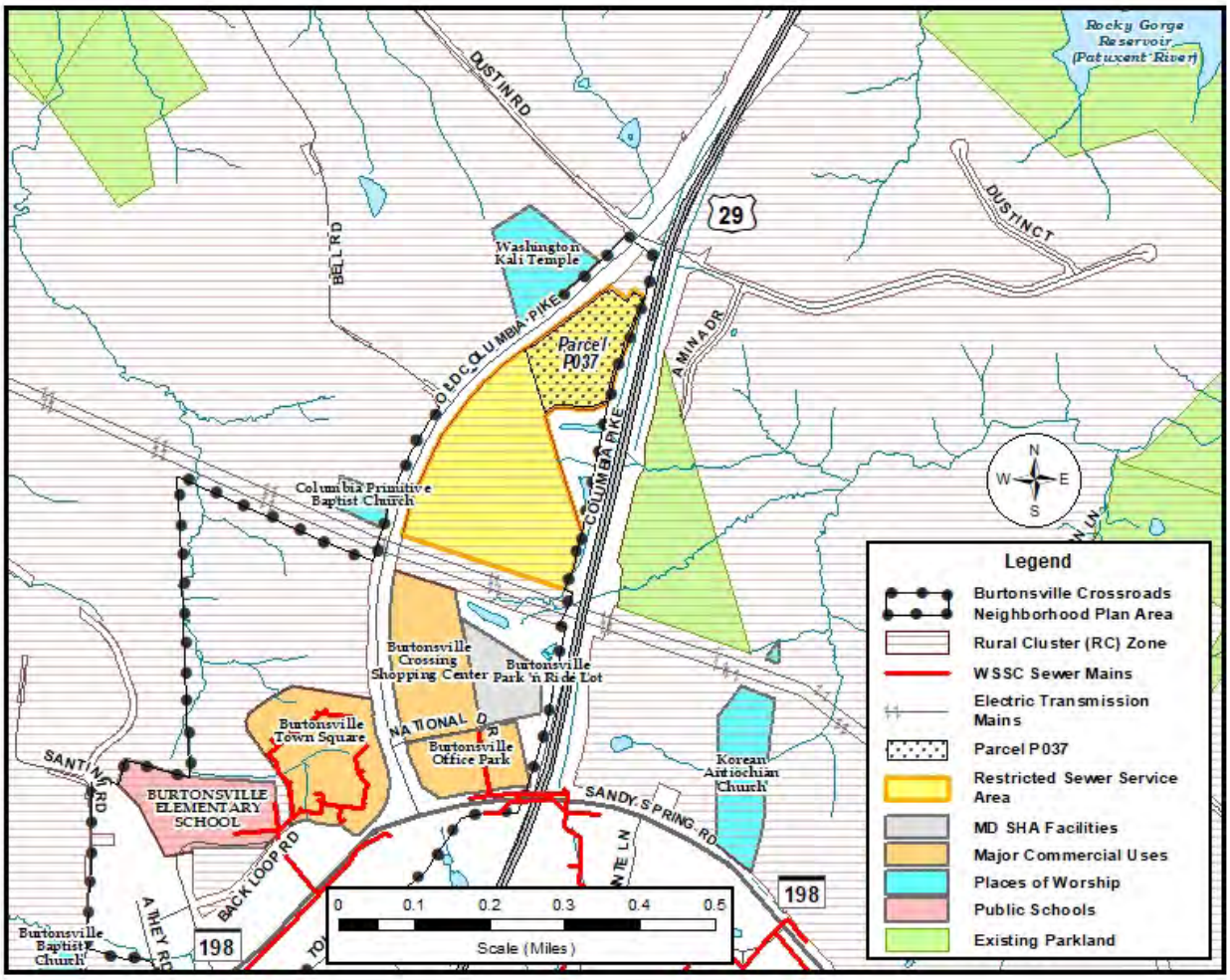
Restricted Community Sewer Service Area: Recommended by the 2012 Burtonsville Crossroads Neighborhood Plan

Subject Area: Zoned RC between Old Columbia Pike and Columbia Pike (U.S. Hwy. 29) north of the P.E.P.Co. power lines alignment, and south of Dustin Rd. (See Figure C-9.)

Service Recommendation & Comments: The 2012 master plan recommends against the provision of community sewer service for any reason within this area. This reverses a service recommendation in the prior 1997 Fairland Master Plan that raised the possibility of service for a conditional (special exception) use in this region.

Figure C-9: Restricted Sewer Service Area in North Burtonsville

Figure C-9 shows the Burtonsville Neighborhood Plan area, including an area zoned RC between US Route 29 and Old Columbia Pk. and north of the Burtonsville Crossing Shopping Center where that plan recommends against the provision of community sewer service for any land use. Also shown are other land uses such as commercial and institutional.



II.K.: OAKS LANDFILL VICINITY

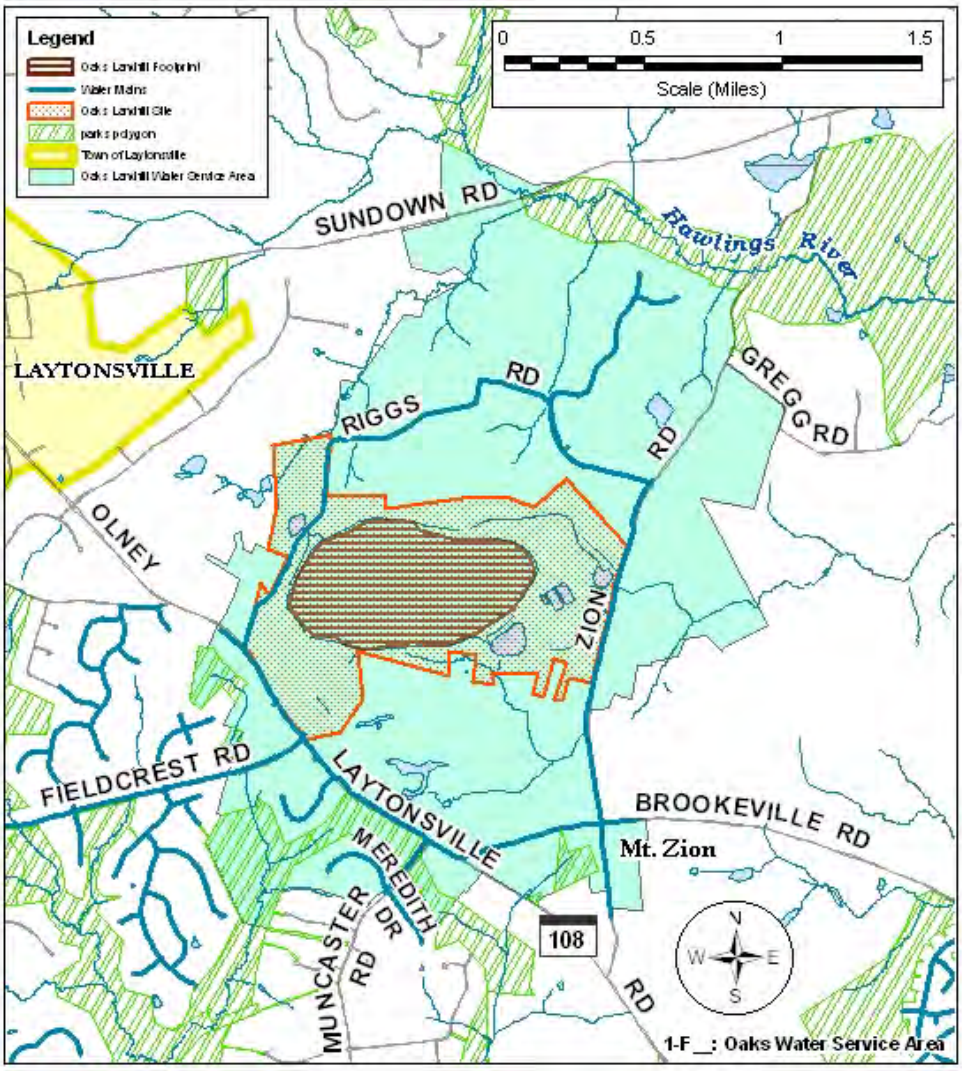
Special Community Water Service Area: Established by Council Resolution No. 13-336 (11/14/95)

Subject Area: Properties located within or partly within the Assumed and Potential Groundwater Influence Areas of the Oaks Landfill

Service Recommendation & Comments: The County approved the extension of community water service to the vicinity of the Oaks Landfill, located between Mt. Zion and Laytonsville, in 1995 (see Figure C-10). The extension of community water service provides public water for approximately 155 eligible, existing dwellings in the community surrounding the landfill site. DEP investigated low-level groundwater contamination in the northwestern area of the Oaks Landfill starting in 1992. While the level of contamination was less than the Maximum Contaminant Limits established by the U.S. Environmental Protection Agency under the Safe Drinking Water Act, it remained persistent. Community water service is provided to this vicinity to relieve anxiety in the community and to avoid potential long-term costs due to an extensive domestic well sampling program in the community. The County's actions are in accordance with provisions of the 1983 Oaks Landfill Mediated Agreement, an agreement between the County and the community near the landfill. The County's Solid Waste Disposal Fund financed the cost of providing community water service within this special service area, including the ongoing payment of water service bills for existing residents. WSSC completed construction the majority of the new the water supply system mains in 1998.

Figure C-10: Oaks Landfill Special Water Service Area

Figure C-10 illustrates the special community water service area around and in the vicinity of the County's Oaks Sanitary Landfill southeast of Laytonsville.



The special water service area envelope, which encompasses parts of the Olney and Upper Rock Creek Planning Areas, includes the potential service area from the 1983 mediated agreement plus other properties in the vicinity that can logically be served by the community water system. The potential service area described in the agreement is based on the Oaks Landfill potential groundwater influence area, which is the "boundary that establishes the maximum potential water service area to be considered for an alternative water supply system," according to a consultant's 1981 hydrogeologic report of the landfill vicinity. Part of the special service area within the Olney Planning Area is zoned Agricultural Reserve (AR), which is not normally recommended for community water service in this Plan. The provision of water service to these AR-zoned areas does not establish a precedent for community water service for similarly zoned properties outside of the special water service area.

This special water service area also includes the Mt. Zion community at the intersection of Zion and Brookeville Roads, located only partly within the landfill's potential groundwater influence area. The alignment of the Oaks water main extension, which follows public roads, comes through Mt. Zion, offering service to properties abutting the new main. However, many of the homes in this community had substandard, hand-dug wells which were considered as public health problems and were relieved by the provision of community water service. The County also provided for a water service extension along Meredith Drive east of Muncaster Road where a groundwater contamination problem, unrelated to the Oaks Landfill, had affected many homes using wells.

II.L.: PINEY BRANCH WATERSHED

Restricted Community Sewer Service Area: Current version established by Council Resolution No. 15-396 (11/18/03) and recommended by the 2002 Potomac Subregion Master Plan.

Subject Area: Natural drainage area of Piney Branch, a tributary of Watts Branch.

Service Recommendation & Comments: The provision of community sewer service within this watershed is regulated by the Piney Branch Restricted Sewer Access. This policy was amended in 2002 in accordance with the recommendations in the updated 2002 master plan. (See Figure C-11.)

In 1991, the County Council established a policy to restrict the availability of community sewer service in the Piney Branch Watershed which is designated as one of the county's Special Protection Area watersheds. Through the Piney Branch Sewer Restricted Access Policy, the Council sought to limit the growth of public sewer-dependent development within and near this environmentally sensitive watershed, particularly within the areas of the watershed zoned for one- and two-acre development. The Council subsequently amended the policy in March 1997 under CR 13-830 and again in October 2002 under CR 14-1481. By these actions, the Council has specifically designated the Piney Branch Trunk Sewer and its tributary mains as **Limited Access** mains (see Section III.A.1.).

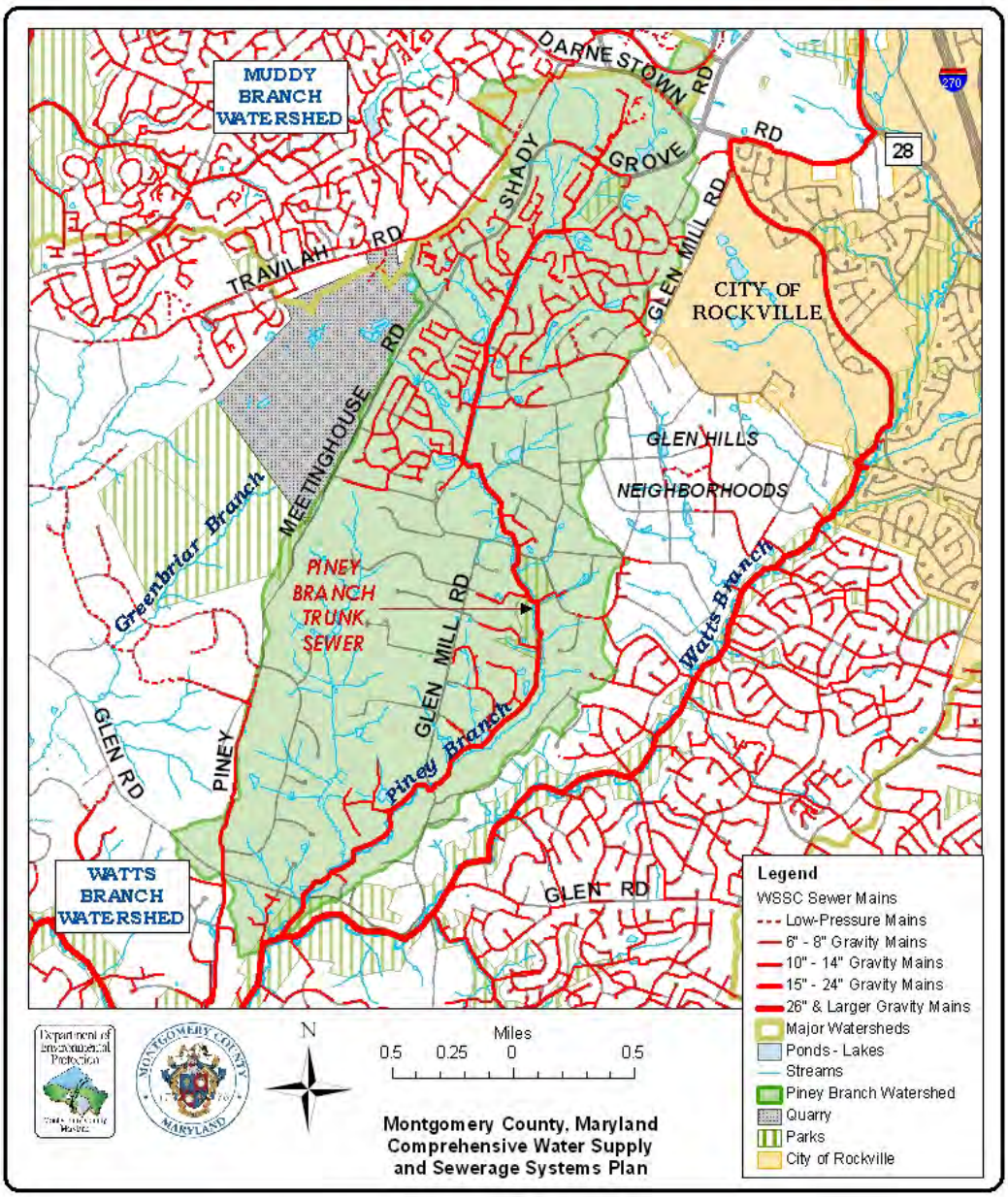
This restricted access policy was recently reexamined in the context of interrelated land use, zoning, and sewer service recommendations in the 2002 Potomac Subregion Master Plan; the following conditions reflect the policy changes recommended by the new master plan. In order to be eligible for community sewer service, properties within the Piney Branch watershed must satisfy at least one of the following six conditions:

