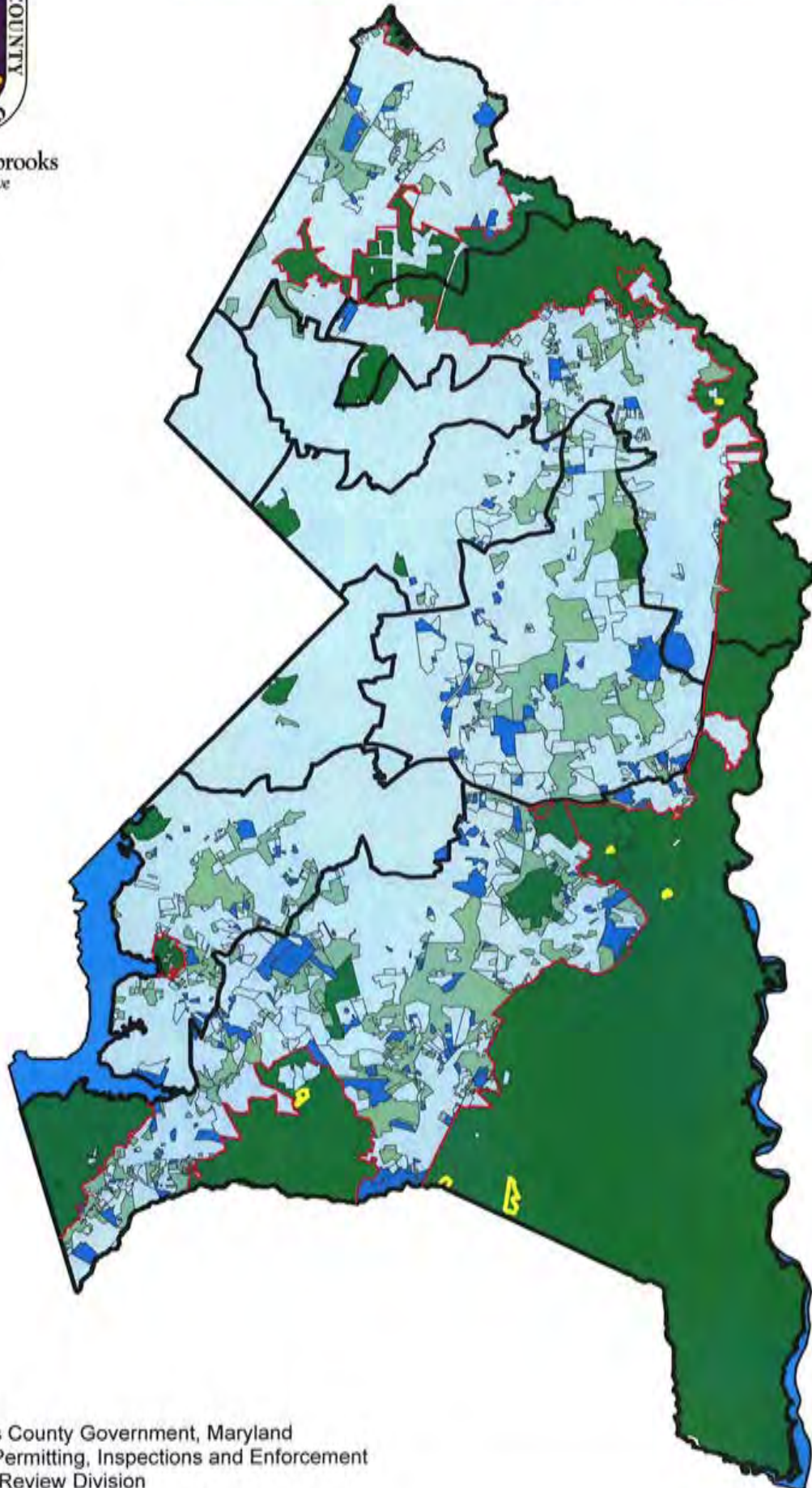




# 2018 WATER & SEWER PLAN

Angela D. Alsobrooks  
County Executive



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*2018 Water and Sewer Plan*

*Ten-Year Plan for  
Water Supply and Sewerage Systems*

*Prince George's County, Maryland*

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***PRINCE GEORGE'S COUNTY,  
MARYLAND***

***JUNE 2019***

***2018 WATER AND SEWER PLAN***

Angela D. Alsobrooks, County Executive

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The Honorable Todd M. Turner, Chair  
Prince George's County Council  
County Administration Building (CAB)  
14741 Governor Oden Bowie Drive  
Upper Marlboro, Maryland 20772

Dear Chair Turner:

The Prince George's County 2018 Water and Sewer Plan (the 2018 Plan) is prepared to update and enhance the Adopted 2008 Water and Sewer Plan, which is currently outdated and past due its triennial updates. The Water and Sewer Plan is an important functional Master Plan that ensures adequate public water and sewer for planned development and supports managed growth in the County. Equally important is the need to protect and enhance the environmental quality and to improve sustainability in water and sewer planning in Prince George's County.

I have reviewed the Plan and it meets the goals for the mandated revision. The guiding principles used for the preparation of revisions for the 2018 Water and Sewer Plan were:

- To govern with policies and practices that are innovative, results oriented and sustainable;
- To better coordinate with the County's other plans and land use policies;
- To reach out to existing communities as stakeholders;
- To improve on environmental sustainability through efficient use of resources;
- To update the fee structure to better align our fees with the actual cost of administering the program;
- To update, revise and clarify the category maps; and
- To improve the plan amendment processes.

The 2018 Plan has incorporated policies, procedures, and changes to other related plan adoptions that have occurred in the County through year-end 2018. The significant changes of this 2018 version are described in the following "Summary of Changes" and corresponding Index. I am pleased to present these changes to the County Council for your review, approval and subsequent adoption of the "2018 Water and Sewer Plan."

Sincerely,

Angela D. Alsobrooks  
County Executive

## 2018 Water and Sewer Plan Summary of Changes

### 1) Coordination with new County plans and policies

One of the primary goals for water and sewer planning is to assure consistency with all county and local plans and policies and to ensure adequate water and sewer services to the residents of the County. Since the 2008 Water and Sewer Plan, several new planning and policy documents have been adopted and published in Prince George's County. Throughout this document, all efforts are made to incorporate language from the General Plan adopted in 2014 as "*Plan Prince George's 2035*," area and functional Master Plans, the Water Resources Plan, the Green Infrastructure Plan, the Sustainable Growth Act, and to implement elements of sustainable practices.

### 2) Improvements to environmental sustainability

The 2018 Water and Sewer Plan recommends strategic planning for sewage treatment and transmission capacity to ensure long-term water quality in our streams and rivers. The Plan also acknowledges the Sanitary Sewage Overflow (SSO) Consent Decree requiring immediate improvements and incorporates new information on biosolids management to include a storage lagoon and potential digesters.

### 3) Map revisions and category adjustments

- The Water and Sewer Category maps approved with the 2018 Plan will include all amendments adopted since CR-91-2008, and up to and including CR-044-2019. Maps also incorporate amendments to bring the service categories in compliance with Plan 2035 recommendations and policies.
- Revisions to the Sewer Envelope boundary correlate to that of the Growth Boundary, as adopted with the General Plan, and as amended through Sectional Map Amendments (SMA) and Subregion Master Plan Amendments (incorporated within *Plan 2035*), since the adoption of the 2008 Water and Sewer Plan.
- The 2018 Plan redesignates properties previously located outside the Sewer Envelope into the Growth Boundary (*or inside the Sewer Envelope*), and into Category 5 – Future Community Systems. Additionally, properties outside the Sewer Envelope that predate this Plan that have not met requirements for the appropriations, have been reclassified to reflect existing conditions. The M-NCPPC has redesignated properties previously inside the Sewer Envelope to outside the Growth Boundary that will effectively be redesignated to Category 6 – Individual Systems upon adoption of the 2018 Water and Sewer Plan.
- Properties outside the Sewer Envelope boundary being served or to be served by shared facilities or community systems are shown outlined in Category 6, rather than as Category 3 – Community System, which is generally “interpreted as public” for

properties inside the Sewer Envelope. This eliminates confusion as to the type of service afforded the property by clearly reflecting its preferred designation.

4) Administrative Changes to the Amendment Process

- The 2018 Plan proposes to enhance plan amendment criteria to coincide with recommendations of Plan 2035 relating to land use planning. All residential development shall be evaluated for its fiscal impact on County services, public facilities, and residential capacity. All amendment requests must adhere to the established Water and Sewer Plan, Plan 2035 policies, functional master plans, and existing development review processes.
- The 2018 Plan proposes an increase in the number of legislative amendment cycles from tri-annual to quaternary filing, with administrative amendment cycles on a continuous monthly basis.

5) General updates and corrections

- All data has been reviewed and updated in accordance to County planning and policy documents.
- The 2018 Water and Sewer Plan includes new maps on:
  - General Plan Tiers
  - Sustainable Growth Act Tiers
  - Flood Plains/Watersheds
  - Suitable/Unsuitable Soils
  - Geologic Formations
  - Land Use
  - Zoning
  - Public Facilities
  - Water Quality Criteria
- The fee structure has been updated to reflect the actual cost of administering the water and sewer program with an eye towards maintaining a cost competitive posture with our neighboring jurisdictions.
- The Water and Sewer Category maps associated with the 2018 Plan have been updated to include all amendments since the adoption of the 2008 Water and Sewer Plan (CR-91-2008), as well as corrections of known drafting errors.

This version of the 2018 Water and Sewer Plan has been pre-reviewed by staff at Maryland Department of the Environment (MDE) and the Maryland Department of Planning (MDP) and has been found to be compliant with the adopted General Plan. Recommendations by the respective departmental staff are included in this version, effective September 25, 2018.



## **Indexed Summary of Changes**

### **Chapter 1, Introduction**

This chapter sets the goals and responsibilities for water and sewer planning in Prince George's County. The State and local legal requirements are also included, as are the various government responsibilities. This chapter also describes the State mandate and intergovernmental agreements setting the framework for water and sewer planning. Sections within this chapter that have been substantially revised or added are summarized herein.

Section 1.3 Government Responsibilities, summarizes agency responsibilities under the Water and Sewer Plan and incorporates the Department of Permitting, Inspections and Enforcement (DPIE) as the delegated agency to manage the Water and Sewer Plan.

Section 1.3.1 Intergovernmental Agreements Relating to the Plan includes updated information on agreements, such as the 2012 Intermunicipal Agreement (IMA), ratified on April 3, 2013, and new or revised agreements with the City of Bowie, Charles County, and Howard County.

Section 1.3.3 Other Related Agreements clarifies the purpose of the Chesapeake Bay Agreement (2000) as a goal for reducing nutrient loadings in the Chesapeake Bay and as a guide for restoration activities.

Section 1.3.4 Consent Decree summarizes the agreement between the Department of Justice, the Environmental Protection Agency, the State of Maryland and the Washington Suburban Sanitary Commission (WSSC) in response to the Clean Water Act litigation, and the responsibilities of the WSSC under a 12-year action plan.

### **Chapter 2, Framework for Water and Sewer Planning**

Chapter 2 outlines the policies and procedures for water and sewer planning, including the water and sewer categories, category change policies, and their connection to the County's development review process. It describes the basis for the County's water and sewer planning process by defining the natural environmental setting, community planning, and legal framework. In addition, the following sections are of particular interest in the development review process and contain revisions to policies and procedures.

Section 2.1 Policies and Procedures for Water and Sewer Planning, incorporates elements of the 2010 Water Resources Plan (WRP) to include assessing the status of each aquifer in the county for its capacity to accommodate future growth and the impact of development in adjacent counties on the aquifer. The WRP further enforces policies of the Sewer Envelope and Growth Tier boundaries.

Section 2.1.1 Sewer Envelope depicts the limit of planned water and sewer facilities and servicing. The Sewer Envelope coincides with the Growth Boundary adopted by Plan 2035. Consequently, some properties having been redesignated by Plan 2035 to be inside or outside the Growth Boundary will be redesignated accordingly to the staged service designation for properties inside or outside the Sewer Envelope.

Section 2.2 Natural Environment introduces the 2017 Resource Conservation Plan, a functional master plan that combines the related elements of green infrastructure planning and agricultural and rural conservation to support a platform for sustainable growth. Plan 2035 targets the conservation of 1,500 acres annually, countywide.

Section 2.2.4 Water Quality Criteria provides a glimpse of State and Federal requirements for protecting, maintaining and improving the quality of surface waters. A use table and Criteria Map are included in this Chapter.

Section 2.3.1 Role of the General Plan in Water and Sewer Planning addresses the provision of public facilities, including water and sewer needed to serve existing and future county residents and businesses. This rewrite is consistent to recommendations and policies contained within the adopted General Plan, Plan 2035.

Section 2.3.2 Projected Growth Rate, Land Use and Zoning, is updated to include data from the Planning Department's Round 8.1 Cooperative Forecasts, 2012. New maps, required by Maryland Department of Planning (MDP), on Land Use, Zoning and Government Facilities may be found in this section.

### **Chapter 3, Water Plan for Community Systems**

This chapter addresses the existing water systems and facilities, including water resources, treatment and transmission issues, current demand, financing and planning for future needs. The sections contained herein address current water-planning issues.

Section 3.2 Treatment and Transmission. Three new storage facilities are identified in the WSSC FY 2018 – 2023 Capital Improvement Program (CIP), and three old standpipes were demolished. This section summarizes design plans and data for the new facilities.

Section 3.2.6 Water Reclamation (Reuse) discusses the innovative practice of recycling reclaimed water for beneficial use or a controlled use under MDE guidelines. It further defines the types of reclaimed water proposed for non-potable purposes that may be considered in requests for green building design in commercial and industrial facilities.

Section 3.3.2 Water Loss Reduction Plan (2010 - 2017) includes new information on the efforts of Total Water Management, based on ten practices recommended by the American

Water Works Associated (AWWA) Manual M36. Excerpts may be found as Appendix 3-3 of this Chapter.

Section 3.3.3 WSSC Water Conservation Plan (2010) documents WSSC long-term water resources management goals. Excerpts of this plan may be found as Appendix 3-4 of this Chapter.

Section 3.4 Water Supply Source Programs and Policies discusses agreements among the region's utilities describing how water is distributed and used during drought conditions.

## **Chapter 4, Sewer Plan for Community Systems**

Chapter 4 describes the existing public sewer systems, policies, financing and biosolids management issues and analyzes the future capacity demands. Also found in the sections below are emerging sewer-planning issues, to include the Bay Restoration Fund Law.

Section 4.1 Existing Sewer System introduces Water Resource Recovery Facility (WRRF) which replaces the term Wastewater Treatment Plant (WWTP) for the three facilities located in the County and operated by the Washington Suburban Sanitary Commission.

Section 4.2 Wastewater Treatment Plants Serving the County, raises the issues of approaching capacity limitations at the plants, and sanitary system overflows in the transmission system. New permitting guidelines and criteria by which a Wastewater Capacity Management Plan must be submitted are discussed.

Section 4.2.1 Blue Plains Wastewater Treatment Plant confers the County's commitment to the terms of the 2012 Intermunicipal Agreement (IMA), providing for wastewater collection and treatment, and biosolids management for the Blue Plains service area. Additionally, discussed in this section is the Sanitary Sewer Overflow (SSO) Consent Decree, signed by WSSC on December 7, 2005, and amended on June 29, 2016. The deadline for completion of delayed work is February 9, 2022.

Section 4.2.4 Piscataway Water Resource Recovery Facility highlights a long-term agreement between Mattawoman Energy, LLC and the Washington Suburban Sanitary Commission for the purchase of treated effluent from the Piscataway WRRF for use at the proposed 990-megawatt power plant in Brandywine.

Section 4.3.2 Regional Water Quality Initiatives in the Chesapeake Bay Watershed incorporates the Bay Restoration Fund Law, the Enhanced Nutrient Removal (ENR) requirements, Total Maximum Daily Load (TMDL) restrictions, the Bay Restoration fee being collected from all residences and public utility customers (*commenced in January 2005*), and from private septic system owners (*commenced in October 2005*). Increased fees (from \$2.50 to \$5.00) became effective July 2012.

Section 4.3.4 Sanitary Sewer Overflows (SSO), describes the cause and effect of the overflows, enforcement actions by EPA, and improvements implemented by WSSC on its collection systems.

Section 4.3.5 Biosolids Management Plan for DC Water identifies capital improvements needed and funding required in maintaining and complying with regulations.

Section 4.3.6 Unserved and Underserved Areas gives a brief description of the problems that have created long term use of interim septic systems where public sewer lines were to have been constructed. The Bi-County Infrastructure Working Group's analysis and possible solutions to alleviate problem areas is excerpted as Plan Appendix G.

## **Chapter 5, Rural Sanitation**

This chapter documents the regulations and policies pertaining to individual and shared water supply wells and septic systems. The Prince George's County Environmental Health Division of the Health Department updated this chapter, having oversight over such systems usage in the County.

Section 5.2.5 Interim Systems or Waivers for Wells and Septic Systems discusses the use of such systems and defines the conditions under which the use is granted.

Section 5.3.1 Experimental and Innovative Sewage Disposal Systems addresses use and procedures applicable for these systems.

Section 5.3.2 Holding Tanks addresses use and procedures applicable for these systems.

5.4 Funding for On-Site Systems provides information on the availability of funding under the State's Chesapeake Bay Restoration Fund (BRF) for eligible applicants.

5.5 Contractor Services introduces the issuance of licenses for persons performing sewage related services, i.e. percolation testing and system installation.

## **Chapter 6, Procedures for Adopting and Amending the Plan**

Chapter 6 describes the Legislative and Administrative Amendment processes as well as the waiver process. The sections contained herewith reflect new policy or procedures incorporated into the 2018 Water and Sewer Plan administered by the Department of Permitting, Inspections and Enforcement (DPIE).

6.3 Legislative Amendment Process records the delegation of DPIE as the managing agency of the Water and Sewer Plan and amendments processes, and the frequency in which this process is held, increasing the number of "cycles" from tri-annual to quaternary.

Section 6.3.1 Referral and Review Process discusses the reviewing agencies and the response time to comment on applications. Reviewing agencies are given 15 days (a decrease from 30 days) to review and comment to DPIE on applications submitted.

Section 6.4 Administrative Amendment Process will allow applicants meeting the criteria to file on a continuous basis, however, will only be considered if the application is complete for the month in which it will have filed. Applications will still be grouped when possible.

Section 6.5.1 Waiver Criteria – Connection to Public (Community) Water and Sewer further clarifies and identifies individual residential properties and minor subdivisions (as defined and amended in the subdivision regulations) that meet the criteria to be eligible for this procedure. Revised Development Services Code 1102.1.1 dictates 200 feet for non-abutting connections, up from 100 feet in the previous code. This will limit the number of residential properties eligible for waivers and increase those requiring an extension via a category change.

Section 6.5.2 Waiver Criteria – Use of Interim Individual Well and Septic Systems, further clarifies and identifies individual residential properties and minor subdivisions (as defined and amended in the subdivision regulations) that meet the criteria to be eligible for this procedure. Revised Development Services Code 1102.1.1 dictates 200 feet for non-abutting connections, up from 100 feet in the previous code. This will limit the number of *non-developed* residential properties eligible for interim well and septic use in publicly designated areas. Consequently, *existing* residential properties will still benefit while the area does not have accessibility to public lines.

Appendix 6-1 Application Forms and Instructions, presents revised application forms for the processing of legislative and administrative amendments, waiver applications, and final plat approvals under the 2018 Water and Sewer Plan, policies and procedures. Applications are being reviewed and adjusted for online transmittal followed by one signed original. Electronic copies of applications are forwarded to reviewing agencies.

Appendix 6-2 Fee Schedule includes the fees associated with the plan amendment processes, maps and special requests of services. The fees have remained consistent since the adoption of the 2008 Water and Sewer Plan but should be reconsidered for increase. There is no need to distinguish between the developed and developing tiers, and therefore all fees are the same regardless of location. Fees are waived for public entities i.e., Federal, State, County and Municipal projects.



**PRINCE GEORGE'S COUNTY, MARYLAND  
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**DRAFT 2018 WATER AND SEWER PLAN APPENDICES**

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## 2018 WATER AND SEWER PLAN

### CHAPTER 1 INTRODUCTION

The Water and Sewer Plan is the embodiment of the County's goals, objectives and legal requirements for providing water and sewer service in Prince George's County. Together with other operational plans, such as solid waste, housing and transportation, the Water and Sewer Plan provides guidance for the implementation of the County's General Plan and area master plans as they relate to water and sewer service.

The Water and Sewer Plan (the Plan) documents existing water resources and wastewater treatment capacities, identifies needed mechanisms to meet future demand, and develops tools for sustaining these resources well into the future. The Plan serves as a tool to implement the land use plan found in the County's General Plan. It encourages the orderly expansion of the public water and sewer systems where appropriate and the use of private water and sewer systems where public service is not available or accessible.

The Water and Sewer Plan for Prince George's County acts as a statement of policy and as a working document. As a policy statement, the Plan implements the land use and development policies set by the County. As a working document, it guides the County planning and development processes by setting out the criteria under which both public and private water and sewer services can be provided.

The Water and Sewer Plan consists of two parts: the written plan and the maps. The Plan's text in Chapter 1 sets the goals and responsibilities for water and sewer planning in Prince George's County. Since the State of Maryland requires each County to prepare a Water and Sewer Plan, the State and local legal requirements are also included, as are the various government responsibilities. Chapter 2 outlines the policies and procedures for water and sewer planning, including the water and sewer categories, category change policies, and their connection to the County's development review process. It describes the basis for the County's water and sewer planning process by defining the environmental setting, community planning and legal framework. The water plan for community systems is covered in Chapter 3. It addresses the existing water systems and facilities, including water resources, treatment and transmission issues, current demand, financing, and planning for future needs. The sewer plan for community systems is included in Chapter 4. It describes the existing public sewer systems, policies, financing and biosolids management issues, and analyzes the future capacity demands. Chapter 5 documents the regulations and policies pertaining to individual and shared water supply wells and septic systems. The procedures and requirements to amend the Water and Sewer Plan and to amend water and sewer service categories are covered in Chapter 6.

The water and sewer maps play an important role in land use planning and development review. The maps reflect the official designation for all properties in the County water and sewer service categories, which determine if and when water and sewer service is available to the property. As category changes occur through the plan amendment process, the maps are regularly amended. The County maintains the water and sewer category maps in a Geographic Information

## 2018 WATER AND SEWER PLAN

System (GIS) format. Small-scale maps are included as appendices to this Plan document. Special printouts can be obtained from the Department of Permitting, Inspections and Enforcement. See **Appendix 6-2** for the related fee structure.

### **1.1 LEGAL AUTHORITY**

Maryland State law and implementing regulations govern the County's Water and Sewer Plan. The specific legal requirements are found in the Environment Article, Title 9, Subtitle 5, "County Water and Sewerage Plans," Sections 9-501 through 9-521 of the Annotated Code of Maryland, and in the Code of Maryland Regulations, Title 26, "Department of the Environment," Subtitle 3, Chapter 1, "Planning Water Supply and Sewerage Systems" (COMAR 26.03.01.01 - .08). The pertinent Federal and State legislation is further described in Chapter 2, and may be found as **Appendix A** and **Appendix B** of this Plan.

### **1.2 PLAN GOALS AND OBJECTIVES**

The following goals for water and sewer planning comply with requirements in Maryland's Environment Article, Title 9, Subtitle 5, while others support the County's planning and development policies and affect interagency agreements. The goals and objectives fall into three categories:

#### **Meet all regulatory requirements to ensure adequacy of the water and sewer system**

- Provide for orderly expansion of community water supply and sewer systems.
- Provide for adequate treatment facilities.
- Ensure proper financing for and staging of construction and operation of programmed community water supply and sewer systems.
- Promote sustainable, cost-efficient water and sewer service in all parts of the County.
- Comply with all requirements of Maryland's Environment Article.

#### **Support managed development in Prince George's County**

- Enhance the quality of life and the economic well-being of the County and its residents by supporting land use policies and orderly development.
- Identify all physical, geographic and population factors that provide a framework to support water and sewer planning.
- Implement the goals of the Prince George's County adopted General Plan, "*Plan Prince George's 2035*," area master plans, functional master plans, all applicable County land use plans, and building practices.
- Meet the objectives of inter-agency agreements related to water and sewer planning.

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### **Protect and enhance the environmental quality of Prince George's County through sound water and sewer planning**

- Enhance environmental quality by ensuring proper utilization and sustainability of natural resources.
- Ensure that regulations and agreements are in place to protect the quality and quantity of water resources and wastewater discharge.
- Promote conservation principles to better manage our drinking water supplies.
- Ensure the integrity of the Sewer Envelope and Growth Boundary, and promote the use of shared systems and innovative, sustainable technologies in sensitive areas.
- Prevent contamination of any waters from any community or privately-owned water and sewer systems.

### **1.3 GOVERNMENT RESPONSIBILITIES**

The Prince George's County Government exercises its powers of self-government under an adopted home rule charter. It consists of an elected County Executive to head the executive branch and an elected eleven-member County Council to exercise legislative powers. The organization of the executive branch of the Prince George's County Government is shown in **Figure 1**.

The State Environment Article, Title 9, Subtitle 5, outlines the administration of water and sewer planning for the County Executive and County Council.

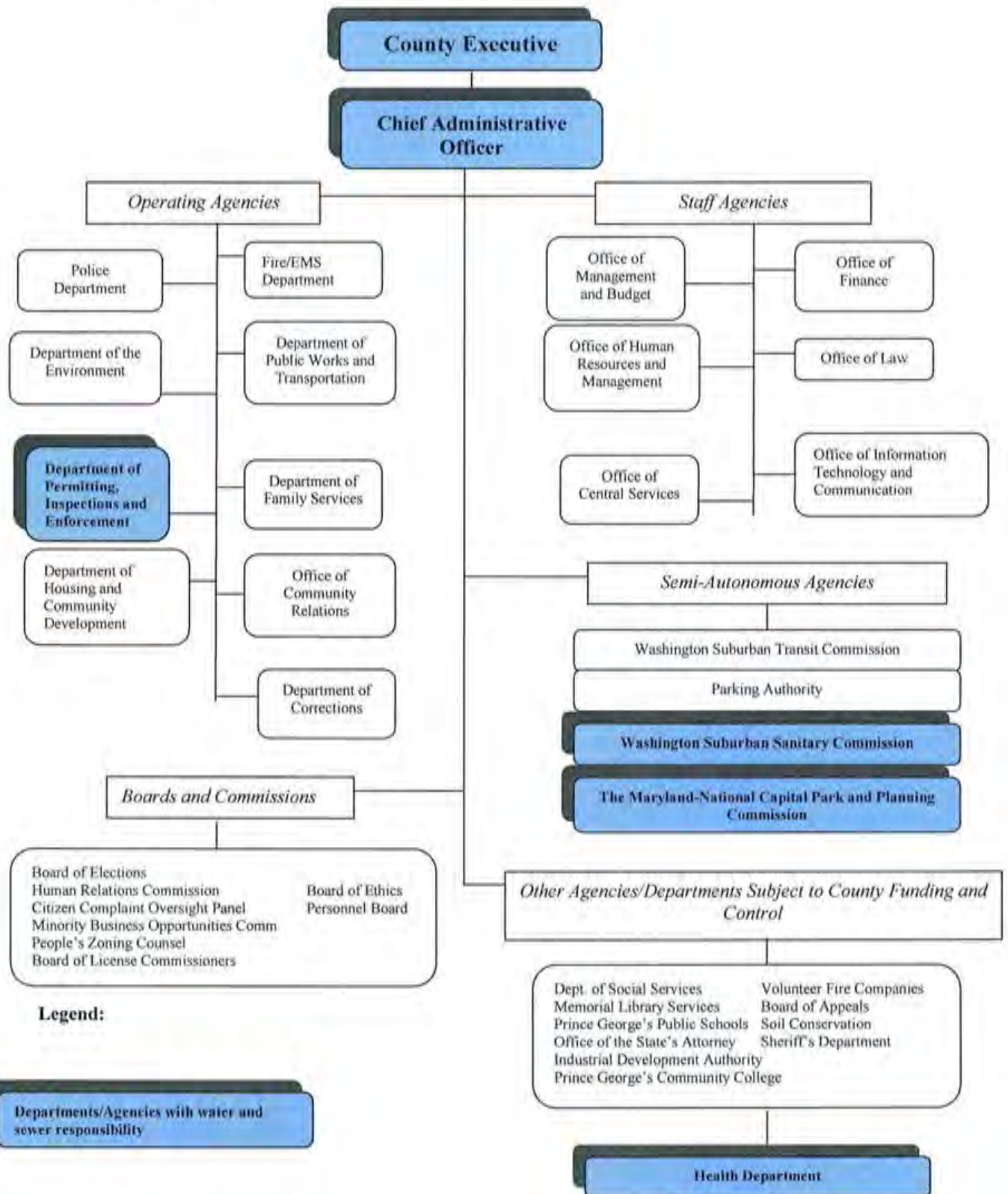
**County Executive** - The County Executive has the responsibility for ensuring that the goals, objectives and legal authority are complied with, preparing the Water and Sewer Plan, and submitting the Plan and amendments to the County Council for its consideration and adoption. Within the Executive Branch of the County Government, the County Executive's responsibilities are delegated to the following agency:

**Department of Permitting, Inspections and Enforcement (DPIE)** – Executive Order No. 20-2012, a reorganization proposal created DPIE, an agency that would accommodate permitting, inspections, enforcement and various other functions in one agency. Council Bill CB-69-2012 implemented Executive Order No. 20-2012 and transferred permitting functions from the Department of Environmental Resources (DER) and other agencies to DPIE.

DPIE became the successor agency of the Department of the Environment, DoE, formerly the Department of Environmental Resources, DER, and the administration of the Water and Sewer Plan was effectively transferred to DPIE in July 2017. DPIE is responsible for preparing the Water and Sewer Plan and its amendments under the guidance of the County Executive and in accordance with State laws and regulations governing the County's water and sewer planning. In addition to its administration of the plan, DPIE provides information on use and occupancy, building permits, and inspections associated with development projects proposing to develop on public water and sewer systems or private well and septic systems.

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**Figure 1.** Prince George's County Executive Branch



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Additionally, DPIE reviews and approves street grade establishment, grading, storm drain, and stormwater plans, and inspection and code enforcement on site development projects.

The County Executive and the County Council also request the following County departments to review and comment on proposed amendments to the Plan:

**Health Department** - The County's Health Department provides information on soils, feasibility of using individual wells and septic systems, use of innovative and alternative on-site sewage disposal systems, preparation and listings of sanitary surveys, and other environmental health sanitation issues in Prince George's County.

**Department of the Environment (DoE)** - The County's Department of the Environment formerly the Department of Environmental Resources, DER, is the result of Executive Order No. 10-2014, a reorganizational proposal that changed the name to more accurately reflect the functions of the department as the environmental steward. Council Bill CB-32-2014 was enacted to implement Executive Order No. 10-2014, distinguishing the department from its former identity as a permitting, inspections and enforcement agency with a renewed image that projects responsible and innovative environmental stewardship. DoE responds to the needs of the public by improving the quality of life through the enhancement and cultivation of the natural and created environment. DoE provides for healthy, safe, and clean communities by protecting and enhancing the natural and built environment, creating an aesthetically pleasing environment, and makes comments on requirements for sustaining air, water and natural resources.

**Department of Public Works and Transportation (DPW&T)** - The County's Department of Public Works and Transportation maintains and constructs County roads and ensures the adequacy of the County streets and roads.

**County Council** - The County Council has the responsibility for preparing a statement of objectives and policies that set forth the framework for the County's Plan, and for approving the Plan and amendments after a public hearing.

State law further requires referral of the Plan, prior to its adoption by the County Council, for review and comments from the Washington Suburban Sanitary Commission (WSSC) and The Maryland-National Capital Park and Planning Commission (M-NCPPC). These agencies provide information and assistance to the County Executive and to the County Council, when requested, during the preparation of the Plan and amendments.

**Washington Suburban Sanitary Commission (WSSC)** - This bi-county State-chartered agency, owns, operates, and maintains various water and wastewater facilities within the Washington Suburban Sanitary District (WSSD). In addition, the WSSC utilizes wastewater treatment plants operated by other jurisdictions to treat wastewater generated in portions of the WSSD. The WSSC provides data and guidance to the County Executives and County Councils of Montgomery and Prince George's counties pertaining to capacity of its water supply and distribution systems and its sewerage treatment and collection systems. The Commission also provides information and guidance regarding engineering and fiscal aspects of water and wastewater system expansion.

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**The Maryland-National Capital Park and Planning Commission (M-NCPPC)** – The Maryland-National Capital Park and Planning Commission, a bi-county State-chartered planning agency, provides information on population and employment distribution, growth projections, planning factors, zoning, environmental impacts, and other development review standards. The Planning Board reviews the Plan and amendments for consistency with the General Plan and submits recommendations to the County Executive and County Council for each category change in accordance with the County Code.

**Other Agencies** – Certain areas of Prince George's County are served by other water and sewer community systems, such as parts of the City of Bowie. The City of Laurel has its own planning agency. These municipalities and agencies also operate in coordination with the County's Water and Sewer Plan and, when appropriate, provide review and comment.

**Maryland Department of the Environment (MDE)** – Pursuant to State law, The Maryland Department of the Environment is responsible for the State's review and approval of the County's Plan. It adopts and administers regulations that the County must follow in preparing its Plan. MDE is responsible for approving and disapproving amendments to the Plan and has the authority to force amendments under some exceptional circumstances. MDE coordinates State grant and loan programs for major water and sewer infrastructure improvements and also regulates the discharge of treated wastewater into State waters through its permit issuing and monitoring programs. MDE coordinates the review and approval of the Plan and its amendments with the Maryland Department of Planning (MDP), the Maryland Department of Natural Resources (DNR), and the Maryland Department of Agriculture.

**Maryland Department of Planning (MDP)** – The Maryland Department of Planning provides guidance, analysis, outreach and support to ensure that all of the State's natural resources, built environment and public assets are preserved and protected as smart and sustainable growth goals are attained. The water and sewer plan, required of each County and Baltimore City, must demonstrate how safe and adequate water and sewerage facilities will be provided to support planned redevelopment and new growth, as outlined in their adopted Comprehensive Land Use Plan. MDP is mandated to advise MDE concerning the consistency of these water and sewer plans and plan amendments with the local comprehensive plans and other development related policies and programs.

### **1.3.1 Intergovernmental Agreements Relating to the Plan**

Parts of the WSSC water and sewer system are integrated with adjoining jurisdictions. The management and operation of such facilities are governed by agreements that the County and WSSC have entered into with other jurisdictions. Primary agreements that relate to Prince George's County and its Water and Sewer Plan are briefly described herein.

#### **Blue Plains Intermunicipal Agreement of 2012**

The Blue Plains Intermunicipal Agreement of 2012 (2012 IMA) was ratified on April 3, 2013, between the District of Columbia (District), the District of Columbia Water and Sewer Authority (DC Water), Fairfax County, Virginia (Fairfax), Montgomery County, Maryland

## **2018 WATER AND SEWER PLAN**

(Montgomery), Prince George's County, Maryland (Prince George's), and the Washington Suburban Sanitary Commission (WSSC). The 2012 IMA replaces the 1985 IMA which is no longer in force or effect. The 2012 IMA was entered into for the purposes of: (a) allocating wastewater treatment capacity of Blue Plains; (b) equitably allocating the capital costs of wastewater treatment and biosolids management; (c) equitably allocating operation and maintenance costs; (d) defining the responsibilities of pretreatment and operational requirements and biosolids management; (e) defining the process of making future wastewater capacity planning decisions, including addressing load allocations; (f) providing a mechanism for continuing coordination, cooperation and communication; and (g) providing environmental stewardship.

### **1983 Bi-County Sewage Treatment Capacity Agreement**

Prior to the 1985 IMA, Prince George's and Montgomery counties and WSSC had agreed upon allocation of WSSC share of the Blue Plains wastewater capacity between the two counties. The agreement, known as the 1983 Bi-County Sewage Treatment Capacity Agreement, outlines the use and maintenance of the apportioned shares. The general principles of this Agreement are further discussed in Chapter 4.

### **1985 City of Bowie/WSSC Water and Sewer Agreement**

The City of Bowie (City) in Prince George's County, Maryland, supplies water to certain areas within the Washington Suburban Sanitary District, according to this interagency agreement. The areas serviced are within the City limits, east of MD Route 3 and north of US Route 50 at the Melford development. The City had provided interim sewer service to this area until a sewer project was completed. Sewer service at the Melford site is now provided by WSSC.

### **2017 City of Bowie/WSSC Interconnection Agreement**

This agreement establishes allocation of costs and standard operating procedures for the Potable Water Interconnection ("the Interconnection") between the facilities of WSSC and the City, within the vicinity of the intersection of Holiday Lane and Easthaven Lane, in order to support the City during water supply emergency conditions.

### **Potomac River Water Appropriation and Use Permit (1957)**

Issued by the MDE to WSSC, this permit allocates the water used for a municipal potable supply to the WSSC service area. It sets the daily average on a yearly basis and a maximum daily withdrawal from the Potomac River. The point of withdrawal is located at 12200 River Road in Potomac, Montgomery County, Maryland. The permit is renewed every 12 years with its latest renewal through August 1, 2022.

### **Patuxent River Water Appropriation and Use Permit (1938)**

Issued by the MDE to WSSC, this permit allocates water used for a regional water supply for WSSC's Patuxent River service area. It sets the daily average on a yearly basis and a maximum daily withdrawal from the Patuxent River. The point of withdrawal is the T. Howard Duckett

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Dam, one mile northwest of Laurel in Prince George's County, Maryland. The permit is renewed every 12 years with its latest renewal through October 1, 2025.

### **Agreements with Charles County (1980 and 1987)**

WSSC signed an agreement with Charles County in October 1980 to provide Prince George's County with 20 percent, 3 million gallons a day (mgd), of the total 15 mgd of the wastewater treatment capacity in the Mattawoman Sewage Treatment Plant. Currently, the actual and committed flow from Prince George's County amounts to a little more than one mgd in serving the Brandywine and southern Accokeek areas. Additionally, the 1980 Agreement identifies WSSC flow allocations along the points of connection to the Mattawoman Interceptor Sewer. Since the Agreement was executed, the actual points of connection have differed and a proposed addendum is currently being prepared by WSSC to modify the exhibit in the agreement and to redistribute the allocations. The overall interceptor capacity available to WSSC will not change with this addendum.

Another agreement with Charles County signed in March 1987 provides for the water supply of up to 1.4 million gallons per day (mgd) to Charles County through a connection along Bealle Hill Road. Charles County is currently being supplied under the terms of this agreement.

### **Agreement with Howard County (1988)**

WSSC and Howard County have an agreement in which WSSC provides up to 5 million gallons a day (mgd) of water supply to Howard County through its water distribution system – an interconnection at Woodview Terrace in the City of Laurel in Prince George's County, Maryland. The current agreement governing the supply of water between Howard County and WSSC was originally executed in 1954 and replaced with a new agreement in 1988. It has been amended twice (2008 and 2009; see below). In accordance with the 1988 agreement (as amended), Howard County may draw up to 5 mgd of potable water from the WSSC system with a minimum draw of 2.5 mgd daily. The supply may be used at any time at the discretion of Howard County. This Agreement was effected on June 16, 1988.

### **2008 Addendum to the 1988 Howard County Agreement.**

In October 2008, WSSC and Howard County agreed to an addendum to the 1988 agreement. Howard County had not purchased its full allotment due to WSSC's water costing more than Howard County's other main supplier, the City of Baltimore (Baltimore). In this addendum to the agreement, Howard County agreed to guarantee a purchase of a portion of its full allotment, assuming WSSC charges a rate comparable to that of Howard County's other main supplier, Baltimore. Howard County conducted a pilot program for six months to test the capacity of its current equipment and facilities to determine what portion of its current allotment it could guarantee to utilize on a daily basis. WSSC agreed to reduce its current rate of payment in the original agreement to equal the service rate charged Howard County by Baltimore (\$1,304.80 per million gallons) during the pilot period. After the pilot period ended, the rate of payment would revert to the 1988 Agreement, unless amended. All other terms and conditions of the 1988 Agreement were unchanged.

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### **2009 Addendum to the 1988 Howard County Agreement**

In August 2009, WSSC and Howard County agreed to a second addendum to the 1988 Agreement. This second addendum superseded the first addendum of 2008. In the second addendum, Howard County agreed to purchase a minimum of 2.5 million gallons of water per day, regardless of its actual draw, but no greater than the 5 million gallons maximum daily rate established in the 1988 Agreement. The minimum daily rate would be calculated as a monthly daily average “beginning at midnight of the 1<sup>st</sup> day of the month and ending at midnight of the last day of the month.” Howard County would not be required to purchase any minimum amount of water for any day that (1) WSSC furnishes water for less than a full day, or (2) WSSC provides a restricted water supply at any time during the same period of time, or (3) WSSC and Howard County mutually agree to waive the minimum purchase. In such events, WSSC would adjust the minimum daily rate for that month by eliminating that day the purchase was not required. WSSC agreed to set its current billing rate for all potable water supplied to Howard County at the “Wholesale Service Rate” charged Howard County by the City of Baltimore (Baltimore) for each billing period, beginning at \$1,304.80 per million gallons. Howard County agreed to promptly notify WSSC of any changes in Baltimore’s billing rate and, annually on June 30<sup>th</sup>, provide certification to WSSC of the current Baltimore rates. Changes in Baltimore’s billing rate would be applied retroactively to WSSC’s billing rate as of the date of the Baltimore rate change. Howard County, at their expense, has the right to review and audit the statements and accounts of WSSC related to the supply of and billing for the potable water. WSSC, at their expense, would have the right to review and audit the statements and accounts of Howard County related to the supply of and billing for the use of potable water. Both entities would make their reviews or audits available to each other upon completion. The minimum daily rate, maximum daily rate, and billing rate can be reviewed every five years by the parties, or earlier at the request of either Howard County or WSSC. All other terms and conditions of the 1988 Agreement were unchanged.

### **1.3.2 Other Regional Water Agreements and Permits**

Prince George’s County is also party to agreements established by the States of Maryland and Virginia, the District of Columbia, the U.S. Environmental Protection Agency, the Chesapeake Bay Commission and the Metropolitan Washington Council of Governments that relate to water conservation, low-flow conditions, and river restoration in the Washington metropolitan area. WSSC, as the bi-county agent for Prince George’s and Montgomery counties in Maryland is also a cosigner of these agreements. Some of the agreements that may affect the County’s Plan include:

#### **Potomac River Low Flow Allocation Agreement (LFAA) 1978**

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. The signatories to this Agreement are the State of Maryland, the State of Virginia, the District of Columbia, the U.S. Army Corps of Engineers, WSSC and the Fairfax County Water Authority (FCWA). The LFAA Modification of 1982 provides for releases from the Jennings Randolph (Bloomington) and Savage reservoirs and Little Seneca Lake to be subject to the allocation formula of the LFAA. The 1982 modification also required the parties in April 1990, and at five-year intervals thereafter, to conduct 20-year demand forecasts and water resource

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adequacy analyses, and further, to share the costs of any additional needed supplies by a stated formula.

### **Metropolitan Washington Water Supply and Drought Awareness Response Plan (2000)**

This plan of action would be implemented during drought conditions for the purpose of coordinated regional response. It consists of two interrelated components: (1) a year-round plan emphasizing wise water use and conservation; and (2) a water supply and drought awareness and response plan. The plan covers emergencies that affect the quantity of water supplied from the Potomac River. Signatories to this agreement are the Metropolitan Washington Council of Governments' Board of Directors, including Prince George's County. A listing of the local governments acting as members of this board may be found in **Appendix 3-6** of this Plan.

### **Metropolitan Washington Water Supply Emergency Plan (1994)**

Three plans are included: a regional response mechanism for health-related emergencies in the Washington Aqueduct Division system, a mechanism for emergencies that affect more than one of the utilities that withdraw raw water from the Potomac River; and, the routine planning and cooperative operating procedures to reduce the risk of drought affecting the region's water supply.

### **Patuxent Reservoirs Watershed Protection Agreement (1996)**

The Patuxent Reservoirs Watershed Protection Agreement was signed on October 29, 1996 and provides for a consensus-based process to establish watershed protection strategies. These strategies encourage, enforce and ensure a safe, reliable source of drinking water. The signatories include Howard, Montgomery and Prince George's counties in Maryland, the Howard Soil Conservation District, the Montgomery Soil Conservation District, the Maryland-National Capital Park and Planning Commission, and Washington Suburban Sanitary Commission. The Patuxent watershed spans the three County signatories, originating from a small portion of Frederick County, Maryland. The reservoirs are surrounded by 6.6 square miles of parkland, owned and maintained by WSSC. The Agreement includes the Triadelphia and T. Howard Duckett reservoirs, the contributing Patuxent River, and its tributary streams and associated groundwater sources.

### **1.3.3 Other Related Agreements**

#### **Chesapeake Bay Agreement (2000)**

The Chesapeake Bay Agreement to restore the Chesapeake Bay was signed in 1983 by the governors of Maryland, Virginia, and Pennsylvania, the mayor of the District of Columbia, the administrator of the Environmental Protection Agency, and the chairman of the Chesapeake Bay Commission. The Agreement was amended in 1987, 1992 and 2000. Its initial goal was to reduce by 40 percent, nutrient loadings (nitrogen and phosphorous) from point and nonpoint sources, to the mainstem of the Bay by the year 2000. In June 2000, the Chesapeake Bay Program adopted Chesapeake 2000, an agreement intended to guide restoration activities throughout the Chesapeake Bay watershed through 2010. The 2000 Agreement was a voluntary effort and a recommitment to restore, enhance and protect the living resources of the Chesapeake Bay. Its expanded goals

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address reductions in sediment and chemical contaminants among a number of other issues. Regional Water Quality Initiatives in the Chesapeake Bay Watershed (Section 4.3.2 of Chapter 4), addresses actions for continuing efforts in reducing impairments to the Bay.

### **Chesapeake Bay Watershed Agreement (2014)**

This agreement, signed on June 16, 2014, encompasses the seven jurisdictions in the watershed by adding New York, West Virginia and Delaware, and making them full partners in the Chesapeake Bay Program and the Chesapeake Executive Council. Federal agencies have also reaffirmed and augmented their long-standing and shared commitments. The agreement remains a voluntary effort and subject to the availability of appropriated funds. Its underlying principles remain the same: to restore, enhance, protect and sustain the Chesapeake Bay. It acknowledges that every issue cannot be addressed at once, and outlines progression in a strategic and cost-effective manner. Implementation of the agreement is dependent on local governments partnering with individuals, businesses, watershed groups and non-governmental organizations. The agreement may be found as **Appendix 1-1** of this chapter.

### **Anacostia Watershed Restoration Agreement (2001)**

Efforts to restore the Anacostia River watersheds by reducing pollutant loads and protecting and restoring the ecological integrity of its streams are identified in this Agreement. Signatories are the District of Columbia, Montgomery and Prince George's counties, the State of Maryland, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the National Park Service.

### **1.3.4 Consent Decree (2005)**

#### **United States of America, State of Maryland, Anacostia Watershed Society, Audubon Naturalist Society of the Central Atlantic States, Inc., Friends of Sligo Creek, and the Natural Resources Defense Council v. Washington Suburban Sanitary Commission (2005)**

In December 2005, in response to Clean Water Act litigation brought by the United States, the State of Maryland and a coalition of four environmental groups, the Department of Justice, the Environmental Protection Agency, the State of Maryland and Washington Suburban Sanitary Commission (WSSC) entered into a settlement agreement consisting of a 12 - year action plan to repair and upgrade its wastewater collection system and eliminate sanitary sewer overflows (SSOs). The Agreement accelerates \$1.6 billion in improvements to WSSC's wastewater collection system and facilities, provides \$4.4 million for supplemental environmental improvements projects (SEIPs) and a \$1.1 million civil penalty. (The full text of this Agreement can be found at United States, State of Maryland, Anacostia Watershed Society, Audubon Naturalist Society of the Central Atlantic States, Inc., Friends of Sligo Creek, and Natural Resources Defense Council v. Washington Suburban Sanitary Commission, PJM-04-3679).

WSSC will perform wastewater collection systems evaluations, including sewer system evaluation surveys and trunk sewer inspections aimed at locating defects that may cause SSOs. WSSC will also inspect and permit all food service establishments in an effort to improve fats,

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oils, and grease (FOG) abatement. Under Article VII of the Consent Decree, WSSC is required to conduct Performance Assessments of the work undertaken in Articles II (Sewer System Evaluation Surveys or SSES) and VI (Sewer Repair, Replacement, and Rehabilitation Plans or SR3 Plans) for each sewer basin in the collection system. As part of the performance assessments, WSSC will quantify the reduction of I/I in each sewer basin that is the subject of an SSES. The performance assessment shall be completed for each sewer basin no later than 18 months after complete implementation of the SR3 Plan for each sewer basin. The Performance Assessment report shall be prepared no later than 90 days after completion of the performance assessment, and submitted to MDE, EPA and the citizens listed as “plaintiffs-interveners” in the consent decree. The first Sewer Basin Performance Assessments began in 2014. To date, WSSC has completed five performance assessments. As the above work is completed, the sewer models will be updated to reassess system capacity constraints.

Under the first SEIP project, WSSC will acquire conservation easements and/or will purchase undeveloped real estate in the area surrounding the Patuxent Reservoir to reduce pollutant flows into the Reservoir. Under the second SEIP project, WSSC will further reduce the level of nitrogen that is discharged from its Western Branch Water Resource Recovery Facility (formerly Wastewater Treatment Plant), which will benefit the Chesapeake Bay.

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***APPENDIX 1-1***

***CHESAPEAKE BAY WATERSHED AGREEMENT***

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# VISION

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*The Chesapeake Bay Program partners envision an environmentally and economically sustainable Chesapeake Bay watershed with clean water, abundant life, conserved lands and access to the water, a vibrant cultural heritage and a diversity of engaged citizens and stakeholders.*



# PREAMBLE

The Chesapeake Bay watershed is one of the most extraordinary places in America, spanning six states and the District of Columbia. As the nation's largest and most productive estuary, the Chesapeake Bay and its vast network of more than 180,000 miles of streams, creeks and rivers, holds tremendous ecological, cultural, economic, historic and recreational value for the nearly 18 million people who live, work and play in the region.

To restore and protect this national treasure, the Chesapeake Bay Program partnership (the "Partnership") was formed in 1983 when the Governors of Maryland, Virginia, Pennsylvania, the Mayor of the District of Columbia, the Chair of the Chesapeake Bay Commission and the Administrator of the Environmental Protection Agency signed the first Chesapeake Bay agreement. That initial agreement recognized the "historical decline of living resources" in the Chesapeake Bay and committed to a cooperative approach to "fully address the extent, complexity and sources of pollutants entering the Bay." For more than 30 years, this regional Partnership has become recognized as one of the nation's premier estuarine restoration efforts, implementing policies, engaging in scientific investigation and coordinating actions among the states, the District of Columbia and the federal government.

The Chesapeake Bay Program partners have made much progress in that time, but there is more to do—especially in the face of continued challenges such as changes in population, loss of farm and forest lands and changing environmental conditions. Through the 2014 Chesapeake Bay Watershed Agreement (the "Agreement"), the Partnership recommits to the Bay watershed restoration effort based in and guided by science and the lessons learned from our experiences.

One of the most important lessons the partners have learned from the past three decades is that although watershed-wide partnerships can help to coordinate and catalyze progress, implementation happens locally. Local governments are key partners in our work, as are individual citizens, businesses, watershed groups and other non-governmental organizations. Working together to engage, empower and facilitate these partners will leverage resources and ensure better outcomes.

The Partnership's experience with watershed restoration and protection efforts has shown that measurable results, coupled with firm accountability, yield the most significant results. The Partnership stands ready to embrace new ideas, technologies and policies that will help meet its goals. The Partnership is committed to improving verification and transparency of its actions to strengthen and increase public confidence in its efforts.

The 1983 Agreement laid the foundation for a cooperative program that included four jurisdictions along with the Chesapeake Bay Commission and the federal government. This new Agreement includes the seven jurisdictions in the watershed, bringing New York, West Virginia and Delaware on board with the original signatories and making them full partners in the Chesapeake Bay Program and the Chesapeake Executive Council. Due in part to a 2009 Presidential Executive Order, numerous federal agencies have also reaffirmed and augmented their longstanding and shared commitment to restoring and protecting the Chesapeake Bay.

This Chesapeake Bay Watershed Agreement acknowledges that the Partnership cannot address every issue at once and that progress must be made in a strategic manner, focusing on efforts that will achieve the most cost-effective results. Watershed restoration and protection have the potential to become integral drivers of the region's economy. To that end, the Partnership is committed to achieving restoration success while maximizing the economic benefits to local communities across the region. The signatories to this voluntary Agreement commit to achieving the restoration and protection of the Chesapeake Bay watershed and its living resources.

# PRINCIPLES

The following principles are an overarching framework by which the Chesapeake Bay Program commits to operate. They encompass the partners' collective, core values and are intended to help guide us in our work as the Partnership develops policy and takes actions to achieve this Agreement's Goals and Outcomes.

## THE PARTNERSHIP WILL:

- **Collaborate** to achieve the Goals and Outcomes of this Agreement.
- **Achieve Goals and Outcomes** in a timely way and at the least possible cost to our citizens.
- **Represent the interests of people** throughout the watershed fairly and effectively, including a broad diversity of cultures, demographics and ages.
- **Operate with transparency** in program decisions, policies, actions and reporting on progress to strengthen public confidence in our efforts.
- **Use science-based decision-making and seek out innovative technologies and approaches** to support sound management decisions in a changing system.
- **Maintain a coordinated watershed-wide monitoring and research program** to support decision-making and track progress and the effectiveness of management actions.
- **Acknowledge, support and embrace local governments** and other local entities in watershed restoration and protection activities.
- **Anticipate changing conditions**, including long-term trends in sea level, temperature, precipitation, land use and other variables.
- **Adaptively manage** at all levels of the Partnership to foster continuous improvement.
- **Seek consensus** when making decisions.
- **Use place-based approaches**, where appropriate, that produce recognizable benefits to local communities while contributing to larger ecosystem goals.
- **Engage citizens** to increase the number and diversity of people who support and carry out the conservation and restoration activities necessary to achieve the Goals and Outcomes of the Agreement.
- **Explore using social science** to better understand and measure how human behavior can drive natural resource use, management and decision-making.
- **Promote environmental justice** through the meaningful involvement and fair treatment of all people, regardless of race, color, national origin or income, in the implementation of this Agreement.



# GOALS & OUTCOMES

The commitments contained in this section are the Goals and Outcomes that the signatories will work on collectively to advance restoration and protection of the Chesapeake Bay ecosystem and its watershed. The Goals articulate the desired high-level aspects of the partners' Vision. The Outcomes related to each Goal are specific, time-bound, measurable targets that directly contribute to achieving that Goal.

The Management Strategies further described in the next section of this Agreement articulate the actions necessary to achieve the Goals and Outcomes. This work will require effort from many, including all levels of government, academic institutions, non-governmental organizations, watershed groups, businesses and individual citizens. Local government will continue to play a unique and critical role in helping the Partnership realize this shared Vision for the Chesapeake Bay. Signatories will participate in achieving the Outcomes of this Agreement in the manner described in the "Management Strategies Development and Implementation" section.

While the Goals and Outcomes are described by separate topic areas, the signatories recognize that they are interrelated. Improvements in habitat and water quality lead to healthier living resources. Environmentally literate citizens are more engaged stewards of the Chesapeake Bay's healthy watersheds. Better water quality means swimmable, fishable waters for Bay residents and visitors. Increased public access to the Bay inspires people to care for critical landscapes and honor the region's heritage and culture. Healthy fish and shellfish populations support a vibrant economy for a spectrum of fishing-related industries. The signatories recognize that all aspects of the ecosystem are connected and that these Goals and Outcomes support the health and the protection of the entire Bay watershed.

As the signatories identify new opportunities and concerns, Goals or Outcomes may be adopted or modified. Any changes or additions to Goals will be approved by the Executive Council. The Principals' Staff Committee will approve changes or additions to Outcomes, although significant changes or additions will be raised to the Executive Council for approval. Proposed changes to Goals and Outcomes or the addition of new ones will be open for public input before being finalized. Final changes or additions will be available on the Chesapeake Bay Program's website.

# GOALS & OUTCOMES

## SUSTAINABLE FISHERIES

Habitat loss, poor water quality, non-native and invasive species, toxics and fishing pressure continue to threaten the sustainability of the Chesapeake Bay's fisheries. Sustaining fish and shellfish populations contributes to a strong economy and maritime culture and supports a healthy ecosystem for all Bay watershed residents.



**GOAL:** Protect, restore and enhance finfish, shellfish and other living resources, their habitats and ecological relationships to sustain all fisheries and provide for a balanced ecosystem in the watershed and Bay.

Blue Crab  
Abundance  
Outcome



Maintain a sustainable blue crab population based on the current 2012 target of 215 million adult females. Refine population targets through 2025 based on best available science.

Blue Crab  
Management  
Outcome



Manage for a stable and productive crab fishery including working with the industry, recreational crabbers and other stakeholders to improve commercial and recreational harvest accountability. By 2018, evaluate the establishment of a Bay-wide, allocation-based management framework with annual levels set by the jurisdictions for the purpose of accounting for and adjusting harvest by each jurisdiction.

Oyster Outcome



Continually increase finfish and shellfish habitat and water quality benefits from restored oyster populations. Restore native oyster habitat and populations in 10 tributaries by 2025 and ensure their protection.

Forage Fish  
Outcome



Continually improve the Partnership's capacity to understand the role of forage fish populations in the Chesapeake Bay. By 2016, develop a strategy for assessing the forage fish base available as food for predatory species in the Chesapeake Bay.

Fish Habitat  
Outcome



Continually improve effectiveness of fish habitat conservation and restoration efforts by identifying and characterizing critical spawning, nursery and forage areas within the Bay and tributaries for important fish and shellfish, and use existing and new tools to integrate information and conduct assessments to inform restoration and conservation efforts.



# GOALS & OUTCOMES

## VITAL HABITATS

Increasing needs for land and resources have resulted in fragmentation and degradation of many habitats across the watershed while also challenging the health of many Bay watershed species. Conserving healthy habitats and restoring the connectivity and function of degraded habitats is essential to the long-term resilience and sustainability of the ecosystem and the region's quality of life.



**GOAL:** Restore, enhance and protect a network of land and water habitats to support fish and wildlife, and to afford other public benefits, including water quality, recreational uses and scenic value across the watershed.

Wetlands  
Outcome



Continually increase the capacity of wetlands to provide water quality and habitat benefits throughout the watershed. Create or re-establish 85,000 acres of tidal and non-tidal wetlands and enhance the function of an additional 150,000 acres of degraded wetlands by 2025. These activities may occur in any land use (including urban) but primarily occur in agricultural or natural landscapes.

5

Black Duck



By 2025, restore, enhance and preserve wetland habitats that support a wintering population of 100,000 black ducks, a species representative of the health of tidal marshes across the watershed. Refine population targets through 2025 based on best available science.

Stream Health  
Outcome



Continually improve stream health and function throughout the watershed. Improve health and function of ten percent of stream miles above the 2008 baseline for the Chesapeake Bay watershed.

Brook Trout



Restore and sustain naturally reproducing brook trout populations in Chesapeake headwater streams with an eight percent increase in occupied habitat by 2025.

# GOALS & OUTCOMES

## VITAL HABITATS (CONTINUED)



**GOAL:** Restore, enhance and protect a network of land and water habitats to support fish and wildlife, and to afford other public benefits, including water quality, recreational uses and scenic value across the watershed.

Fish Passage Outcome



Continually increase available habitat to support sustainable migratory fish populations in Chesapeake Bay freshwater rivers and streams. By 2025, restore historical fish migratory routes by opening 1,000 additional stream miles, with restoration success indicated by the consistent presence of alewife, blueback herring, American shad, hickory shad, American eel and brook trout, to be monitored in accordance with available agency resources and collaboratively developed methods.

Submerged Aquatic Vegetation (SAV) Outcome



Sustain and increase the habitat benefits of SAV (underwater grasses) in the Chesapeake Bay. Achieve and sustain the ultimate outcome of 185,000 acres of SAV Bay-wide necessary for a restored Bay. Progress toward this ultimate outcome will be measured against a target of 90,000 acres by 2017 and 130,000 acres by 2025.

Forest Buffer Outcome



Continually increase the capacity of forest buffers to provide water quality and habitat benefits throughout the watershed. Restore 900 miles per year of riparian forest buffer and conserve existing buffers until at least 70 percent of riparian areas throughout the watershed are forested.

Tree Canopy Outcome



Continually increase urban tree canopy capacity to provide air quality, water quality and habitat benefits throughout the watershed. Expand urban tree canopy by 2,400 acres by 2025.



# GOALS & OUTCOMES

## WATER QUALITY

Restoring the Bay's waters is critical to overall watershed restoration because clean water is the foundation for healthy fisheries, habitats and communities across the region. However excess amounts of nitrogen, phosphorus and sediment in the Bay and its tributaries have caused many sections of the Bay to be listed as "impaired" under the Clean Water Act. The Chesapeake Bay Total Maximum Daily Load (TMDL) is driving nutrient and sediment reductions as described in the Watershed Implementation Plans (WIPs), adopted by the states and the District of Columbia, and establishes the foundation for water quality improvements embodied in this Agreement. These plans set nutrient and sediment reduction targets for various sources—stormwater, agriculture, air deposition, wastewater and septic systems.



**GOAL:** Reduce pollutants to achieve the water quality necessary to support the aquatic living resources of the Bay and its tributaries and protect human health.

7

2017 Watershed Implementation Plans (WIP) Outcome



By 2017, have practices and controls in place that are expected to achieve 60 percent of the nutrient and sediment pollution load reductions necessary to achieve applicable water quality standards compared to 2009 levels.

2025 WIP Outcome



By 2025, have all practices and controls installed to achieve the Bay's dissolved oxygen, water clarity/submerged aquatic vegetation and chlorophyll *a* standards as articulated in the Chesapeake Bay TMDL document.

Water Quality Standards Attainment and Monitoring Outcome



Continually improve the capacity to monitor and assess the effects of management actions being undertaken to implement the Bay TMDL and improve water quality. Use the monitoring results to report annually to the public on progress made in attaining established Bay water quality standards and trends in reducing nutrients and sediment in the watershed.

# GOALS & OUTCOMES

## TOXIC CONTAMINANTS

Toxic contaminants harm fish and wildlife in the Bay and its watershed and create risks to human health that limit the amount of fish that people can eat. Reducing the impacts of toxic contaminants is critical to improve the health of fish and wildlife, thereby improving their recreational value for citizens.



**GOAL:** Ensure that the Bay and its rivers are free of effects of toxic contaminants on living resources and human health.

Toxic Contaminants  
Research Outcome



Continually increase our understanding of the impacts and mitigation options for toxic contaminants. Develop a research agenda and further characterize the occurrence, concentrations, sources and effects of mercury, PCBs and other contaminants of emerging and widespread concern. In addition, identify which best management practices might provide multiple benefits of reducing nutrient and sediment pollution as well as toxic contaminants in waterways.

Toxic Contaminants  
Policy and Prevention  
Outcome



Continually improve practices and controls that reduce and prevent the effects of toxic contaminants below levels that harm aquatic systems and humans. Build on existing programs to reduce the amount and effects of PCBs in the Bay and watershed. Use research findings to evaluate the implementation of additional policies, programs and practices for other contaminants that need to be further reduced or eliminated.



# GOALS & OUTCOMES

## HEALTHY WATERSHEDS

Many small watersheds in the Bay region are currently healthy but also at risk of degradation as the demand for local lands and resources increases. Promoting the long-term conservation and protection of healthy watershed systems through stakeholder engagement, collaboration and education is critical to the health of the larger ecosystem.



**GOAL:** Sustain state-identified healthy waters and watersheds recognized for their high quality and/or high ecological value.

Healthy Watersheds  
Outcome



100 percent of state-identified currently healthy waters and watersheds remain healthy.

# GOALS & OUTCOMES

## STEWARDSHIP

The long-term success of the Chesapeake Bay restoration effort will depend on local leadership—and local action that depends primarily on a strong citizen stewardship. More than 600 local conservation and watershed organizations in our region are educating and empowering citizens to restore and protect their local streams and rivers. Tens of thousands of local citizen volunteers continue to donate their time and talent to our shared goals. Building a larger, broader, and more diverse constituency of stewards is vital to achieving many of the Goals and Outcomes outlined in this Agreement.



**GOAL:** Increase the number and the diversity of local citizen stewards and local governments that actively support and carry out the conservation and restoration activities that achieve healthy local streams, rivers and a vibrant Chesapeake Bay.

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Citizen Stewardship Outcome



Increase the number and diversity of trained and mobilized citizen volunteers with the knowledge and skills needed to enhance the health of their local watersheds.

Local Leadership Outcome



Continually increase the knowledge and capacity of local officials on issues related to water resources and in the implementation of economic and policy incentives that will support local conservation actions.

Diversity Outcome



Identify minority stakeholder groups that are not currently represented in the leadership, decision-making and implementation of conservation and restoration activities and create meaningful opportunities and programs to recruit and engage them in the Partnership's efforts.



# GOALS & OUTCOMES

## LAND CONSERVATION

The landscapes around the Bay and its tributaries are ecologically, culturally, historically and recreationally valuable to the people and communities of the region. Stimulating, renewing and expanding commitments to conserve priority lands for use and enjoyment is an integral part of furthering the watershed's identity and spirit.



**GOAL:** Conserve landscapes treasured by citizens in order to maintain water quality and habitat; sustain working forests, farms and maritime communities; and conserve lands of cultural, indigenous and community value.

Protected Lands  
Outcome



By 2025, protect an additional two million acres of lands throughout the watershed—currently identified as high conservation priorities at the federal, state or local level—including 225,000 acres of wetlands and 695,000 acres of forest land of highest value for maintaining water quality. (2010 baseline year)

Land Use Methods and  
Metrics Development  
Outcome



Continually improve the knowledge of land conversion and the associated impacts throughout the watershed. By 2016, develop a Chesapeake Bay watershed-wide methodology and local level metrics for characterizing the rate of farmland, forest and wetland conversion, measuring the extent and rate of change in impervious surface coverage and quantifying the potential impacts of land conversion to water quality, healthy watersheds and communities. Launch a public awareness campaign to share this information with citizens, local governments, elected officials and stakeholders.

Land Use Options  
Evaluation Outcome



By the end of 2017, with the direct involvement of local governments or their representatives, evaluate policy options, incentives and planning tools that could assist them in continually improving their capacity to reduce the rate of conversion of agricultural lands, forests and wetlands as well as the rate of changing landscapes from more natural lands that soak up pollutants to those that are paved over, landscaped or otherwise impervious. Strategies should be developed for supporting local governments' and others' efforts in reducing these rates by 2025 and beyond.

# GOALS & OUTCOMES

## PUBLIC ACCESS

Physical access to the Bay and its tributaries is very limited, with real consequences for quality of life, local economies and long-term conservation. Increasing public access to local waterways for fishing, swimming, boating and other activities fosters a shared sense of responsibility and increased stewardship that supports Bay watershed restoration goals.



**GOAL:** Expand public access to the Bay and its tributaries through existing and new local, state and federal parks, refuges, reserves, trails and partner sites.

Public Access  
Site Development  
Outcome



By 2025, add 300 new public access sites, with a strong emphasis on providing opportunities for boating, swimming and fishing, where feasible. (2010 baseline year)



# GOALS & OUTCOMES

## ENVIRONMENTAL LITERACY

The well-being of the Chesapeake Bay watershed will soon rest in the hands of its youngest citizens—the more than three million students in kindergarten through twelfth grade. Establishing strong, targeted environmental education programs now provides a vital foundation for these future watershed stewards.



**GOAL:** Enable every student in the region to graduate with the knowledge and skills to act responsibly to protect and restore their local watershed.

Student Outcome



Continually increase students' age-appropriate understanding of the watershed through participation in teacher-supported, meaningful watershed educational experiences and rigorous, inquiry-based instruction, with a target of at least one meaningful watershed educational experience in elementary, middle and high school depending on available resources.

Sustainable Schools Outcome



Continually increase the number of schools in the region that reduce the impact of their buildings and grounds on their local watershed, environment and human health through best practices, including student-led protection and restoration projects.

Environmental Literacy Planning Outcome



Each participating Bay jurisdiction should develop a comprehensive and systemic approach to environmental literacy for all students in the region that includes policies, practices and voluntary metrics that support the environmental literacy Goals and Outcomes of this Agreement.

# GOALS & OUTCOMES

## CLIMATE RESILIENCY

Changing climatic and sea level conditions may alter the Bay ecosystem and human activities, requiring adjustment to policies, programs and projects to successfully achieve our restoration and protection goals for the Chesapeake Bay and its watershed. This challenge requires careful monitoring and assessment of these impacts and application of this knowledge to policies, programs and projects.



**GOAL:** Increase the resiliency of the Chesapeake Bay watershed, including its living resources, habitats, public infrastructure and communities, to withstand adverse impacts from changing environmental and climate conditions.

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Monitoring and Assessment Outcome



Continually monitor and assess the trends and likely impacts of changing climatic and sea level conditions on the Chesapeake Bay ecosystem, including the effectiveness of restoration and protection policies, programs and projects.

Adaptation Outcome



Continually pursue, design and construct restoration and protection projects to enhance the resiliency of Bay and aquatic ecosystems from the impacts of coastal erosion, coastal flooding, more intense and more frequent storms and sea level rise.



# MANAGEMENT STRATEGIES

## DEVELOPMENT AND IMPLEMENTATION

Within one year of the signing of the Chesapeake Bay Watershed Agreement, the Chesapeake Bay Program's Goal Implementation Teams will develop Management Strategies for the Outcomes that support this Agreement's goals. These strategies will outline the means for accomplishing each Outcome as well as monitoring, assessing and reporting progress and coordinating actions among partners and stakeholders as necessary. Where appropriate, Management Strategies should describe how local governments, nonprofit and private partners will be engaged; where actions, tools or technical support are needed to empower local governments and others to do their part; and what steps will be taken to facilitate greater local participation in achieving the Outcome.

Participation in Management Strategies or participating in the achievement of Outcomes is expected to vary by signatory based on differing priorities across the watershed. This participation may include sharing knowledge, data or information, educating citizens or members, working on future legislation and developing or implementing programs or practices. Management Strategies, which are aimed at implementing outcomes, will identify participating signatories and other stakeholders, including local governments and nonprofit organizations, and will be implemented in two-year periods.

The signatories and other partners shall thereafter update and/or modify such commitments every two years. Specific Management Strategies will be developed in consultation with stakeholders, organizations and other agencies and will include a period for public input and review prior to final adoption. The Principals' Staff Committee will report on adoption of Management Strategies at the next Executive Council meeting and report on Implementation of Management Strategies every two years.

Management Strategies may address multiple Outcomes if deemed appropriate. Goal Implementation Teams will re-evaluate biennially and update strategies as necessary, with attention to changing environmental and economic conditions. Partners may identify policy changes to address these conditions and minimize obstacles to achieve the Outcomes.

Stakeholder input will be incorporated into the development and reevaluation of each of the strategies. The Chesapeake Bay Program will make these strategies and reports on progress available to the public in a transparent manner on its websites and through public meetings of the appropriate Goal Implementation Teams and Management Board.

The Goal Implementation Teams will submit the Management Strategies to the Partnership's Management Board for review. If the Management Board determines that any strategy or plan developed prior to the signing of this Agreement meets the requirements of a Management Strategy as defined above, no new strategy needs to be developed. This includes, but is not limited to, the strategies and plans for implementing the Chesapeake Bay TMDL.

# AFFIRMATION

As Chesapeake Bay Program Partners, we recognize the need to accelerate implementation of actions necessary to achieve the Goals and Outcomes outlined herein and realize our shared Vision of a healthy and vibrant Chesapeake Bay watershed.

As Chesapeake Bay Program Partners, we acknowledge that this Agreement is voluntary and subject to the availability of appropriated funds. This Agreement is not a contract or an assistance agreement. We also understand that this Agreement does not pre-empt, supersede or override any other law or regulation applicable to each signatory.

We, the undersigned members of the Chesapeake Executive Council, re-affirm our commitment to support the Goals of this Agreement and to work cooperatively in its implementation. We agree to work both independently and collaboratively toward the Goals and Outcomes of this Agreement and to implement specific Management Strategies to achieve them. Every citizen of this great watershed is invited to join with the Partnership, uniting as a region and embracing the actions that will lead to success.

Date: June 16, 2014

For the Chesapeake Bay Commission



*Ronald E. Miller*

For the State of Delaware



*Jed Mahaffey*

For the District of Columbia



*Vernant C. Gray*

For the State of Maryland



*Arthur H. Sledge*

For the Commonwealth of Pennsylvania



*Tom Corbett*

For the State of New York



*Rob Astorino*

For the Commonwealth of Virginia



*Gregory B. Waffle*

For the State of West Virginia



*Carl Kay Tomblin*

For the United States of America



*Jack McInerney*

on behalf of the Federal Government and the  
Federal Leadership Committee for the Chesapeake Bay:

U.S. Environmental Protection Agency

U.S. Department of Agriculture

U.S. Department of Commerce

U.S. Department of Defense

U.S. Department of Homeland Security

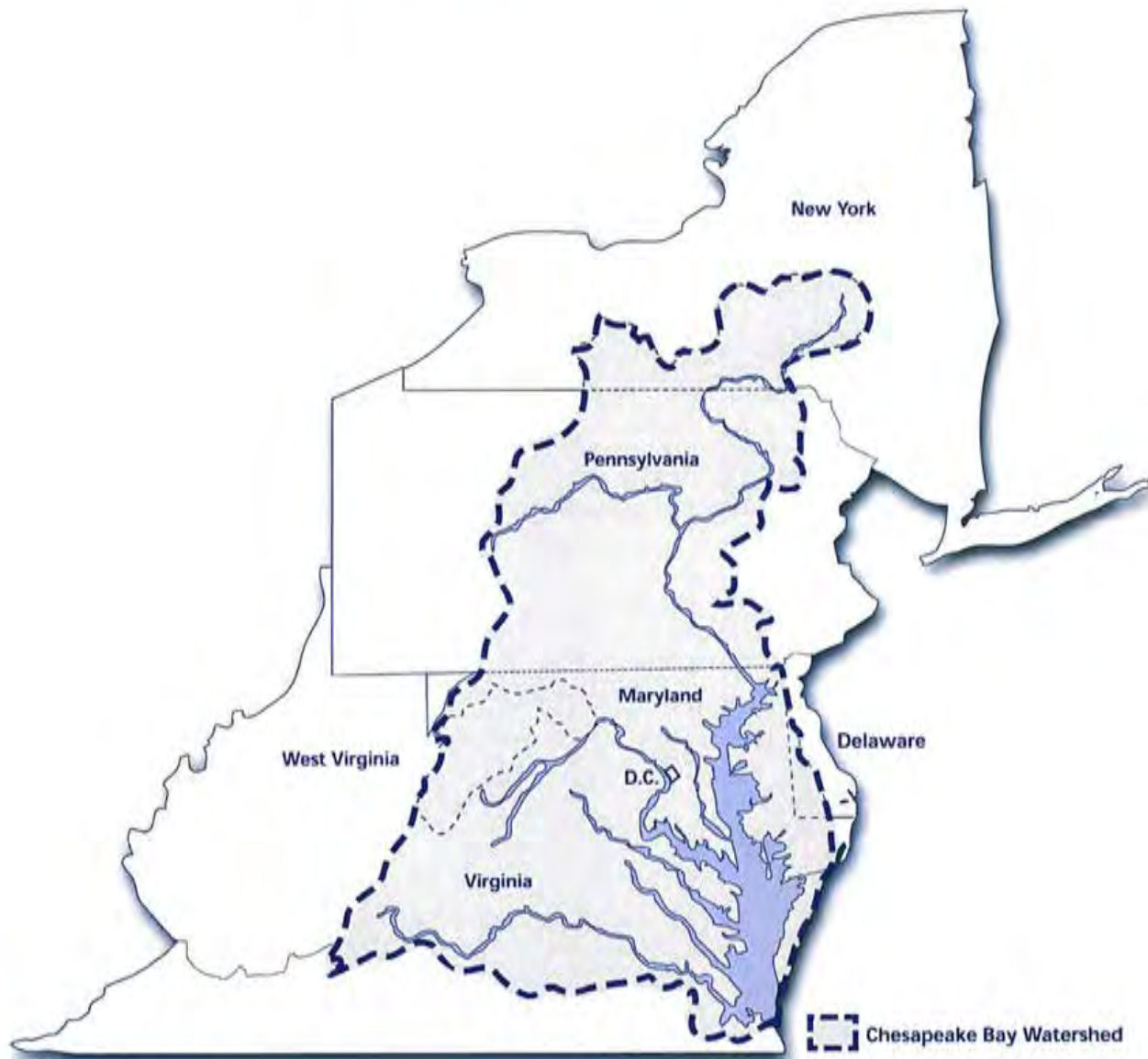
U.S. Department of the Interior

U.S. Department of Transportation



Chesapeake Bay Program  
Science. Restoration. Partnership.

# CHESAPEAKE BAY WATERSHED





Chesapeake Bay Program  
*Science. Restoration. Partnership.*





## 2018 WATER AND SEWER PLAN

### CHAPTER 2 FRAMEWORK FOR WATER AND SEWER PLANNING

A water and sewer service network is important in managing and directing development in the County. Urban development requires community or multi-use water and sewer service; urban growth is directly dependent on expansion of this service. On the other hand, individual water supply and septic systems, as well as shared facilities, can only support relatively low-density development. Water and sewer management that provides for adequate water supplies, healthy drinking water and appropriate sewage disposal methods promotes public health and environmental quality.

Water and sewer systems provide the basic building blocks for a modern, growing and environmentally healthy community. Water and sewer planning is critical to the staging and promotion of orderly growth of communities and the prevention of urban sprawl. Therefore, water and sewer planning must be based on consideration of geographical features and environmental factors, community needs as expressed in the County's land use and development policies, Federal and State policy guidance, and public health requirements.

The contextual framework for water and sewer planning includes the natural environment, community planning and development, and legal requirements. These parameters are discussed in more detail in this chapter.

#### **2.1 POLICIES AND PROCEDURES FOR WATER AND SEWER PLANNING**

The State of Maryland requires every County to develop a Water and Sewer Plan to ensure that there is adequate public water and sewer for planned development. Since the public drinking water supply is a precious resource, the County must plan to provide this supply for its residents in a comprehensive and staged manner. One aspect of the Plan is the designation of every piece of property into service categories used to stage development.

Pursuant to State Law, each County and all municipalities governed by the Land Use Article must prepare a comprehensive water resources element (WRE) plan. This Water and Sewer Plan will be amended to address the policies contained in the 2010 Approved Water Resources Plan. As part of the water resources plan element being developed by the County, an assessment will be made of the adequacy of each aquifer in the County, its capacity to accommodate future growth and the impact of development in adjacent counties.

##### **2.1.1 Sewer Envelope**

The Sewer Envelope is depicted on the Category Maps as a boundary beyond which no community water and sewer facilities will be approved. The Sewer Envelope boundary is based on topography, existing sewer service areas, and proposed development density according to the General Plan and the Area Master Plans. The Sewer Envelope boundary was established in 1994. The County Council reaffirmed the envelope boundary by adopting it as the template for the Rural Tier boundary adopted in the Commission 2000 Biennial Growth Policy Plan and the 2002 General

## 2018 WATER AND SEWER PLAN

Plan. Plan Prince George's 2035, adopted in 2014, approved several areas from the Rural Tier to the Growth Tier that will require amending the boundary for consistency and compliance with the General Plan.

The Sewer Envelope serves to encourage growth in communities where water and sewer services are approved and are sufficient for handling this growth. The Sewer Envelope, as it is known, was based on the County's topography and drainage into sewer basins. While it remains the Sewer Envelope, it encompasses both water and sewer service categories. By defining a geographic boundary in which public water and sewer service can be provided, it also serves to preserve the County's rural, agricultural, and environmentally sensitive lands. Shared septic facilities and innovative technologies are encouraged in sensitive areas, especially outside the Sewer Envelope. Provisions for the use of these facilities may be found under "Strategies" outlined in Policy 12 of the Rural and Agricultural Areas of the General Plan. Applicable County policies on rural sanitation, individual systems, and shared facilities are described in Chapter 5.

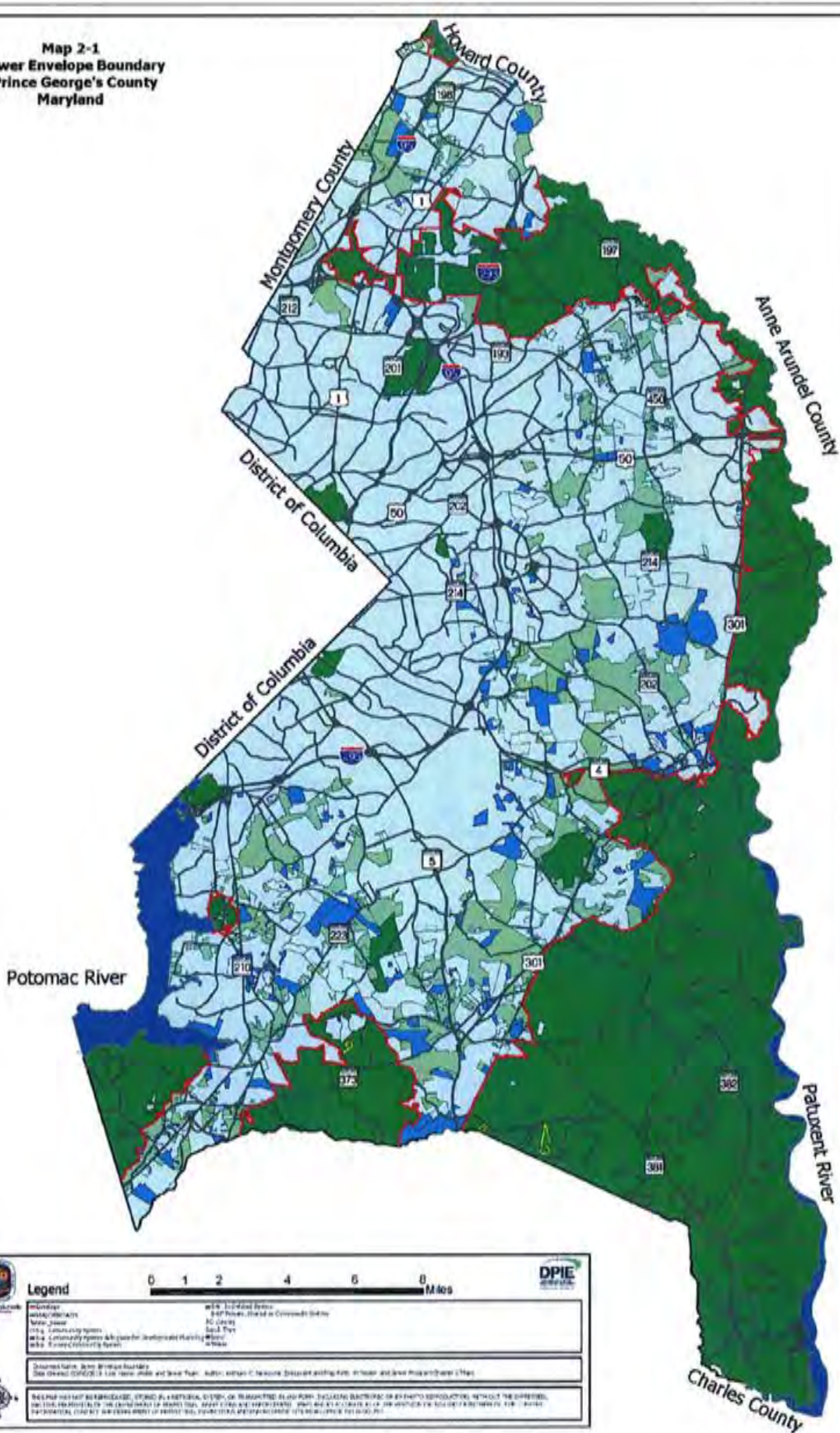
Adjustments of the Sewer Envelope boundary may only be achieved through a master plan, sector plan or general plan process and approved by the County Council. A property's location in proximity to the boundary is not, in itself, justification for changing the boundary. There are many factors that contribute to the decision to retain or modify the Sewer Envelope boundary, including consistency with the General Plan. Each factor must be thoroughly reviewed against criteria that were used in establishing the Sewer Envelope and new criteria for determining compatibility with other County growth policies. **Map 2-1** reflects the Sewer Envelope boundary consistent with the General Plan Growth Boundary, and the prevailing sewer (and water) service categories. The General Plan Growth Policy map – from which the Sewer Envelope boundary is revised for consistency thereto – may be found in the *Community Planning Framework* section of this chapter.

### 2.1.2 Water and Sewer Categories

Water and sewer categories represent different planning levels for the provision of public water and sewer service. Prince George's County has been using water and sewer categories, also known as "service areas" and "system areas", since the adoption of its first Comprehensive Water and Sewer Plan in 1977. The process of changing categories allows public water and sewer service to be staged according to development proposals, and assures high quality development by the landowner consistent with County policies.

The policy of linking water and sewer categories to stages of the development process assures that the water and sewer systems will expand appropriately to reach new development as it comes on line. Conversely, this system assures that when new developments are built, adequate water and sewer service will be available. The County Executive is charged with ensuring that this process is done in accordance with the goals, objectives and legal authority granted Prince George's County under the State Environment Article.

**Map 2-1  
Sewer Envelope Boundary  
Prince George's County  
Maryland**



	<b>Legend</b>		
<p><small>Copyright © 2010 by the District of Columbia Department of the Environment. All rights reserved. This map is provided for informational purposes only. The District of Columbia Department of the Environment is not responsible for any errors or omissions in this map. The District of Columbia Department of the Environment is not liable for any damages, including consequential damages, arising from the use of this map.</small></p>			

## 2018 WATER AND SEWER PLAN

To facilitate the orderly extension of community water and sewer service, State regulations (COMAR 26.03.01.04) have established six category designations for water and sewer service areas. Prince George's County has modified the State's category definitions to more accurately reflect the planning needs of the County. These determine where public water and sewer service is or will be available (Categories 3, 4, and 5) and where private well and septic systems must be used (Category 6). Under State regulations, Categories 1 and 2 refer to existing service areas or areas with approved connections or extensions, via the Washington Suburban Sanitary Commission (WSSC). Prince George's County has included these properties in Category 3. Category designations inside the Sewer Envelope reflect planning stages for the public water and sewer system(s). Monitoring the expansion of water and sewer service is the most effective way to manage and phase growth. Therefore, the County uses the following water and sewer categories for the staging of development and its processes:

- Category 3 Community System
- Category 4 Community System Adequate for Development Planning
- Category 5 Future Community System
- Category 6 Individual Systems - Well and Septic Systems or Shared Facilities
- Category 6P Private, Shared/Community System

It is necessary to know a property's water and sewer category to determine whether to develop using public water and sewer, or individual wells and septic systems. Properties are usually designated in the same category for both water and sewer service. The water category map and the sewer category map are included as appendices to this Plan. Amendment processes and the criteria for re-designation are discussed further in Section 2.1.4 and in Chapter 6. The following water and sewer categories further define usage as designated on the maps in Prince George's County:

**Category 6. Individual Systems.** This category consists of all areas outside the limit of planned water and sewer service (Sewer Envelope), and of certain larger tracts of parkland and open space inside the Sewer Envelope. Development in Category 6 must use permanent individual water supply and wastewater disposal systems (i.e., well and septic systems) or shared facilities and smaller community systems (Category 6P) as approved by the County (see Section 5.2.3 in Chapter 5). Re-designation to and from Category 6 or 6P must proceed through a legislative amendment process (see Chapter 6).

**Category 5. Future Community System.** This category consists of land inside the Sewer Envelope that should not be developed until water and sewer lines are available or planned to serve proposed development, its community, as needed to meet growth projections, or when additional residential capacity is required. Properties in Category 5 require a re-designation to Category 4 prior to the approval of a preliminary plan of subdivision, having first demonstrated its ability to meet the aforementioned criteria. Minor residential developments may be approved for the use of interim individual systems in certain circumstances. This is known as the "Waiver" process (see Chapter 6).

## 2018 WATER AND SEWER PLAN

Redesignation requests from Category 5 to Category 4 must proceed through a legislative amendment to the Water and Sewer Plan (see Chapter 6).

**Category 4. Community System Adequate for Development Planning.** This category includes all properties inside the Sewer Envelope for which the subdivision process is required.

Redesignation from Category 4 to Category 3 may be requested through the Administrative Amendment process. In addition to the final plat requirements, the redesignation will require that (1) the development proposal is consistent with the County's development policies and criteria (Section 2.1.4) and the State Growth Act; (2) adequate capacity exists; and (3) the projects for necessary system improvements are included in the approved WSSC Capital Improvement Program (CIP). Inconsistencies or inadequacies with the above criteria shall be eliminated prior to redesignation to Category 3.

**Category 3. Community System.** This category comprises all developed land (platted or built) on public water and sewer, and undeveloped land with a valid preliminary plan approved for public water and sewer. The expiration of a preliminary plan reverts the property to Category 4 even if the maps have not been amended to reflect the change. In instances where the change has not been effected, DPIE will indicate these properties to be "Dormant Category 3".

At the time of preliminary plan review, DPIE will verify that a property shown on the maps in Category 3, in fact meets the stated criteria (i.e., developed land, platted or built on public water and sewer, and undeveloped land with a valid preliminary plan approved for public water and sewer). If not, the property is considered to be in Category 4, being designated "Dormant Category 3" on the Water and Sewer Maps, and will follow the Administrative Amendment process for renewal of Category 3.

Individual water supply and wastewater disposal systems may not be approved for properties in Category 3 unless special circumstances exist (see Chapter 6, Waiver Process).

### 2.1.3 Water and Sewer Category Maps

The Water and Sewer Plan adopts redrafting of the County's Water and Sewer Category Maps in accordance to legislative and administrative amendments and in consistency with the approved General Plan and amendments. The Category Maps are prepared using the County's Geographic Information System (GIS). The 2018 maps are based on the Adopted 2008 Water and Sewer Category Maps and all category change amendments approved since CR-91-2008, and impact of changes as a consequence of the approval of Plan 2035. DPIE is the delegated authority to determine the validity of any subsequent challenges to the maps. The adoption of the 2018 Water and Sewer Category Maps reflects the following:

## 2018 WATER AND SEWER PLAN

1. All property outside the Sewer Envelope boundary is designated in Category 6 (dark green hue on the category maps) except certain parcels approved for and connected to public water or sewer service prior to the adoption of this Plan. These properties are listed in **Appendix 2-1** of this Chapter. Properties approved for shared community systems, outside the Sewer Envelope, are shown outlined on the water and sewer maps (Category 6P).
2. All property located inside the Sewer Envelope is designated in Category 5, 4 or 3 with the exception of certain larger tracts of open space, generally parks and cemeteries.
3. Administrative and technical mapping changes and corrections of drafting errors, including changes to incorporate the adoption of Subregion plans that may not have been affected by the prior versions of the Prince George's County Water and Sewer Category Maps.

Properties referenced above are listed in Appendices 2-1, and 2-2 of this chapter. Small-scale water and sewer category maps are included as appendices to this Plan. Special printouts and larger scale maps may be obtained from DPIE, and follow the applicable fee structure adopted for the Water and Sewer Plan. See Appendix 6-2 for related fee structure.

### **2.1.4 Category Change Policies and Criteria**

Based upon its legal authority, Prince George's County has developed special policies to govern water and sewer planning in a manner consistent with the County's goals for development review. The County Executive and the County Council review these policies, which must be in concert with the County's goals and objectives and, through a legislative process, amend categories within the adopted Water and Sewer Plan. This is known as the "Category Change" procedure. Executive authority delegates the processing of category amendments to DPIE, which acts as the County's steward on development and permitting matters and, as the administrator to the Water and Sewer Plan. The policies governing changes to a designated category must take into account environmental factors, economic concerns, planning requirements, regulatory policies, engineering constraints, and public health concerns. An application may be rejected if these policies and criteria are not met unless a hardship in meeting the policies and criteria is demonstrated by the applicant and concurred by the elected body. Specifically, these include:

#### ***A. Environmental factors***

Under this criterion, the proposal must:

- Protect the integrity of the water supply and the receiving waters;
- Protect natural resources; and
- Preserve, protect, and enhance environmental quality.

## 2018 WATER AND SEWER PLAN

### ***B. Environmental factors***

Under this criterion, the proposal must:

- Protect the integrity of the water supply and the receiving waters;
- Protect natural resources; and
- Preserve, protect, and enhance environmental quality.

### ***C. Economics and general fiscal concerns***

Under this criterion, the proposal must:

- Be analyzed for its fiscal impact related to location, community needs, public facilities, services and infrastructure.
- Correlate with County strategies and not unduly burden the existing taxpayers or the WSSC ratepayers.
- Enhance business, housing, retail development and employment opportunities throughout the County.

### ***D. Planning, zoning, and subdivision requirements***

- No Water or Sewer Category Change Request shall be processed or approved for land for which a change in zoning is proposed in:
  1. A Sectional Map Amendment transmitted by the Planning Board to the District Council; or
  2. A Zoning or Special Exception application pending before the Hearing Examiner or Prince George's County District Council.

Once the District Council has adopted a zoning change, the processing of a water and sewer category change can proceed.

- No Water or Sewer Category Change request shall be processed or approved for properties designated Category 6 where the following conditions exist:
  1. Properties in Water and/or Sewer Category 6 within the defined planning or study area for which a master, or sector plan, or sectional map amendment, has been initiated by the District Council but not yet adopted/disapproved by the Planning Board and/or District Council.
  2. Properties in Water and/or Sewer Category 6 within the defined planning or study area for which a master, or sector plan, or sectional map amendment, has been initiated by the District Council and adopted by the Planning Board, but remanded by the District Council for further Planning Board review.

Applicants may submit Water and/or Sewer Category Change Requests for these properties upon a Planning Board disapproval or District Council approval of a master plan, sector plan, sectional map amendment, or zoning application, if necessary.

- A hydraulic planning analysis (HPA) should be submitted to WSSC prior to submittal of the preliminary plan of subdivision to M-NCPPC.
- All preliminary plans of subdivision must show a conceptual alignment of all proposed onsite and offsite water and sewer facilities before DPIE may deem the public water and sewer facilities adequate and allocated for the proposed development.
- All final plats of subdivision must be approved by DPIE for public water and sewer service, or by the County Health Department for individual well and septic systems.

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### ***E. Federal, State, Regional, County and Municipal land use plans and planning policies***

Under this criterion, the proposal must conform to governed mandates, policies and ordinances:

- Water and sewer service shall be provided in concert with the availability of other public facilities, and in accordance with the General Plan and applicable Area and Functional Master Plans.
- Water and sewer lines traversing the Rural and Agricultural areas are designated as controlled access facilities and are not available for connection or extension. Controlled access facility lines serve the purpose of transmission to a public entity (*Federal, State, Regional, County, and Municipal*) or a project that has been granted a Certificate of Public Convenience and Necessity by the Maryland Public Service Commission. Water and sewer lines for extension of service into the rural and agricultural areas of the County may be approved if the following applies:
  - An approved Area Master Plan or Sector Plan designates the area for public water and sewer service consistent with the policies in the General Plan or the proposed development has been determined to be compatible with other County growth policies relating to location, community needs, residential capacity, public facilities and other appropriate policies.
- Proposed development in the Growth Policy Areas shall meet existing contiguity policies, and demonstrate:
  - Contiguity to existing built developments;
  - Location within 1,500 feet of existing public water and sewer systems;
  - Roadways are capable of supporting demands from the proposed development; and,
  - Require developer(s) to bear the full responsibility of the costs of on- and off-site public facilities.
- Proposed development may not hinder the County's ability to provide adequate public services to the County and its residents. Adequacy of public facilities shall be measured in accordance with subdivision and zoning ordinances.
- Proposed development shall be analyzed for consistency with the General Plan, master/sector plans, and functional master plans as defined by the land use article of the Maryland Annotated Code. This analysis shall include, but not be limited to, the impact of proposed developments and water and sewer extensions on land use, development patterns, historic sites and districts, public facilities, green infrastructure, and transportation system, including, but not limited to, traffic impacts, road construction needs, sidewalks, pedestrian trails and road connectivity in the surrounding neighborhoods.

### ***F. Water and sewer facility plans, engineering constraints, and the availability of transmission and treatment capacity***

- Public water and sewer service extensions shall not be allowed in the area outside the limit of planned sewer services – also called the Sewer Envelope – unless the project is deemed to be compatible with other County growth policies after an analysis of the impact of the project related to its location, community needs, residential capacity, services, infrastructure, public facilities and other appropriate policies have been evaluated.
- Any proposed use of grinder pumps shall be in accordance with WSSC policy and standards.

## 2018 WATER AND SEWER PLAN

- A development proposal must meet any conditions of an allocation policy set for the specific basin or water pressure zone.
- Water and sewer systems must have adequate transmission and treatment capacities to serve the proposed development.

### ***G. The need to alleviate and abate public health problems***

- The County's primary responsibility is to protect public health and safety.
- Water and sewer service is restricted by any moratorium orders issued by MDE, WSSC, or the Federal Government.
- No new developments will be approved that may impose a water and sewer moratorium on the County.
- The County Health Department may request a category change for a community based on findings of a sanitary survey.

The County, by its adopted Water and Sewer Plan, has a reasonable expectation that service will be available in accordance with the specific category designation. The designation, however, does not constitute a guarantee, a binding promise, a firm offer or a representation that water or sewer service will actually be provided. It is important to emphasize that the Water and Sewer Plan, as interpreted by the Maryland courts and by its nature as a planning tool, provides considerable flexibility in its implementation to accommodate growth within the County. Furthermore, the ability of the County to provide service must be secondary to the responsibility of the County to protect public health and safety, including the prevention of wastewater overflows and the pollution of the County's waters.

The developer must also be aware that actual water and sewer service is further dependent on one or more of the following:

- The transmission and treatment capacities of the water and sewer systems;
- Moratorium orders issued by MDE, WSSC, and Federal and State Planning processes;
- An extension approval for the project from the WSSC before construction can begin;
- The acquisition of any necessary rights-of-way and the completion of engineering feasibility studies;
- The financial ability of the developer or the utility to fund construction of water and sewer lines;
- Land use plans and zoning constraints;
- Any defaults by parties contracting with WSSC to construct water and sewer facilities; and,
- The County's allocation policies, which are discussed below,

### **2.1.5 Allocations of Capacity**

In the process of evaluating category change requests, development proposals are reviewed for adequacy of available capacity in the water pressure zone and the sewer basin where the project

## 2018 WATER AND SEWER PLAN

is located. The capacity of each sewer basin in Prince George's County is monitored by the WSSC. The WSSC publishes quarterly reports on the available sewer capacity that are reviewed by DPIE and the Health Department.

Specific allocation of sewer capacity may be required if the treatment or transmission flows and commitments exceed 90 percent of the capacity in a particular sewer basin. If this occurs, system capacity will continue to be monitored by WSSC and DPIE. Upon notice from WSSC that 90 percent of the capacity is being exceeded in any sewer basin or for another good reason, the County may re-institute a sewer allocation process when deemed necessary for the orderly expansion of the water and sewer system or for the health, safety and welfare of the citizens of the County. For each sewer basin where 95 percent of the capacity has been exceeded, WSSC shall notify DPIE and the Health Department, then WSSC, and DPIE or the Health Department will jointly approve all subsequent record plats. An amendment to the allocation policy must be approved in the Water and Sewer Plan.

### **2.1.6 Public Use Service Allocations**

A public use allocation is required for all projects that are undertaken by a public entity (*Federal, State, Regional, County or Municipal*) and require service connection to the public system. A public use allocation is obtained through the Administrative Amendment approval process described in Chapter 6, Section 6.4.

In addition to a public use allocation, the Administrative Amendment process may be used to approve water and sewer category change, water withdrawal point, or point of discharge for certain projects as described below:

- A. A public project that meets the following criteria:
  - 1. The project is in the adopted Capital Improvement Program of the Prince George's County Government, the M-NCPPC or WSSC;
  - 2. The project description states that public water and sewer service is required for project implementation; and
  - 3. The proposed project site is clearly identified.
- B. A project that has been granted a Certificate of Public Convenience and Necessity by the Maryland Public Service Commission.
- C. A project that is undertaken by any County public safety agency, and is wholly or partially funded through the adopted Operating Budget of the Prince George's County Government.

## 2018 WATER AND SEWER PLAN

### **2.1.7 Relationship to Other Development Review Processes**

The development review process includes consideration of environmental factors, the cost of public investments to support development, and the need to improve the County's community environment while strengthening its economic position. When implemented in conjunction with a master plan and zoning map amendment, these efforts allow for a comprehensive and cohesive process that discourages haphazard and piece-meal development.

Water and sewer planning is coordinated with other development review processes in the County. Listed below are the more common development review processes that are linked to water and sewer planning. Water and sewer service categories used are described in more detail in Section 2.1.2 of this Chapter.

- A. **Zoning.** DPIE accepts applications to amend the Water and Sewer Plan only when the development proposal for the subject property is in conformance with current zoning, including applicable Special Exceptions. Prior to approval, Zoning Amendments and Special Exceptions must be reviewed for conformance with the Water and Sewer Plan.
- B. **Preliminary Plan of Subdivision.** Subdivision of properties in water and sewer service Category 6 must be based on individual wells and septic systems. Development plans based on public water and sewer service must be designated in water and sewer service Category 4 or 3, and must display a conceptual alignment of onsite and offsite water and sewer facilities, before a preliminary plan of subdivision can be approved. A hydraulic planning analysis (HPA) should be submitted to WSSC prior to submittal of the preliminary plan of subdivision to M-NCPPC.
- C. **Site Development Concept Plan Review (formerly known as Stormwater Management Concept).** An approved Site Development Concept Plan is required prior to approval of water and sewer service Category 3.
- D. **Water and Sewer System Expansion Permit (SEP) Extensions.** Water and sewer service Category 3 and allocation, if applicable, must be approved before the WSSC can approve an extension of public water and sewer service. A WSSC approval of a HPA is required for recordation of a final plat if water and sewer service requires the extension of existing lines.
- E. **Recordation of Final Plats.** A final plat of subdivision based on public water and sewer service can be recorded after DPIE certifies that the subject property is in Category 3 and has an allocation, if applicable. It must also certify that water and sewer lines either abut all of the lots to be recorded, or that WSSC has approved an extension of service and has notified DPIE of such action through a WSSC Letter of Findings that includes a sketch of necessary extensions.

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### **2.2 NATURAL ENVIRONMENT**

Among the geographical and environmental factors to be considered in planning water and sewer facilities, are the drainage patterns, soils, aquifers, and surface waters with associated floodplains and wetlands. These factors determine availability of water, feasible transmission patterns for both water and sewer, and percolation characteristics.

The natural environment also sets a framework for development. In 2017 Prince George's County adopted the *Resource Conservation Plan*, a Countywide Functional Master Plan that combines the related elements of green infrastructure planning and agricultural and rural conservation to support a platform for sustainable growth. The plan identifies the green infrastructure network, and sets goals for the preservation, enhancement, and restoration of the network and its ecological functions while supporting the desired development pattern of the General Plan. The green infrastructure network is established with two categories: countywide Regulated Areas and Evaluation Areas. The countywide Regulated Areas contain environmentally sensitive features, such as streams, wetlands, buffers, the 100-year floodplain, and adjacent steep and severe slopes. The areas identified as Network Gaps on the 2005 Green Infrastructure network map are not identified on the 2017 GI network map because the new network is too complicated to identify network gaps at the countywide scale. Network gaps will be identified using one of two methods in the future: (1) when master and sector plans are prepared, the GI network boundaries can be adjusted as needed and Network Gaps can be identified; and (2) when development applications are reviewed for areas where Network Gaps have not been identified. The plan also designates 13 Special Conservation Areas of the countywide significance that are to be carefully considered when land development proposals are reviewed. The Green Infrastructure Plan is used as a guide by decision-makers when making land use and acquisition decisions and contains policies and strategies to preserve, protect, enhance and restore the green infrastructure network and its ecological functions. Master plans and sector plans can also designate special conservation areas of local significance or add areas to the designated green infrastructure network that are of local significance. These locally significant features are also considered with land development proposals.

The General Plan provides an annual target for land conservation countywide of 1,500 acres. All types of land conservation programs are included in the goal, as are the acres of woodlands preserved and planted as a result of implementation of the Woodland and Wildlife Habitat Conservation Ordinance. The Green Infrastructure plan provides guidance regarding targeted woodland preservation to protect waterways and support a contiguous forest. Sector and area plans as well as Sections 5B, 24, 25, 27, and 32 of the Prince George's County Code contain regulations, objectives and strategies for land conservation.

#### **2.2.1 Physiography, Topography, Drainage and Wetlands**

Prince George's County is mostly in the physiographic province called the Atlantic Coastal Plain, but a small area along the Montgomery County line is in the Piedmont province. The Piedmont is underlain by crystalline rocks of pre-Cambrian age. It is gently rolling to hilly and moderately dissected by broad, shallow valleys. The Atlantic Coastal Plain is underlain by

## 2018 WATER AND SEWER PLAN

deposits of gravel, sand, silt and clay that range in age from Cretaceous in the northern part of the County to Recent Alluvium on the floodplains.

The northern part of the Coastal Plain in Prince George's County is gently rolling and has broad valleys. The rest is a partly dissected low plateau that extends into Charles County. In the central part of the County, this plateau is nearly level to gently sloping, but near the Patuxent and Potomac Rivers, it is cut by V-shaped valleys that have short, steep slopes. Old alluvial terraces border the Patuxent and Potomac Rivers. Elevations range from sea level along the lower reaches of the major rivers to 365 feet in the northern part of the County. Slopes of 15 percent or greater comprise almost 43,000 acres or 14 percent of the total land area of the County (see **Map 2-2**).

Approximately half of Prince George's County drains eastward into the Patuxent River; the remainder drains southwestward through the Anacostia River and other streams to the Potomac River. **Map 2-3** delineates the watersheds. The major tributaries of the Potomac River are the Anacostia River, Oxon Run, Henson Creek, Piscataway Creek, Mattawoman Creek and Zekiah Swamp. The largest of these, the Anacostia, has tributaries of its own. The major tributaries of the Patuxent River are Western Branch, Bear Branch, Mattaponi Creek, Rock Branch and Swanson Creek. Western Branch is the largest of these tributaries.

All of the major streams in the County flow at a low velocity under normal conditions. Most are in broad valleys and many have large accumulations of silt. Tidal waters occur where the streams flow into the Patuxent and Potomac rivers, primarily in the southern part of the County. The total area of surface water in the County is 7,000 acres or 2.4 percent.

### 2.2.2 Soils


Water quality is often dependent on the amount of sediment-laden runoff that enters surface waters from agricultural uses and unregulated development activity. In order to protect surface water quality, erodible soils must be managed by using best management practices and sediment controls. Refer to soils and drainage class further within this chapter.

Soils play an important role in determining whether on-site sewage disposal systems (septic systems) can be used. Soils characterized as well-drained are considered conducive for underground sewage disposal. These soil types are commonly found along sloping ground and below the crests of ridgelines and hilltops.

Soils characterized as poorly drained are not considered to be conducive for underground sewage disposal. These soil types are most commonly found on the top of plateaus, on very flat land, and near or at the bottom of ravines, hills or ridgelines. Soils displaying these characteristics often have seasonally high water tables.

**Map 2-2  
Steep Slopes 2014  
Prince George's County  
Maryland**



	<p>Legend</p> <p>0 1 2 4 6 8 Miles</p>	
	<p><b>STEEP SLOPES</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></span> Between 15% and 25%</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: green; border: 1px solid black; margin-right: 5px;"></span> Greater Than 25%</li> </ul>	<p><b>COUNTY BOUNDARY</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; border-bottom: 1px dashed black; margin-right: 5px;"></span> Land</li> <li><span style="display: inline-block; width: 15px; border-bottom: 1px solid blue; margin-right: 5px;"></span> Water</li> </ul>
<p>Document Name: Steep Slopes 2014          Date Revised: 3/11/2015. Use Name: Water and Sewer. Issue: Address, Flood Control, Map Pub. 2/2015 Water and Sewer Plan Map.</p> <p><small>THIS MAP MAY NOT BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF THE COUNTY ENGINEER. THE COUNTY ENGINEER'S OFFICE IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS MAP. THE COUNTY ENGINEER'S OFFICE IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS MAP. THE COUNTY ENGINEER'S OFFICE IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS MAP.</small></p>		



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The U.S. Department of Agriculture (USDA) Soil Survey written for Prince George's County aids in identifying specific soil types and various limitations associated with them. The Soil Survey also combines several soil series into soil groupings or associations. A soil association is a landscape that has a distinctive pattern of soil. It normally consists of one or more major soils, at least one minor soil, and is named for the major soils.

The soils in one association may occur in another, but in a different pattern. **Map 2-4** identifies the soil associations found in Prince George's County. Additional information concerning soils can be found in the USDA Soil Survey for Prince George's County or by contacting the Prince George's County Soil Conservation District.

Beltsville-Leonardtown-Chillum association: moderately deep, well-drained to poorly drained, predominantly gently sloping soils that have a compact subsoil, substratum or both.

Bibb-Tidal Marsh association: poorly drained soils of floodplains and tidal marshes that are subject to tidal flooding.

Christiana-Sunnyside-Beltsville association: deep, level-to-steep, well-drained, sandy and clayey soils and level-to-sloping, moderately deep, moderately well-drained soils that have a compact subsoil, substratum or both.

Collington-Adelphia-Monmouth association: deep, nearly level to strongly sloping, well-drained and moderately well-drained soils of the uplands that develop in sediments containing glauconite. Soil in this association has fairly friable subsoil and a friable-to-loose substratum.

Collington-Matapeake-Galestown association: deep, well-drained to excessively drained, nearly level to strongly sloping soils on terraces along the Patuxent River. Soils in this association have fairly friable subsoil and a friable-to-loose substratum.

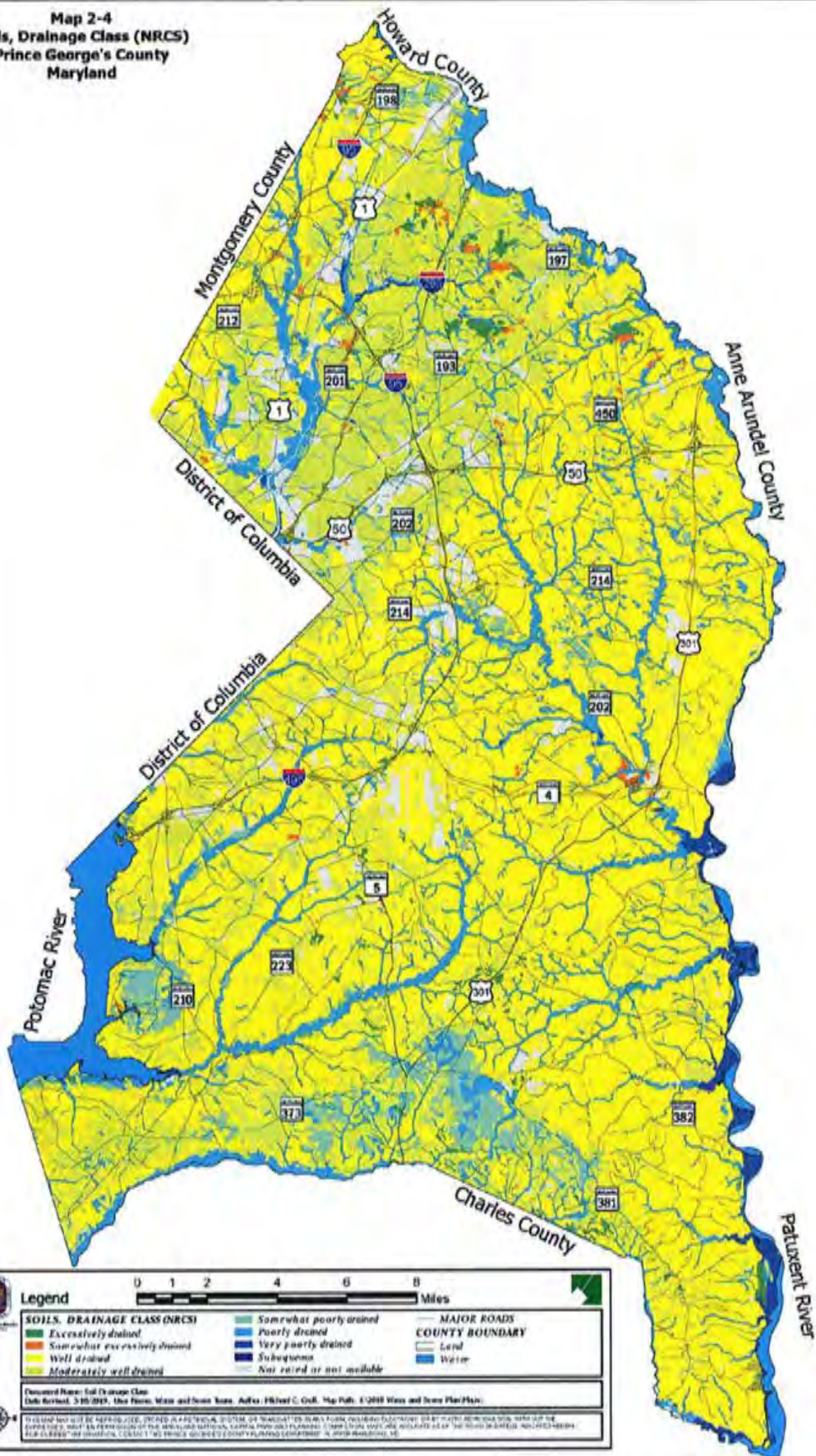
Manor-Glenelg association: deep, well-drained and somewhat excessively drained, nearly level to very steep soils of the Piedmont province.

Sassafras-Croom association: gently sloping to steep, well-drained, predominantly gravelly soils, some of them with compact subsoil, substratum or both.

Sassafras-Keyport-Elkton association: nearly level to strongly sloping, well-drained to poorly drained soils on terraces along the Potomac River.

Westphalia-Evesboro-Sassafras association: deep, well-drained to excessively drained soils of uplands that are mostly moderately sloping to steep. Soils in this association have fairly friable subsoil and a friable-to-loose substratum.

**Map 2-4**  
**Soils, Drainage Class (NRCS)**  
**Prince George's County**  
**Maryland**



**Legend**

Excessively drained	Somewhat poorly drained	MAJOR ROADS
Somewhat excessively drained	Poorly drained	COUNTY BOUNDARY
Well drained	Very poorly drained	Land
Moderately well drained	Subaqueous	Water
	Not rated or not available	

0 1 2 4 6 8 Miles

Source: Prince George's County, Maryland, Department of Planning and Economic Development, 2010. Data provided by the National Soil Survey Center, National Soil Survey Data Center, 2010. Data provided by the National Soil Survey Center, National Soil Survey Data Center, 2010. Data provided by the National Soil Survey Center, National Soil Survey Data Center, 2010.

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Westphalia-Marr-Howell association: deep, well-drained, nearly level to strongly sloping soils of the uplands. Soils in this association have fairly friable subsoil and a friable-to-loose substratum.

In addition to the soil types identified, there is a deeper geologic formation that places constraints on development in Prince George's County – Marlboro Clay. These soils may slump or slide when bearing the weight of structures, and they are not suitable for effective onsite sewage disposal systems. Areas with Marlboro Clay are shown on **Map 2-5**. The Coastal Plain sediments underlying Prince George's County frequently contain sulfidic material at some depth. While posing few hazards when left undisturbed, these sulfidic materials exposed to air oxidize fairly rapidly and create conditions that are extremely corrosive to concrete and steel. Geologic formations inherent to Prince George's County are identified in **Map 2-6**. The listing below provides descriptions of the identified formations. Additional information on geologic formations may be obtained by contacting the Maryland Department of Natural Resources.

Laurel Formation – Medium to coarse-grained, moderately to well foliated sedimentary mélange consisting of a quartzofeldspathic matrix that contains quartz “eyes” and fragment to blocks of metamorphic rocks which specifically include fragments of meta-arenite and biotitic schist in the mapped area. The rock weathers to a porous, spongy brown saprolite and grades upward to sticky micaceous red and gray clay.

Silt-Clay Facies – Clay, silt, and subordinate fine-to medium-grained clayey sand. Red, tan, gray, buff, or mottled; dark-gray, where heavily organic.

Sand- Gravel Facies – Interbedded quartz sand, pebbly sand, gravel, and subordinate silt-clay. Sands and gravels typically whit, buff, yellow to brown; weathered zone commonly limonitic with ironstone pods and layers. Silt-clay is white, pale gray, or variegated; dark-gray where highly organic.

Alluvium – Interbedded sand, silt-clay, and subordinate gravel. Light-to dark-gray, tan, or brown; weathers pale-gray, yellow, or brown.

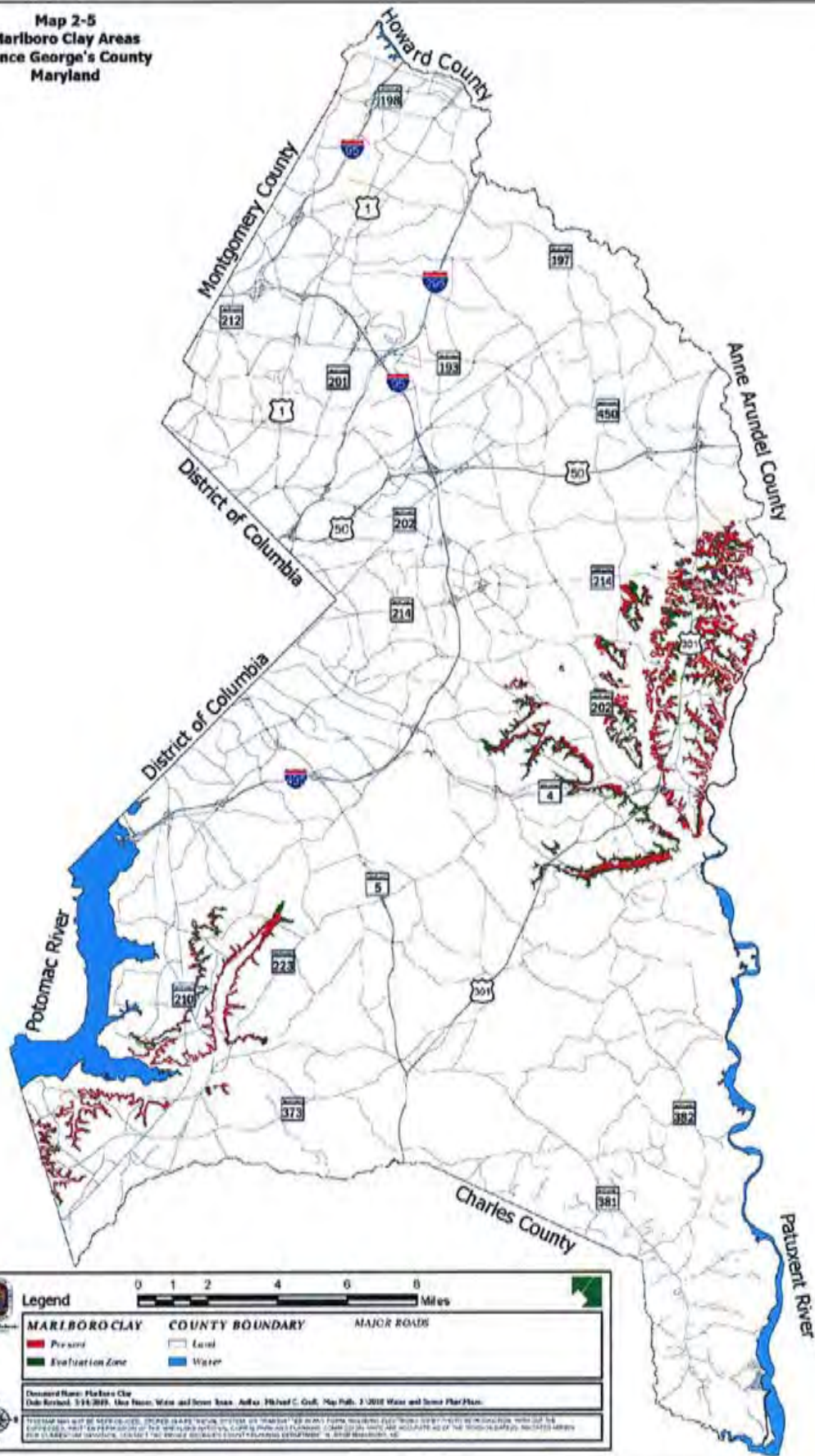
Terrace Deposits – Interbedded sand, gravel and silt-clay. Typically tan, brown, or shades of gray; weather to yellow, orange, or brown hues, commonly limonitic.

Brightseat –Severn Formations, undivided – Sand and silt, clayey in part, variably glauconitic. Dark-gray to dark greenish gray; weathering pale-gray to brownish gray.

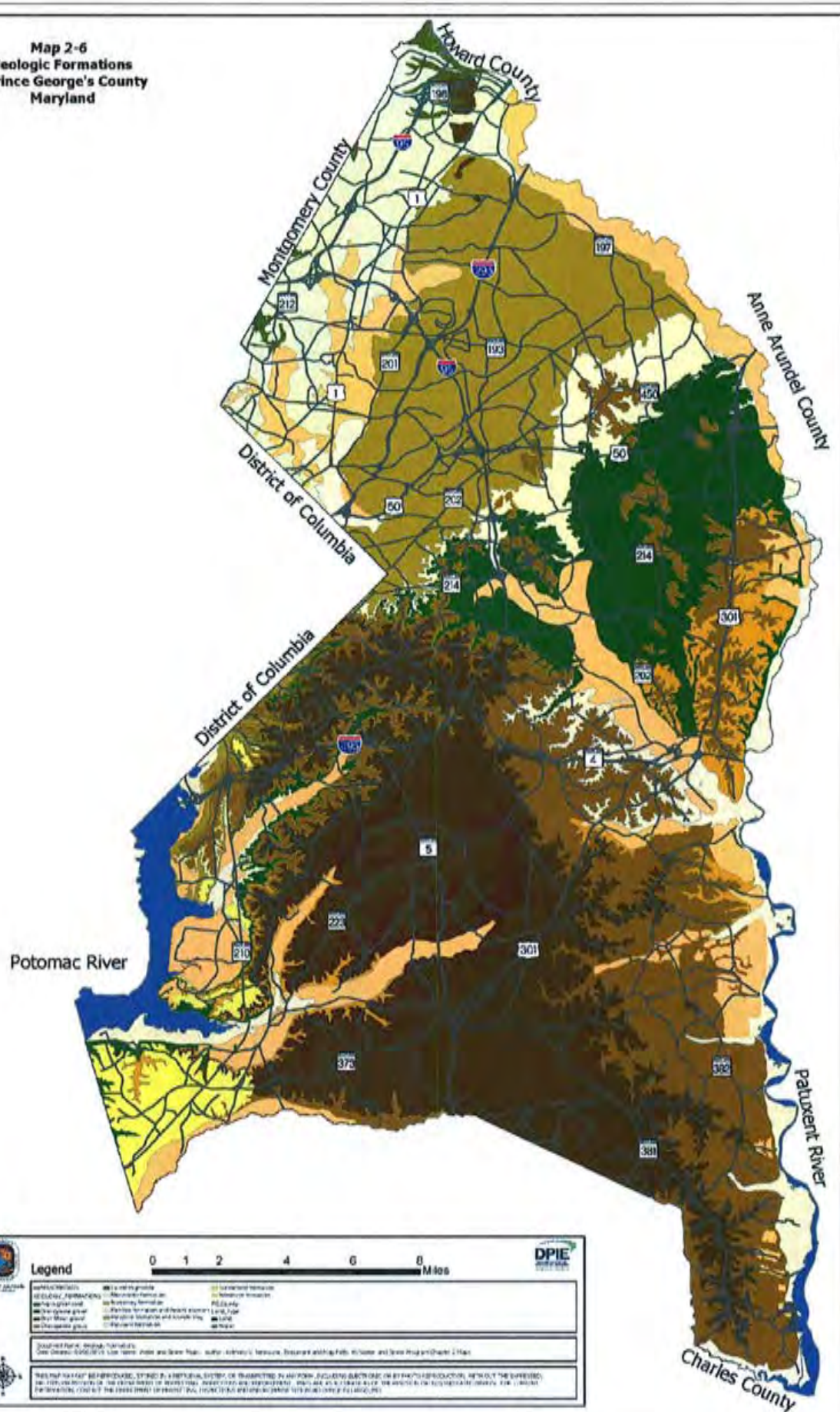
Severn Formation – Sand, fine-grained, variably glauconitic. Pale-gray to medium-gray; weathering mottled pale-gray and yellow.


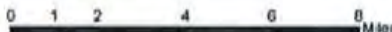





























Aquia Formation – Sand, variably glauconitic, and minor calcareous or ferruginous sandstone. Dark greenish gray to medium-gray; weathering “salt and pepper” speckled to rusty brown.

**Map 2-5  
Marlboro Clay Areas  
Prince George's County  
Maryland**



**Map 2-6**  
**Geologic Formations**  
**Prince George's County**  
**Maryland**



					
<p><b>Legend</b></p> <p><b>Geologic Formations</b></p> <ul style="list-style-type: none"> <li> Potomac Group</li> <li> Annapolis Formation</li> <li> Upper Marlboro Formation</li> <li> Middle Marlboro Formation</li> <li> Lower Marlboro Formation</li> <li> Patuxent Formation</li> <li> Charles River Formation</li> </ul>	<ul style="list-style-type: none"> <li> Lodi Formation</li> <li> New River Formation</li> <li> PLE (Potomac Limestone) Formation</li> <li> Upper Marlboro Formation (Lodi, Upper)</li> <li> Upper Marlboro Formation (Lodi, Lower)</li> <li> Upper Marlboro Formation (Lodi, Middle)</li> <li> Upper Marlboro Formation (Lodi, Lower)</li> </ul>	<ul style="list-style-type: none"> <li> Lodi Formation</li> <li> New River Formation</li> <li> PLE (Potomac Limestone) Formation</li> <li> Upper Marlboro Formation (Lodi, Upper)</li> <li> Upper Marlboro Formation (Lodi, Lower)</li> <li> Upper Marlboro Formation (Lodi, Middle)</li> <li> Upper Marlboro Formation (Lodi, Lower)</li> </ul>	<ul style="list-style-type: none"> <li> Lodi Formation</li> <li> New River Formation</li> <li> PLE (Potomac Limestone) Formation</li> <li> Upper Marlboro Formation (Lodi, Upper)</li> <li> Upper Marlboro Formation (Lodi, Lower)</li> <li> Upper Marlboro Formation (Lodi, Middle)</li> <li> Upper Marlboro Formation (Lodi, Lower)</li> </ul>		
<p><small>Geological Formations: Potomac Group, Annapolis Formation, Upper Marlboro Formation, Middle Marlboro Formation, Lower Marlboro Formation, Patuxent Formation, Charles River Formation, Lodi Formation, New River Formation, PLE (Potomac Limestone) Formation, Upper Marlboro Formation (Lodi, Upper), Upper Marlboro Formation (Lodi, Lower), Upper Marlboro Formation (Lodi, Middle), Upper Marlboro Formation (Lodi, Lower).</small></p>					
<p><small>This map was prepared by the Department of Planning and Economic Development, Prince George's County, Maryland, in cooperation with the Department of Planning and Economic Development, Prince George's County, Maryland, and the Department of Planning and Economic Development, Prince George's County, Maryland.</small></p>					

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Calvert Formation – Sand quartz silt, and diatomaceous silt. Olive-green to olive-gray where unweathered; pale-gray, tan, brown, yellow or orange in weathered sections.

Marlboro Clay – Clay, pale-red to silvery-gray and minor interbedded silt, yellowish gray to pale-gray.

Nanjemoy Formation – Sand, glauconitic, variably clayey and silt-clay. Glauconitic sand, medium-gray to dark greenish gray, where unweathered; silt-clay, dark-gray to chocolate-brown. Mottled yellow and pale-brown in weathered outcrop.

Upland Deposits – Sand pebbly sand, and gravel, capped by sandy pebbly loam in places. Pale-gray, tan, or buff in color, weathering to yellow, orange, and shades of brown.

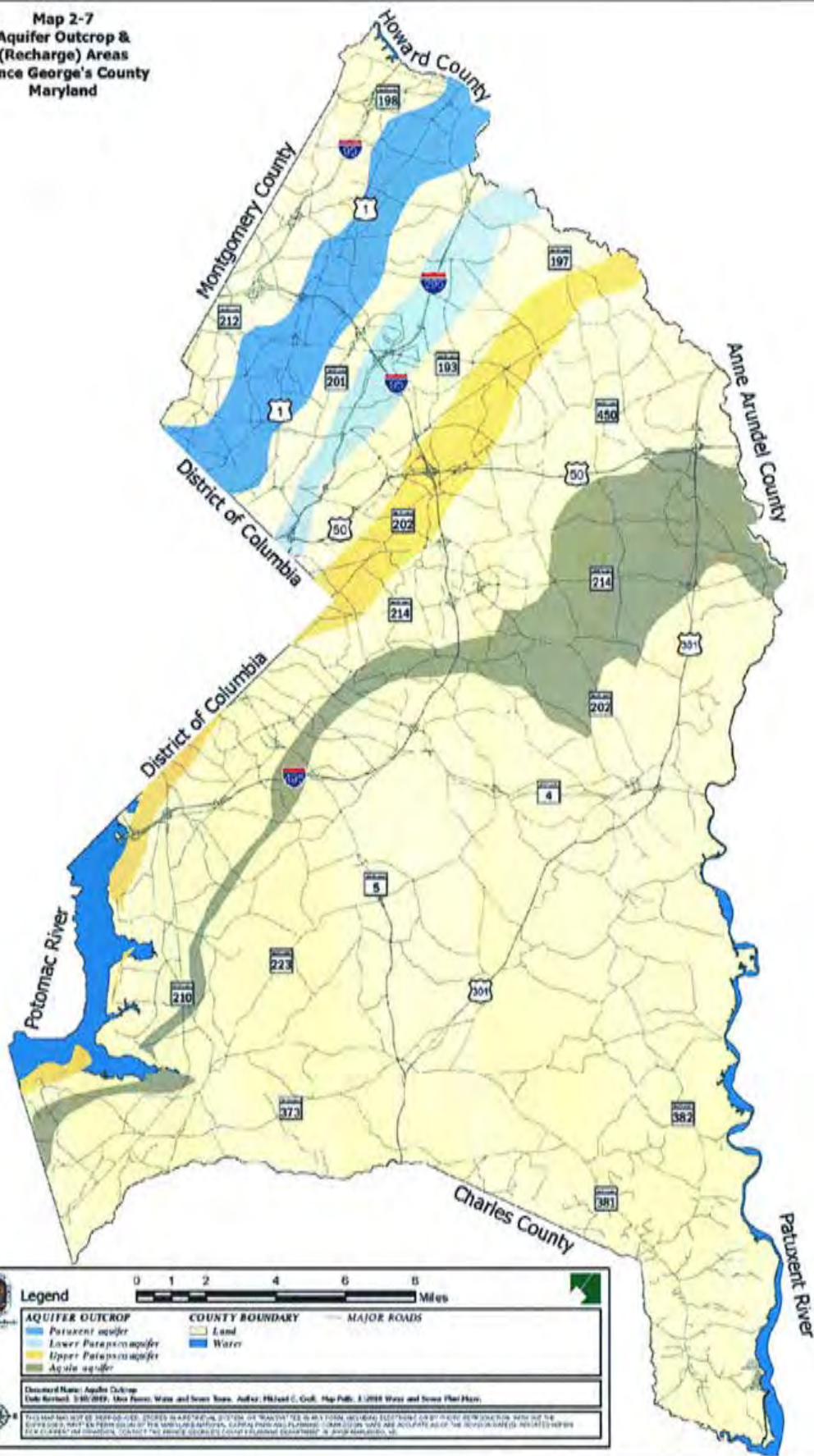
### 2.2.3 Aquifers

The major groundwater resources of Prince George's County are the aquifers of the Patuxent, Patapsco, Magothy and Aquia formations, and the deposits of Pliocene and Pleistocene Age. The water supply in the aquifers is replenished by precipitation slowly filtering through sand and gravel deposits in the so-called "recharge areas." The County's major aquifers' outcrop and recharge areas are shown on **Map 2-7**.

The Patuxent Formation underlies the entire County and constitutes an important source of groundwater for the northern, northwestern and western parts of the County. The water quality of the Patuxent formation is generally soft, low in total dissolved solids, low in chlorides, and of a moderate pH. However, high iron content is often a problem that can necessitate treatment, and because of its depth, this aquifer serves mainly as a groundwater source for only very large users such as the Beltsville Agricultural Research Center, the Patuxent Wildlife Research Center, and the City of Bowie.

The Patapsco Formation underlies the entire County and is also an important aquifer. Due to its depth, it is not economically feasible for domestic use in the southeastern part of the County. The quality of the water from this aquifer is generally good, but local treatment for iron removal and acidity is normally required. The City of Bowie and the Chalk Point Generating Station use the Patapsco as their primary source of water. In recent years, extensive withdrawal of water from this aquifer for community well water systems in nearby Charles County has resulted in aquifer level declines of approximately five feet per year in the Accokeek area. For new domestic use wells in the Accokeek area, the use of larger diameter casing (4.5" versus 4.0") to a depth of 500 feet is recommended, but not required by the Health Department. Although they are more expensive to drill, the deeper wells with large diameter casings have a significantly longer useful life and provide the homeowner with long-term protection against declining water levels.

**Map 2-7  
Aquifer Outcrop &  
(Recharge) Areas  
Prince George's County  
Maryland**



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The Magothy Formation is the major aquifer within Prince George's County used for individual water supplies. Besides serving individual users, this formation also supplies water for the City of Bowie, the Western Branch Wastewater Treatment Plant, and the Chalk Point Generating Station. The natural water quality of the Magothy Formation is generally acceptable for most users, but localized acidity and elevated levels of iron occasionally require treatment. Extensive withdrawal of water from the Magothy aquifer for community water systems in Charles County has also resulted in significant lowering of the water level of this aquifer in the southern portion of Prince George's County. In order to limit the decline of the water level in the aquifer, the Maryland Department of the Environment (MDE) is approving future withdrawals to residential and small commercial users. Requests for larger appropriations of groundwater will be required to utilize the Patapsco and Patuxent aquifers.

The Aquia Formation yields small to moderate supplies of water in the central eastern portion of the County, and moderate supplies in the southeastern areas. However, because the aquifer is generally not as productive as the deeper Magothy Formation, it is often overlooked or bypassed as a potential water supply in these areas, even though its water quality is typically superior. In areas where the Aquia is confined by Marlboro clay, it generally can be used with little or no treatment.

The lowland and upland deposits from the Pliocene and Pleistocene Age forming irregularly bedded sands, gravel, silts and clays can yield small to moderate amounts of water. However, the yield and bacteriological quality of the water are unpredictable. For this reason, the Health Department does not approve the use of this water for potable water supply.

The aquifers of the Northern Atlantic Coastal Plain Aquifer System can be either confined or unconfined. A particular aquifer is considered to be confined where it is bounded above and below by beds of distinctly lower permeability (i.e., clay) than that of the aquifer itself and, therefore, contains groundwater under pressure. This term is synonymous with artesian aquifer. An aquifer is considered to be unconfined where it is **not** bounded above by a bed of distinctly lower permeability than that of the aquifer itself and groundwater is under no or low pressure. This term is synonymous with "water-table aquifer." Typically, the aquifers of the Northern Atlantic Coastal Plain here in Prince George's County are unconfined in their outcrop areas, where there is an absence of a clay layer above the aquifer sands, and become confined to the southeast where younger clay layers overlay the aquifer sands. Some important differences between the unconfined and confined portion of the aquifers are that where they are unconfined they are more susceptible to contamination from sources at the land surface, are more readily influenced by short-term drought and climate change, and are more likely to discharge water into nearby surface water systems. Hence, groundwater in the shallow unconfined portion of the aquifers of the Coastal Plain is sensitive to how people manage and use the overlying land.

### **2.2.4 Water Quality Standards**

The purpose of water quality standards is to protect, maintain and improve the quality of surface waters. There are three components of water quality standards: Designated Uses, Water Quality Criteria, and Antidegradation policy. Each water body in the State of Maryland is assigned

## 2018 WATER AND SEWER PLAN

a use class, which identifies the type of use most appropriate for the quality of the water. These use classes are outlined below:

- **Use Class I** – Water Contact Recreation, and Protection of Nontidal Warmwater Aquatic Life
  - **Use Class I-P** – Water Contact Recreation, Protection of Aquatic Life, and Public Water Supply
  - **Use Class II** – Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting\*
    - Shellfish Harvesting Subcategory
    - Seasonal Migratory Fish Spawning and Nursery Subcategory (Chesapeake Bay only)
    - Seasonal Shallow-Water Submerged Aquatic Vegetation Subcategory (Chesapeake Bay only)
    - Open-Water Fish and Shellfish Subcategory (Chesapeake Bay only)
    - Seasonal Deep-Water Fish and Shellfish Subcategory (Chesapeake Bay only)
    - Season Deep-Channel Refuge Use (Chesapeake Bay only)
- \* Waterbodies designated as Use II do not necessarily support the shellfish harvesting use as some waters may be tidal but too fresh to support viable populations of shellfish.*
- **Use Class II-P** – Tidal Fresh Water Estuary – includes applicable Use II and Public Water Supply
  - **Use Class III** – Nontidal Cold Water
  - **Use Class III-P** – Nontidal Cold Water and Public Water Supply
  - **Use Class IV** – Recreational Trout Waters
  - **Use Class IV-P** – Recreational Trout Waters and Public Water Supply

Federal antidegradation regulations require states to develop and adopt a statewide antidegradation policy that protects all waters of the U.S. from degradation. Tier I specifies the minimum standard that must be met (fishable-swimmable). However, Tier II protects water that is better than the minimum specified for that designated use. The regulation requires states to maintain the condition of these high-quality waters. A third Tier of protection is being developed in Maryland that will identify Outstanding National Resource Water (ONRW). A water quality map that further identifies Tier II streams located in Prince George's County may be found as **Appendix 2-4** of this chapter. For more information on Maryland's *2016 Triennial Review of Water Quality Standards*, please visit:

[www.mde.maryland.gov/programs/water/TMDL/WaterQualityStandards/Pages/](http://www.mde.maryland.gov/programs/water/TMDL/WaterQualityStandards/Pages/)

## 2018 WATER AND SEWER PLAN

### **2.3 COMMUNITY PLANNING FRAMEWORK**

The rapid urbanization of Prince George's County has created an increasing awareness of the need for protecting environmental quality while providing the necessary infrastructure for the community. Until the late 1980s, it was the County's policy that all areas developed at densities less than one dwelling unit per acre were to be served by individual wells and septic systems, and that public systems should not be extended into such areas. This policy was based on the assumption that lots would be uniformly large, the cost of extending service prohibitively high, and such extensions might encourage inappropriate requests for increased density.

In 2006 new legislation was passed that established regulations for the "conservation subdivision" techniques which allows a reduction in the minimum lot size required in the zone. The reduced lot size allowed for an increase in the preservation of valuable environmental, historic and cultural resources, and unique site characteristics. The conservation subdivision regulations are the required method of residential development in Sustainable Growth Tier IV (Environmental Strategy Area 3, or ESA 3, formerly the Rural Tier), for minor preliminary plans of subdivision and major preliminary plans of subdivision in Sustainable Growth Tier III, and are optional in specific zones in Environmental Strategy Areas 1 and 2, or ESA 1 and 2 (formerly the Developing and Developed tiers, respectively). In ESA 1 and 2 the conservation subdivision option results in a reduction in the costs for sewer extensions because of the reduced lot sizes. Land in ESA 3 is typically outside the public water and sewer service boundaries.

#### **2.3.1 Role of the General Plan in Water and Sewer Planning**

The Prince George's County Council approved *Plan Prince George's 2035 Approved General Plan* as the General Plan on May 6, 2014. As a comprehensive 20-year general plan, the General Plan is a blueprint for long-term growth and development in Prince George's County. The General Plan contains six principles that guide the plan's vision, policies, and strategies:

1. Concentrate future growth
2. Prioritize and focus our resource
3. Build on our strengths and assets
4. Create choice communities
5. Connect our neighborhoods and significant places
6. Protect and value our natural resources

The General Plan addresses the provision of public facilities which includes water and sewer needed to serve existing and future county residents and businesses. The effectiveness, sustainability, design, and location of these facilities are essential components to the County's quality of life, economic competitiveness, and environmental health. It recognizes the mounting cost of providing and maintaining water and sewer service will increasingly burden the County's budget. This underscores the importance of curbing the County's sprawling development pattern.

The majority of recent development in the County occurred in suburban locations outside the Capital Beltway and outside of designated growth centers, resulting in a sprawling development pattern (see Plan 2035, p.78). Residential development has continued to encroach

## 2018 WATER AND SEWER PLAN

on our rural and agricultural areas, endangering our farmland and natural resources, resulting in costly water, sewer, and road expansions, and triggering the construction of large stormwater management facilities (see Plan 2035, p.93).

Natural resources are increasingly being degraded and county financial resources are stretched across numerous priorities, such as our schools and police, community services, and economic development initiatives. It is critical that new development not disproportionately use our county's limited resources and harm our natural environment. One way to do this is to proactively encourage development to build on our existing infrastructure – our transit, roads, trails, water and sewer system, and public facilities – rather than to build new infrastructure. This will help ensure that we use our tax dollars efficiently and protect our rural and agricultural communities and open spaces.

Prince George's County is at a crossroads. The easy road continues our sprawling development pattern, strains our county's budget, degrades our natural environment, complicates health issues, and fuels congestion. The bold road, proposed by the General Plan, leads to a strong economy built upon concentrated public investment in targeted transit-oriented commercial and mixed-use centers. The strategic approach attracts new private investment, businesses, and residents to the county and generates the revenue the county needs to provide well-maintained, safe, and healthy communities, improved environmental resources, high-quality public schools, and other critical services (see Plan 2035, p.7). **Map 2-8**, the General Plan Growth Policy Map, conveys this strategic approach.

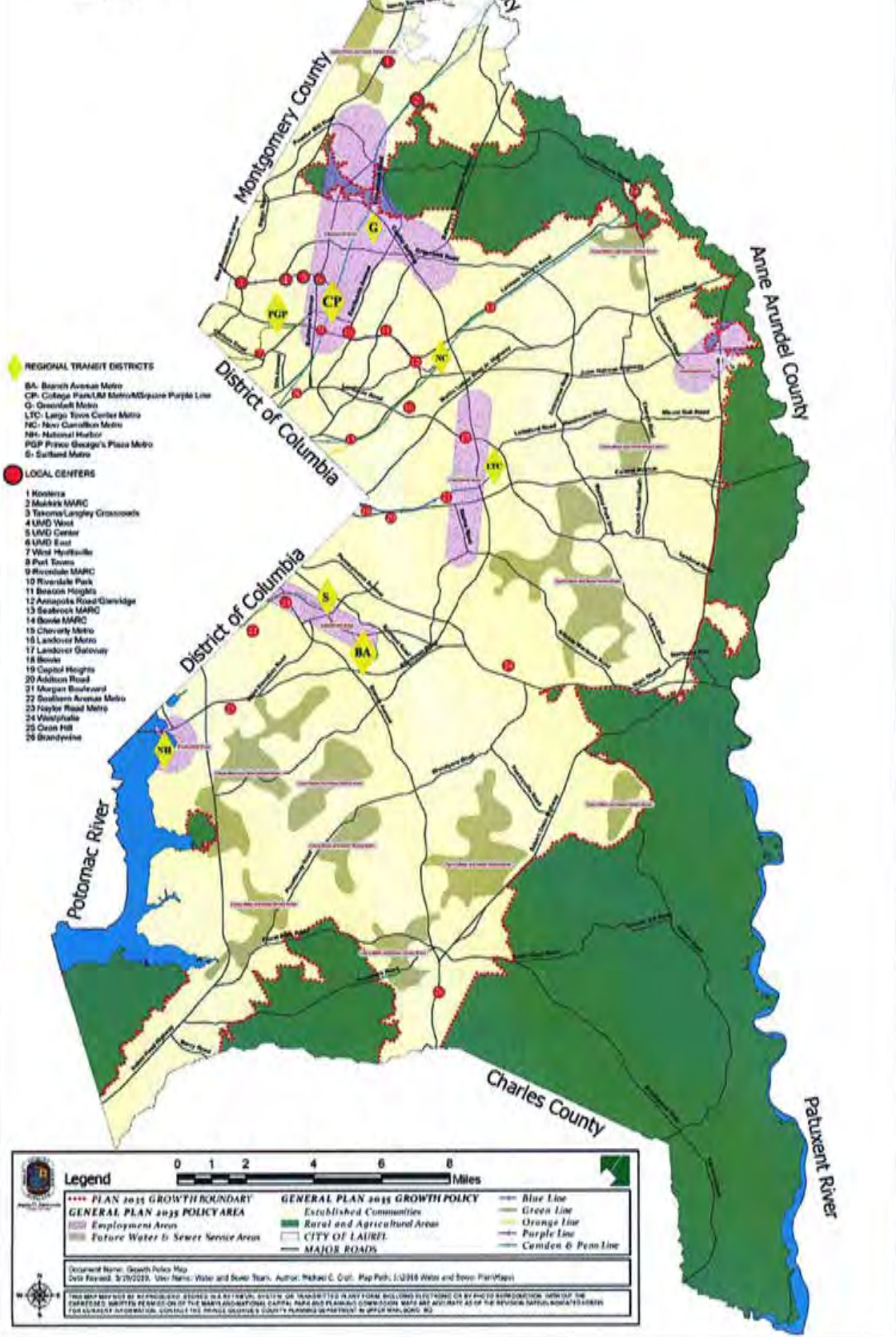
The Growth Policy Map visually communicates where and how we should grow and evolve as a county over the next 20 years, as well as which parts of the county will not experience substantial change (see Plan 2035, p.17). It introduces six new area classifications:

1. Regional Transit Districts
2. Employment Areas
3. Local Centers
4. Established Communities
5. Future Water and Sewer Service Areas
6. Rural and Agricultural Areas

These six new area classifications replace the 2002 General Plan tier, center, and corridor designations. The Growth Policy Map takes into account our existing development patterns, environmental features, existing and planned transportation investments, and projected growth and balances these factors with the county's underlying capacity to meet the needs of existing communities and to accommodate future development (see Plan 2035, p.17).

The General Plan designates eight centers – Branch Avenue Metro, College Park/UM Metro, Greenbelt Metro, Largo Town Center Metro, National Harbor, New Carrollton Metro, Prince George's Plaza Metro, and Suitland Metro – with extensive transit and transportation infrastructure and the long-term capacity to become mixed-use, economic generators for the county as Regional Transit Districts (see Plan 2035, pp.18-20)

**Map 2-8  
Growth Policy Map  
Prince George's County  
Maryland**



- REGIONAL TRANSIT DISTRICTS**
- BA- Branch Avenue Metro
  - CP- College Park/LA Metro/MtRainier Purple Line
  - G- Greenbelt Metro
  - LTA- Largo Town Center Metro
  - NC- New Carrollton Metro
  - NH- National Harbor
  - PGP- Prince George's Plaza Metro
  - S- Suitland Metro
- LOCAL CENTERS**
- 1 Koozenga
  - 2 Maalek MARC
  - 3 Takoma/Langley Crossroads
  - 4 LMD West
  - 5 LMD Center
  - 6 LMD East
  - 7 Wind Myrtleville
  - 8 Port Towns
  - 9 Riverdale MARC
  - 10 Riverdale Park
  - 11 Beacon Heights
  - 12 Annapolis Road/Glenridge
  - 13 Seabrook MARC
  - 14 Bowie MARC
  - 15 Chevy Chase Metro
  - 16 Landover Metro
  - 17 Landover Gateway
  - 18 Bowie
  - 19 Capitol Heights
  - 20 Addison Road
  - 21 Morgan Boulevard
  - 22 Southern Avenue Metro
  - 23 Naylor Road Metro
  - 24 Westphalia
  - 25 Oxon Hill
  - 26 Brandywine

**Legend**

<p>PLAN 2011 GROWTH BOUNDARY</p> <p>GENERAL PLAN 2035 POLICY AREA</p> <p>Employment Areas</p> <p>Future Water &amp; Sewer Service Areas</p>	<p>GENERAL PLAN 2035 GROWTH POLICY</p> <p>Established Communities</p> <p>Rural and Agricultural Areas</p> <p>CITY OF LAUREL</p> <p>MAJOR ROADS</p>	<p>Blue Line</p> <p>Green Line</p> <p>Orange Line</p> <p>Purple Line</p> <p>Camden &amp; Penn Line</p>
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Scale: 0 1 2 4 6 8 Miles

Document Name: Growth Policy Map  
Date Revised: 3/20/2023, User Name: Water and Sewer Team, Author: Michael C. Cull, Map Path: I:\GIS\Water and Sewer\PlanMaps

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## 2018 WATER AND SEWER PLAN

Regional Transit Districts are high-density, vibrant, and transit-rich mixed-use areas envisioned to capture the majority of future residential and employment growth and development in the County.

Employment Areas are areas commanding the highest concentrations of economic activity in four targeted industry clusters – healthcare and life sciences; business services; information, communication, and electronics; and the Federal Government.

Local Centers are focal points of concentrated residential development and limited commercial activity serving our Established Communities. The General Plan contains recommendations for directing medium- to medium-high residential development, along with limited commercial uses, to these locations rather than scattering them throughout the Established Communities.

Established Communities make up the county's heart – its established neighborhoods, municipalities, and unincorporated areas outside designated centers. These are existing residential neighborhoods and commercial areas served by public water and sewer outside of the Regional Transit Districts and Local-Centers. Established communities are most appropriate for context-sensitive infill and low- to medium-density development.

Future Water and Sewer Service Areas are holding areas that are located inside the Growth Boundary, but have not been approved for a water and sewer category change. Development here is largely determined by the availability and capacity of water and sewer service. Controlling the expansion of water and sewer service is the easiest and most effective way a jurisdiction can manage and phase growth.

Rural and Agricultural Areas are areas with significant natural and agricultural resources that are best suited for low-density residential development on well and septic, agricultural activity, and forest preservation. The General Plan proposes this area remain low-density residential or support park and open space land uses and focuses new investment on maintaining existing infrastructure and stabilizing small-scale neighborhood-oriented commercial activities that support the areas' rural lifestyle and character (see Plan 2035, p.106).

The growth boundary is important because it designates the areas that are eligible to receive public water and sewer service and impacts where we grow and develop. The rural and agricultural areas are not eligible for public water and sewer service (see Plan 2035, p.18). This has made them useful in assessing the capacity and potential of each center to support future growth and development.

The General Plan offers a range of policy choices for controlling sprawl and ensuring cost-effective use of public resources to maintain a high and sustainable quality of life. Implementation of the General Plan's policies and strategies will involve making choices concerning future development patterns, while taking into consideration the cost of providing needed infrastructure and protecting the environment. Successful implementation should occur through a combination of regulations, programs and plans, including the Water and Sewer Plan.

## 2018 WATER AND SEWER PLAN

### 2.3.2 Projected Growth Rate, Land Use and Zoning

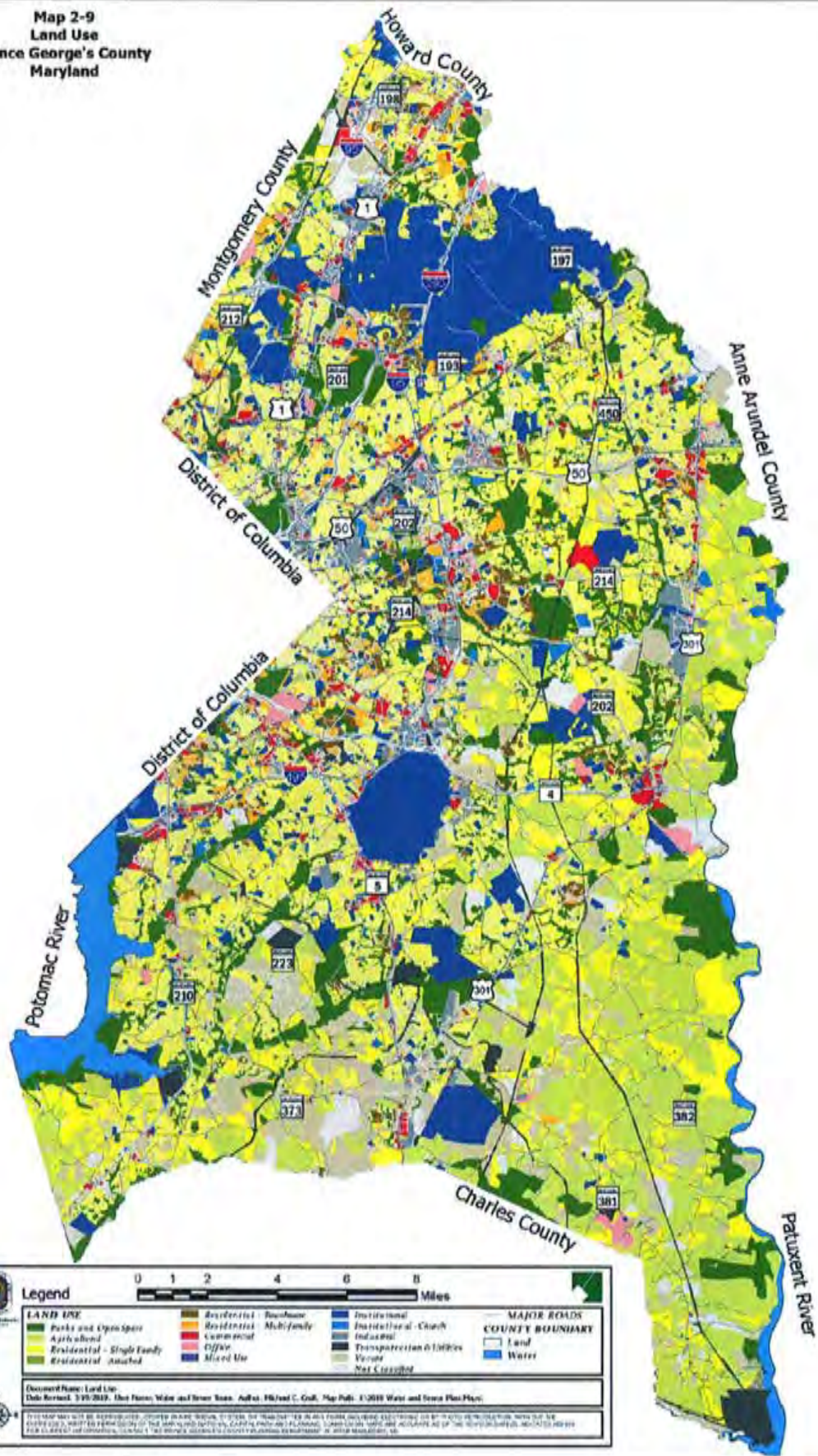
The County's future growth pattern directly influences the cost, sizing, and siting of water and sewer facilities. Population, employment, households, and dwelling units are the four major parameters affecting the demand for water and sewer facilities, the amount of biosolids generation, and the amount of land needed for collection, transmission, storage, treatment, and disposal facilities. **Map 2-9** is reflective of the land use in Prince George's County.

**Table 2-1. Approximate Population Forecasts by WSSC Sewer Basins for Prince George's County**

Sewer Basin	2010	2015	2020	2025	2030	2035	2040	2045
Beaverdam	67,586	67,761	69,505	70,129	70,539	72,525	74,376	76,369
Broad Creek	94,541	95,671	96,673	98,610	99,377	100,001	101,091	102,543
Horsepen	15,880	17,032	17,045	17,230	17,389	17,389	17,390	17,392
Lower Anacostia	25,333	26,724	26,807	26,823	26,923	27,228	27,303	27,499
Mattawoman	8,678	9,856	17,554	18,680	18,964	18,979	18,980	18,980
Northeast Branch	119,789	122,270	123,328	126,120	131,597	133,758	135,673	137,941
Northwest Branch	63,808	64,732	64,735	64,789	65,433	66,501	66,982	67,038
Oxon Run	75,891	76,651	77,173	77,474	77,925	79,039	80,567	81,507
Paint Branch	38,841	39,789	39,837	39,874	40,073	40,075	40,130	40,137
Parkway	52,821	54,521	54,523	54,525	54,747	54,746	54,754	54,993
Patuxent Central	35,119	36,123	38,236	39,216	39,296	40,243	40,665	40,702
Patuxent North	195	205	205	205	205	205	205	205
Patuxent South	5,187	5,710	5,711	5,731	5,769	5,843	5,922	5,977
Piscataway Creek	70,934	74,411	74,439	76,764	78,559	79,559	82,525	83,839
Potomac River South	3,903	4,035	4,078	4,291	4,314	4,314	4,314	4,314
Sligo Creek	19,395	19,678	19,679	19,680	19,684	19,719	19,685	19,814
Western Branch	184,512	188,367	192,724	196,988	201,266	206,826	210,929	215,733
Zekiah	383	894	894	894	894	894	894	894
<b>Grand Total</b>	<b>863,420</b>	<b>904,430</b>	<b>923,144</b>	<b>938,023</b>	<b>952,955</b>	<b>967,842</b>	<b>982,385</b>	<b>995,876</b>

*Source: Prince George's County Planning Department (M-NCPPC) Round 9.0 Cooperative Forecast*

**Map 2-9  
Land Use  
Prince George's County  
Maryland**



## 2018 WATER AND SEWER PLAN

**Table 2-2. Land Use and Zoning, Prince George's County**

Land Use Category	Existing Land Use (already developed)		Zoned	
	Acres	% of Total	Acres	% of Total
Residential	80,320	28.3%	237,074	84.7%
Commercial/Industrial	13,488	4.8%	20,316	7.3%
Institutional/Open Space	49,796	17.6%	-	-
Mixed Use	286	0.1%	7,491	2.7%
Forest	79,619	28.1%	-	-
Agriculture	27,188	9.6%	-	-
Extractive/Barren/Bare	22,675	8.0%	-	-
Wetland	7,015	2.5%	-	-
R-O-W/Unclassified			14,929	5.3%
<b>Total</b>	<b>283,479</b>		<b>279,810</b>	<b>100%</b>

*Source: Prince George's County Planning Department (M-NCPPC), April 2011.*

These forecasts of growth for Prince George's County are contained in the Round 9.0 Cooperative Forecasts, prepared by the Prince George's County Planning Department, Maryland-National Capital Park and Planning Commission (M-NCPPC), in conjunction with the Metropolitan Washington Council of Governments (MWCOG). These forecasts cover the time period from 2010 to 2045 and are shown in **Table 2-3**.

**TABLE 2-3. Prince George's County Forecasts: 2010-2040**

	2010	2015	2020	2025	2030	2035	2040	2045
Population	863,420	904,430	923,144	938,023	952,955	967,842	982,385	995,876
Dwelling Units	328,182	344,818	350,947	357,706	367,453	375,582	382,675	389,907
Households	304,042	321,143	334,268	343,865	355,494	363,283	370,023	376,787
Employment	333,942	338,565	349,048	366,326	375,741	385,510	393,336	402,147

*Source: M-NCPPC, Countywide Planning Division, Research Section, Cooperative Forecast, Round 9.0, 2016.*

## 2018 WATER AND SEWER PLAN

Growth and its distribution generate physical, economic and environmental pressures on the County's water and wastewater systems. The population increase between 2015 and 2025 is expected to be 33,593. Table 2-4 presents the projected growth for the period from 2015 – 2045. By the year 2045, The County's population is estimated to reach 995,876. The population over three decades will have grown by 91,446 or 10.1 percent.

**TABLE 2-4. Projected County Growth Patterns, 2015-2045**

Type of Growth	2015-2025	% Change	2025-2035	% Change	2035-2045	% Change
Population	33,593	3.71%	29,819	3.18%	28,034	2.90%
Dwelling Units	12,888	3.74%	17,876	5.00%	14,325	3.81%
Households	22,722	7.08%	19,418	5.65%	13,504	3.72%
Employment	27,761	8.20%	19,184	5.24%	16,637	4.32%

*Source: M-NCPPC, Countywide Planning Division, Research Section, Cooperative Forecast, Round 9.0, 2016*

Since 2000, the central and southern portions of the County outside the Beltway experienced increased population growth. This growth is expected to continue to 2045 with an increasing share of growth going to the southern portion of the County. After 2015, areas inside the Capital Beltway are expected to receive increased population growth with the promotion of infill development and redevelopment around Metro stations. Infill development is the term used to describe development of land located in areas that are already developed, and that have the infrastructure in place. Forecasted redevelopment around Metro stations is based on the General Plan goal of more intense development at transit stations. During the same time period, more growth is also expected in the northern part of the County. Factors, such as transportation and job opportunities, will play an important role in defining this growth within the County. **Map 2-10** depicts the 2010 population density for Prince George's County.

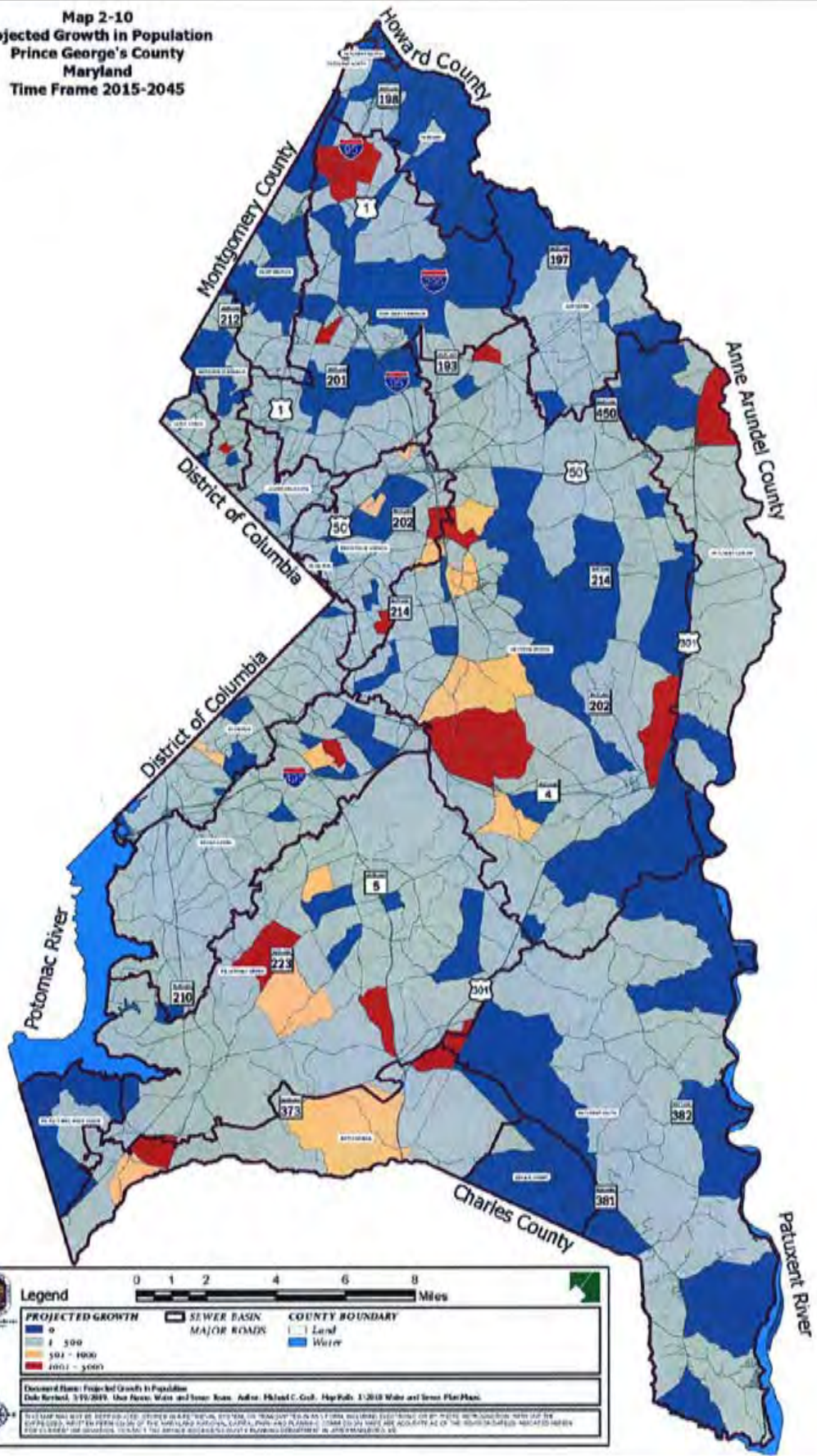
During the period from 2015 to 2025, total employment in the County is projected to increase by 27,761 jobs. From 2015 to 2045, total employment is expected to increase by 63,582 or 18.8%. The northern half of the County will remain the dominant employment center but new concentrations of growth will occur in the central and southern sections.

An increase of 22,722 households is expected between 2015 and 2025 with an additional 19,418 between 2025 and 2035. The increase in households between 2035 and 2045 is expected to be an even smaller 13,504. Household growth is expected in the southern part of the county, as well as in master-planned developments such as Westphalia and Konterra.

Infill development and redevelopment will characterize new dwelling unit growth inside the Capital Beltway after 2010. In the southern portion of the County, new growth will continue along MD 5 and U.S 301 and in the north along U.S 1. These trends will generally continue from 2015 to 2025. A projected 12,888 new dwelling units are expected to be built from 2015 to 2025 with an additional 32,201 more units between 2025 and 2045.

Public Land **Map 2-11** is provided to show the areas in which Federal, State, County and Municipal facilities makeup the County, having provided for a 12.7% increase in employment growth. **Appendix 2-3** provides the names for these public facilities.

**Map 2-10**  
**Projected Growth in Population**  
**Prince George's County**  
**Maryland**  
**Time Frame 2015-2045**



**Legend**

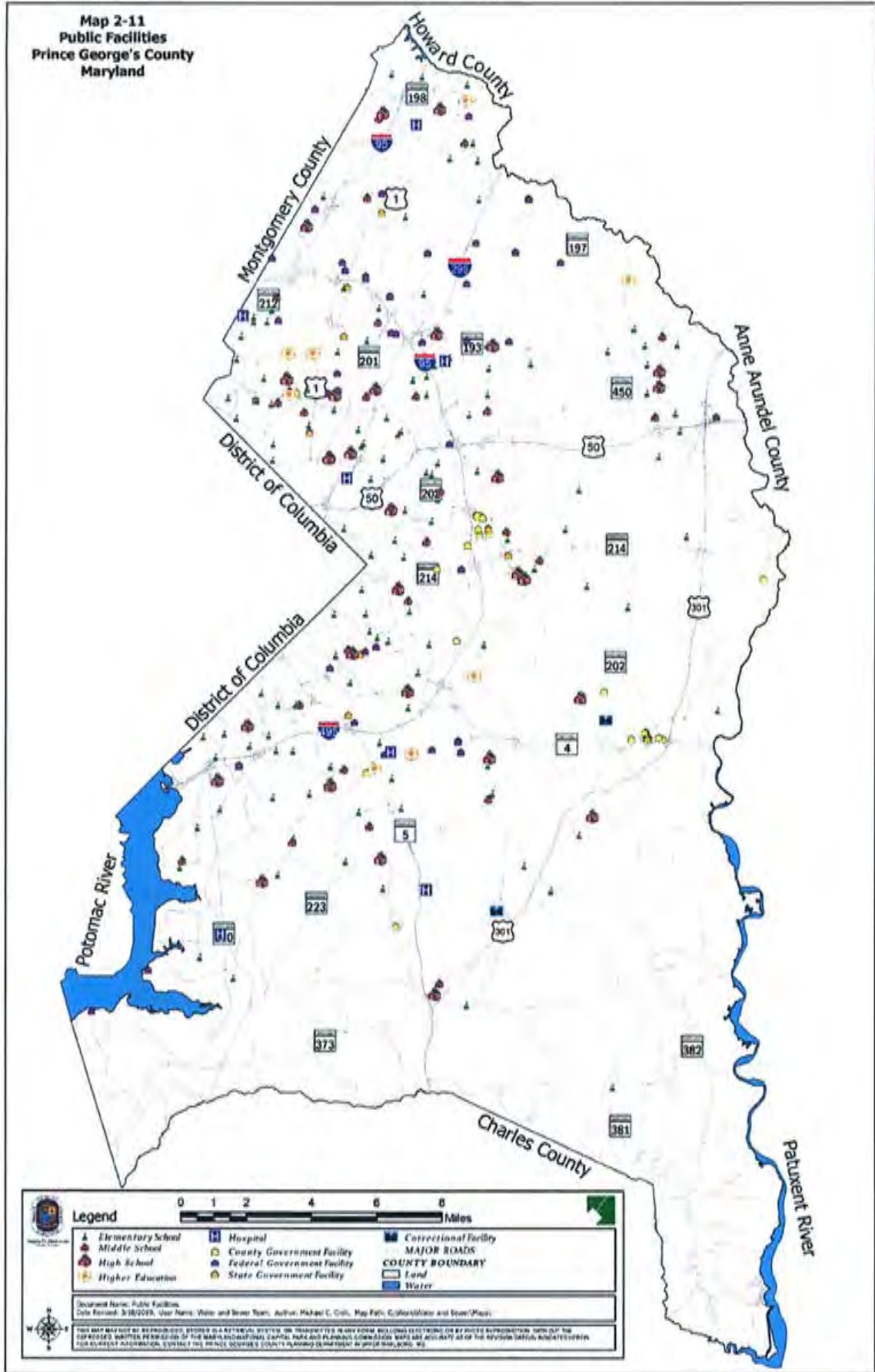
4001 - 5000	1 - 500	SEWER BASIN	COUNTY BOUNDARY
3001 - 4000	501 - 1000	MAJOR ROADS	Water
0			Land

0 1 2 4 6 8 Miles

**Document Name:** Projected Growth in Population  
**Date Revised:** 3/19/2019. **Map Name:** Water and Sewer. **Author:** Michael C. Cook. **Map Path:** 3-2018 Water and Sewer Plan Map.

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**Map 2-11  
Public Facilities  
Prince George's County  
Maryland**



<p><b>Legend</b></p>		
▲ Elementary School	■ Hospital	■ Correctional Facility
▲ Middle School	■ County Government Facility	■ MAJOR ROADS
▲ High School	■ Federal Government Facility	■ COUNTY BOUNDARY
■ Higher Education	■ State Government Facility	■ Land
		■ Water
<p>Document Name: Public Facilities          Date Revised: 3/18/2019, User Name: Wade and Steve Tarr, Author: Michael C. Coll, Map File: C:\GIS\MapInfo and Data\MapInfo</p>		
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## 2018 WATER AND SEWER PLAN

### **2.4 LEGAL FRAMEWORK**

The County's Water and Sewer Plan is governed by State law and is directly and indirectly guided by Federal and State law. Since the early 1970s, there have been numerous legislative actions that directly correlate to water resources and sewer planning. No longer is water and sewer planning merely a process of extending water and sewer lines to owners' properties. Now the County is required to consider a number of issues prior to approving water and sewer service.

These include:

- Adequacy of water resources
- Water quality standards
- Effluent standards
- Methods of sewage treatment and disposal
- Water supply
- Cost effectiveness
- Fulfillment of County plans and goals

#### **2.4.1 Federal Law**

- A. Federal Water Pollution Control Act Amendments of 1972. These represented a complete rewrite of all existing water pollution control laws. As stated in the declaration of goals and policy statement, "The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. In order to achieve this objective, it is hereby declared that, consistent with the provisions of this Act:
  1. It is the national goal that discharge of pollutants into the navigable waters be eliminated;
  2. It is the national goal that, wherever attainable, an interim goal of water quality, which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water, be achieved;
  3. It is the national policy that discharge of toxic pollutants in toxic amounts be prohibited; and
  4. It is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans."
- B. Clean Water Act of 1977. This legislation introduced the concept of effluent limitations, which is the elimination of pollution before wastewater is discharged into a waterway. Under the Clean Water Act, water pollution control is based on the concept of stream standards and the capacity of a waterway to assimilate pollutants that are discharged.

## 2018 WATER AND SEWER PLAN

Essential to the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES), which requires permits from either the U.S. Environmental Protection Agency (EPA) or the State for every point source discharge such as power plants, certain industrial processing plants, and sewage treatment plants. Each permit is for five years and must contain a schedule of compliance. The Maryland Department of the Environment (MDE) is responsible for implementing the NPDES program for the State of Maryland. Prince George's County has obtained a nonpoint source NPDES permit from the MDE to cover stormwater runoff and stormwater discharges.

- C. **Safe Drinking Water Act.** On December 16, 1974, Congress enacted the Safe Drinking Water Act that provides national standards for public water supply systems and sources of drinking water for any community water supply that serves 15 service connections or 25 individuals. Federal standards for drinking water have been in effect since 1914, when the Federal Government enacted measures to prevent the interstate spread of communicable diseases. The Act authorizes the EPA to do the following:
1. Conduct research on technological and health aspects of providing public drinking water;
  2. Assist the states to improve their drinking water programs by providing technical assistance, employee training and financial support;
  3. Assure adequate material supply for treatment for public systems; and
  4. Establish a regulatory program to protect underground sources of water.

Implementation and enforcement of this Act is the responsibility of MDE.

The 1996 amendment to the Safe Drinking Water Act called for source water assessments (SWA) to protect water supply sources. The Washington Suburban Sanitary Commission's ongoing work on the Patuxent reservoirs and the source water assessments being conducted on the Potomac River are on behalf of MDE. These SWA projects are further discussed in Sections 3.2.1 and 3.2.2 of this Plan.

### **2.4.2 State Law**

Maryland State laws guide components within the Prince George's County Water and Sewer Plan. The components herein described are subject to the State Environment Article, Title 9, Subtitle 5; the Annotated Code of Maryland Regulation (COMAR), Title 26, Subtitle 03; and Senate Bill 1107 (1975). These specific laws are appendices to this Plan.

- A. **Prince George's County Comprehensive Water and Sewer Plan:** State law requires all counties within the State to prepare and submit a comprehensive water and sewer plan. Prince George's and Montgomery counties are required to submit their plans triennially. The

## 2018 WATER AND SEWER PLAN

purpose of the plan is to coordinate and control the extension of community water and sewer systems in a manner consistent with local development policies and objectives. The Water and Sewer Plan is subject to review and approval by the MDE.

- B. Washington Suburban Sanitary Commission (WSSC): Chapter 392, Laws of Maryland, 1975, requires actions of the WSSC to conform to adopted and approved plans, programs and policies of the elected governing body of Prince George's County. The Commission may not grant water or sewer service connections, hook-ups, or authorization for service, or otherwise extend water and sewer service to any new development within the Prince George's County portion of the Sanitary District unless the development is in conformance with adopted and approved plans, programs and policies of the County governing body or other rules and regulations that the governing body may desire to include in their duly adopted and approved comprehensive Water and Sewer plans, amendments, or revisions.
- C. WSSC Six-Year Capital Improvement Program (CIP) and Capital and Operating Budget: The Maryland Annotated Code requirements governing the Six-Year CIP and the Capital and Operating Budget of the WSSC provide a limited degree of County control over WSSC construction programs. With both the six-year program and the annual budget, WSSC must submit a proposed list of projects planned for the County, including treatment and storage facilities, major water and sewer lines, pumping stations and force mains, and other major facilities.

The County Executive reviews the WSSC CIP proposal and, along with his or her comments and recommendations, submits them to the County Council by March 15 of each year. After public hearings, the County Council approves the WSSC Six-Year CIP and annual operating budgets with modifications as desired. In addition to approving the construction schedule for major water and sewer facilities, the County Council may impose restrictions on the area to be served by individual sewer and water projects. Following County Council action, the WSSC must adopt the CIP as approved by the County Council.

Although WSSC is prohibited from undertaking any project that is not scheduled in the first year of this program, WSSC is not obliged to implement any project that the Commission determines to be financially infeasible. Also, when WSSC proposes a project lying totally or partially within Montgomery or Prince George's counties that is designed to provide services in whole or in substantial part to the other County, the project may be disapproved with the concurrence of the governing body that is to receive the designed services. In addition, the County in which the project is physically proposed has the authority to direct modifications in project location and scheduling provided that such modification or change does not prevent the services from being available when needed. This authority to modify locations may be exercised to affect reasonable changes during the County Council's action in reviewing the WSSC CIP during the year in which the project is first introduced. Thereafter, the authority to make further modifications is limited to those that would not result in substantial net additional costs to the WSSC, unless the County directing the modifications reimburses the WSSC for any additional net cost increases that may be required.

## 2018 WATER AND SEWER PLAN

- D. State Water Pollution Control Regulations: MDE has the responsibility for water quality regulations and standards. The standards shall protect public health, safety and welfare, and the present and future use of the waters for public water supply, the propagation of fish and other aquatic life and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses. All standards may be amended from time to time by MDE and shall include, but not be limited, to:
1. Water quality standards specifying, among other things, the maximum short-term and long-term concentrations of pollutants in the water, minimum permissible concentrations of dissolved oxygen and other desirable matter in the water and the temperature range for the water;
  2. Effluent standards specifying the maximum loading or concentrations and the physical, thermal, chemical, biological and radioactive properties of wastes that may be discharged into the waters; standards must be at least as stringent as those specified by the NPDES;
  3. Rules and regulations defining techniques for filling and sealing of abandoned water wells and holes, for disposal wells and for landfills to prevent groundwater contamination, seepage, and drainage into the waters of the State;
  4. Rules and regulations regarding the sale, offer, use or storage of articles that constitute a water pollution hazard as determined by MDE;
  5. Rules and regulations outlining the procedures for water pollution episodes or emergencies that constitute an acute danger to health or the environment;
  6. Rules and regulations prescribing method, facilities, standards, and devices for transfer, storage, separation, removal, treatment, and disposal of oil and other unctuous substances; and
  7. Rules and regulations specifying standards for equipment and procedures for monitoring pollutants, collection of samples, log-keeping and reporting.
- E. The Chesapeake Bay Critical Area Law: The Chesapeake Bay Critical Area Protection Program was enacted by the State legislature in 1984 because of concern about the decline of natural resources in the Chesapeake Bay. It is acknowledged that this decline is related to the intensity of human activities within the Bay watershed. The intent of the Critical Area legislation is to address the impact of human activities on the Bay by designating a 1,000-foot wide geographical area around the waters of the Chesapeake Bay and its tidal tributaries as the "Chesapeake Bay Critical Area." Within the designated "Critical Area," it is County policy to mitigate the negative impact of development on the water quality and habitat of the Bay. Land within the Critical Area is subdivided into three zones: Intensely Developed

## 2018 WATER AND SEWER PLAN

Overlay (IDO), Limited Development Overlay (LDO), and Resource Conservation Overlay (RCO). The purpose of the Critical Area legislation is to generally encourage the siting of intensive development away from the Critical Area, but at the same time allow a limited amount of such development where appropriate.

The County's Water and Sewer Plan may be utilized to implement the three Critical Area designations and to direct the extension of water and sewer service accordingly. For example, in the Resource Conservation Overlay, the permitted residential density is one dwelling unit per 20 acres. Such areas may be redesignated to water and sewer Category 6 (no planned service) if the properties are not already in that category. The Water and Sewer Plan is reviewed regularly to ensure consistency with the policies and ordinances of the Prince George's County Chesapeake Bay Critical Area Program.

- F. **Wetlands Regulations:** Impacts to tidal wetlands or within tidal waters are regulated by the U.S. Army Corps of Engineers under the River and Harbors Act of 1899 (33 USC 403) and by the Maryland Department of the Environment (Title XVI of the Environment Article). Locally, impacts to tidal wetlands and tidal waters are regulated by the Prince George's County Chesapeake Bay Critical Area Program. Prior to the issuance of any permit by DPIE, appropriate permits, licenses, or letters of permission must be obtained by the applicant from the Federal and State permit agencies. Non-government projects must have a Chesapeake Bay Critical Area Plan approved by the Prince George's County Planning Board. The Chesapeake Bay Critical Area Commission in Annapolis must approve government projects.

Impacts to nontidal wetlands or the 25-foot wetland buffer must be approved by MDE via a Joint Federal/State Wetland Permit or Letter of Permission pursuant to Maryland General Permit MGPD-1 issued by the U.S. Army Corps of Engineers, or have an approved U.S. Army Corps of Engineers Permit or Letter of Permission pursuant to Section 404 of the Clean Water Act (33 USC 1344). Maryland law governing nontidal wetlands is contained in Title V of the Environment Article.

Impacts to nontidal wetlands are locally reviewed and regulated by the Subdivision Ordinance (Section 24-130), and review and approval of Tree Conservation Plans are required through the Prince George's County Woodland Conservation Ordinance.

In general, impacts to tidal or nontidal wetlands should be avoided unless necessary. Necessary impacts must be minimized and, where appropriate, mitigation will be required.

- G. **Smart Growth Legislation:** In 1997, the State of Maryland initiated the Smart Growth and Neighborhood Conservation Program. Through a variety of legislative efforts, the General Assembly has approved the following:
- **Smart Growth Areas Act:** A law limiting most State infrastructure funding to existing communities or those designated for growth.
  - **Rural Legacy:** A grant program to purchase development rights and to preserve large rural areas from sprawl.

## 2018 WATER AND SEWER PLAN

- Brownfields programs: Several programs to facilitate cleanup of contaminated industrial areas and redevelopment of those sites.
- Job Creation Tax Credit: Income tax credits for businesses creating new jobs within designated areas.
- Live-Near-Your-Work Program: Matching grants to homebuyers who purchase homes near their workplace.

The designation of the Smart Growth Priority Funding Areas is required to evaluate the availability of existing or planned water and sewer service and the development density. MDE has redirected most of its capital programs to facilitate development and redevelopment in accordance with the Smart Growth legislation.

**Category Exceptions to the Sewer Envelope**

**I. Category 6 Designations inside the Sewer Envelope**

1. Greenbelt Park
2. U.S. Department of Agriculture, College Park
3. U.S. Department of the Interior, Greenbelt
4. Fort Lincoln Cemetery, Port Towns
5. Belt Woods, Bowie/Mitchellville
6. Nash Woods, Bowie
7. National Harmony Cemetery, Landover
8. Lincoln Memorial Cemetery, Suitland
9. Oxon Hill Farm
10. Rosaryville State Park, Upper Marlboro
11. Louise M. Cosca Park, Clinton
12. Duval Woods, Upper Marlboro. Water and Sewer Category 6. Approved by CR-15-2004. Tax Map 128 C-1/2 & D-1. Parcels 48, 49 & 54.
13. Magruder Tract West, Upper Marlboro. Sewer Category 6. Approved by CR-64-2006. Tax Map 118 E-2. Part of Parcel 10.
14. Woodyard Estates, Upper Marlboro. Sewer Category 6. Approved by CR-17-2009. Tax Map 109 B-3. Lots 7 – 12 & 43 – 49

**II. Category 3 Designations outside the Sewer Envelope**

(Descriptions of the referenced properties reflect proposals at the time of approval)

**Group A – Properties are currently served or will be served by public water and/or sewer facilities**

1. Federally owned property:
  - U.S. Department of the Interior – Patuxent Research Refuge, Laurel. Selected areas. Water and Sewer Category 3.
  - U.S. Department of Agriculture – Beltsville Agricultural Research Center, Beltsville. Selected areas. Water and Sewer Category 3.
  - U.S. Air Force Communications Site, Brandywine. Tax Map 145 E-4. Parcel 73. Approved for Water and Sewer Category 3 – currently using well and septic facilities.
  - U.S. Department of Agriculture – College Park. Tax Map 19 A-4, Parcel 55; Tax Map 26 A-1, Parcel 6. Water and Sewer Category 3. Developed. Rural Tier. Water and Sewer Category 3.

## 2018 WATER AND SEWER PLAN

**Group A** (*continued*) – Properties are currently served or will be served by public water and/or sewer facilities

2. Normal School Road area, Bowie: Tax Map 29 D-1/2. Parcels 12, 16, 32, 34, 35, 44, 45, 46, 47, 133, 134, 135, 136, 175, 191, 230, 243, 254, 276, 279, 308, 321, 322, and Lot 1. Water Category 3.
3. State of Maryland property, Upper Marlboro. Tax Map 111 A-1. Parcel 48. Water and Sewer Category 3.
4. Old Indian Head Road area, Cheltenham: Maryland Department of Natural Resources – Tax Map 126 D-4. Parcel 65. Tax Map 127 B-4. Parcel 111. Water Category 3.
5. Broadcreek area, Fort Washington. Tax Map 122, F-3, P. 83. Developed. Water and Sewer Category 3.
6. Ridges I & II, Piscataway. Tax Map 143 E-2. Water and Sewer Category 3.
7. Brandywine VFD, Brandywine. Tax Map 145 E-3. Parcels 76, 106 and 107. Water and Sewer Category 3.
8. Accolawn Road area of Accokeek:
  - Tax Map 151 A-4. Lots 1-4, Jamestowne Estates and Lots 29-36, Accolawn Estates. Water and Sewer Category 3.
  - Tax Map 151 A-4. Lots 7, 8, 11, 14-20, 25, 27, 28, and Parcel 94, Accokeek Lawn Subdivision. Water Category 3.
9. Hickory Hills Road, Accokeek. Tax Map 160 D-2, Lots 1 and 2. Water Category 3.
10. Cherry Hill Park, College Park. Tax Map 18 C-3/4. Parcels 103, 105, 106 and 186. Water and Sewer Category 4 approved by CR-64-2006; Water and Sewer Category 3, approved July 2011. Rural Tier, outside the Sewer Envelope.

**Group B** – Properties served by or approved for shared facilities or smaller community systems.

1. Forest Hills, Bowie. Tax Map 47 D-1. Lots 3-21. The property is served by the City of Bowie water system. Water Category 3. Tax Map 47 D-1. Lot 4, Delaney Property. (Formerly Sewer Category 3) Shared Septic.
2. Bragg Motel, Upper Marlboro. Tax Map 110 C-2. Parcel 10. (Formerly Water and Sewer Category 3) Private Community System.
3. Croom Vocational School, Croom. Tax Map 120 A-1. Parcel A. (Formerly Sewer Category 3) Community System.
4. Brandywine Estates, Brandywine. (Formerly Sewer Category 3) Shared Septic Facility.

## 2018 WATER AND SEWER PLAN

**Group B (continued)** – Properties served by or approved for shared facilities or smaller community systems.

5. Cedarville Mobile Home Park, Cedarville. (Formerly Sewer Category 3) Private Community Septic System.
6. Danville Estates, Piscataway. Tax Map 143 D-4. Part of Lot 23, Shared Septic Facility.

### III. Compliance in accordance to the Water and Sewer Plan

1. Albani Knolls and Marion Acres subdivisions; Category 3; CR-20-2013
2. Vistas at Laurel Lakes; Category 3; CR-16-2015
3. Greencastle Manor; Sewer 3; CR-16-2015
4. Glendale Subdivision; Category 3; CR-16-2015
5. Old Chapel Estates; Category 3; CR-16-2015
6. Cleary Lane & Romsey Drive; Category 3; CR-16-2015
7. Holmehurst Subdivision; Sewer 3; CR-16-2015
8. Cabin Branch/Pyles subdivisions; Category 3; CR-16-2015
9. Kings Council Condo/Villages of Marlborough; Category 3; CR-16-2015
10. Sunrise subdivision; Category 3; CR-16-2015
11. Temple Hills Acres; Sewer 3; CR-16-2015
12. Ridgevale subdivision; Sewer 3; CR-16-2015
13. Williamsburg Estates; Category 3; CR-16-2015
14. Marlton Town Center; Category 3; CR-16-2015
15. Clinton Grove/Hyde Field Estates; Sewer 3; CR-16-2015
16. Boniwood area; Category 3; CR-16-2015
17. Brandywine Heights/Early Haven area; Category 3; CR-16-2015
18. Shafer Lane; Sewer 3; CR-43-2016
19. Crescent Drive area; Sewer 3; CR-43-2106
20. Allentown Road & Webster Place; Sewer 3; CR-43-2016
21. Lanham Lane; Sewer 3; CR-43-2016
22. River Bend area; Category 3; CR-43-2016
23. Allentown Road area; Sewer 3; CR-43-2016
24. Riverview Road/Gates Drive area; Category 3; CR-43-2016
25. Old Fort Road; Sewer 3; CR-43-2016
26. Gallahan Road; Sewer 3; CR-43-2016
27. Allen Gayles Acres; Category 3; CR-43-2016
28. West Manning Road parcels; Category 3; CR-43-2016
29. Livingston Grove; Sewer 3; CR-43-2016
30. Marchegiani/Bellevue/Bealle Hill area; Sewer 3; CR-43-2016
31. Simmons Acres; Category 3; CR-43-2016
32. Spring Grove; Category 3; CR-43-2016

## 2018 WATER AND SEWER PLAN

### III. Compliance in accordance to the Water and Sewer Plan *(continued)*

33. Brock Hills subdivision; Sewer 3; CR-23-2017
34. Poplar/Oak Road area; Sewer 3; CR-23-2017
35. Old Allentown Road area; Category 3; CR-23-2017
36. Riverside Baptist Church/9111 Oxon Hill Road; Category 3; CR-23-2017
37. Littleworth subdivision; Category 3; CR-23-2017

**General Plan Compliance  
Subregion Master Plan Changes  
Water and Sewer Category Designations 5, 4, & 3  
and Sewer Envelope Realignment**

## 2018 WATER AND SEWER PLAN

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## 2018 WATER AND SEWER PLAN

### I. Compliance in accordance to the General Plan (and amendments)

During the drafting of this Plan, the following properties previously designated according to the 2002 General Plan, were redesignated within the Growth Boundary or within the Rural Agricultural area in accordance to the policies of the adopted General Plan. Consequently, the water and sewer categories are reversed or amended to reflect the appropriate servicing of the redesignation.

1. WSSC Property, Laurel. Tax Map 2 E-2. Parcel 26. Water and Sewer Category 5. Not Developed. Rural and Agricultural areas; outside the Sewer Envelope. Reversed to Water and Sewer Category 6,
2. Patuxent Greens Golf Course area, Laurel. Tax Maps 6, F-3, E/F-4 & 10, E/F-1/2/3/4. Water and Sewer Category 6; within the Growth Boundary; inside the Sewer Envelope; Amend to Water and Sewer Category 5.
3. U.S.DA south area, Beltsville. Tax Maps 25, B/C-1/2 & D-3/4. Water and Sewer Category 6; within the Growth Boundary; inside the Sewer Envelope; Amend to Water and Sewer Category 5.
4. City of Greenbelt, Crescent Road. Tax Maps 27, A/B-2/3. Water and Sewer Category 6; within the Growth Boundary; inside the Sewer Envelope; Amend to Water and Sewer Category 5.
5. Race Track Road/Bowie State University area, Bowie. Tax Maps 22, D/E-3/4. Water and Sewer Category 6; within the Growth Boundary; inside the Sewer Envelope; Amend to Water and Sewer Category 5.
6. City of Bowie, Public Works Road. Tax Maps 38, C/D-1. Water and Sewer Category 3 & 5; Rural and Agricultural areas; outside the Sewer Envelope; Reversed to Water and Sewer Category 6.
7. Prince George's Stadium and surrounding areas: Jesuits Property/Sacred Hearts Church area, Bowie. Tax Map 38 D/E-3. Parcels 55, 60 & p/o Lot 1-A. Rural and Agricultural areas; outside the Sewer Envelope. Reversed to Water and Sewer Category 6. Zehner property, Bowie. Tax Map 48 A-4. Parcel 4. Water and Sewer Category 5 & 6. Not Developed. Rural and Agricultural areas; outside the Sewer Envelope. Reversed to Water and Sewer Category 6,
8. Broadcreek Area(s), Fort Washington. Tax Maps 113, E/F-4; 114, A-4; 122, E/F-1/2/3; 123, A-1/2/3. Water and Sewer Categories 5& 6. Developed/Not Developed. Rural and Agricultural areas; outside the Sewer Envelope. Reversed/Retained as Water and Sewer Category 6.

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### II. Compliance in accordance to Sectional Map Amendments

#### Subregion 5

9. Robin Dale Golf Course. Brandywine. Tax Map 164, C-1, Parcel A; Water and Sewer Category 3. Rural and Agricultural areas; outside the Sewer Envelope. Reversed to Water and Sewer Category 6.
10. Thomas Property (Rubino). Accokeek. Tax Map 160, E-3, Parcel 77. Water and Sewer Category 4. Rural and Agricultural areas; outside the Sewer Envelope. Reversed to Water and Sewer Category 6.

#### Subregion 6

11. Clagett Farm and contiguous parcels along Farm Road. Tax Map 100, C/D/E-3/4; 109, E/F-1. Water and Sewer Category 6; within the Growth Boundary; inside the Sewer Envelope. Amend to Water and Sewer Category 5.

*For specific information on other properties that may have been affected by Subregion 5 and Subregion 6 Master Plans and Sectional Map Amendments, please refer to the General Plan or the specific sectional map amendments.*

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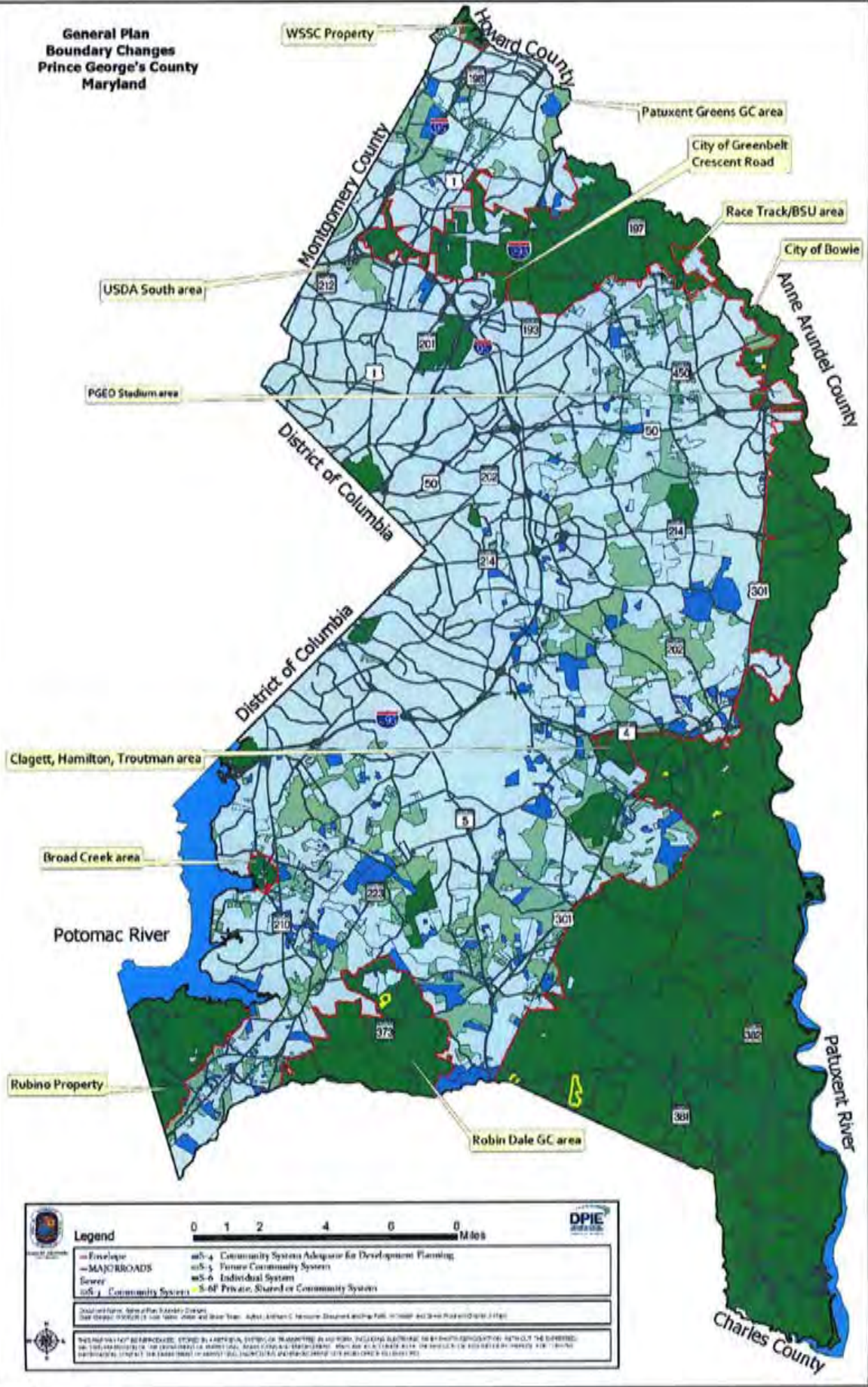
### Supplemental Map

General Plan Boundary Changes

## 2018 WATER AND SEWER PLAN

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**General Plan  
Boundary Changes  
Prince George's County  
Maryland**



**Legend**

0 1 2 4 6 8 Miles

**Legend**

- Envelope
- MAJORROADS
- Sewer
- Community Systems
- MS-4 Community Systems Adaptive for Development Planning
- MS-5 Future Community Systems
- MS-6 Individual System
- MS-7 Private, Shared or Community Systems

**DPIE**  
DPR

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**Public Facilities in  
Prince George's County**

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NAME	ADDRESS	CITY	ZIP CODE	TELEPHONE	FACILITY TYPE
Academy of Health Sciences at PGCC	301 Largo Road	Upper Marlboro	20774	301-546-7247	High School
Adelphi Elementary School	8820 Riggs Road	Hyattsville	20783	301-431-6250	Elementary School
Allenwood Elementary School	6300 Hasley Lane	Temple Hills	20748	301-702-3930	Elementary School
Apple Grove Elementary School	7400 Beltsfield Avenue	Fort Washington	20744	301-449-4966	Elementary School
Arndmore Elementary School	9301 Ardwick Arndmore Road	Upper Marlboro	20774	301-925-1311	Elementary School
Arrowhead Elementary School	2300 Sansbury Road	Upper Marlboro	20774	301-499-7071	Elementary School
Avalon Elementary School	7302 Webster Lane	Fort Washington	20744	301-448-4970	Elementary School
Baden Elementary School	13601 Baden Westwood Road	Brandywine	20613	301-888-1188	Elementary School
Barack Obama Elementary School	12700 Brooke Lane	Upper Marlboro	20772	301-574-4020	Elementary School
Barnaby Manor Elementary School	2411 Owens Road	Oxon Hill	20745	301-702-7560	Elementary School
Beacon Heights Elementary School	6929 Furman Parkway	Rivertdale	20737	301-918-8700	Elementary School
Benjamin Tasker Middle School	2501 Olson Street	Temple Hills	20748	301-702-7500	Middle School
Benwyn Heights Elementary School	4801 Collington Road	Bowie	20715	301-805-2660	Middle School
Bladensburg Elementary School	6200 Pontiac Street	College Park	20740	240-694-6210	Elementary School
Bladensburg High School	4915 Annapolis Road	Bladensburg	20710	301-985-1450	Elementary School
Bond Mill Elementary School	4200 57th Avenue	Laurel	20707	301-987-6700	High School
Bowie High School	16001 Sherwood Avenue	Bowie	20715	301-497-3600	Elementary School
Bowie High School Annex (9th Grade)	15200 Annapolis Road	Bowie	20715	301-805-2600	High School
Bowie State University	3021 Belair Drive	Bowie	20715	301-860-7361	High School
Bradbury Heights Elementary School	14000 Jericho Park Road	Capitol Heights	20743	301-850-4000	Higher Education
Brandywine Elementary School	1401 Glacier Avenue	Capitol Heights	20743	301-817-0570	Elementary School
Buck Lodge Middle School	14101 Brandywine Road	Brandywine	20613	301-372-0100	Elementary School
Calverton Elementary School	2611 Buck Lodge Road	Hyattsville	20783	301-431-6280	Middle School
Capitol Heights Elementary School	3400 Beltsville Road	Beltsville	20705	301-572-0640	Elementary School
Carmony Hills Elementary School	401 Suffolk Avenue	Capitol Heights	20743	301-817-0494	Elementary School
Carole Highlands Elementary School	401 Jadesal Avenue	Capitol Heights	20743	301-808-8150	Elementary School
Carrollton Elementary School	1510 Hannan Street	Takoma Park	20912	301-431-5660	Elementary School
Catherina T. Reed Elementary School	6300 Quirkana Street	Hyattsville	20784	301-918-8708	Elementary School
Central High School	9501 Greenbelt Road	Lanham	20706	301-918-8716	Elementary School
Central Michigan University	200 Cabin Branch Road	Capitol Heights	20743	301-489-7080	High School
Charles Carroll Middle School	1413 Arkansas Road	Andrews Air Force Base	20762	301-568-0545	Higher Education
Charles H. Flowers High School	6130 Lamont Drive	Hyattsville	20784	301-918-8640	Middle School
Cherokee Lane Elementary School	10001 Ardwick Arndmore Road	Upper Marlboro	20774	301-636-8000	High School
Chillum Elementary School	9000 25th Avenue	Hyattsville	20783	301-445-8415	Elementary School
Clinton Grove Elementary School	1420 Chillum Road	Hyattsville	20782	301-853-0825	Elementary School
CMIT Academy North Public Charter Elementary School	9420 Temple Hill Road	Clinton	20735	301-589-2414	Elementary School
CMIT Academy North Public Charter Middle School	6151 Chevy Chase Drive	Laurel	20707	240-573-7240	Elementary School
CMIT Academy South Public Charter Elementary School	14800 Sweitzer Lane	Laurel	20707	240-787-4080	High School
CMIT Academy South Public Charter Middle High School	6100 Frost Place	Laurel	20707	301-350-6051	Middle School
College Park Academy Public Charter School	9601 Fallard Terrace	Upper Marlboro	20772	240-767-4820	Elementary School
Columbia Park Elementary School	9822 Fallard Court	Upper Marlboro	20772	240-573-7250	High School
Community-Based Classroom	5751 Riverloch Court	Rivertdale	20737	240-696-3206	High School
Concord Elementary School	1901 Kent Village Drive	Hyattsville	20785	301-925-1322	Elementary School
Cool Spring Elementary School	5150 Annapolis Road	Bladensburg	20710	301-965-5149	High School
Cooper Lane Elementary School	2004 Concord Lane	District Heights	20747	301-817-0488	Elementary School
Corra L. Rice Elementary School	8910 Roggs Road	Hyattsville	20763	301-431-6200	Elementary School
Crossland Evening High School	3817 Cooper Lane	Hyattsville	20784	301-925-1350	Elementary School
Crossland High School	950 Nalley Road	Hyattsville	20785	301-636-6340	Elementary School
Deerfield Run Elementary School	6901 Temple Hill Road	Temple Hills	20748	301-442-4994	High School
District Heights Elementary School	6901 Temple Hill Road	Temple Hills	20748	301-449-4800	High School
Doctor Henry A. Wise, Jr. High School	13000 Laurel Bowie Road	Laurel	20708	301-457-3610	Elementary School
Dodge Park Elementary School	2200 County Road	District Heights	20747	301-817-0484	Elementary School
Doswell E. Brooks Elementary School	12650 Brooke Lane	Upper Marlboro	20772	301-780-2100	High School
Drew-Freeman Middle School	3401 Hubbard Road	Hyattsville	20785	301-863-4220	Elementary School
Duval High School	1301 Brooke Road	Capitol Heights	20743	301-817-0480	Elementary School
Dwight D. Eisenhower Middle School	2600 Brooks Drive	Suitland	20746	301-617-0600	Middle School
	9680 Good Luck Road	Lanham	20706	301-918-8600	High School
	13725 Brianwood Drive	Laurel	20708	301-487-3620	Middle School

NAME	ADDRESS	CITY	ZIP CODE	TELEPHONE	FACILITY TYPE
Edward M. Feely Elementary School	8110 Editors Park Drive	Hyattsville	20782	301-386-1610	Elementary School
Eleanor Roosevelt High School	7601 Hanover Parkway	Greenbelt	20770	301-513-5400	High School
Ernest Everett Just Middle School	1300 Campus Way North	Bowie	20721	301-808-4040	Middle School
EXCEL Academy Public Charter School	7910 Scott Road	Hyattsville	20785	301-825-2320	Elementary School
Fairmont Heights High School	8501 Columbia Park Road	Hyattsville	20785	301-925-1360	High School
Flintstone Elementary School	800 Comanche Drive	Oxon Hill	20745	301-748-4210	Elementary School
Forest Heights Elementary School	200 Talbert Drive	Oxon Hill	20745	301-749-4220	Elementary School
Forestville High School	7001 Belz Drive	District Heights	20747	301-817-0400	High School
Fort Foote Elementary School	8300 Oxon Hill Road	Fort Washington	20744	301-748-4230	Elementary School
Fort Washington Forest Elementary School	1300 Fillmore Road	Fort Washington	20744	301-203-1123	Elementary School
Francis Scott Key Elementary School	2301 Scott Key Drive	District Heights	20747	301-817-7970	Elementary School
Francis T. Evans Elementary School	6720 Old Alexandria Ferry Road	Clinton	20735	301-599-2490	Elementary School
Frederick Douglass High School	8000 Croxon Road	Upper Marlboro	20772	301-952-2400	High School
Friendly High School	10000 Allentown Road	Fort Washington	20744	301-448-4900	High School
G. James Gholson Middle School	900 Nalley Road	Hyattsville	20785	301-883-6390	Middle School
Gaywood Elementary School	6701 87th Avenue	Lanham	20706	301-918-8730	Elementary School
Glady's Noon Spellman Elementary School	3324 54th Avenue	Hyattsville	20785	301-925-1944	Elementary School
Glassmanor Elementary School	1011 Marcy Avenue	Oxon Hill	20745	301-749-4240	Elementary School
Glennard Woods Elementary School	7801 Glennard Parkway	Lanham	20706	301-925-1300	Elementary School
Glenn Dale Elementary School	6700 Glenn Dale Road	Glenn Dale	20769	301-805-2750	Elementary School
Glennridge Elementary School	7200 Galatin Street	Hyattsville	20784	301-918-8740	Elementary School
Greenbelt Elementary School	66 Ridge Road	Greenbelt	20770	301-513-5911	Elementary School
Greenbelt Middle School	6301 Breezeview Drive	Greenbelt	20770	301-513-5040	Middle School
Gwynn Park High School	13800 Brandywine Road	Brandywine	20613	301-372-0140	High School
Gwynn Park Middle School	8000 Dyson Road	Brandywine	20613	301-372-0120	Middle School
Heather Hills Elementary School	12805 Heming Lane	Bowie	20716	301-805-2730	Elementary School
High Bridge Elementary School	7011 High Bridge Road	Bowie	20720	301-805-2690	Elementary School
High Point High School	3601 Powder Mill Road	Bellsville	20705	301-572-6400	High School
Highland Park Elementary School	6501 Lowland Drive	Hyattsville	20785	301-333-0980	Elementary School
Hillcrest Heights Elementary School	4305 22nd Place	Temple Hills	20748	301-702-3800	Elementary School
Hollywood Elementary School	9811 49th Avenue	College Park	20740	301-513-5900	Elementary School
Hyattsville Elementary School	5311 43rd Avenue	Hyattsville	20781	301-209-5800	Elementary School
Hyattsville Middle School	5001 42nd Avenue	Hyattsville	20781	301-209-5830	Middle School
Imagine Andrews Public Charter School	4701 San Antonio Boulevard	Andrews Air Force Base	20762	301-350-6002	Elementary School
Imagine Foundations I at Leeland Public Charter School	14111 Oak Grove Road	Upper Marlboro	20774	301-383-1899	Elementary School
Imagine Foundations II at Morningside Public Charter School	6900 Amos Street	Suitland	20746	301-817-0544	Elementary School
Imagine Lincoln Public Charter School	4207 Norcross Street	Temple Hills	20748	301-805-5600	Elementary School
Indian Queen Elementary School	9561 Fort Foote Road	Fort Washington	20744	301-748-4250	Elementary School
International High School at Langley Park	5150 Annapolis Road	Bladensburg	20710	301-702-3910	High School
International High School at Largo	505 Largo Road	Upper Marlboro	20774	301-702-3810	High School
Isaac J. Gourdine Middle School	8700 Allentown Road	Fort Washington	20744	301-449-4940	Middle School
J. Frank Dent Elementary School	2700 Corning Avenue	Fort Washington	20744	301-702-3850	Elementary School
James H. Harrison Elementary School	13200 Leitchdale Road	Laurel	20708	301-497-3650	Elementary School
James Madison Middle School	7300 Woodyard Road	Upper Marlboro	20772	301-599-2422	Middle School
James McHenry Elementary School	8908 McHenry Lane	Lanham	20706	301-918-8760	Elementary School
James Ryder Randall Elementary School	5410 Kirby Road	Clinton	20735	301-449-4980	Elementary School
John H. Bayne Elementary School	7010 Walker Mill Road	Capitol Heights	20743	301-499-7020	Elementary School
Judge Sylvia W. Woods, Sr. Elementary School	3000 Church Street	Lanham	20706	301-925-2640	Elementary School
Kensilworth Elementary School	12520 Cambridge Drive	Bowie	20715	301-805-6600	Elementary School
Kenmoor Middle School	2500 Kenmoor Drive	Hyattsville	20785	301-925-2300	Middle School
Kettering Elementary School	11000 Layton Street	Upper Marlboro	20774	301-808-5977	Elementary School
Kettering Middle School	65 Herrington Drive	Upper Marlboro	20774	301-808-4060	Middle School
Kingsford Elementary School	1401 Enterprise Road	Bowie	20721	301-380-0260	Elementary School
Lake Arbor Elementary School	10205 Lake Arbor Way	Bowie	20721	301-808-5940	Elementary School
Lanmont Elementary School	7101 Good Luck Road	Hyattsville	20784	301-513-5205	Elementary School
Langley Park-McCormick Elementary School	8201 15th Avenue	Hyattsville	20783	301-445-8423	Elementary School
Largo High School	505 Largo Road	Upper Marlboro	20774	301-808-8880	High School
Laurel Elementary School	516 Montgomery Street	Laurel	20707	301-497-3660	Elementary School