- **Master Plan Sewer Staging:** Properties designated as Sewer Stages 1 or II in the 1980 Potomac Subregion Master Plan.
- **Trunk Sewer Right-of-Way:** Properties that the Piney Branch Trunk Sewer right-of-way either traverses or abuts, including properties adjacent to and commonly owned with these abutted or traversed properties as of December 3, 1991,
- **Prior Sewer Category Approvals:** Properties with approval or conditional approval for sewer categories S-1 or S-3 as of December 3, 1991,
- **Public Health Problems:** Properties with documented public health problems resulting from failed septic systems, and properties included within a Council-designated special sewer service area, where the provision of public sewer service is logical, economical, and environmentally acceptable,
- **Abutting Sewer Mains:** Properties that abut existing or approved sewer mains and which satisfy the policy requirements for Section II.G.3.: Community Service for Properties Abutting Community System Mains – Single Hookups for Only One Property. Applicants shall not use the provision of a single sewer hookup to support subdivision or resubdivision of these properties into more than one lot. (This condition does not restrict sewer service provided to properties satisfying condition ii., preceding.)
- **Cluster Development:** Properties zoned RE-2C located in the southeast corner of the intersection of Boswell Lane and Piney Meetinghouse Road which develop using the cluster method.

All other properties within the Piney Branch watershed are restricted from community sewer service, whether from the Piney Branch sewerage system or from other adjacent sewerage systems.

Figure C-11: Piney Branch Watershed and Restricted Sewer Service Area

Figure C-11 shows the Piney Branch subwatershed and special protection area within the Watts Branch watershed. The provision of community sewer service in the subwatershed area is directed in the Plan by the Piney Branch restricted sewer service policy.



Developers seeking to subdivide parcels into building lots using community sewer service in the Piney Branch subwatershed are required to record, as a covenant running with the properties, the Piney Branch Sewer Agreement Recommendations as a condition for the approval of sewer categories S-1 or S-3. Properties established prior to 1988, and for which only a single sewer connection is sought, are exempt from this requirement. Contact DEP staff (see Appendix D) for copies of the draft covenant and the required recommendations.

II.M.: POTOMAC PERIPHERAL SEWER SERVICE POLICY

Special Community Sewer Service Policy: Recommended by the 2002 Potomac Subregion Master Plan

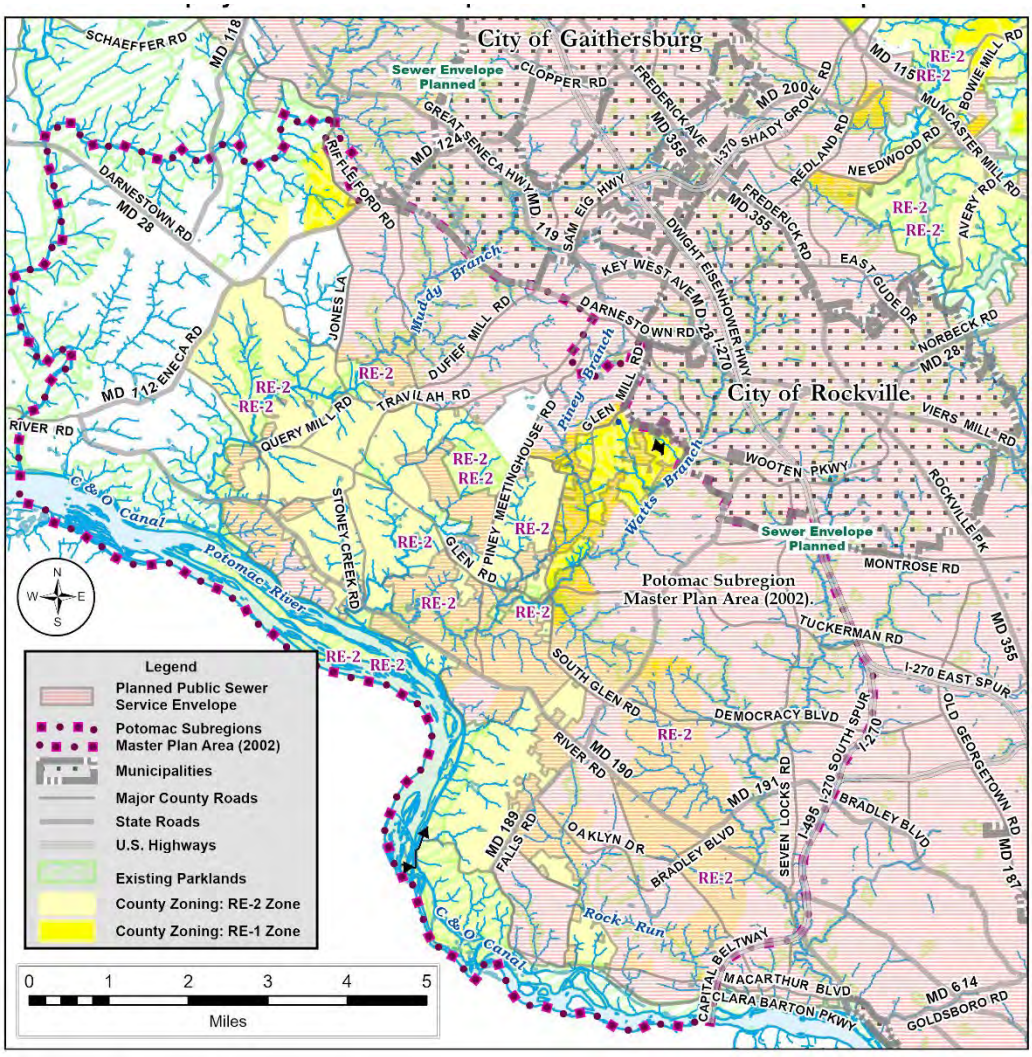
Subject Area: Properties zoned RE-1 or RE-2 at the edge or "periphery" of the master plan's recommended community sewer service envelope

Service Recommendation & Comments: The master plan's recommendations concerning for community sewer service properties zoned for rural estate development (RE-1 and RE-2) depart from those in the 1980 master plan. The previous master plan had allowed for the consideration of sewer service for rural estate zones. The 2002 master plan follows in line with the Water and Sewer Plan's general service policies for rural estate zones. However, the new master plan also recognizes that before 2002, the approval and provision of community sewer service within these zones occurred on a case-by-case basis, resulting in an irregular sewer service envelope. The master plan recommends that RE-1- and RE-2-zoned properties located at the edge or periphery of the recommended community sewer envelope may be *considered* for community sewer service on a case-by-case basis. In such cases:

- The property under consideration must abut or confront another property within the master plan's designated sewer service envelope.
- The extension of community sewer service is intended to follow existing public rights-of-way and must not affect streams, stream valley buffers, or other environmentally-sensitive areas.

Figure C-12: Potomac Area Peripheral Sewer Service Policy and RE-1 and RE-1 Zones

Figure C-12 shows the planned community sewer envelope within the Potomac Master Plan area and related areas zoned RE-1 and RE-2.

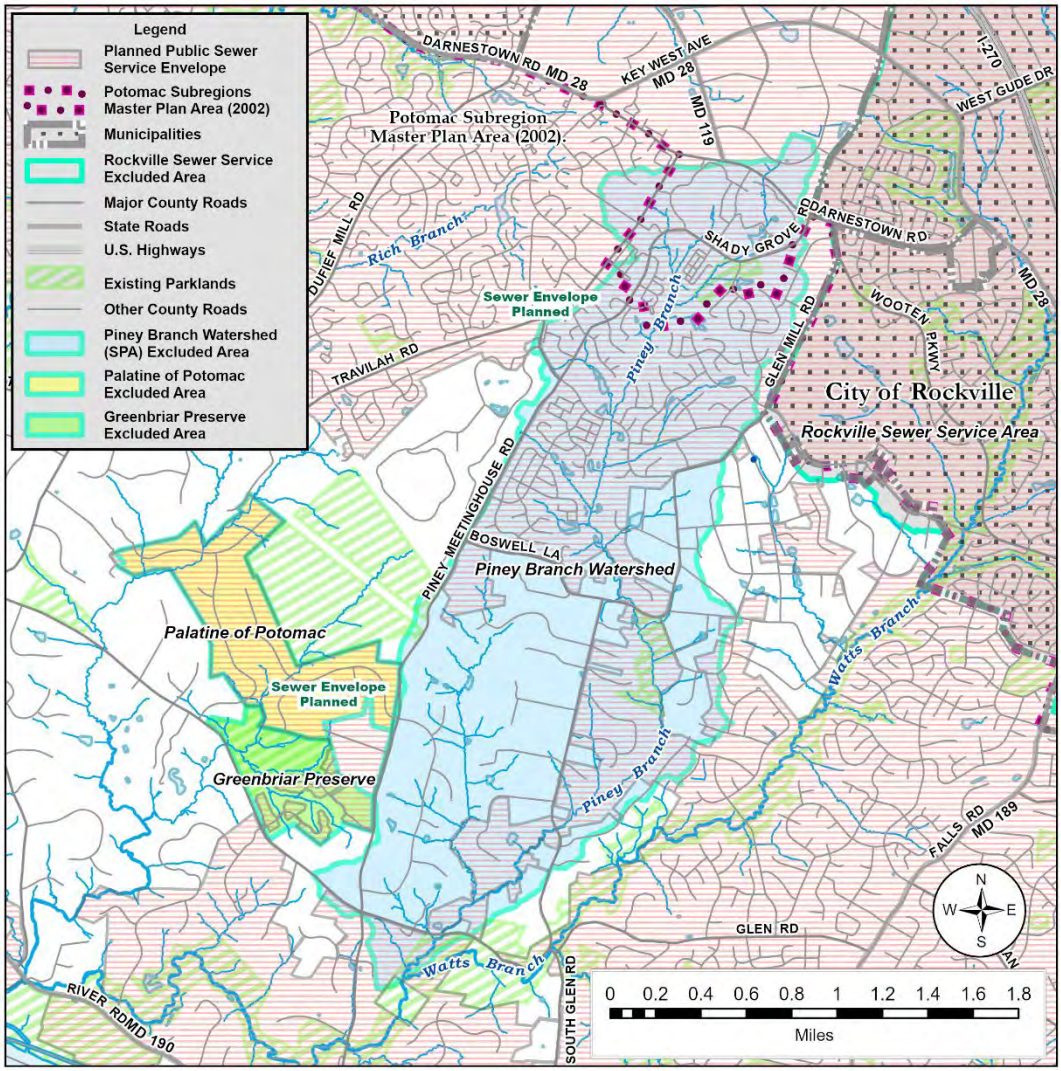


In addition to the preceding essential requirements, several years of experience implementing this policy have resulted in the acceptance of guidelines that further refine the evaluation of and recommendations for potential cases.

- Properties that confront the sewer envelope across broad public rights-of-way should also be in relatively close proximity to other properties approved for sewer service on their own side of that right-of-way.
- The selection of sewer main extensions, wherever possible, should minimize the number of properties abutting new sewer main extensions

Figure C-13: Potomac Area Peripheral Sewer Service Policy Exclusion Areas

Figure C-13 shows areas that cannot be used as a basis for application of the Potomac peripheral sewer service policy.



Note that the 2002 master plan specifically recommends excluding properties within or at the edge of the following neighborhoods from the use of this policy (see Figure C-13):

- The Piney Branch subwatershed
- The Palatine of Potomac neighborhood
- The Greenbriar Preserve neighborhoods.
- The City of Rockville Community Sewer Service Area

The preceding exclusion areas previously included the Glen Hills neighborhoods. The 2002 master plan recommended reconsideration of this exclusion following the completion of the Glen Hills Area Sanitary Study. However, the recommendations provided with the study did not address this policy. The 2017 Water and Sewer

Plan update removes the Glen Hills area exclusion, except for those properties at the periphery of the planned sewer envelope within the Piney Brach watershed.

II.N. RIVERWOOD DRIVE

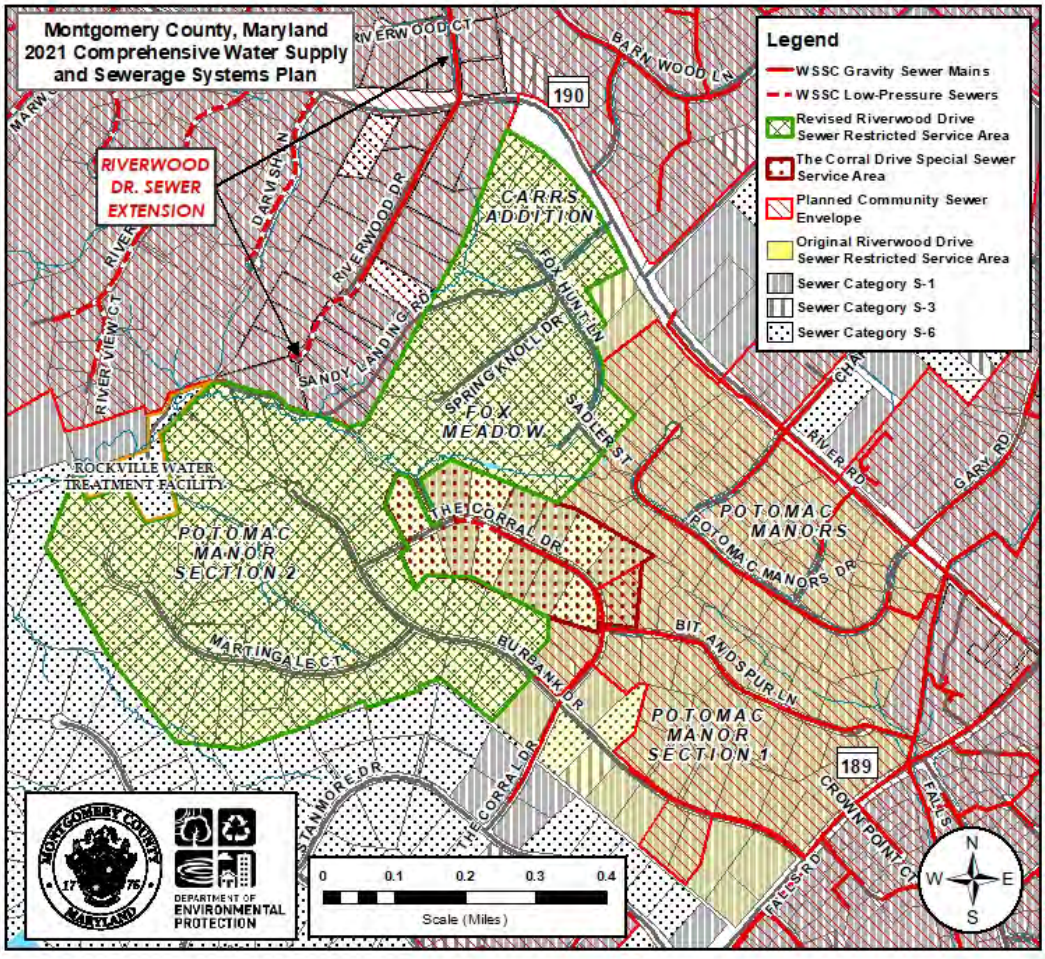
Restricted Sewer Service Area: Established by Council Resolution 13-1205 (3/10/98)

Subject Area: Fox Meadow, Carrs Addition, and Potomac Manor Section 2 subdivisions.