NAME	ADDRESS	CITY	ZIP CODE	TELEPHONE	FACILITY TYPE
Laurel High School	8000 Cherry Lane	Laurel	20707	301-497-2050	High School
Lewisdale Elementary School	2400 Banning Place	Hyattsville	20783	301-445-8433	Elementary School
Longfields Elementary School	3300 Newkirk Avenue	District Heights	20747	301-817-0455	Elementary School
Magnolia Elementary School	8400 Nightingale Drive	Lanham	20706	301-918-8770	Elementary School
Marlton Elementary School	8506 Old Colony Drive South	Upper Marlboro	20772	301-952-7760	Elementary School
Martin Luther King, Jr. Middle School	4545 Ammendale Road	Beltsville	20705	301-572-0650	Middle School
Mary Harris "Mother" Jones Elementary School	2405 Tecumseh Street	Hyattsville	20783	301-408-7900	Elementary School
Maitaponi Elementary School	11701 Dufey Station Road	Upper Marlboro	20772	301-599-2442	Elementary School
Meadowbrook Elementary School	3501 Moylan Drive	Bowie	20715	301-805-2680	Elementary School
Melwood Elementary School	7100 Woodyard Road	Upper Marlboro	20772	301-599-2500	Elementary School
Montpelier Elementary School	9200 Muirkirk Road	Laurel	20708	301-497-9870	Elementary School
Mount Rainier Elementary School	4011 32nd Street	Mount Rainier	20712	301-965-1810	Elementary School
Nicholas Orem Middle School	6100 Editors Park Drive	Hyattsville	20782	301-853-0840	Middle School
North Forestville Elementary School	2311 Ritchie Road	District Heights	20747	301-499-7098	Elementary School
Northview Elementary School	3700 Northview Drive	Bowie	20716	301-218-1520	Elementary School
Northwestern Evening High School	7000 Adelphi Road	Hyattsville	20782	301-985-1460	High School
Northwestern High School	7000 Adelphi Road	Hyattsville	20782	301-985-1820	High School
Oaklands Elementary School	13710 Laurel Bowie Road	Laurel	20705	301-497-3110	Elementary School
Oxon Hill Elementary School	7701 Livingston Road	Oxon Hill	20745	301-749-4290	Elementary School
Oxon Hill High School	6701 Leyte Drive	Oxon Hill	20745	301-749-4300	High School
Oxon Hill Middle School	9570 Fort Foote Road	Fort Washington	20744	301-749-4270	Middle School
Paint Branch Elementary School	5101 Pierce Avenue	College Park	20740	301-513-5300	Elementary School
Panorama Elementary School	2002 Callaway Street	Temple Hills	20748	301-702-3870	Elementary School
Parkdale High School	6001 Good Luck Road	Riverdale	20737	301-513-5700	High School
Patuxent Elementary School	4410 Bishopmill Drive	Upper Marlboro	20772	301-952-7700	Elementary School
Perrywood Elementary School	501 Walkers Park Drive	Upper Marlboro	20774	301-218-3040	Elementary School
Pointer Ridge Elementary School	1110 Parkington Lane	Bowie	20716	301-350-0220	Elementary School
Port Towns Elementary School	4351 58th Avenue	Bladensburg	20710	301-985-1480	Elementary School
Potomac High School	5211 Boydell Avenue	Oxon Hill	20745	301-702-3500	High School
Potomac Landing Elementary School	12500 Fort Washington Road	Fort Washington	20744	301-203-1114	Elementary School
Prince George's Community College at Joint Base Andrews Degree Center	1413 Arkansas Road	Andrews Air Force Base	20762	301-546-0778	Higher Education
Prince George's Community College at Laurel College Center	312 Marshall Avenue	Laurel	20748	443-518-4162	Higher Education
Prince George's Community College at Skilled Trades Center	5400 Old Branch Avenue	Temple Hills	20748	301-546-8900	Higher Education
Prince George's Community College at University Town Center	6505 Belcrest Road	Hyattsville	20782	301-546-8000	Higher Education
Prince George's Community College at Westphalia Training Center	9109 Westphalia Road	Upper Marlboro	20774	301-546-8500	Higher Education
Prince George's Community College Main Campus	301 Largo Road	Upper Marlboro	20774	301-546-7422	Higher Education
Princeton Elementary School	6101 Bontier Drive	Suitland	20746	301-702-7650	Elementary School
Ridgecrest Elementary School	6120 Riggs Road	Hyattsville	20783	301-853-0820	Elementary School
Riverdale Elementary School	5006 Riverdale Road	Riverdale	20737	301-985-1850	Elementary School
Robert Frost Elementary School	9419 85th Avenue	Hyattsville	20784	301-918-8792	Elementary School
Robert R. Gray Elementary School	4949 Addison Road	Capitol Heights	20743	301-636-8400	Elementary School
Rockledge Elementary School	7701 Laurel Bowie Road	Bowie	20715	301-805-2720	Elementary School
Rogers Heights Elementary School	4301 58th Avenue	Bladensburg	20710	301-985-1860	Elementary School
Rosa L. Parks Elementary School	6111 Ager Road	Hyattsville	20782	301-445-8060	Elementary School
Rosemaryville Elementary School	9925 Rosemaryville Road	Upper Marlboro	20772	301-569-2490	Elementary School
Rose Valley Elementary School	9800 Jacqueline Drive	Fort Washington	20744	301-449-4960	Elementary School
Samuel Chase Elementary School	5700 Fisher Road	Temple Hills	20748	301-702-7660	Elementary School
Samuel Ogle Middle School	4111 Chelmont Lane	Bowie	20715	301-805-2641	Middle School
Scotttown Hills Elementary School	15950 Dorset Road	Laurel	20707	301-497-3994	Elementary School
Seabrook Elementary School	6001 Seabrook Road	Lanham	20706	301-918-8542	Elementary School
Seat Pleasant Elementary School	6411 G Street	Capitol Heights	20743	301-825-2330	Elementary School
Springhill Lake Elementary School	8060 Springhill Drive	Greenbelt	20770	301-513-5996	Elementary School
Stephen Decatur Middle School	8200 Pinewood Drive	Clinton	20735	301-449-4950	Middle School
Suitland Elementary School	4650 Towne Park Road	Suitland	20746	301-817-3770	Elementary School
Suitland High School	5200 Silver Hill Road	District Heights	20747	301-817-0500	High School
Surrattsville High School	6101 Garden Drive	Clinton	20735	301-589-2453	High School
Tayac Elementary School	8600 Allentown Road	Fort Washington	20744	301-449-4940	Elementary School
Templeton Elementary School	6201 Carters Lane	Riverdale	20737	301-985-1880	Elementary School

Public Facilities  
Prince George's County

NAME	ADDRESS	CITY	ZIP CODE	TELEPHONE	FACILITY TYPE
Thomas Johnson Middle School	5401 Barker Place	Lanham	20706	301-918-9630	Middle School
Thomas S. Stone Elementary School	4500 34th Street	Mount Rainier	20712	301-985-1690	Elementary School
Thurgood G. Marshall Middle School	4909 Brinkley Road	Temple Hills	20748	301-702-7540	Middle School
Tulip Grove Elementary School	2909 Traitor Lane	Bowie	20715	301-805-2660	Elementary School
Turning Point Academy Public Charter School	7800 Good Luck Road	Lanham	20708	301-552-0164	Elementary School
University of Maryland University College	1413 Arkansas Road	Andrews Air Force Base	20762	301-981-3123	Higher Education
University of Maryland, College Park	7911 Regents Drive	College Park	20742	301-405-1000	Higher Education
University of Maryland, University College	3501 University Boulevard East	Hyattsville	20763	800-388-8632	Elementary School
University Park Elementary School	4315 Underwood Street	Hyattsville	20762	301-985-1668	Elementary School
Valley View Elementary School	5500 Danby Avenue	Oxon Hill	20745	301-749-4350	Elementary School
Vansville Elementary School	6813 Ammenodale Road	Beltsville	20705	301-931-2630	Elementary School
Walton Woods Elementary School	10301 Thrift Road	Clinton	20735	301-599-2540	Elementary School
Walker Mill Middle School	800 Karen Boulevard	Capitol Heights	20743	301-408-4055	Middle School
Whitehall Elementary School	3901 Woodhaven Lane	Bowie	20715	301-805-1000	Elementary School
William Beanes Elementary School	5108 Dianna Drive	Suffland	20746	301-817-0533	Elementary School
William Paica Elementary School	7801 Sheriff Road	Hyattsville	20785	301-925-1330	Elementary School
William Wit Middle School	8200 Tuckerman Street	Riverdale	20737	301-985-1720	Middle School
Woodmore Elementary School	12500 Woodmore Road	Bowie	20721	301-390-0239	Elementary School
Woodridge Elementary School	5001 Flintridge Drive	Hyattsville	20784	301-918-8585	Elementary School
Yorktown Elementary School	7301 Race Track Road	Bowie	20715	301-805-6610	Elementary School
Doctors Community Hospital	8118 Good Luck Road	Lanham	20706	301-552-8118	Hospital
Fort Washington Medical Center	11711 Livingston Road	Fort Washington	20744	301-292-7000	Hospital
Laurel Regional Hospital	7300 Van Dusen Road	Laurel	20707	301-725-4300	Hospital
Malcolm Grow Medical Clinics and Surgery Center	1080 West Pentimeter Road	Andrews Air Force Base	20762	240-812-4866	Hospital
MedStar Southern Maryland Hospital Center	7503 Sunratts Road	Clinton	20735	301-866-8000	Hospital
Prince George's Hospital Center	3001 Hospital Drive	Hyattsville	20785	301-818-2000	Hospital
Saint Luke Institute	8901 New Hampshire Road	Silver Spring	20903	301-445-7870	Hospital
Agricultural Research Service(BRAC) Bld 003	10300 Bahama Avenue	Beltsville	20705	301-504-5392	Federal Government Facility
Air National Guard	3252 East Pentimeter Road	Clinton	20762	301-991-2820	Federal Government Facility
Alcoholic Beverage Control Board	5012 Rhode Island Avenue	Hyattsville	20781	301-699-2770	County Government Facility
Animal and Plant Health Inspection Service	4700 River Road	Riverdale	20737	301-734-6370	Federal Government Facility
Animal Management	3750 Brown Station Road	Upper Marlboro	20772	301-780-7200	County Government Facility
Appeals Board	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-3220	County Government Facility
Assessment and Taxation	14735 Main Street	Upper Marlboro	20772	301-952-2500	County Government Facility
Assignment Office	14735 Main Street	Upper Marlboro	20772	301-952-2500	County Government Facility
Audits & Investigations	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-3431	County Government Facility
Bail Bond Commissioner	14735 Main Street	Upper Marlboro	20772	301-952-3422	County Government Facility
Bird Banding Laboratory	12100 Beech Forest Road	Laurel	20708	301-497-5790	Federal Government Facility
Board Of Elections	1100 Mercantile Lane, Suite 115A	Largo	20774	301-341-7391	County Government Facility
Bureau of Alcohol, Tobacco, Firearms and Explosives	10210 Greenbelt Road	Lanham	20706	301-397-2640	Federal Government Facility
Bureau of Alcohol, Tobacco, Firearms, Explosives and National Laboratory Center	6000 Ammendale Road	Beltsville	20705	1-888-283-5227	Federal Government Facility
Bureau of The Census	4600 Silver Hill Road	Suitland	20746	301-763-4636	Federal Government Facility
Bureau of The Census, Bowie Computer Center	17101 Meiford Boulevard	Bowie	20715	301-763-1034	Federal Government Facility
Center for Plant Health Sciences and Technology	9901 Powder Mill Road	Beltsville	20705	301-574-5162	Federal Government Facility
Central Services Office	1400 McCormick Drive, Suite 338	Landover	20774	301-883-6450	County Government Facility
Clerk of the Circuit Court	14735 Main Street	Upper Marlboro	20772	301-952-3318	County Government Facility
Commission For Animal Control Office	1220 Caraway Court	Landover	20774	301-883-6009	County Government Facility
Community Partnership Division	9201 Bassi Court	Landover	20774	301-863-5310	County Government Facility
Cooperative Extension Service	6707 Groveton Drive	Clinton	20735	301-868-6966	County Government Facility
County Council	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-3700	County Government Facility
County Credit Union	9201 Bassi Court	Landover	20774	301-883-5278	County Government Facility
County Credit Union	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-5670	County Government Facility
County Executive	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-4131	County Government Facility
Department Of Environmental Resources	1801 McCormick Drive, Suite 500	Landover	20774	301-863-5810	County Government Facility
Department Of Family Services	5012 Rhode Island Avenue	Hyattsville	20781	301-699-2672	County Government Facility
Department Of Housing & Community Development	9200 Bassi Court, Suite 500	Landover	20774	301-883-4663	County Government Facility
Department Of Juvenile Justice	14735 Main Street	Upper Marlboro	20772	301-952-2580	State Government Facility
Department Of Juvenile Justice	9475 Lottisford Road	Landover	20774	301-952-9660	State Government Facility

Public Facilities  
Prince George's County

NAME	ADDRESS	CITY	ZIP CODE	TELEPHONE	FACILITY TYPE
Department Of Social Services	6111 Ager Road	Hyattsville	20782	301-209-5000	State Government Facility
Director's Office Of Finance	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-5025	County Government Facility
Division Of Parole & Probation	14735 Main Street	Upper Marlboro	20772	301-952-2634	State Government Facility
Division Of Rehabilitation Services	4710 Auth Place	Temple Hills	20746	301-898-1020	State Government Facility
Drinking Driver Monitor Program	5012 Rhode Island Avenue	Hyattsville	20782	301-985-3437	State Government Facility
Emergency Management Office	5408 Silver Hill Road	Suitland	20747	301-735-9295	County Government Facility
Emergency Medical Services Division	7915 Anchor Street	Landover	20785	301-324-4400	County Government Facility
Energy Services Office	5111 Benwyn Road	College Park	20740	301-474-1485	State Government Facility
Facility Services	6110 Ager Road	Hyattsville	20782	301-422-5110	County Government Facility
Farm Service Agency	6420 Allentown Road	Camp Springs	20748	301-265-9418	County Government Facility
Federal Bureau Of Investigation Maryland Resident Agency	5301 Marlboro Racetrack Road	Upper Marlboro	20772	301-574-5162	Federal Government Facility
Food and Drug Administration	11700 Beltsville Drive	Calverton	20705	301-572-5400	Federal Government Facility
Food Safety and Inspection Service	5001 Paint Branch Parkway	College Park	20740	301-443-1544	Federal Government Facility
Fort Washington Park National Park Service	5601 Sunnyside Avenue	Beltsville	20705	301-504-2136	Federal Government Facility
Goddard Space Flight Center	13551 Fort Washington Road	Fort Washington	20744	301-763-4600	Federal Government Facility
Greenbelt Regional Park, National Park Service	8900 Greenbelt Road	Greenbelt	20771	301-286-2000	Federal Government Facility
Health Department Administrative Office	6585 Greenbelt Road	Greenbelt	20770	301-344-3946	Federal Government Facility
Highway Maintenance Office	1701 McCormick Drive	Largo	20774	301-883-7879	County Government Facility
Human Relations Commission	8400 Darcy Road	Forestville	20747	301-439-8523	County Government Facility
Individuals With Disabilities Division	14741 Governor Oden Bowie Drive, Suite L105	Upper Marlboro	20772	301-883-6170	County Government Facility
Joint Base Andrews Naval Air Facility Washington	9201 Basil Court	Landover	20774	301-883-5160	County Government Facility
Juvenile Services	14735 Main Street	Camp Springs	20762	301-981-1110	Federal Government Facility
Library Administrative Offices	14735 Main Street	Upper Marlboro	20772	301-952-2560	County Government Facility
Liquor Board Of Prince Georges County	6530 Adolph Road	Hyattsville	20782	301-899-3500	County Government Facility
Management and Budget Office	5012 Rhode Island Avenue	Hyattsville	20782	301-899-2770	County Government Facility
Maryland Division Of Employment	9828 Rhode Island Avenue	Upper Marlboro	20772	301-952-3218/2300	County Government Facility
Media & Film Office	9475 Lottisford Road	College Park	20740	301-441-2137	State Government Facility
Minority Business Opportunities Commission	1400 McCormick Drive	Landover	20774	301-386-3456	County Government Facility
Motor Vehicle Administration	10251 Central Avenue	Upper Marlboro	20774	410-950-1882	State Government Facility
Motor Vehicle Administration	11760 Baltimore Avenue	Beltsville	20705	410-950-1882	State Government Facility
National Agricultural Library	10301 Baltimore Avenue	Beltsville	20705	301-504-5755	Federal Government Facility
National Archives Of College Park	7700 Power Mill Road	Beltsville	20705	301-504-8800	Federal Government Facility
National Colonial Farm, National Park Service	8601 Adolph Road	College Park	20742	301-713-6800	Federal Government Facility
National Information Technology Center, IT System Operations Branch	3400 Bryan's Point Road	Accokeek	20607	301-283-2113	Federal Government Facility
National Oceanic and Atmospheric	5601 Sunnyside Avenue	Beltsville	20705	301-504-2211	Federal Government Facility
Natural Resources Conservation Services (National Headquarters)	6501 Lefayette Avenue	Riverdale	20737	301-436-6690	Federal Government Facility
Office of Field Operations	5601 Sunnyside Avenue	Beltsville	20705	301-504-5755	Federal Government Facility
Office of Homeland Security	8781 Beaver Dam Road	Beltsville	20705	301-504-8175	Federal Government Facility
Office of Law	5601 Sunnyside Avenue	Beltsville	20705	301-504-2136	Federal Government Facility
Orphans Court	14741 Governor Oden Bowie Drive, Suite L23	Upper Marlboro	20772	301-780-8313	County Government Facility
Patuxent River 4-H Center	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-5225	County Government Facility
Patuxent Wildlife Research Refuge	14735 Main Street	Upper Marlboro	20772	301-952-3790	County Government Facility
Peoples Zoning Counsel	18405 Queen Anne Road	Upper Marlboro	20774	301-218-3079	County Government Facility
Personnel	12100 Beech Forest Road	Laurel	20708	301-497-5663	Federal Government Facility
Property Tax Assessment Appeal Board	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-3644	County Government Facility
Property Tax Assessment Appeals Board	9201 Basil Court	Landover	20774	301-952-4500	County Government Facility
Public Defender	14735 Main Street	Upper Marlboro	20772	301-952-2834	State Government Facility
Public Defender	14735 Main Street	Upper Marlboro	20772	301-952-2100	County Government Facility
Public Works and Transportation Department	5012 Rhode Island Avenue	Hyattsville	20782	301-699-2760	County Government Facility
Register Of Wills	9400 Peppercorn Place	Landover	20774	301-883-6600	County Government Facility
Sassor Administration Building	14735 Main Street	Upper Marlboro	20772	301-952-3250	County Government Facility
Sheriff's Office	14201 School Lane	Upper Marlboro	20772	301-952-6023	County Government Facility
Social Services Director and Administrative	5303 Chrysler Way	Upper Marlboro	20772	301-780-8600	County Government Facility
Social Services Director and Administrative	14735 Main Street	Upper Marlboro	20772	301-952-2681	County Government Facility
	805 Brightseat Road	Landover	20785	301-908-7000	County Government Facility

NAME	ADDRESS	CITY	ZIP CODE	TELEPHONE	FACILITY TYPE
Soil Conservation District	14741 Governor Oden Bowie Drive	Upper Marlboro	20772	301-952-3930	County Government Facility
Soil Conservation District Office	5301 Marlboro Race Track Road, Suite 100	Upper Marlboro	20772	301-574-5162	County Government Facility
State Income Tax Information	14735 Main Street	Upper Marlboro	20772	301-952-2810	State Government Facility
United States Air Force Recruiting	5211 Auth Road	Suitland	20746	301-394-0903	Federal Government Facility
United States Air Force Recruiting	6192 Oxon Hill Road	Oxon Hill	20745	301-394-0506	Federal Government Facility
United States Army Recruiting	8700 Central Avenue	Landover	20785	301-350-7870	Federal Government Facility
United States Army Recruiting	6001 Marlboro Pike	District Heights	20747	301-394-0529	Federal Government Facility
United States Army Recruiting	6525 Belcrest Road	Hyattsville	20782	301-394-0513	Federal Government Facility
United States Army Research Laboratory	2800 Powder Mill Road	Arlington	20783	301-394-2515	Federal Government Facility
United States Attorney for District of Maryland, Southern Division	6500 Chammywood Lane	Greenbelt	20770	301-344-4433	Federal Government Facility
United States Commerce Department	6501 Lafayette Avenue	Riverdale	20737	301-436-6990	Federal Government Facility
United States Dept. of the Treasury and Internal Revenue Service	6401 Corporate Drive	Landover	20785	202-927-9361	Federal Government Facility
United States District Court for District of Maryland	6500 Cherry Lane	Greenbelt	20770	301-344-0660	Federal Government Facility
United States Fish and Wildlife Services, Patuxent Research Refuge	10901 Scarlett Tanager Loop	Laurel	20708	301-497-5560	Federal Government Facility
United States Government Printing Office	8660 Cherry Lane	Laurel	20707	301-317-3953	Federal Government Facility
United States Human Nutrition Information Service	6505 Belcrest Road	Hyattsville	20782	301-436-7725	Federal Government Facility
United States Interior Department	12100 Beech Forest Road	Laurel	20708	301-497-5500	Federal Government Facility
United States Labor Department Wage and Hour Division	6525 Belcrest Road	Hyattsville	20782	301-436-6767	Federal Government Facility
United States Marine Corps Recruiting	6700 Central Avenue	Landover	20785	301-350-8130	Federal Government Facility
United States Marine Corps Recruiting	6192 Oxon Hill Road	Oxon Hill	20745	301-394-0545	Federal Government Facility
United States Marine Corps Recruiting	6525 Belcrest Road	Hyattsville	20782	301-394-0536	Federal Government Facility
United States Marine Corps Recruiting	940 Fourth Street	Laurel	20707	301-498-6059	Federal Government Facility
United States Naval Air Reserve	1 San Diego Loop	Clinton	20762	301-981-7111	Federal Government Facility
United States Naval Air Reserve Recruit	1 San Diego Loop	Clinton	20762	301-981-7111	Federal Government Facility
United States Navy Recruiting	5716 Silver Hill Road	District Heights	20747	301-394-0527	Federal Government Facility
United States Navy Recruiting	6192 Oxon Hill Road	Oxon Hill	20745	301-394-0549	Federal Government Facility
United States Navy Recruiting	6525 Belcrest Road	Hyattsville	20782	301-394-0500	Federal Government Facility
United States Navy Recruiting	940 Fourth Street	Laurel	20707	301-725-4900	Federal Government Facility
United States Park Police	6501 Greenbelt Road	Greenbelt	20770	301-344-4250	Federal Government Facility
United States Secret Service, James J. Rowley Training Center	9200 Powder Mill Road	Laurel	20708	617-565-5640	Federal Government Facility
United States Fish and Wildlife Service	12100 Beech Forest Road	Laurel	20708	301-497-5580	Federal Government Facility
University Of Maryland	3500 Campus Drive	College Park	20742	301-585-7000	State Government Facility
Veterans Health Administration	6525 Greenway Center Drive, Suite T-4	Greenbelt	20770	301-345-2463	Federal Government Facility
Veterans Health Administration	5801 Allentown Road	Camp Springs	20770	301-423-3700	Federal Government Facility
County Correctional Center	13400 Dills Drive	Upper Marlboro	20772	301-952-7154	Correctional Facility
Cheltenham Youth Detention Center	11003 Frank Tippett Road	Cheltenham	20623	301-762-2400	Correctional Facility

**2018 WATER AND SEWER PLAN**




***APPENDIX 2-4***

**Water Quality Criteria  
Prince George's County  
(*State identified waterbodies & Tier II streams*)**

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**Water Quality Criteria  
Prince George's County  
Maryland**



	<b>Legend</b>				
	<b>MAJOR ROADS</b> — I — Interstate — SR — State Road — P — Parkway — F — Ferry — Not yet determined — F	<b>Rivers, Streams</b> — I — I — II — II — III — III — IV — IV — Not yet determined — F	<b>Impoundments</b> — I — I — II — II — III — III — IV — IV — Not yet determined — F	<b>Field Waters (In County)</b> — I — I — II — II — III — III — IV — IV — Not yet determined — F	
Data last revised: Water Quality Criteria Date: 08/01/2010					
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## 2018 WATER AND SEWER PLAN

### CHAPTER 3 WATER PLAN FOR COMMUNITY SYSTEMS

Drinking water is supplied to Prince George's County primarily through community water supply facilities such as the Washington Suburban Sanitary Commission (WSSC). In rural areas water is provided through individual wells. This chapter discusses the sources of drinking water, identifies major treatment and transmission providers, provides an inventory of community system wells, and addresses water demand and production issues. It also outlines key regional water supply agreements.

#### 3.1 RESOURCES

The Patuxent and Potomac rivers provide the major source of the County's surface (or raw) water supply. The Potomac River is the larger of the two sources of raw water, supplying more than 40 billion gallons of water annually to the bicounty area of Montgomery and Prince George's counties. In addition to water from the free-flowing river, there are three impounded (or storage) areas that can supplement flows into the Potomac River during periods of low flow.

The Jennings Randolph Reservoir is located near Bloomington, Maryland, on the North Branch of the Potomac River at the State boundary with West Virginia, 200 miles upstream from the Potomac intake at Watkins Island. This reservoir was completed in 1981 and provides 30 billion gallons of water storage with 13 billion gallons currently allocated to water supply. The remaining capacity is used for both water quality purposes to help buffer acidity downstream resulting from acid mine drainage, and recreation.

The Savage Reservoir is located on the Savage River, slightly north of the Potomac River and the Jennings Randolph Reservoir. The Savage River flows into the Potomac just downstream of the Jennings Randolph Reservoir. It is owned by the Upper Potomac River Commission and supplements the Jennings Randolph supply augmentations to provide adequate water supply to downstream users including WSSC for Prince George's County, and meets water quality standards in the Potomac River. The Savage Reservoir has a gross capacity of 10.4 billion gallons, and the capacity of the reservoir used for water supply is 6.3 billion gallons. The U.S. Army Corps of Engineers are responsible for the maintenance and operation of the Jennings Randolph and Savage dams.

Little Seneca Lake was built solely for water supply and is located near Boyds, Maryland. It has a gross capacity of 3.9 billion gallons. WSSC owns and operates the Little Seneca Dam and controls water releases from the facility. **Table 3-1** provides an inventory of existing storage facilities (impounded water supply) on the Potomac River.

The Patuxent River is located along the northeastern border between Montgomery and Howard counties, and is the second major source of raw water which is supplied and treated by WSSC to the two counties. There are two water supply impoundments along the Patuxent River operated by the WSSC – the Triadelphia and the T.H. Duckett Reservoirs, created by the Brighton and T. Howard Duckett dams, respectively. They are used solely for water supply. The Triadelphia Reservoir is located at Brighton Dam in Montgomery County, 14 miles north of the

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**Table 3-1 Inventory of Existing Storage Facilities  
Potomac River – Jennings Randolph and Little Seneca Lake**

	JENNINGS RANDOLPH	LITTLE SENECA
Crest Elevation (above sea level)	1,514 Feet	408 Feet
Spillway Length	210 Feet	
Flooded Area at Crest Elevation	1,247 Acres	530 Acres
Area of Land Owned by WSSC	None	530 Acres
First Overflow of Dam Crest	N/A	1985
Total Length of Dam	2,130 Feet	600 Feet
Capacity of Reservoir Used For Water Supply	13 Billion Gals.	3.9 Billion Gals.
Safe Yield	155 mgd	
Average Withdrawal*		
Maximum Historical Withdrawal*	290 mgd	275 mgd

*\*1999 was the first time these sources were tapped to relieve drought conditions.*

northernmost tip of Washington, D.C., and has a gross storage capacity of 6.4 billion gallons. The T.H. Duckett Reservoir is located about two miles northwest of Laurel, in Prince George's County, and has a gross storage capacity of 5.7 billion gallons. **Table 3-2** provides an inventory of existing storage facilities (impounded water supply) on the Patuxent River.

**Table 3-2 Inventory of Existing Storage Facilities  
Patuxent River -- WSSC Reservoirs**

	TRIADELPHIA	T.H. DUCKETT
Crest Elevation (above sea level)	366.4 Feet	286.4 Feet
Spillway Length	234 Feet	189 Feet
Total Length of Dam	995 Feet	840 Feet
Height of Crest above Stream Bed	64 Feet	125.45 Feet
Flooded Area of Crest Elevation	800 Acres	815 Acres
Area of Land Owned	2,936 Acres	3,023 Acres
Water Overflowed Crest for 1 <sup>st</sup> Time	1944	August 1955
Gross Capacity of Reservoir	6.4 Billion Gallons	5.7 Billion Gallons
Capacity for Water Supply	5.6 Billion Gallons	5.0 Billion Gallons
Safe Yield (mgd)	45.3 mgd – Combined	
Average Daily Withdrawal (mgd)	50.6 mgd – Combined	
Maximum Daily Withdrawal (mgd)	72 mgd – Combined	

## 2018 WATER AND SEWER PLAN

### **3.2 TREATMENT AND TRANSMISSION**

The largest agencies involved in supplying water to Prince George's County are WSSC, the City of Bowie, and the Beltsville Agricultural Research Center.

WSSC supplies water to Prince George's and Montgomery counties from the Potomac and Patuxent rivers through two water filtration plants (WFP), Potomac WTP and Patuxent WTP. The WSSC Water Network, found as **Appendix 3-1** of this chapter, demonstrates flexibility to provide Prince George's County with water from both sources and WFPs.

#### **3.2.1 Potomac Water Treatment Plant**

WSSC withdraws water from the Potomac River near Watts Branch for processing at the Potomac Water Treatment Plant. The Potomac Plant is the subject of ongoing planning and construction to maintain treatment capacity while meeting new water quality regulations.

The Potomac Plant has a State-permitted maximum intake capacity of 300 million gallons per day (mgd) and a treatment capacity of 288 mgd. The Potomac Plant is the subject of an ongoing planning effort to maintain treatment capacity while meeting new water quality regulations that may require modifications to current treatment processes. The present average output capacity, which is water that can be reliably delivered from the Plant through the Potomac pumping station, is 337 mgd. The Potomac Plant is also the subject of a Source Water Assessment (SWA) study required by the Safe Drinking Water Act. The study is funded by the Maryland Department of the Environment (MDE) and is intended to assess the raw water upstream of the Potomac Plant's intake for any possible sources of contamination relevant to water supply, as well as the susceptibility of the plant to the contaminants.

The Potomac Plant currently has solid removal processes which include provisions for separating filter backwash and for pumping, thickening, dewatering and disposing of sedimentation solids. In April 2016, a consent decree was entered by the U.S. District Court of Maryland. Under the terms of the consent decree, WSSC is required to undertake short-term operational changes and capital improvements at the Plant to reduce significantly the amount of solids being discharged into the river, and must plan, design, and implement long-term upgrades to achieve the effluent limits, conditions, and waste load allocations established by the Maryland Department of the Environment to be incorporated into a new discharge permit to be issued by the State.

Finished water from the Potomac Plant which serves Prince Georges County is first pumped into the Montgomery Main Zone and then into the Prince George's Main Zone through by means of the Bi-County Tunnel and pressure reduction valves. From the Prince George's Main Zone, water is transmitted to the Prince George's High Zone through the Central Avenue and Hill Road pumping stations. Water moves from the High Zone to the Prince George's Intermediate Zone by way of pressure reduction valves or pumping at the Central Avenue Pumping Station. The Clinton and Potomac zones are fed from the High Zone through pressure reduction valves. Finally, the Marlboro Zone is fed by pressure reduction from the Prince George's Intermediate Zone.

## 2018 WATER AND SEWER PLAN

The water transmission network is shown on the map *The Water Network*, included as **Appendix 3-1**. An important facility for Prince Georges County that conveys finished water from the Potomac Plant in Montgomery County into Prince George's County is the Bi-County tunnel, also known as Project 80 which became operational in 2015.

### **3.2.2 Patuxent Water Treatment Plant**

The Triadelphia and the Duckett reservoirs provide the raw water source for the Patuxent Water Treatment Plant. To protect these reservoirs against water quality degradation and against excessive capacity loss due to sedimentation, the Patuxent Reservoirs Watershed Protection Agreement was signed in 1996 between seven local governments and agencies with interest in the issue. Included in the Agreement are Prince George's County and the WSSC. The Agreement has created a policy board composed of the executive-level representatives of the seven agencies. They meet once a year and supervise the work conducted or proposed by a Technical Advisory Committee (TAC). The TAC is engaged in monitoring, modeling, and field assessments for the reservoirs and its watershed. It also provides support to the SWA being conducted by MDE.

The Patuxent Water Treatment Plant can currently treat a nominal capacity of 56 mgd, and emergency capacity of 72 mgd. However, the raw water pump station can supply a maximum of 68.5 mgd to the plant. Phase II of the Patuxent Treatment Plant expansion, is currently under construction and will allow for 72 mgd nominal capacity and 110 mgd emergency capacity. These numbers are found in CIP Project W-172.05. When Phase II and the Rocky Gorge Pump Station, in combination with the fourth raw water transmission pipeline between the pump station and water treatment plant, are complete, the capacity of the plant will increase. The Triadelphia and T. H. Duckett reservoirs have a maximum storage capacity of 12.1 billion gallons.

### **3.2.3 Transmission**

The WSSC water network in Prince George's County is divided into 28 pressure zones. Nine of the pressures zones serve large areas (450A, 415A, 385B, 350E, 345A, 320A, 317A, 290B, 280A) while the remaining 19 are small subzones. All pressure zones can be found in **Map 3-1** that also reflects the Prince George's County Water and Sewer Service Envelope, resulting from the adoption of this water and sewer plan.

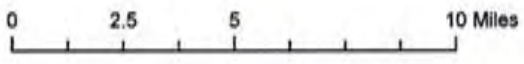
The County is also served indirectly by the Wheaton Reservoirs which are located in Montgomery County, as the Wheaton Reservoirs are a main feed to the Project 80. Project 80 is a 96-inch water main that follows the alignment of the Capital Beltway to Central Avenue. *The Water Network* identifies the ground-level, elevated, and standpipe water storage facilities in the WSSC system.

Water storage facilities are an integral part of the water system. The stored water at a high elevation provides for emergency supply, capacity for fire suppression, and allows for the daily fluctuations in water use, and maintains a consistent pressure within the water pressure zone. Elevated facilities are reliable and efficient, and provide for water supply even during power outages.

# Map 3-1



- Sewer Service Envelope
- Water Pressure Zones



## 2018 WATER AND SEWER PLAN

By design, elevated water storage tanks are tall structures usually located on high ground. Therefore, it is important to assure that the siting and design of these monumental structures are compatible with the surrounding community. New elevated water storage tanks in Prince George's County have to meet the following criteria:

1. The siting and design of water storage are developed in coordination with the community and planning agencies.
2. The siting of storage will be directed toward commercial or public lands where feasible.
3. The design of water storage will incorporate potential antenna sites.

Three new water storage facilities (described below) are proposed for Prince George's County and appear in the WSSC FY 2019 - 2024 Capital Improvement Program (CIP).

Construction of the Collington Elevated Water Storage Facility (W-147.00) was recently completed, providing additional storage in the Intermediate Zone (hg = 317'). This project provided for the site selection, planning, design, and construction of 4.0 million gallons (mg) of elevated storage to serve the Intermediate Zone. The site selection phase included a Community Outreach Program. The new facility was coordinated with the construction of the Oak Grove / Leeland Roads Water Main, Part 2 project (W-123.20). The facility is located northwest of the intersection of Leeland Road and Route 301. The project also included modifications at the existing Central Avenue Water Pumping Station (WPS) to add an additional pump and upgrade an existing pump to optimize utilization of the new Collington tanks.

The St. Barnabas Elevated Tank Replacement (W-65.10) will provide for additional usable storage in the Prince George's High Zone (hg = 450'). This project provides for evaluation of current storage levels in the zone, site selection, planning, design, and construction of a 2.5 million gallons (mg) of elevated storage to serve the High Zone. The facility is currently under construction.

Clinton Zone Water Storage Facility Implementation (W-65.02) provides for the design and construction of approximately 4.0 million gallons (mg) of water storage to serve the Clinton Pressure Zone. The planning phase was executed under Project W-62.04 and included a Community Outreach Program to elicit comment from the public. The Clinton Zone currently has only one storage facility, which poses operational problems when the existing facility must be removed from service for maintenance.

In addition to the storage projects mentioned above, the Adopted WSSC CIP 2019 - 2024 includes some major transmission projects as well. Transmission projects associated with new storage facilities mentioned above may be found in **Table 3-3**.

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**Table 3-3 Prince George's County Transmission Projects Associated with Storage Facilities**

CIP Number	Title of Project	Storage Facility
W-34.04	Branch Avenue Water Transmission Improvements	Clinton Zone Water Storage Facility (W-62.05)
W-123.20	Oak Grove/Leeland Roads Water Main, Part 2	Collington Elevated Water Storage Facility (W147.00)

One other water main project of note is W-34.03, Water Transmission Improvements to the 385B Pressure Zone. This project provides for the planning, design, and construction for 24,000 feet of 24-inch diameter water main and a flow control valve along Accokeek Road outside the current Prince George's County Water and Sewer Service Envelope. This was the preferred route recommended as a result of a detailed alignment study that evaluated many alternatives for constructability, impact on natural resources, and community impacts.

This project will remedy an existing system deficiency, increasing the level of service and reliability to WSSC customers in the Accokeek Pressure Zone as well as address future system needs within the designated Prince George's County Water and Sewer Service Envelope. It was not designed, nor is its purpose, to provide service to any future development along Accokeek Road outside of the current service envelope.

Pursuant to the Public Utilities Article, Division II of the Annotated Code of Maryland, WSSC may not grant water or sewer service connections, hookups or authorizations for service or otherwise extend water and sewer service to any new development within the WSSD unless the development is in conformance with adopted and approved plans, programs, and policies of the applicable County's comprehensive water and sewerage plan, amendment, or revision.

More information on the above-mentioned water projects for Prince George's County may be found in the *Adopted WSSC CIP 2018 - 2023*. Excerpts of Bi-County Water Projects and Prince George's County Water Projects may be found as **Appendix 3-7** of this Chapter.

The WSSC has water system interconnections with several other jurisdictions. These interconnections are subject to formal agreements between WSSC and each individual jurisdiction. Some of these supply arrangements are used as an everyday supply, some are for emergencies only and some are used to meet the other jurisdictions' peak demands. **Table 3-4** shows interconnections in Prince George's County. Both Howard County and Charles County have approached WSSC regarding the possibility of increasing the allowable withdrawal since the last update of this plan. However, at this time, no formal requests have been made. Finished water storage facilities that serve Prince George's County are listed in **Table 3-5**.

## 2018 WATER AND SEWER PLAN

**Table 3-4 Interconnections with other Jurisdictions**

Jurisdiction	Allowable Withdrawal (mgd)	WSSC Pressure Zone
City of Bowie	Not specified –emergency only	350E
Charles County	1.4	345A
Howard County	5.0	415A
DC Water	Not specified	various

### **3.2.4 Water Treatment Plants Using Groundwater Supplies**

Underground water supplies, known as aquifers, are used for smaller community systems and individual wells. There are two community groundwater systems in the County as reflected in **Table 3-6** that are used to service 25 or more residential units.

The City of Bowie operates the largest of these. Six wells supply up to 5.2 million gallons per day to serve the northern portions of the City of Bowie. Beginning in 1989, the City made numerous improvements to its system of wells. One well was rehabilitated using chemical treatment; two wells were reconstructed; two wells were redrilled as replacement wells; and one new well was drilled. An inventory of the existing water treatment facilities follows:

Plant Design Capacity	5.2 mgd
Current Peak Capability	8.0 mgd
Average Production	2.3 mgd
Storage Capacity	4.2 mgd

As part of the City of Bowie's water treatment plant system, 600,000 gallons are stored at the water treatment plant, 600,000 gallons in a water tank on Belair Drive, and 3 million gallons at a ground-level storage facility on Media Lane. Any new connections that result in expansion of the system are considered in accordance with Chapter 25 of the City of Bowie Code.

### **3.2.5 Water Withdrawal (Groundwater and Surface Water) and Point of Discharge**

Groundwater supplies account for a small percentage of the total water used in the County. Individual wells are not listed, although larger water withdrawals, as well as points of discharge exceeding 5,000 gallons per day (gpd) must be approved within this plan. A complete listing of water withdrawal and point of discharge permits issued by MDE in Prince George's County are provided as **Appendix 3-2** of this chapter and **Appendix 4-1** of Chapter 4, respectively.

## 2018 WATER AND SEWER PLAN

**Table 3-5 WSSC Finished Water Storage Facilities in Prince George's County**

<b>Facility Location</b>	<b>Type</b>	<b>Max Elevation (ft)</b>	<b>Total Capacity (mg)</b>
<b><u>Ground Level Storage</u></b>			
Patuxent Reservoirs (7)	Ground level	415	18.4
South Laurel	Ground level	249	3.0
Hill Road (3)	Ground level	270	30.0
St. Barnabas Reservoir	Ground level	290	5.0
<b><u>Elevated Storage</u></b>			
Wildlife (3)	Elevated	350	4.5
Pointer Ridge	Elevated	317	2.0
Suitland	Elevated	445	2.0
Andrews	Elevated	450	3.0
Camp Springs	Elevated	440	1.0
Clinton	Elevated	385	3.0
St. Barnabas	Elevated	430	1.0
Forest Heights	Elevated	290	0.3
Fort Washington	Elevated	290	0.5
Accokeek	Elevated	345	0.75
Collington	Elevated	317	4.0
<b><u>Standpipes</u></b>			
Carole Highlands	Standpipe	310	3.0
Greenbelt	Standpipe	320	2.0
Rogers Heights	Standpipe	305	4.0

*mg = million gallons*

*Other facilities located in Montgomery County provide service to Prince George's County user; e.g. Wheaton Reservoirs*

## 2018 WATER AND SEWER PLAN

**Table 3-6 Inventory of Community System Wells**

Well Name and Number	Coordinate Aquifer	Location	Depth	Diameter	Maximum Safe Yield gpd	Pumping Capacity
<b><u>MUNICIPAL</u></b>						
City of Bowie						
6 Wells					10,000,000 (combined total)	
No. 1	Magothy		192'	8"		
No. 2	Patapsco	834-E	700'	8"		
No. 3	Patapsco	439-N	733'	10"		
No. 4	Patuxent		1158'	10"		6,800 gpm
No. 5	Patuxent		980'	10"		
No. 6	Patapsco		715'			
<i>Note: Belair Community; North Bowie</i>						
<b><u>PRIVATE</u></b>						
Calvert Manor Corporation						
Accokeek						
2 Wells						
No. 1	Potomac	799-E	380'	6"		(Total)
No. 2	Group	311-N	630'	6"	65,000	150 gpm

*Note: Calvert Manor residential subdivision - Plat A05-1189; Tax Maps 141 E/F-4 & 151 E/F-1; Blocks A, B, & C; Water Category 3*

Applicants requesting water withdrawal appropriations or point of discharge for consideration as an amendment to the Water and Sewer Plan will be reviewed consistent with the procedures set forth for legislative amendments (Chapter 6, Section 6.3), including policies and criteria (Chapter 2, Section 2.1.4) of this Plan. At a minimum, applications must include computations that demonstrate the impact of the proposed water withdrawal or point of discharge on existing natural resources, and a well-defined written proposal for its intended use and rationale.

A "Conditional Approval for Plan Amendment" will be recommended when the County determines that the proposal meets the minimum criteria, and it will serve to allow further evaluation of the proposal by MDE. This "conditional approval" does not obligate or constitute County support of the proposed use of the requested appropriation. Should the County decide that the request for water withdrawal appropriation does not meet County requirements for future environmental impacts to aquifers in the County, and the installation and use of wells, the request may be denied. A denial by the County will subsequently cancel any request submitted to the MDE. Upon concurrence with the findings of the state evaluation and approval by the MDE or its permitting agency, the request shall be incorporated as an amendment to the Water and Sewer Plan.

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### 3.2.6 Water Reuse

Water reuse, is an environmentally friendly “green” initiative, in line with the State of Maryland’s adoption of Leadership in Energy and Environmental Design (LEED) that can promote extensive conservation of water resources by recycling reclaimed water. MDE defines water reuse as the “use of reclaimed water for beneficial use or a controlled use in accordance to MDE Guidelines”. For purposes of this section in this Plan (2018 Water and Sewer Plan), water reuse is further defined for groundwater, rainwater, or graywater (from fixtures not intended for human bodily waste) that has been treated in accordance to State regulations (COMAR 26.08.04.01). As a minimum, it meets the criteria of Class IV Effluent, and can be safely and effectively used for non-potable purposes in commercial and industrial practices. When used in accordance to established regulations, these non-potable purposes may consist of surface and subsurface irrigation, heating and cooling, and processing.

Water reuse, when used as stated above, almost always requires the supplemental use of potable water from the public system – posing concerns and challenges to the regulating, permitting and monitoring entities – to effectively prevent any level of cross-contamination to the public water supply. County and Bi-County agencies charged with the responsibility for safe distribution and use of the public (and private) potable water system(s) will need to effectively scrutinize water reuse systems in green building technologies and designs. Prince George’s County agencies will continue their review of best practices, policies and procedures that will ultimately guide the safe implementation and permitting process for water reuse. A listing of public and private projects meeting the above criteria and currently using water reclamation and reuse strategies, are found in **Appendix 3-8** of this chapter.

### 3.3 WATER DEMAND AND PRODUCTION

Water production represents the amount of water delivered from the water treatment plants to the transmission system. The transmission system consists of water mains, pumping stations, pressure reduction valves, and water storage facilities. The transmission system is divided into different water pressure zones based on the distance from the water plants and elevation of land. Conversely, water demand consists of water consumed by customers and a variety of unbilled uses such as firefighting, water main breaks, maintenance of the water system, and unmetered water use.

Water demand varies greatly over the seasons. During a dry summer, the consumption may be 30 percent higher than during winter months. Daily variations in water demand may be even larger. During the drought of 1999, customers of WSSC in Prince George’s County consumed a daily average of 87 mgd during the months of June, July and August. The normal average daily use for the year was 77 mgd. These variations in water demand require the County’s water facilities to retain flexibility. **Table 3-7** presents WSSC’s daily average and maximum water production levels since 1995.

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**Table 3-7– WSSC Historic Water Production**

Year	Average Production (MGD)	Maximum Day Production (MGD)	Ratio
1995	167.1	233.9	1.40
1996	161.3	198.9	1.23
1997	164.6	245.8	1.49
1998	166.5	219.8	1.32
1999	168.0	263.4	1.57
2000	162.0	200.8	1.24
2001	167.4	253.2	1.51
2002	164.7	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	169.1	224.9	1.33
2007	172.4	222.8	1.29
2008	163.1	251.1	1.54
2009	162.7	210.0	1.29
2010	175.0	232.8	1.33
2011	169.5	225.4	1.33
2012	163.8	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	162.6	209.7	1.29
2018	162.9	212.9	1.31

*Note: Data includes all of the WSSC service area (Montgomery and Prince George's Counties)*

*MGD: Million Gallons/Day*

*Source: WSSC – Planning Group – February 2019*

WSSC bases the calculation of future water demand on dwelling unit and employment projections provided by the Metropolitan Washington Council of Governments. Based on analysis of the latest water production and consumption data, WSSC has developed the following water demand per unit to be used for growth projections and planning water system improvements:

- Single-Family Dwelling Unit (SFDU):-----177.0 gallons per day (gpd)
- Employees:----- 36.1 gpd
- Multi-Family Dwelling Unit (MFDU):-----146.8 gpd

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WSSC has prepared water demand projections through the year 2040 for Prince George's County, using COG/MNCPPC Round 8.0 population forecasts and current water use factors for single-family dwelling units, multi-family dwelling units, and employees. **Table 3-8** shows the projected demands until Year 2040 for Prince George's County in five-year increments.

**Table 3-8 – Projected Average Water Demands for Prince George's County**

Calendar Year	Total Production – Million Gallons per Day (MGD)		
	Main Zone	High Zone	Total
2020	44.7	41.9	86.6
2025	45.9	43.2	89.1
2030	47.2	44.6	91.8
2035	48.1	45.8	93.9
2040	49.1	47.0	96.1

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 is 1.43 for system-wide facilities, based on a 20% probability of exceedance. **Table 3-9** lists WSSC's daily average and maximum water production projections and planned capacity for the Washington Suburban Sanitary District (WSSD).

As shown in the 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 2016 Water Production Projections Report. The 2016 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.

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**Table 3-9 – Projected Average Daily Water Demands WSSD**

Calendar Year	Projected Demand (MGD)		Planned Capacity (MGD) * – Available Treatment Capacity – Daily Maximum
	Daily Average	Daily Maximum	
2020	180.8	255.7	398.0
2025	188.9	267.2	398.0
2030	197.8	279.6	398.0
2035	203.3	287.7	398.0
2040	208.7	295.2	398.0

*\*This is planned or available treatment capacity at both Potomac and Patuxent treatment facilities. The Daily Maximum Production at the Potomac Plant is 288 MGD. The Patuxent Plant is currently undergoing upgrades that will increase its capacity to 72 MGD (nominal) and 110 MGD (emergency).*

*Note: The above data is based on the 2016 Water Production Projections by WSSC Planning Division.*

The annual averages of water transmitted into Prince George’s County and the Bi-County area from 1995 through 2018 are reflected in **Table 3-10** and **Table 3-11** respectively. A new transmission line (Project 80) was placed in service in November 2000, and shortly thereafter, not all water into Prince George’s County had been metered. Therefore, the production numbers highlighted grey in Table 3-10 cannot be correlated with the earlier production numbers. Flow metering was corrected in November 2004.

### **3.3.1 Total Water Management**

Since the early 1990s, water production at WSSC has shown little or no change regardless of any increase in new connections. In fact, WSSC’s water production per capita, as well as production per customer account, has decreased during the past 10 years. Because of growing concerns about flat water production numbers while capital projects were increasing, Prince George’s County studied the concept of Total Water Management in 1998.

Total Water Management integrates the activities of local, State, and Federal governments, and is based on the principles of pollution prevention, resource conservation, and sustainable development. The recommended strategies and measures may be geared toward water supply, transmission efficiency, and water consumption. The overarching goal is to satisfy customer needs in a cost-effective and efficient manner, minimizing any adverse environmental impact and preserving the quality of life.

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Table 3-10 Prince George's County Water Production from 1995 to 2018 in millions of gallons per day (mgd)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg/Year
1995	77.1	78.2	76.7	77.3	74.7	77.5	82.3	89.9	82.9	75.3	73.6	75.9	78.5
1996	77.9	75.6	72.1	74.0	76.5	81.6	79.8	80.3	78.0	75.5	72.2	72.4	76.3
1997	74.8	72.2	69.3	71.4	77.9	81.9	89.3	88.4	83.3	78.0	73.0	69.3	77.4
1998	69.3	68.9	70.3	72.7	77.5	80.3	88.8	89.9	88.4	79.9	78.8	74.5	78.3
1999	76.9	71.1	66.0	71.8	80.3	90.6	92.1	80.0	75.3	77.8	74.6	72.3	77.4
2000	75.0	76.0	72.7	71.1	75.4	78.4	78.4	77.5	73.9	64.8	55.0	58.0	71.4
2001	55.7	52.4	55.4	53.4	61.0	60.2	50.4	48.3	48.9	48.7	52.3	52.4	53.3
2002	50.9	31.3	25.0	27.0	49.4	50.9	48.7	46.4	47.5	40.4	43.2	42.8	42.0
2003	44.9	48.1	47.5	46.2	45.0	47.4	50.9	50.2	52.4	54.9	46.8	45.2	48.4
2004	48.4	47.6	45.9	48.9	42.5	44.6	46.7	36.9	46.5	46.7	79.7	78.6	51.1
2005	80.7	81.3	80.6	80.6	85.3	91.5	84.1	89.1	90.6	83.4	77.5	77.4	83.5
2006	76.9	78.0	77.7	78.1	85.5	88.3	88.2	98.1	86.8	82.8	82.4	82.0	83.7
2007	80.6	78.6	73.1	74.3	92.4	91.4	92.6	88.3	84.2	76.7	72.0	72.2	81.4
2008	73.6	71.7	68.8	68.7	72.3	75.3	76.8	82.7	77.2	74.9	72.4	71.9	73.9
2009	77.3	72.0	70.3	74.3	71.6	76.4	82.2	80.9	77.1	73.6	72.2	75.7	75.3
2010	72.9	57.6	67.6	73.9	78.2	84.3	86.8	87.1	87.5	81.1	77.4	77.8	77.7
2011	78.7	75.0	77.6	80.9	84.4	89.7	95.6	81.0	72.0	73.2	72.6	72.5	79.4
2012	72.5	64.6	66.9	75.9	78.3	82.8	77.4	78.7	75.6	62.7	61.8	67.7	72.1
2013	67.9	62.8	59.5	64.6	67.8	69.1	71.6	70.3	69.5	64.4	63.2	64.8	66.3
2014	72.4	68.6	65.7	65.5	68.3	72.6	93.8	71.9	79.6	78.8	73.8	70.8	73.5
2015	72.6	73.2	73.0	67.2	72.2	72.2	73.3	77.0	76.3	78.3	74.7	76.4	73.9
2016	78.7	80.7	72.6	76.9	74.2	78.9	81.2	82.0	75.2	65.5	66.4	70.8	75.3
2017	73.5	71.5	68.2	71.9	73.3	81.3	83.6	84.1	85.3	77.1	77.2	76.1	76.9
2018	85.1	81.0	81.6	90.8	99.5	101.9	98.5	93.4	107.6	94.6	77.9	78.4	90.9
Monthly Avg	70.9	68.1	67.0	69.4	74.0	78.2	80.6	78.3	76.8	72.1	70.2	70.1	73.0

New transmission line (Project 80) was placed into service during November 2000. After that, not all water into Prince George's County has been metered until November 2004. Therefore, production numbers, highlighted grey in this table, cannot be correlated with the earlier production numbers.

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Table 3-11 Bi-County Water Production from 1995 to 2018 in millions of gallons per day (mgd)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg/Year
1995	158.2	158.5	157.5	161.8	160.9	170.0	183.2	199.9	182.3	160.4	156.7	155.3	167.1
1996	163.6	160.5	155.5	157.4	162.6	174.4	169.5	169.4	164.7	158.2	150.6	149.1	161.3
1997	154.2	151.2	149.4	158.3	166.5	173.4	195.9	190.6	172.2	163.4	152.3	147.9	164.6
1998	147.9	145.9	149.3	154.7	167.9	173.2	191.7	194.6	190.5	166.5	160.9	154.8	166.5
1999	159.1	151.5	154.2	158.3	185.0	204.2	207.1	173.7	161.2	155.6	153.4	153.0	168.0
2000	156.8	157.7	152.5	158.0	166.8	172.8	172.1	168.9	164.1	160.1	155.8	158.2	162.0
2001	158.6	153.9	159.6	168.3	179.5	181.2	176.8	177.4	177.5	165.5	159.1	151.0	167.4
2002	153.0	148.4	148.4	156.3	163.8	182.1	191.5	192.4	170.4	158.6	153.3	158.0	164.7
2003	162.1	158.8	159.0	160.8	163.0	168.2	174.3	176.1	168.6	161.2	160.4	159.0	164.3
2004	167.0	166.9	156.7	161.6	175.0	175.9	178.5	176.2	175.6	163.5	160.6	159.1	168.1
2005	161.1	162.0	160.9	165.2	172.6	188.4	183.5	187.2	191.5	170.0	160.8	159.8	171.9
2006	156.0	155.8	157.2	163.0	175.5	184.7	186.5	204.8	171.3	164.9	156.1	153.1	169.1
2007	150.1	163.4	156.2	158.2	183.1	189.1	201.6	194.1	187.9	174.0	155.1	155.6	172.4
2008	154.0	151.7	150.5	154.0	162.1	177.2	178.2	184.9	172.9	161.2	154.4	156.4	163.1
2009	160.0	150.4	151.6	155.0	159.4	166.6	184.8	181.9	169.8	160.9	155.8	156.7	162.7
2010	162.0	164.9	159.9	162.7	171.6	193.8	198.8	192.8	195.2	169.8	163.2	165.4	175.0
2011	164.2	159.7	158.3	163.6	173.6	194.0	201.3	182.4	167.6	160.6	155.1	153.3	169.5
2012	153.2	151.2	151.1	162.3	167.9	181.2	188.8	178.0	169.1	159.0	153.4	150.5	163.8
2013	153.3	152.9	149.5	153.3	158.8	166.8	173.4	166.7	169.0	156.7	152.2	150.7	158.6
2014	165.3	155.8	151.4	151.6	161.4	172.4	177.4	171.4	169.2	158.0	155.4	151.5	161.7
2015	155.1	161.4	158.6	157.0	170.3	169.7	176.0	182.4	179.0	160.6	157.3	151.1	164.9
2016	157.0	158.6	154.0	161.2	161.1	172.3	180.9	181.9	173.1	159.7	158.2	157.8	164.7
2017	154.1	150.0	148.3	154.6	159.4	177.9	181.8	174.1	173.8	166.3	157.3	153.9	162.6
2018	169.5	151.9	149.0	153.3	167.4	167.2	183.4	176.7	168.9	162.2	154.2	150.9	162.9
Monthly Avg	157.6	155.1	154.3	159.0	168.2	178.7	184.9	182.7	174.6	162.4	156.4	154.8	165.8

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The major findings of the 1998 study were: the unbilled water at WSSC (i.e., difference between water production and water demand as billed) exceeded the national average; major facility planning was based on outdated assumptions of per capita consumption; and efforts to reduce usage were overlooked as an alternative to increasing capacity of the water system. As a direct result of this study, WSSC initiated its own Total Water Management study in early 2000 to identify trends in water consumption and methods that can be used to reduce future capital expenses, as well as identify better ways to predict water usage. Periodic water production projection studies and annual water audits are completed as part of continued Total Water Management efforts by WSSC. The trends identified in these studies assist in identifying future capacity and infrastructure needs, as well as provide insight as to how customers in the service area are using water.

### **3.3.2 Water Loss Reduction Plan (Annual 2010 - 2018)**

The most recent effort in Total Water Management is the WSSC Water Loss Reduction Plan which documented the approach WSSC will take to reduce real and apparent water losses in the water distribution system. The recommended approach is based on the American Water Works Association (AWWA) Manual M36, Water Audits and Loss Control Programs. It is based on ten practices recommended by the AWWA Manual M36. Since unaccounted for water exceeded the 10% threshold required by MDE in 2010, a Water Loss Reduction Plan was initiated. Each year, based on the results of the annual water audit, the Water Loss Reduction Plan is reviewed, updated and submitted to MDE. Excerpts from the Water Loss Reduction Plan are provided as **Appendix 3-3** of this chapter.

WSSC is taking a proactive approach to reduce its water system losses. WSSC is assessing existing water loss methods in further detail, identifying data gaps, and developing data gathering tools to better quantify losses. These efforts will take many years to implement programs designed to target the identified losses.

### **3.3.3 WSSC Water Conservation Plan (2010)**

WSSC completed the Water Audit for 2010, and submitted its first Water Conservation Plan to the Maryland Department of the Environment (MDE) in December 2010. The Water Conservation Plan (WCP) documents WSSC long-term water resources management goals. It also documents WSSC current practices that promote water conservation, including Water Metering programs and Conservation Incentive Pricing. A copy of the WCP (extracted pages) may be found as **Appendix 3-4** of this chapter.

## **3.4 WATER SUPPLY SOURCE PROGRAMS AND POLICIES**

### **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 river to meet the environmental flow-by, the Cooperative (CO-OP) section of the Interstate Commission of the Potomac River Basin (ICPRB) coordinates releases from the

## 2018 WATER AND SEWER PLAN

Jennings Randolph Reservoir, located near Bloomington, Maryland, on the North Branch of the Potomac River, and the Little Seneca Lake in the County on Little Seneca Creek. These two sources of water augment the Potomac River during periods of extreme low flow in the Washington metropolitan area. The agencies that have intakes in Montgomery County and which are considered the Regional Water Supply System during a drought are: 1) The Washington Suburban Sanitary Commission, 2) the Fairfax County Water Authority (FCWA), and 3) the Washington Aqueduct Division (WAD) of the Corps of Engineers that serve the District of Columbia, Arlington, Falls Church, and a small portion of Fairfax County. The City of Rockville and the Town of Leesburg also draw their water from the metropolitan area of the Potomac River. A new Potomac River intake and water treatment plant for the Loudoun County Sanitation Authority (Loudoun Water) are under construction downstream of Leesburg in Loudoun County.

There are a number of agreements among the region's utilities describing how the water is distributed and used during drought conditions. The agreements, included in chronological order are:

- **Agreement for Future Water Supply Storage Space in the Bloomington Reservoir (1982)**

This agreement entitles the District of Columbia, the Fairfax County Water Authority and WSSC to 36.78 percent of Jennings Randolph Reservoir storage capacity known as future supply. The metropolitan areas share would equal 13.37 billion gallons when the reservoir is full. In return, the three nonfederal signatories are required to pay 27.4% of the construction cost (local share estimated at \$54.2 million, includes interest over 50 years); 34.75% of the cost of major replacement items; and, 28.56% of the annual operation and maintenance costs. Jennings Randolph water not contracted 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, the Fairfax County Water Authority and WSSC, transferred the function of the MPWA to the other three parties.*

- **Bloomington Payment Agreement (1982)**

This agreement delineates the three major water users' individual responsibility to pay for the capital and O&M expenditures associated with the Jennings Randolph water supply in the agreed to ratios. This agreement was necessitated by the Corp of Engineers requiring 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

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user default in payment, another user can make the payment and sue the defaulter for payment plus penalty. In addition, the defaulter loses the right to use Jennings.

- **Little Seneca Lake Cost Sharing Agreement (1982)**

This agreement establishes the cost shares and payment mechanisms for the capital and O&M expenditures for Little Seneca Lake in Montgomery County. These costs are distributed according to the following ratios: WSSC – 50 percent; the District of Columbia – 40 percent; and Fairfax County Water Authority – 10 percent.
- **Savage Reservoir Maintenance and Operation Cost Sharing Agreement (1982)**

This agreement addresses water releases from the Savage Reservoir, which as relatively basic, were intended to neutralize releases from the Jennings Randolph Reservoir, which were expected to be acidic due to upstream mine drainage. 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 Upper Potomac River Commission (UPRC) have agreed to fund the annual operations and maintenance, and replacement and repair costs of Savage Reservoir according to the following percentages: Fairfax County Water Authority – 16 percent; District of Columbia – 24 percent; WSSC – 40 percent; and Allegany County – 20 percent. (See the preceding discussion of the reservoir for additional information.)
- **Metropolitan Washington Water Supply Emergency Agreement (1994)**

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)**

This Council of Government 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

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This plan is primarily designed for those customers who use the Potomac River for their drinking water supply source (see **Appendix 3-5** of this chapter.). The Plan will eventually be expanded to incorporate all water supply systems throughout the region.

### **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. Operations 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 Lake, Occoquan Reservoir, Triadelphia Reservoir, Rocky Gorge Reservoir, and Little Seneca Lake 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 usable 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 the 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 water 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. 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 WSSC and the 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, and the FCWA, also directs releases from Jennings Randolph Reservoir and Little Seneca Lake.

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The signing of the Water Supply Agreements of 1982 and the completion of Little Seneca Lake in the fall of 1984 resulted in a regional consensus that area raw water supply needs are satisfied, at least through the year 2020. Recent water demand forecast and resource adequacy analysis (2015 Washington Metropolitan Area Water Supply Study) by ICPRB/CO-OP confirms that presently available resources will be stressed for the region by the year 2035 in the event of a repetition of the drought of record.

As noted above, the ICPRB evaluates the adequacy of the Potomac River system to supply drinking water needs. The ICPRB annually coordinates a week-long drought management exercise that simulates water management operations and decision making under drought conditions for the Washington metropolitan area water suppliers. Additionally, an analysis is conducted every five years in order to incorporate new demographic information into the demand forecast. A 2015 water resource analysis was conducted using the Potomac Reservoir and River Simulation Model (PRRISM). PRRISM has been updated since the last study was completed in 2010 to reflect new operating procedures for the Jennings Randolph and Savage reservoirs, as well as revised sedimentation rates. The model has also been updated to incorporate over 100 climate change models. The 2015 analysis indicates that with climate change, the current water supply system will begin to realize deficiencies beginning in 2040 during a repeat of the drought of record. As a result, under the terms of the ICPRB Water Supply Coordination Agreement, a water supply alternatives study was prepared to evaluate alternatives that could provide the adequate raw water storage necessary for the long-range planning for the three water utilities that are part of the Agreement. The recommended strategies included the development of several different quarries in Virginia and Maryland into raw water storage reservoirs. In Maryland, the Travilah quarry, in Montgomery County was identified as one of these reservoirs. The entire study is published by the ICPRB on their website at: [www.potomacriver.org](http://www.potomacriver.org) Future work will require project development and planning to include defining project scope, budget, funding, and schedule.

### **Potomac Water Filtration Plant Source Water Assessment:**

MDE and WSSC completed a source water assessment (SWA) for the Potomac River and WSSC'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 system
- Reducing ammonia levels and chlorine demand in the raw water

## 2018 WATER AND SEWER PLAN

Following the completion of the SWA, WSSC actively worked with other utilities and relevant governmental agencies to establish the Potomac River Basin Drinking Water Source Protection Partnership. The Partnership, formed in 2004, 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.

WSSC has actively worked within the Partnership framework to develop a strategy of outreach and environmental programs to protect the Potomac drinking water supply, which serves more than 4 million people. Through work groups and active discussion at Partnership meetings, the Partnership is implementing a strategy for carrying forward source water protection as recommended by the source water assessments conducted throughout the Potomac basin, as well as important source water protection issues as they emerge.

Highest priority issues for the Partnership in 2016 were enhancing chemical contaminant knowledge in the Potomac watershed, implementing improvements to regional spill response, and source water protection activities related to 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 Metropolitan Washington Council of Governments, 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 country. 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 the 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 the Water Research Foundation and U.S. Endowment for Forestry and Communities, Inc., to evaluate benefits to upstream forest protection on drinking water quality and treatment costs.

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### **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 Rocky Gorge 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 County and Howard County Soil Conservation Districts, the M-NCPPC, and WSSC. 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.

Initially an action plan was 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 list of action items or work plan, titled Performance Measures and Goals for Priority Resources, represents a continuation of the commitment to coordinate protection efforts in coming years. This table contains goals, performance measures, implementation items, and a time line 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

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 accomplished 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. Outreach activities to further public awareness of watershed issues have included the H2O Fest Watershed Festival, a Patuxent River Cleanup Day, and the annual Family Campfire.

In 1998, the Maryland Department of the Environment (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 U.S. Environmental Protection Agency (EPA) approved total maximum daily loads (TMDLs) for both reservoirs in November 2008. The water quality goal of the nutrient TMDL is to reduce high chlorophyll at concentrations that reflect excessive algal blooms, and to maintain dissolved oxygen levels at a

## 2018 WATER AND SEWER PLAN

level that is supportive of the designated uses. The water quality goal for the sediment TMDL for Triadelphia Reservoir is to increase the useful life of the reservoir for water supply by preserving storage capacity. A phosphorus TMDL was established for each reservoir, and a sediment TMDL was established for Triadelphia Reservoir (29 percent reduction required). Significant phosphorus load reductions are required (58 percent for Triadelphia Reservoir, 48 percent for Rocky Gorge Reservoir) to meet Maryland's water quality standards. (Maryland Department of the Environment, June 2008).

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. Next steps include seeking feedback from the MDE, continuing to track land use and BMP implementation, assessing the apparent BMP implementation rates, and identifying the most cost-effective BMPs. The TAC was directed to proceed with the plan in 2017.

### 3.5 FINANCING

Financing of all WSSC's CIP is reviewed by the County Executives of Prince George's and Montgomery counties and approved annually by the two County Councils. Each CIP covers a six-year period. The Prince George's County Council adopts the CIP as part of the County's Comprehensive Water and Sewer Plan. The CIP is divided into three categories for both water and sewer projects: Prince George's County projects, Montgomery County projects, and Bi-County projects. **Appendix 3-6** of this chapter lists the current water projects for Prince George's County and for the Bi-County area.

System improvement projects under the CIP are financed with funds from the Water Supply and Sewage Disposal Bond Funds. The funds are repaid to bond holders over a period of 20 years by annual principal and interest payments known as debt service. Growth-related projects are usually paid through system development charges (SDC) and developer contributions.

Additional information relating to the financing, proposals and status of projects in Prince George's and Montgomery counties are found in the CIP. A copy may be requested by contacting WSSC.

The City of Bowie is required to prepare and adopt a formal budget appropriating funds for the operation, including plant improvements, of the water and sewer system. The City Council formally adopts the budget each year. Rates are established based upon the "cash needs approach." The rate structure must provide not only funds for operation and maintenance, but principal and interest payments on long-term debt, plant additions, and renewals and replacements.

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***APPENDIX 3-1***

***THE WATER NETWORK  
WASHINGTON SUBURBAN SANITARY COMMISSION***

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# The Water Network



**WSSC's Water Distribution System for  
Prince George's and Montgomery Counties,  
Maryland**



**The water** from your faucet marks the end of a journey. Over 5,700 miles of water mains, 16 pumping stations and 57 storage facilities are all part of WSSC's distribution network that delivers drinking water to you and to your neighbors- and to more than 1.8 million other customers.

Every customer benefits from this combination of treatment plants, pumps, pipelines and storage. Filtration plants treat water from the rivers and make it safe to drink. Pumping stations move water from the filtration plants through pipelines to customers just down the road and far away. Storage facilities all along the way provide water to a system that serves both nearby areas and distant neighborhoods. This effective network meets the current as well as the growing needs of WSSC's customers.



## PRODUCTION

Water is purified at WSSC's two water filtration plants.

One plant draws water from the Potomac River, the other from the Patuxent River.

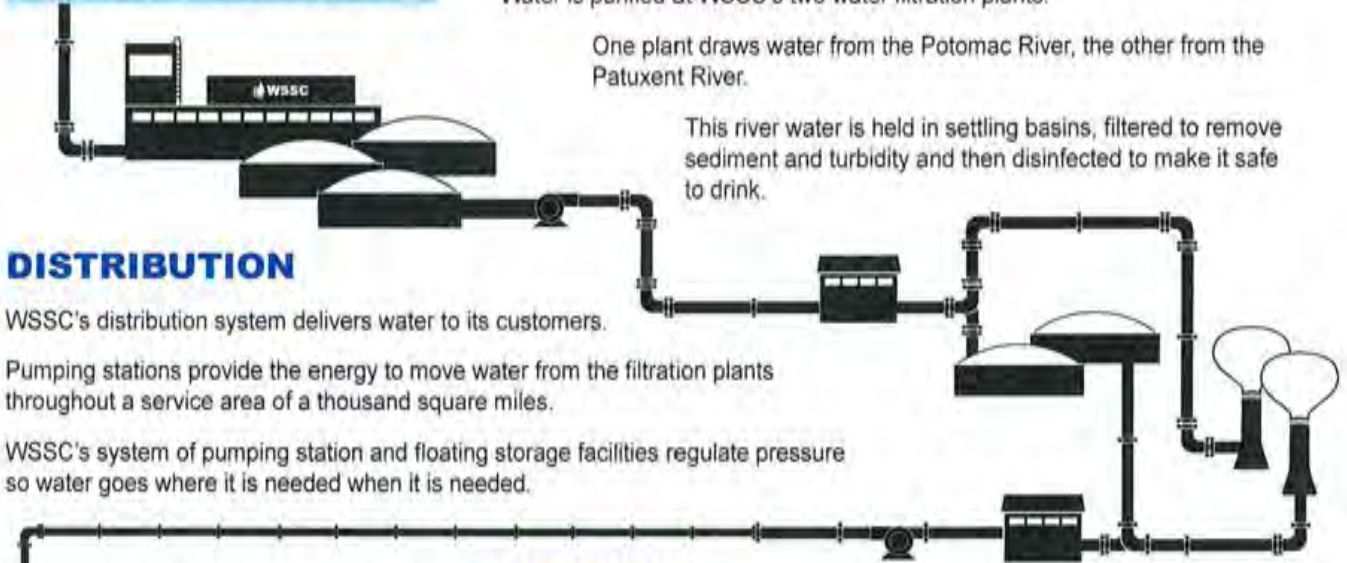
This river water is held in settling basins, filtered to remove sediment and turbidity and then disinfected to make it safe to drink.

## DISTRIBUTION

WSSC's distribution system delivers water to its customers.

Pumping stations provide the energy to move water from the filtration plants throughout a service area of a thousand square miles.

WSSC's system of pumping station and floating storage facilities regulate pressure so water goes where it is needed when it is needed.



## NETWORK

To get where it is needed, the water travels many miles.

WSSC's distribution network includes more than 5,700 miles of pipeline.

The pipes range in size from a 96-inch diameter one leaving the Potomac filtration plant to the thousands of pipes two inches or smaller that serve individual homes.

Using energy supplied by pumping stations, these pipes can carry water to customers at every geographic elevation within the service area and into all the storage facilities.

## STORAGE

Water storage provides many benefits.

It keeps water ready for use in a system where the amount used changes in a daily cycle: a lot being used at some times of the day and less at other times.

Elevated stored water is always available during emergency situations, such as power outages, treatment plant shutdowns or pipe breaks.

Storage keeps water ready for immediate use for firefighting.

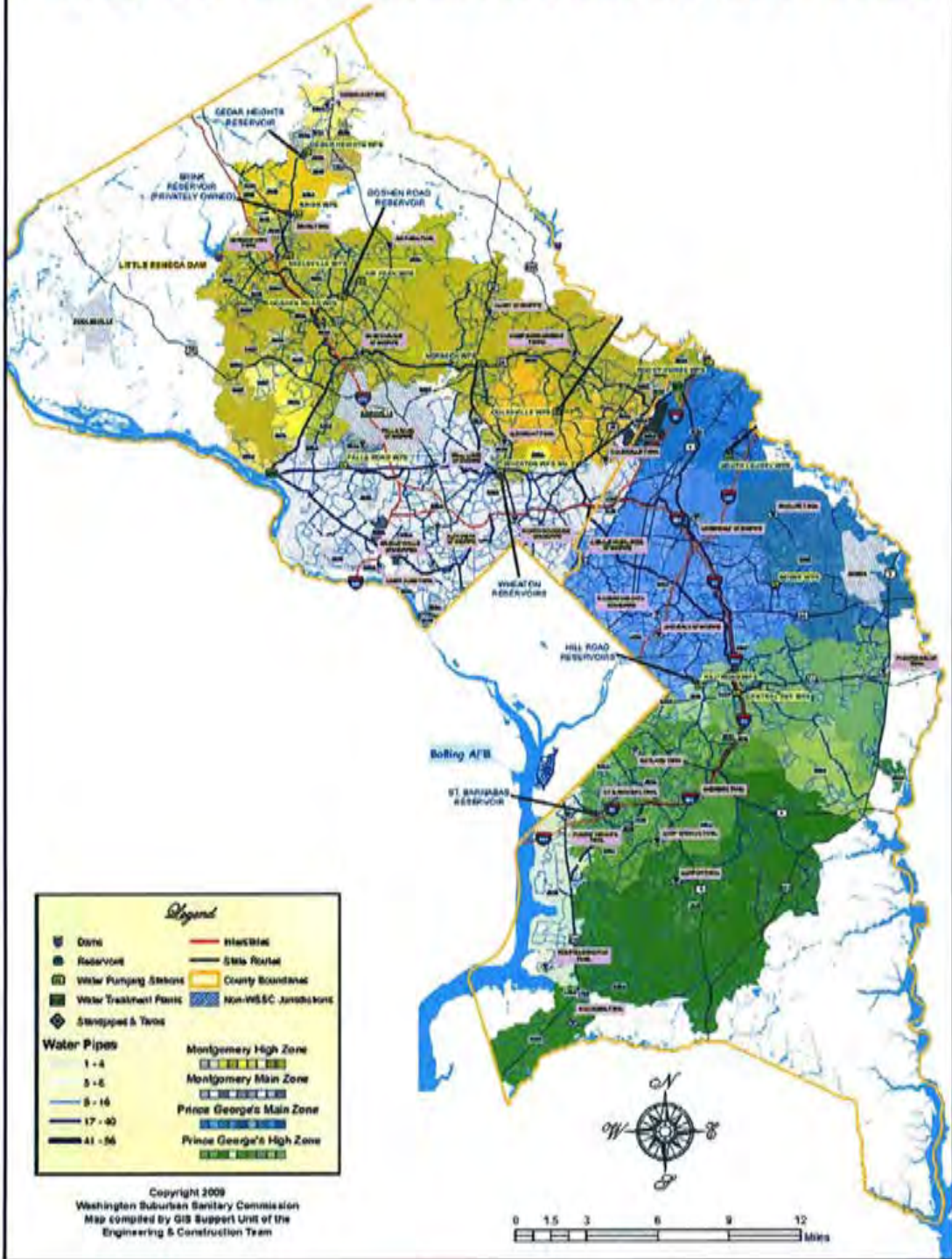
Water that has been stored in facilities that are tall or on high ground can always be used when it is needed, even if there is a power outage because it will move out of the storage by gravity.

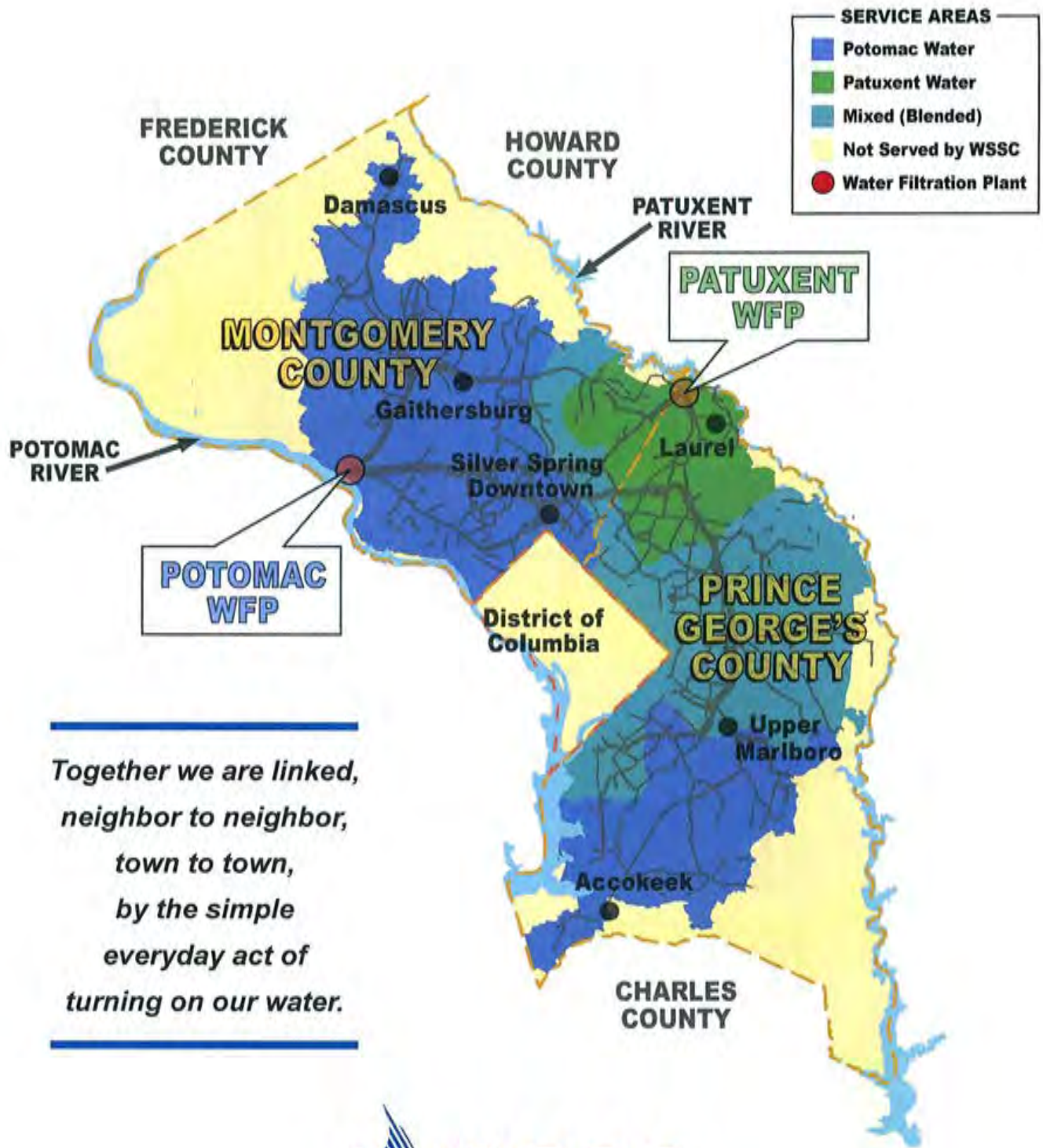
Without a supply of stored water to meet demands, most other parts of the distribution network would have to be larger and consequently would cost more to build.





# Water Distribution Network






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*Together we are linked,  
neighbor to neighbor,  
town to town,  
by the simple  
everyday act of  
turning on our water.*

---



*Where Water Matters*

14501 Sweitzer Lane • Laurel, MD 20707

[www.wsscwater.com](http://www.wsscwater.com)

For additional information  
please contact the Communications Office  
301-206-8100

**2018 WATER AND SEWER PLAN**

***APPENDIX 3-2***

***MDE WATER WITHDRAWAL PERMITS  
PRINCE GEORGE'S COUNTY***

## 2018 WATER AND SEWER PLAN

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**Prince George's County  
Water Withdrawal Permits (2017)**

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1938S001(08)	Washington Suburban Sanitary Commission	10/01/2013	10/01/2025	72,000,000	120000000			Patuxent River	SANDY SPRING
PG1952G005(04)	Bhupendra Patel	04/01/2012	04/01/2024	4,000	5000	Magothy Formation			UPPER MARLBORO
PG1955G011(06)	Calvert Manor Corporation	11/02/2015	10/31/2027	24,000	38000	Lower Patuxco Aquifer	PG-94-1402, PG-67-0013		MOUNT VERNON
PG1956G005(05)	Oxon Hill Recreation Club, Inc.	03/01/2005	03/01/2017	7,000	20000	Patuxent Formation			ANACOSTIA
PG1956G007(07)	Department of Juvenile Service	06/19/2014	05/31/2026	65,000	105000	Magothy Formation			
PG1957G003(05)	Shields Enterprises, Lp	07/01/2011	07/01/2023	50,000	200000	Patuxco Formation	PG026908; PG920625		LANHAM
PG1957S003(03)	Shields Enterprises, Lp	07/01/2011	07/01/2023	50,000	200000			Horsepen Branch	LANHAM
PG1958G003(05)	U.S. Fish And Wildlife Service	06/01/2001	06/01/2012	300,000	600000	Patuxent Formation	PG670003		LAUREL
PG1958G103(03)	U.S. Fish And Wildlife Service	08/01/2001	06/01/2012	200,000	600000	Patuxent Formation	PG730986; PG031935; PG999999; PG941251; PG052827; PG670004		LAUREL

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1958G203(02)	U.S. Fish And Wildlife Service	06/01/2001	06/01/2012	3,000	5000	Patapsco Formation	PG010923; PG730248; PG730985; PG999998; PG999997		LAUREL
PG1961G008(10)	City Of Bowie	04/01/2012	11/01/2019	200,000	500000	Magothy Formation	PG034997		BOWIE
PG1961G108(04)	City Of Bowie	04/01/2012	11/01/2019	1,500,000	2500000	Lower Patapsco Aquifer			BOWIE
PG1961G208(05)	City Of Bowie	10/01/2009	11/01/2019	1,800,000	2500000	Patuxent Formation	PG880226; PG650085; PG-88-0226; PG-14-0279		BOWIE
PG1962G007(10)	NRG Chalk Point LLC	08/04/2017	07/31/2029	660,000	1200000	Magothy Formation			BENEDICT
PG1962G107(04)	NRG Chalk Point LLC	08/04/2017	07/31/2029	1,020,000	1280000	Patuxent Formation			BENEDICT, MARYLAND
PG1963G006(06)	Cedarville Park, Inc.	08/11/2015	12/01/2020	60,000	75000	Magothy Formation	PG680011; PG810666; pg-81-0666; PG-95-0171		BRANDYWINE
PG1964S001(07)	NRG Chalk Point LLC	02/10/2015	01/31/2027	720,000,000	1100000000			Patuxent River	BENEDICT
PG1966G001(05)	Sg Housing Corporation	03/01/2004	03/01/2016	5,600	8400	Magothy Formation			UPPER MARLBORO
PG1966G006(06)	Maryland-National Capital Parks & Planning Commission	10/16/2017	09/30/2023	13,000	78000	Upper Patapsco Aquifer	PG-66-0064		ANACOSTA, MARYLAND
PG1966G011(02)	Bishop Byrne Council, Knights Of Columbu	03/01/1997	03/01/2009	3,000	5000	Patuxent Formation	PG660103		ANACOSTIA

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1968S009(03)	City Of Bowie	04/01/2014	04/01/2026	8,000	16000			Collington Branch	BOWIE
PG1969G007(05)	Vestry Of Saint Barnabas Church	10/01/2013	10/01/2025	6,000	7500	Upper Patapsco Aquifer	PG920601; PG811859; PG811813; PG690054		UPPER MARLBORO
PG1970G012(03)	Bardon, Inc.	07/01/2011	07/01/2019	2,640,000	4320000	Quaternary System Sediments			PISCATAWAY
PG1972G004(05)	Southstar Limited Partnership	07/01/2008	07/01/2020	9,000	10000	Magothy Formation			UPPRT MARLBORO
PG1974G009(03)	Southern Maryland Concrete Products, Inc.	03/01/1998	03/01/2010	7,000	9000	Magothy Formation			ANACOSTIA
PG1975G003(04)	Prince George's County Board Of Ed.	02/01/2009	02/01/2021	6,500	9500	Magothy Formation			LOWER MARLBORO
PG1975G008(11)	NRG MD Ash Management LLC	09/01/2016	08/31/2028	70,000	88000	Magothy Formation			BRANDYWINE
PG1975S011(05)	Maryland-National Capital Park & Planning Commission	12/01/2011	12/01/2023	50,000	144000			Lottsford Branch	LANHAM
PG1976S081(05)	Mncp & Pc	06/01/2011	06/01/2023	22,000	75000			Paint Branch	WASHINGTON EAST
PG1977G008(04)	Fred Ryder Enterprises, Inc.	07/01/2005	07/01/2017	20,000	100000	Lower Patapsco Aquifer			LANHAM

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1977S008(03)	Fred Ryder Enterprises, Inc.	07/01/2005	07/01/2017	10,000	25000			Horsepen Branch	LANHAM
PG1979G002(05)	U.S. Air Force	01/01/2006	12/01/2019	70,000	260000	Magothy Formation			
PG1980S010(04)	Concert Woodmore, LLC	10/21/2015	09/30/2027	66,000	312000			Northeast Branch	
PG1981G106(04)	Bardon, Inc.	07/01/2011	07/01/2019	10,000	121500	Lower Patapsco Aquifer			PISCATAWAY
PG1983G001(03)	Maryland National Capital Park And Plann	03/01/2005	03/01/2017	300	500	Magothy Formation			BRANDYWINE
PG1983G008(04)	Susan Watson-Hardy	07/01/2012	07/01/2018	7,500	25000	Magothy Formation	PG810392, PG810312		BRANDYWINE
PG1983G010(02)	M-Ncpc	09/01/1997	09/01/2009	700	1000	Magothy Formation			UPPER MARLBORO
PG1983G011(03)	Nottingham-Myers United Methodist Church	07/01/2005	07/01/2017	2,000	3000	Magothy Formation	PG950467		LOWER MARLBORO, MD.
PG1983S009(03)	Susan Watson-Hardy	07/01/2012	07/01/2018	7,500	24000			Patuxent River	BRANDYWINE
PG1984G001(08)	NRG Chalk Point LLC	06/14/2015	01/31/2027	660,000	1800000	Upper Patapsco Aquifer	PG-73-0172; PG-88-1070; PG-88-1080; PG-88-1081		BENEDICT

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1984G004(04)	Edgemoade Road RE, LLC	07/15/2016	06/30/2028	6,700	8000	Magothy Formation	PG-11-0465		
PG1988G009(02)	Patricia A. Maddy	09/01/2000	09/01/2012	5,000	10000	Patapsco Formation	PG880061; PG811412		MOUNT VERNON
PG1987G003(04)	Maryland-National Capital Park & Planning Commission	12/01/2011	12/01/2023	30,000	100000	Patapsco Formation			LANHAM
PG1988G008(06)	Tantallon Golf, LLC	10/01/2010	10/01/2022	51,000	200000	Lower Patapsco Aquifer	PG811887; PG920980		MOUNT VERNON
PG1988S008(07)	Tantallon Golf, LLC	10/01/2010	10/01/2022	10,000	200000	Upper Patapsco Aquifer	PG-88-0568; PG-88-0569	Swan Creek	MOUNT VERNON
PG1989G001(06)	NRG Chalk Point LLC	08/14/2015	01/31/2027	20,000	60000	Upper Patapsco Aquifer			BENEDICT
PG1989G003(02)	Denison Landscaping And Nursey, Inc.	04/01/1992	04/01/2004	8,000	45000	Magothy Formation			
PG1989G006(02)	Laddie Thomas Rhodes, Jr.	10/01/2010	10/01/2022	7,000	40000	Magothy Formation			
PG1989S012(03)	Anna Gaddis Rauch	08/01/2010	08/01/2022	10,000	30000			Western Branch	UPPER MARLBORO

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1990G012(04)	USDA Beltsville Agricultural Research Center	10/21/2015	09/30/2027	750,000	1000000	Patuxent Formation	PG920973; PG810134; PG731451; PG810541; PG730623; PG730624; PG940129; PG820972; PG940134; PG730622; PG810544		BELTSVILLE
PG1990G023(03)	Rockhill Sand And Gravel Corp.	05/01/2010	05/01/2022	60,000	72000	Magothy Formation	PG881572		BRANDYWINE
PG1990S013(02)	USDA - FOB	03/01/2004	03/01/2016	50,000	300000			Little Paint Branch	BELTSVILLE
PG1990S015(02)	USDA - FOB	03/01/2004	03/01/2016	35,000	210000			Paint Branch	BELTSVILLE
PG1991G015(05)	Washington Brick And Terra Cotta Company	06/01/2006	06/01/2018	125,000	318000	Magothy Formation	PG88245		PISCATAWAY
PG1991S015(04)	Washington Brick And Terra Cotta Company	06/01/2006	06/01/2018	10,000	325000			Mattawoman Creek	PISCATAWAY
PG1993G003(05)	KMC Thermo, LLC	05/16/2014	04/30/2026	74,000	342000	Lower Patapsco Aquifer			Brandywine
PG1994G005(03)	Collington Episcopal Life Care Community	03/01/1999	05/01/2006	5,500	30000	Upper Patapsco Aquifer			LANTHAM, MARYLAND
PG1994G006(02)	U.S. Food And Drug Administration	08/01/2006	08/01/2018	30,000	42000	Patuxent Formation			LAUREL
PG1994G007(06)	Federal Law Enforcement Training Center	02/03/2017	01/31/2029	12,000	50000	Magothy Formation	PG-00-3724		BRANDYWINE

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1995G019(04)	Marlton Golf Club, LLC	10/01/2011	10/01/2023	40,000	242000	Magothy Formation	PG94G073		BRANDYWINE
PG1995S020(05)	Marlton Golf Club, LLC	10/01/2011	10/01/2023	28,000	242000			Southwest Branch	BRANDYWINE
PG1996G005(04)	U.S. Air Force	01/01/2008	12/01/2019	60,000	240000	Aquia Aquifer			
PG1996G008(02)	Cloverleaf Enterprises, Inc.	03/01/1999	03/01/2002	9,500	26000	Upper Patapsco Aquifer	PG940914		ANACOSTIA
PG1996G009(01)	Landscapes Unlimited L.L.C.	11/01/2002	11/01/2014	82,000	300000	Alluvium			BELTSVILLE
PG1996G017(02)	City Of Bowie	09/01/2009	09/01/2021	18,000	43000	Upper Patapsco Aquifer			BOWIE
PG1996G105(03)	U.S. Air Force	01/01/2008	12/01/2019	110,000	440000	Upper Patapsco Aquifer			
PG1996S205(02)	U.S. Air Force	12/01/2007	12/01/2019	10,000	40000			Piscataway Creek	

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1997S011(05)	Patuxent Greens Golf, LLC	11/01/2005	11/01/2017	34,000	136000			Patuxent River	LAUREL
PG1998G005(02)	PAX 40, LLC	11/01/2003	11/01/2015	8,500	15000	Patuxent Formation	PG-94-0455		BOWIE
PG1998G006(02)	Presidential Golf Club, LLC	11/01/2011	11/01/2023	95,000	747000	Patuxent Formation			BRISTOL
PG1998G014(03)	Robin Dale Land LLC	01/01/2013	01/01/2016	34,000	181000	Upper Patuxent Aquifer			BRANDYWINE
PG1998G023(03)	Nasa - Goddard Space Flight Center	05/01/2006	05/01/2018	257,000	375000	Patuxent Formation	PG941408		LAUREL
PG1998S007(02)	Presidential Golf Club, LLC	11/01/2011	11/01/2023	94,000	3200000			East Branch	BRISTOL
PG1998S014(03)	Robin Dale Land LLC	01/01/2013	01/01/2016	12,000	500000			Matiawoman Creek	BRANDYWINE
PG1999G004(02)	Ed's Plant World, Inc.	01/01/2011	01/01/2023	6,000	8000	Aquia Aquifer			
PG1999G011(02)	Department Of The Treasury	11/01/2011	11/01/2023	7,500	16500	Patuxent Formation			BELTSVILLE
PG1999G015(03)	Bardon, Inc. (D/B/A Aggregate Industries	06/01/2008	06/01/2020	35,000	135000	Patuxent Formation	PG941436		WASHINGTON EAST
PG1999G017(01)	Slavrou Construction	01/01/2000	01/01/2012	3,000	10000	Magothy Formation			LANHAM
PG1999G018(02)	Susan Watson-Hardy	07/01/2012	07/01/2018	5,000	15000	Magothy Formation			BRANDYWINE

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG1998G118(02)	Susan Watson Hardy	07/01/2012	07/01/2018	7,500	15000	Quaternary System Sediments			BRANDYWINE
PG2000G003(03)	Denison Landscaping, Inc.	07/01/2006	07/01/2018	20,000	155000	Magothy Formation	PG941283		PISCATAWAY
PG2000G103(02)	Denison Landscaping, Inc.	07/01/2006	07/01/2018	10,000	155000	Quaternary System Sediments			PISCATAWAY
PG2000S003(03)	Denison Landscaping, Inc.	07/01/2006	07/01/2018	17,000	150000			Matiawoman Creek	PISCATAWAY
PG2000S007(02)	Landscapes Unlimited, L.L.C.	11/01/2002	11/01/2014	76,000	475000			Little Paint Branch	BELTSVILLE
PG2001G009(02)	Sr Industrial Limited Partnership	12/01/2013	12/01/2025	5,000	10000	Patuxent Formation	PG942163		
PG2001G011(01)	Pax 40, LLC	12/01/2001	12/01/2013	10,000	40000	Patapsco Formation			
PG2001S001(03)	Landscapes Unlimited, L.L.C.	11/01/2002	11/01/2014	32,400	317000			Little Paint Branch	BELTSVILLE
PG2002G004(03)	City Of Bowie	09/17/2015	08/31/2027	6,000	24000	Lower Patapsco Aquifer			

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG2002G005(03)	City of Bowie	09/17/2015	08/31/2027	6,000	24000	Upper Palapsco Aquifer			
PG2002G006(01)	John Denison	05/01/2002	05/01/2014	75,000	10000	Upper Palapsco Aquifer			
PG2002G008(03)	Oak Creek Golf, LLC	06/01/2010	06/01/2022	200,000	1178000	Patuxent Formation			UPPER MARLBORO, MARYLAND
PG2002G014(02)	Bardon, Inc.	02/28/2017	01/31/2029	58,500	130000	Lower Palapsco Aquifer	PG-95-0368		PISCATAWAY
PG2002S009(02)	Oak Creek Golf LLC	08/01/2007	08/01/2019	5,600	765000			Unnamed Tributary	UPPER MARLBORO, MARYLAND
PG2002S014(02)	Bardon, Inc.	02/28/2017	01/31/2029	2,900,000	3700000			Piscataway Creek	PISCATAWAY
PG2003G002(02)	Bardon, Inc.	07/01/2011	07/01/2019	9,600	20000	Lower Palapsco Aquifer			PISCATAWAY

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG2005G010(01)	Timberlake Homes, Inc.	06/01/2005	06/01/2017	5,000	7200	Magothy Formation			PISCATAWAY
PG2005G016(06)	National Harbor Development L.L.C.	03/30/2016	02/29/2020	360,000	720000	Quaternary System Sediments	PG950531; PG950532; PG950533; PG950526; PG950527; PG950528; PG950529; PG950530		MOUNT VERNON
PG2006G008(02)	Kevin Michale	05/01/2012	05/01/2024	7,000	28000	Magothy Formation			
PG2006G015(01)	U.S. National Archives And Records Adm.	10/01/2008	10/01/2020	55,000	70000	Patuxent Formation			
PG2007G005(01)	Delanta & Alice Mills	07/01/2007	07/01/2019	6,000	18000	Upper Patapsco Aquifer			LANHAM
PG2007G006(02)	Toll Md V Limited Partnership	09/04/2014	08/31/2026	6,000	30000	Magothy Formation			
PG2010G004(02)	Maryland Natl Capt Prk & Plan Comm	04/01/2014	12/01/2022	8,000	20000	Patuxent Formation			
PG2010G005(01)	M-Ncpc	03/01/2011	03/01/2023	7,000	13600	Patapsco Formation			
PG2011G001(02)	University Of Maryland College Park	06/01/2013	05/01/2025	5,100	6000	Quaternary System Sediments			
PG2012G002(01)	Howard Robson Inc.	05/01/2012	05/01/2015	9,900	50000	Artificial Fill			
PG2013G001(02)	Washington Suburban Sanitary Commission	05/03/2016	04/30/2028	9,500	10500	Quaternary System Sediments			
PG2013G005(02)	C S Hawthorne, LLC	10/02/2014	09/30/2026	7,800	95000	Alluvium			
PG2014G001(02)	Alliance Energy LLC	05/15/2017	04/30/2020	7,800	16600	Lower Patapsco Aquifer	PG951867; PG-10-0071; PG-10-0069		

Prince George's County  
Water Withdrawal Permits (2017)

Permit Number	Permittee Name	Effective Date of Permit	Expiration Date of Permit	Allocation (Avg GPD)	Allocation (MMU GPD)	Aquifer Name	Well Tag Number	Stream Name	USGS Topo Map
PG2014G002(01)	Keys Energy Center LLC	03/02/2015	02/28/2027	145,000	500000	Upland Deposits			
PG2014G006(01)	Mattawoman Energy, LLC	12/21/2015	11/30/2027	60,000	275000	Upland Deposits			Brandywine
PG2015G002(01)	Mattawoman Energy, LLC	03/04/2016	02/25/2017	12,000	90000	Upland Deposits			
PG2017G001(01)	Mattawoman Energy, LLC	04/18/2017	03/31/2020	80,000	493000	Upland Deposits			
PG2017G004(01)	Purple Line Transit Contractors (PLTC)	10/06/2017	09/30/2029	10,100	30250	Quaternary System Sediments			Washington East

**2018 WATER AND SEWER PLAN**

***APPENDIX 3-3***

***WATER LOSS REDUCTION PLAN (FY 2017)  
WASHINGTON SUBURBAN SANITARY COMMISSION***

**2018 WATER AND SEWER PLAN**

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WASHINGTON SUBURBAN SANITARY COMMISSION (WSSC)

WATER LOSS REDUCTION PLAN – FY2017

JUNE 2018

In accordance with the Maryland Water Conservation Act, the Washington Suburban Sanitary Commission (WSSC) conducts annual water system audits to calculate the unaccounted-for water losses in the system. The results of the Water Audit conducted for Fiscal Year 2017 (FY2017: July 2016 through June 2017) indicate that the unaccounted-for water losses were 15.7% of total system production. As part of the Water Appropriations Permit renewal process, the Maryland Department of the Environment (MDE) is requiring that utilities prepare a Water Loss Reduction Plan if the annual water system audit determines that the unaccounted-for water losses are greater than 10%. To meet these requirements, WSSC has prepared this update to the latest Water Loss Reduction Plan.

**Background**

As requested by MDE’s Water Supply Program staff in a meeting on December 1, 2016, WSSC is submitting a condensed report of the Water Loss Reduction Plan. This report will focus on details and statistics of active programs and measures relating to Water Loss. Water Loss Reduction Plans submitted by WSSC in FY2015 and previous years can serve as a detailed description of the various Water Loss Control measures that WSSC has implemented in its system.

**Top-Down Water Supply Auditing**

Since 2008, WSSC has been consistently conducting comprehensive water audits. Water audits occur on a fiscal year basis, from July to June, for the sake of uniformity with other reporting practices within WSSC. Since 2010, the percentage of lost water in WSSC’s system has varied from 15.7% to 20.9%. The percentage lost water for the last five years is detailed in Table 1.

**Table 1: Percentage of Lost Water, FY 2013 - 2017**

Year	Percentage Lost Water
FY 2013	17.1 %
FY 2014	15.7 %
FY 2015	17.9 %
FY 2016	20.9 %
FY 2017	15.7 %

The most recent comprehensive audit was performed for the time period of July 1, 2016, through June 30, 2017 (FY2017). This audit was completed using AWWA's Water Loss Control Committee Free Water Audit Software (version 4.0). The AWWA Water Audit Software Reporting Worksheet for the FY2017 water audit is shown in Figure 1. The Reporting Worksheet provides a summary of the various components of total system losses and calculates the total non-revenue water as a percentage of the total volume supplied

**AWWA WLCC Free Water Audit Software: Reporting Worksheet**  
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[Back to](#)

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**Old Invoices definition**      **Water Audit Report for:** Washington Suburban Sanitary Commission (MS9C)  
**Reporting Year:** 2017      7/2014 - 6/3017

Please enter data in the white cells below. Where available, measured values should be used; finalized values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades.

**All volumes to be entered as: MILLION GALLONS (US) PER YEAR**

---

**WATER SUPPLIED**      \*\* Enter grading in column 'G'

Volume from own sources:	<input type="text" value="10"/>	<input type="text" value="59,576,342"/>	Million gallons (MG)/yr (MG/yr)
Water meter error adjustment (enter positive values):	<input type="text" value="10"/>	<input type="text" value=""/>	MG/yr
Water imported:	<input type="text" value="0/0"/>	<input type="text" value=""/>	MG/yr
Water exported:	<input type="text" value="0"/>	<input type="text" value="3,454,114"/>	MG/yr
<b>WATER SUPPLIED:</b>		<b>57,632,224</b>	MG/yr

---

**AUTHORIZED CONSUMPTION**

Billed meters:	<input type="text" value="0"/>	<input type="text" value="47,510,130"/>	MG/yr
Billed unmetered:	<input type="text" value="0"/>	<input type="text" value=""/>	MG/yr
Unbilled unmetered:	<input type="text" value="0"/>	<input type="text" value="390,601"/>	MG/yr
Unbilled unmetered:	<input type="text" value="0"/>	<input type="text" value="720,903"/>	MG/yr
<b>AUTHORIZED CONSUMPTION:</b>		<b>48,631,637</b>	MG/yr

Default option selected for Unbilled unmetered - A grading of 5 is applied but not displayed

---

**WATER LOSSES (Water Supplied - Authorized Consumption)**      **9,033,293** MG/yr

**Apparent Losses**

Unauthorized consumption:	<input type="text" value="0"/>	<input type="text" value="144,181"/>	MG/yr
Customer metering inaccuracies:	<input type="text" value="0"/>	<input type="text" value="2,671,106"/>	MG/yr
Systematic data handling errors:	<input type="text" value="0"/>	<input type="text" value="110,790"/>	MG/yr
<b>Apparent Losses:</b>		<b>2,934,087</b>	MG/yr

Default option selected for Unauthorized consumption - A grading of 5 is applied but not displayed

---

**Real Losses**

<b>Real Losses = Water Losses - Apparent Losses:</b>		<b>6,099,206</b>	MG/yr
<b>WATER LOSSES:</b>		<b>9,033,293</b>	MG/yr

---

**NON-REVENUE WATER**      **10,153,086** MG/yr

= Total Water Loss + Billed Released + Billed Unmetered

---

**SYSTEM DATA**

Length of mains:	<input type="text" value="0"/>	<input type="text" value="5,657,0"/>	feet
Number of active AND inactive service connections:	<input type="text" value="0"/>	<input type="text" value="403,530"/>	connections
Connection density:	<input type="text" value="0"/>	<input type="text" value="0.071"/>	connections/1000 ft
Average length of customer service lines:	<input type="text" value="0"/>	<input type="text" value="73.7"/>	feet
Average operating pressure:	<input type="text" value="0"/>	<input type="text" value="70.2"/>	psi

---

**COST DATA**

Total annual cost of operating water system:	<input type="text" value="0"/>	<input type="text" value="2293,502,000"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="text" value="0"/>	<input type="text" value="25.48"/>	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	<input type="text" value="0"/>	<input type="text" value="2742.40"/>	\$/Million gallons

---

**PERFORMANCE INDICATORS**

**Financial Indicators**

Non-revenue water as percent by volume of Water Supplied:	<input type="text" value="0"/>	<input type="text" value="17.44"/>	%
Non-revenue water as percent by cost of operating system:	<input type="text" value="0"/>	<input type="text" value="0.13"/>	%
Annual cost of Apparent Losses:	<input type="text" value="0"/>	<input type="text" value="216,078,784"/>	\$/Year
Annual cost of Real Losses:	<input type="text" value="0"/>	<input type="text" value="21,600,416"/>	\$/Year

**Operational Efficiency Indicators**

Apparent Losses per service connection per day:	<input type="text" value="0"/>	<input type="text" value="14.42"/>	gallons/connection/day
Real Losses per service connection per day:	<input type="text" value="0"/>	<input type="text" value="34.56"/>	gallons/connection/day
Real Losses per length of main per day:	<input type="text" value="0"/>	<input type="text" value="0.071"/>	MG/1000 ft
Real Losses per service connection per day per psi pressure:	<input type="text" value="0"/>	<input type="text" value="0.48"/>	gallons/connection/day/psi
Unavoidable Annual Real Losses (UARL):	<input type="text" value="0"/>	<input type="text" value="4,230,77"/>	million gallons/year
Infrastructure Leakage Index (ILI) (Real Losses/UARL):	<input type="text" value="0"/>	<input type="text" value="1.45"/>	

\* only the most applicable of these two indicators will be calculated

---

**WATER AUDIT DATA VALIDITY SCORE:**

**\*\*\* YOUR SCORE IS: 84 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score.

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

1. Unauthorized consumption
2. Systematic data handling errors
3. Customer metering inaccuracies

[For more information, click here to see the Grading Matrix worksheet](#)

Figure 1: AWWA Water Audit Software Reporting Worksheet

A summary of the results from the FY2017 water audit is shown in Table 2.

**Table 2: Summary of the FY2017 Water Audit**

<b>Water Audit Result</b>	<b>Quantity</b>	<b>Unit</b>
Volume of Water From Own Sources (Raw Data)	59,518	MG/Yr.
Adjustments to Water From Own Sources	7	MG/Yr.
Adjusted Volume of Water From Own Sources	59,526	MG/Yr.
Water Exported	1,854	MG/Yr.
Water Supplied	57,672	MG/Yr.
Billed Metered Consumption	47,519	MG/Yr.
Billed Unmetered Consumption	0	MG/Yr.
Unbilled Metered Consumption	399	MG/Yr.
Unbilled Unmetered Consumption	721	MG/Yr.
Apparent Water Losses	2,934	MG/Yr.
Real Water Losses	6,099	MG/Yr.
Net Lost or Unmeasured Water	9,033	MG/Yr.
Percentage of Lost or Unmeasured Water (Net Lost or Unmeasured Water/Water Produced)	15.7	%

This report seeks to document some of the potential sources of water loss in WSSC's system and to highlight recent efforts that WSSC has undertaken to reduce water loss.

### **Financial Indicators**

One of the most important means of categorizing water loss is by cost. While the volume of apparent losses (2.9 BG) for FY2017 is less than the volume of real losses (6.1 BG), the cost of lost water due to apparent losses is more than ten times the cost of lost water due to real losses. Lost water categorized as apparent losses includes all types of inaccuracies associated with customer metering, data handling errors, and unauthorized consumption. The cost of apparent losses is tied to the current water rates since the associated revenue is not captured from these losses. The volume of lost water due to system leakage is categorized as real losses. The cost of real losses is tied to the cost of water production since this loss occurs within the transmission and distribution system prior to the point of customer use.

The total cost of lost water for FY2017 in the WSSC system is detailed in Table 3.

Table 3: Cost of Lost Water

Loss Category	Water Audit Result	Water Loss (MG)	Cost of Lost Water
Apparent Losses <sup>1</sup>		2,934	\$ 16.1 M
	Unauthorized Consumption	144	\$ 0.8 M
	Customer Metering Inaccuracies	2,671	\$ 14.6 M
	Data Handling Errors	119	\$ 0.7 M
Real Losses <sup>2</sup>	System Leakage	6,099	\$ 1.6 M

1. Cost of Apparent Losses based on Retail Cost

2. Cost of Real Losses based on Production Cost

This analysis of the cost of lost water is important because it can assist in the evaluation of potential methods to reduce water loss and can help prioritize a utility's focus on water loss reduction initiatives.

### Meter Accuracy and Replacement

The WSSC system contains over 440,000 small residential meters and between 12,000 and 13,000 large commercial meters. From the FY2017 Water Audit, approximately 2.9 billion gallons (BG) of the water loss in WSSC's system can be attributed to apparent water losses. Of these apparent losses, the majority can be attributed to customer metering inaccuracies, estimated at 2.7 BG.

WSSC has a permanent state-of-the-art meter testing facility at the Anacostia Depot Meter Shop. This facility utilizes gravimetric technology and is capable of testing small meters and large meters up to 6 inches. WSSC performs meter testing in accordance with the standard procedures outlined in the *AWWA Manual M6, Water Meters – Selection, Installation, Testing, and Maintenance*.

WSSC conducts meter testing in the following situations:

- WSSC selects a random sample (5 percent of residential meters and 10 percent of commercial meters) of all new meter shipments. These meters are inspected and tested to verify that they meet WSSC's accuracy requirements.
- WSSC only installs manufacturers' meter models that have been thoroughly evaluated, tested, and approved. A manufacturer can request that WSSC test their model for inclusion in the list of approved meters. These meters are tested at the depot for accuracy and also in the field for ease of meter installation and meter reading.
- WSSC's Customer Service Team requests meter testing for a variety of reasons based on consumption anomalies for individual customer accounts. These anomalies include consumption that is significantly higher or lower than typical or meter registration or zero consumption. Meter testing is also requested by Customer Service to resolve billing disputes.

- WSSC customers can request a "witness test" of the meter installed on their service line if they dispute the consumption shown on their bill.
- The production meters at the Potomac and Patuxent Water Treatment Plants are tested on a semi-annual or annual basis.
- The interconnection meters are tested at least annually.
- Large commercial meters are tested twice a year.

WSSC plans to continue to utilize the results from the Meter Testing Program to update the approach to a Long-Term Change-Out Program of existing meters. Currently, WSSC's policy is to replace small meters after 30 years of service. As volumes of water pass through meters, their components wear and lose accuracy. In an effort to improve the accuracy of the large number of existing small meters in the WSSC system, WSSC has considered the implementation of a program to test the accuracy of existing small meters in the system.

The *AWWA Manual M36* suggests the implementation of a complete Automatic Meter Reading or Advanced Metering Infrastructure (AMR/AMI) system as one method of reducing apparent losses resulting from meter reading errors. WSSC has already completed a strategic implementation of AMR on the Commission's large volume, high revenue customer accounts that have their meters read monthly. WSSC is currently conducting a strategic sourcing project to examine the system options available for an AMI system, and to determine the best-suited system to support the Commission's infrastructure. This effort is happening in conjunction with the implementation of a new billing system. Due to the large amount of data generated by an AMI system, WSSC is implementing a new billing system in preparation for a new AMI metering system.

### **Customer Billing**

In an effort to provide improved customer service to its ratepayers and stakeholders, WSSC is working to update its billing system. WSSC will replace the existing Customer Service Information System (CSIS) billing system with a new Customer Care and Billing System (CC&B). One of the goals of the CC&B is to provide the framework for the implementation of a new AMI metering system. Currently, the CC&B System is scheduled for implementation by July 2019.

As part of the CC&B, WSSC is also investigating monthly billing. WSSC currently utilizes quarterly billing for most residential customers. Monthly billing may reduce apparent water losses.

WSSC has renewed its commitment to customer relations with the development of the Customer Relations Team. In FY2017, the Customer Service Team developed a new Billing and Revenue Protection Division to focus on such billing issues. Progress has been made to reconcile unbilled accounts, and the outstanding number of such accounts has and continues to decline significantly. The new billing system is projected to be operational in FY2019 and subsequently, the roll-out of the AMI may take up to an

additional five years. It will then take several years to evaluate the effectiveness of this program with respect to apparent losses; however, based on similar programs with other utilities, WSSC believes these initiatives will further reduce the apparent losses in the system.

### **Assessment of Unauthorized Consumption**

Unauthorized consumption of water from a system, including theft or illegal use of water, is categorized as apparent losses. For FY2017, Unauthorized Consumption was estimated at 144 MG. Because this volume is difficult to quantify, many utilities (including WSSC) estimate the amount of Unauthorized Consumption as a percentage of water supplied.

The WSSC Police and Homeland Security Services Division is responsible for investigating theft of service cases. In addition to increasing the Police and Security staff, in June 2016 WSSC launched a Theft of Service program to reduce the incidents of theft from the WSSC water system. The Program seeks to recover expired meters as well as identify theft from WSSC hydrants. In 2017, 62 inquiries for theft of service were submitted to the Police and Security staff. The inquiries resulted in eight citations issued for theft of service.

### **Leak Detection and Repair**

WSSC has three individual programs that collectively provide a comprehensive approach to leak detection in our water system. All three programs are run through the Commission's Utility Services Department, with support from the Engineering and Construction Department. The following programs are responsible for leak detection at WSSC:

- Leak Detection Crews – WSSC currently has three fully operational, in-house, 2-person leak detection crews that conduct leak surveys for approximately seven months each year. In FY2017, the Leak Detection Crews conducted leak surveys on over 300 miles of pipeline in the WSSC system. Leak detection capabilities are limited to the warm weather months since the crews must be available to address the increase in water main breaks during the winter season.
- Water Main Condition Assessment (Ferrous Pipes) – Leak detection conducted through an outside contractor continues to occur by the Water/Wastewater Assessment Division of the Utility Services Department.
- PCCP Management Program – WSSC also performs comprehensive leak detection and leak repairs on all Pre-stressed Concrete Cylinder Pipe (PCCP) water transmission 36" and larger as part of the WSSC PCCP Management Program. Overall, 170.8 miles of PCCP pipe has been inspected as of the end of FY2017. In FY2017, WSSC inspected 27.2 miles of PCCP pipe utilizing

Smartball® and Sahara® technologies, as well as visual / sounding and electromagnetic inspections. As a result of these inspections, nine leaks were found, with an estimated leakage rate of 29 gpm total.

### Leak Detection Pilot Programs

WSSC recently initiated an Innovation and Research Team under the Engineering and Environmental Services Division to research emerging technologies and innovative construction methods. This team also studies best practices in the industry to improve the way WSSC engineers its existing and future assets. In FY2017, the Division began the following several pilot programs relating to leak detection:

- Echologics – WSSC has initiated two pilots with Echologics, one for distribution mains (Echoshore-DX) and one for transmission mains (Echoshore-TX).
  - Echoshore-DX is a permanent leak detection system for water mains which leverages integrated communication capability over a private radio network. The pilot involves the installation of approximately 100 sensors on selected hydrants over one square mile of the system or approximately 11 miles of pipe. Sensors were installed in December 2017, and the pilot will last one year.
  - Echologics-TX is an acoustic monitoring system for large diameter transmission mains. The TX system utilizes hydrophones connected to the water column in order to capture the sound profile of the system and the nodes transmit the data to servers each night. The servers flag any potential leaks and prompt leak specialists to analyze the files. File analysis will provide indications of leaks or other anomalies in the transmission main. The Echologics-TX system is installed on a portion of 96-inch PCCP transmission main in the WSSC water system.
  
- 540 Technologies (previously Fluid Conservation) – WSSC initiated a pilot program with 540 Technologies in May 2018 to install 20 acoustic sensors in the same neighborhood as the Echoshore-DX pilot. These 20 sensors have been moved to a second location for the month of June 2018 in order to continue testing and to evaluate ease of relocation.
  
- Syrinix – The SYRINIX PipeMinder T transmission main monitoring service provides permanent monitoring of pressurized water supply pipelines including real-time pressure and flow reporting, early stage leak detection and locating, and real-time major burst detection. Using a fusion of sensors, including a hydrophone in direct contact with the water and a geophone in contact with the pipeline itself, the high resolution monitoring and analysis service provided by PipeMinder T allows users to manage pipeline assets, and the risks related to those assets, on an active and informed basis. WSSC is conducting a yearlong pilot of the Syrinix system along the same section of 96-inch PCCP transmission main evaluated by the Echologics-TX system.

- UTILIS – UTILIS uses spectral aerial imaging, taken from satellite-mounted sensors, to spot leakage in subterranean drinking water networks. Drinking water is detected by looking for the particular spectral signatures typical to drinking water. Eventually, the user is presented with a graphical leaks report overlaid on a map with streets, pipes and leak probability information. WSSC piloted Utilis in 2017 with poor results. Utilis performed a second flyover in 2018 covering an area of approximately 460 miles of main and service lines. Preliminary results are much better than those from 2017. The 2017 pilot was in the same area as the Echologics- DX pilot, while the 2018 pilot is in the same area as the 540 pilot.

WSSC is in the initial stages of development for the leak detection pilot programs. WSSC is also collaborating with DC Water and Howard County on their leak detection pilots. Findings and recommendations from the pilot programs will be incorporated into future Water Loss Reduction Plans.

In addition to the leak detection pilot programs, the Innovation and Engineering Research Team has also coordinated with NO-DES, Inc. in 2016 to purchase a NO-DES (Neutral Output - Discharge Elimination System) system as a pilot program. The NO-DES system is utilized for flushing and cleaning water mains 12 inches in diameter or smaller. The NO-DES system is able to flush and clean water mains with minimal water loss by utilizing a closed loop for flushing, achieved by filtering and cleaning the water before returning it to the main. The NO-DES system was evaluated in 2016 and the results were presented to the Innovation and Research Council who subsequently approved the acquisition of the NO-DES equipment, contingent upon programmatic funding in the Utility Services budget.

### **Infrastructure Rehabilitation and Renewal**

The WSSC water system is comprised of over 5,700 miles of pipe, ranging in size up to 96 inches in diameter. Portions of the system are over 100 years old with the majority pipe in the system installed prior to 1980. The average age of pipes in the system is almost 50 years old.

As the water system ages, breaks and leaks are a significant concern and contribute to the amount of real water losses. For FY2017, real losses were estimated at 6.1 BG. Correspondingly, for FY2017, WSSC's water system experienced 1,625 breaks and leaks. The number of breaks and leaks in the system fluctuates depending on a variety of factors (temperature, age of pipe, freezing and thawing, precipitation, etc.). Table 4 provides a summary of the breaks and leaks in the WSSC water system over the last eight years. As shown, it is difficult to correlate breaks with real loss values.

Table 4: Breaks and Leaks per 100 miles of Water Mains

Fiscal Year	Breaks & Leaks	Mileage	Breaks & Leaks / 100 miles
2017	1,625	5,768	28
2016	1,607	5,647	28
2015	2,191	5,657	39
2014	2,055	5,620	37
2013	1,812	5,605	32
2012	1,454	5,550	26
2011	2,020	5,525	37
2010	1,852	5,500	34

WSSC maintains several programs under various divisions within the Commission that are focused on water system infrastructure rehabilitation and renewal. By systematically rehabilitating and renewing existing pipelines in the system, WSSC hopes to experience a reduction in water loss in the system as a whole.

- Water Main Reconstruction Program – The Engineering & Construction Department’s Pipeline Design Division manages the Water Main Reconstruction (WMR) Program, which began in 2001. Water mains are prioritized for replacement using a combination of desktop condition assessment modeling. The list of prioritized water main replacement areas is assembled into individual projects for construction by either WSSC crews or external contractors. Since 2010, the WMR Program has replaced approximately 440 miles of distribution water mains and 29 miles of transmission water mains. In FY2017, the WMR Program replaced 69.2 miles of distribution water mains and 28.6 miles of transmission water mains. A summary of the pipe replacements by year are provided in Tables 5 and 6.

Table 5: Water Distribution Pipe (<16” diameter) Replaced

Fiscal Year	Miles Replaced (Planned) <sup>1</sup>	Miles Replaced (Actual)
2017	55	69.2
2016	55	56.7
2015	55	60.2
2014	51	59.5
2013	46	51.8
2012	41	59.8
2011	36.5	44.3
2010	31	38.1
<b>TOTAL</b>		<b>439.6</b>

1. Replacement distances represent the combined miles replaced through the WMR and SEU Programs.

Table 6: Water Transmission Pipe (16" & larger diameter) Replaced

Fiscal Year	Miles Replaced (Planned) <sup>1</sup>	Miles Replaced (Actual)
2017	4	9.7
2016	4	2.3
2015	4	6.0
2014	3	2.2
2013	2	3.1
2012	2	3.9
2011	2	1.4
2010	—	—
<b>TOTAL</b>		<b>28.6</b>

1. Replacement distances represent the combined miles replaced through the WMR Program.

- System Enhancement Unit – The System Enhancement Unit (SEU) has crews dedicated to in-house water main replacements for the water distribution system. During the winter months, when water main break frequency increases, these crews also support the Depot Maintenance Unit crews for water main repairs. SEU has a goal of 12 miles per year of replacement mains. These replacement values are included in the replacement totals in Table 5.
- PCCP Inspection Program – The Utility Services Department’s Water/Wastewater Systems Assessment Division manages WSSC’s Large Diameter PCCP Inspection Program. If leaks or deteriorated pipes are detected during inspection, the necessary repairs or replacements are performed prior to placing the main back in service.
- Asset Management and Condition Assessment – The Water/Wastewater Systems Assessment Division manages the inspections of buried water mains and corresponding condition results. Based on this information, the Water Condition Assessment Section makes recommendations for repairs, rehabilitation, or replacements. The Asset Strategy Manager works closely with the Water/Wastewater Systems Assessment Division to establish the existing condition and associated risks of the assets. Using decision support software, the Asset Strategy Manager projects the near and long term capital and O&M efforts needed to sustain the health of the infrastructure. The result of this effort is a prioritized list of replacement or rehabilitation needs.

Recently, WSSC’s Planning Division added a new position to conduct the preliminary planning associated with the replacement and rehabilitation of PCCP mains. Priorities for replacement are based on condition assessment efforts from the PCCP Inspection Program, and are determined by the Asset Strategy Manager. The new position will help to streamline the preliminary design process for PCCP pipes in need of repair or replacement.

## Water Loss Reduction Roadmap

WSSC is also working to reduce water loss through a multi-year Water Loss Reduction Roadmap exercise. As part of the exercise, WSSC will be assessing water loss methods in further detail, identifying data gaps, and developing data gathering tools to better quantify losses. WSSC is gathering additional data on metering inaccuracies, meter right-sizing, meter replacement and unauthorized consumption to better quantify apparent losses. A cost benefit analysis will be conducted to better identify which methods to pursue. WSSC is also working with field crews to better quantify real losses by gathering volume estimates from breaks and leaks. This will be a program of continuous improvement as data sources improve. Findings and recommendations from the Roadmap will be incorporated into future Water Loss Reduction Plans.

## Conclusion

This FY2017 Water Loss Reduction Plan demonstrates that WSSC is taking a pro-active approach to reduce its water system losses. These efforts will take many years to compile the data to better quantify the sources of water loss and then several more years to implement the programs designed to target the identified losses. It will only be after this work is completed that measurable results could be experienced. WSSC will continue to calculate the percent water loss in its annual water audits, but will also evaluate other water loss metrics that may be more representative and useful for benchmarking purposes in accordance with AWWA research and industry practices.

**2018 WATER AND SEWER PLAN**

***APPENDIX 3-4***

***WATER CONSERVATION PLAN (2010)  
WASHINGTON SUBURBAN SANITARY COMMISSION***

**2018 WATER AND SEWER PLAN**

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**Washington Suburban  
Sanitary Commission**

# **Water Conservation Plan**

## **Acknowledgements**

### **Maryland Department of Environment (MDE)**

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John Grace

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# Water Conservation Plan

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## 1 Introduction

The Washington Suburban Sanitary Commission (WSSC or the Commission) serves nearly 1.8 million residents through approximately 460,000 connections in Prince George's and Montgomery counties. The total service area covers about 1,000 square miles. The Commission operates and maintains two water filtration plants and more than 5,500 miles of fresh water pipeline. The Patuxent and the Potomac filtration plants produce an average of 167 million gallons per day (MGD) of safe drinking water. In its 90-plus year history, WSSC drinking water has always met or exceeded federal standards.

As one of the largest water and wastewater utilities in the nation, WSSC recognizes the importance of being prudent stewards of the regional water resources. The mission of WSSC is to provide safe and reliable water and return clean water to the environment, all in an ethically and financially responsible manner. WSSC accomplishes this mission by adopting values and strategies that ensure efficient water resource management. This includes activities that promote water conservation and increase water use efficiency.

Maryland Department of the Environment (MDE) requires the WSSC 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 Appropriations permit.

WSSC employs sound water resource management, which emphasizes careful, efficient use of water to achieve the water conservation objectives.

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.

## 2 Goals

WSSC water conservation goals are 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.

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 environmental resources
- Promoting environmental stewardship and sustainability

WSSC will continue to work with various stakeholders in developing and implementing these goals.

## 3 Water Audit

A Water Audit quantifies consumption and losses that occur in the distribution system and the management processes of the water utility. WSSC will seek guidance from the following sources in completing its annual Water Audit:

1. Water Audits and Loss Control Programs (AWWA Manual M36, Third Edition)
2. Developing and Implementing a Water Conservation Plan (*MDE's Guidance for Maryland Public Water Systems on Best Management Practices for Improving Water Conservation and Water Use Efficiency*)
  - a. Appendix A-1 – MDE Water Audit Guidelines
  - b. Appendix A-2 – Water Audit Instructions and Worksheet
  - c. Appendix A-3 – Annual Water Audit Summary

WSSC's Water Audit will be submitted annually to MDE by December 31<sup>st</sup> for the prior fiscal year (July 1 to June 30).



## 4 Water Demand

### 4.1 Water Production Forecast

WSSC's average water production is expected to increase by approximately 1% per year reaching approximately 224 million gallons per day (mgd) in the year 2030. WSSC provides most of the water to Montgomery County, Prince George's County and a small amount to other jurisdictions in Maryland.

The WSSC *Water Production Projections Report* approved in 2006 (See **Appendix A**), provides the latest water production projections. The report indicates that per (household) unit water production has remained flat over the past 5 years after significant decreases during the preceding 15 years. If per unit production continues to hold steady, total production will continue to increase as new units are added. According to this report WSSC serves 90% of the Montgomery County population, 95% of the Prince George's County population and a total of 93% of the bi-county population.

Water supply to other jurisdictions (wholesale) recently increased due to supply interruptions from alternate sources. Similar potential requests for additional supplies present possibilities for additional future increases in WSSC production requirements.

A summary of the water production projections in million gallons by WSSC customer groups based on population growth for 5, 10 and 20 years into the future are provided in Table 4.1.1.

**Table 4.1.1 - Projected Average Water Production in Million Gallons per day (MGD)**

Customer Group	2005	2010	2015	2020	2025	2030
Montgomery County	93	99	104	109	113	118
Prince George's County	80	84	88	92	97	103
Wholesale	2	4	4	4	4	4
<b>System Totals</b>	<b>175</b>	<b>187</b>	<b>196</b>	<b>205</b>	<b>214</b>	<b>224</b>

### 4.2 Water Users Demand Forecast

WSSC water end user groups are divided into four primary sectors; single family, multi-family, employees, and other jurisdictions (wholesale). Table 4.2.1 below shows estimated water demand in million gallons for each group in 5 year increments. The table is based on forecasted unit growth provided by the Metropolitan Washington Council of Governments (COG) and the Maryland National Capital Park and Planning Commission (M-NCP&PC) in the Round 7.0 Cooperative Growth Forecast.

**Table 4.2.1- Total Water Demand per Unit Served in MGD**

Year	Single Family	Multi Family	Employees	Wholesale	Production Totals
2005	90	39	44	2	175
2010	93	43	47	4	187
2015	95	46	51	4	196
2020	97	49	54	4	205
2025	99	53	58	4	214
<b>2030</b>	<b>102</b>	<b>57</b>	<b>61</b>	<b>4</b>	<b>224</b>

The forecasted production numbers account for all known and planned changes to water demand until 2030.



## 5 Water Conservation Measures

WSSC has a wide variety of water conservation initiatives that apply to the water facilities and system-wide infrastructure, consumer regulations and pricing. As one of the largest water utilities in the nation, WSSC employs prudent water utility management practices to monitor the system and reduce water loss that ultimately affects the financial bottom line of the Commission.

These practices include a system wide metering system, conservation incentive pricing and a range of public outreach programs. Water conservation measures of the Commission are described in the sections below.

### 5.1 Water Metering

#### 5.1.1 Metering Method

WSSC meters all of its customers including wholesales customers. WSSC meters are classified based on two sizes; small meters and large meters. Small meters are typically for residential users, and large meters are for wholesale, commercial and industrial users.

WSSC has over 440,000 small meters and between 12,000 to 13,000 large meters. The Commission adds several thousand new metered services each year and may replace tens of thousands of meters a year.

WSSC has a dedicated force of approximately 50 employees who service and maintain meters, and over 250 people who are trained and capable of replacing meters in the system.

#### 5.1.2 Meter Maintenance

WSSC has a well established program to test, calibrate and repair meters in the system. This program helps to:

- collect and analyze losses and water usage
- reduce estimated billings for large revenue customers,
- provide proper registration to provide equity in customer billings,
- reduce breakdown maintenance,
- Increase revenue since most improperly registering and/or estimated meters under register, and
- Increase integrity in the system.

The major manufacturers of large meters in WSSC's system are Badger, Hersey, Trident/Schlumberger/Neptune and Rockwell/ Invensys/ Sensus.

The WSSC preventive maintenance program allows for efficient service to the customers and reduction of water loss in the system.

#### 5.1.3 Meter Replacement

The WSSC meter replacement program is based on the meter size and a schedule that allows for efficiency of service. Large meters are replaced or repaired/ serviced in place based on the schedule below.

- All 1-1/2" and all 2" positive displacement meters = 10 years
- All 2" DC meters = 20 years
- All DC meters larger than 2" = 10 years
- All other Large Meters not noted above receive preventive maintenance based on the Daily Average Consumption (DAC)
  - 0 - 19,999 = 4 years
  - 20,000 - 89,999 = 2 years
  - 90,000 and above = 0.5 years (6 months)

Note: DAC represents the daily average consumption of water. This is a historical average across a number of billing periods as opposed to a one billing period average, known as the average daily consumption (ADC). The DAC normalizes some of the fluctuations in a single period usage.



WSSC replaces all small meters on a 30 year schedule. This policy came out of a study done in 2004 by the University of Maryland and is commonly referred to as the Optimum Meter Age Study.

WSSC periodically studies small residential meter performance. The Commission understands that continued periodic evaluation of residential meter performance is essential to ensuring that water losses are kept to a minimum while concurrently providing guidance towards the timely implementation of new technologies.

#### **5.1.4 Meter Sizing**

As recently as 2002, WSSC revisited the issue of "Right Sizing of our Large Meters". It was called a Large Meter Downsizing Project and was done in conjunction with the initial Automatic Meter Reading (AMR) pilot project to determine if rightsizing the meters would result in increased registration and revenues. Small samples (162) of the 13,000 plus large meters were examined and resulted in downsizing of 154 meters. Only two low-pressure complaints were received from customers, both of them on shopping centers, and those two meters were restored to their original size to ensure seamless customer service. The other 152 meters remain in a resized configuration to date.

While the effort was certainly worthwhile, the result was disappointing. The expected level of increased revenues did not materialize. However, a positive aspect that surfaced is a strong indication that the current preventive maintenance program is quite effective.

## **5.2 Water Accounting and Loss Control**

### **5.2.1 Loss Prevention Program**

As a requirement of the State Water Appropriation permit, if upon completion of the Water Audit the unaccounted for water loss is greater than 10%, WSSC will prepare a Water Loss Reduction Plan that will address areas in the system where unaccounted water losses exist.

### **5.2.2 System Monitoring**

WSSC has a robust monitoring system for the water production facilities. WSSC uses a Supervisory Control And Data Acquisition (SCADA) system to monitor the status of remote facilities through a microwave system of more than 2500 set points. The assimilated data is processed through software programmed for the Commission's water distribution system with all known constraints set to indicate if the system is being maintained within those constraints.

### **5.2.3 Storage Overflow Management**

To prevent storage overflows, all water storage facilities have level transmitters that are monitored continuously in SCADA. The Commission also installed moisture probes on all overflow pipes that will independently close the altitude valves to the water storage facilities and send an alarm to the SCADA system.

### **5.2.4 System Inspection and Maintenance**

WSSC operates an inspection and maintenance program to locate leaks in the water transmission and distribution mains so they can be repaired. One of the programs is the Prestressed Concrete Cylindrical Pipe (PCCP) Program Inspections/Leak detection that includes non-destructive testing and inspection of 12 to 18 miles of large diameter PCCP pipelines per year.

Inspections performed include visual/sounding inspections, electromagnetic surveying, sonic pulse echo surveying, acoustic monitoring, structural analysis (including nonlinear finite element analysis), and forensic analyses of PCCP pipe failures. After each inspection, consultants provide engineering analysis that includes the condition assessment of each pipe and pipeline, the degree of deterioration, the risk of failure, and reliability of each pipe and the pipeline. Based on that information, WSSC and consultants prioritize 1) pipes recommended for immediate repair/replacement prior to putting the pipeline back in service, and 2) pipes that may require replacement in the next 10 year time frame and prioritize them for surveillance under a long-term acoustic monitoring program.

### **5.2.5 Water Metering and Billing**

WSSC meter information is used for billing customers. WSSC customer bills are based on the total amount of water that passes through a meter since the last billing period.

The water rate on the bill depends upon the amount of water that a customer uses and is referred to as Average Daily Consumption or ADC. To calculate the ADC, divide the total gallons used by the number of days in the billing period. According to studies, an individual in our service area typically uses about 70 gallons of water per/day. If the amount of water someone used in a quarter varies dramatically from how much they used last year during the same season, we'll alert them in the message portion of the bill by including an ADC comparison between the current and past year's usage.

### **5.2.6 Leak Detection**

WSSC continues to develop the leak detection program that includes performing leak surveys of the transmission and distribution system to reduce unaccounted for water as well as pinpointing leaks for immediate repair.

WSSC's Utility Master Plan has recommended having a more robust leak detection program. This program would provide valuable information to the Commission that would likely assist in prioritizing major capital work such as pipeline replacement projects.

The current leak detection program includes a 2-person leak detection crew that surveys approximately 100 miles a year.

WSSC future plans are to have eight (8) people total and to have this activity coming out of all four Zones: North, West, Central, and South.

WSSC also has a "Leak Inspection Program for Customers" where the customers are offered a Property Inspection for leak detection at a cost. This inspection is to help residential customers locate leaks on toilets, faucets, and other indoor water fixtures.

### **5.2.7 Loss Prevention technology**

WSSC has taken a conservative, proactive approach for tracking deterioration of its large diameter PCCP pipelines. Since 2007, WSSC has utilized the latest technology, i.e. installing acoustic fiber optic cable (AFO) in all critical PCC Pipelines following inspection, to enable long term monitoring. To achieve this, all PCCP pipelines that are 48" or greater in diameter, are being set up with permanent AFO systems and will be monitored continuously. By 2013 AFO permanent monitoring will be installed in all PCCP pipes 48 inches and larger in diameter and some 42 inches diameter pipes.

### **5.2.8 Repair**

WSSC repairs all leaks based on priority and as they are found. Once a leak is located, the required repair information is entered into the WSSC work order system. The WSSC work order system can prioritize leaks and breaks so that the worst case scenarios get done immediately.

## **5.3 Infrastructure Renewal**

WSSC maintains approximately 5,500 miles of water mains and nearly 25% (about 1,380 miles) of the pipe is more than 50 years old. WSSC is faced with the critical challenge of old and failing infrastructure which has necessitated the need to embark on an aggressive Water Main Replacement Program. WSSC has developed a 30-year infrastructure plan that involves a Water Replacement Program to replace defective pipes in the system and to mitigate the frequency of water main breaks.

The WSSC water main replacement program supports the Commission's water conservation efforts by removing aging water mains that experience water loss through breaks and leaks. Since 2002, WSSC has significantly increased its water main replacement rate from approximately five miles per year to 35 miles per year. The Commission will steadily increase the rate of replacement so that as many as 60 miles are replaced each year.



## 5.4 Conservation Incentive Pricing

WSSC has established an increasing based rate schedule which is a strategy intended to encourage water conservation.

WSSC uses a "16 Step" increasing-rate structure as indicated in Table 5.4.1, whereby customers who use more water are charged at higher rates, and those who use less water are charged at lower rates. The rate is based on a sliding scale per 1,000 gallons of water used.

The current approved rates for Fiscal Year 2011 (July 1, 2010 to June 30, 2011) are as follows:

**Table 5.4.1 - WSSC Water/Sewer Rate Schedule Effective July 1, 2010**  
(Rates per 1000 Gallons)

Average Daily Consumption by Customer Unit During Billing Period (Gallons Per Day)	Water Consumption Rate	Sewer Consumption Rate	Combined Water & Sewer Rate
0 - 49	\$2.52	\$3.09	\$5.61
50 - 99	2.83	3.59	6.42
100 - 149	3.09	4.22	7.31
150 - 199	3.47	4.86	8.33
200 - 249	4.05	5.30	9.35
250 - 299	4.39	5.73	10.12
300 - 349	4.64	6.12	10.76
350 - 399	4.85	6.40	11.25
400 - 449	5.04	6.55	11.59
450 - 499	5.16	6.77	11.93
500 - 749	5.26	6.90	12.16
750 - 999	5.39	7.05	12.44
1,000 - 3,999	5.49	7.35	12.84
4,000 - 6,999	5.62	7.52	13.14
7,000 - 8,999	5.69	7.63	13.32
<b>9,000 - Greater</b>	<b>5.79</b>	<b>7.83</b>	<b>13.62</b>

Customers are billed based on their average daily consumption (in gallons) during the billing period. Most customers are billed on a quarterly basis. Customers who utilize large amounts of water are billed on a monthly basis.

As an example, a water and sewer customer who uses 14,400 gallons during a 90-day billing cycle would have an average daily consumption of 160 gallons per day. They would then be billed  $(14,400 / 1,000) \times \$8.33$  or \$119.95 for the billing period. A water and sewer customer who uses 240,000 gallons during a 30-day billing cycle would have an average daily consumption of 8,000 gallons per day. They would be billed  $(240,000 / 1,000) \times \$13.32$  or \$3,196.80 for the billing period.

Customers also pay an Account Maintenance Fee which varies based on meter size. The Account Maintenance Fee covers the fixed costs of servicing a customer account including such things as meter reading, billing and collecting.



## 5.5 Information and Education Program

WSSC has an information and water conservation education program that targets all customer groups, including residential, industrial, commercial and institutional. WSSC also lists water conservation practices in bill inserts to customers and in full detail on its website.

As a core partner of the Metropolitan Washington Council of Government (MWCOG) *Water Use it Wisely* (Conservation) campaign, WSSC has a history of working closely with the community to promote areas where water can be conserved and used efficiently.

### 5.5.1 Water Use Information

WSSC understands that when customers are aware of their daily water use, they are more likely to conserve. Therefore WSSC provides understandable and informative water bills to customers. On each bill, WSSC customers receive their average daily water consumption for the account. This allows the customers to find out what their daily water usage is for the household. Since WSSC shows water use in terms of average daily consumption per customer unit (home, apartment, building), this provides a price signal to the customer.

### 5.5.2 Education Program

WSSC provides information on water conservation through its participation in community events. Conservation tips are provided through brochures on water-wise landscaping as well as magnets that promote water conservation. WSSC also has a demonstration native plant garden in the parking lot of Brighton Dam which draws a large number of visitors to its recreation area and Azalea Garden. The demonstration garden has various elements that promote water conservation. There are several components of the WSSC water conservation education program:

**Water Conservation Outreach Events-** WSSC's outreach efforts on water conservation are focused on residential customers. These efforts include presenting information to students during "WSSC in the Classroom" presentations to over 50 schools each year, distribution of water conservation brochures and materials to residents at 50 events each year, sponsorship of our H2O Fest that draws 300-600 people to learn about environmental stewardship and water conservation, and the Children's Water Festival which teaches 600 4<sup>th</sup> graders each year about the importance of water and environmental stewardship.

WSSC also presents information upon request about water conservation to homeowner associations and citizens groups.

**Brochures and Newsletters-** WSSC provides a brochure called "Water Wise Landscaping" that is distributed at outreach events each year and is also sent to customers who request the brochure online.

**Promote Water Reuse and recycling -** WSSC website advises customers on water reuse practices including, reusing water and pool water for watering lawn and garden.

## 5.6 Pressure Management

WSSC employs a pressure management system that ensures the efficient use of water. WSSC requires pressure reducing valves at all service connections that experience pressures greater than 80 psi. Currently WSSC has established pressure limit policies for residential areas where the pressure at service connections must range between 40 psi and 130 psi. All pressure zone pressure reducing valves are inspected 8 to 10 times per year.



## 5.7 Water- Use Regulation

### 5.7.1 New Developments

WSSC regulates new development water use based on plumbing codes. WSSC currently uses the 2009 WSSC Plumbing and Fuel Gas Code (See **Appendix B**) which adopted the 2006 edition of the **International plumbing Code** and **International Residential Code**. The international codes set the maximum water flow rates and flush volumes for plumbing fixtures and fittings. WSSC incorporates these codes to specify the requirements for water conservation features in buildings and structures that are served by the Commission.

### 5.7.2 Water Use Reductions

WSSC has standard procedures (SP Number PRO 04-04) to regulate consumer water use during times of drought and other water supply emergencies. The standard procedures describe the various levels of water use restrictions for implementation based on the degree of emergency.

For drought conditions, WSSC standard procedures follow the programs prescribed in the "Metropolitan Washington Water Supply and Drought Awareness Response Plan" adopted by the COG on June 7, 2000. The procedures include guidelines for implementing voluntary and mandatory water restrictions to ensure water use reduction during drought.

**Voluntary Water Use Reductions:** The public and businesses are asked to take specific measures to conserve water on a voluntary basis. There are no penalties or sanctions for failure to follow such measures. However, the public and businesses will be informed that should conditions worsen, one or more of these measures could become mandatory and enforceable. Voluntary water use reductions would be triggered whenever WSSC is anticipated to be unable to meet 100% of expected demand, such as under the "Drought Warning (Orange)" level of the "Metropolitan Washington Water Supply and Drought Awareness Response Plan." Signs may be posted in public places with the notification of "voluntary water use reductions in effect" along with a list of measures.

**Mandatory Water Use Reductions-** The public and businesses are required to take specific measures to conserve water. Penalties and sanctions are identified for these measures and they are enforceable under local ordinances and/or state laws. Mandatory water use reductions would be triggered whenever WSSC is anticipated to be unable to meet 100% of expected demand, and voluntary reductions are insufficient to reduce demand to acceptable levels, such as under the "Drought Emergency (Red)" level of the "Metropolitan Washington Water Supply and Drought Awareness Response Plan." Signs may be posted in public places with the notification of "Mandatory water use reductions in effect" along with a list of measures.

For emergencies, WSSC standard procedures provide guidelines for implementation of temporary mandatory restrictions. Temporary mandatory water use restrictions are designed to reduce non-essential water uses and ensure continued water supply for all customers, fire protection, hospital/medical uses and other exigent needs. These mandatory restrictions are for a short duration. The WSSC General Manager has the authority to enact mandatory restrictions.

Specific water Use restrictions that are imposed on WSSC customers for a limited duration of time may include;

- Discontinue all outside water use, including watering lawns, irrigating and washing cars;
- Use water in doors only as necessary. Take short showers instead of baths, turn off water when brushing teeth, shaving or shampooing;
- Limit flushing toilets (do not flush after every use)
- Limit using washing machines and dishwashers (wash full loads only)

### **5.7.3 Enforcement**

**The Public Utilities Article, Annotated Code of Maryland**, (See **Appendix C**), authorizes WSSC to limit or regulate the use and supply of water service in any area within the WSSC service area. In accordance with §29-101 of the Public Utilities Article, Annotated Code of Maryland, a person who violates WSSC water use restrictions is guilty of a misdemeanor and, on conviction, is subject to a fine not exceeding \$1,000 or imprisonment not exceeding 30 days or both. The penalties for misuse of water during periods of emergency water use restrictions include a written warning for a first offense and, \$500 fine for a second offense.

In accordance with §28-201, the WSSC police force has responsibility for enforcing water use restrictions in cooperation with local and county police officers within the WSSC service area.

## **5.8 Integrated Resource Management**

Integrated resource management comes from the idea that water is often used jointly with other resources. WSSC understands that water conservation has a direct link to energy production and use. WSSC recognizes that it takes a lot of energy to treat and convey water, which is why WSSC implements operating practices that achieve energy and water savings.

## **5.9 Water Reuse and Recycling**

WSSC supports water reuse and recycling as a water conservation measure. In addition to the public outreach programs, WSSC participates in the Chesapeake Water Environment Association (CWEA) Water Reuse Committee, and is working with Maryland Department of the Environment (MDE) to develop new water reuse regulations. To date, MDE has taken a phased approach to implementation of water reuse. Phase 1 slightly modified the existing land treatment guidelines to create a new class III effluent (high quality WWTP effluent) for unrestricted public access reuse (to irrigate water highway strips, public golf courses, school fields, etc., in addition to farmlands). MDE's Phase 2 is focused on other uses of non-potable water, including commercial, industrial, watering residential lawns, and toilet flushing.

At present WSSC does not have any operating non-potable water systems, nor does it provide non-potable water to any other operating non-potable water systems; however, this may change in the future once the new regulations are implemented and if/when beneficial reuse opportunities arise. A key concern to be addressed prior to proceeding forward with any water reuse program will be ensuring the safety of any non-potable water system and also to prevent cross-contamination of potable water systems; formation of cross-organizational partnerships is recommended to adequately address this concern. At this stage, WSSC does not foresee approving use of non-potable water in private residences. MDE is using the new Virginia Water Reuse regulation as a baseline of their committee's efforts to develop more detailed guidelines for use of non-potable water. The new regulations will identify general requirements to ensure non-potable water quality and safety, adequate cross-connection prevention, and other offset requirements, but the cross-organizational partnership will be required to develop more specific requirements and practices prior to constructing, operating, and maintaining any non-potable water systems.

## 6 Near-Term Implementation Strategy

As documented in this plan, WSSC already takes a comprehensive approach to water conservation. The Commission will continue to improve these practices by employing sound water resource management, which emphasizes careful, efficient use of water. Some areas where the Commission will improve on its approach include:

**Water Audit-** WSSC will complete an annual water audit of the water distribution system.

**Water Accounting and Loss Prevention Plan** - WSSC will develop a water accounting and loss prevention plan if the amount of unaccounted water in the annual audit is greater than 10%.

**Information and Outreach-** WSSC will continue improving the content of the informational and outreach programs to customers.

**Water Reuse and Recycling** - WSSC will continue to participate in the committee to develop a water reuse and recycling program.

**Improve metering system** – WSSC will continue to study and improve the customer metering systems with the long-term goal of replacing all meters with Automatic Meter Reading (AMR) devices. Tracking residential meter performance will have a significant impact on the Commission's decision to implement AMR on a system-wide basis.

The system-wide implementation of a proven Automatic Meter Reading system has a number of potential advantages; the elimination of estimated readings and the related customer relation problems, reduction of customer call volumes, lower customer service costs, and increased customer satisfaction.

**Evaluate and Adopt New Technologies** - Meter technology is also continuing to evolve. There are now small meters on the market that do not utilize any moving parts. Known as "fluidic oscillators" these meters claim to be extremely accurate, AMR compatible, and have no moving parts to wear out. The American Water Works Association (AWWA) recently adopted a standard for this type of meter. As a water conservation measure, the Commission can consider a thorough evaluation of this and other technologies to determine if the meters prove viable.

**Pipes Inspection, Repair and Replacement** – After more than 90 years of being in existence the Commission is faced with old, aging pipes and valves. WSSC has taken a rigorous approach to fixing these issues. WSSC has developed a 30-year infrastructure plan to replace defective pipes. Working with officials from Prince George's and Montgomery counties, we are also developing a 10-year fiscal plan to finance the needed work. The Commission will continue its pipe inspection, repair and replacement program.

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**2018 WATER AND SEWER PLAN**

***APPENDIX 3-5***

***METROPOLITAN WASHINGTON WATER SUPPLY  
AND DROUGHT AWARENESS PLAN  
POTOMAC RIVER SYSTEM***

**2018 WATER AND SEWER PLAN**

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# Metropolitan Washington Water Supply and Drought Awareness

## Response Plan: Potomac River System

Adopted June 7, 2000

	Normal	Watch	Warning	Emergency
<b>Audience</b>	Wise Water Use Entire Metropolitan Washington Region	Voluntary Water Conservation Entire Metropolitan Washington Region	Voluntary Water Restrictions Customers of Co-op System, associated local governments, media	Mandatory Water Restrictions Customers of Co-op System, associated local governments, media
<b>Trigger</b>	<ul style="list-style-type: none"> <li>None – water supply adequate to meet all demands</li> </ul>	<ul style="list-style-type: none"> <li>NOAA “D1” drought level in Potomac River Basin (adopted on a <i>provisional 2-year basis and will be re-assessed during this time period</i>)</li> </ul>	<ul style="list-style-type: none"> <li>Combined water supply storage at Jennings Randolph and Little Seneca reservoirs drops to 60% of capacity for 5 consecutive days; lifted when combined water storage at reservoirs increases and remains above 60% for a period of 15 days; OR</li> <li>5% Probability of not meeting unrestricted water supply demands over next 1 – 2 months</li> </ul>	<ul style="list-style-type: none"> <li>50% probability of not being able to meet water supply demands over next month</li> </ul>
<b>Actions</b>	<ul style="list-style-type: none"> <li>Year round Water Conservation Program emphasizing “Wise Water Use” (Attachment B)</li> <li>Routine reporting                             <ul style="list-style-type: none"> <li>Annual briefing in May</li> <li>Monthly Water and Drought Outlooks (June-Oct.)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li>Regional media briefing/media communications;</li> <li><b>Announce voluntary water conservation recommendations</b></li> <li>Detailed water supply and drought status reporting; outline of next steps in plan;</li> <li>Inform public that Potomac River Co-op Water Supply is adequate to meet unrestricted demands</li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li><b>Announcement of voluntary water restrictions</b> (see attachment C-illustrative list)</li> <li>Regional media briefing on a weekly basis/ongoing media communications</li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li><b>Announcement of mandatory water restrictions</b> (see attachment C-illustrative list)</li> <li>WAD assigns allocations to Potomac River utilities (per Low Flow Allocation Agreement)</li> <li>Regional press conference on daily basis; ongoing media communications</li> <li>Water supply reporting on a daily basis</li> </ul>

	Normal	Watch	Warning	Emergency
<b>Actions Cont.</b>		<ul style="list-style-type: none"> <li>Press release upon first water supply release; reporting on a weekly basis thereafter</li> <li>Press release when water supply storage at Jennings Randolph and Little Seneca reservoirs drops to 75% of capacity.</li> <li>Press releases/briefings to include voluntary water conservation recommendations</li> </ul>		
<b>Messages</b>	<p><u>Wise Water Use Messages:</u></p> <ul style="list-style-type: none"> <li>Wise water use—focus on inside uses: repairing plumbing problems/leaks</li> </ul> <p><u>General Information Messages:</u></p> <ul style="list-style-type: none"> <li>Know your water sources and suppliers</li> <li>Water supply outlook</li> <li>Regional response to drought (here is how the region is prepared to respond)</li> <li>Promotion of web site(s)</li> </ul>	<p><u>Voluntary Water CONSERVATION Messages:</u></p> <ul style="list-style-type: none"> <li>Emphasis on water conservation outside the home or office—</li> <li>Reminders about year round wise water uses</li> </ul> <p><u>General Information Messages:</u></p> <ul style="list-style-type: none"> <li>Know your water sources and suppliers</li> <li>Co-op water supply system outlook</li> <li>Impact on groundwater users, environment, non-co-op water systems, and agriculture</li> <li>Water supply conditions have deteriorated, but Co-op water supply system still adequate</li> <li>Reminder that reservoir releases are planned events</li> <li>Understanding of current water supply and hydrologic and soil moisture conditions</li> <li>Reminders of the next steps if conditions worsen</li> </ul>	<p><u>Voluntary Water RESTRICTIONS Messages:</u></p> <ul style="list-style-type: none"> <li>Public and businesses asked to voluntarily implement water restrictions to help ensure adequate water supply and maintain reservoir levels</li> <li>Detailed list of voluntary water restrictions issued</li> </ul> <p><u>General Information Messages:</u></p> <ul style="list-style-type: none"> <li>Know your water source</li> <li>Water supply conditions have deteriorated, but Co-op system water supply still adequate</li> <li>Co-op water supply system outlook</li> <li>Reminders of the next steps if conditions worsen</li> </ul>	<p><u>Mandatory Water RESTRICTIONS Messages:</u></p> <ul style="list-style-type: none"> <li>Public and businesses required to implement water restrictions to maintain water supplies</li> <li>Detailed list of mandatory reductions issued</li> </ul> <p><u>General Information Messages:</u></p> <ul style="list-style-type: none"> <li>Water supply very limited; alter use reductions essential</li> <li>Know your water source</li> <li>Co-op water supply outlook</li> </ul>

# WATER SUPPLY AND DROUGHT AWARENESS RESPONSE PLAN FOR THE COG REGION

## A Drought Primer for COG Chief Administrative Officers May 2015

### Water Supply and Drought Awareness Response Plan

COG's water supply and drought response awareness plan (The Plan) provides a plan of action that would be implemented during drought conditions for the purpose of coordinated regional response. The Plan consists of two interrelated components:

(1) A year-round public outreach campaign emphasizing wise water use and conservation messages focused on both indoor and outside water uses; and (2) A water supply and drought awareness and response plan designed to insure a consistent and coordinated regional response to drought conditions.

The first part of the Plan, a year-round wise water use program, has been established for the entire region and consists of indoor and outdoor water conservation messages. COG created a web site ([www.wisewateruse.com](http://www.wisewateruse.com)) for our members, water utilities, and the general public to use during times of drought but emphasizes year-round conservation. The Plan establishes a series of triggers and associated actions tailored to the severity of drought conditions, focused on the Potomac River water supply system. Actions include coordinated regional decision-making through the Drought Coordination Committee (see below) concerning drought stage declarations (NORMAL, WATCH, WARNING, EMERGENCY) as well as public messaging and if necessary, coordination concerning implementation of water use restrictions in the rare situation of a severe drought (WARNING and EMERGENCY stages).

### Role of the CAOs during times of Drought

The COG CAOs Committee, in conjunction with area water utility general managers, the Interstate Commission of the Potomac River Basin (ICPRB), supported by state water supply coordinators and the NOAA Climate Prediction Center, comprise the Drought Coordination Committee (DCC) under the Plan. The DCC is the delegated authority under the Plan for issuing drought stage declarations (e.g., WATCH, WARNING, EMERGENCY) along with public notification associated with each stage. In the event of issuance of a WARNING and EMERGENCY stage, the DCC would coordinate issuance of specific restrictions to insure regional consistency and meet frequently to help manage the drought response for the region. When conditions are in the NORMAL range, the CAOs receive routine reports on a monthly basis between May and October. If moderately dry conditions enter the Potomac River basin as determined by the National Oceanic and Atmospheric Administration (NOAA), the DCC may be convened to consider issuance of a WATCH. The DCC is supported in its determination by a technical committee from local governments, water utilities, NOAA, and ICPRB.

# Drought Stages and Reporting

## DROUGHT STAGES TRIGGERS AND ACTIONS

The table provides a synopsis of the four stages of the Plan – NORMAL, WATCH, WARNING, and EMERGENCY. The triggers that help guide declarations for each stage are noted, along with specific actions that are implemented once a stage is declared by the Drought Coordination Committee. The Drought Coordination Committee is responsible for declaring a stage, as well as declaring when conditions have returned to normal. It is also important to note that the triggers in the table are defined for the Potomac River water supply system; utilities using other sources of supply have their own criteria for drought stages for their systems. Yet, they are expected to follow the actions associated with the four stages in the Plan in terms of messaging and implementation of any water use restrictions.

## LAST DROUGHT WATCH DECLARED IN 2010

Due to unusually dry conditions, COG's DCC declared a drought "WATCH" in September 2010. A press release was issued that urged residents and businesses to conserve water and use water wisely. It also emphasized that water supply reservoirs constructed in the early 1980s to provide water during droughts were full but would be utilized if needed. The WATCH ended when Tropical Storm Lee hit the region.

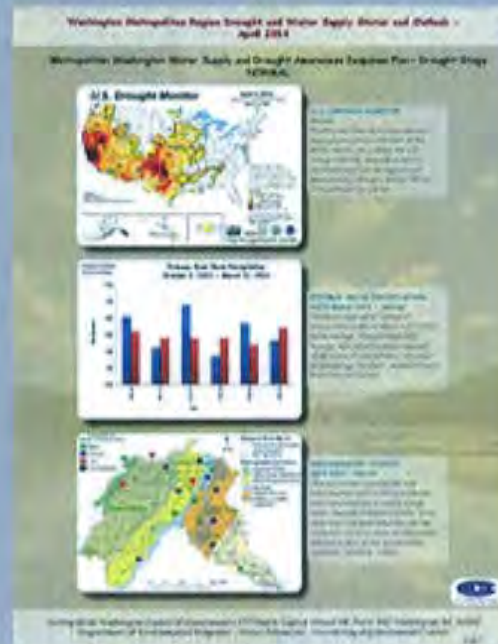
### Metropolitan Washington Water Supply and Drought Awareness Response Plan: Potomac River System Adopted June 7, 2000

	Normal	Watch	Warning	Emergency
	Wise Water Use	Voluntary Water Conservation	Voluntary Water Restrictions	Voluntary Water Restrictions
<b>Audience</b>	Entire Metropolitan Washington Region	Entire Metropolitan Washington Region	Customers of Co-op System, associated local governments, media	Customers of Co-op System, associated local governments, media
<b>Trigger</b>	<ul style="list-style-type: none"> <li>None - water supply adequate to meet demand</li> </ul>	<ul style="list-style-type: none"> <li>NOAA "D1" drought level in Potomac River Basin (adopted on a provisional 2-year basis and will be re-assessed during this time period)</li> </ul>	<ul style="list-style-type: none"> <li>Combined water supply storage at Jennings Randolph and Little Falls reservoirs drops to 60% of capacity for 5 consecutive days, if and when combined water storage at reservoirs increases and remains above 60% for a period of 15 days; OR</li> <li>7% Probability of not meeting unrestricted water supply demands over next 1-2 months</li> </ul>	<ul style="list-style-type: none"> <li>Probability of not meeting unrestricted water supply demands over next period</li> </ul>
<b>Actions</b>	<ul style="list-style-type: none"> <li>Two-pronged Water Conservation Program consisting of "Use Water the Old-fashioned Way"</li> <li>Publicizing information in Metropolitan Water and Sewerage Authority Newsletters</li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li>Regional media briefing/media communications</li> <li>Announce voluntary water conservation recommendations</li> <li>Detailed water supply and drought status reporting, outline of next steps in plan</li> <li>Inform public that Potomac River Co-op Water Supply is adequate to meet unrestricted demands</li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li>Announcement of voluntary water restrictions (see attachment C-Implementation List)</li> <li>Regional media briefing on a weekly basis/ongoing media communications</li> </ul>	<ul style="list-style-type: none"> <li>Meeting of the Drought Coordination Committee</li> <li>Announcement of mandatory water restrictions (see attachment C-Implementation List)</li> <li>WASD status information if necessary (via the Potomac River Basin Allocation Agreement)</li> <li>Regional press conference on next steps regarding media communications</li> <li>Water supply reporting and status</li> </ul>

COG 5/11/10

-1-

## COG's Water Supply and Drought Report



COG issues monthly reports during the drought monitoring season (typically from May—October) unless conditions deteriorate and additional reporting is needed. The report is a snapshot of current water supply and drought monitoring conditions in the Potomac River Basin along with an outlook for the next several months, including:

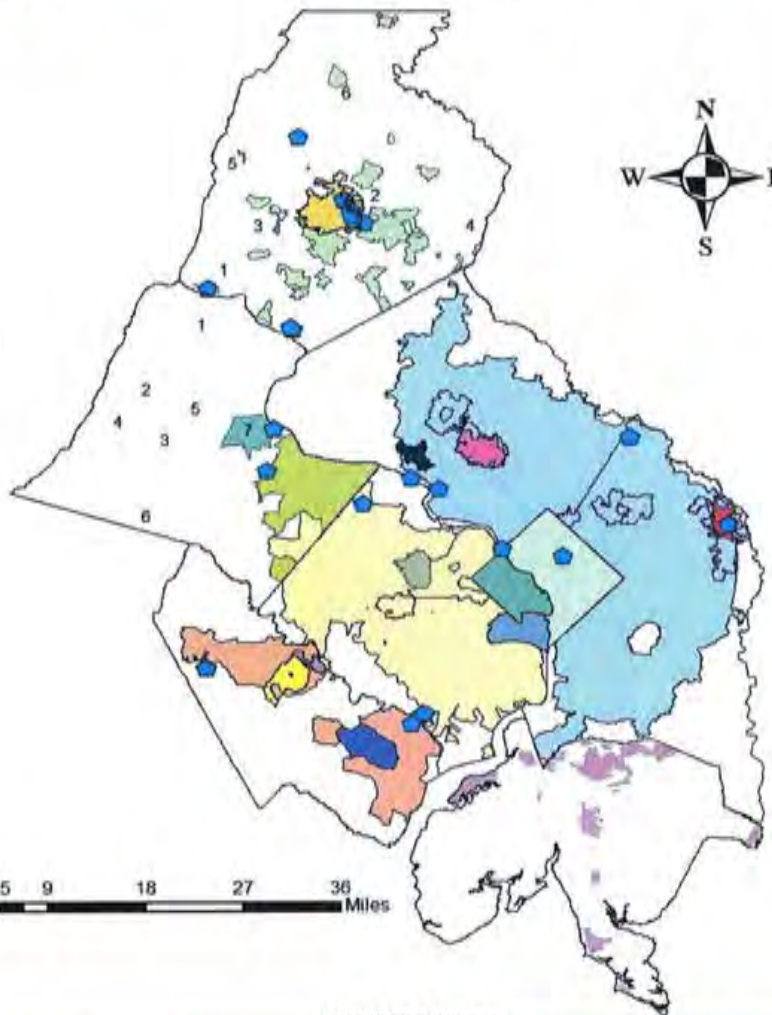
- The current U.S. Drought Monitor issued by NOAA
- Precipitation data
- Groundwater levels
- Seasonal drought outlooks—prediction tools issued by NOAA
- Streamflow data for Little Falls and Point of Rocks
- Current regional water supply status

# Water Supply in the COG Region

3/27/2014



## Drinking Water Treatment Plant Service Areas -COG Region-



### Legend

- Water Treatment Plants
- Drinking Water Suppliers and Distributors**
- City of Bowie Dept. of Public Works
- City of Manassas DU
- City of Manassas Park DPW
- Rockville
- Loudoun County Town Systems
  - 1. Town of Lovettsville
  - 2. Town of Hillsboro
  - 3. Town of Purcellville
  - 4. Town of Round Hill
  - 5. Town of Hamilton
  - 6. Town of Middleburg
  - 7. Town of Leesburg
- Frederick County Utilities and Solid Waste
- City of Frederick
- Frederick County Town Systems**
  - 1. City of Brunswick
  - 2. Fort Detrick
  - 3. Town of Middletown
  - 4. Town of Mt. Airy
  - 5. Town of Myersville
  - 6. Town of Thurmont
- Fairfax Water
- Loudoun Water
- Prince William County Service Authority
- Virginia-American Water Company
- Virginia-American Water Company - Alexandria
- Vienna DPW
- Washington Aqueduct U.S. Army Corp of Engineers (COE)**
  - Arlington DPW
  - District of Columbia
  - Washington Suburban Sanitary Commission - Current area
  - Washington Suburban Sanitary Commission - Potential area
  - Charles PWS
  - Areas served by private systems

-I-WRTC/DW & WW Maps

The Washington metropolitan region gets nearly 75% of its drinking water from the free flowing Potomac River. Additional sources of water include the Patuxent and Occoquan reservoirs, as well as a number of additional small surface and ground water sources. During periods of low flow in the Potomac River, the Jennings Randolph Reservoir in West Virginia and the Little Seneca Reservoir in Montgomery County may be utilized to augment Potomac River flow to insure sufficient drinking water supply.

Three major water supply agencies furnish about 95% of the metropolitan region's water. These are the Washington Aqueduct of the U.S. Army Corps of Engineers (WAD), Fairfax Water (FW) and the Washington Suburban Sanitary Commission (WSSC). Other agencies in our region supply the remaining 5% of the water. Some parts of the region are supplied by utilities that purchase water wholesale from one or more of the three large water utilities mentioned above.

During times of drought, natural flows on the Potomac may not always be sufficient to meet water supply needs while still maintaining a minimum flow in the river for sustaining aquatic resources. In such cases, a cooperative entity staffed by the Interstate Commission on the Potomac River Basin coordinates the management of the water system as a whole. This group is known as the Section for Cooperative Water Supply Operations on the Potomac (CO-OP), and is formally associated with the three major supply agencies by the Water Supply Coordination Agreement of 1982.

The three major supply agencies have paid for water storage held in reservoirs in the Potomac Basin, which can augment water supply during low flow conditions so that the region's water supply demands are met while also meeting the Potomac River environmental flow-by requirements. Jennings Randolph Reservoir in the upper reaches of the Potomac River Basin stores 13 billion gallons of water that may be allocated to water supply augmentation. Water released from Jennings Randolph travels for 7-9 days during periods of significant drought before reaching the Washington metropolitan region. Located in Montgomery County, Little Seneca Reservoir has 4 billion gallons of storage, which can quickly augment flow in stretches of the Potomac where the intakes for the major supply agencies are located.

# Frequently Asked Question about Regional Water Supply

## What prompted the development of the Plan?

In 1999, the COG Board of Directors established a "Task Force on Water Supply Issues" during one of the most severe periods of drought in the 20th century. The Task Force was established to find a way to improve communication and coordination among local and state governments, water supply utilities, the media and general public in the event of another serious drought in the future. The Plan was developed as a result. The Task Force included a year-round program promoting wise water use as an integral part of the new regional plan.

## What is the CO-OP?

The Section for Cooperative Water Supply Operations of the Interstate Commission on the Potomac River Basin (CO-OP) began in the early 1960s and has helped maintain adequate water supply for the region's growing population. The CO-OP was created to coordinate water supply operations of the three independent water suppliers (Fairfax Water, Washington Aqueduct, WSSC) in the Washington, D.C. area during times of drought. During times of low Potomac River flows the CO-OP may post monitoring updates on current available water resources. In drought years, the CO-OP coordinates releases from regional reservoirs to ensure that water supply needs are met, along with maintaining Potomac River environmental flow-by. For additional information visit the [CO-OP website](#).

## What are the minimum environmental flow requirements for the Potomac River?

As water withdrawals from the Potomac River began to increase to meet the needs of the watershed's growing populations, concerns were raised about the potential consequences of such withdrawals on the Potomac River ecosystem. In 1981, the Potomac River Environmental Flow-by study was created to establish a minimum flow needed to protect its aquatic resources. The Potomac River minimum low-flow or flow-by requirement at Little Falls is 100 million gallons per day (mgd) and 300 mgd at Great Falls. To ensure that flows do not drop below these protective levels, natural flows in the river are augmented with water releases from several impoundments in the basin, as needed.

## How many reservoirs are coordinated by the CO-OP and how much water can they hold? (bg—billion gallons)

Jennings Randolph – 13.4 bg (back up reservoir)  
Little Seneca – 3.9 bg (back up reservoir)  
Occoquan – 8.0 bg (daily use)  
Patuxent – 10.2 bg (daily use)

NOTE: Loudoun County has approved of the use of Luck Stone's quarry located north of the W&OD Trail and east of Goose Creek for Water Banking. It is anticipated that approximately 1 billion gallons of water will be able to be stored in this quarry alone once mining operations are complete in the 2017-2020 timeframe. Fairfax Water is developing a plan to create a water supply reservoir at Lorton's Vulcan Quarry.

## Can you tell me about the major water utilities in our area?

The Washington Aqueduct serves the District of Columbia via the DC Water, as well as portions of northern Virginia - Arlington County, part of Fairfax County and the Town of Vienna. WSSC serves Montgomery and Prince George's counties in Maryland, and provides a limited amount of water to Howard and Charles counties. Water is also provided on an emergency basis to the City of Rockville and very limited amounts to DC Water. Fairfax Water provides water to nearly 2 million people in the Northern Virginia communities of Fairfax, Loudoun, Prince William and Alexandria.

## Have we ever issued a Warning or Emergency? If so, when?

Since the regional plan was adopted, the region has declared a WATCH three times. It has not been necessary to declare a WARNING or EMERGENCY for the Potomac River system. However, in 2002, the combined reservoir storage in Jennings Randolph and Little Seneca briefly dropped to levels approaching the WARNING trigger, but due to sufficient rainfall it was not necessary to implement this stage of the plan. Since 2000, several smaller systems have briefly declared WARNING or EMERGENCY stages due to limited rainfall and less resilient water supply systems.

## For additional resources please visit COG's water supply and drought website at:

<http://www.mwcog.org/environment/water/watersupply.asp>

**METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS  
(COG)  
MEMBER JURISDICTIONS**

**District of Columbia**

**Maryland**

Town of Bladensburg  
City of Bowie  
Charles County  
City of College Park  
City of Frederick  
Frederick County  
City of Gaithersburg  
City of Greenbelt  
City of Hyattsville  
Montgomery County  
Prince George's County  
City of Rockville  
City of Takoma Park

**Virginia**

City of Alexandria  
Arlington County  
City of Fairfax  
Fairfax County  
City of Falls Church  
Loudon County  
City of Manassas  
City of Manassas Park  
Prince William County

# 2018 WATER AND SEWER PLAN



**2018 WATER AND SEWER PLAN**

***APPENDIX 3-7***

***BI-COUNTY AND PRINCE GEORGE'S COUNTY  
WATER PROJECTS  
2019 – 2024  
CAPITAL IMPROVEMENT PROGRAM***

**2018 WATER AND SEWER PLAN**

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## Section 3 - Bi-County Water Projects

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**FINANCIAL SUMMARY**  
 (ALL FIGURES IN THOUSANDS)

**BI-COUNTY WATER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST TOTAL COST	EXPEND THRU 17	EST. EXPEND 18	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM	
						YR 1 19	YR 2 20	YR 3 21	YR 4 22	YR 5 23	YR 6 24			
W-73.19	Potomac WFP Outdoor Substation No. 2 Replacement	15,062	14,450	580	22	22	0	0	0	0	0	0	0	3-3
W-73.21	Potomac WFP Corrosion Mitigation	17,280	15,600	1,615	65	65	0	0	0	0	0	0	0	3-4
W-73.22	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	24,961	7,751	4,786	12,424	7,883	4,518	23	0	0	0	0	0	3-5
W-73.30	Potomac WFP Submerged Channel Intake	55,104	4,322	525	78,257	70	3,917	24,255	24,150	19,950	5,915	0	0	3-6
W-73.32	Potomac WFP Main Zone Pipeline	37,470	950	550	35,970	1,100	660	19,030	15,180	0	0	0	0	3-7
W-73.33	Potomac WFP Consent Decree Program	157,460	1,500	5,430	121,150	9,850	10,500	19,950	27,300	28,350	25,200	29,400	0	3-8
W-139.02	Duckett & Brighton Dam Upgrades	30,754	14,066	8,142	8,546	7,801	745	0	0	0	0	0	0	3-9
W-161.01	Large Diameter Water Pipe & Large Valve Rehabilitation Program	435,594	0	53,206	382,398	40,861	57,862	62,865	72,021	73,751	75,226	0	0	3-10
W-172.05	Peluxent WFP Phase II Expansion	63,869	56,594	6,229	1,076	1,076	0	0	0	0	0	0	0	3-13
W-172.07	Peluxent Raw Water Pipeline	33,663	12,705	4,202	16,756	378	8,378	8,000	0	0	0	0	0	3-14
W-172.08	Rocky Gorge Pump Station Upgrade	22,564	7,037	10,974	4,553	2,484	2,069	0	0	0	0	0	0	3-15
W-202.00	Land & Rights-of-Way Acquisition - Bi-County Water	3,695	0	777	2,918	1,300	1,570	18	10	10	10	0	0	3-16
	Projects Pending Close-Out	141,636	140,624	1,012	0	0	0	0	0	0	0	0	0	3-17
<b>TOTALS</b>		<b>1,067,152</b>	<b>275,599</b>	<b>98,030</b>	<b>564,123</b>	<b>72,680</b>	<b>90,219</b>	<b>134,141</b>	<b>138,661</b>	<b>122,061</b>	<b>106,351</b>	<b>29,400</b>	<b>0</b>	

**POTOMAC WATER FILTRATION PLANT PROJECTS**  
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY18 TOTAL COST	ADOPTED FY19 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
W-73.19	Potomac WFP Outdoor Substation No. 2 Replacement	\$14,850	\$15,052	\$202	1.4%	\$22	August 2017
W-73.21	Potomac WFP Corrosion Mitigation	15,557	17,280	1,723	11.1%	65	September 2017
W-73.22	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	22,129	24,961	2,832	12.8%	12,424	December 2020
W-73.30	Potomac WFP Submerged Channel Intake	83,104	83,104	0	0.0%	78,257	FY 2024
W-73.32	Potomac WFP Main Zone Pipeline	36,494	37,470	976	2.7%	35,970	FY 2022
W-73.33	Potomac WFP Consent Decree Program	43,050	157,480	114,430	265.8%	121,150	January 2026
	<b>TOTALS</b>	<b>\$215,184</b>	<b>\$335,347</b>	<b>\$120,163</b>	<b>55.8%</b>	<b>\$247,888</b>	

**Summary:** This group of projects represents operational improvements to the Potomac Water Filtration Plant (WFP) in Montgomery County. The Potomac WFP Outdoor Substation No. 2 Replacement project (W-73.19) provides for the replacement of the Outdoor Substation No. 2 (OSS-2) at the Potomac Water Filtration Plant, which is over 30 years old and contains 5kV switchgear that houses air magnetic breakers which are obsolete. The Potomac WFP Corrosion Mitigation (W-73.21) provides for upgrading/replacing existing metallic components in the eight sedimentation basins due to accelerated corrosion, along with upgrading components in the rapid mix and flocculation processes. The Potomac WFP Pre-Filter Chlorination & Air Scour Improvements project (W-73.22) provides for a pre-filter chlorination system, and the replacement of existing plant filters to improve the performance of the underdrain system. The Potomac WFP Submerged Channel Intake project (W-73.30) will provide an additional barrier against drinking water contamination, enhance reliability, and reduce treatment costs by drawing water from a location with a cleaner, more stable water quality. The Potomac WFP Main Zone Pipeline project (W-73.32) provides an 84-inch diameter redundancy main from the Main Zone pumping station to the 96-inch diameter and 66-inch diameter main why connections on River Road. The Potomac WFP Consent Decree Program project (W-73.33) 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 the Commission to meet the new discharge limitations identified in the Consent Decree.

**Cost Impact:** The increase in cost is due to several factors. Performance issues relating to additional concrete and equipment repair work in the basins contributed to the increase associated with W-73.21 Potomac WFP Corrosion Mitigation. The need to replace all 32 filter underdrains led to the increase in W-73.22 Potomac WFP Pre-Filter Chlorination & Air Scour Improvements. Finally, the Potomac WFP Consent Decree Program (W-73.33) was increased significantly based on estimates from the December 2016 Audit and Long-Term Upgrade Report for the Potomac WFP.

# Potomac WFP Outdoor Substation No. 2 Replacement

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-73.19	113802	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County:

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	4,405	4,027	377	1	1						
Land											
Site Improvements & Utilities											
Construction	10,593	10,423	150	20	20						
Other	54	53	1	1	1						
<b>Total</b>	<b>15,052</b>	<b>14,450</b>	<b>580</b>	<b>22</b>	<b>22</b>						

## C. Funding Schedule (000's)

WSSC Bonds	15,052	14,450	580	22	22						
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction required to replace the Outdoor Substation No. 2 (OSS-2) 5KV switchgear and the two motor control centers (MCCs) located in the Raw Water Pumping Station No. 1 at the Potomac Water Filtration Plant. OSS-2 is over 30 years old and contains 5KV switchgear that houses air magnetic breakers which are obsolete. The two MCCs are over 50 years old, and the manufacturer is no longer in business, making replacement parts difficult to obtain.

### JUSTIFICATION

The Phase ID - Energy Performance Project included engineering and planning of equipment and operations upgrades to develop an energy efficient and guaranteed savings program to upgrade/replace pumps at the Potomac Raw Water Pumping Stations (RWPS) #1 and #2, and upgrade Main Zone pump #3. Subsequent tests and inspections of OSS-2 serving RWPS #1 and #2 resulted in a report indicating that OSS-2 was unsafe and in poor condition, and that WSSC should move in an expeditious manner to replace the switchgear in its entirety. Industry practice is to replace 5 KV switchgear between 25 and 30 years old, when in an environment with airborne chemicals. The old breakers in OSS-2 have misalignment problems, and the switchgear housing is corroded, which can pose safety risks to the plant electrical and mechanical maintenance staff as well as the operators.

Energy Performance Project, Phase ID, Energy Systems Group (ESG) (March 2009). Raw Water Pump Testing and subsequent site visits and meetings at Potomac from April to June 2009 by ESG, Whitman Requardt & Assoc., and Shah Assoc. (sub-consultants to ESG).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B above are based on actual bid. The project is substantially complete in FY'18. Estimated cost shown for FY'19 is for site restoration.

### COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government;  
Coordinating Projects: A-103.00-Energy Performance Program;

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$979	20
Total Cost	\$979	20
Impact on Water and Sewer Rate	\$0.02	20

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	7,834
Cost Estimate Last FY	14,850
Present Cost Estimate	15,052
Approved Request Last FY	1,248
Total Expense & Encumbrances	14,450
Approval Request Year 1	22

## G. Status Information

Land Status	Public/Agency owned land
Project Phase	Construction
Percent Complete	99%
Est Completion Date	August 2017

## H. Map



# Potomac WFP Corrosion Mitigation

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-73.21	143802	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	2,685	2,600	75	10	10						
Land											
Site Improvements & Utilities											
Construction	14,450	13,000	1,400	50	50						
Other	145	140	5	5	5						
<b>Total</b>	<b>17,280</b>	<b>15,600</b>	<b>1,615</b>	<b>65</b>	<b>65</b>						

## C. Funding Schedule (000's)

WSSC Bonds	17,280	15,600	1,615	65	65						
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction required to upgrade and replace the existing metallic components in the eight Sedimentation Basins due to accelerated corrosion observed since the implementation of the full-scale Low pH Enhanced Coagulation Program in 2008. The project will also upgrade components in the Rapid Mix and Flocculation process areas in anticipation of the Ferric Chloride Feed System Project implementation that will introduce a coagulant that is not compatible with several of the existing metallic components.

### JUSTIFICATION

Sedimentation Basin components, such as valve hardware, pipe couplings, operator extensions, cross beams, cross collector drive chains and pipe support brackets, are all essential elements. Failure could mean losing important and significant process capacity, possibly for extended periods of time. This could hinder the Commission's ability to meet water supply demands, particularly when the system may need to recover quickly, as in the case of a major water main break. Replacing the metallic components with compatible materials will help maintain the integrity of our system. The project also includes the replacement of the existing polyurethane sprockets, chains for the cross collector drive, augers, auger shafts, and auger chains.

Technical Memorandum No. 1 - Impact of Ferric Chloride on Existing Facilities, Hazen and Sawyer, (May 2010); Potomac Sedimentation Basin Corrosion Study, Halch Mott MacDonald, (July 2010).

### COST CHANGE

Cost increase is due to performance issues relating to additional concrete, and equipment repair work in the basins.

### OTHER

The project scope has remained the same. Expenditures and schedule projections shown in Block B above are based upon actual bid. The project will be substantially complete in FY'18. Estimated cost shown for FY'19 is for project closeout activities.

### COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government; Maryland Department of the Environment.  
Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

	FY of Impact
Staff	
Maintenance	
Other Project Costs	
Debt Service	\$1,124
Total Cost	\$1,124
Impact on Water and Sewer Rate	\$0.02

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 14
Date First Approved	FY 14
Initial Cost Estimate	7,443
Cost Estimate Last FY	15,557
Present Cost Estimate	17,280
Approved Request Last FY	760
Total Expense & Encumbrances	15,600
Approval Request Year 1	65

## G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	90%
Est Completion Date	September 2017

## H. Map

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

MAP NOT APPLICABLE

# Potomac WFP Pre-Filter Chlorination & Air Scour Improvements

A. Identification and Coding Information		PDF Date	October 1, 2017	Pressure Zones	
Agency Number	Project Number	Date Revised		Drainage Basins	
W-73.22	143803	Change		Planning Areas	Bi-County

B. Expenditure Schedule (000's)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Beyond
		FY'19	FY'20	FY'21	FY'22	FY'23	FY'24	6 Years
Estimate	Total	985	373	1				
Through FY'17	2,941	1,873	103					
Cost Elements								
Planning, Design & Supervision	2,941	1,873	103					
Land								
Site Improvements & Utilities								
Construction	20,455	5,878	4,248	3,734	20			
Other	1,565	435	1,130	411	2			
<b>Total</b>	<b>24,961</b>	<b>7,751</b>	<b>4,786</b>	<b>12,424</b>	<b>4,518</b>	<b>23</b>		

C. Funding Schedule (000's)	WSSC Bonds	24,961	7,751	4,786	12,424	7,883	4,518	23
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**D. Description & Justification**  
**DESCRIPTION**  
 This project provides for the planning, design, and construction of a pre-filter chlorination system and filter air scour system for the Potomac Water Filtration Plant. It also includes the replacement of all 32 filter underdrains.  
**JUSTIFICATION**  
 Due to numerous separate incidents of catastrophic filter underdrain failures since October 2006, an investigation was conducted by WSSC and ITT Leopold, suppliers of the failed underdrain systems. The investigation revealed that the ITT Leopold underdrain system with an Integral Media Support (IMS) cap is not compatible with the biologically active filters at the Potomac WFP.  
 Engineering Standard - I. M. S. Cap Monitoring Operation, and Maintenance Instructions, ITT Water & Wastewater, Leopold, Inc., (April 2009). Memo from Jofin Gelbel, P.E., Sr. Product Engineer @ ITT Water & Wastewater, Leopold, Inc. - Potomac Filtration Plant Visit April 2009 - to Joseph Johnson, Potomac Plant Superintendent, (May 2010).  
**COST CHANGE**  
 Total project cost has increased to include the cost for replacement of all 32 filter underdrains.  
**OTHER**

The project scope has been modified to include the replacement of all 32 filter underdrains. The Potomac Water Filtration Plant experienced fourteen separate incidents of catastrophic filter underdrain failure from October 2006 through FY'17, including three filters that failed twice. The failure rate accelerated with six of the fourteen filter failures taking place during the spring and summer of 2016. Expenditure and schedule projections shown in Block B above include design level estimates for Air Scour (which may change based on actual bids) and on actual bids for Underdrain Replacement. The original plan was to design and construct both pre-filter chlorination and air scour systems as one deliverable at the same time. However, due to the more critical need to implement pre-filter chlorination at the Potomac plant, this portion of the project was placed on an accelerated schedule for design and construction, separate from that of the air scour system. Estimated cost for FY'21 is for site restoration.

**COORDINATION**  
 Coordinating Agencies: Montgomery County Government, Prince George's County Government;  
 Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)	Staff		FY of Impact
	Maintenance		
	Other Project Costs		
	Debt Service	\$1,624	22
	Total Cost	\$1,624	22
	Impact on Water and Sewer Rate	\$0.03	22

F. Approval and Expenditure Data (000's)	Date First in Program	FY 14
	Date First Approved	FY 14
	Initial Cost Estimate	5,602
	Cost Estimate Last FY	22,129
	Present Cost Estimate	24,961
	Approved Request Last FY	9,972
	Total Expense & Encumbrances	7,751
	Approval Request Year 1	7,883

G. Status Information	Land Status	Not Applicable
	Project Phase	Construction
	Percent Complete	30%
	Est. Completion Date	December 2020

H. Map	Growth	
	System Improvement	100%
	Environmental Regulation	
	Population Served	
	Capacity	

**MAP NOT APPLICABLE**

**Potomac WFP Submerged Channel Intake**

A. Identification and Coding Information		PDF Date	October 1, 2017
Agency Number	Project Number	Date Revised	Feb. 21, 2018
W-73.30	033912	Change	

Pressure Zones	Potomac WFP HGPOWF
Drainage Basins	
Planning Areas	Bi-County

**B. Expenditure Schedule (000's)**

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	10,552	4,322	500	5,830	67	1,730	1,100	1,000	1,000	933	
Land											
Site Improvements & Utilities											
Construction	68,700			68,700		2,000	22,000	22,000	18,000	4,700	
Other	3,752		25	3,727	3	187	1,155	1,150	950	282	
<b>Total</b>	<b>83,104</b>	<b>4,322</b>	<b>525</b>	<b>78,257</b>	<b>70</b>	<b>3,917</b>	<b>24,255</b>	<b>24,150</b>	<b>19,950</b>	<b>5,915</b>	

**C. Funding Schedule (000's)**

WSSC Bonds	83,104	4,322	525	78,257	70	3,917	24,255	24,150	19,950	5,915
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**D. Description & Justification**

**DESCRIPTION**  
 This project includes planning, which involves community outreach and coordination with elected officials, design, and construction of a submerged channel intake to provide an additional barrier against drinking water contamination (particularly Giardia cysts and Cryptosporidium oocysts), as well as to enhance reliability and reduce treatment costs by drawing water from a location with cleaner, more stable water quality.

**JUSTIFICATION**  
 The project is expected to pay for itself over time based upon the reduced chemical and solids handling costs resulting from the cleaner raw water source. It also provides for a more reliable supply by eliminating the current problems associated with ice and vegetation blocking the existing bank withdrawal. This project is consistent with the industry's recommended multiple barrier approach.

"Technical Memorandum No. 2 Water Quality Needs Assessment," O'Brien & Gere Engineers, Inc. (November 2001); "Draft Source Water Assessment Study," Maryland Department of the Environment (April 2002); "Potomac WFP Facility Plan," O'Brien & Gere Engineers, Inc. (September 2002); "Draft Feasibility Study Report", Black & Veatch (November 2013).

**COST CHANGE**

Not applicable.

**OTHER**

The project scope has remained the same. As part of the planning phase of this project, significant outreach activities will occur. A series of briefings with State legislators, County Council members, County Executive staff and County Council staff will be undertaken prior to commencement of further engineering work. As the planning process moves into its final stages and the National Environmental Policy Act (NEPA) approval process is underway, elected officials, county government staffs, environmental community members, and the general public will be engaged in an on-going information, outreach and project participation program. Expenditure and schedule projections shown above are planning level estimates and may change based on site-specific conditions and design constraints. Both Councils will review the results of the detailed study and must approve continuing with the project before design and construction may proceed. Land costs are included in WSSC Project W-202.00.

**COORDINATION**

Coordinating Agencies: Montgomery County Government; Prince George's County Government; National Park Service; Montgomery County Department of Environmental Protection; Maryland Department of the Environment; Maryland Department of Natural Resources; Prince George's County Department of Environmental Resources; U.S. Army Corps of Engineers; Maryland-National Capital Park & Planning Commission;

Coordinating Projects: Not Applicable

**E. Annual Operating Budget Impact (000's)**

Staff						FY of Impact
Maintenance						
Other Project Costs						
Debt Service					\$5,406	25
Total Cost					\$5,406	25
Impact on Water and Sewer Rate					\$0.11	25

**F. Approval and Expenditure Data (000's)**

Date First in Program		FY 04
Date First Approved		FY 03
Initial Cost Estimate		936
Cost Estimate Last FY		83,104
Present Cost Estimate		83,104
Approved Request Last FY		1,523
Total Expense & Encumbrances		4,322
Approval Request Year 1		70

**G. Status Information**

Land Status	Land and RW to be acquired
Project Phase	Planning
Percent Complete	95%
Est Completion Date	FY 2024

**H. Map**

MAP NOT AVAILABLE

# Potomac WFP Main Zone Pipeline

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-73.32	133800	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Montgomery Main 495A; Prince George's
Drainage Basins	
Planning Areas	Potomac-Cabin John & Vicinity PA 29;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	3,650	950	500	2,200	1,000	600	300	300			
Land											
Site Improvements & Utilities											
Construction	30,500			30,500			17,000	13,500			
Other	3,320		50	3,270	100	60	1,730	1,380			
<b>Total</b>	<b>37,470</b>	<b>950</b>	<b>550</b>	<b>35,970</b>	<b>1,100</b>	<b>660</b>	<b>19,030</b>	<b>15,180</b>			

## C. Funding Schedule (000's)

WSSC Bonds	37,470	950	550	35,970	1,100	660	19,030	15,180			
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of approximately 1,500 feet of 84-inch diameter redundancy main from the Main Zone pumping station to the 96-inch diameter and 66-inch diameter main wye connections on River Road. The project will include a rock tunnel segment.

### JUSTIFICATION

The existing 78-inch diameter PCOP pipeline is the major feed to the 96-inch diameter Montgomery County Main Zone pipeline and the 66-inch diameter River Road pipeline. The primary purpose of this project is to provide redundancy for the existing line. The Business Case recommended a new 84-inch diameter main be installed from the Main Zone pumping station to the 66-inch diameter and 96-inch diameter wye connection. In addition the wye connection will be replaced as part of this project.

E-mail from M. Woodcock to C. Fricke and E. Betanzo dated April 27, 2011; Business Case Evaluation for Potomac Water Treatment Plan - 78 inch finished water main redundancy, O'Brien and Gere Engineers, Inc. (October 2013)

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B above are Order of Magnitude estimates and may change based upon site specific conditions and design constraints.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Montgomery County Department of Public Works and Transportation; Montgomery County Government; Maryland Department of the Environment; Maryland Department of Natural Resources; U.S. Army Corps of Engineers; Maryland-National Capital Park & Planning Commission.  
Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$39	23
Other Project Costs		
Debt Service	\$2,437	23
Total Cost	\$2,476	23
Impact on Water and Sewer Rate	\$0.05	23

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	330
Cost Estimate Last FY	36,494
Present Cost Estimate	37,470
Approved Request Last FY	9,504
Total Expense & Encumbrances	950
Approval Request Year 1	1,100

## G. Status Information

Land Status	Not Applicable
Project Phase	Design
Percent Complete	10%
Est Completion Date	FY 2022

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	Approximately 200 mgd

## H. Map



# Potomac WFP Consent Decree Program

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-73.33	173901	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Potomac WFP HGPOWF.
Drainage Basins	
Planning Areas:	Bi-County.

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	28,500	1,500	4,000	20,000	4,000	4,000	4,000	4,000	2,000	2,000	3,000
Land	1,000		500	400	400						
Site Improvements & Utilities											
Construction	120,600		600	95,000	5,000	5,000	15,000	22,000	25,000	22,000	25,000
Other	7,380		230	5,750	450	500	950	1,300	1,350	1,200	1,400
<b>Total</b>	<b>157,480</b>	<b>1,500</b>	<b>5,430</b>	<b>121,150</b>	<b>9,850</b>	<b>10,500</b>	<b>19,950</b>	<b>27,300</b>	<b>28,350</b>	<b>25,200</b>	<b>29,400</b>
WSSC Bonds	157,480	1,500	5,430	121,150	9,850	10,500	19,950	27,300	28,350	25,200	29,400

## D. Description & Justification

**DESCRIPTION**  
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 the Commission to meet the new discharge limitations identified in the Consent Decree.

### JUSTIFICATION

The Consent Decree (CD) was Entered by the U.S. District Court of Maryland on April 15, 2016. Under the terms of the CD the Commission is required to "undertake short-term operational changes and capital improvements at the Potomac WFP that will enable WSSC to reduce significantly the pounds per day of solids discharged to the River" (CD Section II, Paragraph 6.); 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 the Commission 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 28, 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. The Commission 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.

### COST CHANGE

Cost increase is based on estimates from the December 2016 Audit and Long-Term Upgrade Report for the Potomac WFP.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown above are Order of Magnitude level estimates. The construction estimates have increased significantly based on the Short-Term Audit Report and Long-Term Upgrade Plan Report dated December 2016. The expenditure and schedule projections shown above also include \$1,000,000 for Supplemental Environmental Projects included under CD Section IX, Paragraph 50. Preliminary planning work began in FY16 under ESP project W-708.48, Potomac WFP Consent Decree Projects; operational requirements identified in CD Section IV. Interim Performance Measures and Plant Improvements are currently underway under ESP project W-708.47, Potomac WFP Turbidity Monitoring.

### COORDINATION

Coordinating Agencies: Maryland Department of the Environment; Montgomery County Government; Prince George's County Government; National Park Service; U.S. Environmental Protection Agency, Region III.  
Coordinating Projects: W-73 21-Potomac WFP Corrosion Mitigation; W-73.30-Potomac WFP Submerged Channel Intake;

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$10,244	
Total Cost	\$10,244	
Impact on Water and Sewer Rate	\$0.22	

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 17
Date First Approved		FY 16
Initial Cost Estimate		27,250
Cost Estimate Last FY		43,050
Present Cost Estimate		157,480
Approved Request Last FY		7,000
Total Expense & Encumbrances		1,500
Approval Request Year 1		9,850

## G. Status Information

Land Status	Land and RAW to be acquired
Project Phase	Planning
Percent Complete	95%
Est. Completion Date	January 2026

Growth	
System Improvement	
Environmental Regulation	100%
Population Served	
Capacity	

## H. Map

**MAP NOT AVAILABLE**

# Duckett & Brighton Dam Upgrades

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-139.02	073802	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	9,465	7,238	1,033	1,194	1,023	171					
Land											
Site Improvements & Utilities											
Construction	19,772	6,828	6,369	6,575	6,069	506					
Other	1,517		740	777	709	68					
<b>Total</b>	<b>30,754</b>	<b>14,066</b>	<b>8,142</b>	<b>8,546</b>	<b>7,801</b>	<b>745</b>					

## C. Funding Schedule (000's)

WSSC Bonds	30,754	14,066	8,142	8,546	7,801	745
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of the upgrades required to enable the T. Howard Duckett Dam to meet current Maryland Department of the Environment (MDE) dam safety standards including the Probable Maximum Flood (PMF) criteria and maximum credible earthquake loadings. The upgrades include parapet walls on both embankments of the dam and three foot thick scour slabs tied into the rock on the downstream side of the dam. The project also includes work at the Brighton Dam to assure continued safe operation, e.g., spillway resurfacing, new stairs and intake repairs.

### JUSTIFICATION

The MDE requested that WSSC perform a safety analysis of the T. Howard Duckett Dam to ensure that the dam can safely pass the Probable Maximum Flood criteria. MDE also requested that the evaluation include an analysis of the dam's ability to withstand the maximum credible earthquake loadings. The safety analysis includes geotechnical and structural evaluations.

December 13, 2004 letter from MDE: "Comprehensive Safety Evaluation of the T. Howard Duckett Dam", URS Corporation (January 2007); June 28, 2007 letter from MDE.

### COST CHANGE

Costs were decreased based on the actual bid for the recently awarded Brighton Dam Upgrades construction project.

### OTHER

The project scope has remained the same. Expenditures and schedule projections shown in Block B above reflect the actual bid for the Brighton Dam Upgrades construction. Construction work at Duckett Dam is substantially complete. Brighton Dam Upgrades construction project is currently under construction.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Montgomery County Government; Prince George's County Government; Howard County Government; City of Laurel; Maryland Department of the Environment; U.S. Army Corps of Engineers; Coordinating Projects: Not Applicable.

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$2,001	21
Total Cost	\$2,001	21
Impact on Water and Sewer Rate	\$0.04	21

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 07
Date First Approved	FY 07
Initial Cost Estimate	575
Cost Estimate Last FY	35,415
Present Cost Estimate	30,754
Approved Request Last FY	10,673
Total Expense & Encumbrances	14,066
Approval Request Year 1	7,801

## G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	35%
Est. Completion Date	April 2019

## H. Map

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

MAP NOT AVAILABLE

# Large Diameter Water Pipe & Large Valve Rehabilitation Program

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
WA-161.01	113803	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones
Drainage Basins
Planning Areas
Bi-County:

## B. Expenditure Schedule (000's)

Cost Elements	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	4,421	40,528	6,441	6,569	6,701	6,835	6,971	7,111	
Land									
Site Improvements & Utilities									
Construction	46,253	323,549	32,264	48,538	53,170	61,756	63,268	64,533	
Other	2,534	18,209	1,936	2,755	2,994	3,430	3,512	3,582	
<b>Total</b>	<b>53,208</b>	<b>382,386</b>	<b>40,661</b>	<b>57,862</b>	<b>62,865</b>	<b>72,021</b>	<b>73,751</b>	<b>75,226</b>	

## C. Funding Schedule (000's)

WSSC Bonds	53,208	382,386	40,661	57,862	62,865	72,021	73,751	75,226
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## D. Description & Justification

### DESCRIPTION

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.

\* EXPENDITURES FOR LARGE DIAMETER WATER PIPE REHABILITATION ARE EXPECTED TO CONTINUE INDEFINITELY.

### JUSTIFICATION

WSSC has approximately 1,031 miles of large diameter water main ranging from 16-inch to 96-inch 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 annually on PCCP pipelines 36-inch 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 amongst 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 July 2013, WSSC's Acoustic Fiber Optic monitoring system identified breaking wires in a 54-inch diameter PCCP water transmission main in the Forestville area of Prince George's County. Upon attempting to close nearby valves to isolate the failing pipe for repair, WSSC crews encountered an inoperable valve with a broken gear, requiring the crew to drop back to the next available valve. This dropping-back to another valve would block one of the major water mains serving Prince George's county, significantly enlarging the shutdown area and reduce our capacity to supply water to over 100,000 residents. 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 and replace (when necessary) any of the 1500 large diameter valves and vaults located throughout the system.

Utility Wide Master Plan, (December 2007); 30 Year Infrastructure Plan (2007); FY2016 Water Transmission System Asset Management Plan (February 2014); WSSC FY 2018 Bonded Water Asset Systems Asset Management Plan (December 2015);

### COST CHANGE

Overall program costs were increased for inflation and to reflect higher construction unit costs for pipe replacements due to requirements to fill abandoned pipe.

## E. Annual Operating Budget Impact (000's)

Staff		
Maintenance		
Other Project Costs		
Debt Service	\$28,336	25
Total Cost	\$28,336	25
Impact on Water and Sewer Rate	\$0.60	25

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 11
Date First Approved		FY 11
Initial Cost Estimate		
Cost Estimate Last FY		415,928
Present Cost Estimate		435,594
Approved Request Last FY		41,501
Total Expense & Encumbrances		
Approval Request Year 1		40,661

## G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0%
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

## H. Map

MAP NOT AVAILABLE

## Large Diameter Water Pipe & Large Valve Rehabilitation Program

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B above are Order of Magnitude estimates and are expected to change based upon the results of the inspections and condition assessments. Life to date expenditures for this program are approximately \$190 million. Additional costs associated with PCCP inspection/condition assessment, large valve inspection/repairs and emergency repairs are included in the Operating Budget.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Montgomery County Department of Public Works and Transportation; Montgomery County Government; (including localities where work is to be performed); Prince George's County Government; (including localities where work is to be performed); Maryland-National Capital Park & Planning Commission; Prince George's County Department of Permitting, Inspection and Enforcement; Local Community Civic Associations;  
Coordinating Projects: W-1.00-Water Reconstruction Program; A-107.00-Specialty Valve Vault Rehabilitation Program;

**PATUXENT WATER FILTRATION PLANT PROJECTS**

(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY'18 TOTAL COST	ADOPTED FY'19 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
W-172.05	Patuxent WFP Phase II Expansion	\$64,214	\$63,899	(\$315)	-0.5%	\$1,076	August 2018
W-172.07	Patuxent Raw Water Pipeline	32,932	33,663	731	2.2%	16,756	FY 2020
W-172.08	Rocky Gorge Pump Station Upgrade	22,179	22,564	385	1.7%	4,553	August 2019
	<b>TOTALS</b>	<b>\$119,325</b>	<b>\$120,126</b>	<b>\$801</b>	<b>0.7%</b>	<b>\$22,365</b>	

**Summary:** The Patuxent Water Filtration Plant (WFP) Phase II Expansion project (W-172.05) provides for the addition of a sixth treatment train, a new electrical substation, upgrades to existing yard piping, upgrades to chemical facilities, new UV disinfection facilities, an upgrade to the existing potassium permanganate feed system, upgrades to the existing sewer system and new solids removal facilities. In conjunction with the WFP Phase II Expansion project, the Patuxent Raw Water Pipeline project (W-172.07) and the Rocky Gorge Pump Station Upgrade project (W-172.08) provide for a new raw water pipeline and the necessary modification/expansion to the pumping station to allow the delivery of up to 110 million gallons per day (MGD) of raw water to the Patuxent WFP.

**Cost Impact:** Not applicable.

### Patuxent WFP Phase II Expansion

A. Identification and Coding Information			
Agency Number	Project Number	Update Code	
W-172.05	033507	Change	

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Bi-County:
Drainage Basins	
Planning Areas	Bi-County:

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	16,459	13,802	2,432	225	225						
Land	21	21									
Site Improvements & Utilities											
Construction	47,071	42,771	3,500	800	800						
Other	348		297	51	51						
<b>Total</b>	<b>63,899</b>	<b>56,594</b>	<b>6,229</b>	<b>1,076</b>	<b>1,076</b>						

### C. Funding Schedule (000's)

WSSC Bonds	63,899	56,594	6,229	1,076	1,076					
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### D. Description & Justification

**DESCRIPTION**  
 This project provides for the addition of a sixth treatment train, a new electrical substation, a new residuals handling facility, new UV disinfection facilities, upgrades to existing yard piping, and upgrades to chemical facilities at the Patuxent WFP along with an upgrade to the existing potassium permanganate and carbon feed systems at the Patuxent Pretreatment Facility and a new relief sewer which upgrades the existing sewer system along Sweitzer Lane to accommodate the new residuals facility.

### JUSTIFICATION

Phase II will add a sixth treatment train consisting of a three stage flocculation chamber, sedimentation basin with chain and flight solids removal and plate settlers, disinfectant contact chamber, and two deep bed granular carbon filters. A fourth raw water pipeline, Patuxent Raw Water Pipeline (W-172.07) and the modification and expansion of the Rocky Gorge Water Pumping Station (W-172.08), will provide a firm raw water pumping/transmission capacity of 110 MGD. These improvements will give the plant a firm nominal capacity of 110 MGD, with emergency capacity of 72 MGD. New UV disinfection facilities are being added to the plant in order to assure compliance with future EPA regulations for Cryptosporidium treatment and Stage 2 Disinfection Byproducts Rule effective 2012. This project also adds a residuals handling facility to remove the solids from impacting the Parkway WWTP and a relief sewer along Sweitzer Lane to assure no sanitary sewer overflows (SSO) occur as a result of Plant wastewater discharge.

"Patuxent WFP Facility Plan", O'Brien & Gere Engineers, Inc., (April, 1997); In-House Study (April, 2002); Patuxent Expansion Design Criteria Report (April, 2005); "Parkway WWTP Biosolids Facility Plan", CH2M Hill (October, 2009); "Evaluation of Residuals Handling Process Alternatives", AECOM Technical Services, (July, 2011)

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B above are based on actual bids. In the event of an outage at the Potomac WFP, additional capacity at the Patuxent WFP will reduce customer impact. However, emergency conservation measures will still be required.

### COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment; Maryland State Department of Transportation; Baltimore Gas & Electric; Maryland State Highway Administration.  
 Coordinating Projects: W-12.02-Prince George's County HG415 Zone Water Main; W-172.07-Patuxent Raw Water Pipeline; W-172.08-Rocky Gorge Pump Station Upgrade;

### E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$4,157	20
Total Cost	\$4,157	20
Impact on Water and Sewer Rate	\$0.09	20

### F. Approval and Expenditure Data (000's)

Date First in Program		FY 04
Date First Approved		FY 03
Initial Cost Estimate	33,002	
Cost Estimate Last FY	64,214	
Present Cost Estimate	63,899	
Approved Request Last FY	8,956	
Total Expense & Encumbrances	56,594	
Approval Request Year 1		1,076

### G. Status Information

Land Status	RW acquired
Project Phase	Construction
Percent Complete	80%
Est Completion Date	August 2018

### Growth

System Improvement	80%
Environmental Regulation	20%
Population Served	
Capacity	72 MGD nominal/110 MGD emergency

### H. Map

MAP NOT AVAILABLE

# Patuxent Raw Water Pipeline

A. Identification and Coding Information	
Agency Number	Project Number
W-172.07	063804
	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	5,350	4,770	220	400	20	200	180				
Land											
Site Improvements & Utilities											
Construction	26,367	7,935	3,600	14,832	320	7,416	7,096				
Other	1,906		382	1,524	38	762	724				
<b>Total</b>	<b>33,663</b>	<b>12,705</b>	<b>4,202</b>	<b>16,756</b>	<b>378</b>	<b>8,378</b>	<b>8,000</b>				

## C. Funding Schedule (000's)

WSSC Bonds	33,663	12,705	4,202	16,756	378	8,378	8,000				
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## D. Description & Justification

### DESCRIPTION

This project provides for 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, clearing of the existing water lines and replacement of valves.

### JUSTIFICATION

The existing raw water supply facilities are 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 is required. A fourth raw water pipeline from Rocky Gorge Pumping Station to the Patuxent Plant and modification/expansion of the Rocky Gorge Pumping Station will provide 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 MG.

Patuxent WFP Facility Plan (April 1997); It-House Study (April 2002).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The Rocky Gorge Valve Replacement and the cleaning of existing raw water pipelines are 100% complete. The new raw water pipeline is currently in design. Expenditure and schedule estimates for the new raw water pipeline may change based upon design constraints and permitting issues. The project has been delayed due to a lengthy permit and right-of-way acquisition process. As with any construction project, areas disturbed by construction will be restored. This restoration includes paving of impacted roads in accordance with Prince George's County Policy and Specifications for Utility Installation and Maintenance Manual (Section 4.7.2). Land costs are included in WSSC Project W-202.00.

### COORDINATION

Coordinating Agencies: Montgomery County Government, Prince George's County Government, Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment; Interstate Commission on the Potomac River Basin; Local Community Civic Associations; (West Laurel Civic Association); Baltimore Gas & Electric;

Coordinating Projects: W-172.05-Patuxent WFP Phase II Expansion; W-172.08-Rocky Gorge Pump Station Upgrade.

## E. Annual Operating Budget Impact (000's)

Staff	FY of impact
Maintenance	\$341
Other Project Costs	
Debt Service	\$2,190
Total Cost	\$2,531
Impact on Water and Sewer Rate	\$0.05

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 06
Date First Approved	FY 03
Initial Cost Estimate	18,750
Cost Estimate Last FY	32,932
Present Cost Estimate	33,663
Approved Request Last FY	4,180
Total Expense & Encumbrances	12,705
Approval Request Year 1	378

## G. Status Information

Land Status	Land and RW to be acquired
Project Phase	Design
Percent Complete	60%
Est. Completion Date	FY 2020

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

## H. Map



# Rocky Gorge Pump Station Upgrade

A. Identification and Coding Information			
Agency Number	Project Number	Update Code	
W-172.06	063905	Change	

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County

Staff	
Maintenance	
Other Project Costs	
Debt Service	\$1,468
Total Cost	\$1,468
Impact on Water and Sewer Rate	\$0.03
	21

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	5,787	3,137	1,800	850	436	414					
Land											
Site Improvements & Utilities											
Construction	15,148	3,900	8,000	3,248	1,748	1,500					
Other	1,629		1,174	455	300	155					
<b>Total</b>	<b>22,564</b>	<b>7,037</b>	<b>10,974</b>	<b>4,553</b>	<b>2,484</b>	<b>2,069</b>					

## C. Funding Schedule (000's)

WSSC Bonds	22,564	7,037	10,974	4,553	2,484	2,069					
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## D. Description & Justification

**DESCRIPTION**  
This project provides for the modification and expansion of the Rocky Gorge Pump Station to allow the station to provide up to 110 MGD of raw water to the Patuxent Water Filtration Plant.

### JUSTIFICATION

The modification and expansion of the Rocky Gorge Raw Water Pumping Station will provide a firm raw water pumping capacity of 110 MGD. The improvements to the pump station, along with a fourth water pipeline (W-172.07) and expansion of the Patuxent Plant (W-172.05) will give the Patuxent Plant a firm nominal capacity of 72 MGD, with emergency capacity of 110 MGD.

Patuxent WFP Facility Plan (April 1997); In-House Study (April 2002)

### COST CHANGE

Not applicable.

### OTHER

The project scope remains the same. Expenditure and schedule projections shown in Block B above are based on actual bids.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Montgomery County Government; Prince George's County Government; Maryland Department of the Environment; Baltimore Gas & Electric;  
Coordinating Projects: W-172.05-Patuxent WFP Phase II Expansion; W-172.07-Patuxent Raw Water Pipeline; W-139.02-Duckett & Brighton Dam Upgrades.

## E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$1,468	21
Total Cost	\$1,468	21
Impact on Water and Sewer Rate	\$0.03	21

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 06
Date First Approved		FY 03
Initial Cost Estimate	12,930	
Cost Estimate Last FY	22,179	
Present Cost Estimate	22,564	
Approved Request Last FY	7,590	
Total Expense & Encumbrances	7,037	
Approval Request Year 1	2,484	

## G. Status Information

Land Status	Public/Agency owned land
Project Phase	Construction
Percent Complete	30%
Est Completion Date	August 2019

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	110 MGD

## H. Map



# Land & Rights-of-Way Acquisition - Bi-County Water

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-202.00	983857	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision											
Land	3,695		777	2,918	1,300	1,570	18	10	10	10	
Site Improvements & Utilities											
Construction											
Other											
<b>Total</b>	<b>3,695</b>		<b>777</b>	<b>2,918</b>	<b>1,300</b>	<b>1,570</b>	<b>18</b>	<b>10</b>	<b>10</b>	<b>10</b>	

## C. Funding Schedule (000's)

WSSC Bonds	3,081	2,709	1,091	1,570	18	10	10	10
SDC	614	209	209					

## D. Description & Justification

### DESCRIPTION

This PDF provides a consolidated estimate of funding for the acquisition of land and rights-of-way for water projects and for easement and land acquisitions for watershed protection. Expenditures are programmed based upon anticipated schedules and are required for the completion of those specific projects. These costs do not include purchases which have already been completed.

### JUSTIFICATION

Consolidation of expenditures for land and rights-of-way acquisitions provides flexibility in expending funds in a specific fiscal year and permits the WSSC to respond to the uncertainty of project-specific implementation schedules. Other considerations include the accommodation of unpredictable delays which impact the timing of a planned purchase, unanticipated rights-of-way requirements due to minor alignment changes identified late in the design phase, and the need to assure the WSSC an equitable negotiation position by avoiding project-specific cost displays prior to contacting property owners.

Acquisition needs are determined by the WSSC and are based upon facility planning efforts, alignment studies, field surveys, realignments required by other agencies, or requirements identified within the Development Services Process (DSP).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B are Order of Magnitude estimates only and may change based upon actual negotiations. When purchases are complete, the actual cost will be displayed in the expenditure schedule on the appropriate project.