Service Recommendation & Comments: In March 1998 under CR 13-1205, the County Council approved the extension of community sewer service to properties located along Riverwood Drive south of River Road in Potomac (see Figure C-14). In approving this service, the Council restricted the number of sewer hookups allowed for the Kitchen Property located at the southern end of the street, and further restricted the sewer main extension from serving properties in nearby neighborhoods in order to limit the extension of sewer service in the areas zoned for two-acre development south of River Road.

Figure C-14: Riverwood Drive Sewer Restricted Service Area

Figure C-14 shows a restricted sewer service area southwest of River Rd. and includes the neighborhoods of Carrs addition, Fox Madow, and parts of Potomac Manor. These areas cannot receive community sewer service from either the sewer main extension along Riverwood Dr. or by extensions from that sewer main.



DEP's review of this restricted sewer service area originally established under CR13-1205 revealed that it is more extensive than is needed to limit sewer service from the Riverwood Dr. sewer main extension south of River Rd. Much of the original restricted service area already has community sewer service. Except where community service is required to relieve public health problems, the Riverwood Drive sewer main, and potential future extensions from that main, are restricted from serving the following subdivisions: Fox Meadow, Carrs Addition, and part of Potomac Manor Section 2 as shown on Figure C-14.

II.O.: SANDY SPRING AND ASHTON AREA

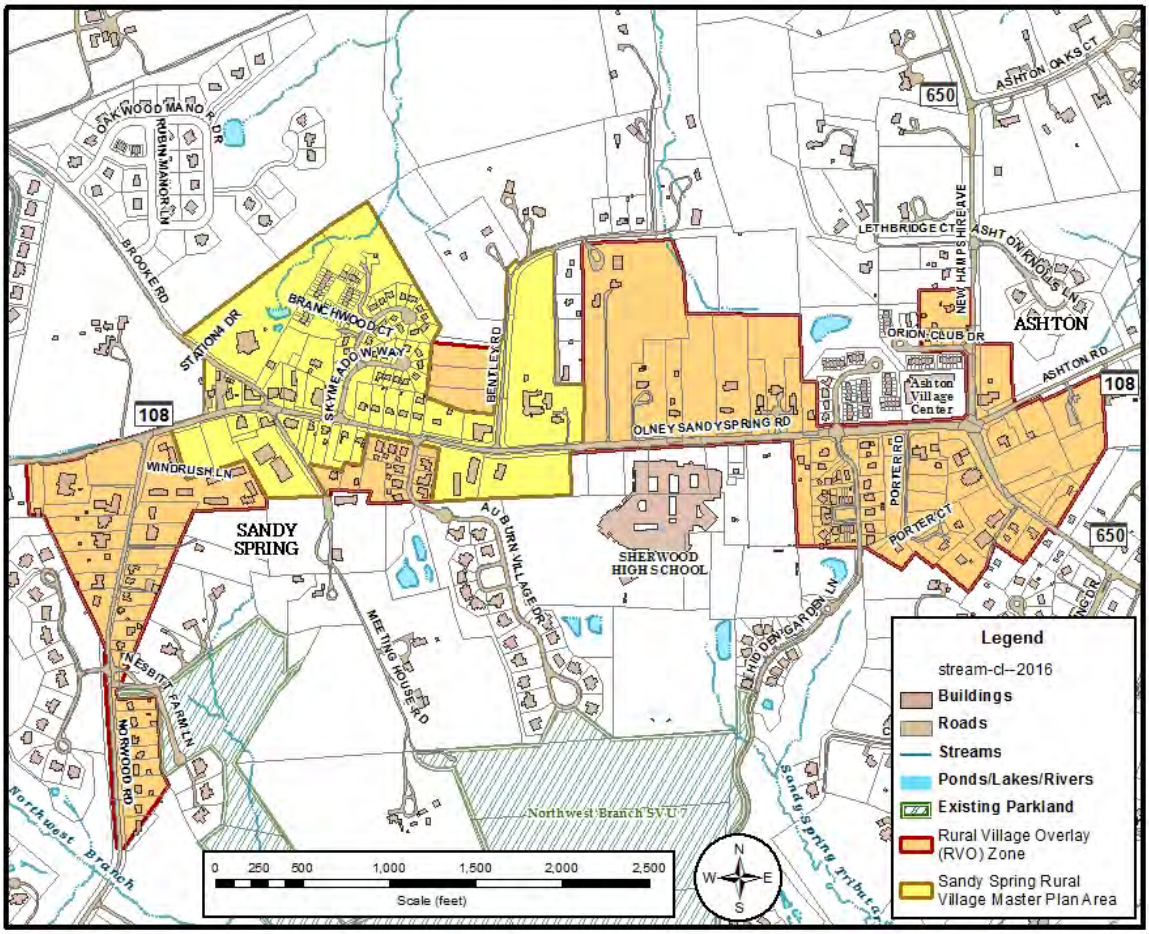
Rural Village Overlay (RVO) Zone Special Community Water and Sewer Service Area: Recommended by the 1998 Sandy Spring – Ashton Master Plan.

Subject Area: Sandy Spring and Ashton along MD Route 108

Service Recommendation & Comments: The RVO Zone is a floating zone applied to specific development projects in the Sandy Spring and Ashton areas to improve and provide for more flexible site design and to provide for smaller lots without increasing density. Base zoning under the floating zone varies, and not all have zoning suitable for community service. (For example, RC-zoned properties are not usually eligible for community sewer service.) However, the master plan calls for the provision of community water and sewer service to support development using the RVO Zone standards. Service area changes in some cases will need to be conditioned and restricted on the use of the RVO Zone standards. (See Figure C-15.)

Figure C-15: Sandy Spring & Ashton Area

Figure C-15 illustrates the recommended community sewer service area in the communities of Sandy Spring and Ashton.



Sandy Spring Rural Village Special Community Water and Sewer Service Area: Recommended by the 2015 Sandy Spring Rural Village Master Plan.

Subject Area: Sandy Spring Rural Village Master Plan area

Service Recommendation & Comments: The 2015 master plan update for Sandy Spring reconfirms the water and sewer service recommendations established by the previous 1998 master plan. Specifically, the 2015 master plan recommends, “Provide [community] water and sewer to commercial, mixed commercial/residential and residential uses within the Plan area.” The 2015 master plan supersedes the previous 1997 master plan, and therefore, both special community service areas are shown on the following figure, C-15.

II.P.: SOUTHEAST QUADRANT OF OLNEY

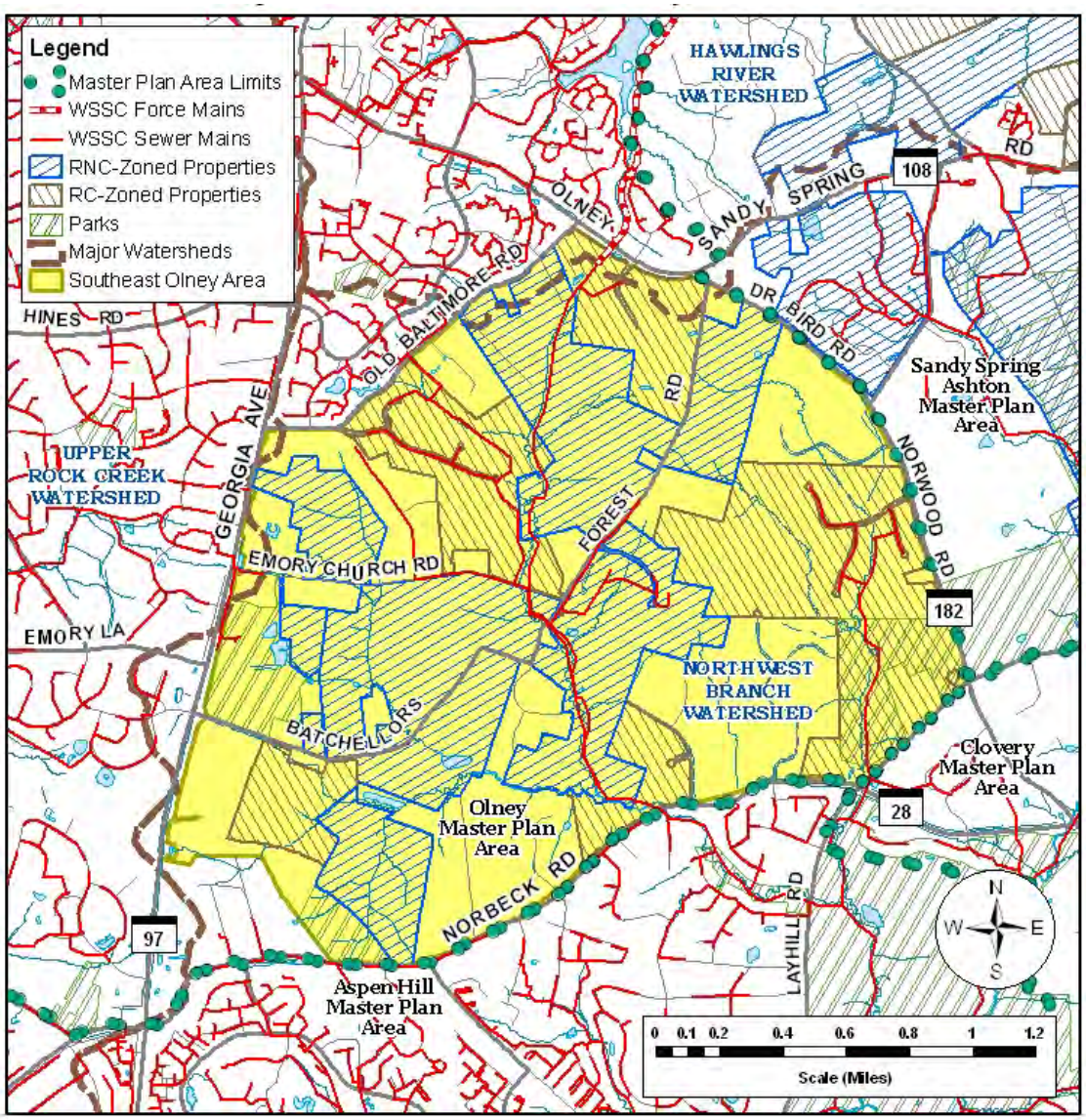
Restricted Community Sewer Service Area: Recommended by the 2005 Olney Master Plan

Subject Area: Bounded by:

- Olney Sandy Spring Rd. (Rte. 108) to the north
- Norwood Rd. and Dr. Bird Rd. to the east
- Norbeck Rd. (MD 28) to the south
- Georgia Ave. (MD 97) and Old Baltimore Rd. to the west

Figure C-15: Southeast Quadrant of Olney

Figure C-15 shows the area referred to as "Southeast Olney" in the Water and Sewer Plan. Within this area certain areas zoned RC and RNC are recommend for community sewer service by the Olney Master Plan.



Service Recommendation & Comments: The master plan recommends community water and sewer service for certain properties zoned Rural Neighborhood Cluster (RNC) located in this area of Olney. However, the master plan emphasizes the need to avoid the construction of new sewer main extensions along undisturbed tributaries of Northwest Branch. The RNC-zoned sites, and the areas intended for optional-method cluster development, were selected in part to allow for optimizing the use of gravity sewer service extensions to existing sewer mains while protecting stream valleys.

Under the 1980 master plan, properties in this area could receive community sewer service only if they were rezoned (as part of the Olney sectional zoning map amendment) from RE-2 to Rural Cluster (RC) and if projects used the RC cluster development option. To allow other properties to use this option, the Council created the Low-Density Rural Cluster (LDRC) Zone, a floating zone that could be applied to specific properties. The Council removed this recommendation from the 2005 master plan and rezoned to RC the few properties previously zoned LDRC.