### COORDINATION

Coordinating Agencies: Not Applicable

Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$200	25
Total Cost	\$200	25
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 98
Date First Approved		FY 98
Initial Cost Estimate		
Cost Estimate Last FY	4,529	
Present Cost Estimate	3,695	
Approved Request Last FY	2,375	
Total Expense & Encumbrances		
Approval Request Year 1	1,300	

## G. Status Information

Land Status	Land and RW to be acquired
Project Phase	On-Going
Percent Complete	
Est Completion Date	Not Applicable

Growth	17%
System Improvement	83%
Environmental Regulation	
Population Served	
Capacity	

## H. Map



**PROJECTS PENDING CLOSE-OUT**  
 Bi-County Water Projects  
 (costs in thousands)

Project Number	Agency Number	Project Name	Estimated Total Cost	Expenditures Thru FY'17	Estimated Expenditures FY'18	Remarks
934855	W-127.01	Bi-County Water Tunnel	\$141,636	\$140,624	\$1,012	Project completion expected in FY'18.
		<b>TOTALS</b>	<b>\$141,636</b>	<b>\$140,624</b>	<b>\$1,012</b>	

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## **Section 5 - Prince George's County Water Projects**

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**FINANCIAL SUMMARY**  
(ALL FIGURES IN THOUSANDS)

**PRINCE GEORGE'S COUNTY WATER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST TOTAL COST	EXPEND THRU 17	EST. EXPEND 18	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM	
						YR 1 19	YR 2 20	YR 3 21	YR 4 22	YR 5 23	YR 6 24			
W-12.02	Prince George's County HG415 Zone Water Main	3,644	418	965	2,261	2,077	184	0	0	0	0	0	0	5-2
W-34.02	Old Branch Avenue Water Main	24,240	2,812	198	21,230	8,820	8,690	5,720	0	0	0	0	0	5-3
W-34.03	Water Transmission Improvements 385B Pressure Zone	23,253	1,203	8,830	13,220	6,620	4,400	2,200	0	0	0	0	0	5-4
W-34.04	Branch Avenue Water Transmission Improvements	80,377	8,295	13,825	36,257	14,751	17,741	5,765	0	0	0	0	0	5-5
W-34.05	Marlboro Zone Reinforcement Main	4,226	380	810	3,036	3,036	0	0	0	0	0	0	0	5-6
W-62.05	Clinton Zone Water Storage Facility Implementation	15,527	2,087	2,002	6,593	5,993	605	0	0	0	0	0	0	5-7
W-65.10	St. Barnabas Elevated Tank Replacement	10,784	4,346	6,016	422	422	0	0	0	0	0	0	0	5-8
W-84.02	Richie Marlboro Road Transmission & PRV	5,867	2,002	3,105	1,760	1,760	0	0	0	0	0	0	0	5-9
W-84.03	Smith Home Farms Water Main	2,603	801	570	1,232	414	412	406	0	0	0	0	0	5-10
W-84.04	Westphalia Town Center Water Main	1,532	556	43	933	313	367	253	0	0	0	0	0	5-11
W-84.05	Prince George's County 450A Zone Water Main	84,540	1,509	821	64,321	684	9,149	13,622	13,622	13,622	13,622	13,622	17,899	5-12
W-93.01	Konterra Town Center East Water Main	1,581	43	651	867	61	350	194	282	0	0	0	0	5-13
W-105.01	Marlton Section 18 Water Main, Lake Marlton Avenue	2,581	29	1	2,551	406	429	429	429	429	429	429	0	5-14
W-111.05	Hillmeade Road Water Main	5,438	1,002	1,760	2,676	2,676	0	0	0	0	0	0	0	5-15
W-119.01	John Hanson Highway Water Main, Part 1	13,970	8,078	7,282	610	610	0	0	0	0	0	0	0	5-16
W-120.14	Villages of Timothy Water Main, Part 1	1,069	54	540	475	475	0	0	0	0	0	0	0	5-17
W-120.15	Villages of Timothy Water Main, Part 2	337	18	170	149	149	0	0	0	0	0	0	0	5-18
W-123.14	Old Marlboro Pike Water Main	1,755	1,269	118	363	202	166	0	0	0	0	0	0	5-19
W-123.20	Oak Grove/Leesland Roads Water Main, Part 2	14,868	9,642	4,796	230	230	0	0	0	0	0	0	0	5-20
W-137.03	South Potomac Supply Improvement, Phase 2	54,632	30	1,313	53,289	1,575	3,478	12,863	12,863	12,863	9,647	0	0	5-21
W-147.00	Collington Elevated Water Storage Facility	15,942	15,534	274	134	134	0	0	0	0	0	0	0	5-22
	Projects Pending Close-Out	17,380	16,780	600	0	0	0	0	0	0	0	0	0	5-23
<b>TOTALS</b>		<b>385,966</b>	<b>74,898</b>	<b>54,690</b>	<b>214,639</b>	<b>49,408</b>	<b>45,971</b>	<b>41,452</b>	<b>27,196</b>	<b>26,914</b>	<b>23,898</b>	<b>22,729</b>		

**Prince George's County HG415 Zone Water Main**

<b>A. Identification and Coding Information</b>	
Agency Number	Project Number
Update Code	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Patuxent HG415A; Montgomery High
Drainage Basins	
Planning Areas	Patuxent PA 15;

**B. Expenditure Schedule (000's)**

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	446	418	24	4	3	1					
Land											
Site Improvements & Utilities											
Construction	2,787		929	1,858	1,800	58					
Other	411		12	399	274	125					
<b>Total</b>	<b>3,644</b>	<b>418</b>	<b>965</b>	<b>2,261</b>	<b>2,077</b>	<b>184</b>					

**C. Funding Schedule (000's)**

WSSC Bonds	3,644	418	965	2,261	2,077	184					
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**D. Description & Justification**

**DESCRIPTION**

This project provides for the planning, design, and construction of 1,500 feet of 24-inch diameter water main and new isolation valves, pressure relief valves with flow control capability, which will improve system reliability by improving the flexibility of the delivery system to the Montgomery County High Zone HG660. Main Zone HG495A and Patuxent Pressure Zone HG415A 30-inch and 42-inch diameter transmission mains leaving the Patuxent Plant.

**JUSTIFICATION**

The new water main will provide a redundant feed to the Montgomery County High Zone HG660, Montgomery County Main Zone HG495 and Patuxent Pressure Zone HG415A from the Potomac Plant in the event the Patuxent Plant is out of service.  
BOA Contract No. PM0003A05, Task Order No. 12 - Patuxent Pressure Zone HG415A Redundancy Study, Whitman, Requardt & Associates, LLP (February 2009); BOA Contract No. PM0019A08, Task Order No. 11, Patuxent Pressure Zone HG415A 24-inch Transmission Main, EBA Engineering (December 2011), PM0007A13, Task Order No. 14, Patuxent Pressure Zone HG415A 24-inch Transmission Main, EBA Engineering ( March 16, 2017).

**COST CHANGE**

Cost increase based upon more complex design requirements

**OTHER**

The project scope remains the same. Expenditure and schedule projections shown in Block B above are preliminary design level estimates and may change depending on site-specific conditions and design constraints. Land costs are included in WSSC Project W-202.00.

**COORDINATION**

Coordinating Agencies: Prince George's County Government, Maryland Department of the Environment, Baltimore Gas & Electric; Coordinating Projects: Not Applicable

**E. Annual Operating Budget Impact (000's)**

Staff		FY of Impact
Maintenance	\$54	21
Other Project Costs		
Debt Service	\$237	21
Total Cost	\$291	21
Impact on Water and Sewer Rate	\$0.01	21

**F. Approval and Expenditure Data (000's)**

Date First in Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	1,074
Cost Estimate Last FY	3,443
Present Cost Estimate	3,644
Approved Request Last FY	2,098
Total Expense & Encumbrances	418
Approval Request Year 1	2,077

**G. Status Information**

Land Status	Land and RAW to be acquired
Project Phase	Design
Percent Complete	90%
Est Completion Date	FY 2020

**H. Map**



# Old Branch Avenue Water Main

A. Identification and Coding Information	
Agency Number	Project Number
Update Code	Change

PDF Date:	October 1, 2017
Date Revised:	

Pressure Zones	Clinton HG385B;
Drainage Basins	
Planning Areas	Clinton & Vicinity PA 81A;

Staff		
Maintenance	\$414	22
Other Project Costs		
Debt Service	\$788	22
Total Cost	\$1,202	22
Impact on Water and Sewer Rate	\$0.03	22

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Land	162	162									
Site Improvements & Utilities											
Construction	18,700			18,700	6,000	7,700	5,000				
Other	1,948		18	1,930	620	790	520				
<b>Total</b>	<b>24,240</b>	<b>2,812</b>	<b>198</b>	<b>21,230</b>	<b>6,820</b>	<b>8,690</b>	<b>5,720</b>				

## C. Funding Schedule (000's)

WSSC Bonds	12,120	1,406	99	10,615	3,410	4,345	2,860				
SDC	12,120	1,406	99	10,615	3,410	4,345	2,860				

## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of approximately 16,000 feet of 30-inch diameter water main and a new flow control valve along Old Branch Avenue, from Allentown Road to Piscataway Road.

### JUSTIFICATION

This project will provide redundancy to a large area of Prince George's County, including the 85,000 customers in Clinton Pressure Zone HG385B and dependent zones. Service to these zones would be severely disrupted with the loss of the Marlboro Road Pressure Reducing Valves or associated piping. The WSSC attempts to provide for average day demands in the event of the loss of any one water system facility and this project will meet that goal for Clinton Pressure Zone HG385B and dependent zones.

General Plan; M-NCP&PC Round 7.0 growth forecasts; WSSC Memorandum dated May 16, 2006.

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditure and schedule projections as shown in Block B above are design level estimates and may change based upon the final engineer's estimate and actual bids. Five properties have been acquired.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment; Prince George's County Department of Permitting Inspection and Enforcement.

Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		
Maintenance	\$414	22
Other Project Costs		
Debt Service	\$788	22
Total Cost	\$1,202	22
Impact on Water and Sewer Rate	\$0.03	22

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 08
Date First Approved		FY 08
Initial Cost Estimate		10,350
Cost Estimate Last FY		23,510
Present Cost Estimate		24,240
Approved Request Last FY		8,640
Total Expense & Encumbrances		2,812
Approval Request Year 1		6,820

## G. Status Information

Land Status	Public/Agency owned land
Project Phase	Design
Percent Complete	100%
Est Completion Date	FY 2021

Growth	50%
System Improvement	50%
Environmental Regulation	
Population Served	
Capacity	

## H. Map



## Water Transmission Improvements 385B Pressure Zone

A. Identification and Coding Information		PDF Date	October 1, 2017
Agency Number	Project Number	Date Revised	
W-34.03			
	Update Code		
	Change		

B. Expenditure Schedule (000's)		Pressure Zones	Clinton HG385B;
		Drainage Basins	
		Planning Areas	Clinton & Vicinity PA 81A;

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	1,253	1,203	30	20	20						
Land											
Site Improvements & Utilities											
Construction	20,000		8,000	12,000	6,000	4,000	2,000				
Other	2,000		800	1,200	600	400	200				
<b>Total</b>	<b>23,253</b>	<b>1,203</b>	<b>8,830</b>	<b>13,220</b>	<b>6,620</b>	<b>4,400</b>	<b>2,200</b>				

C. Funding Schedule (000's)	SDC
	23,253
	1,203
	8,830
	13,220
	4,400
	2,200

### D. Description & Justification

**DESCRIPTION**  
This project provides for the planning, design, and construction of approximately 24,000 feet of 24-inch diameter water transmission main and a flow control valve along Accokeek Road that will improve system reliability through the HG385 and HG345 pressure zones.

**JUSTIFICATION**  
The existing transmission mains have been stressed by recent development in southern Prince George's County. In addition, head-loss due to increased water use is preventing the Accokeek elevated tank from operating as designed. A new water main will improve our transmission capacity to serve recent and future growth, and will also improve overall reliability for southern Prince George's County customers.

Clinton Zone WSF & Transmission Improvements Modeling and Master Plan Report, Gannett Fleming, Inc. (February 2012).

### COST CHANGE

Cost decreased based upon final design estimate.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B above are based on engineer's estimates and may change based on actual bid. The alignment has been established and design is being finalized. No WSSC rate supported debt will be used for this project. Land costs are included in WSSC Project W-202.00.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; (Major stakeholder as 3/4 of the proposed alignment would be on SHIA ROW); Maryland-National Capital Park & Planning Commission; (MNCPPC Mandatory Referral Review Approval obtained on March 3, 2015). Maryland Department of the Environment; Maryland Department of Natural Resources; Prince George's County Department of Environmental Resources; Prince George's County Department of Permitting Inspection and Enforcement; U.S. Army Corps of Engineers; Prince George's County Government.

Coordinating Projects: Not Applicable

### E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$622	22
Other Project Costs		
Debt Service	\$622	22
Total Cost	\$0.01	22
Impact on Water and Sewer Rate	\$0.01	22

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 12
Date First Approved	FY 12
Initial Cost Estimate	173
Cost Estimate Last FY	30,240
Present Cost Estimate	23,253
Approved Request Last FY	13,365
Total Expense & Encumbrances	1,203
Approval Request Year 1	6,620

### G. Status Information

Land Status	Land and ROW to be acquired
Project Phase	Design
Percent Complete	100%
Est. Completion Date	FY 2021

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

### H. Map



# Branch Avenue Water Transmission Improvements

A. Identification and Coding Information		PDF Date	October 1, 2017	Pressure Zones	Clinton HG385B
Agency Number	Project Number	Date Revised		Drainage Basins	
W-34.04				Planning Areas	Clinton & Vicinity PA 81A
B. Expenditure Schedule (000's)					

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	2,983	2,469	257	257	155	78	24				
Land	244	244									
Site Improvements & Utilities											
Construction	32,604	5,582	10,684	16,338	5,403	6,719	4,216				
Other	24,546	2,884	2,884	21,662	9,193	10,944	1,525				
<b>Total</b>	<b>60,377</b>	<b>8,295</b>	<b>13,825</b>	<b>38,257</b>	<b>14,751</b>	<b>17,741</b>	<b>5,765</b>				
C. Funding Schedule (000's)											
SDC			13,625	38,257	14,751	17,741	5,765				

## D. Description & Justification

**DESCRIPTION**  
 This project provides for the planning, design, and construction of approximately 21,800 feet of 42-inch diameter water transmission main and 5,400 feet of 30-inch diameter water transmission main along Branch Avenue and Surratts Road in the Clinton area.

## JUSTIFICATION

The new water main will serve as a primary feed for the new Brandywine (formerly Clinton South) Tank. Clinton Zone WSF & Transmission Improvements Modeling and Master Plan Report, Gannett Fleming, Inc. (February 2012).

## COST CHANGE

Cost increase is due to the redesign of the Phase IV alignment.

## OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B above are a mix of bid value, design and planning level estimates and are expected to change as design progresses. The project is split into four phases. The first phase is comprised of approximately 1,200 feet of 42-inch pipe along Surratts Road and has been constructed by Prince George's County as part of the County Surratts/Brandywine road widening project. The second phase is approximately 3,300 feet of 30-inch main along Branch Avenue and will be constructed by the Maryland State Highway Administration (SHA) under the SHA MDS/Brandywine interchange improvement project. The third phase is to construct approximately 12,800 feet of 42-inch pipe and 2,100 feet of 30-inch pipe along Branch Avenue. The last phase is to construct the remaining 7,798 feet of pipe along Surratts Rd and the north section to tie-in to the existing 30-inch pipe on Woodyard/Piscataway Road. Both Phases III (BL5273B11) and IV (BL5273F1) will be bid and constructed by WSSC. No WSSC rate supported debt will be used for this project. Land costs are included in WSSC Project W-202.00.

## COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Maryland-National Capital Park & Planning Commission; (Mandatory Referral Process); Maryland Department of the Environment; Maryland Department of Natural Resources; Prince George's County Department of Permitting, Inspection and Enforcement; U.S. Army Corps of Engineers; Prince George's County Department of Public Works and Transportation; Prince George's County Department of Permitting, Inspection and Enforcement.  
 Coordinating Projects: W-62.05-Clinton Zone Water Storage Facility Implementation.

## E. Annual Operating Budget Impact (000's)

Staff						FY of Impact
Maintenance					\$704	22
Other Project Costs						
Debt Service					\$704	22
Total Cost					\$0.01	22
Impact on Water and Sewer Rate						

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 14
Date First Approved		FY 14
Initial Cost Estimate		23,705
Cost Estimate Last FY		54,033
Present Cost Estimate		60,377
Approved Request Last FY		13,604
Total Expense & Encumbrances		8,295
Approval Request Year 1		14,751

## G. Status Information

Land Status	Land and R/W to be acquired
Project Phase	Construction
Percent Complete	30%
Est Completion Date	July 2020

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



### Marlboro Zone Reinforcement Main

<b>A. Identification and Coding Information</b>		PDF Date	October 1, 2017	Pressure Zones	Clinton HG385B;
Agency Number	Project Number	Date Revised		Drainage Basins	
W-34.05				Planning Areas	Clinton & Vicinity PA 81A;

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	725	380	105	240	240						
Land											
Site Improvements & Utilities											
Construction	3,000		600	2,400	2,400						
Other	501		105	396	396						
<b>Total</b>	<b>4,226</b>	<b>380</b>	<b>810</b>	<b>3,036</b>	<b>3,036</b>						
WSSC Bonds	4,226	380	810	3,036	3,036						

### C. Funding Schedule (000's)

WSSC Bonds	Total
4,226	4,226

### D. Description & Justification

**DESCRIPTION**  
This project provides for the planning, design, and construction of approximately 4,000 feet of 16-inch diameter water transmission main and a flow control valve along Old Marlboro Pike in the Clinton area.

**JUSTIFICATION**  
This new water main will provide system reliability and redundancy by connecting the 385B and 280A pressure zones.

Clinton Zone WSF & Transmission Improvements Modeling and Master Plan Report, Gannett Fleming, Inc. (February 2012).

**COST CHANGE**  
Not applicable.

**OTHER**  
The project scope has remained the same. Expenditure and schedule projections shown in Block B above are planning level estimates and are expected to change as design progresses. Land costs are included in WSSC Project W-202.00.

**COORDINATION**  
Coordinating Agencies: Maryland State Highway Administration; Maryland-National Capital Park & Planning Commission; (Mandatory Referral Process); Prince George's County Department of Environmental Resources; Prince George's County Department of Permitting Inspection and Enforcement; Prince George's County Government.  
Coordinating Projects: Not Applicable

### E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$104	20
Other Project Costs		
Debt Service	\$275	20
Total Cost	\$379	20
Impact on Water and Sewer Rate	\$0.01	20

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 14
Date First Approved	FY 14
Initial Cost Estimate	5,234
Cost Estimate Last FY	4,232
Present Cost Estimate	4,226
Approved Request Last FY	2,651
Total Expense & Encumbrances	380
Approval Request Year 1	3,036

### G. Status Information

Land Status	Site Selected
Project Phase	Design
Percent Complete	80%
Est Completion Date	June 2019

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

### H. Map



# Clinton Zone Water Storage Facility Implementation

A. Identification and Coding Information		PDF Date	October 1, 2017
Agency Number	Project Number	Date Revised	
W-62.05			
	Update Code		
	Change		

Pressure Zones	Clinton HG385B;
Drainage Basins	
Planning Areas	Clinton & Vicinity PA 81A;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	2,341	1,973	120	198	148	50					50
Land	114	114									
Site Improvements & Utilities											
Construction	11,850		1,700	5,800	5,300	500					4,350
Other	1,222		182	600	545	55					440
<b>Total</b>	<b>15,527</b>	<b>2,087</b>	<b>2,002</b>	<b>6,598</b>	<b>5,993</b>	<b>605</b>					<b>4,840</b>
SDC	15,527	2,087	2,002	6,598	5,993	605					4,840

## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of approximately 4.0 million gallons (MG) of water storage to serve the Clinton area. The site selection phase of this project will include a Community Outreach Program. WSSC will construct a 2.0 MG water tank in the Brandywine area by FY'20. A future 2.0 MG water tank will be constructed in the Rosaryville area by FY'26 to meet the demands of the study area.

### JUSTIFICATION

Clinton Pressure Zone HG385B serves a large and growing area of Southern Prince George's County and currently has only one storage facility. Since storage facilities must be periodically removed from service for maintenance, having only one in a large zone creates operational problems. The Modeling and Master Plan Report indicates that there will be approximately 4.0 MG of storage deficit in Clinton Pressure Zone HG385B by the year 2040.

WSSC Memorandum dated May 9, 2005, from Timothy Hirrel, Unit Coordinator, to Craig Fricke, Planning Group Leader, 2006 Water Production Projections, 2005 Water Storage Volume Criteria; Clinton Zone WSF & Transmission Improvements Modeling and Master Plan Report, Gannett Fleming, Inc. (February 2012).

### COST CHANGE

Not applicable

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown are design level estimates and are expected to change once the project moves into construction. Estimated costs allocated for 'Beyond 6 Years' is for the future 2.0 MG water tank. No WSSC rate supported debt will be used for this project. Land costs are included in WSSC Project W-202.00.

### COORDINATION

Coordinating Agencies: Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment; Prince George's County Department of Environmental Resources; Federal Aviation Administration; Maryland Department of Natural Resources;

Coordinating Projects: W-34.02-Old Branch Avenue Water Main, W-34.03-Water Transmission Improvements 385B Pressure Zone, W-34.04-Branch Avenue Water Transmission Improvements, W-34.05-Marlboro Zone Reinforcement Main.

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service		
Total Cost		
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 13
Date First Approved		FY 13
Initial Cost Estimate		7,993
Cost Estimate Last FY		15,482
Present Cost Estimate		15,527
Approved Request Last FY		4,920
Total Expense & Encumbrances		2,087
Approval Request Year 1		5,993

## G. Status Information

Land Status	Land and RW to be acquired
Project Phase	Design
Percent Complete	100%
Est Completion Date	See Block D

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	4.0 MG

## H. Map

MAP NOT APPLICABLE

# St. Barnabas Elevated Tank Replacement

A. Identification and Coding Information		PDF Date	October 1, 2017
Agency Number	Project Number	Date Revised	
W-65.10			
	Update Code		
	Change		

Pressure Zones	Prince George's High HG450A; Patient
Drainage Basins	
Planning Areas	Suitland-District Heights & Vicinity PA

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$351	20
Total Cost	\$351	20
Impact on Water and Sewer Rate	\$0.01	20

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	1,335	1,086	169	80	80						
Land											
Site Improvements & Utilities											
Construction	8,864	3,260	5,300	304	304						
Other	585		547	38	38						
<b>Total</b>	<b>10,784</b>	<b>4,346</b>	<b>6,016</b>	<b>422</b>	<b>422</b>						

## C. Funding Schedule (000's)

WSSC Bonds	5,392	2,173	3,008	211	211						
SDC	5,392	2,173	3,008	211	211						

## D. Description & Justification

### DESCRIPTION

This project provides for the design and construction of approximately 2.5 million gallons (MG) of water storage to serve Prince George's High Pressure Zone HG450A and the demolition of the existing St. Barnabas elevated water storage tank.

### JUSTIFICATION

This project is necessary to provide storage capacity and address water quality issues in Prince George's High Pressure Zone HG450A. Specifically, the existing St. Barnabas and Camp Springs elevated tanks have low overflow elevations that impact water quality in the zone.

Prince George's County High Zone Storage Study, Hazen & Sawyer (June 2012).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B are based on actual bid. The Prince George's County High Zone Storage Study recommended moving forward with design and construction of a new tank on the existing St. Barnabas site. The new tank will replace the existing St. Barnabas elevated tank. The study also recommended pursuing acquisition of an additional site for long-term water storage needs.

### COORDINATION

Coordinating Agencies: Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment; Federal Aviation Administration;  
Coordinating Projects: Not Applicable

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	7,274
Cost Estimate Last FY	11,382
Present Cost Estimate	10,784
Approved Request Last FY	4,724
Total Expense & Encumbrances	4,346
Approval Request Year 1	422

## G. Status Information

Land Status	Public/Agency owned land
Project Phase	Construction
Percent Complete	36%
Est. Completion Date	August 2018

Growth	50%
System Improvement	50%
Environmental Regulation	
Population Served	
Capacity	2.5 MG

## H. Map



# Ritchie Marlboro Road Transmission Main & PRV

A. Identification and Coding Information	
Agency Number	Project Number
Update Code	Change
WI-64.02	

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Prince George's High HG-450A; Southern
Drainage Basins	
Planning Areas	Westphalia & Vicinity PA 78;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	1,800	1,600	100	100	100						
Land	2	2									
Site Improvements & Utilities											
Construction	4,430	400	2,600	1,430	1,430						
Other	635		405	230	230						
<b>Total</b>	<b>6,867</b>	<b>2,002</b>	<b>3,105</b>	<b>1,760</b>	<b>1,760</b>						

## C. Funding Schedule (000's)

SDC	6,867	2,002	3,105	1,760	1,760						
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of approximately 13,100 feet of 24-inch diameter main and a pressure reducing valve (PRV) to serve the Westphalia area. The water main will be constructed along Ritchie Marlboro Road from south of Westphalia Road to the Bellway.

### JUSTIFICATION

Prince George's County High Zone Water Main Alignment and Capacity Study, Chester Engineering (September 2012).

### COST CHANGE

Cost decreased based upon actual bid.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown above are based upon actual bid. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Water Management Administration; Maryland Department of Natural Resources; Prince George's County Department of Permitting Inspection and Enforcement; U.S. Army Corps of Engineers.  
Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$339	20
Other Project Costs		
Debt Service	\$339	20
Total Cost	\$0.01	20
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 08
Date First Approved	FY 08
Initial Cost Estimate	2,496
Cost Estimate Last FY	12,799
Present Cost Estimate	6,867
Approved Request Last FY	5,676
Total Expense & Encumbrances	2,002
Approval Request Year 1	1,760

## G. Status Information

Land Status	Land acquired
Project Phase	Construction
Percent Complete	70%
Est. Completion Date	November 2018

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



## Smith Home Farms Water Main

A. Identification and Coding Information	
Agency Number	Project Number
W-94.03	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Southern 385B;
Drainage Basins	
Planning Areas	Westphalia & Vicinity PA 78;

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	425	158	87	180	63	61	56				
Land											
Site Improvements & Utilities											
Construction	1,943	643	409	891	297	297	297				
Other	235		74	161	54	54	53				
<b>Total</b>	<b>2,603</b>	<b>801</b>	<b>570</b>	<b>1,232</b>	<b>414</b>	<b>412</b>	<b>406</b>				

### C. Funding Schedule (000's)

Contribution/Other	2,603	801	570	1,232	414	412	406				
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### D. Description & Justification

**DESCRIPTION**  
 This project provides for the planning, design, and construction of 7,600 feet of 16-inch diameter water main to serve the Smith Home Farms Subdivision.

**JUSTIFICATION**  
 Smith Home Farm Subdivision Hydraulic Planning Analysis (Amended March 2015).

**COST CHANGE**  
 Not applicable.

**OTHER**  
 The project scope has remained the same. Expenditure and schedule projections shown in Block B above are based upon information provided by the developer. Design and construction will be performed by the developer under a System Extension Permit. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

**COORDINATION**  
 Coordinating Agencies: Maryland-National Capital Park & Planning Commission; (Westphalia Sector Plan); Prince George's County Government.  
 Coordinating Projects: Not Applicable

### E. Annual Operating Budget Impact (000's)

Staff			FY of Impact
Maintenance		\$197	22
Other Project Costs			
Debt Service			
Total Cost		\$197	22
Impact on Water and Sewer Rate			

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 08
Date First Approved	FY 08
Initial Cost Estimate	1,600
Cost Estimate Last FY	2,549
Present Cost Estimate	2,603
Approved Request Last FY	409
Total Expense & Encumbrances	801
Approval Request Year 1	414

### G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	75%
Est. Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

### H. Map



# Westphalia Town Center Water Main

A. Identification and Coding Information	
Agency Number	Project Number
W-84.04	Update Code
	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Clinton HG385B;
Drainage Basins	
Planning Areas	Westphalia & Vicinity PA 78;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	192	23	37	132	63	45	24				
Land											
Site Improvements & Utilities											
Construction	1,212	533		679	209	274	196				
Other	128		6	122	41	48	33				
<b>Total</b>	<b>1,532</b>	<b>556</b>	<b>43</b>	<b>933</b>	<b>313</b>	<b>367</b>	<b>253</b>				

## C. Funding Schedule (000's)

Contribution/Other	1,532	556	43	933	313	367	253				
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## D. Description & Justification

**DESCRIPTION**  
This project provides for the planning, design, and construction of 4,700 feet of 16-inch diameter water main to serve Westphalia Town Center and vicinity.

### JUSTIFICATION

Westphalia Town Center Hydraulic Planning Analysis (June 2008).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditure and schedule projections shown in Block B above are based upon information provided by the developer. Design and construction will be performed by the developer under a System Extension Permit. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Maryland-National Capital Park & Planning Commission; Prince George's County Department of Permitting Inspection and Enforcement; Prince George's County Government.  
Coordinating Projects: W-84.03-Smith Home Farms Water Main.

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$122	22
Other Project Costs		
Debt Service		
Total Cost	\$122	22
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 14
Date First Approved	FY 14
Initial Cost Estimate	1,396
Cost Estimate Last FY	1,497
Present Cost Estimate	1,532
Approved Request Last FY	302
Total Expense & Encumbrances	556
Approval Request Year 1	313

## G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	40%
Est Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



# Prince George's County 450A Zone Water Main

A. Identification and Coding Information	
Agency Number	Project Number
W-84.05	Change
Update Code	

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Prince George's High HG450A
Drainage Basins	
Planning Areas	Prince George's County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY-17	Estimate FY-18	Total 6 Years	Year 1 FY-19	Year 2 FY-20	Year 3 FY-21	Year 4 FY-22	Year 5 FY-23	Year 6 FY-24	Beyond 6 Years
Planning, Design & Supervision	3,708	1,509	714	1,485	595	178	178	178	178	178	
Land											
Site Improvements & Utilities											
Construction	70,002			54,446	7,778	11,667	11,667	11,667	11,667	11,667	15,556
Other	10,830		107	8,390	89	1,193	1,777	1,777	1,777	1,777	2,333
<b>Total</b>	<b>84,540</b>	<b>1,509</b>	<b>821</b>	<b>64,321</b>	<b>684</b>	<b>9,149</b>	<b>13,622</b>	<b>13,622</b>	<b>13,622</b>	<b>13,622</b>	<b>17,889</b>

## C. Funding Schedule (000's)

WSSC Bonds	84,540	1,509	821	64,321	684	9,149	13,622	13,622	13,622	13,622	17,889
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## D. Description & Justification

### DESCRIPTION

This project provides for a capacity and alignment study, design, and construction of approximately 3.8 miles of new 48-inch diameter redundant transmission main for Prince George's High Pressure Zone HG450A. Portions of the transmission main that currently serve the HG450A and HG290B Pressure Zones will be out of service almost every year to meet the goals of the FCCP inspection program. A redundant transmission main is required to continue to provide service to our customers while the existing transmission main is planned to be out of service and to provide service in case the existing main fails.

### JUSTIFICATION

When portions of the existing main are out of service, the remaining mains lack sufficient capacity and pumping against these restrictions can cause high pressure that may result in pipe failure. The new transmission main may parallel or replace existing mains as determined by modeling. The new main should be a minimum of 30-inch diameter and will start where the existing 54-inch diameter main inside the beltway connects to an existing 30-inch diameter main just north of Pennsylvania Ave. and tie in to the new 30-inch diameter main to be constructed under WSSC project W-34.02-Old Branch Avenue Water Main.

### COST CHANGE

Cost estimate increased based on the final selected alignment and preliminary design estimate.

### OTHER

The project scope has remained the same. Expenditure and schedule projects shown above are preliminary design level estimates and are expected to change as the project moves through design. An alignment and capacity study has been performed and final alignment and pipeline diameter has been selected. The project is expected to move into final design phase in the next fiscal year. Land costs are included in WSSC Project W-202.00.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Prince George's County Government; Maryland-National Capital Park & Planning Commission; (Mandatory Referral Process); Prince George's County Department of Permitting Inspection and Enforcement; Maryland Department of Natural Resources; Prince George's County Department of Public Works and Transportation; National Park Service; Maryland Historical Trust; U.S. Army Corps of Engineers; Washington Metropolitan Area Transit Authority.  
Coordinating Projects: W-34.02-Old Branch Avenue Water Main.

## E. Annual Operating Budget Impact (000's)

Staff					FY of Impact
Maintenance					
Other Project Costs				\$821	
Debt Service				\$5,499	
Total Cost				\$6,320	
Impact on Water and Sewer Rate				\$0.13	

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	374
Cost Estimate Last FY	40,308
Present Cost Estimate	84,540
Approved Request Last FY	1,609
Total Expense & Encumbrances	1,509
Approval Request Year 1	684

## G. Status Information

Land Status	Land and RAW to be acquired
Project Phase	Design
Percent Complete	30%
Est Completion Date	FY 2025

## H. Map

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	



# Konterra Town Center East Water Main

A. Identification and Coding Information		PDF Date:	October 1, 2017
Agency Number	Project Number	Date Revised	
W-93.01			
Update Code			
Change			

Pressure Zones	P. G. 415A;
Drainage Basins	Northeast Branch Branch 08;
Planning Areas	Northwestern Area PA. 60;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	183	8	74	101	7	40	22	32			
Land											
Site Improvements & Utilities											
Construction	1,197	35	492	670	46	264	147	213			
Other	201		85	116	8	46	25	37			
<b>Total</b>	<b>1,581</b>	<b>43</b>	<b>651</b>	<b>887</b>	<b>61</b>	<b>350</b>	<b>194</b>	<b>282</b>			

## C. Funding Schedule (000's)

Contribution/Other	1,581	43	651	887	61	350	194	282			
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of 9,200 feet of 16-inch diameter water main to serve the Konterra Town Center East, located in the area bound by Interstate 95, the Intercounty Connector and Konterra Drive. The sleeve for the water main crossing the intercounty connector was built under WSSC Project S-28.18 Konterra Town Center East Sewer.

### JUSTIFICATION

Letter of Findings - Hydraulic Planning Analysis (August 29, 2013).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B are based upon information provided by the developer. Design and construction will be performed by the developer under a Systems Extension Permit. Estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Prince George's County Government.  
Coordinating Projects: S-28.18-Konterra Town Center East Sewer Main;

## E. Annual Operating Budget Impact (000's)

Staff											FY of Impact
Maintenance										\$238	23
Other Project Costs											
Debt Service											
Total Cost										\$238	23
Impact on Water and Sewer Rate										\$0.01	23

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 09
Date First Approved		FY 09
Initial Cost Estimate		610
Cost Estimate Last FY		1,593
Present Cost Estimate		1,581
Approved Request Last FY		61
Total Expense & Encumbrances		43
Approval Request Year 1		61

## G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	3%
Est Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



# Marlton Section 18 Water Main, Lake Marlton Avenue

A. Identification and Coding Information		PDF Date	October 1, 2017
Agency Number	Project Number	Update Code	
W-105.01		Change	

Pressure Zones	Clinton HG385B;
Drainage Basins	
Planning Areas	Rosaryville PA.82A;

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$140	25
Other Project Costs		
Debt Service		
Total Cost	\$140	25
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 02
Date First Approved	FY 02
Initial Cost Estimate	398
Cost Estimate Last FY	2,480
Present Cost Estimate	2,581
Approved Request Last FY	386
Total Expense & Encumbrances	29
Approval Request Year 1	406

## G. Status Information

Land Status	Not Applicable
Project Phase	Design
Percent Complete	20%
Est. Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years	Contribution/Other		
												29	429	
Planning, Design & Supervision	394	29	1	364	44	64	64	64	64	64	64		29	429
Land														
Site Improvements & Utilities														
Construction	1,854			1,854	309	309	309	309	309	309	309			
Other	333		0	333	53	56	56	56	56	56	56			
<b>Total</b>	<b>2,581</b>	<b>29</b>	<b>1</b>	<b>2,551</b>	<b>406</b>	<b>429</b>	<b>429</b>	<b>429</b>	<b>429</b>	<b>429</b>	<b>429</b>		<b>29</b>	<b>429</b>

## D. Description & Justification

**DESCRIPTION**  
This project provides for the planning, design, and construction of 5,400 feet of 16-inch diameter water main to provide service to East Marlton, Section 18, along Heathermore Boulevard and Lake Marlton Avenue.

## JUSTIFICATION

East Marlton Hydraulic Planning Analysis (February 2008).

## COST CHANGE

Not applicable.

## OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B are based upon information provided by the developer. Design and construction will be performed by the developer under a Systems Extension Permit. Estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

## COORDINATION

Coordinating Agencies: Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment;  
Coordinating Projects: Not Applicable.

# Hillmeade Road Water Main

A. Identification and Coding Information	
Agency Number	Project Number
Update Code	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Bowie HG350E;
Drainage Basins	
Planning Areas	Bowie & Vicinity PA 71A;

E. Annual Operating Budget Impact (000's)	
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### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	1,032	972	30	30	30						
Land	30	30									
Site Improvements & Utilities											
Construction	3,797	1,500	2,297	2,297							
Other	579	230	349	349							
<b>Total</b>	<b>5,438</b>	<b>1,002</b>	<b>1,760</b>	<b>2,676</b>							

### C. Funding Schedule (000's)

SDC	5,438	1,002	1,760	2,676							
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### D. Description & Justification

**DESCRIPTION**  
 This project provides for the planning, design, and construction of approximately 7,300 feet of 24-inch diameter water main along Hillmeade Road from Latham-Severn Road to an existing 24-inch diameter water main in Hillmeade Road at Daisy Lane.

#### JUSTIFICATION

The purpose of this project is to provide adequate pressure in response to growth in the Bowie area. Bowie-Glen Dale Water Storage Facility Plan, O'Brien & Gere Engineers, Inc. (October 1990); Water Resources Planning Section Memorandum dated May 31, 1996; M-WCP&PC Round 6 growth forecasts.

#### COST CHANGE

Not applicable.

#### OTHER

The project scope has remained the same. Expenditures and schedule projections shown in Block B are design level estimates and may change based upon site-specific conditions and actual bid. This project has been delayed due to outstanding permitting issues. No WSSC rate supported debt will be used for this project.

#### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Prince George's County Government; Maryland-National Capital Park & Planning Commission; AMTRAK; Maryland Department of Natural Resources; Prince George's County Department of Permitting Inspection and Enforcement; U.S. Army Corps of Engineers;  
 Coordinating Projects: Not Applicable

Staff		
Maintenance		
Other Project Costs	\$189	20
Debt Service		
Total Cost	\$189	20
Impact on Water and Sewer Rate		

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 98
Date First Approved	FY 98
Initial Cost Estimate	1,898
Cost Estimate Last FY	5,598
Present Cost Estimate	5,438
Approved Request Last FY	3,114
Total Expense & Encumbrances	1,002
Approval Request Year 1	2,676

### G. Status Information

Land Status	Land acquired
Project Phase	Design
Percent Complete	100%
Est Completion Date	December 2018

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

### H. Map



# John Hanson Highway Water Main, Part 1

A. Identification and Coding Information	
Agency Number	Project Number
Update Code	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Prince George's Main HG320A; Prince
Drainage Basins	
Planning Areas	Collington & Vicinity PA 74B; Largo-

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY-17	Estimate FY-18	Total 6 Years	Year 1 FY-19	Year 2 FY-20	Year 3 FY-21	Year 4 FY-22	Year 5 FY-23	Year 6 FY-24	Beyond 6 Years
Planning, Design & Supervision	1,100	900	120	80	80						
Land											
Site Improvements & Utilities											
Construction	11,600	4,625	6,500	475	475						
Other	1,270	553	662	55	55						
<b>Total</b>	<b>13,970</b>	<b>6,078</b>	<b>7,282</b>	<b>610</b>	<b>610</b>						
<b>SDC</b>	<b>13,970</b>	<b>6,078</b>	<b>7,282</b>	<b>610</b>	<b>610</b>						

## D. Description & Justification

**DESCRIPTION**  
This project provides for the planning, design, and construction of 9,300 feet of 36-inch diameter water main along John Hanson Highway and Martin Luther King Jr. Highway, from Whitfield Chapel Road to Folly Branch.

### JUSTIFICATION

This project will provide service to the growing area of Bowie and to the low pressure area north of Route 50, Prince George's Main Pressure Zone HG320A. This main will provide redundancy to existing and future developments in the Bowie area.

General Plan: M-NC&PC Round 6.2 growth projections; WSSC Memorandum dated April 7, 1997.

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditure and schedule projections shown in Block B above are based upon actual bid. The redundancy and water system reliability benefits of this project would be immediate. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Prince George's County Government; Prince George's County Department of Environmental Resources; Maryland Department of the Environment; U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; Maryland-National Capital Park & Planning Commission; Maryland Department of Natural Resources;  
Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$241	20
Other Project Costs		
Debt Service		
Total Cost	\$241	20
Impact on Water and Sewer Rate	\$0.01	20

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 82
Date First Approved	FY 82
Initial Cost Estimate	675
Cost Estimate Last FY	14,500
Present Cost Estimate	13,970
Approved Request Last FY	6,600
Total Expense & Encumbrances	6,078
Approval Request Year 1	610

## G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	30%
Est Completion Date	FY 2019

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



# Villages of Timothy Water Main, Part 1

A. Identification and Coding Information		PDF Date	October 1, 2017
Agency Number:	Project Number	Date Revised	
W-120.14			
	Update Code		
	Change		

Pressure Zones	Southern 385B;
Drainage Basins	
Planning Areas	Brandywine & Vicinity PA 85A;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Land											
Site Improvements & Utilities											
Construction	781		390	391	391						
Other	132		70	62	62						
<b>Total</b>	<b>1,069</b>	<b>54</b>	<b>540</b>	<b>475</b>	<b>475</b>						

## C. Funding Schedule (000's)

Contribution/Other	1,069	54	540	475	475						
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## D. Description & Justification

**DESCRIPTION**  
This project provides for the planning, design, and construction of 3,800 feet of 16-inch water main to serve the Villages of Timothy project, Part 7.

### JUSTIFICATION

Villages of Timothy Hydraulic Planning Analysis (Amended April 2017):

### COST CHANGE

The expenditures and schedule have been updated based upon information provided by the developer.

### OTHER

The project scope has remained the same. The expenditure and schedule projections shown in Block B above are based upon information provided by the developer. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Prince George's County Government  
Coordinating Projects: W-120.15-Villages of Timothy Water Main, Part 2;

## E. Annual Operating Budget Impact (000's)

Staff				FY of Impact
Maintenance				
Other Project Costs		\$26		20
Debt Service				
Total Cost		\$26		20
Impact on Water and Sewer Rate				

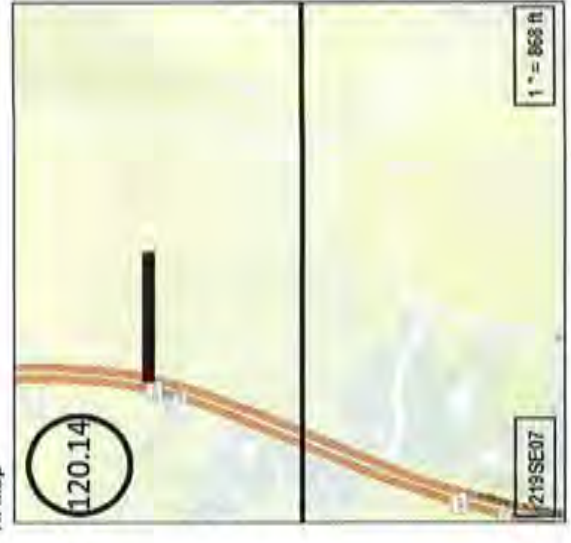
## F. Approval and Expenditure Data (000's)

Date First in Program		FY 94
Date First Approved		FY 94
Initial Cost Estimate	176	
Cost Estimate Last FY	277	
Present Cost Estimate	1,069	
Approved Request Last FY	28	
Total Expense & Encumbrances	54	
Approval Request Year 1	475	

## G. Status Information

Land Status	Not Applicable
Project Phase	Planning
Percent Complete	100%
Est. Completion Date	Developer Dependent
Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



# Villages of Timothy Water Main, Part 2

<b>A. Identification and Coding Information</b>		PDF Date	October 1, 2017	Pressure Zones	Southern 385B;
Agency Number	Project Number	Date Revised		Drainage Basins	
W-120.15				Planning Areas	Brandywine & Vicinity PA 85A;

<b>B. Expenditure Schedule (000's)</b>		Thru FY'17	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	49	18	6						
Land									
Site Improvements & Utilities									
Construction	247	123	124						
Other	41	22	19						
<b>Total</b>	<b>337</b>	<b>170</b>	<b>149</b>						
<b>C. Funding Schedule (000's)</b>									
Contribution/Other	337	18	170	149					

**D. Description & Justification**  
**DESCRIPTION**  
 This project provides for the planning, design, and construction of 1,250 feet of 16-inch water main to serve the Villages of Timothy project, Part 6.  
**JUSTIFICATION**  
 Villages of Timothy Hydraulic Planning Analysis (Amended April 2017).  
**COST CHANGE**  
 The expenditures and schedule have been updated based upon information provided by the developer.  
**OTHER**

The project scope has remained the same. The expenditure and schedule projections shown in Block B above are based upon information provided by the developer. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.  
**COORDINATION**  
 Coordinating Agencies: Prince George's County Government;  
 Coordinating Projects: W-120.14-Villages of Timothy Water Main, Part 1;

## E. Annual Operating Budget Impact (000's)

Staff				FY of Impact
Maintenance			\$70	20
Other Project Costs				
Debt Service				
Total Cost			\$70	20
Impact on Water and Sewer Rate				

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 94
Date First Approved	FY 94
Initial Cost Estimate	159
Cost Estimate Last FY	688
Present Cost Estimate	337
Approved Request Last FY	64
Total Expense & Encumbrances	18
Approval Request Year 1	149

## G. Status Information

Land Status	Not Applicable
Project Phase	Planning
Percent Complete	100%
Est Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



# Old Marlboro Pike Water Main

A. Identification and Coding Information	
Agency Number	Project Number
Update Code	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Clinton HC385B
Drainage Basins	
Planning Areas	Upper Marlboro & Vicinity PA 79;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	233	189	11	33	16	17				
Land										
Site Improvements & Utilities										
Construction	1,459	1,080	92	287	160	127				
Other	63	15	48	26	22					
<b>Total</b>	<b>1,755</b>	<b>1,269</b>	<b>118</b>	<b>368</b>	<b>202</b>	<b>166</b>				

## C. Funding Schedule (000's)

Contribution/Other	1,755	1,269	118	368	202	166				
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## D. Description & Justification

### DESCRIPTION

This project provides for the design and construction of approximately 9,000 feet of 16-inch diameter water main along Old Marlboro Pike and on-site at the applicant's property to serve the Addison Property development.

### JUSTIFICATION

Old Marlboro Pike Hydraulic Analysis (February 2003). Review of Project #DA3538Z03 for the Addison Property development. Based on Development Services and Planning Group studies, a 16-inch diameter water main was deemed necessary to provide service to the Addison Property development as well as to future development.

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditure and schedule projections shown in Block B above are based upon information provided by the developer. Design and construction will be performed by the developer under a System Extension Permit. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland State Department of Transportation; Prince George's County Department of Permitting Inspection and Enforcement; Prince George's County Department of Environmental Resources; Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$233	21
Other Project Costs		
Debt Service		
Total Cost	\$233	21
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 04
Date First Approved	FY 04
Initial Cost Estimate	800
Cost Estimate Last FY	1,748
Present Cost Estimate	1,755
Approved Request Last FY	202
Total Expense & Encumbrances	1,269
Approval Request Year 1	202

## G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	80%
Est. Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map





# South Potomac Supply Improvement, Phase 2

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-137.03		Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Rosecroft HG290A; Potomac 290B;
Drainage Basins	
Planning Areas	Henson Creek PA, 76B; Henson Creek

## B. Expenditure Schedule (000's)

Cost Elements	Thru FY'17	Total	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	30	4,030	1,500	312	250	250	250	188	
Land									
Site Improvements & Utilities									
Construction	0	48,000	0	3,000	12,000	12,000	12,000	9,000	
Other		2,602	63	166	613	613	613	459	
<b>Total</b>	<b>30</b>	<b>54,632</b>	<b>1,575</b>	<b>3,478</b>	<b>12,863</b>	<b>12,863</b>	<b>12,863</b>	<b>9,647</b>	

## C. Funding Schedule (000's)

WSSC Bonds	20	866	1,039	2,295	8,489	8,489	8,489	6,367
SDC	10	447	536	1,183	4,374	4,374	4,374	3,260

## D. Description & Justification

### DESCRIPTION

This project provides for the design and construction of 4.4 miles of 42-inch diameter ductile iron pipe and a new flow control valve vault to replace 3.5 miles of 42-inch diameter PCCP water transmission main in Henson Creek. The new main will be relocated out of Henson Creek and into the roadway along Palmer Road, Tucker Road, and Allentown Road. The project limits are between Indian Head Highway and Temple Hill Road. A parallel distribution main will be constructed to serve residential customers along Palmer, Tucker, and Allentown Roads. Also will include a 10-inch diameter water main replacement along Tucker Rd, an additional Valve, and 500 feet of 42-inch diameter PCCP pipe replacement in Rosecroft area.

### JUSTIFICATION

During design of the 42-inch PCCP transmission main replacement under CIP W-137.02, South Potomac Supply Improvement, Phase 1, WSSC and the Maryland Department of the Environment discussed extensive requirements for stream restoration of Henson Creek. At that time, WSSC staff identified up to 3.5 miles of pipe south of the project area that is exposed along eroding stretches of Henson Creek. An alignment study began under CIP W-137.03, South Potomac Supply Improvement, Phase 2, to evaluate possible relocation of the existing 42-inch PCCP main between Rosecroft Drive and Indian Head Highway. The 3.5 miles of PCCP main will be relocated out of Henson Creek and into a roadway alignment between Temple Hill Road and Indian Head Highway, for a total of 4.4 miles of new 42-inch ductile iron pipe. The transmission main will be relocated out of the 290B pressure zone and into the 450A pressure zone. Phase 2 includes the installation of a flow control valve between pressure zones 450A and 290B.

Concept Finalization Report, O'Brien & Gere Engineers Inc. (January 2014); Alignment Study - Final: Henson Creek 42-Inch Water Main Replacement, O'Brien & Gere Engineers Inc. (April 2017).

### COST CHANGE

Costs increased due to the addition of a new 10-inch diameter water main replacement along Tucker Rd, an additional Valve, and 500 feet of 42-inch diameter PCCP pipe replacement in Rosecroft area.

### OTHER

The project scope has remained the same. The alignment study for Phase 2 was completed in April 2017. Schedule and expenditure projections for Phase 2 are planning level estimates and may change based upon a final evaluation of the recommended alignment, restoration requirements, and other site-specific conditions. Land costs are included in WSSC Project W-202.00

### COORDINATION

Coordinating Agencies: Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment; Maryland Department of Natural Resources; Prince George's County Department of Permitting Inspection and Enforcement; U.S. Army Corps of Engineers; Washington Gas Light Company.  
Coordinating Projects: W-84.05-Prince George's County 450A Zone Water Main; W-34.02-Old Branch Avenue Water Main; W-137.02-South Potomac Supply Improvement, Phase 1

## E. Annual Operating Budget Impact (000's)

Staff									FY of Impact
Maintenance								\$602	25
Other Project Costs									
Debt Service								\$2,345	25
Total Cost								\$2,947	25
Impact on Water and Sewer Rate								\$0.06	25

## F. Approval and Expenditure Data (000's)

Date First in Program									FY 18
Date First Approved									FY 07
Initial Cost Estimate									53,374
Cost Estimate Last FY									53,374
Present Cost Estimate									54,632
Approved Request Last FY									1,024
Total Expense & Encumbrances									30
Approval Request Year 1									1,575

## G. Status Information

Land Status									Land and R/W to be acquired
Project Phase									Design
Percent Complete									30%
Est. Completion Date									FY 2024

Growth									34%
System Improvement									66%
Environmental Regulation									
Population Served									
Capacity									

## H. Map



## Collington Elevated Water Storage Facility

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-147.00		Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Prince George's Intermediate HG317A;
Drainage Basins	
Planning Areas	Collington & Vicinity PA 74B;

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	3,143	3,073	49	21							
Land	130	130									
Site Improvements & Utilities											
Construction	12,631	12,331	200	100	100						
Other	38		25	13	13						
<b>Total</b>	<b>15,942</b>	<b>15,534</b>	<b>274</b>	<b>134</b>	<b>134</b>						

### C. Funding Schedule (000's)

WSSC Bonds	7,971	7,767	137	67						
SDC	7,971	7,767	137	67						

### D. Description & Justification

#### DESCRIPTION

This project provides for the site selection, planning, design, and construction of 4 million gallons (MG) of elevated storage to serve the Intermediate Zone. The site selection phase included a Community Outreach Program. A portion of the Safeway Distribution Facility property, at Leeland Road and Route 301, was acquired as the site for the new water storage tanks. This project also includes modifications at the existing Central Avenue Water Pumping Station to add an additional pump and upgrade an existing pump in order to optimize the utilization of the new Collington Tanks and provide redundancy in the affected zones.

#### JUSTIFICATION

The Prince George's High Zone Facility Plan indicates there is a need to provide up to 4 MG of additional storage to the Intermediate Zone to meet demands to the year 2020. During the siting phase, this project determined the site and size of the new facility.

Prince George's County High Zone Facility Plan (April 1996); Water Storage Volume Criteria Report (November 2005).

#### COST CHANGE

Not applicable.

#### OTHER

The project scope has remained the same. The expenditure and schedule projections shown in Block B are based upon actual bid.

#### COORDINATION

Coordinating Agencies: Prince George's County Government; Maryland-National Capital Park & Planning Commission; City of Bowie;  
Coordinating Projects: W-123.20-Oak Grove/Leeland Roads Water Main, Part 2.

### E. Annual Operating Budget Impact (000's)

Staff	FY of Impact
Maintenance	
Other Project Costs	
Debt Service	\$519
Total Cost	\$519
Impact on Water and Sewer Rate	\$0.01
	20

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 98
Date First Approved	FY 98
Initial Cost Estimate	12,536
Cost Estimate Last FY	17,022
Present Cost Estimate	15,942
Approved Request Last FY	134
Total Expense & Encumbrances	15,534
Approval Request Year 1	134

### G. Status Information

Land Status	Land acquired
Project Phase	Construction
Percent Complete	95%
Est Completion Date	March 2018

Growth	50%
System Improvement	50%
Environmental Regulation	
Population Served	
Capacity	4.0 MG

### H. Map



**PROJECTS PENDING CLOSE-OUT**

Prince George's Water Projects  
(costs in thousands)

Project Number	Agency Number	Project Name	Estimated Total Cost	Expenditures Thru FY'17	Estimated Expenditures FY'18	Remarks
	W-120.16	Villages of Timothy Water Main, Part 3	\$0	\$0	\$0	Project combined with W-120.14 & W-120.15.
	W-137.02	South Potomac Supply Improvement, Phase 1	17,390	16,790	600	Project completion expected in FY'18.
		<b>TOTALS</b>	<b>\$17,390</b>	<b>\$16,790</b>	<b>\$600</b>	

**2018 WATER AND SEWER PLAN**

***APPENDIX 3-8***

***PRINCE GEORGE'S COUNTY  
APPROVED WATER REUSE FACILITIES***

**2018 WATER AND SEWER PLAN**

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## 2018 WATER AND SEWER PLAN

The following list is comprised of facilities that have been approved for water reuse having met the minimum criteria outlined by the County in Section 3.2.6 of this water and sewer plan.

<b>Public Facilities (Federal, State, County, Municipal – owned)</b>		
<i>Project Name</i>	<i>Type of non-potable source</i>	<i>Proposed Use</i>
Fairmount Heights High School	Rainwater	Toilet Flushing
WMATA 3433 Pennsy Drive	Rainwater	Toilet Flushing
M-NCPPC Randall Farms Greenhouse 1200 Ritchie Marlboro Road	Rainwater	Irrigation
Laurel Library 507 7 <sup>th</sup> Street Laurel	Rainwater	Irrigation
National Archives & Records Administration (NARA) College Park	Groundwater	Cooling
University of Maryland Physical Sciences Complex Regents Drive, College Park	Groundwater	Toilet Flushing
<b>Private Facilities</b>		
<i>Project Name</i>	<i>Type of non-potable source</i>	<i>Proposed Use</i>
Alice Ferguson Foundation Bryans Road, Accokeek	Rainwater Groundwater Gray Water	Toilet Flushing & Landscaping
MGM Casino National Harbor	Rainwater	Irrigation & Toilet Flushing
Plumbers Union Local #5 Forbes Blvd, Lanham	Rainwater	Water service for training & Toilet Flushing
Surf N Suds Forestville	Gray Water	Laundry Cleaning
Hotel at UMCP College Park	Rainwater	Irrigation



## 2018 WATER AND SEWER PLAN

### CHAPTER 4 SEWER PLAN FOR COMMUNITY SYSTEMS

The proper handling, treatment and disposal of wastewater are some of the primary goals of the Water and Sewer Plan. Wastewater or sewage is disposed in two ways, either through transmission conveyances to wastewater treatment plants or through individual septic systems. This chapter discusses the County's existing sewer system, treatment plants, future sewer needs, biosolids management and financial needs. It includes discharge permits for smaller plants that discharge treated wastewater into County streams or rivers. Individual septic systems are discussed in Chapter 5, Rural Sanitation.

#### **4.1 EXISTING SEWER SYSTEM**

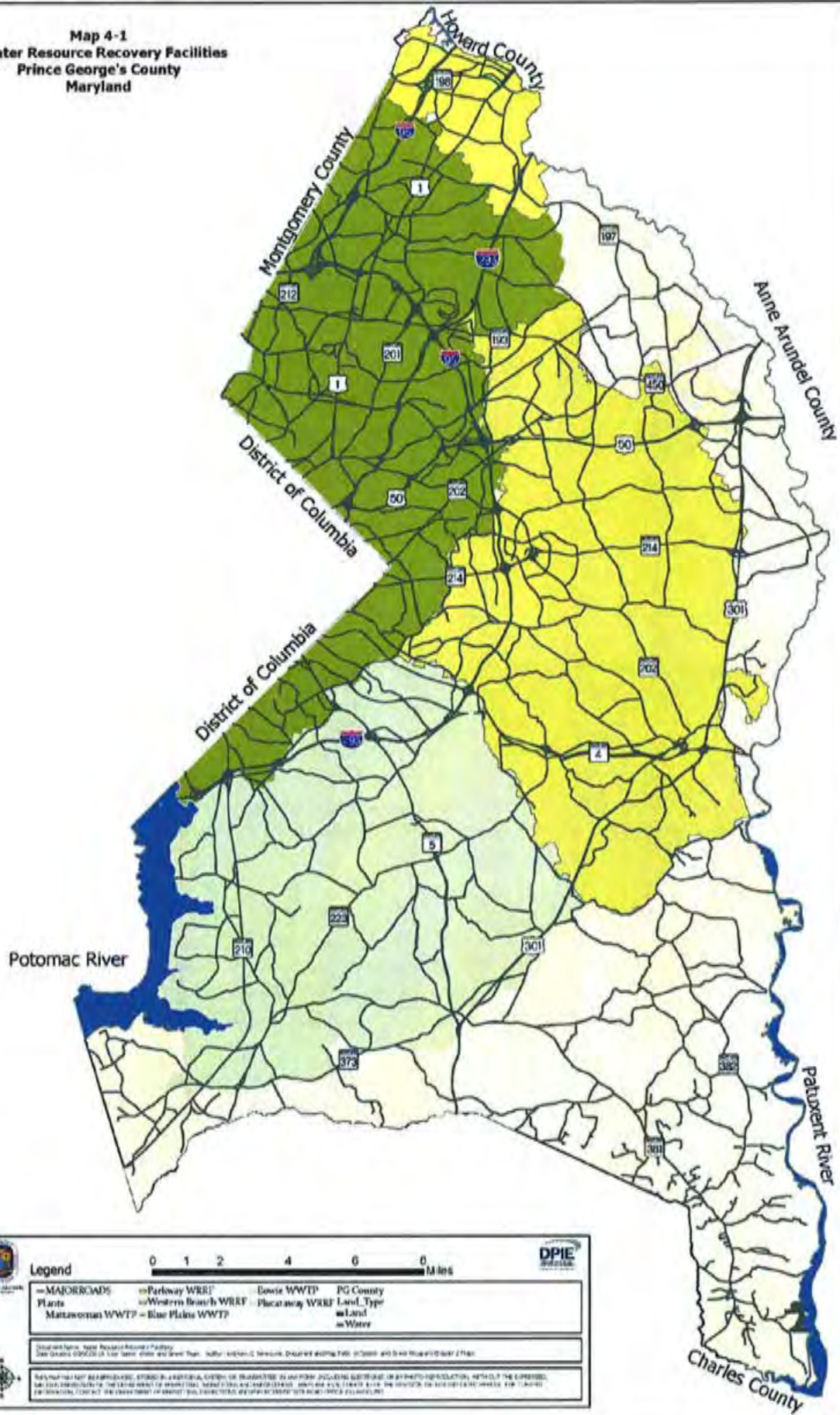
Six drainage basins in Prince George's County are served by public sewage treatment systems. **Map 4-1** identifies the six basins and locates the wastewater resource recovery facilities (WRRF). Four of these municipal plants are located in the County, whereas the Blue Plains WWTP is located in Washington, D.C., and is operated by the District of Columbia Water and Sewer Authority (DC Water). The Mattawoman WWTP is located in and operated by Charles County.

The Washington Suburban Sanitary Commission (WSSC) operates three of the four municipal WWTP located in Prince George's County. These include Parkway, Western Branch and Piscataway. As of 2018, these three WSSC wastewater treatment plants will now be referred to as Water Resource Recovery Facilities (WRRF). The City of Bowie operates a WWTP serving the northern portion of the city. A description of each of the plants is in Section 4.2. An inventory of municipal, industrial, community and institutional wastewater treatment plants located in Prince George's County can be found in **Table 4-1**.

Any treated wastewater discharge that exceeds an average of 5,000 gallons per day must be included in the County's Water and Sewer Plan and must have a State discharge permit issued by the Maryland Department of the Environment (MDE). A State discharge permit must be renewed every five years. A complete listing of discharge permits issued as new, renewal or pending is attached in **Appendix 4-1** of this chapter.

The County Health Department conducts sanitary surveys of areas served by septic systems by request. Occasionally, these surveys lead to a Health Department recommendation that public sewer service be extended to the properties in question to alleviate any health hazard. The Health Department is collaborating with other county agencies and WSSC to identify areas that are unserved or underserved by a public sewerage system. These areas are addressed in Section 4.3.6 of this chapter and as **Appendix G** of this plan.

**Map 4-1**  
**Water Resource Recovery Facilities**  
**Prince George's County**  
**Maryland**



**Legend**

0 1 2 4 6 8 Miles

— MAJORROADS    m Parkway WREF    Eowie WWTP    PG County  
 Plants    m Western Branch WREF    Paganaway WREF    Land Type  
 Mattawoman WWTP - Blue Plains WWTP    m Land    m Water

(Source: Prince George's County Department of Public Works, Office of Planning and Economic Development, 2010; and State Water Resources Institute, 2010)  
 Date: October 2010

This map was prepared for the District of Columbia, Prince George's County, and Anne Arundel County, Maryland, by the District of Columbia, Prince George's County, and Anne Arundel County, Maryland, and the State Water Resources Institute, Inc. (SWRI). The District of Columbia, Prince George's County, and Anne Arundel County, Maryland, are not responsible for the content of this map. For more information, contact the District of Columbia, Prince George's County, and Anne Arundel County, Maryland, at the address below.

## 2018 WATER AND SEWER PLAN

**Table 4-1. Inventory of Existing Wastewater Treatment Plants (WWTP) Located in Prince George’s County**

Name	Location	Type Treatment	Point of Discharge	Existing Capacity (mgd)	Flows (mgd) Avg/Peak	Operating Agency
<u>Municipal (Public)</u>						
Parkway	Bowie	Tertiary	Patuxent River	7.5	6.26	WSSC
Western Branch	Upper Marlboro	Tertiary	Western Branch	30.6	19.72	WSSC
Piscataway	Piscataway	Tertiary	Piscataway Creek	30.0	21.84	WSSC
Bowie	Bowie	Tertiary	Patuxent River	3.3	2.2	City of Bowie
<u>Industrial</u>						
PEPCO- Chalk Point	Aquasco	Package Plant Secondary Treatment Activated Sludge	Patuxent River		0.008	PEPCO
<u>Community/ Institutional</u>						
Brandywine E.S.	Brandywine	Septic Tank and Filter	Timothy Branch		0.01	County
Cheltenham Boys Village	Cheltenham	Secondary Trickling Filter	Piscataway Creek		0.18/0.085	State
Edgemeade School	Brandywine	Septic Tank and Filter	Tributary of Patuxent River			County
Edgemeade School – Adm	Brandywine	Septic Tank and Filter	Tributary of Patuxent River			County
Bowie State University	Bowie	Secondary Treatment Trickling Filter/Sand	Patuxent River	0.08	0.08	State
Patuxent Wildlife Headquarters	Laurel	Secondary Treatment Activated Sludge	Pond Patuxent River	0.027		U.S.
Patuxent Research Refuge	Laurel	Tertiary	Patuxent River	0.0067		U.S.
Andrews AFB	Camp Springs	Septic Tank				U.S.
Andrews AFB Brandywine Housing	Brandywine	Septic Tank and Filter	Timothy			U.S.
Beltsville USDA Horticultural Station	Beltsville	Activated Sludge/ Overland Flow	Little Paint Branch	0.25	0.206	U.S.
Beltsville USDA Research Station	Beltsville	Activated Sludge/ Overland Flow	Beaverdam Creek	0.5	0.4	U.S.
Beltsville Pharmacological Lab	Beltsville	Secondary Treatment Activated Sludge	Beaverdam Creek	0.02	0.01	U.S.
Globocon Sewage Treatment Plant	Brandywine	Secondary Treatment Activated Sludge	Tributary of Mattawoman Creek	0.005		U.S.

## 2018 WATER AND SEWER PLAN

Marinas in Prince George's County require a wastewater collection and treatment system, or a pumpout station to connect the marina to a community sewer system. The County Health Department inspects and approves the wastewater treatment and sanitation facilities at all County marinas. The sanitation requirements are set in COMAR 26.24.04.03 and County Code Subtitle 22. The Fort Washington Marina meets these requirements. The Tantallon Marina is planning to provide the required facilities over the term of this plan. The Bladensburg Marina, while technically a marina, has no tie-up facilities or the ability to receive vessels large enough to have sanitary holding tanks and, therefore, shall not be required to have pumpout facilities.

### **4.2 WASTEWATER TREATMENT PLANTS SERVING THE COUNTY**

Each wastewater treatment plant in the County has specific capacity, wastewater flow and commitments of capacity for future flows authorized by MDE. The following subsections describe the statistics for each of the wastewater treatment plants. Capacity is defined as what is currently being treated and what is planned for in the future. Flow statistics are defined as base flow and peak flow.

A 1986 Agreement with the State of Maryland on Monitoring and Control of Sewage Flows and Allocations requires all treatment plants to prepare a quarterly report on existing flows and flow commitments. Quarterly, WSSC adds flow commitments from final plat recordation and subtracts flow figures from service hook-ups during the same period. The following sections include the quarterly reports for each of the basins.

WSSC also produces monthly reports on all service approvals and service hookups. These approvals are calculated into flow and are subtracted from the available capacity for each basin.

The growth and development in the County's Growth Policy Area has decreased the available capacity faster than expected at the Parkway, Western Branch and Piscataway WRRFs. However, based on WSSC's Wastewater Flow Projections and Demographic Analysis of 2017, the capacities of Parkway, Western Branch and Piscataway WRRFs should be adequate through 2045. The wastewater flow projections were updated with the Round 9.0 Metropolitan Washington Council of Government (MWCOG) and County Planning Department's cooperative demographic forecasts and the forecast updates that were forwarded to WSSC.

#### **4.2.1 Blue Plains Wastewater Treatment Plant**

Sewage originating in the Anacostia, Beaverdam and Oxon Run basins of Prince George's County is treated at the Blue Plains WWTP operated by DC Water. Blue Plains is located in southwest Washington, D.C., adjacent to the U.S. Naval Research Lab facilities on the Potomac River. The Blue Plains WWTP has been the principal wastewater treatment facility for the Washington Metropolitan area since its original construction in 1938. Service to Prince George's and Montgomery Counties is provided under the terms of the 2012 Blue Plains Intermunicipal Agreement (IMA). The updated 2012 IMA was signed by the regional jurisdictions and became effective in April 2013.

## 2018 WATER AND SEWER PLAN

The IMA provides for wastewater conveyance, treatment and biosolids management in the Blue Plains service area. As a signatory to the IMA, Prince George's County recognizes the shared duties and obligations that are essential elements for effective regional wastewater management including:

- Honoring the wastewater capacity limitations at the points of discharge into the DC Water collection and treatment system;
- Equitably sharing in the capital costs of regional wastewater treatment, collection and biosolids management;
- Equitably sharing in operation and maintenance costs;
- Serving on the DC Water Board of Directors and Regional Committees;
- Defining the process of making future planning decisions;
- Providing a mechanism for continuing coordination, cooperation and communication; and
- Supporting a continuing water quality monitoring and evaluation program.

The IMA allocates plant capacity to each user and defines capital and operating cost formulas. WSSC is allocated plant capacity for those portions of Prince George's and Montgomery Counties in the Blue Plains Service Area and by authority of the 1983 Bi-County Agreement, WSSC determines the amount of wastewater flows from these counties to Blue Plains on a first-come, first-served basis. Under the terms of the IMA, WSSC pays for a flow-proportionate share (approximately 40 percent) of the operating costs, and a capacity-proportionate share (approximately 46 percent) of the capital costs at Blue Plains and various shared conveyance and related facilities. The allocated capacity to WSSC is 169.6 mgd of the total 370-mgd plant capacity. Allocated capacity in the DC Water sewage collection and conveyance facilities varies depending on the share of capacity allocated to WSSC. **Table 4-2** reflects the daily average wastewater flows to the Blue Plains WWTP and the authorized IMA limitations for the year 2017.

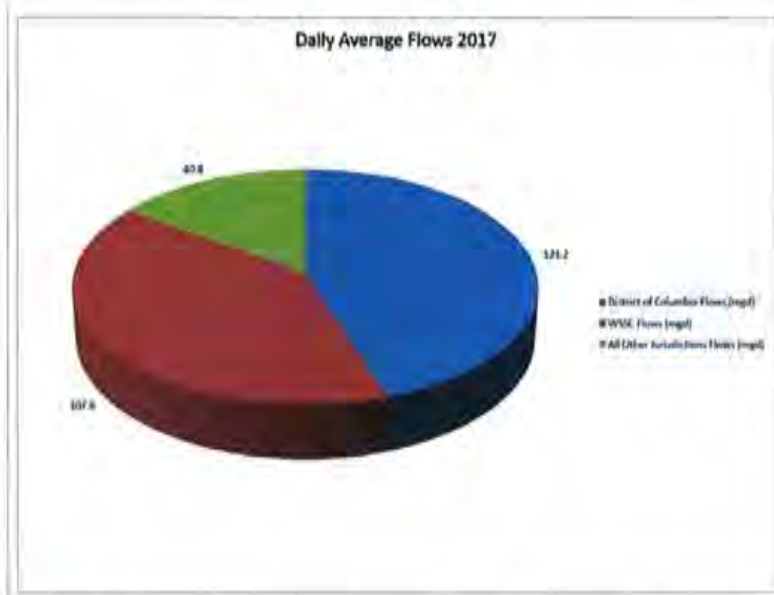
In 1996, Congress authorized the creation of the District of Columbia Water and Sewer Authority (then WASA, now DC Water) as an independent authority to operate the water and sewerage facilities within the District. The 11-member board includes six members from the District of Columbia and five members from the suburban users. Prince George's County has two representatives and two alternates on the Board. More than 318,000 Prince George's County residents, or 43 percent of its population, are served by Blue Plains through WSSC. The County's Board representatives are instrumental in setting policy, overseeing capital construction, and approving the operating and capital budgets of the water and wastewater facilities within the District.

Under the terms of the IMA that governs the County's use of the Blue Plains facility through WSSC, the District of Columbia is not currently obligated to expand the plant beyond the 370-mgd capacity. As such, planning is essential to manage available wastewater treatment and conveyance capacity.

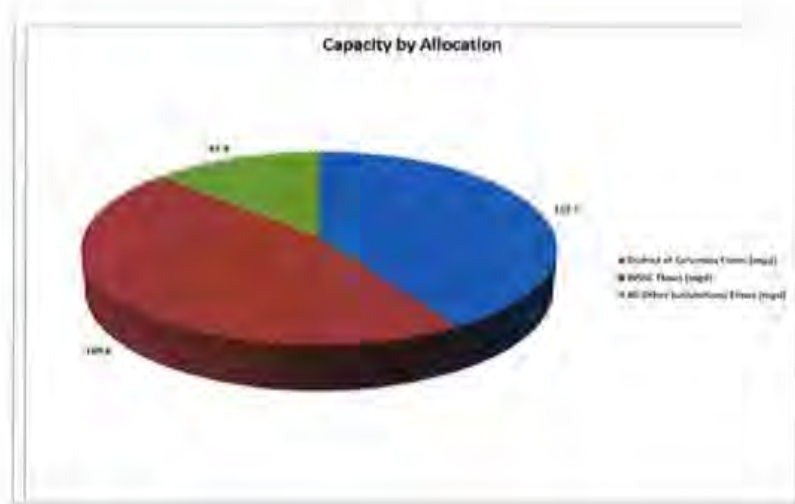
## 2018 WATER AND SEWER PLAN

**Table 4-2 2017 Actual Daily Average Wastewater Flows to the Blue Plains WWTP and Intermunicipal Agreement (IMA) Allocations**

Month	Total Flows to Blue Plains (mgd)	District of Columbia Flows (mgd)	WSSC Flows (mgd)	All Other Jurisdictions Flows (mgd)
Jan-16	260.5	111.7	109.0	39.83
Feb-16	244.2	100.9	104.3	38.90
Mar-16	271.5	122.2	107.9	41.42
Apr-16	290.5	133.4	113.9	43.16
May-16	310.0	147.1	118.2	44.76
Jun-16	267.8	117.3	108.7	41.77
Jul-16	282.4	129.3	110.2	42.89
Aug-16	288.5	132.5	113.8	42.23
Sep-16	269.1	123.0	106.6	39.53
Oct-16	258.6	118.5	100.5	39.63
Nov-16	253.7	113.5	101.1	39.10
Dec-16	238.3	105.0	97.3	36.01
Daily Average	269.6	121.2	107.6	40.8
Total Capacity	370	152.5	169.6	47.9



## 2018 WATER AND SEWER PLAN



### **4.2.2 Parkway Water Resource Recovery Facility**

The Parkway basin in the northern part of the County covers an area of approximately 14 square miles, including the City of Laurel. Ten square miles of the basin is sewered. The Parkway Wastewater Treatment Plant is located on the western shore of the Patuxent River, south of Laurel, adjacent to the Baltimore-Washington Parkway. It has a total capacity of 7.5 million gallons per day (mgd). It is owned and operated by WSSC.

### **Statistics of the Parkway Water Resource Recovery Facility (FY 2017)**

Existing capacity	7.5	mgd
County-approved expansion	2.9	mgd
Total capacity	10.4	mgd
Existing flow	6.26	mgd
Remaining capacity	1.24	mgd

Biosolids produced at the Parkway Branch are disposed of by offsite land application in Virginia and Maryland on permitted sites. Enhanced nutrient removal (ENR) facilities (denitrification filters) at the Parkway WWTP were completed in June 2013. The ENR process achieves a limit of less than four milligrams per liter of nitrogen in the effluent as an annual average.

### **4.2.3 Western Branch Water Resource Recovery Facility**

The Western Branch WRRF is located approximately one mile southeast of the Town of Upper Marlboro at the Patuxent River. It is owned and operated by WSSC. The WRRF serves an area of approximately 113 square miles. The majority of the service area is the natural drainage basin of the Western Branch. Horsepen Basin, north of Bowie, is connected to the Western Branch

## 2018 WATER AND SEWER PLAN

system through a pumping station and force main. There are no plans to expand the capacity of the plant which is an enhanced nutrient removal facility designed to achieve a limit of four milligrams per liter of nitrogen in the effluent as an annual average. Between April and October of every year, the discharge limit for nitrogen is further reduced to 3 milligrams per liter.

### Statistics of the Western Branch Water Resource Recovery Facility (FY 2017)

Existing capacity	30.6 mgd
Total planned capacity	30.6 mgd
Existing flow	19.72 mgd
Remaining capacity	10.88 mgd

Transmission statistics (mgd)	Peak	2017	2017
	Instantaneous Capacity	Average Daily Flow	Maximum Daily Flow
Horsepen Pumping Station	4.0	1.006	1.643
Collington Branch Trunk Sewer	18.4	n/a	n/a
Charles Branch Trunk Sewer	n/a	n/a	n/a
Western Branch	n/a	n/a	n/a

Biosolids produced at the Western Branch WRRF are hauled to a landfill in Virginia.

### 4.2.4 Piscataway Water Resource Recovery Facility

The Piscataway WRRF is located to the west of Indian Head Highway on the Piscataway Bay of the Potomac River and is owned and operated by WSSC. There are no plans for expansion of this plant which is an enhanced nutrient removal (ENR) facility. This ENR process achieves a limit of less than four milligrams per liter of nitrogen in the effluent as an annual average.

### Statistics of the Piscataway Water Resource Recovery Facility (FY 2017)

Existing capacity	30.0 mgd
Total planned capacity	30.0 mgd
Existing flow	21.84 mgd
Remaining capacity	8.16 mgd

Transmission statistics (mgd)	Peak	2017	2017
	Instantaneous Capacity	Average Daily Flow	Maximum Daily Flow
Broad Creek Pumping Station	37.0	9.897	10.626
Tinkers Creek Trunk Sewer	21.1	-	-
Upper Piscataway Trunk Sewer	10.3	-	-
Lower Piscataway Trunk Sewer	-	-	-

The peak capacity of the Broad Creek Pumping Station was exceeded during extreme wet weather in July 2004. As a result of a facility plan for the Broad Creek Wastewater Pumping Station, a 4.2-million gallon onsite storage basin, located at WSSC's Piscataway WRRF and other

## 2018 WATER AND SEWER PLAN

related capacity enhancements for the Broad Creek Pumping Station and force main system, are currently under construction. Biosolids that are produced at the Piscataway Branch are land applied offsite in Maryland and Virginia on permitted sites.

On May 9, 2014, WSSC's general manager/CEO signed a long-term Agreement with Mattawoman Energy LLC that will allow them to purchase up to 5 million gallons a day (mgd) of treated effluent from the Piscataway Wastewater Resource Recovery Facility for use at their proposed 990- megawatt power plant in Brandywine, Maryland. The Commission adopted Resolution 2014-2043 on March 19, 2014, authorizing the general manager/CEO to finalize and execute the Agreement.

The initial term of this Agreement is for 30 years with five-year option terms after that. Mattawoman Energy is responsible for the design and construction of all required capital facilities as well as operation and maintenance of these facilities once they become operational. The Agreement requires Mattawoman Energy to pay WSSC an option fee until the facilities are operational. Thereafter, they will pay WSSC a fixed demand charge every month as well as commodity charges based on their actual usage of reclaimed water. These charges will also be escalated in the future based on the CPI for industrial commodities less fuel, and are expected to generate about \$1 million annually based on their projected usage of reclaimed water. The option fee is payable every six months.

Plans and specifications for the treated effluent facilities, including the routing of the pipeline and location of the pumping station, has and continues to be coordinated with WSSC. However, the facility will be a private utility pipeline owned and maintained by Mattawoman Energy LLC for the sole purpose of routing purchased and reclaimed water to its energy plant in Brandywine. Construction of the first half-mile segment of the pipeline has been constructed. The design of the remaining 9 ½-mile segment has been approved but construction has not yet begun. Mattawoman Energy LLC began construction of the new power plant in 2016 and plans to have all related facilities constructed and operational in 2021.

### **4.2.5 Bowie Wastewater Treatment Plant**

The City of Bowie operates a WWTP in northern Bowie. The treatment plant is located north of Route 450, west of its intersection with Route 3. The drainage basin is mostly developed and there are no plans to extend the service area beyond its current limits.

#### **Statistics of the Bowie Wastewater Treatment Plant**

Existing capacity	3.3 mgd
Design capacity	3.3 mgd
Existing flow	2.2 mgd
Remaining capacity	1.1 mgd

Capital improvements to the Bowie WWTP include an electrical upgrade at Pump Station #1 and to replace impellers at Pump Station #5 and Pump Station #6. The following is contingent upon receiving State Revolving Loan Funds: construction and inspection of a 550 square-foot building addition; a 350 square-foot interior renovation of the administration building; replacement of main electrical switch gear; installation of wire covers; and construction of a sludge building.

## **2018 WATER AND SEWER PLAN**

The biosolids process at the City of Bowie Plant consists of dewatering and lime stabilization. The biosolids are land applied on permitted agricultural properties in Virginia.

### **4.2.6 Mattawoman Wastewater Treatment Plant**

A portion of Prince George's County is located within the Mattawoman Creek watershed. By an agreement between WSSC and Charles County, 3 mgd at the 20-mgd Mattawoman Wastewater Treatment Plant is reserved for WSSC. Flows from Prince George's County discharge into the Mattawoman Creek interceptor and are conveyed to the treatment plant. Current average annual flows from Prince George's County amount to 1.25 mgd for an approximate population of 4,200. The Mattawoman WWTP is owned, operated by and located in Charles County. All operation and capital program management for this facility is the responsibility of Charles County. WSSC is responsible for paying its share of operating and capital costs in accordance with the inter-municipal agreement between the WSSC and Charles County (see Section 1.3.1).

The biosolids process at the Mattawoman Plant consists of dewatering and lime stabilization. The biosolids are either land applied on permitted sites where weather permits, or stored in a facility at King George County, Virginia, for later land application.

## **4.3 FUTURE SEWER NEEDS**

Each of the six sewersheds served by community systems in Prince George's County has adequate capacity to provide service into the future. The ultimate sewer service envelope, and the revision of sewer categories to match the envelope boundary, accurately delineates the area to be sewered in the foreseeable future. The current Water and Sewer Plan maps thus provide a better tool for land-use planning in the County.

In its Capital Improvement Program, WSSC 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 particular developments. The major challenges in future sewer system needs are, however, in maintaining the integrity of the aging system, meeting the enhanced environmental regulations, and optimizing the operations in a cost-effective manner.

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.

### **4.3.1 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

## 2018 WATER AND SEWER PLAN

basins, areaways and roof drains. The WSSC wastewater system that serves Prince George's County is a separate system, meaning, that only wastewater is collected. Some other municipal systems convey combined 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 and, eventually, the treated effluent into local waters discharged at limits set by the federal government. This extraneous flow can significantly reduce the capacity of a sanitary sewer. 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.

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) is used to more specifically isolate the individual sewer line sections and defects contributing to the extraneous 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. All of the grant-funded studies in the Prince George's County basins are completed through the Sewer System Evaluation Survey.

## 2018 WATER AND SEWER PLAN

Infiltration/Inflow Analyses and Sewer System Evaluation Surveys were conducted in the following basins of Prince George's County between 1974 and 2019 (with the most recent studies in parentheses):

Oxon Run (2018)	Broad Creek II (2006)
Piscataway (2010)	Beaverdam Branch (2010)
Parkway (2012)	
Northeast Branch (2012)	
Western Branch (currently underway)	

### **4.3.2 Regional Water Quality Initiatives in the Chesapeake Bay Watershed**

Excess levels of nitrogen and phosphorus are the primary pollution problems facing the Chesapeake Bay. Reducing these pollutants has been a major focus of the multi-state Chesapeake Bay Program over the past two decades. The 1987 Chesapeake Bay Agreement, as amended in 1992, set a goal to reduce levels of nitrogen and phosphorus that are discharged to the Bay by 40% by 2000, and to maintain that reduction thereafter. The Chesapeake 2000 Bay Agreement reaffirmed the minimum commitment, and proposed to remove all nutrient and sediment impairments to the Bay by 2010. Despite significant efforts by federal, state, and local governments and other interested parties, pollution in the Chesapeake Bay prevents the attainment of existing water quality standards. The pollutants that are largely responsible for impairment of the Bay are nutrients, in the form of nitrogen and phosphorus, and sediment.

The United States Environmental Protection Agency (EPA), in coordination with the Bay watershed jurisdictions established a nutrient and sediment pollution diet for the Bay, consistent with Clean Water Act requirements, to guide and assist Chesapeake Bay restoration efforts. This pollution diet is known as the Chesapeake Bay Total Maximum Daily Load (TMDL), or Bay TMDL.

Concurrent with the development of the Bay TMDL, EPA charged the Bay watershed states and DC with developing watershed implementation plans (WIPs) in order to provide adequate "reasonable assurance" that the jurisdictions can and will achieve the nutrient and sediment reductions necessary to implement the TMDL within their respective boundaries.

MDE worked with the other Maryland Bay agencies and many partners in local jurisdictions to develop Phase II Watershed Implementation Plans with more detailed reduction targets and specific strategies to further ensure that the water quality goals of the Bay TMDL will be met. The Phase II Plan was completed, submitted to, and approved by EPA in 2012. (See Maryland's Development Support for the Chesapeake Bay Phase II WIP webpage.) To promote and measure progress for restoring the Chesapeake Bay, EPA requires states to identify milestones to be reached in two-year increments.

Prince George's County is actively working with the area's wastewater treatment plants, the Environmental Protection Agency's Chesapeake Bay Program and the State of Maryland to develop policies to reduce the loadings of nitrogen and phosphorus to the Chesapeake Bay. These efforts continue to be the goal of the County through its participation in the Chesapeake Bay Agreements of 1987, 1992, 2000 and 2012.

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Consistent with the Maryland strategy for reducing nutrient loads from the treatment of wastewater, WSSC has upgraded all three of their major wastewater treatment plants to achieve enhanced nutrient reduction (ENR) and each is meeting the performance goals established by MDE for nitrogen and phosphorous. Western Branch was completed in 2015 and Parkway and Piscataway were completed in 2013.

The City of Bowie WWTP completed construction of its upgrade to achieve ENR performance in 2010. Similarly, the wastewater treatment facilities that treat County wastewater but are located outside of the County have been upgraded to ENR. The Mattawoman WWTP in Charles County was upgraded in 2007. The upgrade of the DC Water Blue Plains AWWTP to achieve enhanced nutrient removal is ongoing. As of 2017, major components of the ENR upgrade have been completed and the plant is meeting ENR performance requirements in accordance with its discharge permit.

Consistent with the County's Watershed Implementation Plans, further nutrient reductions will be necessary by reducing runoff from such non-point sources as highways, other developed areas, and agricultural sources; but, these efforts are beyond the scope of this Plan.

The 2012 legislative session, House Bill 446, doubled the Bay Restoration Fee for most users served by wastewater treatment plants and those on On-site sewage disposal (septic) systems to \$5.00 per month per household/equivalent dwelling unit (EDU). HB 446 also requires that BRF fee billing authorities develop a financial hardship fee waiver plan for low income households. See "*Guidance Documents*" and "*Frequently Asked Questions*" found at:

<http://mde.maryland.gov/programs/Water/BayRestorationFund/Pages/guidancedocs.aspx>

<http://mde.maryland.gov/programs/Water/BayRestorationFund/Pages/faqs.aspx>

Effective July 1, 2012 a \$5.00 monthly fee is collected from each home served by a wastewater treatment plant. Commercial and industrial users are charged at the rate of \$5.00 per month per equivalent dwelling unit (EDU). Fees from wastewater treatment plant users generate an estimated \$100 million per year. This fee will continue to be collected and used to finance the debt incurred to fund a portion of the ENR upgrade of major WWTPs and other programs related to nutrient reductions for the Bay such as septic tank upgrades to Best Available Technology (BAT) and the cover crop program. Moving forward the fee will also be used to fund the upgrade of certain minor wastewater treatment facilities, to support the connection of existing septic systems to ENR wastewater treatment plants and among other initiatives to reduce nutrients to the Bay.

### **4.3.3 Industrial Discharge**

The Federal Pretreatment Regulations (40 CFR Part 403) require the WSSC to operate a program to control industrial discharges to the sewage collection and treatment systems. The goal of these regulations is to prevent the introduction of pollutants to the sanitary sewer. The pollutants of special concern are those that will:

- Inhibit or interfere with the biological treatment processes employed at wastewater treatment plants;

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- Pass through the treatment plants, causing violations of NPDES permits and water quality standards, or otherwise be incompatible with the treatment plants; and
- Restrict biosolids disposal options and wastewater recycling options because of excessive levels of toxic substances.

WSSC requires industries comply with the requirements set forth in Chapter 8 – Industrial and Special Waste of WSSC’s Plumbing & Fuel Gas Code. If an industry’s wastewater is treated at a non-WSSC wastewater treatment plant, then the industry is required to comply with the more stringent discharge requirement. Industrial users that are classified as significant are also required to monitor their industrial discharges to determine compliance with discharge regulations. WSSC also performs its own monitoring of industrial discharges and inspection of industrial users to determine industry compliance independently.

The primary objective of the Industrial Discharge Control Program is to protect the overall integrity of the WSSC wastewater system through the systematic and equitable application of the WSSC Plumbing Regulations and specific administrative procedures. Nevertheless, the County and WSSC also receive benefits from the implementation of an industrial waste control program. These benefits are:

- More efficient operation of WSSC wastewater treatment plants and continued NPDES permit compliance by reducing toxic pollutants that inhibit and interfere with treatment processes.
- More numerous biosolids management and disposal alternatives because of a reduction of heavy metal concentrations and other toxic pollutants.
- The reduction of maintenance costs and manpower requirements for the upkeep of the WSSC wastewater system.
- The prevention of illegal discharges of industrial wastes to the wastewater systems through manholes and direct connections to the sanitary sewer.
- The recovery of maintenance and treatment costs in cases where an industrial user is responsible for pretreatment.
- Rapid response to industrial waste spills which have a potential to cause serious harm to the WSSC wastewater system, public health, or the environment.

### **4.3.4 Sanitary Sewer Overflows (SSO)**

A sanitary sewer overflow (SSO) occurs when sewers become blocked and wastewater backs up in the line and eventually overflows from a manhole. There are a number of other possible causes of SSOs, including pipe deterioration or a break in the sewer main, undersized sewer lines, excess infiltration or inflow of stormwater, naturally occurring problems such as tree roots and grease blockages, and power outages at sewage pumping stations. It is impossible to completely eliminate SSOs. Even in a properly designed, constructed, operated and maintained sewer system, there will always be a certain number of unavoidable overflows due to blockages, unusual natural events, and power failures.

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Historically, the U.S. Environmental Protection Agency (EPA) has worked with the municipal community and other groups to address SSOs. Draft regulations that would have required utilities to develop a “Capacity, Management, Operation, and Maintenance” (CMOM) program were released in 1999, but subsequently withdrawn in January 2001. Since then, the EPA has undertaken numerous enforcement actions nationwide to insure that utilities experiencing SSOs develop a comprehensive program for collection system operation, maintenance, rehabilitation, and capacity analysis to minimize future overflows. In August 2004, the EPA reported to Congress on the current extent of combined sewer overflows (CSOs) and SSOs, including the impact on environmental and human health, technologies used to address these problems, and resources spent by municipalities to address these impacts. The report also identifies many structural and non-structural technologies for CSO and SSO control.

In calendar year 2004, the peak capacity of the Anacostia pumping station was exceeded during extreme wet weather conditions on July 4 and July 27. WSSC contracted a hydraulic study, completed on October 31, 2005, that recommended improved operation of the station, sewer system rehabilitation and repair, and a capital project to address the overflow situation. Alternatives proposed include increased pumping and participation in the DC Water Long Term Control Plan, in-line storage and off-line storage. As a result of this hydraulic study, a new 7-million gallon capacity storage facility, located at WSSC’s Anacostia Number 2 Wastewater Storage Facility, was constructed and placed into service in June 2013. Its 2017 statistics are herein outlined:

<b>Transmission statistics (mgd)</b>	Peak	2017	2017
	Instantaneous Capacity	Average Daily Flow	Maximum Daily Flow
Anacostia Pumping Station	199.0	49.84	63.59

WSSC has re-evaluated the overall operations of its collection system in conjunction with discussions with the EPA regarding past SSOs (Note: WSSC does not have combined sewers in its service areas). In December 2005, WSSC entered into a Consent Decree after Clean Water Act litigation was brought by the United States, the State of Maryland, and a coalition of environmental groups as a result of the Anacostia pumping station overflow.

WSSC signed the Consent Decree on December 7, 2005 for its collection system with the Department of Justice, Environmental Protection Agency, Maryland Department of the Environment and four conservation groups. This Consent Decree addresses capacity, maintenance and operation of the WSSC collection system, fats, oils and grease (FOG) collection system evaluation and modeling, Sewer Basin Repair, Replacement, Rehabilitation, Performance Assessments and Emergency Response Plans, including all major transmission mains and wastewater pumping stations. WSSC is in year thirteen of the Consent Decree. The agreement estimates approximately \$1.6 billion in improvements to the WSSC’s wastewater collection system.

WSSC has allocated additional resources, developed a comprehensive schedule for future studies of the collection system, committed to improvements in operation and maintenance procedures, and identified related program enhancements to be initiated to minimize the number of SSOs that occur in the future.

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Beginning in 2006, WSSC developed, calibrated, and evaluated 21 sewer basin dynamic hydraulic models in its Sanitary District under the Consent Decree's Article V requirements. The calibrated models are used to evaluate capacity of the existing and future sanitary sewer system to convey flows under wet weather conditions under a 2-year (total storm volume of 3.11 inches over 24 hours) and a 10-year design storm (total storm volume of 4.78 inches over 24 hours) events.

The models were built using WSSC asset information in its Sewer Model Database and populated in its Geographic Information System. Once, the model network was verified, the models were calibrated for existing dry weather flows based on WSSC flow data. The model network flows were calibrated to two historic wet weather events and then verified using a third independent verification event. Future flows using dry weather conditions were developed based on demographic projections of sewer household and employment increases and applied WSSC unit wastewater flow factors. The models were then applied using the synthetic design storms as set in the Consent Decree requirements and the modeling reports noted the observed results from the model simulations.

In 2009, WSSC reevaluated the 21 sewer basin hydraulic models using an actual event storm distribution, from a wet weather event experienced in the WSSC Service Area occurring on May 8, 2008. This rainfall event caused significant flooding in various areas of the county and is currently being used for the 2-year and 10-year design storms of record for WSSC hydraulic modeling studies.

WSSC developed a procedure using the hydraulic model and "WSSC" design storms (Standard Procedure ENG 09-02) for reviews conducted as part of Hydraulic Planning Analyses (HPA) conducted under WSSC Development Services Process, effective May 2009. The procedure is used to evaluate the impact of significant development on the downstream capital size (15 inches in diameter and above) sewer system and wastewater conveyance facilities under significant wet weather conditions. This procedure was superseded in September 2016 by Regulation 11.165.

Currently, listed below are Prince George's County sewer basin model simulations indicating areas/locations increased risk of overflow:

1. Broad Creek (2-year WSSC design storm) - Henson Creek (projects upstream of the Broad Creek WWPS are dependent on completion of CIP project number S-43.02, the Broad Creek Sewer Augmentation currently under construction)
2. Northeast Branch (2-year WSSC design storm) - Greenbelt Branch

Other areas indicated in the model simulations for lower risk of overflows are being evaluated as development proposals are evaluated through Regulation 11.165 as part of the WSSC Development Services review process.

COMAR requires WSSC to report all SSOs to MDE and the respective County Health Department within 24 hours of 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 drafted guidance suggesting that wastewater utilities work closely with local environmental and health departments to identify any such potential impacts and to notify the public when warranted.

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The parties to the Consent Decree have entered a Second Amendment to the Consent Decree to provide a schedule for completion of Delayed Rehabilitation work due to permitting issues with National Park Service, Army Corp of Engineers, County Agencies, MDE and Department of Natural Resources. The deadline for completion of delayed work is February 9, 2022. The Second Amendment was lodged with the U.S. District Court and approved on June 29, 2016.

In 2018, which was the wettest year of-record there were a total of 115 sanitary sewer overflows. Of these, 14 were caused by excess flow from infiltration and inflow. Some of WSSC's Consent Decree accomplishments include: 403 submissions to the Regulatory Agencies; completed 24 Collection System Evaluations (nine were Sewer System Evaluation Surveys); prepared 23 Sewer Repair, Replacement and Rehabilitation Plans; completed 1,876 miles of Trunk Walk; completed 2,685 miles of Sewer Cleaning and Closed Circuit Television; completed the Collection System Modeling; completed the Anacostia WWPS Storage Facility; completed five Performance Assessments; completed the Supplemental Environmental Improvement Projects; 21 rounds of Water Quality Monitoring; implemented a Modified FOG Program; and completed two rounds of WWPS Capacity Reevaluations.

### **4.3.5 Unserved and Underserved Areas**

Located within the defined Sewer Envelope in Prince George's County (and Montgomery County) are numerous properties served by septic systems – not connected to the public sewer system. Many of these unserved and underserved areas are within proximity to existing sewer mains, were approved for construction of sewer main extensions, and, were ultimately to be serviced by public sewer. However, the extensions of service to these properties – even in relatively short distances – are too expensive and “prohibitive” for individual, residential landowners to fund connection. These properties typically stock older homes that were constructed prior to development of modern design criteria and regulations. Consequently, individual interim septic systems were constructed on these lots.

The issue of unserved and underserved areas has been growing as septic systems age and fail. Typically, the operating life of septic systems is estimated to be 30+ years. In these areas, the homes average 50+ years; well over the lifespan of its septic system. The cost of extending new sewer mains to serve these properties is expensive, and in most cases, prohibitive to an individual homeowner. Prior to 2001, WSSC constructed and financed water and sewer lines via an assessed front foot benefit charge (FFBC) to homeowners. This system took advantage of “economies of scale” by spreading infrastructure costs over a large number of properties resulting in an average front foot benefit assessment that was affordable. Subsequent to 2001, construction and financing of public water and sewer lines became the obligation of developers of subdivisions and landowners. This shift eliminated the benefits of the “economies of scale,” and for those landowners (now homeowners) absent sewer lines, no public means to finance extensions, even when necessary to alleviate a failed septic system.

The Bi-County Infrastructure Working Group (the Working Group) was established in 2010 to identify alternatives or less costly sources of revenue or methods of funding for operational and capital requirements in the context of the growing need to rehabilitate, upgrade and replace water and wastewater infrastructure and related facilities. The Working Group is comprised of

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representatives from the executive and legislative branches of Prince George's and Montgomery Counties, one WSSC Commissioner from each County, and WSSC managerial and finance staff. One of the policy issues identified for study by the Working Group is the extension of public water and sewer service to unserved and underserved areas in Prince George's and Montgomery Counties. Excerpts of that study, including approximate data and mapping of identified areas, may be found as **Appendix G** to this plan. While no final outcomes have been determined, the study and its effects are still under assessment and evaluation.

### **4.4 BIOSOLIDS MANAGEMENT**

Biosolids are the solids recovered during the wastewater treatment process that contains nutrient-rich organic matter and micronutrients. Research supported by the EPA has determined that the land application of biosolids in accordance with regulations and in appropriate rates enriches the soil and is beneficial to the environment. Biosolids improve agricultural yields while reducing the need for chemical fertilizers that can be harmful when carried by rainfall into streams, rivers and the Chesapeake Bay.

The EPA has established regulations for the use of biosolids to protect human health, plant life, livestock, wildlife, and water quality. The Clean Water Act required that these regulations protect human health and the environment from any reasonably anticipated adverse effects of pollutants and pathogens in the biosolids. Biosolids generated from municipal wastewater treatment plants are monitored for pollutants and cannot be applied to the land if they exceed the EPA limits.<sup>1</sup>

#### **4.4.1 Biosolids Production**

The Blue Plains Wastewater Treatment Plant is the largest advanced wastewater treatment facility of its type in the United States. Although other plants may have larger capacities, Blue Plains provides the highest level of treatment with its nitrification and filtration processes. Treatment consists of preliminary treatment, primary treatment, secondary treatment, nitrification, denitrification, effluent filtration, chlorination/dechlorination and post-aeration. The solids treatment processes are comprised of thickening and dewatering for primary sludge, secondary waste activated sludge, and nitrification/denitrification waste activated sludge. This will result in approximately 50% solids reduction, a Class A pathogen-free product, and enough methane, after thermal hydrolysis and anaerobic digestion, to generate approximately one third of the plant's electricity demand. Plants operated in Prince George's County by WSSC use traditional methods for recovering and treating biosolids, although the Piscataway Water Resource Recovery Facility employs thermal hydrolysis and anaerobic digestion to generate electricity for plant demand after the Bio-Energy Project is completed at the facility tentatively by early 2023.

Once treated, biosolids become a viable product recycled in the form of natural fertilizers and land applied. It may also be disposed of at landfills. **Table 4-3** reflects the production, reuse, and disposal methods for biosolids from the Blue Plains WWTP and treatment facilities located in Prince George's County.

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<sup>1</sup> District of Columbia Water and Sewer Authority, "Biosolids Recycling-Preserving Agriculture and Protecting the Chesapeake Bay"

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### **4.4.2 Regulatory Requirements**

MDE is the primary agency that regulates the application of biosolids. A biosolids contractor must file and be permitted by MDE in order to apply biosolids to any site approved by the County. The application and permitting process assures that all regulatory requirements are met, assuring that use on land is safe for humans and the environment.<sup>2</sup> MDE, WSSC, and the County's Health Department inspect the site both during and after biosolids applications. The following is a list of requirements and restrictions that relate to the land application of biosolids:

- Pathogen Control
- Heavy Metals
- Pretreatment
- Buffer Zones
- Slope Requirements
- Application Rates
- Frozen Ground Restrictions
- Nutrient Management Plans
- Time Restrictions
- Monitoring Records
- Site Inspections

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<sup>2</sup> Maryland Department of the Environment, Factsheet, Sewage Sludge, Website: [www.mde.state.md.us](http://www.mde.state.md.us), January, 2001.

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Table 4-3 Biosolids Production and Reuse

Treatment Plant Name (Existing or Planned)	Sludge Generation (Dry tons / Day)					2015	Solids Contents	Biosolids Facility Planned Expansion and/or Upgrading: Dates and Processes	Present Utilization Method(s) and Site(s)	Site Life Expectancy	Future Plans for Sludge Management
	1985	1990	1995	2000	2005						
Blue Plains (Wash. D.C.) <sup>1</sup>	380	380	380	380	380	190	28%	Anaerobic Digestion and Combined Heat and Power, complete mid- 2014.	Prince George's County Share- Land Application	Hauling Contract Renewed in 2014.	Anaerobic Digestion Land Application
Prince George's County Pro-rata Share <sup>2</sup>	82.9	82.9	82.9	82.9	82.9	82.9					
Parkway	8.2	8.4	8.3	8.4	9.7	9.7				2014	
Western	10.5	12.6	15.8	17.5	12.4	12.4				N/A	
Piscataway	29.6	30.0	27.5	27.6	23.9	23.9	26%	Off-Site Land Application	5 Year Contract	2014	
Mattawoman (Charles Co., MD) <sup>3</sup>							20% 25%	201 Facilities Plan Study in	No biosolids have been received.	N/A	Under Study

<sup>3</sup> The District of Columbia Government has completed a feasibility study for the attainment of effluent limitations contained in NPDES Permit No. DC0021199 and a long-range Blue Plains biosolids management plan.

<sup>4</sup> The Prince George's County pro-rata share is managed pursuant to the 1985 Blue Plains Inter-municipal Agreement.

<sup>5</sup> The operation of the Mattawoman Sewage Treatment Plant (STP) is the responsibility of the Charles County Government. The agreement between the WSSC and the Charles County Government governing the Mattawoman STP provides that the WSSC shall dispose of its proportionate share of the total sludge generated by the Plant outside the geographical boundaries of Charles County. The projection of the amount of sludge for the forecast period is under study by the WSSC. The results of this study will be incorporated at a later date.

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The land application of biosolids is considered an acceptable and beneficial management method and is now considered the centerpiece of a diverse management plan that also includes incineration and landfilling. The County Executive and County Council, pursuant to Section 21-108 of the County Code, must approve sites that are selected for the land application of stabilized biosolids. Land application sites need not be included in the County's Comprehensive Water and Sewer Plan, since the actual application of biosolids on a particular site is of short duration. **Table 4-4** lists companies permitted to apply biosolids in Prince George's County, the facility name, permit number and expiration dates for land application or site reclamation. The locations of the permitted land area sites are found on **Map 4-2**.

The land application contract requires the contractors to provide storage facilities to manage the disposal of biosolids produced daily at the Wastewater Treatment Plants. The storage facilities are used during inclement weather or other conditions that may prevent land application. One biosolids storage lagoon is located in Prince George's County. The Cedarville lagoon is operated by Synagro Central LLC and has a capacity of 8,750 dry tons. The lagoon must be emptied once a year.

### **4.4.3 Land Application**

Biosolids are applied to the land in amounts specific to the type of soil, crop to be grown and proximity to roads or streams. Subsurface soil injection involves injection, under pressure, of liquid biosolids beneath the soil surface. The second method, surface application with incorporation (tilling in), involves spreading the biosolids on the surface of the soil and tilling the soil to incorporate the biosolids with the soil.

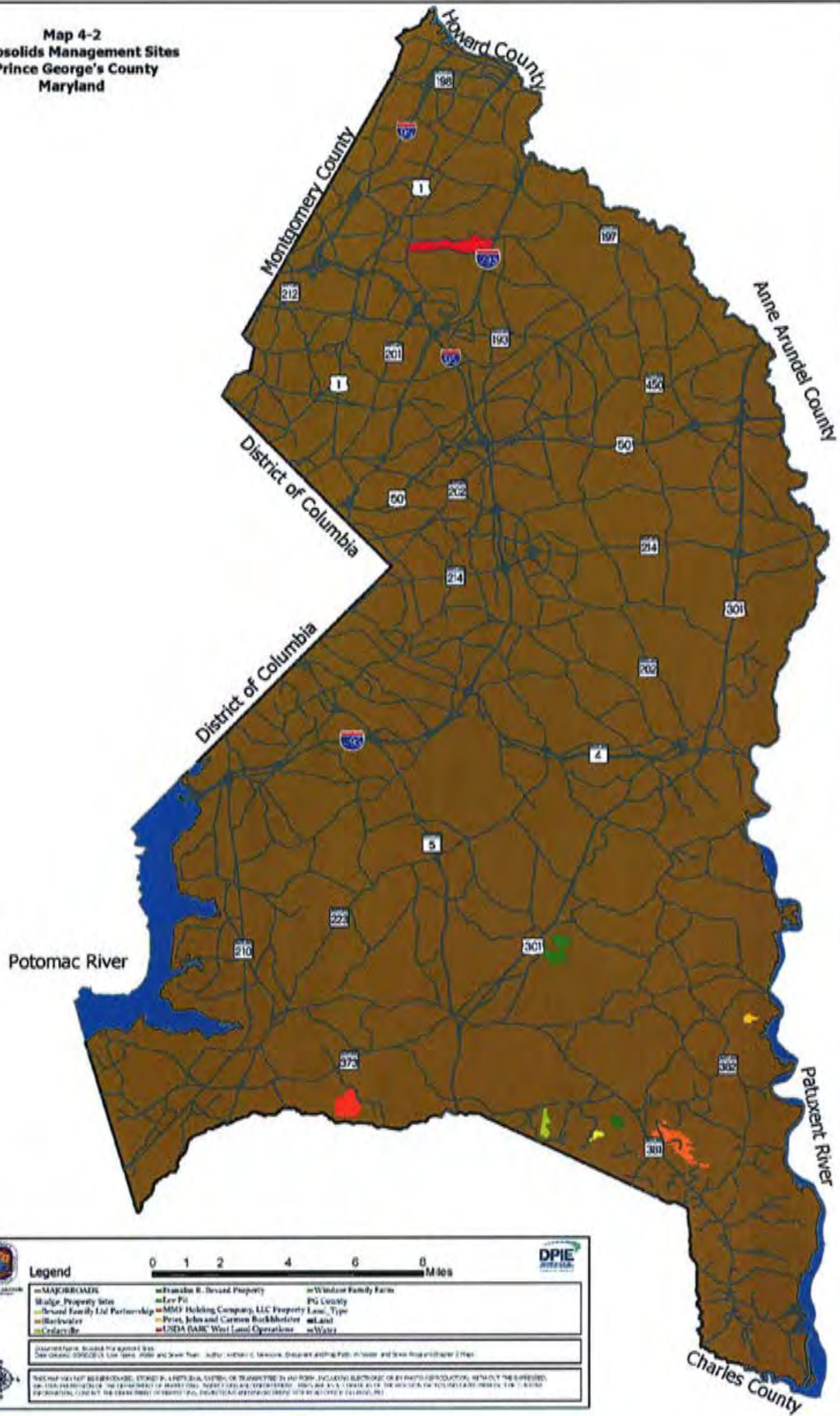
The suitability of a site for biosolids land application is a function of potential crops, the physical, chemical and mineralogical characteristics of the soil as determined by laboratory analyses, and site considerations for each field. Nutrient level, texture, micronutrients and macronutrients, soil alkalinity (pH) and any other soil properties that will influence application rates are considered. Other factors considered are landscape features (e.g., slope), proximity to surface waters and groundwater, soil parent materials, density and moisture-holding capacity. Setback from these features are mandated by State law and strictly enforced by onsite inspection.