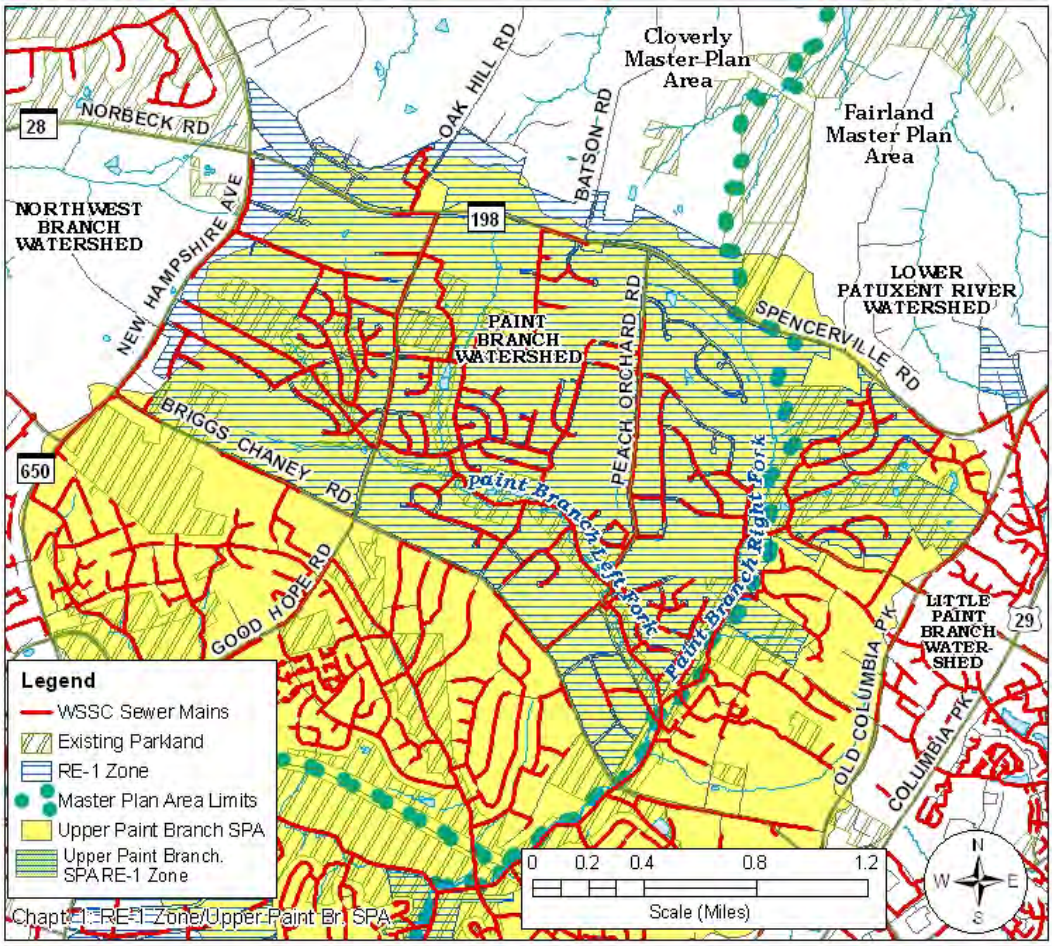
II.Q.: UPPER PAINT BRANCH SPECIAL PROTECTION AREA

Upper Paint Branch SPA Sewer Service Area: Recommended by the 1997 Cloverly and 1997 Fairland Master Plans

Subject Area: Areas zoned RE-1 located within the Upper Paint Branch Special Protection Area/Environmental Overlay Zone (See Figure C-16).

Figure C-16: Upper Paint Branch Special Protection Area

Figure C-16 shows the areas zoned RE-1 within the Upper Paint Branch special protection area (SPA). There are specific conditions in this area required for the provision of community sewer service. Refer to the accompanying text.



Service Recommendation & Comments – Cloverly Master Plan: The master plan recommends that community sewer service may be considered where logical and economical, and where the provision of community service provides an environmental benefit over development occurring using on-site septic systems. This condition is usually evaluated as part of the subdivision plan review.

Service Recommendation & Comments – Fairland Master Plan: The master plan recommends that community sewer service may be considered where logical, economical, and environmentally acceptable.

Appendix D

LOCAL, MUNICIPAL, STATE, AND REGIONAL AGENCIES

Appendix D provides information on contacting many of the local, state and regional agencies involved in Montgomery County's water and sewer planning process, as cited throughout the chapters of this Plan.

Local, Municipal, State, and Regional Agencies

MONTGOMERY COUNTY AGENCIES

Department of Environmental Protection (DEP)

Watershed Restoration Division, Mapping and Planning Section
Water Supply and Wastewater Unit

Contact Information

Web: www.montgomerycountymd.gov/dep
Phone **311** (From within Montgomery County) or **240-777-0311** (From outside the county)
fax 240-777-7715
Address: 2425 Reedie Drive, Fourth Floor, Wheaton, Maryland 20902

Department of Permitting Services (DPS)

Division of Land Development
Well and Septic Section
WSSC Systems Development Charge (SDC) Exemptions

Contact Information

Web: www.montgomerycountymd.gov/dps
Phone: **311** (From within Montgomery County) or **240-777-0311** (From outside the county)
fax: 240-777-6314
Address: 2425 Reedie Drive, Seventh Floor, Wheaton, Maryland 20902

BI-COUNTY AGENCIES (Montgomery and Prince George's Counties)

Maryland - National Capital Park and Planning Commission (M-NCPPC) - Planning Department

Contact Information

Web: www.montgomeryplanning.org
Address Montgomery Regional Office
2425 Reedie Drive, Fourteenth Floor, Wheaton, MD 20902

M-NCPPC: Communications & Engagement

Contact Information

Phone: 301-495-2180

M-NCPPC: Intake and Regulatory Coordination

Contact Information

Phone: 301-495-4550

M-NCPPC: West-county Planning

Contact Information

Phone: 301-495-4580
Email cashielle.nelson@montgomeryplanning.org

M-NCPPC: East-county Planning

Contact Information

Phone: 301-495-4630
Email: cashielle.nelson@montgomeryplanning.org

M-NCPPC: Upcounty Planning

Contact Information

Phone: 301-495-4645
Email: Dominique.Costley@montgomeryplanning.org

M-NCPPC: Information Counter

Contact Information

Phone: 301-495-4610
Email: mcp-infocounter@mncppc-mc.org

Washington Suburban Sanitary Commission (WSSC Water)

Contact Information

Web: www.wsscwater.com
Address: Richard G. Hocevar Building
14501 Sweitzer Lane
Laurel, Maryland 20707

WSSC Water: Water and Sewer Emergencies (24 hours)

Contact Information

Phone: **301-206-4002**
Email: emergencycallcenter@wsscwater.com

WSSC Water: Contact Center/Customer Relations

Contact Information

Phone: 301-206-4001
301-206-WSSC (9772)
Email: custserv@wsscwater.com

WSSC Water: Development Services Division

Contact Information

Phone: 301-206-8650
E-mail: #DSGIntake@wsscwater.com

WSSC Water: Land Services Section

Contact Information

Web: Land Services Section | WSSC Water
Phone: 301-206-8785
Email Barbara.Dillman@wsscwater.com

WSSC Water: Permit Services Section

Contact Information

Web: Permit Applications - Permit Services | WSSC Water
Phone: 301-206-4003
Email: onestopshop@wsscwater.com

WSSC Water: Planning Division

Contact Information

Phone: 301-206-8815
Email: thomas.hilton@wsscwater.com

MUNICIPAL AGENCIES (Montgomery County)

City of Rockville

Contact Information

Web: www.rockvillemd.gov/
Address: Rockville City Hall
111 Maryland Avenue, First Floor
Rockville, Maryland 20850

City of Rockville: Department of Public Works

Contact Information

Phone: 240-314-8500
email: pw@rockvillemd.gov

City of Rockville: Public Works Utility Emergencies (24 Hours)

Contact Information

Phone: **240-314-8567**

City of Rockville: Community Planning and Development Services Department

Contact Information

Phone: 240-314-8200
email: cpds@rockvillemd.gov

Town of Poolesville

Contact Information

Web: www.poolesvillemd.gov/
Phone: 301-428-8927
Fax: 301-286-3359
email: townnhall@poolesvillemd.gov
Address: P.O. Box 158
Poolesville, Maryland 20837
Town Hall: 196721 Beall Street

Town of Poolesville: Water and Sewer Emergencies

Contact Information

Phone: 240-286-3389 or 240-286-3359

MARYLAND STATE AGENCIES

Maryland Department of the Environment (MDE)

MDE Water and Science Administration

Contact Information

Web: www.mde.state.md.us
Phone: 410-537-3000

Toll Free: 866-633-4686
Address: 1800 Washington Boulevard
Baltimore, Maryland 21230

MDE Water/Sewer Pollution Emergencies

Contact Information

Phone: 866-633-4686 (866-MDE-GOTO)

Maryland Department of Planning (MDP)

Contact Information

Web: www.planning.maryland.gov
Phone: 410-767-4500
Email: DLMDP-Webmaster_MDP@maryland.gov
Address: 301 West Preston Street, Suite 1101
Baltimore, Maryland 21201

Maryland Department of Natural Resources (DNR)

Contact Information

Web: www.dnr.maryland.gov
Phone: 410-974-3846
Toll Free: 877-620 8367 (877-620-8DNR)
Address: Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401-2397

REGIONAL AGENCIES

District of Columbia Water and Sewer Authority (DC WASA)

Contact Information

Web: www.dcwater.com
Phone: 202-287-2000
Fax: 202-787-2333
Email: info@dcwater.com
Address: 5000 Overlook Avenue, SW
Washington, DC 20032

Metropolitan Washington Council of Governments (MWCOG)

Contact Information

Web: www.mwcog.org
Phone: 202-962-3200
Fax: 202-962-3201
Address: 777 North Capitol Street, NE
Washington, DC 20002

Interstate Commission on the Potomac River Basin (ICPRB)

Contact Information

Web: www.potomacriver.org
Phone: 301-984-1908
Address: 30 West Gude Drive, Suite
Rockville, Maryland 20850

Appendix E

MAJOR PUBLIC FACILITIES AND INSTITUTIONS

Table E-1. Montgomery County Government Public Facilities and Institutions

NAME	ADDRESS	CITY
Agricultural Services	18410 Muncaster Rd	Derwood
Automotive Equipment Section	1283 Seven Locks Rd	Rockville
Bethesda Depot/AES	1283 Seven Locks Rd	Rockville
Board of Elections	18753 N Frederick Ave	Gaithersburg
Board of Investment Trustees	11 N Washington St	Rockville
Carver Educational Services Center	850 Hungerford Dr	Rockville
Colesville Depot	14335 Cape May Rd	Colesville
Commuter Services	8401 Colesville Rd	Silver Spring
Council Office Building	100 Maryland Ave	Rockville
Damascus Depot	26149 Ridge Rd	Damascus
Dedrick Annex	1400 Spring St	Silver Spring
Department of Economic Development	111 Rockville Pik	Rockville
Department of Liquor Control	201 Edison Park Dr	Gaithersburg
Department of Transportation	101 Orchard Ridge Dr	Gaithersburg
Dickerson Composting Facility	21210 Martinsburg Rd	Dickerson
District Court of MD - Rockville	191 E Jefferson St	Rockville
District Court of MD - Silver Spring	8552 Second Ave	Silver Spring
DREAMS Records Center	8532 Anniversary Cir	Gaithersburg
Edward U Taylor Science Materials Center	19501 White Ground Rd	Boyds
Equipment Maint/Transit Op Ctr (EMTOC)	16624 Crabbs Branch Way	Rockville
Executive Office Building	101 Monroe St	Rockville
Facilities Customer Services	1301 Seven Locks Rd	Rockville
Family Justice Center	600 Jefferson Plz	Rockville
Fire and Explosives Investigations	8663 Grovemont Cir	Rockville
Fleet Management Division	16630 Crabbs Branch Way	Rockville
Gaithersburg Depot	16640 Crabbs Branch Way	Rockville
Gaithersburg Depot	17000 Crabbs Branch Way	Rockville
Gaithersburg Warehouse	8516 Anniversary Cir	Gaithersburg
Gray Courthouse	27 Courhouse Sq	Rockville
Housing Opportunities Commission	10400 Detrick Ave	Kensington
Human Resources	2301 Research Blv	Rockville
Materials Management	2 Metropolitan Ct	Gaithersburgh
MC Airpark Maintenance	7940 Airpark Rd	Gaithersburg
MC Animal Shelter	14645 Rothgeb Dr	Derwood
MC Correctional Facility	22880 Whelan La	Boyds
MC Detention Center	1307 Seven Locks Rd	Rockville
MCE Federal Credit Union	20 Courthouse Sq	Rockville
MCFRS Central Maintenance Facility	14935 Southlawn La	Rockville
MCFRS Warehouse	701 Dover Rd	Rockville
MCG	21 Maryland Ave	Rockville
MCG	51 Monroe St	Rockville
MCPS Bethesda Depot	10901 Westlake Dr	Rockville

Table E-1. Montgomery County Government Public Facilities and Institutions (Continued)

NAME	ADDRESS	CITY
MCPS Center for Technology Innovation	4 Choke Cherry Rd	Rockville
MCPS Clarksburg Maintenance Depot	13100 Shawnee La	Clarksburg
MCPS Concord Center	7210 Hidden Creek Rd	Bethesda
MCPS Department of Materials Management	580 N Stonestreet Ave	Rockville
MCPS Emory Grove Center	18100 Washington Grove La	Gaithersburg
MCPS Food Services	16644 Crabbs Branch Way	Rockville
MCPS Lincoln Center	595 N Stonestreet Ave	Rockville
MCPS Metro Park North Office	7361 Calhoun Pl	Rockville
MCPS Oakgrove Building	2096 Gaither Rd	Rockville
MCPS Office of Staff Development	20010 Century Blv	Germantown
MCPS Professional Library	9636 Gudelsky Dr	Rockville
MCPS Randolph Maintenance Depot	1801 Randolph Rd	White Oak
MCPS Rocking Horse Road Center	4910 Macon Rd	Rockville
MCPS Shady Grove Maintenance Depot	16651 Crabbs Branch Way	Rockville
MCPS Spring Mill Offices	11721 Kemp Mill Rd	Silver Spring
MCPS West Farm Transportation Depot	11920 Bournfield Way	Silver Spring
Montgomery County Circuit Court	50 Maryland Ave	Rockville
Nicholson Court Small Transit Shop	4925 NIcholson Ct	Kensington
Oaks Landfill Leachate Treatment Facility	20500 Zion Rd	Laytonsville
Office of the Public Defender	199 E Montgomery Ave	Rockville
Park and Planning Commission	8787 Georgia Ave	Silver Spring
Park and Planning Hillandale Office	10611 New Hampshire Ave	Hillandale
Parking Meter Maintenance	8110 Fenton St	Silver Spring
Poolesville Depot	19200 Jerusalem Rd	Poolesville
Pre-Release and Re-Entry Services	11651 Nebel St	Rockville
Pre-Trial Services	12500 Ardennes Ave	Rockville
Property Management	10400 Connecticut Ave	Kensington
Public Safety Headquarters	100 Edison Park Dr	Gaithersburg
Radio Communications Services	16647 Crabbs Branch Way	Rockville
Real Estate Development	3930 Knowles Ave	Kensington
Recreation Department	4010 Randoph Rd	Silver Spring
Recycling Center	16105 Frederick Rd	Derwood
Red Brick Courthouse	29 Courthouse Sq	Rockville
Resource Recovery Facility	21204 Martinsburg Rd	Dickerson
Rockville Center	255 Rockville Pik	Rockville
SCBA	8653 Grovemont Cir	Rockville
Shady Grove Transfer Station	16101 Frederick Rd	Derwood
Silver Spring Depot/BMF Transit Shop	8710 Brookville Rd	Silver Spring
USAR Warehouse	12100 Darnestown Rd	North Potomac
MC Correctional Facility	22880 Whelan La	Boyds
MC Detention Center	1307 Seven Locks Rd	Rockville