The annual rate of application for biosolids application is carefully determined and is usually based on meeting the nitrogen requirement of the crop to be grown. This avoids leaching of nitrate-nitrogen into groundwater and surface waters since the crop will quickly absorb the needed nitrogen contained in the biosolids. Silviculture is used in the County where biosolids are land applied. Fast-growing trees are planted above the biosolids, utilizing the nutrient to grow. The following biosolids parameters are required to develop recommendations for application rates on agricultural soils: percent solids, total nitrogen (N), ammonia (NH<sub>3</sub>), nitrate (NO<sub>3</sub>), phosphorus (P), potassium (K), copper (Cu), zinc (Zn), nickel (Ni), lead (Pb) and cadmium (Cd). With all nutrients, (except phosphorus), specific upper level limits of soil accumulation are avoided to protect both the environment and public health. Recent legislation by the State will implement phosphorus limits.

Table 4-4  
Sewage Sludge Utilization Permits  
Prince George's County Sites

Site Name	AMA	Permit Number	Issue Date	Expire Date	Issued to:	Acres	Council Dist.
A. H. Smith Jr. Property	Brandywine Farm	5-00-16-4937-A	12/6/2002	12/5/2007	Synagro - WWT, Inc.	0.00	9-
A.H. Smith Jr. Property	Perconite/Gubelski Materials and Rockhill Sand & Gravel	2016-54G-5940	3/7/2017	3/6/2022	Synagro Central, LLC	448.14	9-
A.H. Smith Property	AH Smith Bowie Farm	5-97-16-4233-A	5/12/1997	5/11/2002	Browning-Ferris, Inc.	15.00	9-
Andrew & Patricia Metrozka Property	*No additional sludge may be applied* per tr closed 7/15/2005	5-04-16-5031-A	1/8/2004	1/7/2009	Synagro Mid-Atlantic, Inc	48.50	9-
Andrew Air Force Base	AAPF recov sludge from Davidsonville Transmitter	5-05-16-5146-T	11/7/2005	11/16/2010	89 CES/CEV	0.00	9-
Associates Limited Partnership	Permit voided 1/31/01	5-96-16-4195-ABE	5/19/2004	5/18/2009	Synagro - WWT, Inc	0.00	9-
At Last Farm, LLC	Brandywine/North Keys Pit	5-04-16-5013-A	5/19/2004	5/18/2009	Synagro Mid-Atlantic, Inc	259.30	9-
Bardon/E.L. Greiner	Queen Estates Acres	5-04-16-2888-M	5/12/2003	5/11/2008	Synagro - WWT, Inc	450.00	9-
Bardon/H.P. Queen Estates	BAPC (Sludge Transport Permit)	5-03-16-4962-M	3/8/2013	3/7/2018	Synagro Mid-Atlantic, Inc.	1,284.30	9-
Beltsville Agricultural Research Center	BAPC	2012-57R-4488	7/27/2002	7/26/2007	USDA - BARC	0.00	1-
Beltsville Agricultural Research Center	BAPC	5-02-16-4945-A	6/13/2012	6/12/2017	USDA - BARC	22.00	1-
Bead Family Limited Partnership	Beard Pit/ Cedarville Compost Facility	2012-58C-50	10/22/2012	10/21/2017	Synagro Central, LLC	202.36	9-
Blackwater Preservation LLC Property	Pre-treatment Facility	2012-57R-5708	11/7/2012	11/6/2017	Synagro Central, LLC	548.40	9-
Brown Station Rd Municipal Landfill	Pre-treatment Facility	2012-57R-5708	11/7/2012	11/6/2017	MD Environmental Service	0.00	9-
Brown Station Rd Municipal Landfill	Pre-treatment Facility	5-01-16-959-S	3/29/2001	3/28/2006	MD Environmental Service	0.00	9-
Cedarville Lagoon Storage Facility	The Lagoon	5-01-16-959-S	3/29/2001	3/28/2006	Synagro - WWT, Inc.	5.20	9-
Chickensham Property LLC	Application inactive - no owner consent	5-01-16-4799-A	12/6/2014	12/7/2019	Synagro - WWT, Inc.	95.50	9-
City of Bowie	City of Bowie WWTP	2014-57R-5825	12/11/1995	7/30/2000	City of Bowie	0.00	4
City of Bowie/Enzian Farm	Enzian Tract	5-00-16-1994-A1	12/11/1995	7/30/2000	Maryland Envir. Service	94.90	4-
Dept. of Natural Resources	Downing Tract	5-05-16-4553-A	5/11/2010	5/11/2010	Synagro Mid-Atlantic, Inc	81.60	9-
Dept. of Natural Resources	Merike Trueman Wildlife Tract	5-05-16-4554-A	3/21/2005	3/21/2010	Synagro Mid-Atlantic, Inc.	282.60	9-
Dept. of Natural Resources	Peed Tract	5-05-16-4555-A1	5/12/2005	5/10/2005	Synagro Mid-Atlantic, Inc.	88.20	9-
Dept. of Natural Resources	Sasson Tract	5-96-16-4553-A1	2/21/1999	2/21/2004	Synagro - WWT, Inc	30.50	9-
ERCO, Inc.	ERCO Tree Farm	5-01-16-809-A	1/8/2001	1/7/2006	ERCO, Incorporated	122.00	9-
ERCO, Inc.	ERCO Tree Farm	5-02-16-4863-R1	2/21/2002	2/21/2007	ERCO, Incorporated	0.00	9-
Ford-Rooney Pit - Perconite, Inc	Rockhill Sand & Gravel	2015-54G-5934	8/9/2016	8/8/2021	Synagro Central, LLC	206.30	9-
Franklin B. Beard Property	Apple field 7/7/2010; ok for Field 28 (15 acres)	2010-58C-5575	6/11/2012	6/11/2012	Synagro Central, LLC	67.68	9-
George Windsor Property	John W. Bond Jr.	5-01-16-4735-A	8/2/2006	8/1/2011	Synagro Mid-Atlantic, Inc	79.80	9-
John W. Bond Jr.	Buchheiser Brothers Property	5-97-16-4294-A1	Pending		Synagro - WWT, Inc	0.00	9-
John, Peter & Carman Buchheiser Property	Buchheiser Brothers Property	5-97-16-4294-A1	Pending		Synagro - WWT, Inc	51.20	9-
Leonard F. Manson	Limited Partnership Associates	5-96-16-1142-M1	5-01-16-4741-T	1/28/2009	Synagro - WWT, Inc	0.00	9-
Miramont Chalk Point LLC	Miramont Chalk Point LLC	5-04-16-5040-T	1/30/2004	1/28/2009	Miramont Chalk Point, LLC	0.00	9-
Nancy Walker	Authorizing transport of sludge from Chalk Pt.	5-96-16-4182-A1	11/8/2013	11/7/2018	Miramont Chalk Point, LLC	0.00	9-
NRG Chalk Point LLC	Chalk Point Generating Station WWTP	2013-57R-5040	11/20/2015	11/19/2025	NRG Chalk Point LLC	0.00	9-
NRG Chalk Point, LLC	Sludge transport from Chalk Pt to WSSC Ritchie Rd Sewage Pumping Station	2015-57R-5902	12/8/2014	12/7/2019	NRG Chalk Point, LLC	0.00	9-
Parkway WWTP	WSSC - Parkway WWTP	2014-57R-5817	4/15/2005	4/15/2010	WSSC	0.00	1
Potomac Wildlife Research Center WWTP	U.S. Fish and Wildlife Service - to transport to WSSC Tanglewood Station	5-05-16-5111-T	4/15/2005	4/15/2010	U.S. Fish & Wildlife Service	0.00	1-
PEPCO	Perconite, Inc - Benfield Pit	5-01-16-3782-M1	5-01-16-4741-T	1/28/2009	Synagro - WWT, Inc	0.00	9-
Perconite, Inc	Permit voided 1/31/01	5-96-16-4023-A	5-01-16-3781-M	3/19/2000	Synagro - WWT, Inc	0.00	9-
Perconite, Inc - Bryan Pit	Perconite, Inc - Dully Pit	5-01-16-3781-M	3/19/2000	3/19/2000	Synagro - WWT, Inc	0.00	9-
Perconite, Inc - Leo Pit	Perconite, Inc - Leo Pit	5-01-16-3781-M1	3/19/2000	3/19/2000	Synagro - WWT, Inc	0.00	9-
Piscataway WWTP	Comtee Sand & Gravel Property	2016-54G-5939	3/7/2017	3/6/2022	Synagro Central, LLC	251.00	9-
Preston Windsor	WSSC - Piscataway WWTP	2014-57R-5823	12/8/2014	12/7/2019	WSSC	0.00	8
Reider Corporation	Permit voided 1/31/01	5-00-16-4675-A1	5/7/2000	5/9/2005	Synagro - WWT, Inc	30.30	9-
Robert & Tamara Petty	Permit voided 1/31/01	5-00-16-4620-M1	3/19/2000	3/19/2000	Synagro - WWT, Inc	0.00	9-
Robert Young	Permit voided 1/31/01	5-97-16-4344-A	6/11/2002	2/15/2005	Synagro - WWT, Inc	0.00	9-
Smith, Alfred & Harry	AH Smith Assoc. Limited Partnership Property	5-00-16-4824-AM2	8/26/2002	8/25/2007	Synagro - WWT, Inc	120.36	9-
Southern Limited Partnership	Chasey Enterprises	5-03-16-4890-M	4/7/2006	4/6/2011	Synagro - WWT, Inc	70.72	9-
Synagro Central	AH Smith Assoc.	5-06-16-5131-M	6/15/2012	6/14/2017	Synagro	120.20	9-
Synagro4	Blackwater	2012-58C-5156	6/15/2012	6/14/2017	Synagro Central, LLC	196.31	9-
The WMHF Holding Company LLC Property	Meinhart/ Brandywine Properties	2012-58C-5156	6/15/2012	6/14/2017	Synagro Central, LLC	196.31	9-

**Map 4-2  
Biosolids Management Sites  
Prince George's County  
Maryland**



Legend		
MAJORROADS	William R. Howard Property	Windsor Family Farm
Widge Property lots	Lee Pl	PG County
Howard Family Ltd Partnership	MSHF Holding Company, LLC Property Lane_Type	Water
Harborwater	Price, John and Carrene BulkMolitor	Land
Conduits	USEPA BARK West Land Operations	Water

Prepared by: DPIE  
 Date: 08/20/2018  
 Scale: 1:50,000  
 Author: [Name]  
 Data Source: [Name]  
 Software: [Name]  
 Project: [Name]

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## **DRAFT 2018 WATER AND SEWER PLAN**

Generally, biosolids produced in Prince George's County are extremely low in metals. As an extra precaution, however, MDE restricts the number of applications that can be made on agricultural land for any biosolids that contain heavy metals such as copper, zinc, nickel, lead or cadmium.

DC Water is participating in a pilot project for small scale composting technology. This pilot project, currently operating offsite from Blue Plains produces Class A product. DC Water unveiled the product and its new brand, Bloom™ in 2016, announcing a pilot program for distribution with local soil blenders and landscapers.

### **4.5 FINANCIAL PLANNING**

Financing of all WSSC CIP is reviewed by the two County Executives and approved annually by the Prince George's and Montgomery county councils. Each CIP covers a six-year period. The Prince George's County Council adopts the CIP as part of the County's Comprehensive Water and Sewer Plan. The CIP is divided into three categories for both water and sewer projects: Prince George's County projects, Montgomery County projects, and Bi-County projects. **Appendix 4-2** of this chapter lists the current sewer projects for the Bi-County area and for Prince George's County.

System improvement projects under the CIP are financed with funds from the Water Supply and Sewage Disposal Bond Funds. The funds are repaid to bond holders over a period of 30 years by annual principal and interest payments known as debt service. System improvement projects related to State environmental regulations are funded in part through grants from the regulatory agency. WSSC has also utilized the Water Quality State Revolving Loan Fund Program. Growth-related projects are paid through System Development Charges and developer contributions.

DC Water also submits a budget for review by Prince George's County as a signatory to the IMA. The DC Water budget includes costs related to the County's share of its allocated flow at the Blue Plains WWTP through WSSC. The DC Water Board of Directors is comprised of 11 members; two of the members are from Prince George's County. The Board sets policy, oversees bond issues, and approves the operating and capital budgets.

The City of Bowie is required to prepare and adopt a formal budget, appropriating funds for the operation, including plant improvements, of the water and sewer system. The City Council formally adopts the budget each year. Rates are established based upon the "cash needs approach." The rate structure must provide not only funds for operation and maintenance, but principal and interest payments on long-term debt, plant additions, and renewals and replacements.

In recent years, the City of Bowie has utilized the Water Quality State Revolving Loan Fund Program to finance its Wastewater Plant improvements. It has also used a pay as you go system to finance some of its improvements, as well as issuing general obligation bonds. Additional information concerning the financial management plan for the City of Bowie's Water and Sewer system may be obtained by contacting the finance director.

**DRAFT 2018 WATER AND SEWER PLAN**

***APPENDIX 4-1***

***MDE DISCHARGE PERMITS  
PRINCE GEORGES COUNTY***

**DRAFT 2018 WATER AND SEWER PLAN**

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Prince George's County  
Discharge Permits 2017

Facility Name	Watershed	State Num.	NPDES Num.	Type	Last Issued	Effective End Date
A & B Trucking, LLC		12SW3157	MDR0003157	General Permit	3/9/2017	12/31/2018
ABC Distribution LLC	Piscataway Creek - 02140203	12SR3062	MDR0003062	General Permit	8/25/2015	12/31/2018
Accokeek Auto Parts	Mattawoman Creek - 02140111	12SW0667	MDR000667	General Permit	10/16/2014	12/31/2018
Aggregate & Dirt Solutions	Anacostia River - 02140205	10MM9920	MDG499920	General Permit	8/30/2016	12/24/2017
Aggregate Industries - Bladensburg Aggregate	Anacostia River - 02140205	10MM0772	MDG490772	General Permit	12/3/2010	12/15/2017
Aggregate Industries - Bladensburg Ready-Mix Concrete & Hot Mix Asphalt Plant	Anacostia River - 02140205	10MM3577	MDG493577	General Permit	8/21/2012	12/15/2017
Aggregate Industries - Kirby Road Asphalt Plant	Upper Tidal Potomac River - 02140201	10MM1036	MDG491036	General Permit	11/30/2010	12/15/2017
Aggregate Industries - Queen Sand & Gravel	Mattawoman Creek - 02140111	10MM9762	MDG499762	General Permit	12/8/2010	12/15/2017
Aggregate Industries-Acckokeek (gaslight) Sand and Gravel	Mattawoman Creek - 02140111	10MM8011	MDG498011	General Permit	12/6/2010	12/15/2017
Airgas East, Inc.	Anacostia River - 02140205	12SR0008	MDR000008	General Permit	5/15/2015	12/31/2018
Alliant Techsystems Inc - Space Systems Division		12NE2087	MDR002087	General Permit	5/26/2015	5/25/2020
Alliant Techsystems, Inc., Space Systems Div (ATK-SSD)		12NE2086	MDR002086	General Permit	5/26/2015	5/25/2020
Anchor Construction - 2300 Beaver Road		12SW3056	MDR003056	General Permit	8/5/2015	12/31/2018
Andrews Air Force Base	Piscataway Creek - 02140203	10MM8034	MDG498034	General Permit	11/10/2010	12/15/2017
Andrews Air Force Base Water Supply System	Piscataway Creek - 02140203	11HT9475	MDG679475	General Permit	4/15/2013	12/25/2017
Aquasco Materials LLC	Patuxent River Area - 02131100	10MM8049	MDG498049	General Permit	10/24/2011	12/15/2017
Arcal Chemicals, Inc	Western Branch - 02131103	12SW2344	MDR002344	General Permit	9/16/2014	12/31/2018
ATK Space Systems, Inc		12NE2233	MDR002233	General Permit	5/21/2015	5/20/2020
Atlantic Contracting Batch Plant - AAFB		10MM8079	MDG498079	General Permit	3/11/2014	12/15/2017
B & B Auto Salvage, Ltd.	Upper Patuxent River - 02131104	12SR1120	MDR001120	General Permit	3/17/2015	12/31/2018
Barobn, Inc. - Kirby Road Sand And Gravel	Piscataway Creek - 02140203	10MM0511	MDG490511	General Permit	12/3/2010	12/15/2017
Barnabas Road Associates, LLC	Upper Tidal Potomac River - 02140201	10MM1720	MDG491720	General Permit	4/1/2015	12/15/2017
Belair Bath And Tennis		12S16542	MDG766542	General Permit	4/5/2013	11/29/2017
Beltville Ready-Mix Concrete (RMC)	Anacostia River - 02140205	10MM9602	MDG493602	General Permit	5/20/2013	12/15/2017
Beltway Used Auto Parts LLC	Anacostia River - 02140205	12SW1464	MDR001464	General Permit	11/20/2014	12/31/2018
Beretta U S A Corp	Mattawoman Creek - 02140111	12SR0590	MDR000590	General Permit	4/15/2015	12/31/2018
Best Western Capitol Beltway		12S17140	MDG767140	General Permit	3/29/2013	11/29/2017
Bowie Sport Fit	Upper Patuxent River - 02131104	12S16165	MDG766165	General Permit	1/16/2013	11/29/2017
Bowle Used Auto Parts, Inc.	Upper Patuxent River - 02131104	12SR0846	MDR000846	General Permit	5/18/2015	12/31/2018
BRAC Administration Facility/Jones Bldg		12SW3055	MDR003055	General Permit	9/15/2015	12/31/2018
Brandywine Auto Parts, Inc.	Mattawoman Creek - 02140111	12SR0847	MDR000847	General Permit	5/19/2015	12/31/2018
Brandywine Ent/cross Trails Operation/	Patuxent River Middle - 02131102	10MM8042	MDG498042	General Permit	4/7/2011	12/15/2017
Brandywine Flyash Site	Patuxent River Middle - 02131102	07DP1389	MD0054836	Industrial Individual	11/1/2016	10/31/2021

Prince George's County  
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Brandywine Flyash Site	Patuxent River Middle - 02131102	12SR3258	MDR003258	General Permit	5/26/2017	12/31/2018
Brown Station Road Sanitary Landfill	Western Branch - 02131103	12SW0401	MDR000401	General Permit	7/14/2015	12/31/2018
Carrillon Manor		12S17106	MDG767106	General Permit	3/25/2013	11/29/2017
Cedarville Mobile Home Park	Zekiah Swamp - 02140108	10DP3264	MD3264Q98	To Groundwater	12/1/2010	12/19/2017
Cedarville State Forest		11HT5139	MDG675139	General Permit	6/4/2012	12/25/2017
Central Small Car Salvage	Upper Patuxent River - 02131104	12SR0841	MDR000841	General Permit	3/30/2015	12/31/2018
Chaney Enterprises - Seat Pleasant	Anacostia River - 02140205	10MM9867	MDG499867	General Permit	11/23/2010	12/15/2017
Chaney Enterprises - Seat Pleasant	Anacostia River - 02140205	15MP9867	MDG499867	General Permit	11/2/2017	4/30/2022
Chaney Enterprises - Upper Marlboro	Western Branch - 02131103	10MM9873	MDG499873	General Permit	12/8/2010	12/15/2017
Chaney Enterprises - Upper Marlboro	Western Branch - 02131103	15MP9873	MDG499873	General Permit	11/3/2017	4/30/2022
Cheltenham Boy's Village WWTP & WTP	Piscataway Creek - 02140203	08DP0755	MD0023931	Municipal (Surface)	6/1/2010	12/16/2017
Cheltenham Boy's Village WWTP & WTP	Piscataway Creek - 02140203	11HT9452	MDG679452	General Permit	6/13/2012	12/25/2017
Chestnut Hill Apartments	Oxon Creek - 02140204	12S6593	MDG766593	General Permit	3/20/2013	11/29/2017
Chuck's Used Auto Parts		12SW3123	MDR003123	General Permit	4/5/2016	12/31/2018
Chucks Used Auto Parts, Inc	Oxon Creek - 02140204	12SW1112	MDR001112	General Permit	9/17/2015	12/31/2018
City Of Bowie Ms4		12SW3250	MDR003250	General Permit	4/24/2017	12/31/2018
City Of Bowie Water System	Upper Patuxent River - 02131104	11HT9557	MDG679557	General Permit	2/15/2013	12/25/2017
City of Bowie WWTP	Upper Patuxent River - 02131104	12SW2525	MDR002525	General Permit	1/30/2015	12/31/2018
City of Bowie WWTP	Upper Patuxent River - 02131104	14DP0697	MD0021628	Municipal (Surface)	6/1/2016	5/31/2021
City of Bowie, Parks and Grounds Facility		12SW3251	MDR003251	General Permit	4/27/2017	12/31/2018
City of College Park DPW	Anacostia River - 02140205	12SW2148	MDR002148	General Permit	3/2/2015	12/31/2018
City of District Heights	Western Branch - 02131103	12NE3240	MDR003240	General Permit	3/23/2017	3/22/2022
City of Greenbelt-Greenbelt Lake		12SW2145	MDR002145	General Permit	2/27/2015	12/31/2018
City of Hyattsville	Anacostia River - 02140205	12SW2150	MDR002150	General Permit	3/2/2015	12/31/2018
City of Laurel DPW Maintenance Facility	Patuxent River Middle - 02131102	12SW1841	MDR001841	General Permit	3/2/2015	12/31/2018
City of Seat Pleasant	Upper Tidal Potomac River - 02140201	12SW2143	MDR002143	General Permit	3/2/2015	12/31/2018
Claggett Farm Chesapeake Bay Foundaton		13DP3784	MD3784Q13	To Groundwater	6/1/2013	5/31/2018
Clean Earth of Greater Washington, LLC		12SR2343	MDR002343	General Permit	4/27/2015	12/31/2018
Cohen Recycling		12SW3138	MDR003138	General Permit	3/2/2017	12/31/2018
Columbia Park	Anacostia River - 02140205	12S16594	MDG766594	General Permit	3/20/2013	11/29/2017
Corporate Press		12NE3040	MDR003040	General Permit	6/9/2015	6/8/2020
D.C. Materials	Anacostia River - 02140205	12SW1745	MDR001745	General Permit	9/9/2014	12/31/2018
D.C. Materials Daisy Lane Yard		12SW2310	MDR002310	General Permit	9/18/2014	12/31/2018
Deerfield Run Apartments	Upper Patuxent River - 02131104	12S16591	MDG766591	General Permit	3/14/2013	11/29/2017
DEiamond Transit - CSC #7044 Temple Hills		12SW3283	MDR003283	General Permit	8/31/2017	12/31/2018
East-West Motors	Anacostia River - 02140205	12SW3130	MDR003130	General Permit	4/20/2016	12/31/2018
Eaton Corporation	Anacostia River - 02140205	12SR0316	MDR000316	General Permit	1/16/2015	12/31/2018
EP Henry	Anacostia River - 02140205	12SR2155	MDR002155	General Permit	4/13/2015	12/31/2018

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Eppley Recreation Center		12S17192	MDG767192	General Permit	4/15/2014	11/29/2017
Fairlands Sports & Aquatic Complex		12S17250	MDG767250	General Permit	9/14/2017	11/29/2017
FDA - Center For Veterinary Medicine	Anacostia River - 02140205	08DP3215	MD3215Q03	Industrial Individual	12/1/2011	12/25/2017
First Transit, Inc #55440 - Capitol Heights		12SW2382	MDR002382	General Permit	10/17/2014	12/31/2018
Ford/Rooney Pit-Percontee	Lower Patuxent River - 02131101	10MM0171	MDG490171	General Permit	2/29/2012	12/15/2017
Foreign Car Parts, Inc.	Western Branch - 02131103	12SW0844	MDR000844	General Permit	2/25/2015	12/31/2018
Forest Hills Apts		12S17141	MDG767141	General Permit	3/29/2013	11/29/2017
Forestville Asphalt Company	Western Branch - 02131103	10MM9911	MDG499911	General Permit	1/6/2016	12/27/2017
Forestville Asphalt Company	Western Branch - 02131103	15MP9911	MDG499911	General Permit	11/15/2017	4/30/2022
Fort Washington Marina	Piscataway Creek - 02140203	10MA9119	MDG999119	General Permit	7/15/2011	12/19/2017
Fort Washington Pool Association	Piscataway Creek - 02140203	12S16265	MDG766265	General Permit	3/7/2013	11/29/2017
Gateway Square Apartments	Oxon Creek - 02140204	12S16595	MDG766595	General Permit	3/25/2013	11/29/2017
Grant County Mulch Laurel Facility	Anacostia River - 02140205	12SR1250	MDR002125	General Permit	4/9/2015	12/31/2018
Greyhound Lines, Inc #320012	Anacostia River - 02140205	12SW2330	MDR002330	General Permit	11/25/2014	12/31/2018
Griffith Energy Services, Inc. - Cheverly	Anacostia River - 02140205	12SW1380	MDR001380	General Permit	9/10/2014	12/31/2018
Halle Enterprises, Inc.	Anacostia River - 02140205	12SW1829	MDR001829	General Permit	1/7/2015	12/31/2018
Hampton Inn - Laurel	Upper Patuxent River - 02131104	12S16698	MDG766698	General Permit	3/6/2013	11/29/2017
Hard Bargain Farm	Middle Tidal Potomac River - 02140102	12DP3515A	MD3515Q05A	To Groundwater	11/1/2013	12/25/2017
Heather Hills Apartments	Anacostia River - 02140205	12S16875	MDG766875	General Permit	4/1/2014	11/29/2017
Heritage Square	Anacostia River - 02140205	12S16596	MDG766596	General Permit	3/25/2013	11/29/2017
Howard Johnson's - Cheverly		12S17149	MDG767149	General Permit	4/18/2013	11/29/2017
Huntsman Pigments	Anacostia River - 02140205	11HT5200	MDG675200	General Permit	12/17/2014	12/25/2017
Huntsman Pigments	Anacostia River - 02140205	12SW1926A	MDR001926	General Permit	2/1/2016	12/31/2018
Insurance Auto Auctions, Inc.	Patuxent River Middle - 02131102	12SR1750	MDR001750	General Permit	1/9/2015	12/31/2018
Intercounty Connector (ICC) Eastern Operations Facility						
Jiffy John Company, Inc.	Anacostia River - 02140205	12SW2415	MDR002415	General Permit	8/20/2014	12/31/2018
Joint Base Andrews Drainage Repair Plan		12NE1299	MDR001299	General Permit	2/27/2015	2/26/2020
Joint Base Andrews Drainage Repair Plan		12SW3055	MDR003055	General Permit	9/15/2015	12/31/2018
Joint Base Andrews Drainage Repair Plan		12SW3066	MDR003066	General Permit	9/15/2015	12/31/2018
Joint Base Andrews Drainage Repair Plan		12SW3067	MDR003067	General Permit	9/15/2015	12/31/2018
Joseph Smith & Sons, Inc	Anacostia River - 02140205	12SW3066	MDR003066	General Permit	9/15/2015	12/31/2018
Kenilworth Foreign Car Parts	Anacostia River - 02140205	12SR0654A	MDR000654	General Permit	10/5/2016	12/31/2018
Kenilworth Towers East	Anacostia River - 02140205	12SW1366	MDR001366	General Permit	3/27/2015	12/31/2018
Keys Energy Center, LLC Facility and Natural Gas Pipeline	Anacostia River - 02140205	12S16597	MDG766597	General Permit	3/25/2013	11/29/2017
KMC Thermo-Brandywine Power Facility	Mattawoman Creek - 02140111	11HT9617	MDG679617	General Permit	9/13/2016	12/25/2017
Landover Bus Garage & Maintenance Division	Anacostia River - 02140205	12SR1173	MDR001173	General Permit	2/19/2015	12/31/2018
		12SR2457	MDR002457	General Permit	7/25/2014	12/31/2018

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Laney Materials, LLC	Anacostia River - 02140205	10MM1754	MDG491754	General Permit	12/7/2010	12/15/2017
Laney Materials, LLC	Anacostia River - 02140205	15MP1754	MDG491754	General Permit	11/15/2017	4/30/2022
Lansdowne Village	Anacostia River - 02140205	12S16599	MDG766599	General Permit	3/25/2013	11/29/2017
Laurel Asphalt Crushing Plant	Anacostia River - 02140205	10MM8039	MDG498039	General Permit	9/29/2011	12/15/2017
Laurel Concrete Crushing Plant	Anacostia River - 02140205	10MM8040	MDG498040	General Permit	9/29/2011	12/15/2017
Laurel Ready Mix Concrete	Anacostia River - 02140205	10MM9755	MDG499755	General Permit	11/30/2010	12/15/2017
Laurel Ready Mix Concrete	Anacostia River - 02140205	15MP9755	MDG499755	General Permit	10/16/2017	4/30/2022
Lawrence Street Industry, LLC	Anacostia River - 02140205	12SW1093	MDR001093	General Permit	3/10/2015	12/31/2018
Lee Pit, PG-175	Patuxent River Middle - 02131102	10MM0170	MDG490170	General Permit	2/29/2012	12/15/2017
Maier, Ernest, Inc.	Anacostia River - 02140205	10MM2092	MDG492092	General Permit	12/11/2014	12/15/2017
Marlboro Auto Parts	Western Branch - 02131103	12SW1933	MDR001933	General Permit	11/10/2014	12/31/2018
Marlton Community Pool		12S71111	MDG767111	General Permit	2/27/2013	11/29/2017
Martz/GoldLine, Inc	Anacostia River - 02140205	12SR1083	MDR001083	General Permit	11/1/2016	12/31/2018
Marva Maid Landover, LLC	Anacostia River - 02140205	12SR2022	MDR002022	General Permit	4/23/2015	12/31/2018
Maryland Reclamation, LLC - Hammitt Property	Western Branch - 02131103	10MM8014	MDG498014	General Permit	6/23/2011	12/15/2017
Megabus Northeast LLC		12SW9266	MDR003266	General Permit	7/10/2017	12/31/2018
Melwood Horticultural Training Center		12NE3072	MDR003072	General Permit	1/15/2016	1/14/2021
Meridian at Bowie		12S16463	MDG766463	General Permit	3/18/2014	11/29/2017
Metro Re-Uz-It Company, Inc.	Anacostia River - 02140205	12SW1357	MDR001357	General Permit	1/12/2015	12/31/2018
Metropolitan Meat, Seafood and Poultry		12SR2559	MDR002559	General Permit	3/27/2015	12/31/2018
Missouri Avenue Convenience Center		12SW2466	MDR002466	General Permit	10/1/2015	12/31/2018
MNCPPC - J. Franklin Bourne Swimming Pool	Anacostia River - 02140205	12S7005	MDG767005	General Permit	3/7/2013	11/29/2017
MNCPPC - Lane Manor Splash Pool	Anacostia River - 02140205	12S16432	MDG766432	General Permit	3/7/2013	11/29/2017
Mount Vernon Printing		12NE3214	MDR003214	General Permit	1/10/2017	1/9/2022
Moyone Community Swimming Pool	Upper Tidal Potomac River - 02140201	12S16574	MDG766574	General Permit	12/1/2014	11/29/2017
Murray Tract		15MM9937	MDG499937	General Permit	10/25/2017	4/30/2022
NASA Goddard Space Flight Center	Anacostia River - 02140205	08DP3156A	MD0067482	Industrial Individual	5/1/2015	12/27/2017
NASA Goddard Space Flight Center	Anacostia River - 02140205	11HT5092	MDG675092	General Permit	5/21/2012	12/25/2017
National Wildlife Visitor Center	Upper Patuxent River - 02131104	09DP2831	MD0065358	Municipal (Surface)	5/1/2012	12/26/2017
Nestle Waters North America Home and Office Distribution		12SW3206	MDR003206	General Permit	1/3/2017	12/31/2018
New Carrollton Public Works	Anacostia River - 02140205	12SW2144	MDR002144	General Permit	3/2/2015	12/31/2018
New Carrollton Recreation Club, Inc.	Anacostia River - 02140205	12S16884	MDG766884	General Permit	1/31/2013	11/29/2017
New Dawn Manufacturing		12NE3178	MDR003178	General Permit	11/2/2017	11/1/2022
NRG Chalk Point Generating Station	Lower Patuxent River - 02131101	06DP0627	MD0002658	Industrial Individual	7/1/2009	12/11/2017
NVA Properties, LLC	Patuxent River Middle - 02131102	13DP1143	MD0052680	Municipal (Surface)	9/1/2017	8/31/2022
O & A Used Auto Parts	Piscataway Creek - 02140203	12SW0981	MDR000981	General Permit	1/9/2015	12/31/2018
Oakcrest Towers		12S71112	MDG767112	General Permit	3/29/2013	11/29/2017

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Office and Equipment Maintenance Facility	12SW2528	MDR002528	General Permit	1/29/2015	12/31/2018
Parkway WWTP	12SR0118	MDR000118	General Permit	2/27/2015	12/31/2018
Parkway WWTP	14DP0631	MD0021725	Municipal (Surface)	6/1/2016	5/31/2021
Patuxent River 4-H Center Foundation, Inc.	09DP1499	MD1499Q84	To Groundwater	4/1/2012	12/26/2017
PCM Construction, Inc	12SW2221	MDR002221	General Permit	9/8/2014	12/31/2018
Pepsi Bottling Group, LLC	12SR1897	MDR001897	General Permit	3/11/2015	12/31/2018
Pg County Public Works-Northern Ave	12SW1222	MDR001222	General Permit	2/11/2015	12/31/2018
Piscataway Wastewater Treatment Plant	12SR0119	MDR000119	General Permit	3/2/2015	12/31/2018
Piscataway Wastewater Treatment Plant	14DP0667	MD0021539	Municipal (Surface)	7/1/2016	6/30/2021
Post Park	12SR1444	MDG767144	General Permit	3/29/2013	11/29/2017
Potomac Airfield	12SR0161	MDR000161	General Permit	10/7/2014	12/31/2018
Potomac Knolls Community Center	12SR7230	MDG767230	General Permit	6/17/2015	11/29/2017
Pr. Geo. County Dept. Of Public Works - Brandywine	12SW1223	MDR001223	General Permit	2/11/2015	12/31/2018
Prince George's Community College	12SR6058	MDG766058	General Permit	1/13/2014	11/29/2017
Prince George's County - Recycling Facility	12SW1224	MDR001224	General Permit	7/14/2015	12/31/2018
Prince George's County Central Services - Fleet Vm	12SW2173	MDR002173	General Permit	7/18/2014	12/31/2018
Prince George's County DPW & Transportation	12SW0521	MDR000521	General Permit	2/13/2015	12/31/2018
Prince George's County Vehicle Audit Unit	12SW0312	MDR000312	General Permit	7/14/2015	12/31/2018
Prince George's County Yard Waste Composting Facility	12DP2792	MD0065111	Industrial Individual	11/1/2015	10/31/2020
Prince George's Scrap, Inc.	12SR0648A	MDR000648	General Permit	2/28/2017	12/31/2018
Prince George's Sports & Learning Complex	12SR7098	MDG767098	General Permit	2/6/2013	11/29/2017
Princeton Estates Limited Partnership	12SR6390	MDG766390	General Permit	4/1/2013	11/29/2017
PSEG Keys Energy Center	11HT9622	MDG679622	General Permit	3/8/2017	2/28/2018
QTG CDSO - Landover	12SW2246	MDR002246	General Permit	6/9/2014	12/31/2018
Ramblewood HOA	12SR7145	MDG767145	General Permit	3/29/2013	11/29/2017
Recycle One Processing & Transfer Station	12SW2352	MDR002352	General Permit	3/28/2014	12/31/2018
Reddy Ice Group #427 - Landover	12NE1901	MDR001901	General Permit	9/19/2014	9/18/2019
Republic Services of Washington Metro	12SW1092	MDR001092	General Permit	7/15/2014	12/31/2018
Ripples Service, Inc.	12SW1064A	MDR001064	General Permit	6/29/2017	12/31/2018
Ritchie Land Reclamation, LLC	12SR3169	MDR003169	General Permit	7/13/2016	12/31/2018
Riverside Plaza Apartments	12SR6598	MDG766598	General Permit	3/25/2013	11/29/2017
Robin Dale Sand and Gravel	10MM8033	MDG498033	General Permit	12/20/2010	12/15/2017
Rockhill Sand & Gravel Corp - Holsinger North Pit	10MM8068	MDG498068	General Permit	8/28/2013	12/15/2017
Rockhill Sand and Gravel Corp / Gudelsky Materials	10MM3000A	MDG493000	General Permit	2/21/2013	12/15/2017
Patuxent River Middle - 02131102					

Prince George's County  
Discharge Permits 2017

Rockville Fuel & Feed Co., Inc		10MM8070	MDG498070	General Permit	9/9/2013	12/15/2017
Rockville Fuel & Feed Co., Inc		15MP8070	MDG498070	General Permit	11/1/2017	4/30/2022
Rodgers Brothers Service, Inc.	Anacostia River - 02140205	12SW2002	MDR002002	General Permit	9/1/2016	12/31/2018
Rolling Frito-Lay Sales - Beltsville DC	Anacostia River - 02140205	12SR1864	MDR001864	General Permit	1/14/2015	12/31/2018
Saddlebrook West	Upper Patuxent River - 02131104	12S17076	MDG767076	General Permit	1/31/2013	11/29/2017
Safeway Eastern Distribution Center		12SR2499	MDR002499	General Permit	1/8/2015	12/31/2018
Sandy Hill Municipal Landfill	Upper Patuxent River - 02131104	12SW0314A	MDR000314	General Permit	4/11/2016	12/31/2018
Save More Used Parts, Inc	Upper Tidal Potomac River - 02140201	12SR0839	MDR000839	General Permit	6/19/2015	12/31/2018
Seven Knolls Gravel Pit		10MM9919	MDG499919	General Permit	8/30/2016	12/24/2017
SHA - Laurel Maintenance Facility		12SW1324	MDR001324	General Permit	8/12/2014	12/31/2018
SHA - Marlboro Shop	Western Branch - 02131103	11HT5093	MDG675093	General Permit	12/5/2012	12/25/2017
SHA - Marlboro Shop	Western Branch - 02131103	12SW1325	MDR001325	General Permit	8/14/2014	12/31/2018
Shadigrove Recycling		12NE3276	MDR003276	General Permit	8/3/2017	8/2/2022
Sheriff Road Asphalt		10MM8072	MDG498072	General Permit	12/30/2013	12/15/2017
Sheriff Road Processing Facility & Transfer Station	Anacostia River - 02140205	10MM9916	MDG499916	General Permit	8/3/2016	12/27/2017
Sheriff Road Processing Facility & Transfer Station	Anacostia River - 02140205	15MM9916	MDG499916	General Permit	10/4/2017	4/30/2022
Sherwin-Williams - Beltsville	Anacostia River - 02140205	12SR0466	MDR000466	General Permit	7/9/2015	12/31/2018
Silver Hill Materials II, LLC - Cedarville Sand & Gravel	Zekiah Swamp - 02140108	10MM9757	MDG499757	General Permit	12/3/2010	12/15/2017
Six Flags America	Western Branch - 02131103	12S7093	MDG767093	General Permit	11/29/2012	11/29/2017
Six Flags America	Western Branch - 02131103	12SR2323	MDR002323	General Permit	5/20/2015	12/31/2018
Soil Safe, Inc.	Mattawoman Creek - 02140111	12SR1681	MDR001681	General Permit	1/29/2015	12/31/2018
Stephens Pipe & Steel		12NE3275	MDR003275	General Permit	8/2/2017	8/1/2022
Stone Industrial Precision Products	Anacostia River - 02140205	12NE0007	MDR000007	General Permit	2/5/2015	2/4/2020
Storm Oil, LLC		12SW3292	MDR003292	General Permit	11/20/2017	12/31/2018
Sun Services on Somerset Ave		12SW2530A	MDR002530	General Permit	11/2/2016	12/31/2018
Takoma Landing		12S7114	MDG767114	General Permit	2/27/2013	11/29/2017
Temple Hills Swim Club	Upper Tidal Potomac River - 02140201	12S6469	MDG766469	General Permit	3/29/2013	11/29/2017
The Bechdon Company, Inc	Upper Patuxent River - 02131104	12NE0511	MDR000511	General Permit	9/24/2014	9/23/2019
The Gardens Ice House	Anacostia River - 02140205	11HT5223	MDG675223	General Permit	9/28/2015	12/25/2017
The Hanover Apartments		12S7248	MDG767548	General Permit	8/18/2017	11/29/2017
The Lighthouse At Twin Lakes	Anacostia River - 02140205	12S6927	MDG766927	General Permit	3/29/2013	11/29/2017
The Ryland Group		12S7218	MDG767218	General Permit	6/15/2015	11/29/2017
Theresa Banks Memorial Aquatic Center		12S7099	MDG767099	General Permit	2/6/2013	11/29/2017
Top of The Hill Apartments		12S7117	MDG767117	General Permit	3/25/2013	11/29/2017
Town of Cheverly	Anacostia River - 02140205	12SW0197	MDR000197	General Permit	2/11/2015	12/31/2018
Town of Riverdale Park DPW	Anacostia River - 02140205	12SW2146	MDR002146	General Permit	3/27/2015	12/31/2018
Tremendo Towing and Repair, LLC		12SW1393	MDR001393	General Permit	4/2/2015	12/31/2018

Prince George's County  
Discharge Permits 2017

U.S. Postal Service - Southern VMF	Western Branch - 02131103	12SW0937	MDR000937	General Permit	9/8/2014	12/31/2018
United Parcel Service	Upper Patuxent River - 02131104	12SW0857	MDR000857	General Permit	9/5/2014	12/31/2018
United Parcel Service	Upper Patuxent River - 02131104	12SR0859	MDR000859	General Permit	5/27/2015	12/31/2018
United Parcel Service - Landover	Anacostia River - 02140205	12SR0740	MDR000740	General Permit	5/27/2015	12/31/2018
United Parcel Service - Landover #2	Anacostia River - 02140205	12SR0858	MDR000858	General Permit	5/28/2015	12/31/2018
University of Maryland	Anacostia River - 02140205	12SW3281	MDR003281	General Permit	9/8/2017	12/31/2018
UPS Freight	Anacostia River - 02140205	08DP2618	MD0063801	Industrial Individual	11/1/2012	11/30/2017
US Postal Service - Riverdale VMF	Anacostia River - 02140205	12SR1065	MDR001065	General Permit	5/27/2015	12/31/2018
USDA East Side WWTP	Anacostia River - 02140205	12SW1103	MDR001103	General Permit	9/8/2014	12/31/2018
USDA West Side WWTP	Anacostia River - 02140205	15DP2525	MD0020842	Municipal (Surface)	9/1/2016	8/31/2021
Veolia Transportation	Anacostia River - 02140205	11DP2787	MD0020851	Municipal (Surface)	12/1/2012	11/30/2017
Walker Mill Business Park, Lot 4		12SR2432	MDR002432	General Permit	6/10/2014	12/31/2018
Western Branch WWTP	Patuxent River Middle - 02131102	12SW2561	MDR002561	General Permit	3/16/2015	12/31/2018
Western Branch WWTP	Patuxent River Middle - 02131102	12SR0121	MDR000121	General Permit	3/2/2015	12/31/2018
Westland Printers	Patuxent River Middle - 02131102	15DP0632	MD0021741	Municipal (Surface)	9/1/2016	8/31/2021
White Glove Machining Inc		12NE3215	MDR003215	General Permit	1/10/2017	1/9/2022
Whitehall Pool & Tennis Club	Patuxent River Middle - 02131102	12NE2507	MDR002507	General Permit	9/24/2014	9/23/2019
Whitehall Square Apartments	Patuxent River Middle - 02131102	12S6138	MDG766138	General Permit	7/16/2014	11/29/2017
Williams & Heintz Map Corporation		12S6592	MDG766592	General Permit	3/20/2013	11/29/2017
WMATA - Carmen Turner Facility		12NE2177	MDR002177	General Permit	7/31/2014	7/30/2019
WMATA - Greenbelt Rail Yard	Anacostia River - 02140205	12SR2534	MDR002534	General Permit	2/20/2015	12/31/2018
WMATA - Largo Operations Building	Western Branch - 02131103	12SR1242	MDR001242	General Permit	2/20/2015	12/31/2018
Wmata - New Carrollton Yard	Anacostia River - 02140205	16DP3559	MD0069774	Industrial Individual	7/1/2017	6/30/2022
Wmata - Southern Avenue Annex	Oxon Creek - 02140204	12SR0328	MDR000328	General Permit	2/20/2015	12/31/2018
WMATA Branch Ave Rail Yard	Upper Tidal Potomac River - 02140201	12SR2458	MDR002458	General Permit	7/25/2014	12/31/2018
Woodmore Towne Center HOA		12SRL709	MDR001709	General Permit	2/20/2015	12/31/2018
World Recycling Company	Anacostia River - 02140205	12S7229	MDG767229	General Permit	7/16/2015	11/29/2017
WSSC - Anacostia Equipment Shop	Anacostia River - 02140205	12SW1365	MDR001365	General Permit	3/10/2015	12/31/2018
WSSC - Anacostia Garage	Anacostia River - 02140205	12SR1735	MDR001735	General Permit	3/2/2015	12/31/2018
WSSC - Temple Hills Garage	Piscataway Creek - 02140203	12SR1736	MDR001736	General Permit	3/2/2015	12/31/2018
Yellow Transportation, Inc. - Landover	Anacostia River - 02140205	12SW1740	MDR001740	General Permit	3/2/2015	12/31/2018
Zantinger		10MM9918	MDG499918	General Permit	7/15/2014	12/31/2018
					8/30/2016	12/24/2017

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***BI-COUNTY AND PRINCE GEORGE'S COUNTY  
SEWER PROJECTS  
2019 - 2024  
CAPITAL IMPROVEMENT PROGRAM***

**DRAFT 2018 WATER AND SEWER PLAN**

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## Section 4 - Bi-County Sewer Projects

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**FINANCIAL SUMMARY**  
 (ALL FIGURES IN THOUSANDS)

**BI-COUNTY SEWER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 17	EST. EXPEND 18	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM
						YR 19	YR 20	YR 21	YR 22	YR 23	YR 24		
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	192,823	0	10,500	122,401	17,471	21,282	21,635	25,189	20,058	16,756	59,922	4-3
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	40,638	0	6,355	33,623	7,890	10,274	8,660	4,964	1,106	729	710	4-4
S-22.09	Blue Plains WWTP: Plant-wide Projects	110,265	0	6,616	82,112	8,206	9,815	17,829	18,969	16,660	10,633	21,537	4-5
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	404,480	340,782	30,335	13,779	8,345	1,563	869	758	1,159	1,065	19,584	4-6
S-22.11	Blue Plains: Pipelines & Appurtenances	147,842	0	22,173	108,360	23,393	14,408	22,805	17,104	16,064	14,566	17,309	4-7
S-103.02	Piscataway WWTP Bio-Energy Project	248,677	6,871	8,873	232,933	40,310	76,251	73,563	34,566	8,253	0	0	4-8
S-170.06	Septage Discharge Facility Planning & Implementation	30,494	4,492	382	25,620	5,229	15,136	5,255	0	0	0	0	4-10
S-170.09	Trunk Sewer Reconstruction Program	440,073	0	141,557	298,516	81,615	65,376	58,500	30,397	31,004	31,624	0	4-11
S-203.00	Land & Rights-Of-Way Acquisition - Bi-County Sewer	490	0	320	170	95	15	15	15	15	15	0	4-12
<b>TOTALS</b>		1,615,832	352,145	227,111	917,514	192,554	214,120	209,121	131,962	94,329	75,428	119,082	

**BLUE PLAINS WASTEWATER TREATMENT PLANT PROJECTS**  
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY18 TOTAL COST	ADOPTED FY19 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	\$173,026	\$192,823	\$19,797	11.4%	\$122,401	On-Going
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	36,101	40,686	4,587	12.7%	33,623	On-Going
S-22.09	Blue Plains WWTP: Plant-wide Projects	98,436	110,265	11,829	12.0%	82,112	On-Going
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	381,788	404,480	22,692	5.9%	13,779	On-Going
S-22.11	Blue Plains: Pipelines & Appurtenances	98,924	147,842	48,918	49.5%	108,360	On-Going
	<b>TOTALS</b>	<b>\$788,275</b>	<b>\$996,098</b>	<b>\$107,823</b>	<b>13.7%</b>	<b>\$360,275</b>	

**Summary:** These five projects, with an estimated total cost of \$896.1 million, provide funding for the upgrade, expansion, and enhancement of wastewater treatment and solids handling facilities at the Regional Blue Plains Wastewater Treatment Plant, located in the District of Columbia. Whereas typical WSSC projects encompass planning, design, construction, and start-up for a single project, with defined starting and ending dates, the Blue Plains projects are comprised of many sub-projects and are "open-ended." As the Blue Plains Facility Plans move forward and new sub-projects are approved, the costs of these new sub-projects are added to the appropriate existing Blue Plains project. The expenditures displayed represent the WSSC's calculated share. There are four main funding divisions: liquid treatment train (S-22.06); biosolids management (S-22.07); plant-wide projects (S-22.09); and, pipelines & appurtenances (S-22.11). Project S-22.10 Enhanced Nutrient Removal (ENR) will achieve nutrient removal levels surpassing Biological Nutrient Removal (BNR) as determined in the Tributary Strategy process of 2005 in order to meet Chesapeake Bay water quality targets.

**Cost Impact:** These five Blue Plains projects, which comprise one of the largest groups of expenditures in the CIP, represent 18% of the Six-Year WSSC CIP program. The figures shown above are derived from the latest available spending projections provided by the District of Columbia Water and Sewer Authority (DCWASA). Spending at the DCWASA staff-proposed rate in future years may challenge the WSSC's ability to stay within County-established spending affordability limits. It is, therefore, recommended that the coordination of development and approval of the DCWASA's and WSSC's CIPs be sustained in order that the economic development and environmental objectives of the region be met, without causing a rapid increase in WSSC customers' bills. An explanation of the cost changes for each project is included on the individual project description forms that immediately follow this summary page.

## Blue Plains WWTP: Liquid Train Projects, Part 2

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-22.06	954811	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	Bi-County 30;
Drainage Basins	Bi-County;
Planning Areas	Bi-County;

### B. Expenditure Schedule (000's)

Cost Elements	Thru FY'17	Estimate FY'18	Total Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	37,934	2,305	21,493	3,398	2,769	3,795	3,678	2,446	5,407	14,136
Land										
Site Improvements & Utilities										
Construction	152,980	8,091	99,696	13,900	18,302	17,526	21,262	17,423	11,183	45,193
Other	1,909	104	1,212	173	211	214	249	199	166	593
<b>Total</b>	<b>192,823</b>	<b>10,500</b>	<b>122,401</b>	<b>17,471</b>	<b>21,282</b>	<b>21,635</b>	<b>25,189</b>	<b>20,068</b>	<b>16,756</b>	<b>59,922</b>

### C. Funding Schedule (000's)

WSSC Bonds	182,238	9,924	115,681	16,512	20,114	20,447	23,806	18,966	15,836	56,633
City of Rockville	10,585	576	6,720	959	1,168	1,188	1,383	1,102	920	3,289

### D. Description & Justification

#### DESCRIPTION

This project provides funding for WSSC's share of Blue Plains liquid train projects for which construction began after June 30, 1993. Major projects include: Dual Purpose Sedimentation Basins Rehabilitation, Filtration/Disinfection Facilities Phases I&II, and Gift Chamber Buildings 1&2.

#### JUSTIFICATION

This is a continuation of the DCWASA's upgrading of the Blue Plains Wastewater Treatment Plant.

The Blue Plains Intermunicipal Agreement of 2012; the DCWASA Master Plan (1998); and the DCWASA Approved FY 2018 Capital Improvements Program.

#### COST CHANGE

Not applicable.

#### OTHER

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast of spending and DCWASA's latest project management data, and fully reflect DCWASA's current cost estimates and expenditure schedules. Given the open-ended nature of the Blue Plains projects, this PDF does not fully reflect the total project costs. These projects are, in fact, expected to continue indefinitely. As new sub-projects are added to the Blue Plains facility plans, the associated costs will be added to this project. The funding schedule also indicates the calculated Rockville share of the cost. Life to date expenditures for this program are approximately \$370 million.

#### COORDINATION

Coordinating Agencies: District of Columbia Water and Sewer Authority; (responsible for design and construction); City of Rockville; (responsible for a share of funding)

Coordinating Projects: S-22-10-Blue Plains WWTP: Enhanced Nutrient Removal;

### E. Annual Operating Budget Impact (000's)

Staff	FY of Impact
Maintenance	
Other Project Costs	
Debt Service	\$11,855
Total Cost	\$11,855
Impact on Water and Sewer Rate	\$0.27

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	
Cost Estimate Last FY	173,026
Present Cost Estimate	192,823
Approved Request Last FY	13,154
Total Expense & Encumbrances	
Approval Request Year 1	17,471

### G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	370 MGD

### H. Map





# Blue Plains WWTP: Plant-wide Projects

A. Identification and Coding Information	
Agency Number	Project Number
S-22.09	023805
	Update Code
	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	Bi-County 30;
Drainage Basins	Bi-County;
Planning Areas	Bi-County;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	22,038		1,524	17,552	2,327	2,201	4,268	3,774	3,046	1,936	2,862
Land											
Site Improvements & Utilities											
Construction	87,135		4,926	63,747	5,798	7,517	13,384	15,007	13,449	8,592	18,462
Other	1,092		66	813	81	97	177	188	165	105	213
<b>Total</b>	<b>110,265</b>		<b>6,616</b>	<b>82,112</b>	<b>8,206</b>	<b>9,815</b>	<b>17,829</b>	<b>18,969</b>	<b>16,660</b>	<b>10,633</b>	<b>21,537</b>

## C. Funding Schedule (000's)

WSSC Bonds	104,212	6,253	77,604	9,276	16,850	17,928	15,745	10,049	20,355
City of Rockville	6,053	363	4,508	450	979	1,041	915	584	1,182

## D. Description & Justification

### DESCRIPTION

This project provides funding for WSSC's share of Blue Plains plant-wide projects for which construction began after June 30, 1993. Major projects include: Plant-wide Fine Bubble Aeration, Plant-wide Painting of Steel Pipes, Process Computer Control System, and Miscellaneous Projects

### JUSTIFICATION

This is a continuation of the DCWASA's upgrading of the Blue Plains Wastewater Treatment Plant.

The Blue Plains Intermunicipal Agreement of 2012; the WASA Master Plan (1998); and the DCWASA Approved FY 2018 Capital Improvement Program.

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast and latest project management data, and reflect DCWASA's current expenditure estimates and schedules. Given the open-ended nature of the project, this PDF does not fully reflect the total project costs. These projects are, in fact, expected to continue indefinitely. As new sub-projects are added to the Blue Plains facility plans, the associated costs will be added to this project. The funding schedule also indicates the calculated Rockville share of the cost. Life to date expenditures for this program are approximately \$210 million.

### COORDINATION

Coordinating Agencies: City of Rockville; (responsible for a share of funding); District of Columbia Water and Sewer Authority; (responsible for design and construction)

Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$6,779	
Total Cost	\$6,779	
Impact on Water and Sewer Rate	\$0.16	

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 95
Date First Approved		FY 02
Initial Cost Estimate		
Cost Estimate Last FY	98,436	
Present Cost Estimate	110,265	
Approved Request Last FY	7,021	
Total Expense & Encumbrances		
Approval Request Year 1		8,206

## G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	370 MGD

## H. Map

MAP NOT AVAILABLE

# Blue Plains WWTP: Enhanced Nutrient Removal

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-22.10	083800	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	Bi-County 30.
Drainage Basins	Bi-County.
Planning Areas	Bi-County.

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	108,555	88,248	8,280	9,848	5,224	888	848	746	1,083	1,059	2,179
Land											
Site Improvements & Utilities											
Construction	295,294	252,534	21,755	3,794	3,038	660	12	4	65	15	17,211
Other	631	300	83	137	83	15	9	8	11	11	194
<b>Total</b>	<b>404,480</b>	<b>340,782</b>	<b>30,335</b>	<b>13,779</b>	<b>8,345</b>	<b>1,563</b>	<b>869</b>	<b>758</b>	<b>1,159</b>	<b>1,085</b>	<b>19,584</b>

## C. Funding Schedule (000's)

WSSC Bonds	174,541	129,184	20,469	6,938	3,991	700	358	309	861	719	17,950
State Aid	221,703	205,998	8,677	6,437	4,122	822	490	431	248	324	591
City of Rockville	8,236	5,600	1,189	404	232	41	21	18	50	42	1,043

## D. Description & Justification

### DESCRIPTION

This project provides funding for WSSC's share of the Blue Plains Enhanced Nutrient Removal projects required to achieve nutrient removal to levels below BNR levels to meet the Chesapeake Bay water quality targets determined in the 2005 Tributary Strategies Process and DC Water's 2010 NPDES permit. Major projects include: Enhanced Nitrogen Removal North, Enhanced Clarification Facilities, Enhanced Nitrogen Removal Facilities, Biosolids Filtrate Treatment Facilities, Combined Heat & Power as Back-up Power, Biosolids Blending Development Center, ENR Program Management, and Wet Weather Mitigation, Diversion at Bolling and Tunnel Dewatering Pump Station.

### JUSTIFICATION

The funding schedule reflects the final cost sharing agreement with the Maryland Department of the Environment. Chesapeake Bay Program Tributary Strategies Process (2005); Blue Plains Strategic Process Study, Metcalf & Eddy (2005); Selection of the Enhanced Nitrogen Removal Process Alternative for the Blue Plains Advanced Wastewater Treatment Facility, Metcalf & Eddy (2009); DCWASA Approved FY 2018 Capital Improvement Program, and the Blue Plains Inter-municipal Agreement of 2012.

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast and latest project management data, and reflect DCWASA's current expenditure estimates and schedules. Total Nitrogen Secondary Treatment Upgrades will take place after 2021. Projects extending beyond those supported by State Aid include rehabilitation and upgrades to older projects. Portions of the program have been financed by low interest loans through the Maryland Department of the Environment's Water Quality Administration State Revolving Loan Program. The funding schedule also indicates the calculated Rockville share of the cost.

### COORDINATION

Coordinating Agencies: Maryland Department of the Environment; U.S. Environmental Protection Agency, Region III; District of Columbia Water and Sewer Authority; (responsible for design and construction); City of Rockville; (responsible for a share of funding)  
Coordinating Projects: S-22.06-Blue Plains WWTP- Liquid Train Projects, Part 2.

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$11,354	
Total Cost	\$11,354	
Impact on Water and Sewer Rate	\$0.26	

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 08
Date First Approved		FY 07
Initial Cost Estimate		648
Cost Estimate Last FY		381,788
Present Cost Estimate		404,480
Approved Request Last FY		26,619
Total Expense & Encumbrances		340,782
Approval Request Year 1		8,345

## G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	86%
Est Completion Date	FY 2028
Growth	
System Improvement	
Environmental Regulation	100%
Population Served	
Capacity	370 MGD

## H. Map

MAP NOT AVAILABLE

# Blue Plains: Pipelines & Appurtenances

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-22.11	113804	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	
Drainage Basins	Bi-County 30;
Planning Areas	Bi-County;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	24,248		4,438	18,568	3,833	3,066	4,053	3,440	2,781	1,395	1,242
Land											
Site Improvements & Utilities											
Construction	122,130		17,515	88,719	19,328	11,199	18,526	13,495	13,124	13,047	15,896
Other	1,464		220	1,073	232	143	226	169	159	144	171
<b>Total</b>	<b>147,842</b>		<b>22,173</b>	<b>108,360</b>	<b>23,393</b>	<b>14,408</b>	<b>22,805</b>	<b>17,104</b>	<b>16,064</b>	<b>14,586</b>	<b>17,309</b>

## C. Funding Schedule (000's)

WSSC Bonds	140,202	21,329	104,118	22,573	14,076	22,393	16,426	15,146	13,504	14,755
City of Rockville	7,640	844	4,242	820	332	412	678	918	1,082	2,554

## D. Description & Justification

### DESCRIPTION

This project provides funding for WSSC's share of Blue Plains-associated projects which are "outside the fence" of the treatment plant. Major projects include: A new headquarters building; Potomac Interceptor Rehabilitation; Upper Potomac Interceptor; Potomac Sewage Pumping Station Rehabilitation; Influent Sewers Rehabilitation, and projects associated with the Combined Sewer Overflow (CSO) Long Term Control Plan (Clean Rivers Program) (e.g. Anacostia Tunnel).

### JUSTIFICATION

This is a continuation of DCWASA's upgrading of the Blue Plains-associated projects outside the fence.

The Blue Plains Inter-municipal Agreement of 2012; the WASA Masler Plan (1998); Technical Memorandum No. 1, Multi-Jurisdictional Use Facilities Capital Cost Allocation, (June 2013), and the DCWASA Approved FY 2018 Capital Improvement Program.

### COST CHANGE

The expenditure schedule has been updated to reflect the latest estimates for the Long Term Control Plan projects.

### OTHER

The project scope has remained the same. Project costs are derived from the DC-WASA Capital & Operating Budget 10-year forecast and latest project management data, and reflect WASA's current expenditure estimates and schedules. Given the open-ended nature of the project, this PDF does not fully reflect the total project costs. These projects are, in fact, expected to continue indefinitely. As new sub-projects are added to the Blue Plains facility plans, the associated costs will be added to this project. The funding schedule also indicates the calculated Rockville share of the cost which varies by project based on the City's relative share of WSSC's flow as derived in the Multijurisdiction Use Facilities Study. Life to date expenditures for this program are approximately \$125 million.

### COORDINATION

Coordinating Agencies: City of Rockville; (responsible for a share of funding); District of Columbia Water and Sewer Authority; (responsible for design and construction)  
Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$9,120	
Total Cost	\$9,120	
Impact on Water and Sewer Rate	\$0.21	

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 11
Date First Approved		FY 02
Initial Cost Estimate		
Cost Estimate Last FY	98,924	
Present Cost Estimate	147,842	
Approved Request Last FY	12,926	
Total Expense & Encumbrances		
Approval Request Year 1	23,393	

## G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	
Est. Completion Date	On-Going

Growth	
System Improvement	45%
Environmental Regulation	55%
Population Served	
Capacity	

## H. Map



# Piscataway WWTP Bio-Energy Project

A. Identification and Coding Information	
Agency Number	Project Number
S-103.02	153902
Update Code	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	41,161	6,871	6,250	28,040	12,700	9,820	4,550	920	50		
Land											
Site Improvements & Utilities											
Construction	196,000		2,200	193,800	25,700	62,800	65,500	32,000	7,800		
Other	11,516		423	11,093	1,910	3,631	3,503	1,646	403		
<b>Total</b>	<b>248,677</b>	<b>6,871</b>	<b>8,873</b>	<b>232,933</b>	<b>40,310</b>	<b>76,251</b>	<b>73,553</b>	<b>34,566</b>	<b>8,253</b>		

## C. Funding Schedule (000's)

WSSC Bonds	244,607	6,301	8,873	229,433	38,310	74,751	73,553	34,566	8,253		
Federal Aid	570	570									
State Aid	3,500			3,500	2,000	1,500					

## D. Description & Justification

### DESCRIPTION

This project will develop a comprehensive program for the engineering, design, construction, maintenance, and monitoring and verification necessary to add sustainable energy equipment and systems to produce biogas and electricity at Piscataway WWTP. 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 sites. The scope of work includes, but is not limited to, the addition of anaerobic digestion equipment; thermal hydrolysis pretreatment equipment; gas cleaning, storage and upgrade systems; tanks, piping, valves, pumps; biosolids pre- and post dewatering, cake receiving and blending; cake storage; effluent disinfection systems; instrumentation; flow metering; power measurement; and combined heat and power generation systems.

### JUSTIFICATION

In March 2009, the WSSC received approval for a federal Department of Energy grant of \$570,900 for the feasibility study/conceptual design phase. On June 16, 2010, the WSSC awarded the study contract to AECOM Technical Services, Inc., of Laurel, Maryland. The study was completed in December 2011, and the Thermal Hydrolysis/Mesophilic Anaerobic Digestion/Combined Heat & Power facility was recommended to be constructed and was presented to the Commission in April 2012.

The EPA is urging wastewater utilities to utilize this commercially available technology (anaerobic digestion) to produce power at a cost below retail electricity, displace purchased fuels for thermal needs, produce renewable fuel for green power programs, enhance power reliability for the wastewater treatment plant to prevent sanitary sewer overflows, reduce biosolids production and improve the health of the Chesapeake Bay, and to reduce greenhouse gas (GHG) and other air pollutants. In April 2009, the EPA announced that greenhouse gases contributed to air pollution that may endanger public health or welfare, and began proceedings to regulate CO2 under the Clean Air Act. In June 2014, the EPA announced a proposed rule to reduce carbon emissions from power plants by 30% by 2030, compared to the levels in 2005. Based on AECOM's feasibility study work as of May 2011, a regionalized plant at a location to be determined based on a Thermal Hydrolysis/Mesophilic Anaerobic Digestion/Combined Heat & Power (THMAD/CHP) process supplemented by restaurant grease fuel design was recommended.

The environmental benefits are estimated as follows: Recover approximately 2 MW of renewable energy from wastewater biomass; reduce Greenhouse Gas production by 11,800 tons/year; reduce biosolids output by 50 - 55% of current output; reduce lime demand by 4,100 tons/year, maintain permitted nutrient load limits to the Chesapeake Bay; reduce 5 million gallons/year of grease discharge to sewers; produce pathogen-free Class A Biosolids.

The economic benefits are estimated as follows: Recover more than \$1.5 million of renewable energy costs/year; reduce biosolids disposal costs by ~ \$1.7 million/year; reduce chemical costs by ~ \$500,000/year; hedge against rising costs of power fuel and chemicals; provide a net payback over time.

## E. Annual Operating Budget Impact (000's)

Staff	FY of Impact
Maintenance	
Other Project Costs	
Debt Service	\$15,912
Total Cost	\$15,912
Impact on Water and Sewer Rate	\$0.37

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 15
Date First Approved	FY 10
Initial Cost Estimate	345
Cost Estimate Last FY	162,190
Present Cost Estimate	248,677
Approved Request Last FY	3,990
Total Expense & Encumbrances	6,871
Approval Request Year 1	40,310

## G. Status Information

Land Status	Public/Agency owned land
Project Phase	Design
Percent Complete	10%
Est Completion Date	July 2022

Growth	
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

## H. Map



## **Piscataway WWTP Bio-Energy Project**

Plans & Studies: Appel Consultants, Urban Waste Grease Resource Assessment-NREL (November 1988); Environmental Protection Agency (EPA) Opportunities For and Benefits Of Combined Heat and Power at Wastewater Treatment Facilities (December 2006); Brown & Caldwell, Anaerobic Digestion and Electric Generation Options for WSSC (November 2007); Metcalf & Eddy, WSSC Sludge Digestion Study for Piscataway and Seneca (December 2007); Black & Veatch, WSSC Digester Scope and Analysis (December 2007); JMT, Prince George's County Septage (FOG) Discharge Facility Study (February 2008); JMT, Western Research Institute (WRI) Biogas Feasibility Study Scope of Work - WSSC (April 2008); JMT, Montgomery County Septage (FOG) Discharge Facility Study (January 2010); Facility Plan for the Rock Creek Wastewater Treatment Plant (January 2010); AECOM Technical Services, Inc., Anaerobic Digestion/Combined Heat & Power Study (December 2011, Executive Summary Revised May 2013), HDR Inc. Design Development Report (March 2017).

### **COST CHANGE**

Cost increased to reflect early design level estimate and inclusion of FOG Facility and Utility Water Upgrades from Piscataway WWTP Facility Plant, and biosolids transported from Western Branch WWTP.

### **OTHER**

The project scope has changed to include a FOG Facility, Utility Water Upgrades at Piscataway Plant, and biosolids transported from Western Branch WWTP. The Commission has a defined scope and estimated capital cost, and is able to proceed with the detailed design and construction of the anaerobic digestion, biomass, and combined heat and power generation system facilities for treating all biosolids from WSSC's Damascus, Seneca, Parkway, Western Branch and Piscataway WWTPs. The Montgomery and Prince George's County Councils were briefed and approved the project by resolution on November 25, 2014, and September 9, 2014, respectively. In April 2017 the Maryland Energy Administration notified WSSC of approval of grant funding up to \$500,000. In June 2017 WSSC was approved for a \$3 million grant through the Maryland Department of the Environment's Energy Water Infrastructure Program (EWIP). WSSC has also applied for grants from the local power utility. WSSC will continue to apply for other available funding sources. The Commission retained the following consulting services: in 2015 - Hawkins, Delafield and Wood - procurement; Rafelis Financial Consultants - financial; in 2016 - HDR Inc for program management and construction management for the Bio-Energy project. A portion of this project will be financed by low interest loans through the Maryland Department of the Environment's Water Quality Administration State Revolving Loan Program.

### **COORDINATION**

Coordinating Agencies: Montgomery County Government; Prince George's County Government; Maryland-National Capital Park & Planning Commission; (Mandatory Referral Process); Montgomery County Department of Environmental Protection; Maryland Department of the Environment; Chesapeake Bay Critical Areas; Maryland Energy Administration; Washington Gas Light Company.

Coordinating Projects: S-96.14-Piscataway WWTP Facility Upgrades; S-170.05-Septage Discharge Facility Planning & Implementation;

# Septage Discharge Facility Planning & Implementation

<b>A. Identification and Coding Information</b>		PDF Date	October 1, 2017
Agency Number	Project Number	Date Revised	
S-170.08	103802	Change	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County.

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	4,175	3,564	347	264	53	158	53				
Land											
Site Improvements & Utilities											
Construction	25,088	928		24,160	4,832	14,496	4,832				
Other	1,231		35	1,196	344	482	370				
<b>Total</b>	<b>30,494</b>	<b>4,492</b>	<b>382</b>	<b>25,620</b>	<b>5,229</b>	<b>15,136</b>	<b>5,255</b>				

## C. Funding Schedule (000's)

WSSC Bonds	30,494	4,492	382	25,620	5,229	15,136	5,255				
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## D. Description & Justification

**DESCRIPTION**  
 This project provides for the planning, design, and construction of a new Septage and Fats, Oils, Grease (FOG) discharge facility at the abandoned Rock Creek WWTP, and new Septage discharge facilities at Anacostia WWPS No 2 and Piscataway WWTP.

### JUSTIFICATION

Currently septage waste is collected at three locations: Muddy Branch Road Disposal Site in Montgomery County, and Ritchie Road Disposal Site and Bladensburg Disposal Site in Prince George's County (the Temple Hills Road site was closed down on July 1, 2015). The types of waste collected are as follows: Septic Tank Pump-Out (Sludge), Waste Holding Tank Discharge (Gray Water), Grease Trap Pump Out (FOG), Bus Holding Tank Discharge (Sewage and Chemicals), and Small Food Service Providers (Low Volume FOG Waste). FOG wastes should not be discharged to the Commission's sewerage system without treatment.

Septage Discharge Facility Study for Montgomery County: Final Report, JMT (July 2012); Septage Discharge Facility Study for Prince George's County: Final Report, JMT (July 2012).

### COST CHANGE

The estimated construction cost of the three facilities has increased significantly based upon the final design submitted.

### OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B are estimates at the 100% design stage and may change based upon actual bid. The design and construction of the FOG Discharge Facility at the Piscataway WWTP has been moved to the Piscataway WWTP Bio-Energy Project.

### COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government; Maryland-National Capital Park & Planning Commission; (Mandatory Referral) Montgomery County Department of Environmental Protection; Maryland Department of Natural Resources; Maryland Department of the Environment; Prince George's County Department of Environmental Resources; Coordinating Projects: S-103-02-Piscataway WWTP Bio-Energy Project.

## E. Annual Operating Budget Impact (000's)

Staff					FY of Impact
Maintenance					
Other Project Costs					
Debt Service				\$1,984	22
Total Cost				\$1,984	22
Impact on Water and Sewer Rate				\$0.05	22

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 10
Date First Approved		FY 10
Initial Cost Estimate		10,835
Cost Estimate Last FY		14,344
Present Cost Estimate		30,494
Approved Request Last FY		2,521
Total Expense & Encumbrances		4,492
Approval Request Year 1		5,229

## G. Status Information

Land Status	Public/Agency owned land
Project Phase	Design
Percent Complete	100%
Est. Completion Date	FY 2021

## H. Map

Growth		
System Improvement		
Environmental Regulation		100%
Population Served		
Capacity		

MAP NOT APPLICABLE

# Trunk Sewer Reconstruction Program

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	Bi-County 30;
Drainage Basins	Bi-County 30;
Planning Areas	Bi-County;

Agency Number	Project Number	Update Code
S-170.09	113805	Change

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	101,445		30,311	71,134	16,771	14,971	11,893	9,051	9,232	9,416	
Land											
Site Improvements & Utilities											
Construction	298,461		97,690	200,771	57,908	44,372	42,467	18,306	18,672	19,046	
Other	40,167		13,556	26,611	6,936	6,033	4,340	3,040	3,100	3,162	
<b>Total</b>	<b>440,073</b>		<b>141,557</b>	<b>298,516</b>	<b>81,615</b>	<b>65,376</b>	<b>58,500</b>	<b>30,397</b>	<b>31,004</b>	<b>31,624</b>	

## C. Funding Schedule (000's)

WSSC Bonds	440,073	141,557	298,516	81,615	65,376	58,500	30,397	31,004	31,624
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## D. Description & Justification

### DESCRIPTION

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 (ESA). 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.

### JUSTIFICATION

Under the terms of the Consent Decree the WSSC Trunk Sewer Inspection Program inspected all required sewers in 21 basins by December 2010 and completed Sewer System Evaluation Surveys (SSES) for 9 basins. WSSC shall conduct rainfall, groundwater and flow monitoring to determine inflow/infiltration (I/I) rates and identify areas of limited capacity through collection system modeling. Where appropriate, WSSC shall use additional means to identify sources of I/I, including CCTV, smoke and/or dye testing. All the Trunk Sewer Inspections, SSES work and other related collection system evaluations are complete. Due to the delay in receiving permits, as well as Right-of-Entry permissions and subcontractor availability, Inrunk sewer reconstruction work has been delayed. All USACE and MDE permits have been received. WSSC Sanitary Sewer Overflow Consent Decree (December 7, 2005). Second Amendment to WSSC Sanitary Sewer Overflow Consent Decree (December 4, 2015)

### COST CHANGE

Program costs reflect the latest expenditure and schedule estimates.

### OTHER

The project scope has remained the same. Reconstruction work will include: reduction of I/I; replacement of substandard sewer segments; in situ lining of sewer segments; pipeline and manhole protection; rebuilding of manholes; and correction of structural defects and poor alignment. The reconstruction work in each sewer basin will be prioritized to most effectively prevent SSOs and backups. A Second Amendment to the Consent Decree extending WSSC's deadline to FY 2022 was agreed to by the U.S. Environmental Protection Agency, U.S. Department of Justice, and Maryland Department of the Environment and was entered by the US District Court. All construction contracts for ESA work have been awarded and the approved amounts have been utilized in the current budget projections. As actual construction progresses the projections may be updated. Beginning in FY 2015, construction work increased in the ESAs as a majority of the work was released for construction. Most of the upfront costs are associated with the construction of access roads and by-pass pumping. After completion of a majority of the Priority 1 construction activities associated with the Consent Decree, Phase 2 work (Priority 2 & 3 plus any newly identified Priority 1) is programmed at roughly five miles per year beginning in FY 2022. Life to date expenditures for this program are approximately \$461 million. Land costs are included in WSSC Project S-203.00.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Montgomery County Department of Public Works and Transportation; Maryland-National Capital Park & Planning Commission; National Park Service; Maryland Department of the Environment; Maryland Department of Natural Resources; (Critical Area Commission, FSD Approval Forest Conservation/Reforestation, Rare, Threatened or Endangered Species) Prince George's County Department of Permitting Inspection and Enforcement; U.S. Army Corps of Engineers; U.S. Environmental Protection Agency, Region III; Maryland Historical Trust

Coordinating Projects: S-1.01-Sewer Reconstruction Program;

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$459	25
Other Project Costs		
Debt Service	\$28,627	25
Total Cost	\$29,086	25
Impact on Water and Sewer Rate	\$0.67	25

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	
Cost Estimate Last FY	504,500
Present Cost Estimate	440,073
Approved Request Last FY	148,900
Total Expense & Encumbrances	
Approval Request Year 1	81,615

## G. Status Information

Land Status	Land and R/W to be acquired
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

## H. Map



MAP NOT AVAILABLE

## Land & Rights-of-Way Acquisition - Bi-County Sewer

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-203.00	163800	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision											
Land	490		320	170	95	15	15	15	15	15	
Site Improvements & Utilities											
Construction											
Other											
<b>Total</b>	<b>490</b>		<b>320</b>	<b>170</b>	<b>95</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>

### C. Funding Schedule (000's)

WSSC Bonds	250	95	155	80	15	15	15	15	15	15
SDC	180	180								
Contribution/Other	60	45	15	15						

### D. Description & Justification

#### DESCRIPTION

This PDF provides a consolidated estimate of funding for the acquisition of land and rights-of-way for sewer projects. Expenditures are programmed based upon anticipated schedules and are required for the completion of those specific projects. These costs do not include purchases which have already been completed.

#### JUSTIFICATION

Consolidation of expenditures for land and rights-of-way acquisitions provides flexibility in expending funds in a specific fiscal year and permits the WSSC to respond to the uncertainty of project-specific implementation schedules. Other considerations include the accommodation of unpredictable delays which impact the timing of a planned purchase, unanticipated rights-of-way requirements due to minor alignment changes identified late in the design phase, and the need to assure the WSSC an equitable negotiation position by avoiding project-specific cost displays prior to contacting property owners.

Acquisition needs are determined by the WSSC and are based upon facility planning efforts, alignment studies, field surveys, realignments required by other agencies, or requirements identified within the Development Services Process.

#### COST CHANGE

Not applicable.

#### OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B are estimates only and may change based upon actual negotiations. When purchases are complete, the actual cost will be displayed in the expenditure schedule on the appropriate project.

#### COORDINATION

Coordinating Agencies: Not Applicable

Coordinating Projects: Not Applicable

### E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$16	25
Total Cost	\$16	25
Impact on Water and Sewer Rate		

### F. Approval and Expenditure Data (000's)

Date First in Program		FY 98
Date First Approved		FY 98
Initial Cost Estimate		
Cost Estimate Last FY		405
Present Cost Estimate		490
Approved Request Last FY		95
Total Expense & Encumbrances		
Approval Request Year 1		95

### G. Status Information

Land Status	Land and RW to be acquired
Project Phase	Not Applicable
Percent Complete	
Est. Completion Date	Not Applicable

Growth	49%
System Improvement	51%
Environmental Regulation	
Population Served	
Capacity	

### H. Map



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**Section 6 - Prince George's County Sewer Projects**

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**FINANCIAL SUMMARY**  
 (ALL FIGURES IN THOUSANDS)

**PRINCE GEORGE'S COUNTY SEWER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 17	EST. EXPEND 18	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM	
						YR 1 19	YR 2 20	YR 3 21	YR 4 22	YR 5 23	YR 6 24			
S-27.08	Westhalla Town Center Sewer Main	850	207	460	183	124	47	12	0	0	0	0	0	6-3
S-28.18	Konterra Town Center East Sewer	7,211	5,189	0	2,022	513	385	0	0	642	482	0	0	6-4
S-43.02	Broad Creek WWPS Augmentation	182,490	143,172	17,325	21,983	15,225	6,768	0	0	0	0	0	0	6-5
S-57.92	Western Branch Facility Upgrade	58,419	50,905	2,128	3,383	3,150	236	0	0	0	0	0	0	6-6
S-68.01	Landover Mall Redevelopment	1,305	24	99	1,182	618	397	44	41	41	41	0	0	6-7
S-75.19	Brandywine Woods Wastewater Pumping Station	315	7	177	131	67	64	0	0	0	0	0	0	6-8
S-75.20	Brandywine Woods WWPS Force Main	123	15	41	67	67	0	0	0	0	0	0	0	6-9
S-75.21	Mattawoman WWTP Upgrades	19,449	0	5,911	12,858	4,049	2,783	1,928	1,897	1,897	404	580	0	6-10
S-77.20	Parkway North Substation Replacement	5,003	15	1,175	3,813	2,650	1,163	0	0	0	0	0	0	6-11
S-86.19	Karrington Subdivision Sewer	672	102	210	360	181	178	0	0	0	0	0	0	6-12
S-86.14	Piscataway WWTP Facility Upgrades	143,234	8,241	4,290	130,763	31,115	39,591	24,810	24,278	10,959	0	0	0	6-13
S-131.05	Pleasant Valley Sewer Main, Part 2	977	43	199	835	393	165	77	0	0	0	0	0	6-14
S-131.07	Pleasant Valley Sewer Main, Part 1	1,750	98	464	1,188	970	218	0	0	0	0	0	0	6-15
S-131.10	Fort Washington Forest No. 1 WWPS Augmentation	4,775	2,558	342	1,875	1,275	600	0	0	0	0	0	0	6-16
	Projects Pending Close-Out	4,645	2,312	2,533	0	0	0	0	0	0	0	0	0	6-17
<b>TOTALS</b>		<b>429,378</b>	<b>212,888</b>	<b>35,354</b>	<b>180,556</b>	<b>60,397</b>	<b>52,596</b>	<b>26,871</b>	<b>26,216</b>	<b>13,549</b>	<b>927</b>	<b>580</b>		

**Prince George's County Sewer Projects**

New Projects Listing

(costs in thousands)

Agency Number	Project Name	Total Project Cost	Budget Year Cost	Page Number
S-77.20	Parkway North Substation Replacement	\$5,003	\$2,650	6-11
<b>TOTALS</b>		<b>\$5,003</b>	<b>\$2,650</b>	



# Konterra Town Center East Sewer

A. Identification and Coding Information	
Agency Number	Project Number
S-28.18	Update Code
	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Northeast Branch Branch 08;
Drainage Basins	Northwestern Area PA 60;
Planning Areas	

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	2,634	2,404	230	230	58	44			73	55	
Land											
Site Improvements & Utilities											
Construction	4,313	2,785	1,528	1,528	388	291		485		364	
Other	264	67	264	264	67	50		64		63	
<b>Total</b>	<b>7,211</b>	<b>5,189</b>	<b>2,022</b>	<b>2,022</b>	<b>513</b>	<b>385</b>		<b>642</b>		<b>482</b>	
Contribution/Other	7,211	5,189	2,022	2,022	513	385		642		482	

## C. Funding Schedule (000's)

	7,211	5,189	2,022	2,022	513	385		642		482	
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## D. Description & Justification

**DESCRIPTION**  
This project provides for the planning, design, and construction of 14,000 feet of 15-inch to 24-inch diameter sewer main, 240 feet of 24-inch diameter steel sleeve for a 16-inch diameter water main (W-93.01), and 240 feet of 48-inch diameter steel sleeve for a 24-inch diameter sewer. The project serves the Konterra Town Center East development which is located in the area bound by Interstate 95, the Intercounty Connector and Konterra Drive.

## JUSTIFICATION

Letter of Findings DA4623Z07 (August 29, 2013).

## COST CHANGE

Not applicable.

## OTHER

The project scope has remained the same. The expenditure and schedule projections shown in Block B are based upon information provided by the developer. Design and construction will be performed by the developer under a System Extension Permit. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

## COORDINATION

Coordinating Agencies: Prince George's County Government;  
Coordinating Projects: W-93.01-Konterra Town Center East Water Main.

## E. Annual Operating Budget Impact (000's)

Staff												FY of Impact
Maintenance												
Other Project Costs												21
Debt Service												
Total Cost												21
Impact on Water and Sewer Rate												21

## F. Approval and Expenditure Data (000's)

Date First in Program												FY 09
Date First Approved												FY 09
Initial Cost Estimate												833
Cost Estimate Last FY												6,897
Present Cost Estimate												7,211
Approved Request Last FY												503
Total Expense & Encumbrances												5,189
Approval Request Year 1												513

## G. Status Information

Land Status												Not Applicable
Project Phase												Construction
Percent Complete												40%
Est. Completion Date												Developer Dependent

Growth												100%
System Improvement												
Environmental Regulation												
Population Served												11,300
Capacity												7.95 MGD

## H. Map



# Broad Creek WWPS Augmentation

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-43.02		Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Broad Creek 11;
Drainage Basins	South Potomac Sector PA 80;
Planning Areas	

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	30,624	27,378	1,500	1,746	1,500	246					
Land	227	227									
Site Improvements & Utilities											
Construction	149,767	115,567	15,000	19,200	13,000	6,200					
Other	1,872		825	1,047	725	322					
<b>Total</b>	<b>182,490</b>	<b>143,172</b>	<b>17,325</b>	<b>21,993</b>	<b>15,225</b>	<b>6,768</b>					

## C. Funding Schedule (000's)

WSSC Bonds	31,023	24,339	2,945	3,739	2,588	1,151					
SDC	151,467	118,833	14,380	18,254	12,637	5,617					

## D. Description & Justification

### DESCRIPTION

This project provides for modifications to the Broad Creek Wastewater Pumping Station and Force Main system for conveying Broad Creek sewerage basin flows to the Piscataway Wastewater Treatment Plant. The Broad Creek WWPS Facility Plan included assessments of engineering, economic, environmental and local community impacts, and recommended the construction of a 48-inch diameter force main and capacity enhancing modifications at the pumping station. At the Piscataway WWTP a concrete storage facility was constructed in the upper existing polishing pond allowing intermittent storage of excess sewage until flows at the plant allow treatment. Implementation of this alternative was approved by the Environmental Protection Agency and the Maryland Department of the Environment (MDE). Construction costs shown above also provide for an emergency generator in the event of power outages. The emergency generators have been installed.

### JUSTIFICATION

This project stems from the following litigation: Section V (Remedial Measures), Article 10, Section B.8 (Pump Stations - Broad Creek), Sanitary Sewer Overflows (SSO) Consent Order Decree (Civil Action PJM-04-3679), Judge Messite, December 7, 2005. The following plans/studies have been completed: Broad Creek Flow Monitoring and III Analysis (1996); Broad Creek SSES (1996 to 1999); Broad Creek III Analysis and SSES Phase II (2001 to 2005); Broad Creek Facility Plan, Delon Hampton & Associates, Inc. (January 2007); FY2012 Broad Creek WWPS Asset Management Plan, GHD, Inc. (March 2011).

### COST CHANGE

Costs were increased for inflation and to address issues with yard piping and vault construction due to potentially high ground water at the site.

### OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B reflect the latest available estimates. Construction is being performed under four (4) contracts to expedite project completion. The National Park Service Permits, previously delaying the project, were obtained in April 2016. The final contract is in the construction phase.

### COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Prince George's County Government; Maryland-National Capital Park & Planning Commission; National Park Service; Maryland Department of the Environment; Maryland Department of Natural Resources; Prince George's County Department of Environmental Resources; U.S. Army Corps of Engineers; U.S. Environmental Protection Agency, Region III. Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$467	21
Other Project Costs		
Debt Service	\$2,018	21
Total Cost	\$2,485	21
Impact on Water and Sewer Rate	\$0.06	21

## F. Approval and Expenditure Data (000's)

Date First in Program		FY 09
Date First Approved		FY 09
Initial Cost Estimate	80,650	
Cost Estimate Last FY	175,971	
Present Cost Estimate	182,490	
Approved Request Last FY	17,605	
Total Expense & Encumbrances	143,172	
Approval Request Year 1	15,225	

## G. Status Information

Land Status	R/W acquired
Project Phase	Construction
Percent Complete	70%
Est Completion Date	FY 2020

Growth	83%
System Improvement	17%
Environmental Regulation	
Population Served	
Capacity	

## H. Map





## Landover Mall Redevelopment

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-68.01		Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Beaverdam Branch 3;
Drainage Basins	
Planning Areas	Prince George's County.

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	227	24	35	168	76	46	13	11	11	11	
Land											
Site Improvements & Utilities											
Construction	911	0	51	860	461	299	25	25	25	25	
Other	167	13	13	154	81	52	6	5	5	5	
<b>Total</b>	<b>1,305</b>	<b>24</b>	<b>99</b>	<b>1,182</b>	<b>618</b>	<b>397</b>	<b>44</b>	<b>41</b>	<b>41</b>	<b>41</b>	

### C. Funding Schedule (000's)

Contribution/Other	1,305	24	99	1,182	618	397	44	41	41	41
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### D. Description & Justification

**DESCRIPTION**  
This project provides 2,500 feet of 27-inch, 300 feet of 24-inch, and 1,450 feet of 18-inch diameter sewer main to provide service for the Landover Mall Redevelopment.

#### JUSTIFICATION

Hydraulic Planning Analysis (May 2009).

#### COST CHANGE

Not applicable.

#### OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B are based on information provided by the developer. Estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

#### COORDINATION

Coordinating Agencies: Prince George's County Government.  
Coordinating Projects: Not Applicable

### E. Annual Operating Budget Impact (000's)

Staff			FY of Impact
Maintenance		\$74	25
Other Project Costs			
Debt Service			
Total Cost		\$74	25
Impact on Water and Sewer Rate			

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	1,108
Cost Estimate Last FY	1,278
Present Cost Estimate	1,305
Approved Request Last FY	605
Total Expense & Encumbrances	24
Approval Request Year 1	618

### G. Status Information

Land Status	Not Applicable
Project Phase	Planning
Percent Complete	20%
Est Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	3,347
Capacity	5.63 MGD

### H. Map



# Brandywine Woods Wastewater Pumping Station

A. Identification and Coding Information	
Agency Number	Project Number
S-75.19	Update Code
	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	
Drainage Basins	Mattwomian 21;
Planning Areas	Cedarville & Vicinity PA 85B;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY-17	Estimate FY-18	Total 6 Years	Year 1 FY-19	Year 2 FY-20	Year 3 FY-21	Year 4 FY-22	Year 5 FY-23	Year 6 FY-24	Beyond 6 Years
Planning, Design & Supervision	58	7	26	25	14	11					
Land											
Site Improvements & Utilities											
Construction	217	0	128	89	44	45					
Other	40		23	17	9	8					
<b>Total</b>	<b>315</b>	<b>7</b>	<b>177</b>	<b>131</b>	<b>67</b>	<b>64</b>					

## C. Funding Schedule (000's)

Contribution/Other	315	7	177	131	67	64					
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of a new wastewater pumping station to provide service to the Brandywine Woods Property

### JUSTIFICATION

Hydraulic Planning Analysis (March 2006).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B are based on information provided by the developer. Estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Prince George's County Department of Permitting Inspection and Enforcement; Prince George's County Government; Coordinating Projects: S-75.20-Brandywine Woods WWPS Force Main.

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service		
Total Cost		
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 08
Date First Approved	FY 08
Initial Cost Estimate	247
Cost Estimate Last FY	308
Present Cost Estimate	315
Approved Request Last FY	65
Total Expense & Encumbrances	7
Approval Request Year 1	67

## G. Status Information

Land Status	Not Applicable
Project Phase	Planning
Percent Complete	100%
Est Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	490
Capacity	0.28 MGD

## H. Map



# Brandywine Woods WWPS Force Main

A. Identification and Coding Information	
Agency Number S-75.20	Update Code Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Mattawoman 21:
Drainage Basins	
Planning Areas	Cedarville & Vicinity PA 85B:

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	28	13	7	8	8	0					
Land											
Site Improvements & Utilities	81	2	29	50	50	0					
Construction	14		5	9	9	0					
Other	123	15	41	67	67	0					
<b>Total</b>											

## C. Funding Schedule (000's)

Contributions/Other	123	15	41	67	67	0					
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of 1,600 feet of 4-inch diameter force main from the Brandywine Woods Wastewater Pumping Station to provide service to the Brandywine Woods Property.

### JUSTIFICATION

Hydraulic Planning Analysis (March 2006).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B are based on information provided by the developer. Estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Prince George's County Department of Permitting Inspection and Enforcement; Prince George's County Government; Coordinating Projects: S-75.19-Brandywine Woods Wastewater Pumping Station.

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$28	20
Other Project Costs		
Debt Service		
Total Cost	\$28	20
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 08
Date First Approved	FY 08
Initial Cost Estimate	100
Cost Estimate Last FY	121
Present Cost Estimate	123
Approved Request Last FY	38
Total Expense & Encumbrances	15
Approval Request Year 1	67

## G. Status Information

Land Status	Not Applicable
Project Phase	Planning
Percent Complete	100%
Est. Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	490
Capacity	0.28MGD

## H. Map



# Mattawoman WWTP Upgrades

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-75.21		Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Mattawoman 21;
Drainage Basins	Piscataway & Vicinity PA 84; Cedarville &
Planning Areas	

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance		
Other Project Costs		
Debt Service	\$1,265	
Total Cost	\$1,265	
Impact on Water and Sewer Rate	\$0.03	

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 08
Date First Approved	FY 08
Initial Cost Estimate	760
Cost Estimate Last FY	16,156
Present Cost Estimate	19,449
Approved Request Last FY	3,633
Total Expense & Encumbrances	
Approval Request Year 1	4,049

## G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	3 MGD for WSSC in Total Plant Capacity of 20 MGD

## H. Map

MAP NOT AVAILABLE

## B. Expenditure Schedule (000's)

Cost Elements	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision									
Land									
Site Improvements & Utilities									
Construction	5,911	12,958	4,049	2,783	1,928	1,897	1,897	404	580
Other									
<b>Total</b>	<b>5,911</b>	<b>12,958</b>	<b>4,049</b>	<b>2,783</b>	<b>1,928</b>	<b>1,897</b>	<b>1,897</b>	<b>404</b>	<b>580</b>
WSSC Bonds	5,911	12,958	4,049	2,783	1,928	1,897	1,897	404	580

## D. Description & Justification

### DESCRIPTION

This project provides for the WSSC's share of the evaluation, design, and construction of capital projects to upgrade and repair Charles County's Mattawoman Interceptor and Wastewater Treatment Plant. Current projects include: Influent/Effluent Pump Station Upgrades, Plant Automation, Electrical System Replacement, In-Plant Water System Improvement, Flow Equalization Study, Clarifier and Thickener Upgrades, Belt Filter Press Replacement, SCADA System Upgrade and Effluent PS Force Main Improvements.

### JUSTIFICATION

Prior evaluations of equipment and structural facilities concluded the need existed for various upgrade, repair, and replacement projects. A further thorough evaluation of the Head Works, Influent/Effluent Pumps, and Influent Wet Well was also deemed necessary in order to identify the specific scope of hydraulic, control, capacity, and safety upgrades to the Influent/Effluent Pump Station. Plant automation will improve the efficiency of operation and maintenance, thereby minimizing resource utilization and avoiding costs.

Agreement dated October 22, 1980; Agreement Addendum No. 1 dated April 15, 2004.

### COST CHANGE

The expenditure schedule reflects the latest information provided by Charles County. A new project has been added "Primary Clarifiers #1-4 Demolition" and the estimated costs for the Influent/Effluent Pump Station Evaluation and the MWWTP Clarifier and Thickener Repairs have increased.

### OTHER

The project scope has remained the same. Under the terms of the 1980 Agreement with Charles County, the WSSC has the use of 3 MGD of the WWTP's capacity, and pays a proportionate share of the capital expenses. As new upgrade sub-projects are added, the associated costs will be added to this project. Beginning in FY 2007, the total plant capacity increased to 20 MGD, and WSSC's proportionate cost share decreased to 15% under the terms of Agreement Addendum No.1. This project is expected to continue indefinitely. Life to date expenditures for this project are approximately \$6 million.

### COORDINATION

Coordinating Agencies: Charles County Government; (Depts of Utilities, Planning & Growth Management, and Fiscal Services)  
Coordinating Projects: Not Applicable



# Karrington Subdivision Sewer

A. Identification and Coding Information		PDF Date	October 1, 2017
Agency Number	Project Number	Date Revised	
S-86.19			
B. Expenditure Schedule (000's)		Pressure Zones	
	Update Code	Drainage Basins	Western Branch 14;
	Change	Planning Areas	Mitchellville & Vicinity PA 74A;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	107	87	13	7	4	3					
Land											
Site Improvements & Utilities											
Construction	491	15	170	305	153	153					
Other	74		27	47	24	23					
<b>Total</b>	<b>672</b>	<b>102</b>	<b>210</b>	<b>360</b>	<b>181</b>	<b>179</b>					

## C. Funding Schedule (000's)

Contribution/Other	672	102	210	360	181	179				
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## D. Description & Justification

**DESCRIPTION**  
This project provides for the planning, design, and construction of 970 feet of 15-inch and 20-inch diameter sewer main to serve the Karrington Subdivision.

### JUSTIFICATION

Karrington Hydraulic Planning Analysis (May 2006).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B are based on information provided by the developer. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment.  
Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff			FY of Impact
Maintenance		\$17	21
Other Project Costs			
Debt Service			
Total Cost		\$17	21
Impact on Water and Sewer Rate			

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 08
Date First Approved	FY 08
Initial Cost Estimate	801
Cost Estimate Last FY	655
Present Cost Estimate	672
Approved Request Last FY	176
Total Expense & Encumbrances	102
Approval Request Year 1	181

## G. Status Information

Land Status	Not Applicable
Project Phase	Design
Percent Complete	100%
Est Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	2,102
Capacity	1.7 to 2.87 MGD

## H. Map





**Pleasant Valley Sewer Main, Part 2**

<b>A. Identification and Coding Information</b>	
Agency Number	Project Number
S-131.05	Update Code
	Change

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Piscataway Creek 4;
Drainage Basins	Piscataway & Vicinity PA 84;
Planning Areas	

**B. Expenditure Schedule (000's)**

Cost Elements	Total	Thru FY'17	Estimate FY'18	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	171	43	59	69						
Land										
Site Improvements & Utilities										
Construction	597		114	483	290	133	60			
Other	109		26	83	51	22	10			
<b>Total</b>	<b>877</b>	<b>43</b>	<b>199</b>	<b>635</b>	<b>393</b>	<b>165</b>	<b>77</b>			

**C. Funding Schedule (000's)**

Contribution/Other	877	43	199	635	393	165	77			
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**D. Description & Justification**

**DESCRIPTION**  
 This project provides for the planning, design, and construction of 2,750 feet of 21-inch diameter sewer main to provide service to the Estates of Pleasant Valley and the Ridges III Subdivisions.

**JUSTIFICATION**

Estates of Pleasant Valley Hydraulic Planning Analysis (Amended March 2010).

**COST CHANGE**

Not applicable.

**OTHER**

The project scope has remained the same. Expenditure and schedule projections shown in Block B are based upon information provided by the developer. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

**COORDINATION**

Coordinating Agencies: Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment; Prince George's County Department of Permitting, Inspection and Enforcement; Coordinating Projects: S-131.07-Pleasant Valley Sewer Main, Part 1;

**E. Annual Operating Budget Impact (000's)**

Staff		FY of Impact
Maintenance	\$48	22
Other Project Costs		
Debt Service		
Total Cost	\$48	22
Impact on Water and Sewer Rate		

**F. Approval and Expenditure Data (000's)**

Date First in Program	FY 05
Date First Approved	FY 05
Initial Cost Estimate	586
Cost Estimate Last FY	849
Present Cost Estimate	877
Approved Request Last FY	385
Total Expense & Encumbrances	43
Approval Request Year 1	393

**G. Status Information**

Land Status	RW acquired
Project Phase	Design
Percent Complete	60%
Est. Completion Date	Developer Dependent

Growth	100%
System Improvement	
Environmental Regulation	
Population Served	2000
Capacity	3.5 MGD

**H. Map**





# Fort Washington Forest No. 1 WWPS Augmentation

A. Identification and Coding Information	
Agency Number	Project Number
S-131.10	Change
Update Code	
Change	

PDF Date	October 1, 2017
Date Revised	

Pressure Zones	Piscataway Creek 4;
Drainage Basins	Piscataway Creek 4;
Planning Areas	Piscataway & Vicinity PA 84;

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	1,344	1,017	147	108	72					
Land										
Site Improvements & Utilities										
Construction	3,141	1,541	150	1,000	450					
Other	290		45	167	78					
<b>Total</b>	<b>4,775</b>	<b>2,558</b>	<b>342</b>	<b>1,275</b>	<b>600</b>					

## C. Funding Schedule (000's)

WSSC Bonds	4,775	2,558	342	1,275	600					
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of the rehabilitation work required for the Fort Washington Forest No. 1 WWPS and to upsize a 900 foot segment of failing 4-inch diameter force main to an 8-inch diameter force main. The rehabilitation will more than double the pumping station's capacity. In addition, approximately 2,700 feet of downstream 8-inch diameter gravity sewer will be upsized to 12-inch diameter to accommodate the additional flow. At the Fort Washington Estates WWPS facility, improvements will be planned, designed and constructed to improve its reliability and the existing force main and downstream gravity sewer will be upsized to accommodate the additional flow.

### JUSTIFICATION

There have been additional overflows at both pumping stations since the original 2005 study. On January 22, 2013, the EPA approved a 180-Day Report, making Fort Washington Forest No. 1 part of the Consent Decree. On July 2, 2015, the 180-Day Report and Schedule for Corrective Measures at Fort Washington Estates WWPS was approved by the EPA.

July 2005 Study by Ken Dixon, Planning Group, outlined work to be done on the Fort Washington Forest No. 1 WWPS and Fort Washington Estates WWPS.

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The expenditure and schedule projections shown above may change based upon site conditions and actual bid for Fort Washington Estates WWPS. Planning began in March 2014 for the Fort Washington Estates WWPS with construction to start in FY 2018. Land costs are included in WSSC project S-203.00.

### COORDINATION

Coordinating Agencies: Prince George's County Government; Maryland-National Capital Park & Planning Commission; Prince George's County Department of Environmental Resources; U.S. Environmental Protection Agency, Region III; Maryland Department of the Environment; Coordinating Projects: Not Applicable

## E. Annual Operating Budget Impact (000's)

Staff		FY of Impact
Maintenance	\$127	21
Other Project Costs		
Debt Service	\$311	21
Total Cost	\$438	21
Impact on Water and Sewer Rate	\$0.01	21

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	1,454
Cost Estimate Last FY	4,887
Present Cost Estimate	4,775
Approved Request Last FY	1,470
Total Expense & Encumbrances	2,558
Approval Request Year 1	1,275

## G. Status Information

Land Status	Land and RW to be acquired
Project Phase	Design
Percent Complete	70%
Est. Completion Date	March 2020

## H. Map

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	825
Capacity	0.7 MGD

MAP NOT AVAILABLE

**PROJECTS PENDING CLOSE-OUT**

Prince George's Sewer Projects  
(costs in thousands)

Project Number	Agency Number	Project Name	Estimated Total Cost	Expenditures Thru FY'17	Estimated Expenditures FY'18	Remarks
	S-57.94	Western Branch WWTP Incinerator Emissions Control	\$2,312	\$2,312	\$0	Project no longer needed.
	S-123.26	Marlboro Meadows Community System	\$2,533	\$0	\$2,533	Project completed.
		<b>TOTALS</b>	<b>\$4,845</b>	<b>\$2,312</b>	<b>\$2,533</b>	





## 2018 WATER AND SEWER PLAN

### CHAPTER 5 RURAL SANITATION

This chapter describes the policies and regulations pertaining to installation and retrofitting of onsite wells and sewage disposal systems. The Prince George's County Department of Permitting, Inspections and Enforcement (DPIE) and the Prince George's County Health Department (Health Department) administer the permitting and inspections of wells, and individual and shared onsite sewage disposal systems.

#### 5.1 ONSITE WATER AND SEWER SYSTEMS

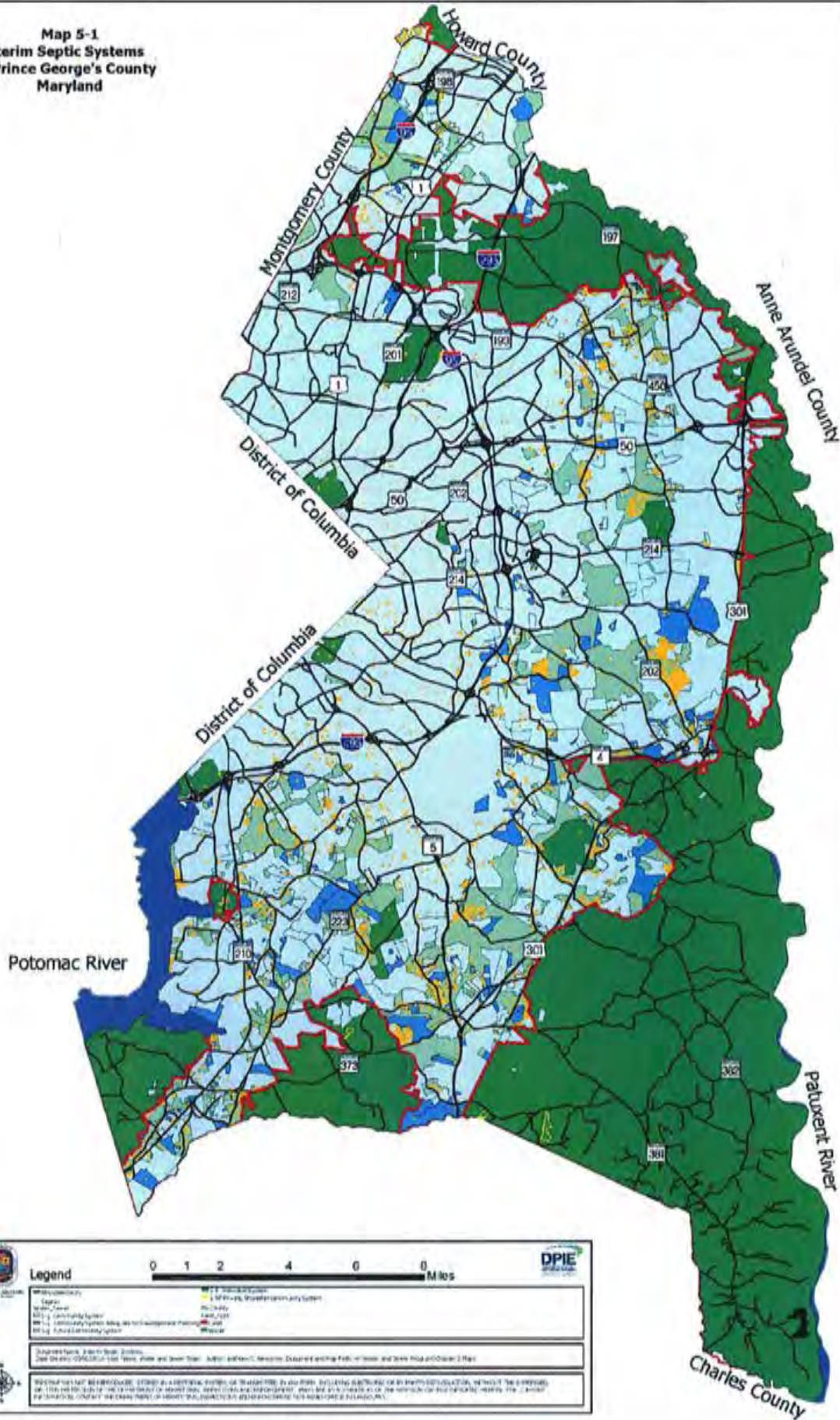
Onsite systems are defined as water supply wells and sewage disposal systems that are located on the property that they serve. There are thousands of properties served by onsite systems in the County. DPIE and the Health Department approve, permit, and maintain records of these systems.

Any onsite potable water supply or sewage disposal system with an average annual capacity of 5,000 gallons per day is considered a community system and must be included in the Water and Sewer Plan. Water withdrawal for nonpotable uses such as agriculture, dewatering, or remediation of contaminated groundwater do not require inclusion in the Plan provided the annual average flow does not exceed 10,000 gallons per day, and there is no anticipated impact to existing or potential potable water supplies.

As a general rule, an onsite water supply or sewage disposal system shall be installed in the County where public water and sewer facilities are not available. These areas are primarily located outside the Sewer Envelope and designated in Category 6. However, the installation and use of temporary or interim individual systems in areas other than Category 6 may be necessary where public water and sewer facilities are either not adequate or not available until economic or engineering constraints can be overcome. **Map 5-1**, Interim Septic Usage, depicts the current distribution of individual – interim septic systems usage inside the Sewer Envelope, in Sewer Category 5, 4 and 3. This map may be amended by DPIE as properties connect, or when found to have connected to the public sewer system (See Section 5.2.5 Interim Systems, et al). The use of new, innovative and alternative technologies may be encouraged in order to reduce demand on the sewage treatment system. The County has not maintained a map for individual wells.

The County Health Department will explore all options to solve existing health hazards with onsite sewage disposal systems; however, existing health hazards may require that a subdivision or individual property be connected to an existing community system regardless of the designated water and sewer category. Under conditions of an existing or anticipated health hazard, the County Health Department may require a subdivision or individual properties to connect to an existing community system regardless of the designated water and sewer category. If a community water and sewer system is not economically available to remediate a health hazard, then the County Health Department will require the repair, remodeling or replacement of the existing well or sewage disposal system that is posing a health hazard. If the health hazard cannot be abated through replacing or repairing the onsite system, the Health Department will invoke other measures to ensure that the health hazard has been abated.

**Map 5-1  
Interim Septic Systems  
Prince George's County  
Maryland**



**Legend**

<ul style="list-style-type: none"> <li>Septic Tank</li> <li>Septic Tank with Pump-out Station</li> <li>Septic Tank with Pump-out Station and Aeration System</li> <li>No System</li> </ul>	<ul style="list-style-type: none"> <li>Septic Tank</li> <li>Septic Tank with Pump-out Station</li> <li>Septic Tank with Pump-out Station and Aeration System</li> <li>No System</li> </ul>
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0 1 2 4 6 8 Miles

**DPIE**  
Department of Planning and Economic Development

This map was prepared by the Department of Planning and Economic Development, Prince George's County, Maryland, for the purpose of providing information to the public. It is not intended to be used as a legal document. For more information, please contact the County Department of Planning and Economic Development.

## 2018 WATER AND SEWER PLAN

### 5.2 ONSITE SYSTEMS FOR NEW CONSTRUCTION

#### 5.2.1 Conventional Systems

Conventional onsite sewage disposal systems are to be used in the areas outside the Sewer Envelope where there is no planned community service. They are specifically required for lots created through the State's subdivision regulations found in the Code of Maryland Regulations (COMAR 26.04.03). In general, conventional onsite sewage disposal systems are permitted provided they are in compliance with the applicable code (COMAR 26.04.02), and the Prince George's County Code (Subtitle 22).

Conventional sewage disposal systems typically incorporate the use of septic tanks and an accompanying drain field, dry well or sand mound system. As of January 1, 2013, all new construction within the Chesapeake Bay Critical Area requires the installation of Best Available Technology (BAT) for the reduction of nitrogen treatment tanks. These systems can incorporate a combination of features such as aeration, agitation, recirculation, filtration, chemical treatment, etc. in order to improve the quality of the effluent discharged from the system and lessen the environmental impact on the waters of the State, including the Chesapeake Bay. Residents in other areas of the County may, if they choose, install BAT tanks, but are not required at this time.

The feasibility of these systems is determined through onsite percolation testing of the soils. Percolation test rates normally distinguish conventional disposal systems from alternative or experimental systems which may be constructed in less permeable soils. Subtitle 22 of the Prince George's County Code specifies the minimum satisfactory percolation test requirements necessary for delineating the sewage disposal recovery area for any individual lot.

Applications to perform percolation tests and to obtain permits for onsite sewage disposal systems shall be filed with the County Health Department through the License Office at the Department of Permitting, Inspections and Enforcement (DPIE). When applying for percolation testing, the applicant shall submit a site plan detailing the proposed development of the property. A percolation test application remains active until all tests are completed for the proposed property. For lots where site conditions dictate the use of an innovative and alternative disposal system (I&A), a separate I&A percolation test application must be filed.

Most percolation testing conducted in the County occurs during the "wet season" that normally begins February 1 and ends April 30 of each year. The County Health Department determines when properties can be tested depending on the various types of soils on the property. Several soils within the Prince George's County Soil Survey are classified as severely limited for the installation of sewage disposal systems due to high water tables, perched water tables, seasonally high water tables, excessive slopes, and flood hazards. The predominance of any one or a combination of types of soil with these limitations, on or in close proximity to the property, determine whether a property has to be tested during the wet season or may be tested at any time of the year.

## 2018 WATER AND SEWER PLAN

Preliminary plan approval of subdivisions utilizing conventional septic systems must show for each lot a minimum 10,000 square foot sewage disposal area based on at least two satisfactory percolation tests. The preliminary plan must also show the location of any proposed wells and the topography at two-foot interval contours.

In addition to onsite water supply wells, the Health Department also issues permits for geothermal, remediation and monitoring wells under COMAR 26.04.04. Applicable regulations governing well and sewage disposal system permits and installation procedures are obtained through the Prince George's County Health Department, Division of Environmental Health/Disease Control, Environmental Engineering/Policy Program.

### **5.2.2 Abandonment Policies**

The abandonment of a well or a sewage disposal system must comply with appropriate State laws and regulations in order to prevent them from acting as conduits of contamination to the waters of the State and to help eliminate health and safety hazards. Proper abandonment of the old wells and septic systems is required for any new development, and is often a condition of a preliminary subdivision approval. The State regulation, COMAR 26.04.04, requires that wells be backfilled and sealed by a licensed well driller or witnessed by a representative from the Division of Environmental Health of the County Health Department. The abandonment of a septic system must be done in a manner to ensure that it cannot be used again, and that it does not become either a health or safety hazard. To comply with the Code, the septic tank must be pumped out by a licensed scavenger and either backfilled in place or removed. Owners or developers are required to contact the Health Department if other portions of the septic system are to be disturbed.

### **5.2.3 Shared Onsite Water and Sewer Facilities**

Prince George's County supports the use of shared water and sewer facilities in areas of the County that are outside the Sewer Envelope. Shared facilities often allow development of these areas consistent with the County's land use plans such as conservation subdivisions, while assuring the protection of sensitive areas and preventing contamination of ground and surface waters.

Shared facilities are community systems of limited size, utilizing onsite wells and or sewage disposal systems serving two or more lots. Shared facilities are governed by COMAR 26.04.05. According to COMAR, all shared facilities must be managed and operated by a governmental entity called a "controlling authority." This entity provides management, operation and continuous preventive and corrective maintenance of the shared facility. In Prince George's County, the controlling authority shall be a third party entity acceptable to the County Health Officer. As the approving authority, the Health Department cannot be a controlling authority.

The shared facility must be approved by the County Health Department and, should the shared system exceed 5,000 gallons per day, by the Maryland Department of the Environment (MDE). It must meet all applicable State and County regulations, including those of WSSC and M-NCPPC. Prior to submittal of a preliminary plan, a concept design plan for a shared sewage disposal system and/or shared water supply facility must be submitted to the Health Department.

## 2018 WATER AND SEWER PLAN

For a shared sewage disposal system, the plan shall include the shared sewage disposal easement area(s) delineated by satisfactory percolation tests and water table observation holes. The plan must also show the proposed location of gravity and force sewer mains, the projected locations of sewage and pump tanks, and the treatment facilities. The concept design for a shared water supply facility is to show the well location(s), water mains, and necessary storage and treatment facilities. In accordance with the Public Utilities Article of the WSSC District Laws, the design and construction of the components of the shared facilities shall meet all relevant WSSC design and construction standards for the benefit of public health and welfare. WSSC shall review and approve treatment systems, excluding septic treatment and disposal systems; and, regardless of the type of treatment system, shall review and approve all on-site piping.

Prior to record plat approval for shared sewage disposal systems, the Health Department must receive a detailed site plan depicting the exact location of the force and gravity mains, the proposed treatment facilities and the sewage disposal area. In addition, an approved MDE ground water discharge permit must be obtained for any shared sewage disposal system that exceeds 5,000 gallons per day. For shared water supply facilities, the site plan shall detail the location of the proposed wells that are to be used as the shared water source. The plan must also show all water supply lines and the location of water treatment facilities. A water appropriation permit will be required from MDE prior to record plat approval. Test wells are likely required before the issuance of the water appropriations permit. All shared facilities must be approved as an amendment to the Water and Sewer Plan prior to final plat approval. Agreements with the controlling authority must be reviewed and approved by the County and the MDE prior to final plat approval. Shared facility agreements shall clearly specify the rights, duties, and responsibilities of the system owners and the controlling authority, both financially and operationally, to assure perpetual operation of the system(s) and clarify the roles of the State and local health authorities to inspect the system(s) as WSSC has no intention of assuming ownership or operation and maintenance responsibilities. DPIE and the Health Department must cosign final plats of subdivision for properties using shared facilities.

### **5.2.4 Alternative Systems**

Alternative systems allow development of lots recorded in the land records of Prince George's County that are determined to be compatible and consistent with County growth policies including the General Plan Rural and Agricultural Areas Strategies for conserving agricultural and forest resources. Alternative systems must also conform to percolation rates specified in the MDE guidance memorandum "Alternative Onsite Sewage Disposal Systems," dated September 28, 1994. Types of alternative systems include:

- At-grade mound
- Sand mound
- Enhanced pretreatment system
- Waterless toilet/graywater system
- Shallow low-pressure distribution system
- Shallow alternating trench system

## 2018 WATER AND SEWER PLAN

Alternative systems require more intensive site review, installation inspection, and operational maintenance than conventional types of disposal systems. Conditions for approval of alternative systems are as follows:

1. Approval for these systems rests with the County Health Department with assistance from the staff of the MDE.
2. Alternative systems must meet the same criteria as conventional systems for setback distances, recovery areas and unsaturated treatment zones.
3. The property owner, the County Health Department, and MDE must sign an Agreement and Easement document to be recorded in the County Land Records and returned to the Health Department. The Agreement and Easement document establishes the regulatory conditions associated with the alternative system, necessary operational and maintenance requirements, and allows access for monitoring by State and County personnel.

### **5.2.5 Interim Systems or Waivers for Wells and Septic Systems**

Interim Systems are used in areas of Prince George's County where there is an expectation that public sewer and water will eventually serve the property, but is currently unavailable. This does not include the Rural and Agricultural Areas where permanent systems are expected to serve the property. DPIE manages the approval of interim systems through a waiver process based on recommendations from the Health Department and WSSC. Waiver application forms may be obtained from DPIE (see Chapter 6). Interim Systems will generally be approved only for individual single-family homes or minor subdivisions as defined in Section 24-117 of the County Code. Percolation tests may be conducted prior to a waiver application. Construction trailers can use temporary wells and sewage disposal systems without an interim system approval if they are on sites that will ultimately be served by public water and sewer.

A waiver to install an interim onsite water and sewer system may be granted by DPIE provided that:

- A. The applicant meets all the requirements specified above for conventional or alternative systems.
- B. The cost of service connection to the community system substantially exceeds the Health Department's estimate of the cost of constructing an individual system. WSSC shall determine the availability and adequacy of water and sewer service based on transmission and treatment capacities, or economic and engineering constraints. Where WSSC finds that service cannot be provided, it shall inform DPIE of the limitations and develop a projected cost estimate to provide service to the property in question.

## 2018 WATER AND SEWER PLAN

- C. Once public water and sewer is made available to a lot, the property owner may continue using the interim system, but must connect within one year of the line being placed into service and abutting the property.
- D. In the event of malfunction of the interim system, it will be the property owner's responsibility to abate the health hazard by replacing or repairing the existing system under Health Department oversight. However, if the community system is available and accessible, the property must connect to the community system.

### **5.3 SEWAGE DISPOSAL SYSTEMS FOR EXISTING STRUCTURES**

The Prince George's County Government will generally require connection of an existing occupied residence to public sewer systems to address public health issues. If public sewer is not available, the County Health Department will pursue the installation of a conventional or alternative sewage disposal system. Failing systems in the Chesapeake Bay Critical Area must be remedied with a Best Available Technology (BAT) system for the reduction of nitrogen or connection to the public sewer leading to a wastewater treatment plant which has incorporated Enhanced Nutrient Reduction (ENR) technologies.

#### **5.3.1 Experimental and Innovative Sewage Disposal Systems**

Should the installation of conventional or alternative sewage disposal systems not be possible due to poor soil characteristics or high ground water tables, the County supports the use of innovative sewage disposal systems when such systems are considered to be economically and environmentally acceptable. The County government endorses continuing research that would provide data useful in determining the suitability of various innovative systems to the County's natural environments. One provision of the MDE guidelines specifies the need for a maintenance contract to ensure the continued operation of these more complex systems. Further information can be obtained from the Prince George's County Health Department, Environmental Engineering/Policy Program.

#### **5.3.2 Holding Tanks**

A holding tank is a watertight tank with sufficient capacity to receive and retain at least one week's volume of sewage flow. A holding tank must be emptied on a regular basis by a licensed scavenger. The County shall not authorize the use of a holding tank for new construction. Rather, it is an acceptable means of sewage disposal when a malfunctioning sewage disposal system cannot be repaired or renovated, until such time as public sewer or some other acceptable disposal method can replace the system.

#### **5.3.3 Chemical Toilets**

A chemical toilet is a self-contained unit that directs human waste into a watertight tank containing deodorizing and liquefying chemicals. A chemical toilet will be accepted for use at temporary events not exceeding 14 days in length and on construction sites during the actual

## **2018 WATER AND SEWER PLAN**

construction phase. The Health Department may also accept the use of chemical toilets in parks owned by governmental agencies.

### **5.3.4 Upgrade of Existing Sewage Disposal Systems**

Sewage disposal systems that are required to be upgraded to meet anticipated increases in sewage flow must comply with requirements for conventional or alternative sewage disposal system, before the Health Department can approve the increase in sewage flow. The Department's determination that the system can be upgraded will be based on the projected increase in the size of the disposal system and the capability of the property to support that increase. The projected sewage flow, percolation test information, capacity and design of the existing system, and the amount of available land to upgrade the system will be contributing factors in making that determination.

### **5.4 FUNDING FOR ON-SITE SYSTEMS**

The County Health Department is delegated responsibility to administer funding from the State's Chesapeake Bay Restoration Fund (BRF). Successful applicants for such funding may have the cost of BAT tank purchase and installation (including the system's initial year(s) of periodic operations and maintenance inspections) paid by the BRF. Funding may also be applied to the connection of an existing domestic dwelling with a failing septic system to the public sewerage system. Interested parties should contact the Health Department's Division of Environmental Health/Disease Control, Environmental Engineering/Policy Program for further information and an application.

### **5.5 CONTRACTOR SERVICES**

The Health Department, pursuant to Prince George's County Code, Subtitle 22, issues annual licenses to persons performing sewage system related services, i.e., percolation testing, sewage disposal system installation and scavenger companies. The Department also performs annual inspections to certify the suitability of scavenger vehicles to WSSC as a condition of their being allowed to collect and discharge septage to WSSC treatment facilities. Where transfer of septage from small capacity trucks to larger vehicles is carried out, such activity shall be listed in this Water and Sewer Plan.





## 2018 WATER AND SEWER PLAN

### CHAPTER 6 PROCEDURES FOR ADOPTING AND AMENDING THE PLAN

The authority to adopt and amend the Water and Sewer Plan resides with the County Council, following recommendations by the County Executive. The Water and Sewer Plan Amendment cycles provide the County Executive and the County Council with an opportunity to manage the rate of growth in the County. It also provides an opportunity to ensure the adequacy of the infrastructure and the delivery of services in a staged manner. The County will schedule four legislative amendment cycles for category changes and minor text amendments as well as monthly administrative amendment cycles per annum, excluding August and December. The Plan adoption process is described further in Section 6.1.

Section 6.2 describes the amendment processes that includes both legislative and administrative amendments. The legislative amendment process, used to advance properties from Category 6 or 5 to Category 4, is further described in Section 6.3. The administrative amendment process of the Plan, used when property owners are ready to develop and move from Category 4 to 3 or for a public use allocation, is discussed in Section 6.4. The requirements and procedures to obtain a waiver to either connect to public water and sewer or to use individual wells and septic systems are discussed in Section 6.5.

#### **6.1 PLAN ADOPTION PROCESS**

State law requires a comprehensive update of the Water and Sewer Plan at least once every three years. The update must include any changes that have occurred in demographics, geographical features, environmental factors, Federal, State or local regulations, and public health requirements. It also incorporates all legislative and administrative amendments approved since the previous plan adoption (November 2008), including category change actions, map revisions and corrections, and necessary text amendments.

The County Executive submits the Plan and Plan Maps for consideration by the County Council. The County Council schedules a public hearing and provides State and local agencies with 30 days' notice of the hearing. Following the public hearing, a work session of the appropriate County Council Committee is held. After considering matters raised at the public hearing and at the work session, the County Council acts on the proposed Plan. The County Executive has 10 days following adoption of the resolution to comment on the County Council's action before the resolution is effective.

In addition, the Water and Sewer Plan is amended annually with the County Council adopting the CIP of WSSC in May of each year. The CIP contains capital projects to support water supply and sewerage system development. Descriptions of these projects are included in the Water and Sewer Plan as chapter **Appendices 3-7** and **4-2**.

## 2018 WATER AND SEWER PLAN

### **6.2 AMENDMENT PROCESSES**

The adopted Water and Sewer Plan assigns a category to every piece of property in the County. These categories determine whether land can be developed using public, or community, water and sewer or individual well and septic systems. A category change is usually required for a development proposal that needs a subdivision, or that disturbs more than 5,000 square feet of land. The categories are discussed in Section 2.1.2. “Water and Sewer Categories.”

Requests for changes to these categories, also known as the Water and Sewer Plan Amendments, can be achieved through two processes: The Legislative Amendment process and the Administrative Amendment process. The Legislative Amendment process is used when changes are proposed from Category 6 or 5 to Category 4 and for variations to policies, procedures, and practices established by the adopted Water and Sewer Plan. The Administrative Amendment process is used when changes are proposed from Category 4 to Category 3 and for public projects that are to be allocated for “public convenience and necessity” use. Both processes require the filing of an application for water and sewer plan amendment. Applications are discussed further in Sections 6.3.3 and 6.4.2, and as **Appendix 6-1**.

### **6.3 LEGISLATIVE AMENDMENT PROCESS**

Landowners, County agencies, the Maryland-National Capital Park and Planning Commission (M-NCPPC), and the Maryland Department of the Environment (MDE) can initiate applications for the Legislative Amendment process. Plan amendments can be requested for water and sewer category changes, and for water withdrawal points and points of discharge, in excess of 5,000 gallons per day as an annual daily average. Additionally, a contract purchaser, with the owner’s written consent, may initiate the application.

The County Executive has delegated the management of the Water and Sewer Plan, including the preparation of Legislative Amendments, to the Department of Permitting, Inspections and Enforcement (DPIE). DPIE leads in implementing the County’s goals, objectives and legal requirements for providing water and sewer service in Prince George’s County, in concert with land use and sustainable growth policies established by the adopted General Plan, and through the Department’s protection of the County’s natural and manmade resources. In its management of the Water and Sewer Plan and amendments, DPIE coordinates with County and Bi-County agencies and evaluates, prepares and submits proposed Legislative Amendments for the County Executive’s review and recommendation. These recommendations are then sent with an accompanying proposed Council Resolution for consideration by the County Council.

The County Council provides a notice of the pending amendments to the public, County, and State agencies prior to a public hearing. Anyone interested in an amendment or an application in the proposed Water and Sewer Plan Amendment package may testify at the public hearing. After the public hearing, a work session of the appropriate County Council Committee is held. After considering matters raised at the public hearing and work session, the County Council acts

## 2018 WATER AND SEWER PLAN

on the proposed Legislative Amendments. The County Executive has 10 days following adoption of the resolution to comment on the County Council's action before the resolution is effective.

Prince George's County will schedule four Water and Sewer Plan Legislative Amendment cycles each year. This is one more cycle than previous adopted plans have allowed. Applications to amend the Plan must be submitted to DPIE by the respective closing dates: January 1, April 1, July 1, and October 1. DPIE provides application forms (see **Appendix 6-1** of this chapter). The applications, with all required attachments, must be completed before the closing date to be accepted for review (see Section 6.3.3). DPIE, the County Executive and the County Council reserve the right to request any additional information deemed appropriate. An application may be rejected from the process if requested information is not received within a designated time frame. Additionally, an application may be rejected if the policies and criteria listed in Section 2.1.4 are not met for the development review processes or for the development proposed. Incomplete applications received, via courier, mail or electronic transfer, will be returned to the applicant or the correspondent of record. Applications found to be incomplete after the closing date will be required to re-file, and may be subject to an additional filing or late fee.

### **6.3.1 Referral and Review Process**

Applications are reviewed by the Washington Suburban Sanitary Commission (WSSC), the Maryland-National Capital Park and Planning Commission (M-NCPPC), the County Health Department (PGCHD), and the Department of Permitting, Inspections and Enforcement (DPIE). DPIE may also request reviews or comments from other appropriate agencies and municipalities. One copy of each application is sent to the County Council. Reviewing agencies are given 15 days from the date of referral to submit comments to DPIE on applications received.

DPIE, as the agency integrally involved in permitting services for the County and the administrator of this process, evaluates each application proposal based on criteria listed in Section 2.1.4, and consistency to other Federal, State, Regional, County, and Municipal land use plans and planning policies outlined or implied in the Water and Sewer Plan. DPIE comments on the existence of and requirements for permits prior to, during, and after the disturbance of land, and the proposed development's need for road improvements and other transportation facilities.

State and County agencies involved in the review process provide information and assistance pertinent to water and sewer planning and development specific to its area of proficiency. These comments are considered in recommendations presented to the County Executive and County Council. In addition to DPIE, the plan administrative agency, the following agencies provide written comments on all amendment applications: WSSC calculates an estimated sewage flow for each project and describes whether the project can be served by existing water and sewer lines, or estimates what size and type of improvements would be necessary to provide service; M-NCPPC compiles information on general plan policies, master plan recommendations, zoning, subdivision status, and adequacy of public facilities, residential capacities, community needs, infrastructure, and services; and PGCHD provides information about existing wells, septic systems and percolation tests conducted on the subject property, as well as soils and other environmental health and sanitation issues.

## 2018 WATER AND SEWER PLAN

Based on the information provided in the application and the comments received from reviewing agencies, DPIE prepares a report evaluating the merits of the request and its proposal. The County Executive then determines a recommendation for each request and transmits the proposed amendment resolution to the County Council. DPIE notifies each applicant of the County Executive's recommendation once the resolution has been introduced as pending legislation. The County Council holds a public hearing and a work session prior to adoption of the resolution. At the close of each public hearing, the Chair of the County Council shall specify that no additional evidence will be accepted by the Clerk of the Council for inclusion into the record. If any evidence is presented subsequent to the public hearing, it shall not be considered as a part of the record and shall not be used as a basis for denying or granting a category change request. The adopted Council Resolution serves as legal documentation of the approved amendments to the Water and Sewer Plan and Maps. A copy of the adopted County Council Resolution is available at the Office of the Clerk of the Council.

The Legislative Amendment process has been modified to accommodate four cycles, approximating 13 weeks per cycle. The exact duration and action dates are dependent on weekdays, holidays and other workload within County agencies, and may also be impacted by County elections. The introduction of a resolution for an Amendment, the public hearing and the County Council's final adoption must each occur at a full legislative session of the County Council. These are usually held on Tuesdays.

**Table 6-1. Approximate Schedule for Legislative Amendments**

Week 1	Initial review by DPIE and referral to agencies
Weeks 2-5	Agency commenting period
Weeks 6-7	DPIE prepares staff report, drafts resolution for transmittal of the County Executive's recommendations and Office of Law review to the County Council
Week 8	County Council introduces Resolution
Weeks 9-12	Public hearing notice, public hearing and work session
Week 13	Final adoption by the County Council

### **6.3.2 Redesignation Criteria for Legislative Amendments**

Legislative Amendments to the Plan include category changes. In order for the County to approve a particular category change, the project must meet the policies and criteria listed in Section 2.1.4 of this plan. Category specific criteria also include the following:

- Category 4
  - The project complies with applicable zoning requirements.
  - Water and sewer service is found to be adequate and available through a WSSC-issued Letter of Findings.
  - Additional residential capacity is needed (residential development)
  - The development proposal includes an adequate description.
  - Property is located inside the Sewer Envelope
  
- Category 5
  - The proposed development complies with applicable zoning.

## 2018 WATER AND SEWER PLAN

- Water and sewer service is ultimately planned for the area.
  - Additional residential capacity is not needed (residential development)
  - Property is located inside the Sewer Envelope
- Category 6
- The project complies with applicable zoning requirements.
  - Community service is not planned for the area.
  - Rural sanitation and rural water supply can support the development.
  - Property is located outside the Sewer Envelope.

Any project that has an active rezoning application may not be processed for water and sewer category amendments.

### **6.3.3 Application Requirements**

The application form must be completed according to its accompanying instructions and is subject to a review process. An application must be made using forms provided by DPIE or by downloading the application from the DPIE website (see **Appendix 6-1** of this chapter). A completed application consists of the original application form (notarized as appropriate), required supporting materials and documents on 8 ½ x 11 papers, and the required nonrefundable filing fee. Documents must be legible and scanner-ready for acceptance into the designated cycle for processing. The deadline for accepting applications is the close of business on the 1<sup>st</sup> of January, April, July and October. If the deadline date is on a weekend or a holiday, the following business day will be considered the deadline date.

### **6.3.4 Refiling of Denied Applications**

Denied applications may be refiled in consecutive cycles. The County reserves the right, however, to determine whether circumstances or policies related to the original denial have changed significantly to justify reconsideration in the next consecutive cycle. The refiled application is subject to the applicable non-refundable filing fee.

### **6.3.5 Fee Schedule**

A fee schedule for Legislative Amendments is found in **Appendix 6-2** of this chapter.

## **6.4 ADMINISTRATIVE AMENDMENT PROCESS**

Once a property has been changed to Category 4 and meets certain criteria, a Plan Amendment application to move to Category 3 may be submitted. Category 3 status allows the owner of the property to obtain appropriate water and sewer extension authorization, record the final plat and subsequently receive building permits. Plan amendments for changes from Category 4 to Category 3, and for public use allocations are generally approved administratively. Public use allocations are required for any development proposed by a public entity (Federal, State, County, Municipal, and Regional) and those deemed public by the Maryland Public Service Commission, possessing a Certificate of Public Convenience and Necessity (CPCN).

## 2018 WATER AND SEWER PLAN

DPIE will accept applications for Administrative Amendments on a continuous basis, and approvals will be issued approximately 45 days after receipt of a complete submittal. Applications should only be submitted to DPIE after the Planning Board has approved the preliminary subdivision. Applications for an Administrative Amendment are submitted on an Application for Water and Sewer Plan Amendment form furnished by DPIE (see **Appendix 6-1** of this chapter). Applications may be initiated by the landowner or his/her legal representative, or by a contract purchaser with the written consent of the property owner. Additionally, County agencies, the M-NCPPC and the Maryland Department of the Environment, may also initiate an administrative amendments. Only completed applications should be submitted for review (see Section 6.4.2). Incomplete applications received, via courier, mail, or electronic transmittal will be returned to the applicant or the correspondent of record. Applications found to be incomplete may be subject to an additional filing fee.

DPIE will evaluate applications received by the 1st of each designated month, and a report on each application will be transmitted to the County Executive and the County Council by the 15th of the month. In order to ensure an adequate analysis and receipt of current information, DPIE reserves the right to determine what is necessary before transmitting the evaluation to the County Executive and the County Council. Reasons for delayed transmittals may include, but are not limited to the following: approved Preliminary Plans that are more than four years old, outstanding conditions (State or County) relating to the preliminary plan approval, conditions set at the time of the legislative approval, expired or outdated DPIE Site Development Concept Plans, or failure to provide any portion of requested information necessary to complete the evaluation. The County Executive and the County Council will have 30 calendar days to comment on the application and its request, once transmitted by DPIE. If no comments are made, the Director of DPIE may approve each application included in the transmitted cycle.

During the 30-day review period, the County Executive or County Council may request that an application be processed as a Legislative Amendment. Should this occur, the application would be placed in the next available Legislative Amendment cycle (January, April, July or October). DPIE will notify the applicant, or the correspondent of record, of any pending procedures or deficiencies in the filing that would prevent the application's processing in a requested cycle.

### **6.4.1 Redesignation Criteria for an Administrative Amendment**

DPIE shall use the policies and criteria listed in Section 2.1.4 of this Plan to review an administrative change from Category 4 to Category 3. At a minimum, the development proposal submitted with the application shall have:

- A. An approved, valid Preliminary Plan, including the signed corresponding Resolution of the specified plan.
- B. A valid DPIE Site Development Concept Approval Letter.
- C. Conceptual water and sewer alignments shown on the preliminary plan submitted in a Hydraulic Planning Analysis (HPA) for WSSC to review.
- D. Required Capital Projects included in the adopted WSSC CIP.

## 2018 WATER AND SEWER PLAN

- E. No additional capacity dependencies noted in WSSC's Letter of Findings.
- F. Description of the project's ability to meet the County's criteria for quality development, to include:
  - 1. Architectural renderings (sales brochure quality);
  - 2. Description of amenities (itemized, if not included above);
  - 3. Confirmed builder(s);
  - 4. Description of community and public enhancements;
  - 5. Designation as a priority project in the County's Economic Development Program.

### **6.4.2 Application Requirements**

The application form must be completed according to accompanying instructions and is subject to a review process. An application must be submitted using forms provided by DPIE or by downloading the application from the DPIE website (see **Appendix 6-1** of this chapter). The original application form and all supporting materials are required for acceptance into the process. A completed application consists of the original application form (notarized as appropriate), required supporting materials and documents on 8 ½ x 11 papers (except for certified Preliminary Plans), and the required nonrefundable filing fee. Documents must be legible and scanner-ready, if not completed online.

### **6.4.3 Fee Schedule**

A fee schedule for plan amendments is found in **Appendix 6-2** of this chapter.

## **6.5 WAIVER PROCESS**

Prince George's County has had a history of allowing interim well and septic systems, on a case by case basis, in areas designated for development planning and future public service (Category 4 and Category 5). It is the intent that interim well and septic systems be removed once public water and sewer becomes available and accessible. However, many developed residential lots are still being serviced by well and septic systems because public water and sewer lines have not been constructed to allow for connections, or property owners have not yet connected to the public system. Numerous interim systems are failing and posing concerns to health and the natural environment. Strategies are now under review that actively seek to remediate these circumstances. New regulations, such as The Sustainable Growth and Agricultural Preservation Act of 2012 (SB 236, also known as "the Septics Bill") has placed stringent requirements on Maryland counties to identify areas where "major and minor residential subdivisions may be located and what type of sewerage system will serve them." The General Plan has redelineated the County by tiers to guide where public facilities are to be constructed, and where interim systems may be utilized. The County will make every effort to strictly adhere to bills, acts and regulations that have been imposed to protect and sustain the natural and manmade environments. Waivers shall not be granted for the purpose of circumventing any of the established policies and guidelines.

The Waiver process is designed to eliminate unnecessary burden on an individual owner of an existing single-family residence or lot, or a residential minor subdivision. The property must

## 2018 WATER AND SEWER PLAN

be located inside the Sewer Envelope, within the Growth Boundary, and in a publicly designated category. There are two types of waivers: 1) Waiver to Connect to Public (Community) Water and Sewer; and 2) Waiver to Use an Interim Individual Well and Septic System.

The Director of DPIE may waive certain Water and Sewer Plan requirements for existing, individually-owned residences and residential minor subdivisions. An application and a review process initiated at DPIE – in conjunction with WSSC, the County Health Department, and M-NCPPC – will determine eligibility of the subject property, and a recommendation based upon findings. Applicants will receive a letter signed by the Director of DPIE regarding the approval or denial of such requests.

Waivers are not typically needed for homeowners who are using an existing well or septic system that has become a health hazard. In most of these cases, the Health Department makes a determination on how to expedite and resolve the problem (see Chapter 5).

### **6.5.1 Waiver Criteria—Connection to Public (Community) Water and Sewer**

A Waiver for Connection to Public Water and Sewer may be requested when public water or gravity sewer lines abut the property and the property owner wishes to connect. Waivers are provided for existing, individually-owned residential lots and parcels, and residential minor subdivisions. This waiver process may be applied for up to seven existing single-family residential lots, or for a proposed subdivision determined by M-NCPPC to qualify as a residential minor subdivision defined in Section 24-117 of the County Code. Each lot must be located inside the Sewer Envelope, within the Growth Boundary, and have abutting water and abutting gravity sewer lines located in a dedicated street, right-of-way or traversing the property. Connections to public water and sewer may not exceed 200 feet of dedicated streets or rights-of-way. The waiver process typically does not change the water or sewer category designation of the property. Residential minor subdivisions requesting such waivers shall be evaluated under the criteria specified in Section 2.1.4 “Category Change Policies and Criteria.”

### **6.5.2 Waiver Criteria – Use of Interim Individual Well and Septic Systems**

A Waiver for the use of interim individual well and septic systems may be requested when the public water and sewer system is not currently available or accessible, but is planned (for servicing and extending) under an approved project. Waivers are provided for existing, individually-owned residential lots and residential minor subdivisions. This waiver process may only be applied for up to seven existing, individually-owned residential lots, or for a proposed subdivision determined by M-NCPPC to qualify as a residential minor subdivision defined in Section 24-117 of the County Code. Each lot must be located inside the Sewer Envelope, within the Growth Boundary, located in an area that is planned for public service under an authorized and active project and, connection is currently greater than 200 feet from the property line. The property must meet the required acreage, testing, and secure the appropriate permits to install or maintain an interim individual system as determined by the PGCHD (see Chapter 5). Connection to the public system shall be made within one year or less after the public system becomes available (As described in COMAR 26.03.01.05). Residential minor subdivisions requesting waivers shall be evaluated under the criteria specified in Section 2.1.4 “Category Change Policies and Criteria.”

## 2018 WATER AND SEWER PLAN

### **6.5.3 Application Requirements**

An application must be submitted using forms provided by DPIE or by downloading the application from the DPIE website (see **Appendix 6-1** of this chapter). Applications are to be completed with the fee and attachments as listed on the application form. Incomplete applications will not be reviewed, and the fee will not be refunded. Additional documents may be requested for further analysis after an initial review. Waiver applications do not have a filing deadline, and may be submitted at any time.

### **6.5.4 Fee Schedule**

A fee schedule for the Waiver process is found in **Appendix 6-2** of this chapter.

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**THE PRINCE GEORGE'S COUNTY GOVERNMENT  
DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT**

***Documents and Forms:***

***Instructions for Amending the Plan  
Water and Sewer Plan Amendment (Form 2.01)***

***Final Plat Approval (Form 2.02)***

***Waiver for Connection to Water and Sewer (Form 2.03)***

***Waiver for Interim/Individual Well or Septic System (Form 2.04)***

Application forms (including instructions) may be downloaded from our website at:  
<http://www.princegeorgescountymd.gov/1024/Permitting-Inspections-and-Enforcement>

*Application forms contained herein are the approved forms associated with the printing of this Plan. For the version currently in use, please contact:*

*Department of Permitting, Inspections & Enforcement (DPIE)  
9400 Peppercorn Place, Largo, Maryland 20774  
301-636-2060*

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**THE PRINCE GEORGE'S COUNTY GOVERNMENT  
DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT**

**APPLICATION FOR WATER AND SEWER PLAN AMENDMENT**

**INSTRUCTIONS**

Please follow the instructions carefully to ensure the application is complete. An incomplete application may delay the processing of the request, including rejection from the requested cycle, and additional fees. The 2018 Water and Sewer Plan revises fees for the plan, plan amendments, and processes that must be included with your submission. A Fee Schedule accompanies this instruction sheet. For questions or assistance in completing the forms, contact the Department of Permitting, Inspections and Enforcement (DPIE), Site Road Plan Review Division, at (301) 636-2060. Interactive applications (PDF) and the 2018 Water and Sewer Plan (PDF) may be found at: <http://www.princegeorgescountymd.gov/1024/Permitting-Inspections-and-Enforcement>

Send completed applications and other required information to:

Prince George's County Government  
Department of Permitting, Inspections and Enforcement (DPIE)  
9400 Peppercom Place  
Largo, MD 20774

For questions regarding the approved General Plan, master plans, zoning or subdivisions, contact the Maryland-National Capital Park and Planning Commission (M-NCPPC) at:  
(301) 952-3680 or (301) 952-3530

For information on the public water and sewer system, connections and line extensions, and water and sewer billing, contact the Washington Suburban Sanitary Commission (WSSC) at:  
(301) 206-WSSC (9772)

For information on well and septic systems, contact the Prince George's County Health Department (PGCHD) at:  
(301) 883-7681

<b>Type of Amendment</b>	<b>Administrative</b>	<b>Legislative</b>
Requested Amendment	Category 3 or Public Use	All other category change requests
Application Deadlines	Continuous; approvals monthly except August and December	January 1, April 1 July 1, October 1
Approximate Processing Time	45 days (some reviews may require additional 30 days)	13 weeks
Submittal Requirements	Original application and required attachments	Original application and required attachments

In addition to the application form, the following attachments are required based on the requested amendment and its criteria:

<b>Requested Amendment</b>	<b>Required Attachments</b>
Category 4	<p>Copy of the current County tax map referencing the grid number(s) and parcel number(s) with the property clearly delineated</p> <p>Development Proposals – description of how the proposal will enhance the surrounding community including initiatives to improve roads, public facilities, community services and environmental concerns</p> <p>Completed owner and contract purchaser Disclosure Statement(s)</p> <p>Notarized owner’s signature</p> <p>Recommended Attachments/Actions:</p> <ul style="list-style-type: none"> <li>• A conceptual description of the development proposal</li> <li>• Response to the Land Development Review questions should be as complete as possible</li> </ul>

<b>Requested Amendment</b>	<b>Required Attachments</b>
<p>Category 3 or Public Use Allocation</p>	<p>An approved Preliminary Plan of subdivision and its signed Planning Board Resolution;</p> <p>A valid DPIE Site Development Concept approval letter</p> <p>A valid WSSC Hydraulic Planning Analysis (HPA) Letter of Findings</p> <p>Architectural renderings (a graphic representation of the finished dwellings or structure and the layout; sales brochures are preferred; submittals larger than 8 ½" x 11" will not be accepted) with written descriptions of amenities offered</p> <p>Confirmed Builder(s)</p> <p>Photocopy of the current County tax map referencing the grid number(s) and parcel number(s) with the property clearly delineated</p> <p>Land Development Review questions answered completely and separate sheets provided as requested</p> <p>Completed owner and contract purchaser Disclosure Statement(s)</p> <p>Notarized owner's signature</p>

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**IV. PROPOSED DEVELOPMENT**

<b><u>Residential</u></b>	<b><u>Total Acreage</u></b>	<b><u># of Units</u></b>	<b><u>Minimum Livable Space*</u></b>	<b><u>Minimum Sales/Rent \$ per Unit</u></b>
Single Family Detached	_____	_____	_____	_____
Townhouse	_____	_____	_____	_____
Multifamily _____ Floors	_____	_____	_____	_____
Other: _____	_____	_____	_____	_____

<b><u>Non-Residential</u></b>	<b><u>Total Acreage</u></b>	<b><u># of Bldgs.</u></b>	<b><u># of Floors</u></b>	<b><u>Total Floor Area</u></b>	<b><u>Minimum Sales/Rent \$ per sq. ft.</u></b>
Retail Space	_____	_____	_____	_____	_____
Office	_____	_____	_____	_____	_____
Warehouse	_____	_____	_____	_____	_____
Church	_____	_____	_____	_____	_____
Other: _____	_____	_____	_____	_____	_____

Contract Purchaser: \_\_\_\_\_

Architect/Engineer: \_\_\_\_\_

Confirmed Builder(s): \_\_\_\_\_

(Required for all Administrative Amendments – Category 4 to 3)

1. Is the commercial/industrial space designed for a certain business? If yes, please explain.

\_\_\_\_\_

\_\_\_\_\_

2. What type of business will occupy the space?

\_\_\_\_\_

Estimated number of employees/contractors \_\_\_\_\_

3. If relocating from within Prince George's County, please provide the current location/address of the business:

\_\_\_\_\_

4. Describe how the proposal will enhance the surrounding community, including what initiatives are offered to improve roads, public facilities, community services, and efficiently use environmental resources. Please provide any information that would facilitate the review of this proposal on a separate 8½" x 11" page.

**V. LAND DEVELOPMENT REVIEW**

Some responses may not be applicable to small, residential developments or projects in the early stages of development

1. Subdivision Name: \_\_\_\_\_  
Preliminary Plan of Subdivision #: \_\_\_\_\_ Submittal Date: \_\_\_\_\_  
Date of Preliminary Plan Approval: \_\_\_\_\_ Certification Date: \_\_\_\_\_
2. Comprehensive Design Plan, Phase II, Name: \_\_\_\_\_  
CDP #: \_\_\_\_\_ Submittal Date: \_\_\_\_\_ Approval Date: \_\_\_\_\_
3. Rezoning or Special Exception Plan Name: \_\_\_\_\_  
Rezoning or Special Exception #: \_\_\_\_\_ Submittal Date: \_\_\_\_\_ Approval Date: \_\_\_\_\_  
*Note: Projects undergoing rezoning or special exception cannot be processed for water or sewer category Amendment. Rezoning and SE cases must receive final approval before amendments can be processed.*
4. Site Development Concept Plan #: \_\_\_\_\_ Approval Date: \_\_\_\_\_
5. WSSC Letter of Findings #: \_\_\_\_\_ Approval Date: \_\_\_\_\_
6. Is this project a Designated Priority Project? Yes: \_\_\_\_\_ No: \_\_\_\_\_
7. Are sustainable practices and techniques proposed? Yes: \_\_\_\_\_ No: \_\_\_\_\_  
If "yes," please attach description on a separate page.
8. Please identify the appropriate Policy Area in which the proposal is located from Plan Prince George's 2035: \_\_\_\_\_ Growth \_\_\_\_\_ Rural & Agricultural
9. Please check the applicable Sustainable Growth Act (SGA) tier designation from Plan Prince George's 2035:  
\_\_\_\_ Tier 1 \_\_\_\_ Tier 2 \_\_\_\_ Tier 3 \_\_\_\_ Tier 4
10. Explain how this development meets or will meet the tier-specific policies established in Plan Prince George's 2035 (Please attach a separate page.)
11. Does water and sewer service to the property necessitate a project in the WSSC Capital Improvement Program (CIP)? Yes: \_\_\_\_\_ No: \_\_\_\_\_ Not Certain: \_\_\_\_\_

**PLEASE NOTE: The latest edition of DPIE Form 2.01 (Rev. 12/17) may be downloaded at:**

*The website is currently under construction and pending revision of the 10-Year Water and Sewer Plan. Please contact the program manager at 301-636-2060 or [sabranch@co.pg.md.us](mailto:sabranch@co.pg.md.us) for more information.*

The original application form and requested attachments are **required** upon submittal to the Legislative or the Administrative Amendment cycle, and must be delivered to DPIE within 48 hours of its electronic transmittal (if approved for electronic transmittal).

The application may be rejected by DPIE if any part of the submittal criteria is not satisfied by the application deadline for the designated amendment cycle or if documentation is not legible.

Signature of Correspondent: \_\_\_\_\_

Name, Title, Company: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-mail Address: \_\_\_\_\_

**VI. OWNER/CONTRACT PURCHASER DISCLOSURE STATEMENT**

**PLEASE NOTE: A separate ownership Disclosure Statement is required for the Property Owner and Contract Purchaser. Legal addresses must be disclosed. Post Office boxes are not acceptable. Attach a separate sheet, if necessary, in the format presented below:**

All individuals having at least 5% interest in the subject property or in the Corporation owning the property (not needed for a corporation listed on the national stock exchange)

<u>Name</u>	<u>Home Address</u>	<u>Business Address</u>

***Officers of the Corporation***

<u>Names</u>	<u>Corporate Address</u>	<u>Office and Date Assumed</u>

***Members of the Board of Directors***

<u>Name</u>	<u>Address</u>	<u>Date Assumed</u>	<u>Term Expires</u>

Statement Prepared by: \_\_\_\_\_ Owner \_\_\_\_\_ Applicant \_\_\_\_\_ Correspondent  
(Please check as appropriate)

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-mail Address: \_\_\_\_\_



THE PRINCE GEORGE'S COUNTY GOVERNMENT  
DEPARTMENT OF PERMITTING,  
INSPECTIONS AND ENFORCEMENT

VII.

NOTARY PAGE FOR OWNER SIGNATURE (S) TO ACCOMPANY  
APPLICATION FOR WATER AND SEWER PLAN AMENDMENT  
**(If more than three owners attach a separate sheet in the format presented)**

Owner: \_\_\_\_\_ (1)

Tax Map #: \_\_\_\_\_ Grid: \_\_\_\_\_ Parcel/Lot #: \_\_\_\_\_

\_\_\_\_\_  
*Signature of Owner*

\_\_\_\_\_  
*Notary Seal, Signature, Commission Expiration*

Owner: \_\_\_\_\_ (2)

Tax Map #: \_\_\_\_\_ Grid: \_\_\_\_\_ Parcel/Lot #: \_\_\_\_\_

\_\_\_\_\_  
*Signature of Owner*

\_\_\_\_\_  
*Notary Seal, Signature, Commission Expiration*

Owner: \_\_\_\_\_ (3)

Tax Map #: \_\_\_\_\_ Grid: \_\_\_\_\_ Parcel/Lot #: \_\_\_\_\_

\_\_\_\_\_  
*Signature of Owner*

\_\_\_\_\_  
*Notary Seal, Signature, Commission Expiration*

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**Prince George's County**  
 Department of Permitting, Inspections  
 and Enforcement  
**SITE/ROAD PLAN REVIEW DIVISION**  
 9400 Peppercorn Place  
 Largo, Maryland 20774  
 301.636.2060 FAX: 301.925.8510



**FINAL PLAT APPROVAL APPLICATION**

Each record plat proposing the use of public water and/or sewer facilities must be submitted with a completed application form to: **Department of Permitting, Inspections and Enforcement, 9400 Peppercorn Place, Largo, Maryland 20774.**  
 For more information, please call (301) 636-2060.

**Submittal Date:** \_\_\_\_\_ (If applicable) **Previous Submittal Date:** \_\_\_\_\_

**Record Plat Name:** \_\_\_\_\_

**Applicant:** \_\_\_\_\_ **Engineer/Company:** \_\_\_\_\_

**Contact Person:** \_\_\_\_\_ **Telephone(s):** \_\_\_\_\_

**E-mail Address:** \_\_\_\_\_

<b>DEVELOPMENT PROPOSAL</b>				<b>Non-residential</b> (Provide best numerical estimates)			
<b>Residential</b> (Provide number of units)				<b>Existing</b>		<b>Planned</b>	
Existing	Planned						
_____ units	_____ units	single-family		_____ sq.ft.	_____ sq.ft.	office	
_____ units	_____ units	townhouses		_____ sq.ft.	_____ sq.ft.	retail store	
_____ units	_____ units	garden apts.		_____ sq.ft.	_____ sq.ft.	warehouse	
_____ units	_____ units	high-rise apts.		_____ seats	_____ seats	restaurant	
_____ units	_____ units	elderly housing		_____ seats	_____ seats	church	
_____ units	_____ units	nursing home		_____ seats	_____ seats	school	(specify type)
_____ units	_____ units	other _____ (specify)		_____ beds	_____ beds	hospital	
				_____ sq.ft.	_____ sq.ft.	other _____ (specify)	

Prior to submitting the plat for review, please ensure the following have been completed and provided:

- \_\_\_\_\_ The property is in **Water and Sewer Category 3**
- \_\_\_\_\_ The above boxed-in sections of this form are completed
- \_\_\_\_\_ Appropriate note is printed on the plat (see page 2)
- \_\_\_\_\_ Surveyor's and owner's signatures are on the plat
- \_\_\_\_\_ Preliminary Plan number is on the plat
- \_\_\_\_\_ WSSC grid number is on the plat
- \_\_\_\_\_ Provide one paper copy of the plat
- \_\_\_\_\_ Provide current WSSC Letter of Findings & Sketch
- \_\_\_\_\_ Floodplain review required, approved or not applicable (specify)
- \_\_\_\_\_ DPIE's signature block is printed on the plat as shown herein (1 1/2 x 5 1/2)
- \_\_\_\_\_ A Mylar copy of the plat is included (a total of 2 plans)
- \_\_\_\_\_ Applicable fee (see Fee Schedule) payable to "Prince George's County"

DEPARTMENT OF PERMITTING, INSPECTIONS AND ENFORCEMENT  
 PRINCE GEORGE'S COUNTY, MARYLAND

**APPROVED:** \_\_\_\_\_

DATE \_\_\_\_\_ DIRECTOR OR DESIGNER \_\_\_\_\_

Use the appropriate water and sewer notes on the Final Plat:

**Note # 1**      *When water and sewer lines already abut each proposed lot:*

Approval of this plat is predicated upon public water and sewer being available prior to construction.

**Note # 2**      *When water and sewer line extensions are required for service:*

Approval of this plat is based upon a reasonable expectation that public water and sewer service will be available when needed and is conditioned on fulfilling all of the commitments contained in the Washington Suburban Sanitary Commission project/ authorization # \_\_\_\_\_: Furthermore, waiver # \_\_\_\_\_ for connection to public water or sewer has been obtained from DPIE. If an On-Site system will be utilized on the property, please provide the approved on-site number from the Washington Suburban Sanitary Commission.

**Note # 3**      *When public water and sewer lines are already being utilized by existing structures and only lot lines are being modified:*

Approval of this plat will have no impact on the existing public water and sewer systems. The approval of future building permits will be based upon public water and sewer capacities being available prior to construction.

**Note # 4**      *When shared water and sewer facilities are proposed  
(Note that shared facility plats must be co-signed with the Health Department):*

Approval of this plat is predicated upon the use of a shared sewage disposal system (or water supply system) approved in CR-\_\_\_\_-20\_\_\_\_ (Please provide the number of the Council Resolution approving the shared facility).

This Page does not need to be submitted with the plat.



**Prince George's County**  
 Department of Permitting, Inspections  
 and Enforcement  
**SITE/ROAD PLAN REVIEW DIVISION**



9400 Peppercorn Place  
 Largo, Maryland 20774  
 301.636.2060 ♦ FAX: 301.925.8510

**WAIVER APPLICATION FOR  
 CONNECTION(S) TO PUBLIC WATER AND SEWER**

Waiver is applied for (check appropriate number):  1  2  3  4 residential connection(s)  
 for public water \_\_\_\_\_ public sewer \_\_\_\_\_ service for the following property:

Legal address of property: \_\_\_\_\_

Tax Map #: \_\_\_\_\_ Grid: \_\_\_\_\_ Parcel(s): \_\_\_\_\_ Lot: \_\_\_\_\_ Acreage: \_\_\_\_\_

Tax Account #: \_\_\_\_\_ Subdivision Name: \_\_\_\_\_

Preliminary Subdivision #: \_\_\_\_\_ Development Proposal: \_\_\_\_\_

Total sq. ft. of structure (The enclosed [finished] living area of the primary residential structure *above ground or at grade level* that is utilized for living, sleeping, eating, cooking, bathing, washing and sanitation purposes. This does not include basements, even if finished.): \_\_\_\_\_

Total Price (including land): \_\_\_\_\_

Property Owner: \_\_\_\_\_

Address: \_\_\_\_\_

Owner's Signature: \_\_\_\_\_ (Date)

(Signature requires a Notary)

Work Telephone #: \_\_\_\_\_ Home Telephone #: \_\_\_\_\_

Mobile Telephone #: \_\_\_\_\_ E-mail Address: \_\_\_\_\_

**A Waiver may be approved if the following criteria are met and provided:**

- The property is located **inside the Sewer Envelope boundary, and** within Sustainable Growth Act Tiers I or II
- The property is designated in **Water or Sewer Category 4 or 5**
- Existing water and sewer lines are near the property (within 200 feet) in dedicated streets or rights-of-way; and
- The water and sewer lines are to serve a maximum of seven single family residential lots that are either existing or proposed for the minor subdivision as defined in Section 24-117 of Subtitle 24 of the Prince George's County Code; and service can be provided to each lot without a main line extension.

**Required attachments:**

- A copy of the tax map with the property lines clearly delineated
- A copy of the preliminary plan (if applicable)
- A copy of the architectural rendering of the proposed unit(s); and, if applicable
- A copy of the WSSC authorization showing that water and/or sewer lines are being built abutting the property
- If property ownership has changed in the last sixty days, submit documentation verifying current ownership
- Applicable fee – **payable to "Prince George's County"** – is received (See Fee Schedule; Note: Fee is non-refundable.)

A Waiver is subject to Health Department moratoria, WSSC transmission and treatment capacity restrictions and engineering constraints. This approval does not guarantee a connection. For further information, please call 301-636-2060. Submit the completed application, documents and fee to:

Prince George's County Government,  
 Department of Permitting, Inspections and Enforcement  
 9400 Peppercorn Place, Suite 230  
 Largo, Maryland 20774

For more information, please call the Water and Sewer Plan Coordinator at: 301-636-2060

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**Prince George's County**  
 Department of Permitting, Inspections  
 and Enforcement  
**SITE/ROAD PLAN REVIEW DIVISION**



9400 Peppercorn Place  
 Largo, Maryland 20774  
 301.636.2060 FAX: 301.925.8510

**WAIVER APPLICATION FOR AN  
 INTERIM INDIVIDUAL WELL OR SEPTIC SYSTEM**

A Waiver for an Interim System is applied for the installation of a *(check the appropriate service)*:  
**Well:** \_\_\_\_\_ **Septic System:** \_\_\_\_\_ on the following property:

Legal Address: \_\_\_\_\_

Tax Map #: \_\_\_\_\_ Grid: \_\_\_\_\_ Parcel/Lot: \_\_\_\_\_ Tax Account: \_\_\_\_\_

Subdivision Name *(if applicable)*: \_\_\_\_\_

Total sq. ft. of Structure *(The enclosed [finished] living area of the primary residential structure above ground or at grade level that is utilized for living, sleeping, eating, cooking, bathing, washing and sanitation purposes. This does not include basements, even if finished.)* \_\_\_\_\_

Justification for the installation of an interim individual system(s): \_\_\_\_\_

Development Proposal: \_\_\_\_\_ Total Price (including land): \_\_\_\_\_

Property Owner: \_\_\_\_\_ Address: \_\_\_\_\_

Work Telephone #: \_\_\_\_\_ Home Telephone #: \_\_\_\_\_

Mobile Telephone #: \_\_\_\_\_ E-mail: \_\_\_\_\_

Owner's Signature: \_\_\_\_\_ (Date)

*(Signature requires a Notary)*

**A Waiver may be approved if the following criteria are met and provided:**

- The property is in **Water and/or Sewer Category 3, 4 or 5** and public service is currently unavailable or inaccessible to the platted parcel or lot
- The property is located within Sustainable Growth Act Tiers I or II
- The interim individual system is to serve a single-family residential unit on a platted parcel or lot
- A copy of the tax map with the property lines clearly delineated is attached
- A copy of the architectural rendering or photo of the residential unit(s) is attached
- Current ownership documents are provided if ownership of the platted parcel or lot has changed in the last ninety days
- Applicable fee – **payable to "Prince George's County"** – is received *(See Fee Schedule; Note: Fee is non-refundable.)*

For more information, please call the Water and Sewer Plan Coordinator at: 301-636-2060.

Submit the completed application to:

Prince George's County  
 Department of Permitting, Inspections and Enforcement  
 9400 Peppercorn Place, Suite 230  
 Largo, Maryland 20774

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**PRINCE GEORGE'S COUNTY**  
**FEE SCHEDULE ASSOCIATED WITH**  
**THE 2018 WATER AND SEWER PLAN**  
**AMENDMENTS AND PROCESSES**

All services and activities under the auspices of the adopted Water and Sewer Plan are subject to the fee schedule that accompanies the plan. All fees are waived for public agencies, i.e., Federal, State, County and Municipal entities.

Water and Sewer Plan Amendments and Activities Related to Water and Sewer Planning

Fees are non-refundable and applicable for category change applications, whether legislative or administrative, waiver applications, and final plat review applications. Deferred and resubmitted applications must also pay these fees. Applications are due by the designated filing deadlines for administrative and legislative amendments. A late submittal to the administrative or legislative amendment cycles are subject to the discretion of the Department of Permitting, Inspections and Enforcement (DPIE) and may be charged at a rate of 10% of the assessed application fee. Applications for other processes do not have a filing deadline, however, the application will expire one year from the date of receipt if no activity, or for incomplete packages.

The Fee Schedule associated with the adoption of the 2018 Water and Sewer Plan is as follows:

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Fee Schedule  
2018 Water and Sewer Plan

**I. Water/Sewer Category Amendment**

Residential - Dwelling Units (DUs)

1 Dwelling Unit

2 - 10 Dwelling Units

11 - 25 Dwelling Units

26 - 100 Dwelling Units

101+ Dwelling Units

Commercial Development

Minor: 2 acres or less

Major: more than 2 acres

Mixed Use

Mixed Use example: 26 DUs, 2 Bldgs, 14 acres: **\$3,500 (residential fee) + \$6,500 (commercial fee) = \$10,000**

Shared System - considered commercial in nature; requires legislation to amend the W/S Plan

**2018 Plan Fees PGEO**

\$350

\$1,000

\$2,250

\$3,500 x

\$15,000

\$2,000

\$6,500 x

Commercial + Residential Fees

Commercial Fees

**Sample Fees**

\$3,500

\$6,500

**II. Water/Sewer Waiver Fees**

Residential (Minor)

Interim System - Well

Interim System - Septic

Connection - Public Water

Connection - Public Sewer

Non Residential

Interim System - Well

Interim System - Septic

Non Residential use is to accommodate existing development until authorized public water/sewer available

\$500

\$500

\$350

\$350

\$850

\$850

**III. Water/Sewer Review - Final Plat**

Review/Signature (per Mylar)

Expedited Review/Signature (per Mylar)

\$350

\$100

**Payable to PGEO:**

**\$10,000**

Late submittals are subject to the discretion of DPIE and a late fee may be charged at a rate of 10% of the assessed application fee  
Fees are waived for public entities i.e., Federal, State, County, Municipal



***APPENDIX A***

***The State Environment Article  
Title 9, Subtitle 5***



**§ 9-425. Eligible costs.**

The eligible cost of a project for State financial assistance under this subtitle may include the costs of reports, plans, specifications, legal and administrative services, equipment, construction, rehabilitation, or improvement, and may include land, easements, and rights-of-way. (1990, ch. 187, § 2.)

**§ 9-426. County water and sewer plans.**

To receive financial assistance from the Fund, the project must be included in the county water and sewer plan approved by the county governing body and the Maryland Department of the Environment. (1990, ch. 187, § 2.)

*Subtitle 5. County Water and Sewerage Plans.***§ 9-501. Definitions.**

(a) *In general.* — In this subtitle the following words have the meanings indicated.

(b) *Community sewerage system.* — "Community sewerage system" means a publicly or privately owned sewerage system that serves at least 2 lots.

(c) *Community water supply system.* — "Community water supply system" means a water supply system that serves at least 2 lots.

(d) *County plan.* — (1) "County plan" means a comprehensive plan for adequately providing throughout the county, including all towns, municipal corporations, and sanitary districts in the county, the following facilities and services by public or private ownership:

- (i) Water supply systems;
- (ii) Sewerage systems;
- (iii) Solid waste disposal systems;
- (iv) Solid waste acceptance facilities; and
- (v) Systematic collection and disposal of solid waste, including litter.

(2) "County plan" includes a revised or amended county plan.

(e) *Individual sewerage system.* — "Individual sewerage system" means a sewerage system that serves only 1 lot.

(f) *Individual water supply system.* — "Individual water supply system" means a water supply system that supplies water to only 1 lot.

(g) *Litter.* — "Litter" means any:

- (1) Waste material;
- (2) Refuse;
- (3) Garbage;
- (4) Trash;
- (5) Debris;
- (6) Dead animal; or
- (7) Other discarded material.

(h) *Lot.* — "Lot" means a parcel of land, including a part of a subdivision, that:

- (1) Is used or is intended to be used as a building site; and

(2) Is not intended to be further subdivided.

(i) *Multiuse sewerage system*. — "Multiuse sewerage system" means a sewerage system that:

- (1) Serves only 1 lot;
- (2) Serves a number of individuals;
- (3) Has a treatment capacity of more than 5,000 gallons a day; and
- (4) Is not publicly owned or operated.

(j) *Multiuse water supply system*. — "Multiuse water supply system" means an individual water supply system that:

- (1) Has the capacity to supply more than 5,000 gallons of water a day; and
- (2) Serves a number of individuals.

(k) *Proposed county plan*. — (1) "Proposed county plan" means a county plan that:

- (i) Has been adopted by the county governing body; and
- (ii) Has not been approved by the Department.

(2) "Proposed county plan" includes any proposed amendment or revision of the county plan.

(l) *Sewage*. — "Sewage" means any human or animal excretion, street wash, domestic waste, or industrial waste.

(m) *Sewerage system*. — (1) "Sewerage system" means:

- (i) The channels used or intended to be used to collect and dispose of sewage; and
- (ii) Any structure and appurtenance used or intended to be used to collect or prepare sewage for discharge into the waters of this State.

(2) "Sewerage system" includes any sewer of any size.

(3) "Sewerage system" does not include the plumbing system inside any building served by the sewerage system.

(n) *Solid waste acceptance facility*. — "Solid waste acceptance facility" means any sanitary landfill, incinerator, transfer station, or plant whose primary purpose is to dispose of, treat, or process solid waste.

(o) *Solid waste disposal system*. — (1) "Solid waste disposal system" means any publicly or privately owned system that:

- (i) Provides a scheduled or systematic collection of solid waste;
- (ii) Transports the solid waste to a solid waste acceptance facility; and
- (iii) Treats or otherwise disposes of the solid waste at the solid waste acceptance facility.

(2) "Solid waste disposal system" includes each solid waste acceptance facility that is used in connection with the solid waste disposal system.

(p) *Subdivision*. — (1) "Subdivision" means any division of a tract or parcel of land into at least 2 lots, for the purpose of sale or building development.

(2) "Subdivision" includes any change in street lines or lot lines.

(3) "Subdivision" does not include any division of land into parcels of more than 3 acres, if the division:

- (i) Is for agricultural purposes; and
- (ii) Does not involve any new street or easement of access.

(q) *Water supply system.* — (1) "Water supply system" means a publicly or privately owned or operated:

(i) Source and the surrounding area from which water is supplied for drinking or domestic purposes; and

(ii) Structure, channel, or appurtenance used or intended to be used to prepare water for use or to deliver water to a consumer.

(2) "Water supply system" does not include the plumbing system inside any building that is served by the water supply system. (1983, ch. 542, § 2; 1984, ch. 762; 1992, ch. 295.)

*Revision of subtitle.* — Chapter 542, Acts 1983, effective July 1, 1983, repealed former §§ 9-501 through 9-517 and the subtitle heading "County Plans" and enacted present §§ 9-501 through 9-521 to be under the new subtitle heading "County Water and Sewerage Plans."

*University of Baltimore Law Review.* — For comment concerning federal, State and local regulation of hazardous and nonhazardous waste management, see 17 U. Balt. L. Rev. 114 (1987).

*Grant of authority to adopt or amend plan.* — This subtitle does not authorize a

county council itself to adopt or amend a county's solid waste management plan. That authority is granted to the "county governing body" or the "governing body of the county." *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

*Stated in Ad + Soil, Inc. v. County Comm'rs*, 307 Md. 307, 513 A.2d 893 (1986).

*Cited in Sugarloaf Citizens Ass'n v. Northeast Md. Waste Disposal Auth.*, 323 Md. 841, 594 A.2d 1115 (1991); *Gregory v. Board of County Comm'rs*, 89 Md. App. 635, 599 A.2d 469 (1991).

§ 9-502. *Scope of subtitle.*

(a) *Systems not requiring water for human or animal consumption.* — Unless the operation of a water supply system would interfere with a cleanup or remediation action of the Department, this subtitle does not prohibit the installation or operation of a water supply system that is used only to supply water for purposes other than human or animal consumption.

(b) *Counties exempt from subtitle.* — If a county is exempt from the provisions of this subtitle, the county may not receive funds from the sanitary facilities fund.

(c) *Conflict with other laws, rules, or regulations.* — Any rule or regulation adopted under this subtitle does not limit or supersede any other county, municipal, or State law, rule, or regulation that provides greater protection to the public health, safety, or welfare. (1983, ch. 542, § 2; 1989, ch. 25.)

*Quoted in Ad + Soil, Inc. v. County Comm'rs*, 307 Md. 307, 513 A.2d 893 (1986).

*Stated in Holmes v. Maryland Reclamation Assocs.*, 90 Md. App. 120, 600 A.2d 864, cert.

dismissed sub nom. *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

**§ 9-503. County plans — Required; review by governing body of county; revision or amendment.**

(a) *Requirement.* — Each county shall have a county plan or a plan with adjoining counties that:

- (1) Is approved by the Department;
- (2) Covers at least the 10-year period next following adoption by the county governing body; and
- (3) Deals with:
  - (i) Water supply systems;
  - (ii) Sewerage systems;
  - (iii) Solid waste disposal systems;
  - (iv) Solid waste acceptance facilities; and
  - (v) The systematic collection and disposal of solid waste, including litter.

(b) *Review by governing body of county.* — Except as provided in § 9-515 of this subtitle, each county governing body shall review its county plan at least once every 3 years in accordance with a schedule set by the Department.

(c) *Revision or amendment.* — Each county governing body shall adopt and submit to the Department a revision or amendment to its county plan if:

- (1) The governing body considers a revision or amendment necessary; or
- (2) The Department requires a revision or amendment.

(d) *Public hearing prior to adoption.* — (1) Before a county governing body adopts any revision or amendment to its county plan or adopts a new county plan, the governing body shall:

(i) Conduct a public hearing on the county plan, revision, or amendment that may be conducted jointly with other public hearings or meetings; and

(ii) Give the principal elected official of each municipal corporation that is affected notice of the county plan, revision, or amendment at least 14 days before the hearing.

(2) (i) Notice of the time and place of the public hearing, together with a summary of the plan, revision, or amendment, shall be published in at least 1 newspaper of general circulation in the county once each week for 2 successive weeks, with the first publication of notice appearing at least 14 days before the hearing.

(ii) Notice of the public hearing may be a part of the general notice listing all other items to be considered during the public hearing or meeting. (1983, ch. 542, § 2; 1985, ch. 224; 1988, ch. 101; 1989, ch. 820; 1990, ch. 6, § 2; 1994, ch. 661, § 2.)

**EXPLANATION**

Section 9-503 (b) of the Environment Article requires counties to conduct at least a biennial review of their ten-year plans concerning water and sewage systems and solid waste facilities. Staff recommends this requirement be

modified to require review at least every three years. The Department of the Environment has agreed with this change; the triennial review would be consistent with the review of several other programs under the Department

§ 9-504

ANNOTATED CODE OF MARYLAND

of the Environment. Section 9-515 (b) of the Environment Article is modified for consistency.

**Effect of amendments.** — The 1994 amendment, effective Oct. 1, 1994, substituted "3 years" for "2 years" in (b).

**Editor's note.** — Section 3, ch. 661, Acts 1994, provides that "the explanation notes contained in this Act are not law and may not be considered to have been enacted as part of this Act. The explanation notes are included for information only."

**University of Baltimore Law Review.** — For article, "Maryland's Growing Pains: The Need for State Regulation," see 16 U. Balt. L. Rev. 201 (1987).

**Permit review authority.** — County council's resolution deleting proposed landfill site from county's solid waste management plan because of potential threat to groundwater was an impermissible invasion on State's permit review authority. *Holmes v. Maryland Reclamation Assocs.*, 90 Md. App. 120, 600 A.2d 864, cert. dismissed sub nom. *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

*Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

**Final approval authority.** — State Department of Environment has final approval authority over county solid waste management plans. *Holmes v. Maryland Reclamation Assocs.*, 90 Md. App. 120, 600 A.2d 864, cert. dismissed sub nom. *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

**Quoted in** *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

**Stated in** *Howard County v. Davidsonville Civic & Potomac River Ass'ns*, 72 Md. App. 19, 527 A.2d 772, cert. denied, 311 Md. 286, 535 A.2d 1308 (1987).

**Cited in** *East v. Gilchrist*, 296 Md. 368, 463 A.2d 285 (1983); *Northwest Land Corp. v. Maryland Dep't of Env't*, 104 Md. App. 471, 656 A.2d 804 (1995).

§ 9-504. Same — Incorporation of subsidiary plans.

(a) *Required incorporation.* — To the extent that the incorporation will promote the public health, safety, and welfare, each county plan shall incorporate all or part of the subsidiary plans of each town, municipal corporation, sanitary district, privately owned facility, or local, State, or federal agency that has existing or planned development in that county.

(b) *Permitted incorporation.* — If the governing body of each county that is affected adopts a subsidiary plan for a multicounty area, the county may incorporate in its county plan all or part of the subsidiary plan. (1983, ch. 542, § 2.)

**University of Baltimore Law Review.** — For article, "Maryland's Growing Pains: The Need for State Regulation," see 16 U. Balt. L. Rev. 201 (1987).

**Stated in** *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

**Cited in** *State Dep't of Env't v. Showell*, 316 Md. 259, 558 A.2d 391 (1989); *Holmes v. Maryland Reclamation Assocs.*, 90 Md. App. 120, 600 A.2d 864, cert. dismissed sub nom. *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

§ 9-505. Same — Contents; recycling reductions; effect of increase in population; regional plans.

(a) *Required contents.* — In addition to the other requirements of this subtitle, each county plan shall:

(1) Provide for the orderly expansion and extension of the following systems in a manner consistent with all county and local comprehensive plans

prepared under § 3.05 of Article 66B, § 5 (X) of Article 25A, § 13 of Article 25B, and § 7-108 of Article 28 of the Code:

- (i) Community water supply systems and multiuse water supply systems;
- (ii) Community sewerage systems and multiuse sewerage systems; and
- (iii) Solid waste disposal systems and solid waste acceptance facilities;
- (2) Provide for the sizing and staging of facilities construction that is consistent with the county plan;
- (3) Show compliance with paragraphs (1) and (2) of this subsection by using graphic and tabular information;
- (4) Provide:
  - (i) For sewage treatment facilities that are adequate to prevent the discharge of any inadequately treated sewage or other liquid waste into any waters; or
  - (ii) Otherwise for safe and sanitary treatment of sewage and other liquid waste;
- (5) Provide for facilities that are adequate to treat, recover, or dispose of solid waste in a manner that is consistent with the laws of this State that relate to air pollution, water pollution, and land use;
- (6) Contain adequate information about:
  - (i) The existing sewage treatment capacity in each drainage basin or sewage treatment plant service area in the county;
  - (ii) The present level of use of sewage treatment plants in each drainage basin; and
  - (iii) Projections for use of sewage treatment plant capacity based on:
    1. Outstanding building permits and subdivision plats if the county has subdivision authority; or
    2. Zoning commitments if the county does not have subdivision authority;
- (7) Taking into account all relevant planning, zoning, population, engineering, and economic information and all State, regional, municipal, and local plans, describe, with all practical precision, those parts of the county that reasonably may be expected to be served in the next 10 years by any:
  - (i) Community water supply system;
  - (ii) Multiuse water supply system;
  - (iii) Community sewerage system;
  - (iv) Multiuse sewerage system;
  - (v) Solid waste disposal system; and
  - (vi) Solid waste acceptance facility;
- (8) Set procedures for identifying and acquiring, on a time schedule that conforms to the time requirement in paragraph (7) of this subsection, any rights-of-way or easements that are necessary for any:
  - (i) Community water supply system;
  - (ii) Multiuse water supply system;
  - (iii) Community sewerage system;
  - (iv) Solid waste disposal system; or
  - (v) Solid waste acceptance facility;

(9) Taking into account all relevant planning, zoning, population, engineering, and economic information and all State, regional, municipal, and local plans, describe, with all practical precision, any parts of the county in which it is not reasonably foreseeable to have service in the next 10 years by any:

- (i) Community water supply system;
- (ii) Multiuse water supply system;
- (iii) Community sewerage system;
- (iv) Multiuse sewerage system;
- (v) Solid waste disposal system; and
- (vi) Solid waste acceptance facility;

(10) Set a time schedule and a proposed method for financing the construction and operation of each planned:

- (i) Community water supply system;
- (ii) Multiuse water supply system;
- (iii) Community sewerage system;
- (iv) Solid waste disposal system; and
- (v) Solid waste acceptance facility;

(11) Set forth the estimated cost of constructing and operating each planned:

- (i) Community water supply system;
- (ii) Multiuse water supply system;
- (iii) Community sewerage system;
- (iv) Solid waste disposal system; and
- (v) Solid waste acceptance facility;

(12) Indicate:

- (i) Any source of supply from the waters of this State;
- (ii) The approximate amount of water to be withdrawn from the waters of this State; and
- (iii) The quantity and quality of waste to be discharged into the waters of this State;

(13) Describe, in accordance with the provisions of this subtitle, each area in the county where:

- (i) A community water supply system must be provided;
- (ii) A multiuse water supply system may be installed and used;
- (iii) An individual water supply system may be installed and used for an interim period until a planned community water supply system is available;
- (iv) An individual water supply system may be installed and used indefinitely;
- (v) A community sewerage system must be provided;
- (vi) A multiuse sewerage system may be installed and used;
- (vii) Except as provided in § 9-517 of this subtitle, an individual sewerage system may be installed and used for an interim period until a planned community sewerage system is available;
- (viii) An individual sewerage system may be installed and used indefinitely;

(ix) A community solid waste disposal system must be provided; or

(x) A community solid waste acceptance facility must be provided for use by residents of the described area during an interim period until a planned community solid waste disposal system is available;

(14) Except as provided in § 9-515 of this subtitle, provide for amendment or revision of the county plan at least once every 2 years in accordance with a schedule adopted by the Department;

(15) Designate an appropriate agency of the county to be responsible for creating a workable plan:

(i) To keep the environment of the county free of solid waste, including litter; and

(ii) To prevent scenic pollution of both public and private property in the county;

(16) By July 1, 1987, treat each publicly owned community sewerage system as a separate entity for fiscal purposes within the local operating agency;

(17) Document compliance with and report on actions taken and plans to enforce §§ 12-605 and 12-606 of the Business Occupations and Professions Article;

(18) For a county with a population greater than 150,000 according to the latest Office of Planning projections, include a recycling plan by July 1, 1990 that:

(i) Provides for a reduction through recycling of at least 20 percent of the county's solid waste stream by weight or submits adequate justification, including economic and other specific factors, as to why the 20 percent reduction cannot be met;

(ii) Provides for recycling of the solid waste stream to the extent practical and economically feasible, but in no event may less than a 10 percent reduction be submitted; and

(iii) Requires full implementation of the recycling plan by January 1, 1994; and

(19) For a county with a population less than 150,000 according to the latest Office of Planning projections, include a recycling plan by July 1, 1990 that:

(i) Provides for a reduction through recycling of at least 15 percent of the county's solid waste stream or submit adequate justification, including economic and other specific factors, as to why the 15 percent reduction cannot be met;

(ii) Provides for recycling of the solid waste stream to the extent practical and economically feasible, but in no event may less than a 5 percent reduction be submitted; and

(iii) Require full implementation of the recycling plan by January 1, 1994.

(b) *Use of prisoners.* — A plan created under subsection (a) (15) of this section may include the use of prisoners from the State correctional system or from county jails or detention centers.

(c) *Recycling reductions not maximum percentages.* — The recycling reductions of 20 percent and 15 percent provided in subsection (a) (18) and (19) of this section are not intended to be the maximum percentage that a county can achieve. A county that can practically and economically achieve a higher rate of recycling is encouraged to submit a recycling plan for a higher percentage.

(d) *Effect of increase in population.* — If a county with a population less than 150,000 increases to a population of above 150,000, the county shall have 2 years to revise the recycling plan to be consistent with the recycling goals under subsection (a) (18) of this section.

(e) *Regional recycling plans.* — (1) The governing bodies of 2 or more counties may adopt a regional recycling plan to comply with subsection (a) (18) or (19) of this section.

(2) A regional recycling plan which otherwise satisfies the requirements of this subtitle for each of the participating counties shall constitute the county recycling plan for each county which participates in the plan. (1983, ch. 542, § 2; 1984, chs. 255, 798; 1985, ch. 10, § 3; 1988, ch. 536; ch. 647, § 1; 1989, ch. 89; ch. 236, § 4; ch. 540, § 1; ch. 820; 1990, ch. 6, § 13.)

*University of Baltimore Law Review.* — For article, "Maryland's Growing Pains: The Need for State Regulation," see 16 U. Balt. L. Rev. 201 (1987).

*Permit review authority.* — County council's resolution deleting proposed landfill site from county's solid waste management plan because of potential threat to groundwater was an impermissible invasion on State's permit review authority. *Holmes v. Maryland Reclamation Assoc.*, 90 Md. App. 120, 600 A.2d 864,

cert. dismissed sub nom. *County Council v. Maryland Reclamation Assoc.*, 328 Md. 229, 814 A.2d 78 (1992).

*Stated in Ad + Soil, Inc. v. County Comm'rs*, 307 Md. 307, 513 A.2d 893 (1986).

*Cited in State Dep't of Env't v. Showell*, 316 Md. 259, 558 A.2d 391 (1989); *Gregory v. Board of County Comm'rs*, 89 Md. App. 636, 599 A.2d 469 (1991); *County Council v. Maryland Reclamation Assoc.*, 328 Md. 229, 614 A.2d 78 (1992).

**§ 9-506. Same — Review by official planning agencies; progress reports; submitting reports to Department.**

(a) *Review by official planning agencies.* — (1) Except as provided in paragraphs (2) and (3) of this subsection, before a county governing body may adopt a county plan or a revision or amendment to the county plan:

(i) The county governing body shall submit the county plan, revision, or amendment to each official planning agency that has jurisdiction in the county, including any comprehensive planning agency with areawide jurisdiction, for review and comment within a 30-day period for consistency with planning programs for the area; and

(ii) The county planning agency shall certify that the plan, revision, or amendment is consistent with the county comprehensive plan prepared under Article 66B, § 3.05; Article 25A, § 5 (X); or Article 25B, § 13 of the Code.

(2) In Montgomery County and Prince George's County, the review and comments of the Maryland-National Capital Park and Planning Commission in accordance with § 9-516 of this subtitle constitute full compliance with the requirement for review by an official planning agency under this subsection.

(3) (i) This paragraph applies only in St. Mary's County.

(ii) A new public sewerage system or an expansion of an existing public sewerage system may not be allowed in St. Mary's County unless the adoption, revision, or amendment to the county plan containing the public sewerage system:

1. Is reviewed by the St. Mary's County Planning Commission in conformity with the provisions of this paragraph; and

2. Is approved by the Board of County Commissioners.

(iii) The County Commissioners may not approve the adoption, revision, or amendment of the county plan that contains a new public sewerage system or an expansion of an existing public sewerage system until the Planning Commission:

1. Conducts a complete review of the county plan; and

2. Holds at least one public hearing on the county plan.

(iv) In its review and recommendation to the County Commissioners, the St. Mary's County Planning Commission shall consider and make specific findings of fact with respect to the following objectives and policies of the county plan that contains a new public sewerage system or an expansion of an existing public sewerage system:

1. Compatibility with the Comprehensive Land Use Plan;

2. Planning and zoning issues;

3. Population estimates;

4. Engineering;

5. Economics;

6. State, regional, and municipal plans; and

7. Comments received from other agencies in the county.

(b) *Submitting reports to Department — In general.* — Each county governing body shall submit to the Department:

(1) Progress reports on the development of its county plan; and

(2) A report of its review conducted at least every 2 years, including any revision or amendment of the county plan that has been adopted.

(c) *Same — Notice and other administrative actions for failure to submit certain reports.* — (1) If the Secretary determines that a county governing body has failed to submit a timely and adequate report of its review of its county plan or any required revision or amendment of its county plan to the Department, the Secretary shall give the county governing body a written notice of:

(i) The county's failure to submit a report; or

(ii) Any specific inadequacy in the county's plan.

(2) If within 90 days of this notice a county does not submit its report or an adequate revision or amendment of its plan to the Department, the Secretary:

(i) May not issue any permit to install or alter a water supply system, sewerage system, or solid waste disposal system in that county under § 9-204 of this title;

(ii) Shall give the county notice of its right to administrative review by the Secretary under this subsection; and

(iii) Shall give the county notice of its right to appeal the Secretary's decision to the Board of Review. (1983, ch. 542, § 2; 1985, ch. 224; 1987, ch. 612, § 2; 1991, ch. 212.)

**University of Baltimore Law Review.** — For article, "Maryland's Growing Pains: The Need for State Regulation," see 16 U. Balt. L. Rev. 201 (1987).

**Permit review authority.** — County council's resolution deleting proposed landfill site from county's solid waste management plan because of potential threat to groundwater was an impermissible invasion on State's permit review authority. *Holmes v. Maryland Reclamation Assocs.*, 90 Md. App. 120, 600 A.2d 864, cert. dismissed sub nom. County Council v.

*Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

**Final approval authority.** — State Department of Environment has final approval authority over county solid waste management plans. *Holmes v. Maryland Reclamation Assocs.*, 90 Md. App. 120, 600 A.2d 864, cert. dismissed sub nom. County Council v. Maryland Reclamation Assocs., 328 Md. 229, 614 A.2d 78 (1992).

**Stated in Ad + Soil, Inc. v. County Comm'rs.**, 307 Md. 307, 513 A.2d 893 (1986).

**§ 9-507. Same — Approval by Department; use of county plans after approval by county governing body.**

(a) *Powers of Department and Secretary.* — When a county governing body submits its proposed county plan or a proposed revision or amendment of its county plan to the Department, the Department may:

(1) Approve the proposal;

(2) Disapprove the proposal;

(3) If the part approved includes all of the required elements of a county plan, approve the proposal in part and disapprove it in part; or

(4) Modify or take other appropriate action on the proposal.

(b) *Required consultation by Department.* — Before the Department approves or disapproves, in whole or in part, a proposed county plan or a proposed revision or amendment of a county plan, the Department shall submit the proposal:

(1) To the Department of Natural Resources for advice on natural resources matters;

(2) To the Office of Planning for advice on the consistency of the proposal with the local master plan and other appropriate matters; and

(3) To the Department of Agriculture for advice on the impact of water and sewerage service and solid waste facilities on productive or potentially productive agricultural land.

(c) *Review period.* — (1) Except as otherwise provided in this subsection, the Department shall approve, disapprove, or partially approve and partially disapprove each proposed county plan or proposed revision or amendment to a county plan within 90 days after the proposal is submitted to the Department.

(2) For good cause and after notice to the county involved, the Department may extend the 90-day review period of paragraph (1) of this subsection for an additional 90 days.

(d) *Failure of Department to act within review period.* — If the Department does not disapprove, in whole or in part, a proposed county plan or a proposed

revision or amendment of a county plan within the review period provided in subsection (c) of this section, the proposal is approved.

(e) *Effect of county plans after adoption by county governing body.* —

(1) Before the Department takes any action under subsection (a) of this section, a county may use its proposed county plan or proposed revision or amendment of its county plan at the county's own risk, if the county governing body has adopted the proposed county plan, revision, or amendment.

(2) After the county governing body adopts the proposed county plan, a person shall follow the provisions of that plan except to the extent that the Department modifies or disapproves that plan. (1983, ch. 542, § 2; 1989, ch. 540, § 1.)

University of Baltimore Law Review. — For article, "Maryland's Growing Pains: The Need for State Regulation," see 16 U. Balt. L. Rev. 201 (1987).

Stated in *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

Cited in *Holmes v. Maryland Reclamation Assocs.*, 90 Md. App. 120, 600 A.2d 864, cert. dismissed sub nom. *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

#### § 9-508. Same — Notice of departmental disapproval; reconsideration of disapproval.

(a) *Notice of departmental disapproval.* — If the Department disapproves, in whole or in part, a proposed county plan or a proposed revision or amendment of a county plan, the Department shall give the county a written notice of disapproval that states the reasons for disapproval.

(b) *Reconsideration of disapproval of proposed county plan.* — At any time up to 6 months after a county receives the notice of disapproval, the county governing body may ask the Secretary to reconsider the disapproval in accordance with the rules and regulations of the Department. (1983, ch. 542, § 2.)

University of Baltimore Law Review. — For article, "Maryland's Growing Pains: The Need for State Regulation," see 16 U. Balt. L. Rev. 201 (1987).

#### § 9-509. Same — Cost of preparing county plans.

As provided in § 9-218 of this title, a county may finance in part the cost of preparing its county plan or any revision or amendment of its county plan. (1983, ch. 542, § 2; 1986, ch. 5, § 1; 1987, ch. 612, § 2.)

University of Baltimore Law Review. — For article, "Maryland's Growing Pains: The Need for State Regulation," see 16 U. Balt. L. Rev. 201 (1987).

**§ 9-510. Miscellaneous powers and duties of Department.**

(a) *Powers.* — In addition to the powers set forth elsewhere in this subtitle, the Department may:

(1) Conduct surveys and research to carry out the provisions of this subtitle; and

(2) Specify the location for any sewage treatment facility discharge point that is included in any county plan.

(b) *Duties.* — In addition to the duties set forth elsewhere in this subtitle, the Department shall adopt rules and regulations:

(1) To carry out the provisions of this subtitle;

(2) To control, limit, or prohibit the installation and use of:

(i) Water supply systems; and

(ii) Sewerage systems;

(3) To require that, before installation of individual water supply systems or individual sewerage systems, consideration be given to:

(i) Present and future population density;

(ii) Size of parcels;

(iii) Contour of the land;

(iv) Porosity and absorbency of the soil;

(v) Ground water conditions;

(vi) Availability of water from unpolluted aquifers;

(vii) Type of construction of community water supply systems;

(viii) Type of construction of community sewerage systems;

(ix) Size of the proposed development; and

(x) Any other pertinent factors;

(4) To require that, giving consideration to the factors in item (3) of this subsection, areas be served by community facilities if the Department finds them to be reasonably necessary:

(i) By installation of the community water supply system, community sewerage system, or solid waste disposal system; and

(ii) By connection of all premises to or service to all premises by the community water supply system, community sewerage system, or solid waste disposal system;

(5) To require that community water supply systems, community sewerage systems, and solid waste disposal systems be constructed to allow the connection of those systems to a larger system, if that larger system becomes available;

(6) To allow a person to install an individual water supply system or an individual sewerage system in any area where a community water supply system or a community sewerage system is not available or required to be installed in the area if:

(i) The Department finds that the individual system is adequate and safe for use before a community system is scheduled to be available in the area; and

(ii) The individual system is constructed in the most economical and convenient way to permit connection to a community system in the area, and the person guarantees the connection to a community system:

1. When the county governing body where the area is located sets a time; and

2. In accordance with this subtitle, any rules and regulations adopted under this subtitle, and any other State law or county requirement by:

A. Posting a bond to secure actual construction and installation of the systems with satisfactory surety for the benefit of the county governing body; or

B. Making any other arrangement that the Department considers necessary and adequate to carry out the provisions of this subtitle;

(7) If a solid waste disposal system is not available or required to be installed in any area as provided in item (4) of this subsection, to allow a person to provide a solid waste acceptance facility in the area without a systematic collection and transportation system;

(8) To require that, before issuance of a permit for construction of a community or multiuse sewerage system, a financial management plan sufficient to ensure the dependable and safe operation of the system has been adopted within the county plan and approved by the Department; and

(9) To require that:

(i) Before issuance of a permit for construction of a privately owned community water supply system that will serve 4 or more residential lots or 2 or more other lots, the applicant has proposed a financial management plan sufficient to ensure the dependable and safe operation of the system, and the plan has been approved by the Department; and

(ii) The applicant shall comply with the plan as approved by the Department. (1983, ch. 542, § 2; 1984, chs. 255, 798; 1992, ch. 295.)

**University of Baltimore Law Review.** — For comment concerning federal, State and local regulation of hazardous and nonhazardous waste management, see 17 U. Balt. L. Rev. 114 (1987).

Cited in *Holmes v. Maryland Reclamation Assocs.*, 90 Md. App. 120, 600 A.2d 864, cert. dismissed sub nom. *County Council v. Maryland Reclamation Assocs.*, 328 Md. 229, 614 A.2d 78 (1992).

### § 9-511. Conformance to county plans required — In general.

Unless they conform to the county plan or revision or amendment of the county plan, the following systems and facilities may not be installed or extended:

- (1) A water supply system;
- (2) A sewerage system;
- (3) A solid waste disposal system; and
- (4) A solid waste acceptance facility. (1983, ch. 542, § 2.)

**Applicability to discharge permit process.** — Although this section may require that an installation and/or extension permit issued pursuant to § 9-204 of this article comply with the county water and sewer plan, it is not

applicable to the discharge permit process contemplated by § 9-323 of this article. *Northwest Land Corp. v. Maryland Dep't of Env't.*, 104 Md. App. 471, 656 A.2d 804 (1995).

**§ 9-512. Same — Building permits; subdivision plats.**

(a) *"Building permit" defined.* — In this section, "building permit" means any permit that allows any building construction and is issued by any State or local authority.

(b) *Building permits — Conformity with county plan; issuance of building permits.* — (1) A State or local authority may not issue a building permit unless:

(i) The water supply system, sewerage system, or solid waste acceptance facility is adequate to serve the proposed construction, taking into account all existing and approved developments in the service area;

(ii) Any water supply system, sewerage system, or solid waste acceptance facility described in the application will not overload any present facility for conveying, pumping, storing, or treating water, sewage, or solid waste;

(iii) Except for essential public services, after January 1, 1992, the county in which the proposed construction is located has an approved recycling plan under § 9-505 of this subtitle and § 9-1703 of this title; and

(iv) Except for essential public services, after January 1, 1994, the county in which the proposed construction is located has met the recycling reductions submitted in an approved recycling plan under § 9-505 of this subtitle and § 9-1703 of this title.

(2) A water supply system, sewerage system, or solid waste acceptance facility referenced in a subdivision plat shall conform to the applicable county plan.

(3) If an allocation of water or wastewater is needed, and before a State or local authority may issue a building permit, the State shall:

(i) Have an allocation of water and wastewater from the county whose facilities are affected by the proposed building construction; or

(ii) Show evidence of being able to provide an acceptable on-site sewage disposal system or well system until an allocation becomes available, or on a permanent basis if the State elects.

(4) The county shall timely review any State request for an allocation of water or wastewater, and report its findings to the State within 45 days from the date of such request.

(5) The Department may grant a waiver from the sanctions of subsection (b) (1) (iii) and (iv) of this section if the county demonstrates to the satisfaction of the Secretary that it cannot achieve the recycling goal due to unforeseen or emergency circumstances beyond the county's control.

(6) (i) In the event that sanctions are imposed under this subsection, and the county submits an application for removing the sanctions, the Secretary shall promptly approve or deny the application.

(ii) In the event that the Secretary has neither approved nor denied the application within 30 days of its submission, the application shall be deemed approved and the sanctions shall be removed.

(c) *Same — Applications.* — To apply for a building permit, an applicant shall:

(1) Submit an application to a State or local authority on the form that the authority requires; and

(2) Provide any information that the authority reasonably requires to comply with subsection (b) of this section.

(d) *Subdivision plats — Conformity with county plan; recording or approving subdivision plats.* — (1) A State or local authority may not record or approve a subdivision plat unless any approved facility for conveying, pumping, storing, or treating water, sewage, or solid waste to serve the proposed development would be:

(i) Completed in time to serve the proposed development; and

(ii) Adequate to serve the proposed development, once completed, without overloading any water supply system, sewerage system, or solid waste acceptance facility.

(2) Each water supply system, sewerage system, and solid waste acceptance facility in a subdivision shall:

(i) Conform to the applicable county plan; and

(ii) Take into consideration all present and approved subdivision plats and building permits in the service area.

(3) If an allocation of water or wastewater is needed, and before a State or local authority may record or approve a subdivision plat, the State shall:

(i) Have an allocation of water and wastewater from the county whose facilities are affected by the proposed development; or

(ii) Show evidence of being able to provide an acceptable on-site sewage disposal system or well system until an allocation becomes available, or on a permanent basis if the State elects.

(4) The county shall timely review any State request for an allocation of water or wastewater, and report its findings to the State within 45 days from the date of such request.

(e) *Same — Applications.* — To apply for approval of a subdivision plat, an applicant shall:

(1) Submit an application to the appropriate State or local authority on the form that the authority requires; and

(2) Provide any information that the authority reasonably requires to comply with subsection (d) of this section. (1983, ch. 542, § 2; 1984, ch. 762; 1988, ch. 536.)

*University of Baltimore Law Review.* — "Need for State Regulation," see 16 U. Balt. L. Rev. 201 (1987). For article, "Maryland's Growing Pains: The

### § 9-513. Exceptions to county plan in Baltimore County and Carroll County.

In Baltimore County or Carroll County, the county approving authority may grant an exception to the county plan that allows a person to install an individual water supply system or an individual sewerage system for an individual residence if the Secretary or a designee of the Secretary:

(1) Finds that this exception to the county plan is justified and necessary to alleviate extreme hardship; and

(2) Approves the exception to the county plan. (1983, ch. 542, § 2.)

### § 9-514. Exceptions to county plan in Harford County.

(a) *Incorporation of subsidiary plans.* — (1) If the Harford County governing body does not approve and incorporate in its county plan all or part of the subsidiary plans of each town, municipal corporation, and sanitary district in Harford County, the Harford County governing body shall send to the Department a written notice of:

- (i) This action; and
- (ii) The specific reasons for this action.

(2) If the Harford County governing body or the governing body of a town, municipal corporation, or sanitary district in Harford County requests, the Department may:

- (i) Arbitrate the dispute; and
- (ii) Decide whether to approve and incorporate all or part of this subsidiary plan in the Harford County plan.

(b) *Prerequisites to issuance of building permits and zoning permits.* — In Harford County, except as provided in subsection (c) of this section, a building permit or a zoning permit may not be issued for a new subdivision in an area where a community water supply system or a community sewerage system is scheduled to be built within 10 years under the county plan, unless there is a county approved water supply system and a county approved sewerage system for the subdivision.

(c) *Waiver in Harford County.* — On their unanimous consent, the Harford County Health Officer, the Director of Planning and Zoning for Harford County, and the Director of Public Works for Harford County may recommend a waiver to the County Executive for his approval from the provisions of subsection (b) of this section if:

- (1) Any lot created is a residential lot with a minimum size of 60,000 square feet;
- (2) A septic reserve area with a minimum size of 20,000 square feet is established and recorded on the final plan;
- (3) The subdivision site is shown in the comprehensive water and sewer plan for the 5-year to 10-year construction category;
- (4) The responsible agencies conclude that the failure to install an approved sewerage collection system at the subject time on the subject property is not detrimental to the overall county water and sewer system; and
- (5) The subdivision site and all the lots in the subdivision site meet other local guidelines to include applicable health, environmental, and physical characteristics including, but not limited to:
  - (i) Minimum lot width at building line of 150 feet;
  - (ii) Maximum slope in septic reserve area of 15 percent;
  - (iii) Percolation rate between 2 and 20 minutes; and
  - (iv) Soils within septic reserve areas with slight to moderate limitations for homes with septic systems.

(d) *Same — Inclusion of site or lot granted waiver in county plan.* — Before adopting any amendment or revision to the county water and sewer plan, the Harford County governing body shall determine whether a subdivision site or lot that has been granted a waiver under subsection (c) of this section shall be included in the amended or revised county plan.

(e) *Consideration of population density estimates.* — In the planning for water supply systems, sewerage systems, and solid waste disposal systems in its county plan, the Harford County governing body shall consider estimates of population density for Harford County. (1983, ch. 542, § 2; 1986, ch. 250.)

**§ 9-515. Special provisions for county plan in Montgomery County and Prince George's County — Preparation; revision or amendment; approval; submission to Department; annual review.**

(a) *Scope of section.* — This section applies only in Montgomery County and Prince George's County.

(b) *Objectives and policies of county plan.* — The county council of each county shall at least once every 3 years:

- (1) Prepare a county plan;
- (2) Prepare, review, and revise, as the county council considers necessary, a separate statement of objectives and policies to be achieved and implemented by the county plan in the county; and
- (3) Consider the following in the statements of objectives and policies of the county plans:

- (i) Planning;
- (ii) Zoning;
- (iii) Population estimates;
- (iv) Engineering;
- (v) Economics; and
- (vi) State, regional, municipal, local, and area plans.

(c) *Drafts and annual revisions or amendments of county plans.* — To achieve the objectives and policies set by the county council, the county executive of each county shall:

- (1) Prepare a preliminary draft of the county plan;
- (2) From time to time review and, as the county executive or county council considers necessary, prepare amendments to the county plan including revisions to service area category designations; and
- (3) Submit to the county council for the county council's consideration, revision, modification, comment, and approval:
  - (i) The draft; and
  - (ii) Any revision or amendment to the draft.

(d) *Proposed county plans — Preparation and submission by county executive.* — The county executive of each county shall prepare and submit to the county council:

- (1) A final draft of the county plan to conform to the action of the county council in approving the draft; and

(2) A final revision or amendment to the county plan that takes into consideration any significant change in the intervening planning or development in the county.

(e) *Same — Submission to Washington Suburban Sanitary Commission and Maryland-National Capital Park and Planning Commission.* — At least 30 days before the date set for a public hearing under subsection (f) of this section, the county council of each county shall submit its final draft or the final draft of any revision or amendment of the county plan for recommendation to:

- (1) The Washington Suburban Sanitary Commission; and
- (2) The Maryland-National Capital Park and Planning Commission.

(f) *Same — Public hearing; notice.* — The county council of each county shall:

- (1) Hold a public hearing on:
  - (i) Its final draft of the county plan; and
  - (ii) The final draft of any revision or amendment to the county plan;

and

(2) Publish a notice of the time and place of the public hearing at least 10 days before the hearing in a newspaper of general circulation in the county.

(g) *Same — Actions by the county councils; when action is final; review and recommendations by county executives.* — (1) After the public hearing in each county, the county council shall review, may amend as the county council considers necessary, and shall adopt the county plan or the revision or amendment to the county plan.

(2) The adoption of the county plan or a revision or amendment of the county plan by the county council of the county is not final until 10 days after the action adopting it.

(3) During the 10-day period provided by paragraph (2) of this subsection, the county executive may:

- (i) Review the county plan or any revision or amendment to the county plan; and
- (ii) Recommend for the consideration of the county council whatever change to the county plan or any revision or amendment to the county plan that the county executive considers necessary or desirable.

(h) *Submission of county plan to Department.* — After the time periods required for adoption under this section, the county council of each county shall submit to the Department, as required by § 9-506 (b) and (c) of this subtitle:

- (1) The county plan; or
- (2) Any revision or amendment to the county plan. (1983, ch. 542, § 2; 1988, ch. 101; 1994, ch. 661, § 2.)

EXPLANATION

Section 9-503 (b) of the Environment Article requires counties to conduct at least a biennial review of their ten-year plans concerning water and sewage systems and solid waste facilities. Staff recommends this requirement be modified to require review at least every three years. The Department of the Environment has agreed with this change: the triennial re-

view would be consistent with the review of several other programs under the Department of the Environment. Section 9-515 (b) of the

Environment Article is modified for consistency.

**Effect of amendments.** — The 1994 amendment, effective Oct. 1, 1994, substituted "3 years" for "2 years" in the introductory language of (b).

**Editor's note.** — Section 3, ch. 661, Acts

1994, provides that "the explanation notes contained in this Act are not law and may not be considered to have been enacted as part of this Act. The explanation notes are included for information only."

**§ 9-516. Same — Information and assistance from Washington Suburban Sanitary Commission and Maryland-National Capital Park and Planning Commission.**

(a) *Scope of section.* — This section applies only in Montgomery County and Prince George's County.

(b) *In general.* — The Washington Suburban Sanitary Commission and the Maryland-National Capital Park and Planning Commission shall provide any information and assistance requested by the county council or the county executive for preparing, reviewing, adopting, revising, or amending a county plan.

(c) *Procedures to accomplish purposes of this section.* — The county council and county executive of each county, the Washington Suburban Sanitary Commission, and the Maryland-National Capital Park and Planning Commission shall adopt procedures for:

- (1) Requesting information or assistance under this section;
- (2) Responding to the request; and
- (3) Setting a reasonable timetable for response to a request.

(d) *What the Washington Suburban Sanitary Commission shall provide.* — The Washington Suburban Sanitary Commission shall provide any requested information about the comprehensive plan for water supply systems and sewerage systems in each county as to:

- (1) Engineering;
- (2) Design;
- (3) Present and future capacities;
- (4) Available service projections;
- (5) Fiscal elements; and
- (6) Annual revisions of this information.

(e) *What the Maryland-National Capital Park and Planning Commission shall provide.* — The Maryland-National Capital Park and Planning Commission shall provide any requested information to each county as to:

- (1) Population;
- (2) Growth projections;
- (3) Planning factors; and
- (4) Other developmental standards. (1983, ch. 542, § 2.)

**§ 9-517. Same — Individual sewerage systems.**

In Montgomery County or Prince George's County, the comprehensive plan for water supply systems and sewerage systems may allow the installation and use of an individual sewerage system for an interim period until the necessary sewerage transmission and treatment capacity in the area is available to provide adequate community sewerage service if:

- (1) A community sewerage system otherwise is required in the area; but
- (2) Access to a community sewerage system is prohibited by an order of:
  - (i) The Department;
  - (ii) Montgomery County;
  - (iii) Prince George's County; or
  - (iv) The Washington Suburban Sanitary Commission. (1983, ch. 542,

§ 2.)

**§ 9-518. Same — Individual septic systems.**

(a) *Definitions.* — (1) In this section the following words have the meanings indicated.

(2) "Commission" means the Washington Suburban Sanitary Commission.

(3) "Health officer" means the health officer for:

- (i) Montgomery County; or
- (ii) Prince George's County.

(4) "Issuing authority" means any 1 of the following authorities that is authorized to issue or approve a permit:

- (i) The Department;
- (ii) The health officer;
- (iii) The Montgomery County Health Department; or
- (iv) The Prince George's County Health Department.

(5) "Permit" means a permit issued or approved by the issuing authority for Montgomery County or Prince George's County to install, connect to, or use an individual septic system.

(b) *Scope of section.* — This section applies only in Montgomery County and Prince George's County.

(c) *Permit required.* — In each county, a person shall have a permit from an issuing authority before the person may install, connect to, or use an individual septic system.

(d) *Applications for permits — In general.* — An applicant for a permit shall submit an application to the issuing authority on the form that the issuing authority requires.

(e) *Same — Submission to Commission required; exceptions; multiple applications in area or subdivision.* — (1) The health officer shall:

- (i) Submit each application for a permit to the Commission; and
- (ii) Notify the Commission if there is more than 1 application for a permit in an area or subdivision of each county when:

1. The original permit application is submitted to the Commission;

or

2. This fact reasonably becomes known to the health officer.

(2) This subsection does not apply to an area of each county in which a community sewerage system is not planned within 10 years under the county's comprehensive plan for sewerage systems.

(f) *Same — Review and comment on applications; combining applications for review and comment.* — (1) Within 30 days after the Commission receives an application under subsection (e) (1) of this section, the Commission shall review the application and comment to the health officer, in writing, on the application.

(2) If there is more than 1 application for a permit in an area or subdivision of each county, the Commission may group these applications together for purposes of review and comment.

(3) In its review and comments under this subsection, the Commission shall include:

(i) A determination of the location of the nearest collection line of a community sewerage system;

(ii) The capacity, feasibility, cost, and engineering conditions or requirements for an extension of this collection line; and

(iii) If available, an estimate of the time required for this extension.

(g) *Issuance of permit; failure of Commission to act within review period.* — (1) The issuing authority shall issue a permit to any applicant who meets the requirements of this subtitle.

(2) If the Commission does not respond as required by subsection (f) of this section, and if the permit otherwise complies with this section, the local health officer may issue the permit.

(h) *Contents of permit; rules and regulations of issuing authority.* — (1) The issuing authority shall include on each permit that the issuing authority issues a requirement that the holder of a permit shall notify, in writing, any buyer or lessee of the permitted property:

(i) That the permitted property is served by an individual septic system;

(ii) Of the conditions, estimate of time, and other factors that concern the subsequent extension of a community sewerage system to the permitted property; and

(iii) If applicable, that the Commission did not review and comment on the application for a permit because the permitted property was in an area of the county in which at the time of the application a community sewerage system was not planned within 10 years under the county's comprehensive plan for sewerage systems.

(2) The health officer:

(i) Shall adopt rules and regulations to carry out the provisions of this subsection; and

(ii) May require the holder of a permit to record the information required by paragraph (1) of this subsection in the land records of the county in which the permitted property is located, (1983, ch. 542, § 2; 1984, ch. 255.)

§ 9-519

ANNOTATED CODE OF MARYLAND

§ 9-519. Installation of sanitary sewer line.

Repealed by Acts 1991, ch. 547, § 3, effective October 1, 1991.