Table E-2. Federal Government Facilities and Institutions

NAME	ADDRESS	CITY
Adelphi Laboratory Center (Army Research Lab)	2800 Powder Mill Rd	Adelphi
Consumer Product Safety Commission	4340 East West Hwy	Bethesda
Dalecarlia Water Treatment Plant	5900 MacArthur Blv	Washington
Department of Energy	19901 Germantown Rd	Germantown
FDA Center for Biologics Evaluation and Research	1401 Rockville Pik	Rockville
FDA Center for Devices and Radiological Health	1350 Piccard Dr	Rockville
FDA Center for Veterinary Medicine	7519 Standish Pl	Rockville
FDA Office of Combination Products	15800 Crabbs Branch Way	Rockville
FDA Office of Criminal Investigations	7500 Standish Pl	Rockville
FDA Office of Science and Engineering Labs	10903 New Hampshire Ave	White Oak
Foundation for Adv Ed in the Sciences	9101 Old Georgetown Rd	Bethesda
HHS Agency for Healthcare Research and Quality	540 Gaither Rd	Rockville
HHS Food And Drug Administration	5600 Fishers La	Rockville
HHS Indian Health Service	801 Thompson Ave	Rockville
HHS Subst Abuse & Mental Health Services	1 Choke Cherry Rd	Rockville
Intelligence Community Campus - Bethesda	4600 Sangamore Rd	Bethesda
Internal Revenue Service	11510 Georgia Ave	Wheaton
Nat Envrmtl Satellite Data and Info Service	1335 East West Hwy	Silver Spring
Nat Inst on Alcohol Abuse and Alcoholism	5635 Fishers La	Rockville
National Cancer Institute	6116 Executive Blv	Bethesda
National Center for Research Resources	6701 Democracy Blv	Bethesda
National Institues of Health	9000 Rockville Pik	Bethesda
National Institute of Standards and Technology	100 Bureau Dr	Gaithersburg
National Oceanic and Atmospheric Admin	1315 East West Hwy	Silver Spring
National Weather Service	1325 East West Hwy	Silver Spring
Naval Surface Warfare Center Carderock	9500 MacArthur Blv	Glen Echo
NIH Center for Information Technology	10401 Fernwood Rd	Bethesda
NIH Extramural Outreach and Info Resources	6701 Rockledge Dr	Bethesda
NIH Neuroscience Center	6001 Executive Blv	Bethesda
NIH Two Democracy Plaza Offices	6707 Democracy Blv	Bethesda
NOAA National Ocean Service	1305 East West Hwy	Silver Spring
NOAA Office of Marine and Aviation Ops	8403 Colesville Rd	Silver Spring
Ntl Inst of Allergy and Infectious Diseases	6610 Rockledge Dr	Bethesda
Nuclear Regulatory Commission	11545 Rockville Pik	Rockville
Public Health Service - Commissioned Corps	1101 Wootton Pkw	Rockville
Uniformed Services University of Health Sciences	4301 Jones Bridge Rd	Bethesda
US Army Garrison Forest Glen	2460 Linden La	Silver Spring
USDA Derwood Service Center	18410 Muncaster Rd	Derwood
Walter Reed National MIlitary Medical Center	8901 Wisconsin Ave	Bethesda
Washington Aqueduct Little Falls Pump Station	6201 Clara Barton Pkw	Glen Echo

Table E-3. Montgomery County Elementary Schools

NAME	ADDRESS	CITY
Arcola ES	1820 Franwall Ave	Silver Spring
Ashburton ES	6314 Lone Oak Dr	Bethesda
Bannockburn ES	6520 Dalroy La	Bethesda
Beall ES	451 Beall Ave	Rockville
Bel Pre ES	13801 Rippling Brook Dr	Silver Spring
Bells Mill ES	8225 Bells Mill Rd	Potomac
Belmont ES	19528 Olney Mill Rd	Olney
Bethesda ES	7600 Arlington Rd	Bethesda
Beverly Farms ES	8501 Post Oak Rd	Potomac
Bradley Hills ES	8701 Hartsdale Ave	Bethesda
Brooke Grove ES	2700 Spartan Rd	Olney
Brookhaven ES	4610 Renn St	Rockville
Brown Station ES	851 Quince Orchard Blv	Gaithersburg
Burning Tree ES	7900 Beech Tree Rd	Bethesda
Burnt Mills ES	11211 Childs St	Silver Spring
Burtonsville ES	15516 Old Columbia Pik	Burtonsville
Candlewood ES	7210 Osprey Dr	Rockville
Cannon Road ES	901 Cannon Rd	Silver Spring
Capt James E Daly ES	20301 Brandermill Dr	Germantown
Carderock Springs ES	7401 Persimmon Tree La	Bethesda
Cashell ES	17101 Cashell Rd	Rockville
Cedar Grove ES	24001 Ridge Rd	Germantown
Chevy Chase ES	4015 Rosemary St	Chevy Chase
Clarksburg ES	13530 Redgrave Pl	Clarksburg
Clearspring ES	9930 Moyer Rd	Damascus
Clopper Mill ES	18501 Cinnamon Dr	Germantown
Cloverly ES	800 Briggs Chaney Rd	Silver Spring
Cold Spring ES	9201 Falls Chapel Way	Potomac
College Gardens ES	1700 Yale Pl	Rockville
Cresthaven ES	1234 Cresthaven Dr	Silver Spring
Damascus ES	10201 Bethesda Church Rd	Damascus
Darnestown ES	15030 Turkey Foot Rd	Gaithersburg
Diamond ES	4 Marquis Dr	Gaithersburg
Dr Charles R Drew ES	1200 Swingingdale Dr	Silver Spring

Table E-3. Montgomery County Elementary Schools (Continued).

NAME	ADDRESS	CITY
Dr Sally K Ride ES	21301 Seneca Crossing Dr	Germantown
Dufief ES	15001 DuFief Dr	Gaithersburg
East Silver Spring ES	631 Silver Spring Ave	Silver Spring
Fairland ES	14315 Fairdale Rd	Silver Spring
Fallsmead ES	1800 Greenplace Ter	Rockville
Farmland ES	7000 Old Gate Rd	Rockville
Fields Road ES	1 School Dr	Gaithersburg
Flora M Singer ES	2600 Hayden Dr	Silver Spring
Flower Hill ES	18425 Flower Hill Way	Gaithersburg
Flower Valley ES	4615 Sunflower Dr	Rockville
Forest Knolls ES	10830 Eastwood Ave	Silver Spring
Fox Chapel ES	19315 Archdale Rd	Germantown
Gaithersburg ES	35 N Summit Ave	Gaithersburg
Galway ES	12612 Galway Dr	Silver Spring
Garrett Park ES	4810 Oxford St	Garrett Park
Georgian Forest ES	3100 Regina Dr	Silver Spring
Germantown ES	19110 Liberty Mill Road	Germantown
Glen Haven ES	10900 Inwood Ave	Silver Spring
Glenallan ES	12520 Heurich Rd	Silver Spring
Goshen ES	8701 Warfield Rd	Gaithersburg
Great Seneca Creek ES	13010 Dairymaid Dr	Germantown
Greencastle ES	13611 Robey Rd	Silver Spring
Greenwood ES	3336 Gold Mine Rd	Brookeville
Harmony Hills ES	13407 Lydia St	Silver Spring
Highland ES	3100 Medway St	Silver Spring
Highland View ES	9010 Providence Ave	Silver Spring
Jackson Road ES	900 Jackson Rd	Silver Spring
JoAnn Leleck ES	710 Beacon Rd	Silver Spring
Jones Lane ES	15110 Jones La	Gaithersburg
Judith A Resnik ES	7301 Hadley Farms Dr	Gaithersburg
Kemp Mill ES	411 Sisson St	Silver Spring
Kensington Parkwood ES	4710 Saul Rd	Kensington
Lake Seneca ES	13600 Wanegarden Dr	Germantown
Lakewood ES	2534 Lindley Ter	Rockville

Table E-3. Montgomery County Elementary Schools (Continued).

NAME	ADDRESS	CITY
Laytonsville ES	21401 Laytonsville Rd	Laytonsville
Little Bennett ES	23930 Burdette Forest Rd	Clarksburg
Lois P Rockwell ES	24555 Cutsail Dr	Damascus
Lucy V Barnsley ES	14516 Nadine Dr	Rockville
Luxmanor ES	6201 Tilden La	Rockville
Maryvale ES	1000 First St	Rockville
Meadow Hall ES	951 Twinbrook Pkwy	Rockville
Mill Creek Towne ES	17700 Park Mill Dr	Rockville
Monocacy ES	18801 Barnesville Rd	Dickerson
Montgomery Knolls ES	807 Daleview Dr	Silver Spring
New Hampshire Estates ES	8720 Carroll Ave	Silver Spring
North Chevy Chase ES	3700 Jones Bridge Rd	Chevy Chase
Oak View ES	400 E Wayne Ave	Silver Spring
Oakland Terrace ES	2720 Plyers Mill Rd	Silver Spring
Olney ES	3401 Queen Mary Dr	Olney
Pine Crest ES	201 Woodmoor Dr	Silver Spring
Piney Branch ES	7510 Maple Ave	Takoma Park
Poolesville ES	19565 Fisher Ave	Poolesville
Potomac ES	10311 River Rd	Potomac
Rachel Carson ES	100 Tschiffely Square Rd	Gaithersburg
Ritchie Park ES	1514 Dunster Rd	Rockville
Rock Creek Forest ES	8330 Grubb Rd	Chevy Chase
Rock Creek Valley ES	5121 Russett Rd	Rockville
Rock View ES	3901 Denfeld Ave	Kensington
Rolling Terrace ES	705 Bayfield St	Takoma Park
Ronald McNair ES	13881 Hopkins Rd	Germantown
Roscoe R Nix ES	1100 Corliss St	Silver Spring
Rosemary Hills ES	2111 Porter Rd	Silver Spring
Rosemont ES	16400 Alden Ave	Gaithersburg
S Christa McAuliffe ES	12500 Wisteria Dr	Germantown
Sargent Shriver ES	12518 Greenly Dr	Silver Spring
Sequoyah ES	17301 Bowie Mill Rd	Derwood
Seven Locks ES	9500 Seven Locks Rd	Bethesda
Sherwood ES	1401 Olney Sandy Spring Rd	Sandy Spring
Sligo Creek ES	500 Schuyler Rd	Silver Spring
Somerset ES	5811 Warwick Pl	Chevy Chase

Table E-3. Montgomery County Elementary Schools (Continued).

NAME	ADDRESS	CITY
South Lake ES	18201 Contour Rd	Gaithersburg
Spark M Matsunaga ES	13902 Bromfield Road	Germantown
Stedwick ES	10631 Stedwick Rd	Montgomery Village
Stone Mill ES	14323 Stonebridge View Dr	North Potomac
Stonegate ES	14811 Notley Rd	Silver Spring
Strathmore ES	3200 Beaverwood La	Silver Spring
Strawberry Knoll ES	18820 Strawberry Knoll Rd	Gaithersburg
Summit Hall ES	101 W Deer Park Rd	Gaithersburg
Takoma Park ES	7511 Holly Ave	Takoma Park
Thurgood Marshall ES	12260 McDonald Chapel Dr	Gaithersburg
Travilah ES	13801 DuFief Mill Rd	North Potomac
Twinbrook ES	5911 Ridgeway Ave	Rockville
Viers Mill ES	11711 Joseph Mill Rd	Silver Spring
Washington Grove ES	8712 Oakmont St	Gaithersburg
Waters Landing ES	13100 Waters Landing Dr	Germantown
Watkins Mill ES	19001 Watkins Mill Rd	Montgomery Village
Wayside ES	10011 Glen Rd	Potomac
Weller Road ES	3301 Weller Rd	Silver Spring
Westbrook ES	5110 Allan Ter	Bethesda
Westover ES	401 Hawkesbury La	Silver Spring
Wheaton Woods ES	4510 Faroe Pl	Rockville
Whetstone ES	19201 Thomas Farm Dr	Gaithersburg
William B Gibbs Jr ES	12601 MIlestone Manor La	Clarksburg
William T Page ES	13400 Tamarack Rd	Silver Spring
Wilson Wims ES	12520 Blue Sky Dr	Clarksburg
Wood Acres ES	5800 Cromwell Dr	Bethesda
Woodfield ES	24200 Woodfield Rd	Gaithersburg
Woodlin ES	2101 Luzerne Ave	Silver Spring
Wyngate ES	9300 Wadsworth Dr	Bethesda

Table E-4. Montgomery County Middle Schools.

NAME	ADDRESS	CITY
A Mario Loiederman MS	12701 Goodhill Rd	Silver Spring
Argyle MS	2400 Bel Pre Rd	Silver Spring
Benjamin Banneker MS	14800 Perrywood Dr	Burtonsville
Briggs Chaney MS	1901 Rainbow Dr	Silver Spring
Cabin John MS	10701 Gainsborough Rd	Potomac
Col E Brooke Lee MS	11800 Monticello Ave	Silver Spring
Earle B. Wood MS	14615 Bauer Dr	Rockville
Eastern MS	300 E University Blv	Silver Spring
Forest Oak MS	651 Saybrooke Oaks Blv	Gaithersburg
Francis Scott Key MS	910 Schindler Dr	Silver Spring
Gaithersburg MS	2 Teachers Way	Gaithersburg
Herbert Hoover MS	8810 Post Oak Rd	Potomac
John Poole MS	17014 Tom Fox Ave	Poolesville
John T Baker MS	25400 Oak Dr	Damascus
Julius West MS	651 Great Falls Rd	Rockville
Kingsview MS	18909 Kingsview Rd	Germantown
Lakelands Park MS	1200 Main St	Gaithersburg
Martin Luther King MS	13737 Wisteria Dr	Germantown
Montgomery Village MS	19300 Watkins Mill Rd	Montgomery Village
Neelsville MS	11700 Neelsville Church Rd	Germantown
Newport Mill MS	11311 Newport Mill Rd	Kensington
North Bethesda MS	8935 Bradmoor Dr	Bethesda
Parkland MS	4610 W Frankfort Dr	Rockville
Redland MS	6505 Muncaster Mill Rd	Rockville
Ridgeview MS	16600 Raven Rock Dr	Gaithersburg
Robert Frost MS	9201 Scott Dr	Rockville
Roberto Clemente MS	18808 Waring Station Rd	Germantown
Rocky Hill MS	22401 Brick Haven Way	Clarksburg
Rosa M Parks MS	19200 Olney Mill Rd	Olney
Shady Grove MS	8100 Midcounty Hwy	Gaithersburg
Silver Spring International MS	313 Wayne Ave	Silver Spring
Sligo MS	1401 Dennis Ave	Silver Spring
Takoma Park MS	7611 Piney Branch Rd	Takoma Park
Thomas W Pyle MS	6311 Wilson La	Bethesda
Tilden MS	11211 Old Georgetown Rd	Rockville
Westland MS	5511 Massachusetts Ave	Bethesda
White Oak MS	12201 New Hampshire Ave	Silver Spring
William H Farquhar MS	16915 Batchellors Forest Rd	Olney

Table E-5. Montgomery County High Schools

NAME	ADDRESS	CITY
Albert Einstein HS	11135 Newport Mill Rd	Kensington
Bethesda-Chevy Chase HS	4301 East West Hwy	Bethesda
Clarksburg HS	22500 Wims Rd	Clarksburg
Col Zadok Magruder HS	5939 Muncaster Mill Rd	Rockville
Damascus HS	25921 Ridge Rd	Damascus
Gaithersburg HS	101 Education Blv	Gaithersburg
James Hubert Blake HS	300 Norwood Rd	Silver Spring
John F Kennedy HS	1901 Randolph Rd	Silver Spring
Montgomery Blair HS	51 E University Blv	Silver Spring
Northwest HS	13501 Richter Farm Rd	Germantown
Northwood HS	919 University Blv W	Silver Spring
Paint Branch HS	14121 Old Columbia Pik	Burtonsville
Poolesville HS	17501 Willard Rd	Poolesville
Quince Orchard HS	15800 Quince Orchard Rd	North Potomac
Richard Montgomery HS	250 Richard Montgomery Dr	Rockville
Rockville HS	2100 Baltimore Rd	Rockville
Seneca Valley HS	19401 Crystal Rock Dr	Germantown
Sherwood HS	300 Olney Sandy Spring Rd	Sandy Spring
Springbrook HS	201 Valleybrook Dr	Silver Spring
Thomas S Wootton HS	2100 Wootton Pkw	Rockville
Walt Whitman HS	7100 Whittier Blv	Bethesda
Walter Johnson HS	6400 Rock Spring Dr	Bethesda
Watkins Mill HS	10301 Apple Ridge Dr	Gaithersburg
Wheaton HS	12601 Dalewood Dr	Wheaton
Winston Churchill HS	11300 Gainsborough Rd	Potomac

Table E-6. Montgomery County Higher Education Facilities and Institutions

Care Xpert Academy	13321 New Hampshire Ave	Silver Spring
Griggs University	12501 Old Columbia Pik	Silver Spring
Johns Hopkins University - Montgomery County	9601 Medical Center Dr	Rockville
Montgomery College - Germantown Campus	20200 Observation Dr	Germantown
Montgomery College - Rockville Campus	51 Mannakee St	Rockville
Montgomery College - Takoma Park	7600 Takoma Ave	Takoma Park
National Labor College George Meany Campus	10000 New Hampshire Ave	Silver Spring
School of Art + Design at Montgomery College	930 King St	Silver Spring
Uniformed Services University	4301 Jones Bridge Rd	Bethesda
University of Maryland - Shady Grove Center	9630 Gudelsky Dr	Rockville
Washington Adventist University	7600 Flower Ave	Takoma Park

Table E-7. Montgomery County Hospitals

NAME	ADDRESS	CITY
Germantown Emergency Center	19731 Germantown Rd	Germantown
Holy Cross Germantown Hospital	19801 Observation Dr	Germantown
Holy Cross Hospital	1500 Forest Glen Rd	Silver Spring
Montgomery General Hospital	18101 Prince Phillip Dr	Olney
National Institue of Health (NIH)	9000 Rockville Pik	Bethesda
Shady Grove Adventist Hospital	9901 Medical Center Dr	Rockville
Suburban Hospital Healthcare System	8600 Old Georgetown Rd	Bethesda
Walter Reed National Military Medical Center	8901 Rockville Pik	Bethesda
Washington Adventist Hospital	7600 Carroll Ave	Takoma Park

Appendix F

Key Changes and Updates to the 2022 – 2031 Montgomery County Comprehensive Water Supply and Sewerage Systems Plan – (The Ten-Year Plan)

Listed below is an overall summary of changes and updates included in the draft 2026-2035 Ten-Year Plan relative to the adopted 2022-2031 Plan.

Chapter 1: OBJECTIVES AND POLICIES

This chapter includes an introduction to the Comprehensive Water Supply and Sewerage Systems Plan, identifying its purpose, legal context, and governance issues. This chapter includes both general and special-condition policies that have been adopted by the County Council for the designation of community water and sewer service areas, which regulate water and sewerage system extensions, connections, and their staging.

The update of Chapter 1 continues a process of reorganization to assist those using the Plan. The preceding changes are largely structural to the Plan, moving sections together with a common theme to provide for clarity, better continuity, and less redundancy. Chapter 1 incorporates text amendments approved by the County since adoption of the prior Plan update. Chapter 1 also provides new information, policy directions, and recommendations, as follows:

- **Updates for General Issues**
  Revised tabular information into straight text to improve reader accessibility.
- **Updates to Plan Goals and Objectives (Section I.A.)**
  Added a statement addressing a septic pump out rebate program and its potential benefits of regular septic tank pumping for the environment.
- **Updates to Washington Suburban Sanitary Commission (WSSC Water, WSSC) (Section I.E.3a.)**
  Added a statement recommended by WSSC Water concerning the agency's authority over water and sewer infrastructure decisions.
- **Updates to County Water and Sewer Systems (Section II.A.)**
  For Figure 1-5: Sample House Connections and Site Utilities (Hookups),.simplified map presentation for purposes of better accessibility.
- **Updates to Numbered Service Area Category Definitions (Section II.C.1)**
  Added text recommended by WSSC Water concerning coordination with the agency for the provision of community service in areas designated categories W-3 and S-3.
- **Updates to Community Service to Relieve Onsite System Concerns (Section II.G.2.)**
  - Clarified the options for cases outside the planned public service envelope that need new main extensions for service to be addressed by either the administrative or Council review processes.
  - Moved step-by-step explanations about conducting individual, onsite systems surveys to new Appendix G.
- **Removed: Further PIF Policy Considerations (formerly Section II.G.4.b.)**
  The section was outdated, the issues included had never been addressed and were no longer relevant for consideration.
- **Updates to WSSC Facility Planning Process (Section III.A.5.)**
  This section was revised based on recommendations provided by WSSC Water.
- **Asset Management Program (Section III.A.5.a)**
  Parts of this section were revised based on recommendations provided by WSSC Water.

- **Updates to Repair, Replacement and Rehabilitation of Aging Community Systems (Section III.A.5.g.)**
  Removed outdated information addressing the US EPA consent agreement with WSSC Water concerning sanitary sewer overflows at the recommendation of that agency.
- **Updates to Onsite Systems Management Program (Section III.C.4.d)**
  Updated the discussion to explain where the program stands now and the proposed septic tank pumping rebate.
- **Updates to Washington Suburban Sanitary District (Section IV.A.):**
  Under Section IV., Water and Sewerage Systems Financing. The text in the following subsections was revised based on recommendations provided by WSSC Water. These subsections included:
  - Water Consumption and Sewer Usage Charges (Section IV.A.1.a.)
  - Systems Development Charge (Section V.A.1.b.)
  - State Funding (Section IV.A.1.c.)
  - Local Service Extension Programs (Section IV.A.2.)
  - Developer-Built Projects (Section IV.A.2.a.)
  - WSSC Water-Built Projects (Section IV.A.2.b.)
  - Service Connection Fees (Section IV.A.3)
  - Aging Infrastructure Costs (Section IV.A.4.)
- **Updates to Efforts to Address Underserved and Unserved Communities (Section IV.A.2.c.)**
  Added text that addresses the current sewer project in Meadowbrook Estates in Germantown, proceeding under a grant from U.S. EPA.
- **Updates to Procedures for Adopting and Amending the Water And Sewer Plan (Section V.):**
  Added a discussion of the State's actions via MDE to modify the Council-approved 2022 Update of the Water and Sewer Plan Chapter 1 text as follows:
  - Revised requirements related to allowed main extensions under the abutting mains policy (Section II.G.3.d.)
  - Removed a provision of the abutting mains policy (section II.G.3.) that allowed for the limited transfer of an abutting mains connection right between two commonly owned properties.
  - Removed a section addressing a policy for allowing for the limited provision of community service for commercial uses outside the planned community service envelopes (formerly Section II.G.5.).

Chapter 2: GENERAL BACKGROUND

Chapter 2 provides an overview of the natural and cultural environments in Montgomery County. Updated new information in this chapter include:

- Updates to the County's latest ratings of stream conditions based on biological monitoring.
- Updates to the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System Permit Program (AKA the MS4 Permit Program).
- Latest comprehensive update to the General Plan, called Thrive Montgomery 2050, was approved by the County Council in October 2022. It serves as a framework for the county's growth within a thirty-year horizon. It sets a vision for the county and encompasses broad, countywide policy recommendations for land use, zoning, housing, the economy, equity, transportation, parks and open space, the environment, and historic resources. These recommendations provide guidance for future master plans, county and state capital

improvement processes, and other public and private initiatives that influence land use and planning in the county.

- Updates to Population dynamics and forecasting. The latest forecasts (Round 10.0 Cooperative Forecasting) of population, households, and employment were developed and published by MWCOG in June 2023 through a cooperative process involving the Council of Governments, its member jurisdictions, the Baltimore region, the states and other planning agencies.

Chapter 3: WATER SUPPLY SYSTEMS

This chapter contains information about the various aspects of the county's water supply systems; including water supply sources, treatment, and distribution systems. Updated new information in this chapter include:

- **Updates to Projected Water Supply Demand:** Based on analysis of the latest water production and consumption data, WSSC has also developed the following water demand per unit to be used for growth projections and planning water system improvements:

  - Single-Family Dwelling Unit (SFDU):----------159.0 gallons per day (gpd)
  - Employees:----------31 gpd
  - Multi-Family Dwelling Unit (MFDU):----------103 gpd

- **Updates to Projected Water Supply System Needs:** The following includes WSSC's major current and planned studies and facilities needed to meet the projected treatment capacity at each of its water treatment plants.

  - Potomac WFP Consent Decree Program:
  - Potomac WFP Main Zone Pipeline:
  - Potomac Submerged Channel Raw Water Intake:
  - Patuxent Raw Water Pipeline
  - Source Water Protection:
  - Large Diameter Water Pipe & Large Valve Rehabilitation Program:
  - Water Reconstruction Program:
  - Lead Reduction Program:
  - Online Water Quality Monitoring System (OWQMS):

- **Updates to Tables, Figures, Graphics, and other Technical Data:** All the tables, figures, and related graphics have been updated to reflect the latest data and information. These include:

  - Water Service Area Category Maps
  - Water Service Area maps
  - Planning areas and pressure zones
  - Water supply sources for each service area
  - Well problem areas
  - Inventory of existing impounded water supplies
  - Existing and projected water supply consumption and demands, trends, and planned capacities for each service area (WSSD, City of Rockville, and the Town of Poolesville)

- **Updates to Programs and Policies:** Included in this updated Plan are revisions to a few program and policies mainly by WSSC to meet regulatory requirements and its financial needs and include:

- Water Conservation Plan
- Public Outreach and Education Programs
- Plumbing Code
- Water consumption Rates

Chapter 4: SEWERAGE SYSTEMS

This Chapter describes the county's existing and planned community and private, individual sewerage systems. Main updates included in Chapter 4 include:

- **Updates to Wastewater Flow Analysis and Projections:** The updated wastewater flow projections used in this chapter are developed on 5-year intervals and are based on Round 10 Cooperative demographic forecasts and WSSC's latest wastewater flow factors. Wastewater flow forecasts are developed from detailed analyses of existing flow records and projected additional future flow based on projected demographics, wastewater flow per household and per employment, and other factors such as infiltration (extraneous groundwater) and inflow from rainfall. Population forecasting and flow projection are based on the best available data at the time the analysis is conducted.

- **Updates to Planned Sewerage System Needs:** Based on the latest population projections and using Wastewater System Modeling, WSSC Water identifies the potential impact of current and future wastewater flows on sewerage system capacities. The Wastewater System Modeling is also used to identify collection system needs such as capacity constraint due to insufficient capacity for present and/or future wastewater flows and plan needed improvements. Updates to planned sewerage systems based on the latest flow analysis for each service area and individual sewer basin include:

  - **Blue Plains Service Area:** Approximately 85% of the municipal wastewater generated in Montgomery County is treated at the Blue Plains WWTP. This service area encompasses much of the central and eastern part of the county which includes Muddy Branch, Rock Creek, Watts Branch, Cabin John Creek, Rock Run, Little Falls Branch, Northwest Branch, Paint Branch, and Sligo Creek Basins. The Blue Plains service area also includes the Rockville Sanitary District.

    - Projected Treatment Capacity Needs: Produced by WSSC and based on COG's latest Cooperative Demographic Forecasts and WSSC's latest wastewater flow factors. The County's projected wastewater treatment needs within the Blue Plains service area will be met beyond the year 2045.
    - Projected Transmission and Conveyance Needs: Projected needs for all sewersheds discharging to the Blue Plains WWTP are listed below. These projections are based on latest demographic forecasts and WSSC's latest wastewater flow factors.

      - **Muddy Branch** – Currently there are no capacity constraints in this basin. Flows to the Potomac Interceptor at Muddy Branch are below the peak flow limitations outlined in the IMA and based on the latest modeling analysis, no overflows is predicted in the Muddy Branch Basin under peak wet weather flows. The following CIP projects are included in the WSSC Water CIP to address needs in the Muddy Branch Basin:
        - *Johns Hopkins Medical Research Park Sewer Main (S-85.23) - This project provides for the planning, design, and construction of approximately 12,390 feet*

of 15-inch diameter or larger sewer mains to serve the Johns Hopkins Medical Research Park and vicinity. This work will extend service to the new development and replace existing sewer mains downstream of the development.

- **Watts Branch** – Results from updated modeling indicate there are no constraints in this basin and no overflows is predicted in the Watts Branch Basin under peak wet weather conditions. However, both daily average and peak flows will exceed the allocated flow limitations to the Potomac Interceptor outlined in the IMA by the year 2045. There is no planned project for this basin
- **Rock Run** – Results from updated modeling indicate there are no constraints in this basin and no overflows is predicted in this basin under peak wet weather conditions. However, both existing and future daily average and peak flows from Rock Run Bain exceed the allocated flow limitations to the Potomac Interceptor outlined in the IMA. There is no planned project for this basin
- **Cabin John** - Results from updated modeling indicate there are no constraints in this basin and no overflows are predicted in this basin under peak wet weather conditions. Based on the results of the updated model, flows to the PI and the MUPI at Cabin John are below the peak flow limitations outlined in the IMA under both existing and future conditions. The following CIP projects are included in the WSSC Water CIP to address needs in the Cabin John Basin:
  - *Rose Village Sewer Main (S-103.17) - This project provides for the planning, design, and construction of approximately 1,728 feet of 30-inch to 33-inch diameter sewer main to serve the Rose Village development. These sewers will replace existing sewer mains*
  - *Erickson Bethesda Sewer Main (S-151.02) - This project provides for the planning, design, and construction of 3,600 feet of 15-inch to 18-inch diameter sanitary sewer adjacent to the new development and 330 feet of 36-inch diameter sanitary sewer south of River Road to serve the Erickson Bethesda development.*
- **Rock Creek** – Results from updated modeling for this basin predicts two overflows under future (2045) 10-year storm conditions in the northern part of the basin. The predicted overflows occur immediately upstream of Reddy Branch pump station as the peak inflow to the pump station exceeds the safe pumping capacity causing the gravity network upstream to back up. The Reddy Branch WWPS is in the planning phase to complete a preliminary engineering design for the replacement and rehabilitation of the existing WWPS along with addressing the flooding issue and replacing the existing force main. Based on the updated modeling, flows to the Rock Creek Basin will exceed the peak flow limitations outlined in the IMA under future conditions.

  The following CIP projects are included in the WSSC Water CIP to address needs in the Rock Creek Basin:
  - *Reddy Branch WWPS and Force Main (S-61.02) – The existing Reddy Branch WWPS and 16-inch Force Main were constructed in 1971 and have reached the end of their useful lives. This project provides for the planning, design, and construction of the modifications to the Reddy Branch WWPS and replacement of the approximately 12,800 feet of force main. The existing pump station is subject to flooding and there are safety concerns with equipment operation. Replacement of the existing force main is in accordance with an initiative to prioritize replacing force mains that have reached their anticipated life expectancy.*

- **Little Falls** – There are no capacity constraints or predicted overflows in this basin.
- **Anacostia Interceptor** – Flows discharged into Anacostia Interceptor System from Montgomery County include Sligo Creek Basin, Northwest Branch Basin, and Paint Branch Basin.
  - **Sligo Creek**: Flows and capacity constraints in this basin are currently under evaluation. The following CIP project is included in the WSSC Water CIP to address needs in the Sligo Creek Basin:
    - *Arcola WWPS and Force Main (S-36.01) – The existing Arcola WWPS and Force Main were constructed in 1961 and have reached the end of their useful lives. This project provides for the planning, design, and construction of the modifications to the Arcola WWPS and replacement of the force main. The rehabilitation will replace both pumps, maintaining the pumping station's 0.17 MGD capacity. The existing 1,300 linear feet of 4-inch force main will be replaced. In addition, replacement of all electrical and mechanical components, piping assets, and the HVAC system are included.*
  - **Northwest Branch Basin**: Flows and capacity constraints in this basin are currently under evaluation. The following CIP project is included in the WSSC Water CIP to address needs in the Sligo Creek Basin:
    - *Sam Rice Manor WWPS and Force Main (S-63.08) – The existing Sam Rice WWPS and Force Main were constructed in 1977 and have reached the end of their useful lives. The station does not meet current standards and is in jeopardy from encroaching streambank erosion. Replacement of the existing force main is in accordance with an initiative to prioritize replacing force mains that have reached their anticipated life expectancy. This project provides for the planning, design, and construction of the modifications to the Sam Rice Manor WWPS and replacement of the force main. This project will enhance existing infrastructure by building additional capacity in order to meet existing and/or future demand. The project will involve the relocation of the pump station and the replacement of the existing 3,500 linear feet of 4-inch force main.*
  - **Paint Branch**: Results from updated modeling indicate no overflow is predicted in this basin under peak wet weather conditions. The following CIP projects are included in the WSSC Water CIP to address needs in the Paint Branch Basin:
    - *Viva White Oak Sewer Main (S-118.09) - This project provides for the planning, design, and construction of 4,175 feet of 15-inch to 24-inch diameter sewer main to serve Viva White Oak and vicinity.*

- **Seneca Service Area:** - Projected flows based on forecasted population and other flow factors for the Seneca Service Area have been developed by WSSC Water and are based on latest (Round 10) Cooperative demographic forecasts. The Seneca WRRF has adequate capacity to treat all the wastewater generated in its service area beyond Year 2045. Results from updated modeling indicate there are no constraints in this basin and no overflows is predicted in this basin under peak wet weather conditions. The following CIP projects are included in the WSSC Water CIP to address needs in Seneca WRRF Service Area:
  - *Ashford Woods WWPS and Force Main (S-83.07) – This project provides for the planning, design, and construction of a 0.42 MGD wastewater pumping station and 2,160 feet of force main to serve development.*

- **Damascus Service Area:** - Projected flows based on demographic forecasts and other flow factors for the Damascus Service Area indicate that existing facilities will handle all expected wastewater flows from this service beyond Year 2045. The following CIP projects are

included in the WSSC Water CIP to address needs in the Damascus Service Area:

- Damascus Town Center WWPS Replacement (S-94.13) - *This project provides for the planning, design, and construction of a 0.416 MGD wastewater pumping station, approximately 2,100 linear feet of gravity sewer, and 2,100 linear feet of force main. The new WWPS and associated force main and gravity sewer will provide service to the existing and future Damascus Town Center service area. The existing pumping station, which is over 45 years old, was originally built as a privately owned facility and did not conform to WSSC Water standards. The pumping station was taken over by WSSC Water in the late 1970s. It has reached the end of its useful life and replacement parts are obsolete. Additionally, the capacity of the pumping station must be increased to accommodate the future service area in accordance with the Maryland-National Capital Park & Planning Commission Damascus Master Plan.*

- Spring Gardens WWPS Replacement (S-94.14) - *This project provides for the planning, design, and construction of a 1.3 MGD wastewater pumping station, 7,500 linear feet of force main, and 900 linear feet of gravity sewer. The relocated wastewater pumping station and force main will provide service to the existing and future Spring Gardens service area. The existing pumping station and force main are over 45 years old and have reached the end of their useful lives. Additionally, the existing capacity of the pumping station must be increased to accommodate build-out of the service area and therefore it must be replaced with a new facility rated at 1.3 MGD.*

- **Hyattstown Service Area:** The Hyattstown Service Area includes the Hyattstown Historic District, located along Frederick Road (Route 355) between Hyattstown Mill Road and Frederick County. The Hyattstown community consists of approximately fifty residential and commercial structures. The wastewater collection system will handle all expected wastewater flows from the Hyattstown community for the foreseeable future. Due to inefficient operation of the Hyattstown treatment Plant, WSSC Water is currently working on to replace the existing Hyattstown WRRF with an enclosed biofilter treatment system. Final design is expected by Fall 2026, with construction of the new facility expected to be complete by the end of 2028.

- **Poolesville Service Area:** - The Town of Poolesville has developed a Wastewater Capacity Management Plan. The Plan utilizes a three-year rolling average of discharge flows from the WWTP to determine the available capacity for development allocation.

- **Updates to Sanitary Sewer Overflows Consent Decree:** In December 2005, the Washington Suburban Sanitary Commission (WSSC) entered into a Consent Decree with the U.S. Environmental Protection Agency (EPA), the State of Maryland and four Citizen Groups on an action plan to significantly minimize, and eliminate where possible, sanitary sewer overflows (SSOs).

  A short description of the requirements of the Consent Decree and additional details regarding the latest status and the remedial measures progress to date have been provided in the Plan.

- **Updates to Biosolids Management:** - As part of a significant long-range program to improve the biosolids management practices in its service area, WSSC Water recently completed the construction of a $271M Bio-Energy Project at Piscataway WRRF in Prince George's County. The construction of this facility began in spring 2019 and was completed in spring 2025. The facility processes all of the biosolids generated from all wastewater treatment plants within WSSC Water service area which include both Montgomery and Prince George's counties. The facilities include a central bio-energy project comprised of thermal hydrolysis, mesophilic anaerobic digestion,

dewatering and combined heat and power facilities. Some of the environmental and economic benefits include:

- Significant reduction in biosolids quantity.
- Production of methane gas as renewable fuel to will be used to produce heat and electric power.
- Producing high quality (Class-A) biosolids which can be used more widely than the Class-B biosolids currently produced.

- **Updates to Tables, Figures, Graphics, and other Technical Data:** All the tables, figures, and graphics contained in the current approved Plan have been updated to reflect the latest data, information, and trends. These include:

  - Wastewater Service Area Category Map for Montgomery County
  - Wastewater Service Area district maps
  - Planning areas and sewersheds
  - Projected Transmission and Conveyance Needs for individual sewersheds
  - Wastewater treatment plant service area maps
  - Projected wastewater treatment capacity needs for all wastewater treatment plants
  - Current and projected safe capacities for all wastewater pumping stations
  - Individual sewershed maps
  - Existing and projected wastewater flows for individual sewersheds
  - Projected facility needs for individual sewersheds
  - Projected facility needs for all districts and treatment service areas
  - Inventory of existing and approved Multi-Use sewerage systems

APPENDIX B: MULTIUSE WATER AND SEWER FACILITIES, and APPENDIX D: LOCAL, MUNICIPAL, STATE, AND REGIONAL AGENCIES

Revised the tabular format of these appendices to straight text for improved accessibility.

APPENDIX C: EXCEPTIONAL SERVICE POLICIES AND RECOMMENDATIONS

This appendix complies existing areas with ether exceptional service allowances or exceptional service restrictions.

- In the Glen Hills Study Area section, added that properties within the City of Rockville cannot be used as justification for sewer category change approvals under the Potomac peripheral sewer service policy. (II.E.)
- In the Jonesville and Jerusalem section, added language addressing repeated sewage flow events exceeding WSSC Water's negotiated 20,000 gallons per day maximum flow into the Poolesville Wastewater Treatment Plant. Noted that, pending WSSC Water investigations into possible infiltration and inflow within its sewerage system, the County and WSSC Water may need to consider either further service restrictions in the service area or renegotiation on flow limits with the Town.
- In what was the Potomac Area RE-1 and RE-2-Zoned Properties section (now the Potomac Peripheral Sewer Service Policy), added that properties within the City of Rockville cannot be used as justification for sewer category change approvals under the Potomac peripheral sewer service policy. (II.M.)
- In the Riverwood Drive section, reduced the area of the existing restriction, removing those areas served by community sewerage systems and with existing and access to existing community sewerage systems. (II.N.)

Appendix G

Standard Operating Procedure (SOP) for Onsite System Surveys

Sanitary surveys, primarily for areas served by septic systems, provide the County with information on the condition of existing onsite systems and their potential to continue to provide service in the long-term. This can assist the County Council in determining which of these areas may require community service in the future, if such service can be provided in a logical, reasonable, and environmentally acceptable manner.

DEP-WSWU Standard Procedures

The following information was compiled from standard operating procedures developed by staff in the Department of Environmental Protection who are responsible for conducting and coordinating sanitary surveys. This is related to the County's responsibilities for the Comprehensive Water Supply and Sewerage Systems Plan. The following procedures are intended for use in cases where the potential survey area is located outside the planned community service envelopes. For situations where the survey area is within a planned community service envelope, please refer to Chapter 1, Section II.G.2.a.

Well/Septic System Surveys – Establishing a Survey Area

Onsite system surveys are typically established at the request of property owners with concerns about their onsite systems, most often, septic systems. A request for a survey in a specific area may originate from one or more owners. A request for a survey from a single owner is different from a request from that owner for assistance with a problem with just the owner's onsite system. In a survey request, the owner looks for consideration of properties in the area in addition to their own.

Requests for a survey from two or more property owners are generally expected to fall into a common geographic area.

Establishing a Survey Area

Receive property owner (applicant) requests for a septic survey. Review comments from owners about onsite systems concerns (age of onsite system, prior problems, poor soils, lack of suitable repair/replacement area are common concerns). If the owners haven't supplied contact information such as phone numbers or email addresses, send a note out requesting that information. The inability of an unimproved property to allow for a permitted well or septic system does not provide a property owner with justification to request an onsite system health survey.

In cases involving septic systems, DPS must determine that the onsite system failure cannot be addressed reasonably by using a conventional replacement system (deep trench, shallow trench, or sand mound), by innovative and alternative onsite replacement systems, or by new technologies as they are approved for use by the State and County (e.g., graywater systems and waterless toilets). Note that in the case of septic systems, reasonable relief methods do not include the use of a holding tank.

Map the applicants' properties to identify the extent of the area that will need to be addressed. Do they fall within a generally common area where they can all be addressed by a single septic survey? If not, how should the survey areas be split out.

Assuming a single survey area, review the following to help identify the extent of the survey area:

- Address soil problems, stream setbacks, steep slopes, and lots not suitable for septic systems based on DPS testing.) It may be helpful to look at individual constraint layers. Properties similarly affected by Review Areas from the Glen Hills Study.
- For establishing a survey area, DEP considers factors such as similar zoning, lot size, and onsite system type and age; logical community service areas and main extension alignments; and physical conditions (such as streams, soils, slopes, and topography).
- Properties with septic systems of a similar type and age. Age, for the time being, is judged by the construction date of the house or building on the lot. This can be updated once DPS permit information is retrieved
- Availability of public water service vs. onsite wells.
- Conceptual sewer extension alignments from the Glen Hills study. If outside the Glen Hills study area, this may require an initial concept developed by DEP and then provided to WSSC Water for review. If

there is a need for future public sewer service, is there a reasonable way to provide new main extensions?

The end purpose is to identify a single, cohesive survey area. This may mean including some lots that—at least at this stage—do not appear to be constrained from future septic system use. This is also a point at which it may become evident that more than one survey area is needed. DEP may include unimproved properties within a survey area as appropriate, except where an unimproved property is at the outside limit of a draft survey area.

Coordinate the draft survey area with DPS Well & Septic and request that they pull together permit information and any other comments for the selected survey properties. DPS "boots-on-the-ground" experience with the onsite systems in the survey area can add important information beyond just the testing results and permit. Account for any changes to the survey area that DPS recommends.

Review the draft survey area with the WRD manager. Once a survey area is agreed to, start the 90-day clock to bring the survey results to the CE and then on to the Council.

Once DEP establishes a draft survey area, staff will notify all property owners prior to the beginning of the survey process. Staff will send written notices to all property owners in the survey area. The notice should:

- Identify the survey area. (A map is sometimes the most helpful. A jpg file can be inserted into the body of the letter.
- Explain the reason for the survey and the survey process.
- Explain, if needed, why DEP has included properties other than the applicants within the survey area.
- Provide a calendar for the survey that addresses:
    - The survey start date.
    - The date of DEP's survey notification to the property owners.
    - The date upon which DEP and/or DPS staff will start to contact owners for permission to visit their properties.
    - The date when DEP/DPS field visits are expected to start.
    - The estimated date for a public meeting for DEP and DPS to present the survey results.
    - The estimated date for a DEP/DPS meeting with the CE to present the survey results and recommendations.
- Advise owners that DPS will contact them about setting up a site visit.
- Background on the County's policies for special sewer service areas and on potential outcomes from the Council's consideration of the survey results and recommendations provided by the CE.
- Contact information for DEP and DPS staff. Also, request that owners of properties added to the survey area provide email addresses and/or telephone numbers.

Consider feedback from owners that do not want to allow a site visit or express a desire to not otherwise participate in the survey process. How would removing these owners' properties affect the survey area and information gathering.

At this point, any owner may choose to formally withdraw their property from inclusion in the survey. An owner's withdrawal of a property requires a written and signed notification from the owner to DEP. Once withdrawn from a survey, the subject property will not be recommended for inclusion in either any special service area or related service area category change. However, DEP may use and present the results of the research gained for withdrawn properties as part of the overall survey evaluation. DEP may also consider an owner's request to withdraw a property after a survey commences on a case-by-case-basis. Excluded properties may be considered for community service if they subsequently satisfy the abutting mains policy (Section II.3.G).

Well/Septic Surveys – Collecting Information

The following is focused on surveys for onsite septic systems.

The State Department of Assessments and Taxation (SDAT) Property Database provides basic information on the properties in the survey (online at http://sdat.dat.maryland.gov/RealProperty/Pages/default.aspx)

- Property (premises) address.
- Identification (lot, block, subdivision or parcel) and tax. acct. no.
- Confirm ownership (Does the owner reside on the property or not?)
- Property size and zoning. (Zoning for a survey area is likely to be uniform. Property size will set the stage for the area available for future septic system use. Typically, the RE-1 standard of 40,000 sq. ft. is a minimum lot size needed to accommodate a well and a septic system on a lot.)
- Building construction date. (Lacking specific septic system permitting information, this date may need to substitute for in system installation date.)
- Date the owners acquired the property. (This may not be available for all properties.)
- Note which properties belong to survey applicants vs. those properties added by DEP.

Some, although not all, of the preceding information is also available using the County's GIS property layer.

DPS Well and Septic System Permits: DEP staff will provide listing of survey properties to the Department of Permitting Services (DPS) to obtain well and septic system permit records. In the Glen Hills study area, permit information pulled from DPS files by the DEP's contractor for the Glen Hills Sanitary Study can provide information, although this will start to become outdated the further the calendar moves away from 2012. DEP will request that DPS provides updates for this information.

Information available from septic system permits:

- Type of septic system - trench, seepage pit, lagoon, mound, shallow drip, holding tank
- Location of system – often a sketch with the location of the septic tank and discharge feature (pits, trenches) shown with a distance relative to a point of reference on the lot (often the house)
- Specifications and details – no. of pits, length of fields, no. of bedrooms, reserve areas, repairs or replacements, installation date, percolation test rate

DEP's Well and Septic System GIS Shapefiles (circa 2005) are a bit more outdated than the Glen Hills study permit data. Well type (potable, irrigation, etc.) and permit no. are generally available. Field visits have shown shapefile locations are not always accurate, due possibly to relocations, data transfer errors, etc. Septic system information seems to identify the location of a septic tank rather than the discharge location.

Field Visits can serve to either confirm or correct information available from GIS files and permit records. DEP and DPS staff find it helpful to visit a property when the owner is available to meet with them. There is an opportunity for education on both sides. DPS/DEP staff can gain a better understanding of the property's history and how the existing system is functioning. The owner can gain insight from DPS/DEP staff about how to use and maintain the onsite septic system. In addition, seeing the layout of the lot can provide insights not necessarily available from feature mapping or aerial photography.

All participating property owners (*i.e.* those who have not withdrawn their properties from the survey) will be required to provide access to their properties for purposes of a DEP/DPS site visit. DEP and DPS staff will contact owners in advance of a scheduled site visit. DEP and DPS may also request that owners provide any available documentation of onsite systems inspections or maintenance. Staff will not pursue a site visit from those owners who choose to withdraw from the survey. DEP cannot require the owners of properties that DEP has added to a survey area to conduct septic system inspections by DPS.

Mapping the Survey Area will use information from a variety of sources.

- **USDA Soil Maps**: The focus here is typically on soils identified with "severe" limitations for septic system use. These are often soils associated with stream buffers and wetlands, those with high water tables and poor percolation rates.

  The maps will also show soils that have "moderate" and "slight" limitations for septic system use. Areas with soils having moderate limitations appear to be the most common in the county and will often support septic systems that satisfy current permitting requirements. Note that this is a generalization; moderate limitation soils are not guaranteed to support septic systems in every case.

- **GIS Base Map Layers**: These layers will provide locations for features such as streams, wetlands, topography and slopes, and buildings. Septic system permitting regulations establish setbacks that will constrain the use septic system on parts of a lot. Apply the following buffers to each related feature:
    - Streams and wetlands: 100 feet
      In many areas, County and FEMA 100-year floodplains will lie within 200-foot stream buffers. Floodplains can also be mapped (see TEBS Environmental Features Layers), although DPS advises that septic can be located within floodplains if needed. Note that not all streams will have established regulatory floodplain information.
    - Steep slopes (> 25 %): 25 feet
      Steep slopes may need to be established first from topographic data via geoprocessing in ArcGIS-Pro.
    - Buildings: 20 feet
- **Onsite System Information GIS Layers**: The most significant setback for replacement septic systems, other than for streams and wetlands, is from existing wells. Regulations provide for lesser setbacks for replacement septic systems from existing seepage pits and trenches. Before establishing setbacks in GIS, staff will adjust well and septic system locations as found from site visits.
    - Wells: 100 feet
      Well setbacks are the most likely constraint to affect one lot from another lot. Well setbacks can extend beyond the boundaries of the properties they serve.
    - Septic seepage pits and trenches: 10 feet.
      An area on a lot used for an existing or abandoned septic system cannot be used again for a replacement system.
- **Woodlands/Forest Areas**: This information is also in the TEBS Environment Feature Layers. Trees and forested areas are <u>not</u> regulatory constraints on septic system locations. However, some property owners will cite possible tree loss as a concern with regard to establishing septic repair or replacement areas.

DEP staff will lay out the preceding potential constraints within the survey area. Then they will estimate for each lot, the percentage of area not affected by potential constraints, then determine the square footage of that area for each lot.

This is done to estimate the available unconstrained area for each property where a septic system replacement might be located. A full replacement system will usually require at least 10,000 sq. ft. A repair system might need only a third to half that area, although repairs are usually for only one field and can place constraints on the use of the property in terms of expanding or replacing the existing structure, ancillary features (pools, decks) and impervious surfaces.

<u>Well/Septic System Surveys – Evaluating & Reporting</u>

The following is focused on surveys for onsite septic systems.

On a specific lot, a minimum 10,000 sq. ft. area free of apparent septic system constraints is an indicator that some onsite repair or replacement system may be feasible. However, it is not always a guarantee.

<u>Full Replacement system</u>: A deep or shallow trench system or sand mound system meeting permit requirements and having the required number of replacement systems for a septic reserve area. For lots with an existing house and septic system, two replacement systems are typically required.

<u>Partial Replacement System</u>: A trench or sand mound system that can be permitted for only one field, not satisfying permit requirements for a septic reserve area. A shallow drip system may also be considered for a single repair. Repair systems that require an innovative or alternative system will require an agreement between the County and the owner that will limit improvements to the existing house and property.

Department of Environmental Protection (DEP) and Department of Permitting Services (DPS) staff will also consider additional issues:

- Is the system replacement area accessible to the equipment needed for that work?
- Is the system replacement area downgrade or upgrade from the well on the property? Ideally, a septic system should be located downgrade from the well serving the same property, although exceptions may be allowed. Wells on other lots can be allowed downgrade of a septic system. DPS will determine an adequate separation between septic systems and downgrade well on other properties.
  (Note: it may be possible to relocate a well, although again you need to consider the accessibility issue. Or, it may be possible to provide public water service to a property currently using a well.)
- Is only a partial replacement system feasible? This is usually a stopgap measure, good for the time being, but not necessarily as a permanent solution.

DEP and DPS will generally use the following criteria for evaluating the suitability of each property within the survey area for the ongoing use of an onsite septic system:

- Severely constrained – Less than 5,000 sq. ft. of potential repair/replacement area. Confirmed by DPS to have no repair/replacement area.
- Somewhat constrained – 5.000 or more sq. ft. of potential repair/replacement area. Relocation of the existing well or conversion to public water service (if reasonably available) could create 5,000 or more sq. ft. of potential repair/replacement area. Confirmed by DPS to have only one repair area available.
- Slightly constrained or unconstrained – 10,000 of more sq. ft. of potential repair/replacement area. Few constraint areas other than for a well setback. Confirmed by DPS to have area sufficient or permitted for a full replacement septic system.

A "special sewer service area" is intended to be a grouping of properties focused on those that have severe potential constraints for future septic system use. A contiguous area, to the extent reasonable, and not a scattering of individual lots, is best. These properties may not all have frontage on the same street, depending on the extent and arrangement of lots in the survey area. In some cases, properties that are moderately constrained or unconstrained may be scattered in among the severely constrained lots. DEP and DPS staff need to consider the proximity of lots with severe potential constraints to others less affected, especially where lots lack specific permit information. If possible, DEP and DPS will minimize the inclusion of slightly constrained and unconstrained properties in recommended special sewer service areas (SSSAs). [1]

A recommendation to include a property within an SSSA must include a restriction for a single sewer service connection/hookup only. The provision of public service resulting from a septic system survey is not intended to promote the creation of new lots within the special sewer service area.

If a special sewer service area is recommended, then it must be at least technically feasible to provide public sewer service. (In the Glen Hills area, the Glen Hills study provides conceptual sewer main extensions directed at providing sewer service to properties located within most Review Areas.) This will require some coordination with Washington Suburban Sanitary Commission (WSSC Water) Development Services to ensure that a sewer extension concept for the area is technically feasible and consistent with WSSC Water extension requirements. Sewer main extensions should avoid streams crossings and stream buffer areas to the maximum extent reasonable. This may require the use of low-pressure/pump systems in areas that might otherwise be logically served by a gravity system.

Sewer extension alignments may pass by properties that are not recommended for inclusion in an SSSA. The possible availability of sewer service is not a stand-alone cause for including abutting properties in the SSSA. If the owners of such properties desire a connection to public sewer service, that consideration can be made via the abutting mains policy.

An area that DEP and WSSC find that is not reasonably accessible to existing or proposed public sewerage systems should not be recommended for inclusion in an SSSA.

Recommendations, if needed, for an SSSA are to be made in two presentations:

- A table that identifies all the properties in the survey area along with recommendations for or against inclusion in the SSSA. The table should also identify the recommended sewer service category and, if possible, the length of sewer main needed to provide service.

- A map showing the properties included in the SSSA and the recommended sewer category for each lot. If available, the sewerage system needed to bring service to these lots should also be shown.

Use the format of preceding survey areas to guide the development of reports for new survey areas.

If the DEP staff recommendation is not to establish an SSSA for any of the properties in the survey area, it will still be necessary to present the survey's findings in a report to the CE and then the Council. If the CE concurs with a no-SSSA recommendation, then the Council needs the opportunity to review the findings and gather testimony in a public hearing.

The presentations and accompanying reports and technical appendices will be reviewed with the Division Chief and then with the DEP Director. Following any changes required by the Director, WWPG staff will arrange with the Director's senior aide setting up a meeting with the County Executive to review the survey and resulting recommendations. DEP staff will coordinate with Council staff so that they are aware that a survey amendment is forthcoming. The County Council's consideration of the Executive's recommendation follows the standard procedures for hearings, work sessions, action, and State consideration used for Water and Sewer Plan amendments.

Attachment 1

Montgomery County Comprehensive Water Supply and Sewerage Systems Plan

2026 - 2035 PLAN

(Executive Draft)

(Water & Sewer Service Area Category Maps)

Montgomery County Water Service Area Category Map

Map Legend

- Localities
- WSSC Tile Grid & Number
- Municipalities
- Major County Roads
- State Roads
- U.S. Highways
- Multiuse Water System
- Properties
- Lakes - Reservoirs - Rivers and Major Streams

Water Service Area Categories

- W-1
- W-3
- W-4
- W-5
- W-6

Notes:
1) This map updates the previous 2018 Water and Sewer Plan water service area categories map. It includes service area changes and corrections approved between August 2018 and May 2022 and changes from W-3 to W-1 to reflect the availability of new community water service.
2) The service area categories for certain properties depicted on this map carry special service conditions or restrictions specific to those properties. Please refer to the water and sewer category information available via the County's Department of Technology and Enterprise Business Solutions webmap viewer. A link to the webmap viewer application is available via DEP's Water and Wastewater webpage at https://www.montgomerycountymd.gov/water/supply/service-categories.html. You can also contact DEP Water Supply and Wastewater Unit staff for information at "311" (or out-of-county at 240-777-0311).
3) This map represents Montgomery County's official record of water and sewer service area categories as part of the triennial update of the Comprehensive Water Supply and Sewerage Systems Plan.

0 10,000 20,000 40,000 Feet

0 2.5 5 10 Miles

N W E S

Montgomery County, Maryland Comprehensive Water Supply and Sewerage Systems Plan 2026 - 2035

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

Water Supply & Wastewater Unit

Montgomery County Sewer Service Area Category Map

Map Legend

- Localities
- WSSC Tile Grid & Number
- Municipalities
- Major County Roads
- State Roads
- U.S. Highways
- Multiuse Sewer System
- Properties
- Lakes - Reservoirs - Rivers and Major Streams

Sewer Service Area Categories

- S-1
- S-3
- S-4
- S-5
- S-6

Notes:
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Montgomery County, Maryland Comprehensive Water Supply and Sewerage Systems Plan 2026-2035

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

Water Supply & Wastewater Unit

Montgomery County Water Service Area Category Map

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Water Service Area Categories

- W-1
- W-3
- W-4
- W-5
- W-6

Hyattstown
Damascus
Clarksburg
Dickerson
BARNESVILLE
Sunshine
LAYTONSVILLE
Triadelphia Reservoir
Little Seneca Lake
Boyds
Germantown
BROOKEVILLE
Martinsburg
Patuxent River
Olney
Sandy Spring
Ashton
POOLESVILLE
WASHINGTON GROVE
Rocky Gorge Reservoir
GAITHERSBURG
Cloverly
Burtonsville
Darnestown
ROCKVILLE
Aspen Hill
Colesville
Potomac River
Wheaton
White Oak
GARRETT PARK
KENSINGTON
Potomac
Silver Spring
Bethesda
TOWN OF CHEVY CHASE
TAKOMA PARK

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Montgomery County, Maryland
Comprehensive Water Supply and Sewerage Systems Plan
2026 - 2035

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

Water Supply & Wastewater Unit

Montgomery County Sewer Service Area Category Map

Map Legend

- Localities
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Sewer Service Area Categories

- S-1
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Montgomery County, Maryland Comprehensive Water Supply and Sewerage Systems Plan 2026-2035

DEPARTMENT OF ENVIRONMENTAL PROTECTION
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Water Supply & Wastewater Unit