*Cross references.* — For provisions similar to those of the repealed section, see § 5-606 of the Labor and Employment Article.

§ 9-520.

Reserved.

§ 9-521. Penalties.

(a) *In general.* — A State or local authority that violates any provisions of § 9-512 (b) or (d) of this subtitle is liable for a civil penalty not exceeding \$100 to be collected in a civil action brought by the Department in the circuit court for any county. Each day a violation continues is a separate violation under this section.

(b) *No bar to other relief or penalty.* — A civil penalty imposed under this section does not bar any other applicable relief or penalty.

(c) *Violation of financial management plan provisions.* — (1) An applicant who violates § 9-510 (b) (9) of this subtitle, or who violates any regulation adopted under § 9-510 (b) (9) of this subtitle, is liable for a civil penalty not to exceed \$500 per violation to be collected in a civil action filed by the Department in the circuit court for any county.

(2) Each day a violation continues under this subsection constitutes a separate violation of this subsection. (1983, ch. 542, § 2; 1992, ch. 295; 1993, ch. 5, § 1.)

*Cross references.* — See notes to § 9-501 of this article.

*Subtitle 6. Sanitary Commissions.*

Part I. Definitions; General Provisions.

§ 9-601. Definitions.

(a) *In general.* — In this subtitle the following words have the meanings indicated.

(b) *Bond.* — “Bond” means any bond, note, or other evidence of indebtedness or obligation that a district is authorized to issue under this subtitle.

(c) *Cost.* — (1) “Cost”, as applied to any project, includes the cost of and all expenses incident to the construction, acquisition, improvement, or placement in operation of a project, including the cost and expenses of:

(i) The purchase price of a project;

(ii) The cost of acquiring all the capital stock of a corporation that owned a project;

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***APPENDIX B***

***Annotated Code of Maryland  
Title 26, Subtitle 03***



**Title 26**  
**DEPARTMENT OF THE ENVIRONMENT**  
**Subtitle 03 WATER SUPPLY, SEWERAGE, SOLID**  
**WASTE, AND POLLUTION CONTROL PLANNING**  
**AND FUNDING**

**Chapter 01 Planning Water Supply and Sewerage Systems**

Authority: Environment Article, §§9-218, 9-505, 9-506, and 9-510,  
Annotated Code of Maryland

**Preface**

It is the intent of these regulations to require the governing body of each county and Baltimore City to develop water supply and sewerage systems so as to be consistent with county comprehensive planning.

**.01 Definitions.**

A. "Approving authority" means one or more officials, agents, or agencies of local government designated by the local governing body or specified by other provisions of Environment Article, Title 9, Subtitle 5, to take certain actions as a part of implementing these regulations.

B. "Community sewerage system" means any system, whether publicly or privately owned, serving two or more individual lots, for the collection and disposal of sewerage or industrial wastes of a liquid nature, including various devices for the treatment of the sewage and industrial wastes.

C. "Community water supply system" means a source of water and a distribution system, including treatment and storage facilities, whether publicly or privately owned, serving two or more individual lots.

D. "County plan" means a comprehensive plan for the provision of adequate water supply systems and sewerage systems, whether publicly or privately owned, throughout the county and all amendments and revisions to it.

E. "Department" means the Department of the Environment.

F. "Existing service area" means that area that is currently served.

G. "Final planning stages" means a work or works of community water supply and community sewerage system for which contract plans and specifications have been completed.

H. "Financial management plan" means, for:

(1) Publicly owned community sewerage systems, a portion of the county water and sewerage plan, as described in Regulation .08B, which demonstrates to the Department's satisfaction that adequate fiscal resources will be available to support the satisfactory operation and maintenance of each system in the county to meet existing and future needs;

(2) Other sewerage systems or extensions, a package of information for each system, as specified in COMAR 26.03.02.02J, which demonstrates to the Department's satisfaction that adequate fiscal resources will be available to support the satisfactory operation and maintenance of the system to meet existing and future needs.

I. "Five- or six-year period" means that period, depending upon the county's capital improvement program, 5 or 6 years following the date of adoption of the plan, its amendment, or revision by the county.

J. "Immediate priority" means a work or works of community water supply and community sewerage system for which the beginning of construction is scheduled to start within 2 years following the date of adoption of the plan, its amendments, and its revision.

K. "Individual sewerage system" means a single system of sewers and piping, treatment tanks or other facilities serving only a single lot and disposing of sewage or individual wastes of a liquid nature, in whole or in part, on or in the soil of the property, into any waters of this State or by other methods.

L. "Individual water supply system" means a single system of piping, pumps, tanks, or other facilities utilizing a source of ground or surface water to supply only a single lot.

M. "Maintenance expense" means those expenses for labor, materials, utilities, and other items necessary to preserve the facility for its designed service life. Equipment or tools under \$200 should be included in this amount.

N. "Marina" means a dock, wharf, or basin providing mooring for boats which contain on-board toilet facilities, operated under public or private ownership, either free or on a fee basis, for the convenience of the public or club membership.

O. "Multi-used sewerage system" means a single system serving a single lot, whether owned or operated by an individual or group of individuals under private or collective ownership and serving a group of individuals for the collection and disposal of sewage or industrial wastes of a liquid nature, including various devices for the treatment of sewage and industrial wastes having a treatment capacity in excess of 5,000 GPD.

P. "Multi-use water supply system" means a single system of piping, pumps, tanks, or other facilities utilizing a source of ground or surface water to supply a group of individuals on a single lot and having a capacity in excess of 1,500 GPD.

Q. "Non-point source" means pollution originating from land run-off where no specific outfall can be identified.

R. "Operation expense" means those expenses such as labor, utilities, supplies, contractual services, training, and insurance, necessary to operate the treatment plant during its designed service life so as to achieve the capacity and performance standards for which it was designed, constructed, and permitted.

S. "Sewerage service area" is 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.

T. "Ten-year period" means that period of the 6 or 7 through 10 years following the date of adoption of the plan, its amendment, or its revision by the county.

U. "Under construction" means a work or works of community water supply and community sewerage systems where actual work is progressing or where a notice to proceed with a contract for this work has been let as of the adoption date of the plan, its amendment or revision.

V. "Water service area" means 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.

#### **.02 General Provisions.**

A. Objective of County Plan. The objective of the county plan is to develop the water supply and sewerage systems in a way consistent with county comprehensive planning. The plan shall be used as a tool to implement the county development policy so that:

(1) An ample supply of water may be collected, treated, and delivered to points of use;

(2) Waste water may be collected and delivered to points best suited for waste treatment and disposal or for re-use;

(3) Waste water can be either treated before any discharge to State waters, in compliance with applicable water quality standards and discharge permit conditions, or disposed of to minimize most effectively adverse effects on legitimate water uses. Consideration shall be given to related aspects of land use, zoning, population estimates, engineering and economic factors, and all governmental, industrial, and other plans for privately owned facilities regarding water and sewerage at any level.

B. County Government Required to Develop Plans. The county governing body is the coordinating agency required to develop county water and sewerage plans. These plans shall incorporate all or part of subsidiary plans of the towns, municipal corporations, sanitary districts, privately owned facilities, and local, State, and federal agencies having existing, planned, or programmed development within the county. The governing body shall give notice to these officials and entities and they shall be provided an opportunity to be heard.

C. Annual Review of Plan. The county plan shall be reviewed by the governing body at least annually. A report of the review, together with

(See page 52)

amendments to or revisions of the plan as adopted by the governing body, shall be submitted to the Department.

D. **Comprehensive Planning Agencies Shall Be Consulted.** Every official planning agency having any immediate jurisdiction in a county, including those comprehensive planning agencies with multi-county or regional jurisdiction, shall be consulted by the governing body in connection with the preparation, amendment, or revision of county plans. A statement that the above agencies have been consulted shall be attached.

E. **Public Hearings on Amendments Required.** A public hearing shall be held on all amendments and revisions to the county water and sewerage plan. The Department shall receive prior written notice of all public hearings on plans, amendments, or revisions.

F. **Sanitary Facilities Fund.** The planning part of the Sanitary Facilities Fund established under Environment Article, §9-218, Annotated Code of Maryland, shall be available to the Department to finance planning for water and sewerage facilities including the preparation, amendments, and revisions of county plans. The Department is authorized to use funds appropriated in the program of the annual State operating budget, which provides for general local health services for this purpose. When so used, the proportion of State, federal, and local funds, respectively, shall be that specified for each subdivision's financing of minimum health services at basic matching rates. The planning for water and sewerage facilities to be financed in this manner may be financed jointly by, or under the joint authority of, the Department and any county or Baltimore City or the Washington Suburban Sanitary Commission. The funds to be so used shall appear in the local health department's budget for the fiscal year in which their use is anticipated. The percentage contribution may not be affected by any other State or federal funds received by the subdivision for the same planning unless the total grants exceed the actual cost of the plan, in which case the contribution shall be reduced accordingly.

### **.03 Submission of County Plans.**

A. The governing body of each county and Baltimore City shall develop and submit annual amendments or revisions to the county water and sewerage plan as required by Environment Article, §§9-511—9-513, Annotated Code of Maryland. The steps listed below shall be followed in sequence:

(1) Submit the plan in preliminary form, with all attachments, to the appropriate multi-county or regional comprehensive planning agency, the Department of State Planning, the Department of Natural Resources, and the Department of the Environment. The preliminary form shall be a rough draft of the entire plan and shall include maps in a complete presentation.

(2) Receive and consider comments from the Department, which will act as the coordinator for comments from the agencies sent a preliminary plan for review according to §A(1), above.

(3) A public hearing will be held.

(4) The plan shall then be formally adopted.

(5) After adoption, the plan will be prepared in final format as set forth in Regulation .04 of this chapter.

(6) Four copies of the plan will be submitted in final form to the Department for review. One copy shall be forwarded to the Department of Natural Resources and one to the Department of State Planning.

(7) The Department shall, within 6 months after submission, approve, disapprove, or approve in part the finally submitted county plan, its amendments or revisions. When disapproved in whole or part, the governing body of the county, within 6 months from the notification of disapproval, shall have the right to appeal the action of the Department to the Secretary of the Environment.

(8) Following receipt of notification of approval of the county plan, amendments, or revisions, the county shall then have the plan, amendments or revisions reproduced and distributed in accordance with §B, below.

B. The counties and Baltimore City shall be the distributing agencies for all copies of the county plans or revisions. At least 50 copies of each should be printed to meet the required distribution. Copies are to be automatically distributed to the following agencies:

(1) Four copies to the Department of the Environment;

(2) Four copies to the Department of Natural Resources.

#### **.04 Requirements Applicable to Adopted County Plans.**

A. All county plans, amendments, or revisions shall be prepared in conformance with this regulation. Each adopted plan shall be arranged with an introduction and a minimum of four chapters as outlined below.

B. Introduction:

(1) A statement certifying that the plan has been officially adopted by the county governing body;

(2) A statement certifying that the plan has been submitted to the Department and it meets the requirements of Regulation .02B;

(3) A statement certifying that sections of the plan covering engineering aspects of water and sewerage projects have been prepared and reviewed for adequacy by a registered professional engineer licensed in the State;

(4) The letter of approval from the Department.

C. Chapter One. This chapter shall contain:

(1) A statement of the goals of the county consistent with county comprehensive planning;

(2) A brief discussion, with charts, of the organization of the county government as it relates to the management of water supply and sewerage facilities.

D. Chapter Two. Chapter two shall contain the general background information relevant to the water and sewerage planning. Information shall include the maps, charts, and tables listed below. When a county has previously developed alternative methods for presenting this data, the specific format required in the chapter may be waived by the Department.

(1) Physical.

(a) General maps showing aquifers, soil drainage characteristics, topography, ground water and surface water patterns.

(b) A map or table showing water quality criteria in the county.

(2) Population.

(a) General maps showing present and projected population distribution and density.

(b) Table No. 1, county population projections.

**Table No. 1  
Population Projections**

<i>County Projections</i>	<i>State Projections</i>	<i>Others</i>
1970		
1975		
1980		
1990		
2000		

(3) Land Use.

(a) Maps showing existing land use, zoning, and the adopted comprehensive development plan for the county.

(b) Table No. 2, reflecting existing and zoned land use in acres.

**Table No. 2  
Land in County**

<i>Existing Land Use</i>		<i>Zoned Land</i>		<i>County Comprehensive Plan 1980 or Other Horizon Date</i>	
<i>Acres</i>	<i>% Total Acreage</i>	<i>Acres</i>	<i>% Total Acreage</i>	<i>Acres</i>	<i>% Total Acreage</i>
Land Use					
Residential, Commercial, Light Industry					
Heavy Industry					
Agricultural and Open Space					
Mines and Quarries					
Surface Water					

(c) A map showing existing and proposed major public institutions, such as schools, hospitals, correctional facilities, government complexes; and a table showing the approximate populations of these facilities.

E. Chapter Three. Chapter three shall contain a description of existing, planned, and future requirements for water service areas including tables, maps, charts, graphs, descriptive information, and all other matter regarding these systems. It shall contain a discussion of ground and surface water resources within the county including the quality and potential quantity of these sources. Summaries of existing and projected water demands and existing sources of pollution or con-

tamination relating to water supplies shall be stated or shown. The chapter shall contain a discussion of alternatives and the rationale used in determining the means of providing future water supplies. For every water service area, the following shall be discussed or shown: operating agency, rated and actual productions, type of treatment, location, operation and maintenance costs, and proposed means of financial improvements. For any proposed new water supply source, a summary of the environmental impact of its development shall be given. Efforts to reduce demands (e.g. metering, rate changes, plumbing codes) shall be outlined. Minimum requirements for tables and maps in this chapter are as follows:

(1) Table No. 3, showing population projections and projected water supply demands and planned capacity by water service areas through the year 2000.

(2) Inventories of water sources as follows:

(a) An inventory, Table No. 4, of community system wells;

(b) An inventory, Table No. 5, of impounded supplies;

(c) An inventory of other surface water supplies showing initial and planned withdrawals (MGD).

(3) An inventory, Table No. 6, of existing treatment facilities.

(4) An inventory, Table No. 7, below, of problem areas such as inadequate portions of community systems (including fire flow inadequacies) and areas where individual systems are experiencing difficulties:

**Table No. 7**  
**Inventory of Water Problem Areas**

<i>Service Area</i>	<i>Location</i>	<i>Population</i>	<i>Acres</i>	<i>Nature of Problem</i>	<i>Planned Correction Date (if known)</i>
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(5) Immediate, 5 and 10 year priorities for water development, Table No. 8.

(6) Maps as specified in §G of this regulation.

F. Chapter Four. Chapter four shall contain a description of the existing and planned community and multi-use sewerage systems, including tables, maps, charts, graphs, descriptive information and all other matters regarding these systems. Indicate locations of proposed

points of waste discharges. It shall be shown how conformance of existing and programmed sewerage facilities meet or will meet the effluent limitations specified in COMAR 26.08.03.01 of the Department of the Environment. It shall contain a summary of each available point of discharge evaluation, specifically those parts pertaining to protected water uses. It shall discuss the rationale for selecting a planned alternative for any proposed treatment facility, pumping station, or interceptor. For every service area and community system, the following should be discussed: operating agency, design average and peak flows; whether combined or separate collection systems; level and type of treatment given; sludge disposal plans, condition of treatment and transmission facilities; operation and maintenance costs; and proposed means of financing improvements. Minimum requirements for tables and maps in this chapter shall be as follows:

- (1) Population projections and present and expected demands and capacities by sewerage service area, Table No. 9.
- (2) Inventory of existing sewage treatment plants, Table No. 10.
- (3) Inventory of problem areas, including inadequate portions of community systems and areas where individual systems are experiencing difficulty, Table No. 11.
- (4) When possible, identify by service area water quality problems due to storm drain outfall and to non-point sources, Table No. 12.
- (5) Immediate, 5 and 10 year priorities for sewerage systems development, Table No. 13.
- (6) Maps as outlined in §G of this regulation.
- (7) The county plan shall include an inventory of problem marinas and will include basic planning concepts for sanitary facilities at all marinas.

#### G. Technical Requirements.

- (1) The following physical format shall be required for the submission of county plans.
  - (a) Textual materials, tables, charts, graphs, and other illustrations shall be prepared on 8½ × 11 inch stock or any other size which can be folded for inclusion in the binder. Margins on the left-hand edge shall be punched for a multi-ringed 10 × 11½ inch interchangeable stiff-backed binder with identification on the binder.
  - (b) The Maryland Coordinate Grid System shall be used to determine place locations. The Maryland State Highway System maps

use this system with lines spaced at intervals of 50,000 feet bearing due east and due north from the points of origin. Other maps can be used by superimposing a similar grid on any map of Maryland. Referenced to the same point of origin, it then becomes possible to find any place on the map if its coordinates are known. Two numbers define any place location on the map. The first number designates the distance in thousands of feet that the place lies east of the point of origin, and the second number, the distance in thousands of feet that the place lies north of the point of origin.

(c) All projections shall be made for decade years except that for the first decade. The mid-period shall also be shown (e.g. 1970, 1975, 1980, 1990, 2000).

(d) Two maps of the entire county to a scale of approximately 1 inch equal to 1 mile shall be included showing, in general, areas served or to be served with community facilities. One map shall be for sewerage facilities and the other water supply facilities. These maps shall be folded, inserted into separate pockets marked "water" and "sewerage" and placed into the multiple-ringed stiff-backed binder.

(e) Two sets of detailed maps (one for water facilities and the other for sewerage facilities) of each portion of the county shall be prepared on a minimum scale of 1 inch equal to 2,000 feet and in sufficient number so as to show actual areas served or to be served as set forth in these regulations. A minimum scale of "1 inch equals 3500 feet" is acceptable in those counties where existing detail mapping is complete or is under preparation. For those counties where detail maps have not been initiated, a scale of "1 inch equals 2000 feet" shall be the minimum requirement. Color coding on the maps is optional.

(f) Amendments or revisions to the county plan shall be prepared so that the new or additional material may be inserted in the binder in the appropriate places to provide a continuously updated and current county comprehensive water and sewerage plan. Each sheet of the amendment or revision shall be dated to show when the change became effective.

(g) Measurements as specified in this regulation shall be converted to their metric equivalence when applicable.

(2) As minimum requirements, the water and sewerage maps in the county plan shall be delineated to show for each existing and proposed community and multi-use water supply and sewerage system the

following data located by codes and symbols as specified in this regulation.

(a) Delineate on the maps, existing or proposed and planned community and multi-use water and sewerage facilities, including wells, reservoirs, intakes, transmission and feeder mains, storage facilities, interceptor and truck sewers, pumping stations, force mains, treatment works, outfall sewers, and service areas. Show on the detailed maps sizes or capacities, or both, where appropriate.

(b) Delineate on the maps areas served by community and multi-use water and sewerage systems which are either existing or are under construction. The actual bounds of areas served by these systems shall be clearly indicated. The areas so delineated in this category shall be as shown in Table 14 and shall be referred to as W-1 for water systems and S-1 for sewerage systems.

(c) Delineate on the maps, areas to be served by extensions of existing community and multi-use water supply and sewerage systems which are in the final planning stages. The areas so shown in this category shall be as shown in Table 14 and shall be referred to as W-2 for water systems and S-2 for sewerage systems.

(d) Delineate on the maps, areas where improvements to, or construction of, new community and multi-use water supply and sewerage systems will be given immediate priority. The areas so shown in this category shall be as shown in Table 14 and shall be referred to as W-3 for water systems and S-3 for sewerage systems.

(e) Delineate on the maps areas where improvements to, or construction of, new community and multi-use water supply and sewerage systems will be programmed for the 3 to 5/6 year period. The areas so shown in this category shall be as shown in Table 14 and shall be referred to as W-4 for water systems and S-4 for sewerage systems.

(f) Delineate on the maps those areas where improvements to, or construction of, new community and multi-use water supply and sewerage systems are programmed for inclusion within the 6/7 through 10-year period. The areas so shown in this category shall be as shown in Table 14 and shall be referred to as W-5 for water systems and S-5 for sewerage systems.

(g) All other areas of the county should be shown as no planned service. The areas so shown in this category shall be as shown in Table 14 and shall be referred to as W-6 for water systems and S-6 for sewerage systems.

(h) Other map symbols shall be as shown in Table 14.

**.05 Individual Water Supply and Individual Sewerage Systems.**

The installation of individual water supply or individual sewerage systems shall be subject to the following requirements:

A. An individual water supply or individual sewerage system may not be permitted to be installed where an adequate community water or sewerage facility is available. If an existing community water or sewerage facility is inadequate or is not available, an interim individual water and sewerage system may be used as set forth in §B(1), (2), and (3), below.

B. Interim individual water supply and sewerage systems may be permitted to be installed in any portion of the county, except where otherwise prohibited, where community systems will be programmed for construction within the S-1-2, 3 and 4 and W-1-2, 3 and 4 service categories provided that:

(1) The interim systems are adjudged by the local health department to be adequate, safe, and in compliance with pertinent State and local regulations, including minimum lot ownership as set forth in COMAR 26.04.03.02 and .03;

(2) Permits for the interim systems shall bear a notice regarding the interim nature of the permit and stating that connection to a future community system shall be made within 1 year or less after the system becomes available;

(3) If interim systems are used, provisions shall be made, whenever possible, to locate the systems so as to permit connection to the public facilities in a most economical and convenient manner.

C. 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 S-5 and 6, and W-5 and 6 where community systems are not planned. The installations shall be governed by the regulations under COMAR 26.04.02 and 26.04.03 as minimum requirements.

**.06 Flow Data.**

For each service area, flow data for all community and multi-use sewerage facilities will be presented according to either Table No. 15 for wastewater treatment plants or Table No. 15A for all principal collector sewers, interceptors, pumping stations, and associated force mains. Information presented previously in either Table No. 9 or Table

No. 10 can be omitted from Table No. 15. In Table No. 15A, present data according to the flow pattern of existing sewerage system by starting with principal collector sewers and proceed to the treatment plant.

**(See tables on following pages)**

26.03.01.06

ENVIRONMENT

**Table No. 3**  
**Projected Water Supply Demands and Planned Capacity**

Service Area	Present 1975			1980			1990			2000		
	Population	(GPCD)Capacity	Population	(GPCD)Capacity	Population	(GPCD)Capacity	Population	(GPCD)Capacity	Population	(GPCD)Capacity	Population	(GPCD)Capacity
	total	unserved	total	unserved	total	unserved	total	unserved	total	unserved	total	unserved
	served	(gals)	served	(gals)	served	(gals)	served	(gals)	served	(gals)	served	(gals)
	demand	planned	demand	planned	demand	planned	demand	planned	demand	planned	demand	planned

**Table No. 4**  
**Inventory of Existing Community System Wells**

Well Name or Number	Aquifer	Coordinate Location	Depth Feet	Diameter Inches	Max. Safe Yield	Pumping Capacity	Water Quality
Municipal (Public)							
Industrial							
Private Community/Institutional							

**Table No. 5**  
**Inventory of Existing Impounded Supplies**

Owner	Crest Elevation (above sea level)	Total Length of Spillway of Dam	Height of Crest Above Stream Bed	Flooded Area of Crest	Length of Line at Crest	Shore Area of Land Owned	Water Overflowed Crest for First Time	Average Daily With- drawal	Safe Yield of Reservoir (MGD)
Municipal (Public)									
Industrial									
Private Community/ Institutional									

**Table No. 6**  
**Inventory of Existing Water Treatment Facilities**

Owner	Water Source	Type Treatment	Location	Rated Plant Capacity (MGD)	Average Production (MGD)	Max Peak Flow (MGD)	Storage Capacity (MGD)	Planned Expansion MGD/ Dates	Method of Sludge Disposal	Operating Agency

Municipal (Public)

Industrial

Private Community\* / Institutional

\* If transfer to public ownership is recommended, indicate expected date.

**Table No. 8**  
**Immediate, 5 and 10 Year Priorities for Water Development**

Fiscal Year and Project Number	County Priority Assigned	Coordinate Location	Description	Estimated Costs *			Total	Project Status
				Federal and/or State	Local	Immediate Priority Projects		
								Constr. Start 5 and 10 Year Period Projects

\* Based on dollar values as of effective date of plan where applicable





**Table No. 12**  
**Water Quality Problem Due to Storm Drainage Outfalls and to Non-point Sources**

Service Area	Problem Description	Location	Reach Affected
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**Table No. 13**  
**Immediate 5 and 10 Year Priorities for Sewerage Development**


Fiscal Year and Project Number	County Priority Assigned	Coordinate* Location	PL 660 Eligibility	Other Federal Local Plans	Project Schedule***		
					Total	Start Construction	Complete Construction
_____ Year							
_____ Year							













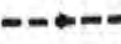


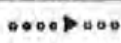
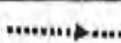

\* Where applicable for both treatment facility and point of discharge location.

\*\* Based on real dollar values.

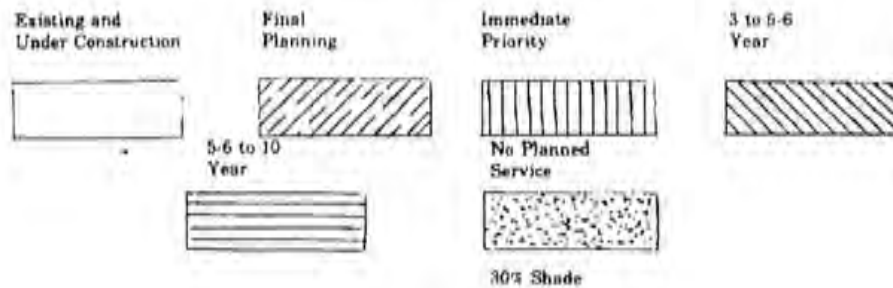
\*\*\*Month and year—for the last 5 years the "Construction Schedule Column" need not be filled in.

Table No. 14  
Water and Sewerage Map Symbols

  
 North

	Existing	Planned
Water or Sewage Treatment Plants		
Water or Sewage Pumping Stations		
Water Storage Tanks		
Wells		
Springs		
Reservoirs		
Interceptors, Outfalls Raw and Treated Water Transmission Mains		
Force Mains		
Laterals and Feeder Mains		

Existing and Planned Service Areas



**Table No. 16**  
**Flow Data**  
**Wastewater Treatment Plants**

Name or Service Area	Design Parameters		Flow		Existing*	Development Occupancy Units (1)			
	Hydraulic (mgd)	Organic (ppm)	Avg. Day* (mgd)	Max. Day & (Date**)		BPI	UC	NUC	PWA
Example: Clear Water	3.5	200	200	3.0	5.5(3-17-76)	6,500	117 R 7 C	7 R none	830 R none

\* Per Effective Date of Plan (7-1-76)

\*\* During Previous Fiscal Year



\*\*\* List Residential (R) Separately from Commercial (C) and Industrial (I)

BPI—Building Permits Issued Per Effective Date of Plan

UC—Building Permits Issued Per Effective Date of Plan for Units Under Construction

NUC—Building Permits Issued Per Effective Date of Plan for Units Not Under Construction

PWA—Building Permits for Unexpired Public Works Agreements Per Effective Date of Plan

(1)—Includes Industrial, Commercial and Residential Units

**Table No. 15A**  
**Flow Data**  
**Collector Sewers, Interceptors, Pumping Stations and Force Mains**

Name or Sewer Type Designation	Sewer		Capability Pumping Station				Force Main			
	Diam. (inches)	Flow, mgd Aug. Day*	Design mgd	Number of Pumps	Capacity of Each Pump (mgd)	Normal Pumping Capacity (mgd)	Aug. Day Pumpage* (mgd)	Max. Day Pumpage and Mgd (date)**	Diam. (inches)	Design Flow (mgd)
Example: Collector	12	0.5	1.0							
Clear Branch Interceptor	18	3.5	5.0							
Severn Run P.S. and F.M.				2	3.6	3.6	2.5	3.0 (3-1-76)	24	8.0
Clear Water STP										

(See Table No. 15)

\* Per Effective Date of Plan (1-1-76)  
 \*\* During Previous Fiscal Year

**.07 Compliance with Maryland Water Conservation Plumbing Fixtures Act (MWCPFA).**

A. Each county water and sewerage plan shall contain documentation that compliance with the MWCPFA, as codified in Article 56, §445, Annotated Code of Maryland, is being achieved.

B. The documentation in §A shall include:

(1) Designation of the county agency responsible for the enforcement of MWCPFA;

(2) A summary of county programs to assure implementation of and compliance with MWCPFA, including a description of:

(a) A procedure which assures compliance with MWCPFA before the issuance of a certificate of occupancy,

(b) Local actions taken to assure compliance with the prohibition of the sale of non-water-conserving plumbing fixtures,

(c) The local procedures used to ensure that agreements between a developer and a builder to assure compliance with MWCPFA are made part of the record plat process or a part of a county building, plumbing, or occupancy permit, or bill of sale.

C. If the county is not currently complying with the MWCPFA, then the county water and sewerage plan shall include a description of proposed changes to the local program which the county intends to implement to achieve compliance with MWCPFA.

**.08 Financial Management of Public Sewerage Systems Required.**

A. Each county water and sewerage plan ("county plan") may be approved only upon inclusion of a financial management plan which includes all publicly owned community sewerage systems in the county.

B. Each financial management plan shall contain a:

(1) Countywide organizational narrative which includes a brief countywide description of the financial roles and relationships of all public entities involved with providing sewerage service within the county.

(2) Completed Schedule FS for each self-contained, publicly owned community sewerage system. The content and format of Schedule FS will be specified by the Department. Each Schedule FS shall demonstrate that adequate fiscal resources are or will be

available to support the satisfactory operation, maintenance, and repair of each system to meet existing and future needs.

C. Before issuance of a State permit for the construction of a new, proposed, self-contained, publicly owned community sewerage system, the following requirements shall be satisfied:

(1) The financial management plan described in §§A and B of this regulation has been adopted as part of the county plan and approved by the Department; and

(2) The proposed system has been described through new narrative text and revised tables and maps in a county plan amendment or update adopted by the county governing body and approved by the Department.

D. Each county plan submitted after the effective date of these regulations, for fiscal purposes, shall treat each publicly owned community sewerage system as a separate entity within the local operating agency budget.

E. Starting on the effective date of these regulations, each county plan update shall include the complete financial management plan specified in §§A and B, above. However, a county may not submit its initial financial management plan later than July 1, 1989, regardless of the due date of its next county plan update.

F. The instructions and definitions necessary for completing Schedule FS shall be sent to all county water and sewer plan contacts.

G. In addition to the completed Schedule FS, the Department, after review of subsequent county water and sewer plans, may require and the county shall provide the information listed below. This information shall be submitted only at the Department's request, and it should not be included as part of the county plan or Schedule FS:

- (1) An inventory of the plant and equipment;
- (2) Documentation that sewer service rates are sufficient to meet operation and maintenance costs;
- (3) A description of the customer billing procedures;
- (4) A description of the system's "bad debt" situation;
- (5) A description of any construction project or plan for expansion anticipated during the next 2 years, as well as the anticipated method of financing the project;

(6) A description of the long-term plans for plant replacement or major renovation, as well as the anticipated method of financing the plans or projects;

(7) A discussion of escrow accounts, existing or contemplated, for construction, maintenance, repair, operation, and emergencies;

(8) The system's balance sheet as of the last day of the most recent fiscal year.

### Administrative History

Effective date: July 1, 1975 (2:3 Md. R. 154)

Regulations .02A, .03A, .04E, F, .05, .06 amended effective Dec. 24, 1975 (2:29 Md. R. 1735)

Regulation .07 adopted effective January 26, 1987 (14:2 Md. R. 129)

Chapter recodified from COMAR 10.17.01 to COMAR 26.03.01

Regulation .01 amended effective July 25, 1988 (15:15 Md. R. 1813)

Regulation .08 adopted effective July 25, 1988 (15:15 Md. R. 1813)

### CHANGES TO REGULATIONS

Changes frequently occur to regulations published in the Code of Maryland Regulations (COMAR). These changes are always printed in the *Maryland Register*, COMAR's bi-weekly supplement. Consult the "Cumulative Table of COMAR Regulations Adopted, Amended, or Repealed" in the most recent issue of the *Maryland Register*.





**2018 WATER AND SEWER PLAN**

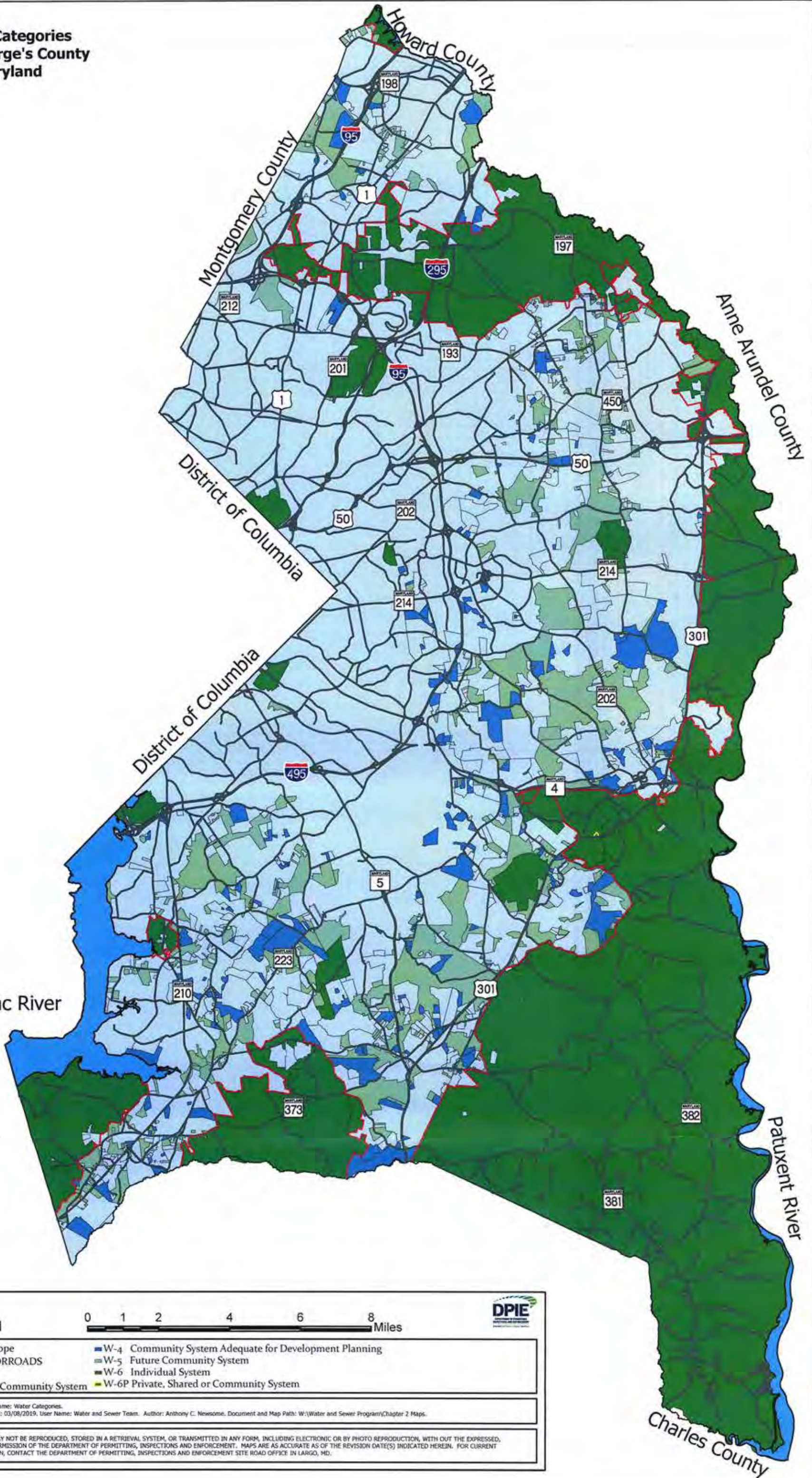
***APPENDIX C***


***2018 Water and Sewer Plan  
Water Category Map***

**2018 WATER AND SEWER PLAN**

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**Water Categories  
Prince George's County  
Maryland**





**Legend**

0 1 2 4 6 8 Miles



<p>— Envelope</p> <p>— MAJORROADS</p> <p>Water</p> <p>□ W-3 Community System</p>	<p>■ W-4 Community System Adequate for Development Planning</p> <p>■ W-5 Future Community System</p> <p>■ W-6 Individual System</p> <p>■ W-6P Private, Shared or Community System</p>	
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Document Name: Water Categories.  
 Date Created: 03/08/2019. User Name: Water and Sewer Team. Author: Anthony C. Newsome. Document and Map Path: W:\Water and Sewer Program\Chapter 2 Maps.

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**2018 WATER AND SEWER PLAN**

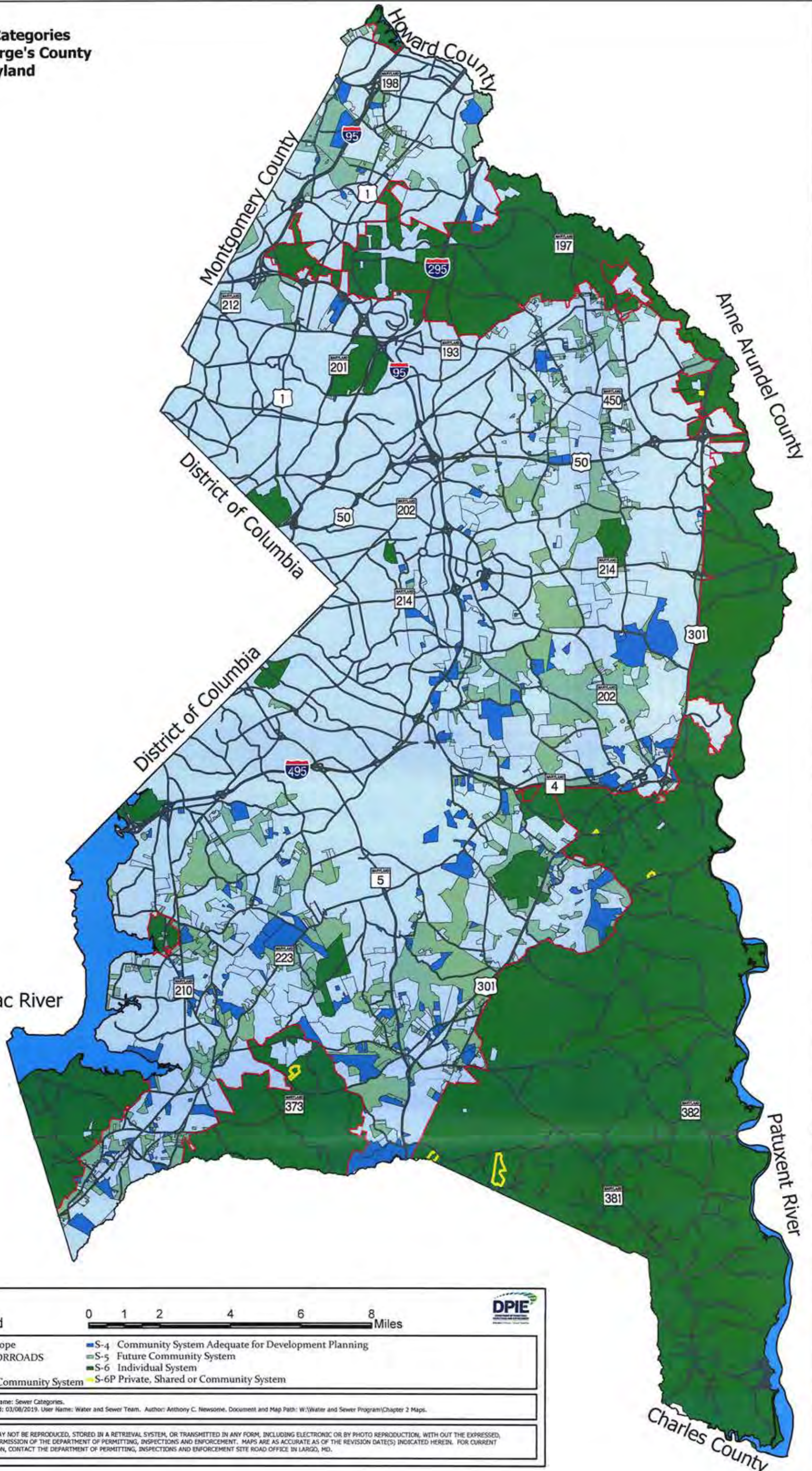
***APPENDIX D***




***2018 Water and Sewer Plan  
Sewer Category Map***

**2018 WATER AND SEWER PLAN**

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**Sewer Categories  
Prince George's County  
Maryland**



Legend	
<ul style="list-style-type: none"> <li>— Envelope</li> <li>— MAJORROADS</li> <li>Sewer</li> <li>□ S-3 Community System</li> </ul>	<ul style="list-style-type: none"> <li>■ S-4 Community System Adequate for Development Planning</li> <li>■ S-5 Future Community System</li> <li>■ S-6 Individual System</li> <li>■ S-6P Private, Shared or Community System</li> </ul>

Document Name: Sewer Categories.  
 Date Created: 03/08/2019. User Name: Water and Sewer Team. Author: Anthony C. Newsome. Document and Map Path: W:\Water and Sewer Program\Chapter 2 Maps.

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*APPENDIX E*

*2018 Water and Sewer Plan  
Glossary of Terms*

**2018 WATER AND SEWER PLAN**

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## 2018 WATER AND SEWER PLAN

*Appendix E*

### GLOSSARY

**Allocation** -- Allotted portions set by the Plan, an agreement or legal document.

**Aquifers** -- Underground water supplies used for small community systems and individual wells.

**Bi-County Infrastructure Working Group** – A group comprised of representatives from the executive and legislative branches of Prince George’s and Montgomery counties, one WSSC commissioner from each County, and WSSC managerial and finance staff.

**Category or Service Category** – A designation of land to determine whether public water and sewer service is or will be available.

**CBCAC, Chesapeake Bay Critical Area Commission** – A Commission created by the 1984 Chesapeake Bay Protection Act to design the Critical Area Criteria, which are the basis of 61 local Critical Area Programs. The Commission reviews and approves local jurisdiction Critical Area Programs and amendments to those programs. While a State agency, the Chesapeake Bay Critical Area Commission of the Department of Natural Resources reviews and comments on development proposals within the Critical Area.

**CIP, Capital Improvement Program** – The budget for planning, design, land acquisition and construction activities for major water and sewer facilities serving Prince George’s County, Montgomery County and the Bi-County areas through the Washington Suburban Sanitary Commission. WSSC’s CIP covers a six-year period and is approved by the two County Councils annually.

**COG, Metropolitan Washington Council of Governments** – The regional planning organization for the Washington D.C. area’s major local governments and their governing officials. COG works towards solutions to regional problems such as energy shortages, traffic congestion, inadequate housing, air and water pollution, and water supply.

**COMAR – Code of Maryland Regulations**

**Community Sewerage System** – Any system, whether publicly or privately owned, 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.

## 2018 WATER AND SEWER PLAN

**Community Water Supply System** – Any system, whether publicly or privately owned serving two or more individual properties, that provides a source of water and a distribution system, including treatment and storage facilities.

**DC Water – District of Columbia Water and Sewer Authority** (formerly DC WASA)  
An agency established by Congress and the District of Columbia under the “Water and Sewer Authority Establishment and Department of Public Works Reorganization Act of 1996.” Its purpose is to provide potable water to customers in the District and wastewater collection and treatment services to the District and user jurisdictions in Maryland and Virginia.

**DER – Prince George’s County Department of Environmental Resources**

**DoE – Prince George’s County Department of the Environment** (successor name to DER)

**DPIE – Prince George’s County Department of Permitting, Inspections and Enforcement**

**DPW&T – Prince George’s County Department of Public Works and Transportation**

**Drainage basin** – Watershed; the region drained by a river system.

**EPA – U. S. Environmental Protection Agency**

**Existing Service Area** – An area that is currently served by water and/or sewer; individual properties within the area are generally connected to the community or public system.

**Final Plat** – The recordation of subdivision in conformance with the approved preliminary plan.

**Floodplain** – Any land area susceptible to being inundated by floodwaters from any source.

**Graywater** – Recycled water from fixtures not intended for human bodily waste.

**Health Department – Prince George’s County Health Department**

## 2018 WATER AND SEWER PLAN

**ICPRB, Interstate Commission on the Potomac River Basin** – Created by interstate compact and approved by Congress in 1940, ICPRB helps control and prevent pollution of the waters of the Potomac drainage area; cooperates with, supports, and coordinates activities of public and non-public entities concerned with water and associated land resources in the Potomac River basin; and promotes public awareness and understanding of issues and activities, and the need for enhancement of the basin's resources.

**Impound** – To accumulate water in a reservoir.

**Individual Sewerage System** – A single system of sewers and 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 the property, into any waters of the State, or by other methods.

**Individual Water Supply System** – A single system of piping, pumps, tanks, or other facilities utilizing a source of ground or surface water to supply only a single property.

**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.

**MDE – Maryland Department of the Environment**

**MDP – Maryland Department of Planning**

**Mixed-Use Development** – Development of land zoned for mixed uses to provide for a variety of compatible uses and create a particular character of development.

**M-NCPPC, Maryland-National Capital Park and Planning Commission** – A bi-county agency created by the General Assembly of Maryland in 1927, M-NCPPC prepares, adopts, amends and extends the General Plan for the physical development of the Maryland-Washington Regional District. It operates in Prince George's and Montgomery Counties through a Planning Board appointed by and responsible to the county governments. All local plans, recommendations on zoning amendments, administration of subdivision regulations, and general administration of parks are responsibilities of the Planning Boards.

**Multi-Use 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, that serve a group of individuals, and have a treatment capacity of 1,500 gallons or more per day (gpd). Multi-use water supply systems utilize a source of ground or surface water to provide potable water, and consist of wells, piping, pumps, tanks, or other facilities.

## 2018 WATER AND SEWER PLAN

**Network Gap** – Areas where there are opportunities to make critical connections in the green infrastructure network and/or to restore areas and enhance the ecological functioning of the network.

**NPDES, National Pollutant Discharge Elimination System** – A network of regulations to protect Maryland’s waters by insuring all industrial and municipal wastewater treatment facilities that discharge effluent meet the requirements, limitations and various restrictions so as not to degrade water quality or harm aquatic life. A permit (NPDES Permit) is issued by MDE that requires the facilities to monitor and submit data insuring compliance with the designated restrictions.

**Percolation** – Seepage or drainage through layers of soil.

**Preliminary Plan** – The first step in the Subdivision Process to review a development proposal for its compliance with County Plans, for the adequacy of public facilities, and for environmental issues.

**Sewer Envelope** – A boundary beyond which no community water or sewer facilities shall be approved.

**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.

**Source Water Assessment (SWA)** – To provide local leaders, water suppliers, and citizens with the information necessary to protect public drinking water sources from contamination.

**TMDL – Total Maximum Daily Load** is the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant.

**WSSC, Washington Suburban Sanitary Commission** – A bi-county agency established by the Maryland General Assembly in 1918. WSSC is responsible for planning, designing, constructing, operating and maintaining water and wastewater systems in order to provide potable water and sanitary sewer services to residents and businesses, and to federal, state, and local municipalities within the Washington Suburban Sanitary District. WSSC owns and operates various water treatment and wastewater treatment plants and transmission facilities within the Washington Suburban Sanitary District (WSSD) and utilizes - through an equity share - in wastewater treatment plants operated by other jurisdictions to treat sewage generated in portions of the WSSD. The WSSC has a board of six commissioners; three appointed by Prince George’s County and three appointed by Montgomery County. The commissioners serve four-year terms.

## 2018 WATER AND SEWER PLAN

**WSSD, Washington Suburban Sanitary District** – The area described in Chapter 805 of the Acts of the General Assembly of 1981, which encompasses most of Prince George’s and Montgomery Counties, spanning 1,000 square miles and serving 1.5 million customers in that area.

**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 Connection** – The portion of the service connection 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.

**Water/Sewer Hookup** – The portion of the service connection for a structure located between the property line and the structure served. A single hookup may serve more than one structure on a given property.

**Watershed** – Drainage basin; a region where all lands slope toward the same waterbody or river system.

**WIP – Watershed Implementation Plan** is the roadmap for how the bay jurisdictions, in partnership with federal and local governments, will achieve the Chesapeake Bay TMDL allocations.

**WWTP – Wastewater (sewage) Treatment Plant**

**USDA – United States Department of Agriculture**

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*APPENDIX F*

***WSSC Standard Procedures #0 96-01  
(Formerly Known As: WSSC Water Demand  
Reduction Plan)***



*File*

STANDARD PROCEDURES  
OF THE  
WASHINGTON SUBURBAN SANITARY COMMISSION

ORIGINATOR & POSITION John P. Corless <i>JPC</i> Division Manager Water Operations	DEPT. & NUMBER O 96-01 SUPERSEDES WOD 90-01 & 2 DMO 77-01	APPROVED BY/DATE Cortez A. White General Manager 7/25/96 <i>Cortez A. White 7/25/96</i>	EFFECTIVE DATE August 1, 1996	PAGE 1 OF 38
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SUBJECT  
EMERGENCY WATER USE RESTRICTIONS FOR THE WASHINGTON SUBURBAN SANITARY DISTRICT

Purpose:

This procedure describes the Washington Suburban Sanitary Commission (WSSC) response plan for periods of water supply emergency to ensure the safety of customers in the area(s) affected by unavailability of an adequate or safe water supply. The procedure includes guidelines for implementing water use restrictions for a range of emergency situations which could affect the entire Washington Sanitary District (WSSD) or which may be limited to localized outages within the WSSD. This standard procedure replaces the 1981 "Administrative Procedure—WSSC Water Demand Reduction Plan."

Procedure:

Initiation

This plan may be initiated directly or in conjunction with other related WSSC or area-wide emergency plans. (See Appendix F.) Emergency conditions which could lead to implementation of this plan include, but are not limited to, shortages caused by drought or distribution system problems, hazardous material in the raw water supply, inability of the treatment plants to effectively remove contaminants, distribution system contamination, or natural disaster.

Anyone who becomes aware of or is notified of any of the conditions noted in the previous paragraph or any other event which may potentially jeopardize the Commission's ability to deliver an adequate supply of safe water to all major areas of the Sanitary District shall contact (directly or through the Control Center) the Water Operations Division (WOD) Manager who will initiate the plan. The WOD Manager is the designated Water Emergency Coordinator (hereinafter referred to as "the Coordinator"); in the event the WOD Manager cannot be immediately contacted by the Control Center, the WOD Duty Supervisor will take on Coordinator responsibilities until relieved by proper authority and shall immediately report this through the chain of authority. The Coordinator will normally notify the General Manager through the chain of authority; if a manager is not immediately available when immediate action is required, reporting will be made to the next higher level. The Control Center will generally be designated by the coordinator as the "WSSC water emergency operations center" during a water emergency. (To minimize confusion throughout this procedure, "Control Center" will be used in lieu of "WSSC water emergency operations center".) The Coordinator will coordinate when and what levels of contact and restriction levels require implementation based on guidelines set forth in this procedure. Recommendations by the Coordinator for implementation or modification of any water restrictions will be made to the General Manager for approval or, for Levels C and higher, for coordinating approval by the Commission (e.g., phone contact through the Secretary's Office); in the event the General Manager is

unavailable, responsibility for approval or coordination of Commission approval will be passed to the next senior manager in the Operations chain of authority (i.e., Chief Operating Officer, followed by Operations Bureau Director, followed by Water Operations Division Manager).

#### Authority and Enforcement

The Annotated Code of Maryland, Art. 29 (See Appendix E.), §9-101, authorizes WSSC to limit or regulate the use and supply of water service in any area within the WSSD on a temporary basis for purposes of public safety without the 30-day advance publication normally necessary for WSSC regulations. §18-104 makes violations of these rules a criminal misdemeanor; upon conviction, a violator is subject to a fine not to exceed \$1,000 or imprisonment not to exceed 30 days, or both. Primary enforcement will be vested with local and county police. (Although violation actions would be processed by the State's Attorney's Office, see the "County emergency operations centers" paragraph in the "Expanded Notification" section on page 4 of this procedure regarding the intent for "passive enforcement.")

#### Restriction Levels

This procedure describes nine "standard" levels of water use restrictions for implementation based on the degree and type of problem in the system; these may be tailored to meet the emergency, and any level may be called at any time. In recommending reduction in restriction levels, the Coordinator must consider the impact of "instantaneous" demand on the system. Drought related restrictions will be coordinated through existing interagency agreements; they will generally be downgraded after 14 days if the demand/supply ratio has dropped below the initiation level and long range weather forecasts are consistent with diminished water demand. The following provides a brief description of applicability (Restriction details are available in Appendix A.) of the standard levels:

Level A Water Shortage Alert: This level serves as an alert to WSSC customers that there is significant probability that restrictions will be required in the near future. For drought response, this level may be called when total withdrawals from the Potomac River are within 50% of total river flow and water impoundment facilities are close to exhaustion. This level may be particularly applicable to an upstream river spill emergency where there may be considerable advance notice of a problem. Due to inherent delays in messages reaching the public, this method may not be applicable to "urgent" scenarios such as loss of primary feed to a large area.

Level B Water Shortage Voluntary Restrictions: This is the lowest level of actual use restriction and depends upon voluntary customer implementation. For drought response, this level may be called when total withdrawals from the Potomac River are within 100 million gallons per day of total river flow. Level B could also be initiated when daily average demand exceeds 95% of safe water supply or distribution system capability. After initial delay in customer response (possibly as much as two to three days), this restriction level could reduce peak demand by 15% with minimal reduction in average daily flows. Due to inherent delays in messages reaching the public, this method may not be applicable to "urgent" scenarios such as loss of primary feed to a large area. (i.e., consider proceeding directly to Level D restrictions.)

Level C Extended Water Shortage Mandatory Restrictions: This is a set of three progressively stringent mandatory restriction levels primarily for drought response and will be implemented when Level B restrictions are inadequate to maintain water usage low enough to protect public safety. It is expected that Level C-1 restrictions will reduce peak consumption by 15% to 20% within the first twenty-four hours and by up to 40% long term; this level will be initiated when average demand exceeds 100% of water supply or distribution system capabilities. Level C-2 may be required when the capacity of the distribution system has been exceeded for five days or if C-1 restrictions are not sufficient; long term anticipated demand reduction is projected at up to 60%. Level C-3 is the highest and most drastic level of the drought restrictions; it would be called when reductions over 60% are required.

Level D Emergency Water Shortage Mandatory Restrictions: This mandatory restriction level will be implemented when Level B (voluntary) restrictions are inadequate to maintain water usage low enough to protect public safety for "urgent" scenarios such as loss of a large water main. This level may be implemented immediately (without first utilizing voluntary restrictions) when a quicker public response is required. It is expected this level of restriction will reduce consumption by 15% to 20% within the first twenty-four hours and by up to 40% long term.

Level E Consumptive Water Use Restrictions: Under this restriction level, customers would be advised that the water cannot be consumed without additional treatment; the water would however, be safe for non-consumptive domestic use. Actual home treatment procedure (e.g., boiling water) will be specified by the State.

Level F Consumptive Water Use Prohibition: Under this restriction level, customers would be advised that the water is not safe for consumption; the water could however, be determined (by the State) to be safe for domestic utility use such as bathing and dish washing. Customers would be instructed to use bottled water for cooking and drinking. This type of restriction might be implemented in the event of distribution system contamination (e.g., backflow) or if a chemical contaminant in the raw water supply were not removed by the treatment process and entered the distribution system prior to detection.

Level G Full Water Use Prohibition: This restriction level would be implemented if necessary to provide immediate fire flow requirements or if distribution system water were not safe for any type of usage. Water use would be restricted to use only in an extreme emergency (e.g., fire fighting).

#### Initial Notification

The Coordinator will normally notify the General Manager through the chain of authority; if a manager is not immediately available when immediate action is required, reporting will be made to the next higher level. The County Executive(s), the Commission and General Manager staff offices will be notified, as deemed appropriate, through the General Manager's Office. (As discussed in "Expanded Notification", the Control Center maintains a list of these contacts.) Once the General Manager indicates that initiation of, or change in, a restriction level has been approved, the Control Center will proceed to expanded notification. The Coordinator will be responsible for initial contact with required State regulatory officials when there is any indication that water in the distribution system may not meet minimum drinking water standards.

Expanded Notification

Except as noted in the Notification Diagram (Appendix C) and specifically delineated below for WSSC organizational units, all expanded notification will be done by the Coordinator through the Control Center; notification procedures will vary for different types of emergencies. [Sample notification lists for various scenarios are included in Appendix D; with the exception of Communications contacts and individual customers, the Control Center maintains a current master phone list (with alternates) for all notifications; the Water Operations Division is charged with verifying this list, through actual phone calls, by June and December of each year.] Appendix C contains a generic notification tree depicting the contacts described below.

County emergency operations centers will be contacted [once the General Manager has notified the County Executive(s)] to provide the coordination link through the Control Center for the Coordinator. (These centers are, in Montgomery County, the "24 hour Emergency Communications Center" and in Prince George's County, the "Combined Communication Facility"; these include the fire boards once the centers have been activated.) The designated liaison (Maintenance Administrative Support Section Head) may be dispatched to one of the county emergency operations centers (especially if significant MEMA or FEMA involvement is anticipated), however, alternative or additional personnel (e.g., Water Pumping Station Superintendent) may be utilized for this function as deemed appropriate for the type of emergency (e.g., if a SCADA link is appropriate). Direct communication will be maintained with the Fire Board to maximize availability for actual fire workload. County police will be requested to provide "passive" restriction enforcement (i.e., although police would actively look for and stop illegal water use, prosecutions would be initiated only in cases of clear abuse) and to provide a contact phone number for public use in reporting restriction violations; a copy of applicable State Code (Appendix E) will be faxed to the emergency operations center if there is any question of enforcement authority. All contact with MEMA (Maryland Emergency Management Agency) and FEMA (Federal Emergency Management Agency) will be made through the county emergency centers.

MDE (Maryland Department of Environment Public Drinking Water Program Office) will be contacted for information purposes during water emergencies, and, in the case of contaminant-related emergencies, as detailed in the "Special Procedures for Water Quality Related Emergencies" section of this plan. Note that the Public Drinking Water Program office coordinates directly with State and affected county health officials to estimate health effects and provide descriptions of possible treatment recommendations; therefore no direct liaison with these agencies is included in this plan.

DC/OEP (District of Columbia Office of Emergency Preparedness) will be contacted for liaison in area-wide emergencies covered under the "Metropolitan Washington Water Supply Emergency Plan."

ICPRB (the Interstate Commission on the Potomac River Basin), coordinating with WAD (Washington Aqueduct Division - the Army Corps of Engineers unit which provides water to the District of Columbia), will be the primary outside contact agency in the event of drought-induced water restrictions in accordance with existing operating agreements.

Other area water utilities will be contacted to provide information to answer customer questions relative to their own service areas. Wholesale customers, either permanently or temporarily connected to the WSSC system, will be notified of the implications for their systems (e.g., Howard County, Bowie, the District of Columbia, Rockville, and Andrews AFB (Although technically a "large customer", for purposes of this paragraph, Andrews AFB will also be notified as a utility due to the large number of on-site connections.)).

Local bottled water suppliers (e.g., Giant and Safeway) may be contacted to alert them that bottled water supplies from outside the WSSD to area stores may need to be increased.

Internal contacts will be made, by the Control Center, as required by the particular emergency:

Customer Services to (1) brief Customer Information Representatives and modify the Customer Services phone message in coordination with the Office of Communications, (2) call large water users directly to notify them of Level C-2, C-3, or D restrictions when implemented (Through coordination with Maintenance Services, Customer Services will maintain, and update once every six months, a telephone list for customers with a daily average consumption greater than 10,000 gallons; by December of each year, they will verify these contact phone numbers; the list will include hours of operation, the contact person with implementation authority, and the primary purpose for which the water is used.), (3) provide a copy of the large user list, with car washes highlighted, to Regulatory Compliance, to the Office of Communications, and to the Customer Services Representatives, and (4) when feasible (e.g., for small areas) and when requested by the Coordinator, make direct phone notification to individual customers in urgent health-related emergencies;

Facilities Maintenance to turn off automatic sprinklers and fountains at WSSC facilities;

Maintenance Reconstruction to immediately discontinue all flushing for cleaning and lining contracts in the affected area if water quantity restrictions are implemented;

Maintenance Services to (1) upgrade response priority for all reported leaks in the affected area, (2) modify the emergency maintenance phone message in coordination with the Office of Communications, (3) notify hospitals to implement their water emergency plans (e.g., utilizing tank truck or bottled water contracts pre-negotiated to meet accreditation requirements), and (4) when applicable, provide a list of WSSC customers served by other water utilities (e.g., along the DC or other jurisdictional border);

Meter Services to (1) immediately discontinue all meter testing in the affected area if water quantity restrictions are implemented, (2) discontinue issuance of fire hydrant meters targeted for use in the affected area, and (3) notify existing major fire hydrant meter users likely to be working in the affected area;

Office of Communications to direct all customer and media interface (The Control Center will provide continuous situation updates including

providing map mark-ups and a description of areas impacted; the Control Center will then work with Communications to finalize "clean" maps and area descriptions; wherever possible, simplified definitions such as major highways, county lines, or zip codes will be used to delineate areas; when available, GIS map preparation should be used.);

Office of Laboratory Services to provide analysis assistance for contaminants and for evaluating treatment alternatives;

Regulatory Compliance assisted by Security and Safety to provide enforcement assistance for large water users (To minimize customer confusion and frustration, non-recycling car washes, as determined by Regulatory Compliance, will have the highest enforcement priority.);

Systems Maintenance to (1) coordinate field operation (and repair) of the distribution system, (2) discontinue all routine flushing in the affected area if restrictions on quantity of usage are implemented, and (3) distribute informational flyers or door hangers (prepared by Communications) and/or bottled water for customers if only a small area is impacted; and

Water Resources Planning to provide modeling assistance for re-routing water transmission and for determining feasibility of drawing water through interconnections with adjoining water suppliers. (An inventory of these interconnections with associated gradients is maintained in the Control Center.)

To minimize message distortion, these units will be contacted directly by the Control Center; the units, in turn, will be responsible for reporting their participation in emergency operations through their respective chain of authority.

#### Public Notification

The Office of Communications will be responsible for essentially all customer and media contact during the emergency. All inquiries by customers will be directed to Customer Information Representatives who will be provided a "script" by the Office of Communications; the only exceptions are technical questions (e.g., from large water users) which will be referred to the Control Center and enforcement requests which will be referred to the civilian police contact phone number (making it clear that 911 should NOT be used!). All inquiries by the media will be referred directly to the Office of Communications. Coordination with other affected agency communication officers will also be handled through the Office of Communications to ensure a consistent message is provided to the public.

Several mechanisms may be used to notify customers when restrictions have been implemented or changed:

- \* In conjunction with the Control Center, Communications will prepare "clean" maps and written descriptions of affected areas.
- \* A news release will be issued at the time of implementation or of any status change in restriction conditions. Examples of three news releases and related maps are included in Appendix B. The section below, "Special Procedures for Water Quality Related Emergencies" addresses legal

requirements for water quality related public releases. In all media releases during quantity use restrictions when recycling car washes are exempt, Communications shall include a statement so indicating.

- \* For long-term restrictions, applicable literature, such as news releases, restrictions and area maps, could be made available at public libraries in the affected area.
- \* Depending on the urgency to notify the public, use of the Local Emergency Broadcasting System (LEBS), available through the county emergency operations center(s), should be considered for all restrictions requiring immediate implementation. The Office of Communications will maintain working relationships (possibly using memorandums of understanding) to facilitate rapid use of LEBS when deemed necessary by WSSC.
- \* The Communications Office will develop a "script" for Customer Information Representatives and text for a recorded message for their phone system to provide customers information on the current status of water restrictions.
- \* The Communications Office will assist Maintenance Services in preparing a recording for their customer phone line message system.
- \* The Communications Office may contact, as a courtesy, city mayors and other officials as time allows and as deemed appropriate for the situation.
- \* For small affected areas, depending on the nature of the emergency and the possibility for customer confusion, customers may be contacted by telephone by the Customer Services Division. (Door hangers, discussed below, would likely still be required since valid phone numbers for all customers are not likely to be available.) If at all possible, this method should be used for primary notification when contaminant related restrictions have been implemented in other jurisdictions but that water serves a limited number of WSSC customers (e.g., temporary interconnections or services along the Washington, DC, border).
- \* Similarly, depending on the size of the affected area, the nature of the emergency, and the possibility for customer confusion, flyers or door hangers may be delivered door-to-door by Systems Maintenance Division. If at all possible, this method should be used in addition to direct phone notification when contaminant related restrictions have been implemented in other jurisdictions but that water serves a limited number of WSSC customers (e.g., temporary interconnections or services along the Washington, DC, or other jurisdictional border).

#### Special Procedures for Water Quality Related Emergencies

In the case of water quality concerns or violation of Safe Drinking Water Act Standards, special procedures apply. The State of Maryland requires reporting of any violations to the MDE Public Drinking Water Program Office within one hour of knowledge of possible violation. In such an event, the Coordinator will immediately notify the General Manager and will, within one hour, verify available information and report to the State. The Office of Communications will also be notified to begin preparation of a public notice regarding the violation.

Although Federal regulations legally allow 72 hours for public notification, EPA guidance states it is to be done immediately when there is an imminent health threat; upon verification by the State that there is a health threat, the Coordinator will immediately notify the General Manager and then contact the Communications Officer to finalize an "immediate" broadcast news release; this release must contain exact language as required by law and as described in EPA publication, General Public Notification For Public Water Systems, EPA 570/9-89-002. (Sample notice in Appendix B.3.)

The Coordinator will request additional investigative sampling through the Office of Laboratory Services or through contract laboratories as required. In the case of a microbiological violation, both plants will increase total chlorine residual to 3.0 ppm, and Water Pumping Station personnel will monitor and adjust chlorine levels at system application points to 3.0 ppm (after allowing for delay time for increased plant residuals to reach the field).

#### Closure

The Coordinator will recommend, through the chain of authority, to the General Manager when the emergency should be ended. Once the General Manager has conferred with the affected county executive(s) and confirmed that the event should be concluded, the Coordinator will again initiate the notification chain (previously used for activation) to pass on that the event has ended. This includes notification of the Office of Communications which will handle all such notification to the public and to the media.

The Water Operations Division is charged with exercising this plan by December of each year if it has not been activated in that year. By January 31 each year, the WOD Manager shall forward, through appropriate channels, a memo of verification to the General Manager indicating specifics (including problem areas) of the prior year's implementation or exercise of this plan.

#### Distribution List:

##### MASTER VOLUME LIST:

General Manager's Office  
Human Resources Division  
Office of Secretary/Internal Audit

##### OUTSIDE DISTRIBUTION:

Montgomery County Division of Emergency  
Management Department of Fire and  
Rescue Services  
Prince George's County Division of  
Emergency Management  
Montgomery County Office of  
Environmental Protection  
Prince George's County Office of  
Environmental Resources

##### OTHER DISTRIBUTION:

General Counsel  
Office of Communications  
Administrative Branch  
Operations Branch  
Administrative Services Bureau  
Construction Bureau  
Customer Affairs Bureau  
General Services Bureau  
Maintenance Bureau  
Bureau Operations  
Planning and Design Bureau  
Treasurer/Finance Bureau  
Customer Services Division  
Facilities Maintenance Division  
Maintenance Reconstruction Division  
Maintenance Services Division  
Meter Services Division  
Planning and Engineering Division  
Public Affairs Office  
Regulatory Compliance Division  
Security and Safety Office  
Systems Maintenance Division  
Water Operations Division  
Office of Laboratory Services  
Water Resources Planning Section

## Appendix A.1

## Level A Restrictions

This level is actually a water shortage alert; it would be activated when there is an indication that a potential shortage of water may occur. News releases aimed at educating the public to prepare for and understand the emergency measures which may need to be implemented should be considered. News releases will tailored to the event; for example, in the case of an oil spill not expected to curtail water production for ten to twelve hours, customers would likely be advised to store water using the bath tub and available containers and to complete water-use activities by a fixed time. (This strategy could lower initial system storage, allowing increased production while raw water supply was still available.) Publication of physical limitations to the water system will be made with a request to governmental, commercial, and industrial water users as appropriate to check for system leakage:

- A. check for system leakage by temporarily shutting off automatic water make-up on chilled water and heating hot water boiler systems,
- B. assuring that automatic bleed controls are in proper calibrations for cooling towers
- C. establish twice daily water meter reading programs to detect overnight flow as an indication of leakage
- D. maintain correct water levels in cooling towers to prevent overflow on shutdown
- E. inspect total plumbing system to assure watertight conditions and
- F. educate their personnel to prepare for and understand the emergency measures which may be required.

## Appendix A.2

## Level B Restrictions

This is the lowest level of water use restriction and primarily depends upon voluntary customer participation to reduce water use, especially during the high demand periods of the day.

- A. As a goal, residents are requested to limit water consumption to one shower per person per day, and one laundry per person every fourth day (approximately 75 gallons per person per day).
- B. Minimize the use of hoses, sprinklers, or other means for sprinkling or watering of shrubbery, trees, lawns, grass, plants, vines, gardens, vegetables, flowers, or any other vegetation. All watering hoses to be provided with self closing nozzle valves. [Depending on the cause generating the water restriction a modification may be made allowing lawn watering based on address with the last digit in the address being the key (e.g., on odd days of the month (i.e., 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, etc.), those with the last digit being odd may water).] Adjust automatic or control landscape watering systems to avoid runoff. Confine watering and sprinkling between the hours of 10 p.m. to 6 a.m. with the exception of commercial florists, nurseries and agricultural usage and facilities with private or separate source of water (i.e., private pond, lake or well).
- C. Restrict the use of water for washing automobiles, trucks, trailers, trailer-houses, or any other type of mobile equipment, except where automatic car washing equipment is employed and a recirculating system is used, which reuses at least 50% of the water. Restriction, again, depends on odd/even street address.
- D. Except for make-up (e.g., compensation for evaporation and/or spillage), swimming or wading pools are only to be filled or refilled by tank trucks supplied with water from outside the restricted area.
- E. For restaurants, drive-ins, fast food, and miscellaneous eating facilities request general conservation of inside water use:
  - 1. Dishwashers to be loaded to maximum capacity when used. (Paper service could be used in lieu of glassware.)
  - 2. Use minimum amount of water for washing vegetables, fruits and other produce.
  - 3. Discontinue use of garbage disposal.
  - 4. Reduce floor washing in customer area. Sweep only and damp mop.
  - 5. Customers to be served water on request only.
- F. In older tank type toilets, insert plastic bottle filled with water to reduce the effective tank volume.
- G. Discontinue operation of all water-demanding amenities such as ornamental fountains, waterfalls, and reflecting ponds.

- H. Discontinue the washing of streets, driveways, parking lots, service station aprons, apartments, sidewalks, exterior of homes, office buildings or other outdoor surfaces. The use of buckets of water for such purposes is permitted.
- I. The use of water from fire hydrants is prohibited for purposes other than construction, fire extinguishing or water interconnection, except for essential static or residual fire plan tests.
- J. Washing machines to be loaded to full capacity when used. Businesses such as, but not limited to, beauty salons, barber shops, and car washes that wash linens in on-premises washing machines are to load to full capacity and at minimum wash cycle.

## Appendix A.3

## Level C.1 Restrictions

- A. Implement all operations of Plan B with the following modifications and additions. Notify local governments, water suppliers, U.S. General Services Administration, and the public of the Emergency condition and the following emergency measures.
- B. Residents to limit water consumption to 50 gallons per person per day (1 bath, 1 flush per person per day; 1 laundry per person every fourth day).
- C. The following restrictions apply to all commercial, industrial, and governmental operations. WSSC and County inspectors with proper identification will be used to enforce restrictions. County Police will be used to supplement and/or enforce restrictions as necessary.
1. Buildings with cooling towers to raise building temperatures to 78° and/or raise chill water temperature to achieve 78° temperature. Do not start up air conditioning system for the day until inside temperature reaches or exceeds 78° and shut down system one half hour before closing. Food facilities that require cooling for food storage and preservation are exempted.
  2. Restaurants, Drive-In and Fast Food Facilities:
    - a. Use paper service in lieu of china and glassware.
    - b. No water to be served, except on request and then only half glass servings.
    - c. Turn off all water not consumed in food or drink preparation.
    - d. Discontinue use of garbage disposal.
    - e. Reduce floor washing in customer area. Sweep only and damp mop.
  3. Restrooms:
    - a. Shut off hot water to public restrooms and reduce cold water pressure to bare minimum.
    - b. Reduce hot and cold water pressures to employee restrooms to bare minimum.
    - c. Lower hot water temperature to 100° (except in food facilities).
    - d. Stores to close off all restrooms except for one men's and one women's, where appropriate.
    - e. Water Shortage - Conservation signs to be installed.
  4. Department and Retail Stores:
    - a. In addition to Plan C-1: Sections A, C.1, C.2 & C.3, permanently turn off all water valves located on exterior of building by closing stop valves located inside building or replacing exterior valve with pipe plug.

- b. When possible, set pressure down on main water service when entering building.
  - c. Permanently close down half of the Beauty Salon sinks and secure towel washing machine.
  - d. Disconnect all customer drinking fountains.
5. Hotels, Motels, Inns and Boarding Houses:
- a. Implement all procedures and curtailment of Plan C-1: Section A, C.1, C.2, C.3 & C.4.
  - b. Change bed linen every other day except where change of occupant occurs.
  - c. Disconnect all public convenience ice cube making machines.
  - d. Instruct maid service as to use of bucket for bathroom cleaning.
  - e. Post water conservation signs at each point of water usage in individual rooms as well as public areas.
6. Health Care Facilities including Hospitals, Clinics, Sanitariums, Nursing Homes, Pharmacies, Laboratories, Ambulance Services and Rescue Squads:
- a. Implement only those procedures and curtailment of Plan C-1: Sections A, C.1, C.2, C.3, C.4 & C.5 which do not endanger intended services.
7. Dentists and Doctors:
- a. Implement Plan C-1: Sections A, C.1, C.2, C.3, C.4, C.5 & C.6.
  - b. Turn off all continuous water running devices.
8. Universities & Colleges - Public, Private:
- a. Implement all procedures and curtailment of Sections A, C.1, C.2, C.3, C.4 & C.5, as applicable.
  - b. Laundry Rooms are to be closed during the hours of 11 a.m. to 7 p.m.
9. Private Clubs, Public Parks, Golf Courses, Country Clubs and other recreational facilities:
- a. Implement all procedures and curtailment of Sections A, C.1, C.2, C.3, C.4 & C.5
10. Landscape & Lawn Watering:
- a. Confine watering and sprinkling between the hours of 12 p.m. to 4 a.m. with the exception of commercial florists, nurseries and agricultural usage and facilities with certified private or separate source of water.

## Appendix A.4

## Level C.2 Restrictions

- A. Implement all operations of Plan C-1 with the following modifications and additions.
- B. Residents to limit consumption to 40 gallons per day per person (1 bath, 1 flush per person per day).
- C. The use of water from private/independent sources is prohibited in order to maintain a reserve for fire purposes and as a source of potentially potable water.
- D. The following restrictions apply to all commercial, industrial, and governmental operations. WSSC and County inspectors with proper identification will be used to enforce restrictions. County Police will be used to supplement and/or enforce restrictions as necessary.
  1. Industrial, Commercial, Retail and Office Buildings:

Buildings with cooling towers to raise building temperature to 80° and/or raise chill water temperature to achieve 80° temperature, plus close all bleed off valves. Where multi-units are used, cut off one air conditioner unit. Food facilities that require cooling for food storage and preservation are exempted. Manufactured products, computer rooms, laboratory and research equipment that are similarly heat-sensitive are exempted.
  2. Restaurants, Drive-In and Fast Food Facilities:
    - a. No water to be served to customers.
    - b. Evaluate for all additional conservation measures.
    - c. Reduce and/or eliminate use of steamers for warming of foods.
    - d. Ice cream dipper fountains to be turned off.
    - e. Discontinue use of ice cubes.
  3. Restrooms:
    - a. Shut off cold water to all public restroom sinks.
    - b. Restrict urinals and toilets to minimal water flow.
  4. Department and Retail Stores:
    - a. Implement all procedures and curtailments of Plan C-2: Sections A, D.1, D.2 & D.3.

- b. Permanently turn off steam boiler used only for alterations. Use steam irons as alternative.
  - c. Beauty and Barber Shops to do single rinse shampoo only; when doing hair cuts, spray bottles to be used to wet hair instead of sink; disposable paper towels to be used, or linens and towels washed by commercial laundry located in non-impacted area, when possible.
  - d. In summer, reduce interior heat loads by turning off as many lighting fixtures as possible.
5. Hotels, Motels, Inns and Boarding Houses:
- a. Implement all procedures and curtailments of Plan C-2: Sections A, D.1, D.2 & D.3 & D.4.
  - b. Change bed linens every third day except where change of occupant occurs.
  - c. Provide only one set of other than bed linen per occupant per day.
  - d. All linens and towels to be washed by commercial laundry located in non-impacted area, when possible.
  - e. Discontinue use of ice cubes except for food preservation.
6. Commercial Laundries:
- a. Reduce water consumption by at least 30% minimum.
7. Bottling Plants:
- a. Discontinue refilling returnable bottles.
  - b. Reduce water consumption by at least 40% minimum.
  - c. Wherever possible, use trucked-in water for all washing and bottling needs.
8. Car Washing and Landscape or Lawn Watering:
- a. All car washing, including commercial facilities which recycle, is prohibited.
  - b. The use of water for outside watering and sprinkling is to be discontinued.
9. General:
- a. Washing of sidewalks and exterior paved areas, vehicles, building windows and other non-essential items is prohibited.

## Appendix A.5

## Level C.3 Restrictions

- A. Implement all of Plan C-2 with the following modifications and additions.
- B. Residents to limit consumption to 30 gallons per person per day (1 flush per person per day; 1 bath per person every other day).
- C. Commandeer all lakes, wells and other private water supplies.
- D. Establish Emergency Water Supply Points with water tank truck or trailers to provide minimum essential supplies of potable water to residents for human consumption at a rate of  $\frac{1}{2}$  gallon of water per person per day.
- E. Establish water purification points on available water sources (e.g., lakes, quarries), and/or arrange with non-affected Water Suppliers for the establishment of resupply points, for refilling of water transport vehicles used to provide potable water to Emergency Water Supply Points.
- F. Prepare for fire suppression operations utilizing the following:
1. Available "tank wagons".
  2. Tank wagons obtained under mutual aid agreements with non-affected jurisdictions.
  3. When needed, water transport vehicles from Emergency Water Supply Points.
  4. Fire department water resupply point locations identified in advance and established by local fire departments at streams, ponds or other water sources.
  5. When needed, water resupply points established to refill water transport vehicles from Emergency Water Supply Points.
- G. Prescribe hygienic measures for human waste disposal in recognition that a water outage precludes flushing of toilets. Use local health and environmental agencies to determine specific measures for the particular situation including the following:
1. Prescribing sources of water for collection (rainwater or streams and ponds not safe for human consumption) which can be used for periodic toilet flushing.
  2. Use of expedient toilets made with trash or garbage cans or similar containers partially filled with  $\frac{1}{2}$  measuring cup of household laundry bleach per gallon of water sufficient to cover waste material.
  3. Use of outside "slit" trenches with available lime to cover waste material.
  4. Location of commercial chemical toilets at public locations, such as near Emergency Water Supply Points.

5. Publicizing necessary measures for public information.
- H. The following restrictions apply to all commercial, industrial, and government operations. WSSC and County Inspectors with proper identification will be used to enforce restrictions. County Police will be used to supplement and/or enforce restrictions as necessary.
1. Water-cooled air conditioning units to be turned off. Food facilities that require cooling for food storage and preservation are excepted. Manufactured products, computer rooms, laboratory and research equipment that are similarly heat-sensitive are excepted.
  2. 65% of all machines in laundrettes or laundromats are to be secured. All water supply to sinks is to be secured.
  3. All concrete batching plants are to use only trucked-in water from resources out of the impact area.
  4. All manufacturing plants using water as the base of product shall use only trucked-in water from resources out of the impact area.

## Appendix A.6

## Level D Restrictions

This mandatory restriction level will be implemented when Level B (voluntary) restrictions are inadequate to maintain water usage low enough to protect public safety for "urgent" scenarios such as loss of a large water main. This level may be implemented immediately (without first utilizing voluntary restrictions) when a quicker public response is required. In Level D, the following Level B restrictions have been expanded:

- A. Prohibit all use of hoses, sprinklers (including automatic systems), or other means for sprinkling or watering of shrubbery, trees, lawns, grass, plants, vines, gardens, vegetables, flowers, or any other vegetation. The use of buckets of water for such vegetation is permitted. Facilities with private or separate source of water (i.e., private pond, lake or well) are excepted, and watering by commercial florists, nurseries and agricultural operations is permitted between the hours of 10 p.m. to 6 a.m.
- B. Prohibit all use of water for washing automobiles, trucks, trailers, trailer-houses, or any other type of mobile equipment, except where automatic car washing equipment is employed and a recirculating system is used, which reuses at least 50% of the water.
- C. Swimming or wading pools are only to be filled or refilled by tank trucks supplied with water from outside the restricted area. This includes make-up water.
- D. Restaurants, drive-ins, fast food, and miscellaneous eating facilities:
  - 1. Discontinue all dish washing. (Paper service could be used in lieu of china and glassware.)
  - 2. Discontinue use of garbage disposal.
  - 3. Reduce floor washing in customer area. Sweep only and damp mop.
  - 4. No water to be served except on request.

The following Level B restrictions remain unchanged in Level D:

- E. In older tank type toilets, insert plastic bottle filled with water to reduce the effective tank volume.
- F. Operation of all water-demanding amenities such as ornamental fountains, waterfalls, and reflecting ponds is prohibited.
- G. Washing of streets, driveways, parking lots, service station aprons, apartments, sidewalks, exterior of homes, office buildings or other outdoor surfaces is prohibited. The use of buckets of water for such purposes is permitted.
- H. The use of water from fire hydrants is prohibited for any purpose other than fire extinguishing or water interconnection, except for essential static or residual fire plan tests.
- I. Washing machines to be loaded to full capacity when used. Businesses such as, but not limited to, beauty salons, barber shops, and car washes that wash linens

in on-premises washing machines are to load to full capacity and at minimum wash cycle.

Level D includes the following in addition to Level B restrictions:

- J. Residents should limit water consumption to one shower, one flush per person per day, and one laundry per family every other day (approximately 75 gallons per person per day).
- K. Hotels, motels, inns and boarding houses:
  - 1. Change bed linen every other day except when there is a change of occupant.
  - 2. Shut off water supply to all public convenience ice cube making machines.
  - 3. Instruct maids to use buckets for bathroom cleaning.

## Appendix A.7

## Level E, F, and G Restrictions

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Level E Restrictions

Level E Consumptive Water Use Restrictions: Under this restriction level, customers would be advised that the water cannot be consumed without additional treatment; the water would however, be safe for domestic use. The most likely scenario would be a coliform or turbidity violation which would require a boil water order, requiring customers to boil water prior to consumption or to use bottle water. Note that a three minute (vigorous) boiling time is included in sample notification for coliform contamination provided in the EPA publication, Emergency Disinfection of Drinking Water, EPA 810F-93-002. Actual boiling time or other recommended home treatment procedure may be different and will be specified by the Maryland (MDE) Water Supply Program Office on a case-by-case basis; for example, for cryptosporidium, EPA and MDE both recommend one minute boiling.

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Level F Restrictions

Level F Consumptive Water Use Prohibition: Under this restriction level, customers would be advised that the water is not safe for consumption; the water could however, be determined (by the State) to be safe for domestic utility use such as bathing and dish washing. This type of restriction might be implemented in the event of distribution system contamination (e.g., backflow) or if a chemical contaminant in the raw water supply were not removed by the treatment process and entered the distribution system prior to detection. Determination of health hazard would be made by the Maryland (MDE) Water Supply Program Office on a case-by-case basis.

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Level G Restrictions

Level Full Water Use Prohibition: These restrictions would be implemented when the water in the distribution system is not safe for any type of usage, or if there is only enough water for fire fighting purposes. Water use would be restricted to use only in an extreme life threatening emergency (e.g., fire fighting). [Determination of health hazard would be made by the Maryland (MDE) Water Supply Program Office on a case-by-case basis.]

Appendix B.1 SAMPLE NEWS RELEASE - C-1 RESTRICTIONS FOR THE MONTGOMERY  
COUNTY HIGH ZONE AND MONTGOMERY COUNTY ZONES DEPENDENT ON THE HIGH ZONES

Washington Suburban Sanitary Commission  
14501 Sweitzer Lane, Laurel, MD 20707  
Phone: (301) 206-8100

FOR RELEASE:           (Release date)          

FOR FURTHER INFORMATION CONTACT: MARJORIE JOHNSON, COMMUNICATIONS DIRECTOR  
(301) 206-8100

WSSC Issues Emergency Water Restrictions For Parts Of Montgomery County  
— Level C-1 Restrictions with Modifications —

Limited water supply brought on by (state reason for emergency i.e., broken water main, pumping station failures, fire damage, electrical power failure) has resulted in the Washington Suburban Sanitary Commission's issuance of water restrictions today for customers in parts of Montgomery County.

Montgomery County residents located north of a boundary extending from the Prince George's County line; west along Randolph Road to Montrose, Falls, Glen and Travilah Roads, to the Potomac river, will be affected.

WSSC requests customers living in these areas to employ the following emergency practices immediately:

- ♦ use of hoses and sprinklers should be restricted to odd days of the month for customers whose address ends with an odd number; similarly, even addresses are limited to even days;
- ♦ operation of all ornamental fountains, waterfalls, reflecting ponds and the like should cease;
- ♦ washing of vehicles and other mobile equipment is restricted to the same odd/even day rule, except for car washes which recycle at least 50% of their water;
- ♦ washing streets, driveways, parking lots, house exteriors and other outdoor surfaces is prohibited;
- ♦ swimming or wading pools should not be filled or refilled; make-up water is okay (Tank trucks may be used to bring water in from outside of the area.);
- ♦ fire hydrant use is prohibited for any purpose other than fire extinguishing;
- ♦ all business and residential washing machines should be loaded to capacity before use; and
- ♦ eating establishments should turn off dish washing equipment and all water not required for food or drink preparation; discontinue use of garbage disposals; and sweep and damp mop floors in customer areas.

Today's announcement of water restrictions comes after (state reason and if possible duration of water use restriction or what the duration of the water restriction is dependent upon.) These restrictions must be imposed for safety purposes to conserve the available water to deliver a minimum quantity of water to all the customers in the affected area and try to maintain fire protection in the affected community.

-MORE-

ADD ONE  
WASHINGTON SUBURBAN SANITARY COMMISSION

For more information contact the Office of Communications at (301) 206-8100. Printed copies of the restrictions are available at County libraries in the affected area.

These Level B restrictions are expected to remain in effect for at least 14 days. If conditions worsen, more comprehensive Level C-2 or C-3 restrictions may be required. Changes in restriction level will be communicated through news releases. Additionally, during the emergency, customers can call (301) 206-7473 to get a recorded update on the current restriction level.

###

Appendix B.1a

The Montgomery County High Service Area



Appendix B.1a

## Appendix B.2 SAMPLE NEWS RELEASE — C-1 RESTRICTIONS FOR THE BOWIE ZONE

Washington Suburban Sanitary Commission  
14501 Sweitzer Lane, Laurel, MD 20707  
Phone: (301) 206-8100

FOR RELEASE:           (Release date)          

FOR FURTHER INFORMATION CONTACT: MARJORIE JOHNSON, COMMUNICATIONS DIRECTOR  
(301) 206-8100

WSSC Issues Bowie Area Emergency Water Restrictions  
— Level C-1 Restrictions with Modifications —

The Washington Suburban Sanitary Commission today issued emergency water restrictions affecting the Bowie area due to high consumer demand and limited fire flow capacity.

The area south of Goddard Space Center and the National Agricultural Research Center, east of Good Luck Road, northeast of state route 193, and north of John Hanson Highway (Rt. 50) will be affected. Although WSSC has a number of projects underway to relieve the problem, residents are asked to start employing the following water conservation practices immediately:

- ♦ use of hoses and sprinklers should be restricted to odd days of the month for customers whose address ends with an odd number; similarly, even addresses are limited to even days;
- ♦ operation of all ornamental fountains, waterfalls, reflecting ponds and the like should cease;
- ♦ washing of vehicles and other mobile equipment is restricted to the same odd/even day rule, except for car washes which recycle at least 50% of their water;
- ♦ washing streets, driveways, parking lots, house exteriors and other outdoor surfaces is prohibited;
- ♦ swimming or wading pools should not be filled or refilled; make-up water is okay (Tank trucks may be used to bring water in from outside of the area.);
- ♦ fire hydrant use is prohibited for any purpose other than fire extinguishing;
- ♦ all business and residential washing machines should be loaded to capacity before use; and
- ♦ eating establishments should turn off dish washing equipment and all water not required for food or drink preparation; discontinue use of garbage disposals; and sweep and damp mop floors in customer areas.

The restrictions are being issued because increased development has out-paced the Commission's attempts to update and improve system pressure in the Bowie area. Fire hydrant tests conducted over the past five years indicate a steady deterioration of system pressure.

-MORE-

ADD ONE  
WASHINGTON SUBURBAN SANITARY COMMISSION

For more information contact the Office of Communications at (301) 206-8100. Printed copies of the restrictions are available at County libraries in the affected area.

These Level C-1 restrictions are expected to remain in effect for at least 14 days. If conditions worsen, more comprehensive Level C-2 or C-3 restrictions may be required. Changes in restriction level will be communicated through news releases. Additionally, during the emergency, customers can call (301) 206-7473 to get a recorded update on the current restriction level.

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Appendix B.2a

The Bowie Service Area



Appendix B.3

SAMPLE MEDIA RELEASE FOR LEVEL E RESTRICTIONS

Washington Suburban Sanitary Commission  
14501 Sweitzer Lane, Laurel, MD 20707  
Phone: (301) 206-8100

FOR RELEASE:           (Release date)          

FOR FURTHER INFORMATION CONTACT: MARJORIE JOHNSON, COMMUNICATIONS DIRECTOR  
(301) 206-8100

**MARYLAND WATER DISTRICT VIOLATES MICROBIOLOGICAL REQUIREMENTS; CUSTOMERS SHOULD BOIL THEIR WATER OR SEEK ALTERNATIVE WATER SUPPLIES.**

THE WASHINGTON SUBURBAN SANITARY COMMISSION HAS VIOLATED FEDERAL DRINKING WATER REGULATIONS WHICH PROHIBIT FECAL COLIFORM BACTERIA IN THE DRINKING WATER.

MARJORIE JOHNSON, WSSC'S SPOKESPERSON, SAID THAT THE PROBLEM APPEARS TO BE RELATED TO THE WATER DISTRIBUTION SYSTEM WHICH SERVES BOTH MONTGOMERY AND PRINCE GEORGE'S COUNTIES IN MARYLAND, BUT THE SOURCE OF THE CONTAMINATION HAS NOT YET BEEN LOCATED. THE PROBLEM WAS DISCOVERED           (Date test results read)          . SINCE THAT TIME, RESIDUAL CHLORINE LEVELS THROUGHOUT THE WATER DISTRIBUTION SYSTEM HAVE BEEN INCREASED TO A MAXIMUM OF 3 MILLIGRAMS PER LITER, BUT POSSIBLE CONTAMINATION COULD STILL POSE A RISK FOR WSSC CUSTOMERS. JOHNSON RECOMMENDED THAT ALL WSSC CUSTOMERS BOIL THEIR WATER VIGOROUSLY FOR THREE FULL MINUTES BEFORE CONSUMPTION OR USE BOTTLED WATER FOR DRINKING UNTIL FURTHER NOTICE.

ACCORDING TO JOHNSON, THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA) SETS DRINKING WATER STANDARDS AND HAS DETERMINED THAT THE PRESENCE OF FECAL COLIFORMS OR E. COLI IS A SERIOUS HEALTH CONCERN. FECAL COLIFORMS AND E. COLI ARE GENERALLY NOT HARMFUL THEMSELVES, BUT THEIR PRESENCE IN DRINKING WATER IS SERIOUS BECAUSE THEY USUALLY ARE ASSOCIATED WITH SEWAGE OR ANIMAL WASTES. THE PRESENCE OF THESE BACTERIA IN DRINKING WATER IS GENERALLY A RESULT OF A PROBLEM WITH WATER TREATMENT OR THE PIPES WHICH DISTRIBUTE THE WATER, AND INDICATES THAT THE WATER MAY BE CONTAMINATED WITH ORGANISMS THAT CAN CAUSE DISEASE. DISEASE SYMPTOMS MAY INCLUDE DIARRHEA, CRAMPS, NAUSEA, AND POSSIBLY JAUNDICE, AND ASSOCIATED HEADACHES AND FATIGUE.

-MORE-

ADD ONE

WASHINGTON SUBURBAN SANITARY COMMISSION

THESE SYMPTOMS, HOWEVER, ARE NOT JUST ASSOCIATED WITH DISEASE-CAUSING ORGANISMS IN DRINKING WATER, BUT ALSO MAY BE CAUSED BY A NUMBER OF FACTORS OTHER THAN YOUR DRINKING WATER. EPA HAS SET AN ENFORCEABLE DRINKING WATER STANDARD FOR FECAL COLIFORMS AND E. COLI TO REDUCE THE RISK OF THESE ADVERSE HEALTH EFFECTS. UNDER THIS STANDARD ALL DRINKING WATER SAMPLES MUST BE FREE OF THESE BACTERIA. DRINKING WATER WHICH MEETS THIS STANDARD IS ASSOCIATED WITH LITTLE OR NONE OF THIS RISK AND SHOULD BE CONSIDERED SAFE. STATE AND LOCAL HEALTH AUTHORITIES RECOMMEND THAT CONSUMERS TAKE THE FOLLOWING PRECAUTIONS: CUSTOMERS SHOULD BOIL THEIR WATER BEFORE CONSUMPTION OR SEEK ALTERNATIVE WATER SUPPLIES SUCH AS BOTTLED WATER.

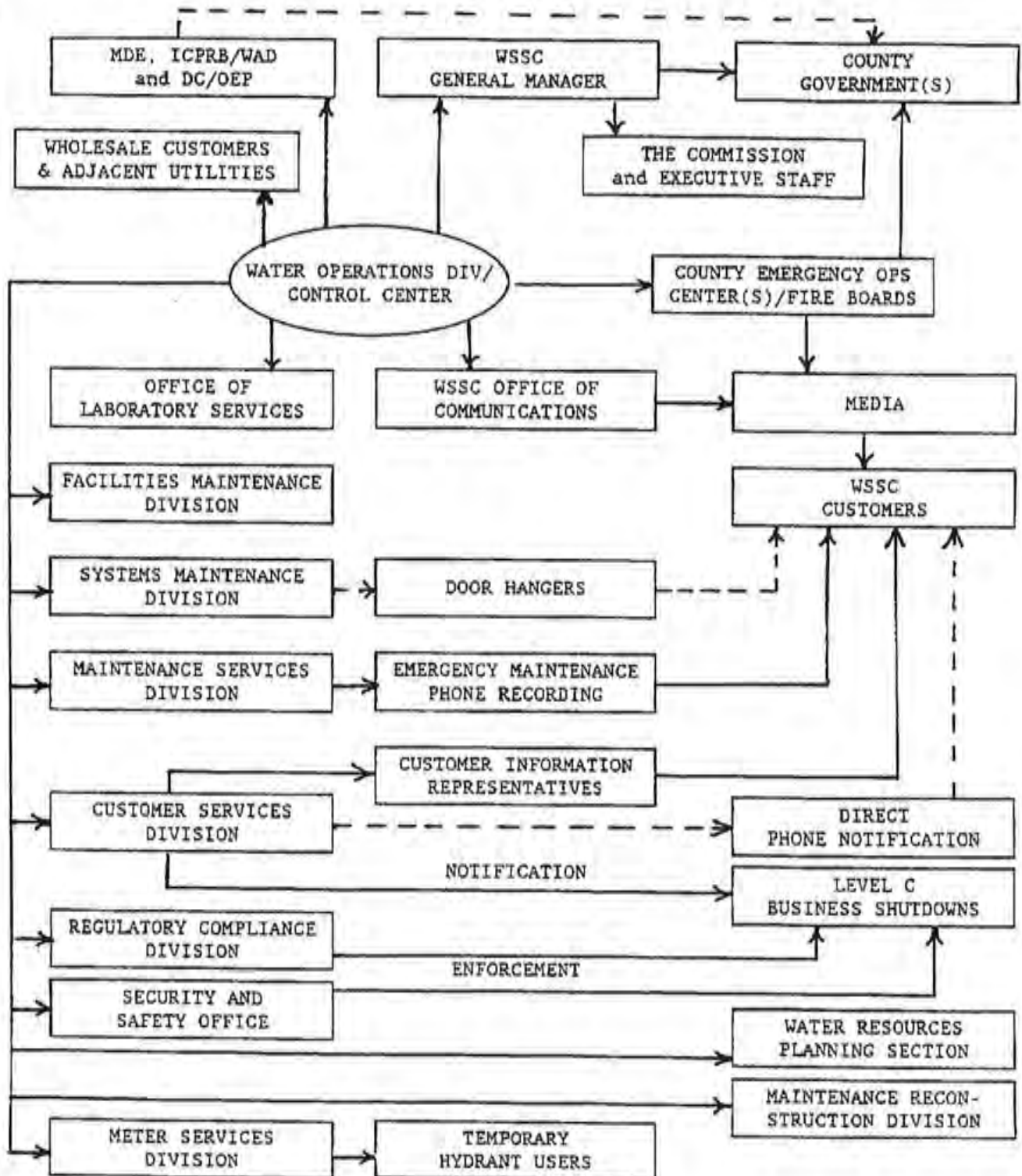
WSSC IS CONDUCTING ADDITIONAL SAMPLING THROUGHOUT ITS DISTRIBUTION SYSTEM TO LOCATE THE CAUSE OF SYSTEM CONTAMINATION. JOHNSON SAID SHE WOULD NOTIFY CUSTOMERS WHEN THEY COULD RETURN TO USING THEIR NORMAL WATER SUPPLY.

RESIDENTS WHO WOULD LIKE MORE INFORMATION ABOUT THE SITUATION SHOULD CONTACT THE WASHINGTON SUBURBAN SANITARY COMMISSION'S COMMUNICATIONS OFFICE BETWEEN 8:15 A.M. AND 5:00 P.M. THE PHONE NUMBER IS (301) 206-8100.

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Appendix C

NOTIFICATION DIAGRAM



## Appendix D.1 NOTIFICATION OUTLINE FOR DROUGHT INDUCED RESTRICTIONS

Drought Induced Restrictions imposed during an area wide drought, will be coordinated by the Interstate Commission on the Potomac River Basin (ICPRB). The ICPRB will be managing water releases from water impoundments and allocating water withdrawal rates from the area resources among Washington Aqueduct, Fairfax County Water Authority, City of Rockville and the WSSC. The ICPRB will be in daily contact with the Systems Control Center/Water Operations Division.

- A. Water Operations Division Manager will notify the General Manager and provide specifics for the needed levels of reduction and recommended courses of action as conditions change
- B. Systems Control Manager/Water Operations Division will notify Maintenance Services Division, Systems Maintenance Division, Customer Services Division, Maintenance Reconstruction Division, Howard County, Andrews AFB, and area water purveyors, Montgomery and Prince George's County OEPs and Fire Boards, the Regulatory Compliance Division, Office of Security and Safety Services and
- C. The General Manager will notify the Montgomery County and Prince George's County Executives, the Office of Communications, the WSSC Commissioners.
- D. The Office of Communications will notify the news media, maintain the recorded information line, provide informational flyers at county libraries, provide information to Communications Office at Andrews AFB
- E. Systems Maintenance Division will increase the priority given for all water leaks
- F. Maintenance Services Division will increase priority on repairs on all water leaks, discontinue routine flushing and flushing for discolored water complaints, monitor all leaks on property closer and require prompter repairs or turn off if necessary, provide information on recorded message
- G. Customer Services Division will notify businesses for water service interruption and provide information on recorded message
- H. Meter Services Division will contact metered fire hydrant users
- I. Maintenance Reconstruction Division will discontinue flushing for Cleaning and Lining contracts
- J. Regulatory Compliance Division will provide assistance if necessary to enforce the water restrictions
- K. Office of Security and Safety Services will provide assistance if necessary to enforce the water restrictions
- L. Andrews AFB would be asked to reduce their water demand and implement water conservation
- M. Howard County could be asked to reduce their demand or provide water depending on the drought situation

## Appendix D.2 NOTIFICATION OUTLINE FOR DISTRIBUTION SYSTEM RESTRICTIONS

Water Distribution System Restrictions caused by a water main failure, pumping station failure, demands which exceed the water distribution systems capacity

- A. Water Operations Division Manager will notify the General Manager and will determine the percent of reduction needed to maintain fire protection and water supply
- B. Systems Control Manager/Water Operations Division will notify Maintenance Services Division, Systems Maintenance Division, Customer Services Division, Maintenance Reconstruction Division, Howard County, Andrews AFB, and possibly area water purveyors, Montgomery and Prince George's County OEPs and Fire Boards, Water Resources Planning
- C. The General Manager will notify the Montgomery County and Prince George's County Executives, the Office of Communications, the WSSC Commissioners.
- D. The Office of Communications will notify the news media, maintain the recorded information line, provide informational flyers at county libraries, provide information to Communications Office at Andrews AFB
- E. Systems Maintenance Division will increase the priority given to all water leaks
- F. Maintenance Services Division will increase priority on repairs on all water leaks, discontinue routine flushing and flushing for discolored water complaints, monitor all leaks on property closer and require prompter repairs or turn off if necessary, provide information on recorded message
- G. Customer Services Division will notify businesses for water service interruption and provide information on recorded message
- H. Meter Services Division will contact metered fire hydrant users
- I. Maintenance Reconstruction Division will discontinue flushing for Cleaning and Lining contracts
- J. Water Resources Planning to evaluate the possibility of using water from the adjacent water purveyors
- K. Howard County could be requested to reduce its water demand or provide water
- L. Andrews AFB could be asked to reduce their water demand and implement water conservation

## Appendix D.3 NOTIFICATION OUTLINE FOR HAZARDOUS SPILL

A hazardous material spill on the Potomac River would affect other area water purveyors and a spill on the Patuxent River would primarily affect the WSSD

- A. Water Operations Division Manager will notify the General Manager and will determine the percent of reduction needed to maintain fire protection and water supply
- B. Systems Control Manager/Water Operations Division will notify Maintenance Services Division, Systems Maintenance Division, Customer Services Division, Maintenance Reconstruction Division, Howard County, Andrews AFB, and area water purveyors, Montgomery and Prince George's County OEPs and Fire Boards, Water Resources Planning
- C. The General Manager will notify the Montgomery County and Prince George's County Executives, the Office of Communications, the WSSC Commissioners.
- D. The Office of Communications will need to coordinate very carefully with communication officers from other water purveyors in the area since the news of this will most probably be out to the public; a coordinated message must be delivered to minimize the confusion which will unavoidably result. The Communications Office will notify the news media, maintain the recorded information line, provide informational flyers at county libraries, provide information to the Communications Office at Andrews AFB
- E. Systems Maintenance Division will give all water leaks increased priority
- F. Maintenance Services Division will increase priority on repairs on all water leaks, discontinue routine flushing and flushing for discolored water complaints, monitor all leaks on property closer and require prompter repairs or turn off if necessary, provide information on recorded message
- G. Customer Services Division will notify businesses for water service interruption and provide information on recorded message
- H. Meter Services Division will contact metered fire hydrant users
- I. Maintenance Reconstruction Division will discontinue flushing for Cleaning and Lining contracts
- J. Water Resources Planning to evaluate the possibility of using water from the adjacent water purveyors

## Appendix D.4 NOTIFICATION OUTLINE FOR WATER SUPPLY CONTAMINATION

Terrorist threat of introducing a contaminant into the water distribution system

- A. Water Operations Division Manager will notify the General Manager, Maryland Department of the Environment
- B. Systems Control Manager/Water Operations Division will notify D.C.'s OEP, Maintenance Services Division, Systems Maintenance Division, Customer Services Division, Maintenance Reconstruction Division, Howard County, Andrews AFB, and area water purveyors, Montgomery and Prince George's County OEPs, Consolidated Laboratories
- C. The General Manager will notify the Montgomery County and Prince George's County Executives, the Office of Communications, the WSSC Commissioners.
- D. Maryland Department of the Environment would contact the Montgomery and Prince George's County Health Departments and EPA Region III
- E. The Consolidated Laboratories will provide information on the contaminant and will conduct testing for the possible contaminants and contact and/or arrange for testing outside of the Commission's Laboratories if deemed necessary
- F. The Office of Communications will need to coordinate very carefully with communication officers from other water purveyors in the area. A coordinated message must be delivered to minimize the confusion which will result. The Communications Office will notify the news media, maintain the recorded information line, provide informational flyers at county libraries
- G. Systems Maintenance Division may be able to isolate the contaminant by closing valves or deliver bottled water if it is deemed necessary (and if the impacted area is small)
- H. Maintenance Services Division will provide information on recorded message
- I. Customer Services Division will provide information on recorded message
- J. Office of Security and Safety Services will contact Federal law enforcement officials

## Appendix D.5 NOTIFICATION OUTLINE FOR WATER TREATMENT PROBLEMS

The water supply is contaminated or does not meet the minimum requirement as outlined by the Safe Drinking Water Act

- A. Water Operations Division Manager will notify the General Manager and within one hour, the Maryland Department of the Environment
- B. Systems Control Manager/Water Operations Division will notify D.C.'s OEP, Maintenance Services Division, Systems Maintenance Division, Customer Services Division, Maintenance Reconstruction Division, Howard County, Andrews AFB, and area water purveyors, Montgomery and Prince George's County OEPs, Consolidated Laboratories
- C. The General Manager will notify the Montgomery County and Prince George's County Executives, the Office of Communications, the WSSC Commissioners.
- D. Maryland Department of the Environment would contact the Montgomery and Prince George's County Health Departments and EPA Region III
- E. The Consolidated Laboratories will conduct testing for the possible contaminants and contact and/or arrange for testing outside of the Commission's Laboratories if deemed necessary
- F. The Office of Communications will need to coordinate very carefully with communication officers from other water purveyors in the area since the news of this will most probably be out to the public; a coordinated message must be delivered to minimize the confusion which will unavoidably result. The Communications Office will notify the news media, maintain the recorded information line, provide informational flyers at county libraries
- G. Systems Maintenance Division will deliver bottled water if it is deemed necessary and if the impacted area is small enough to make this feasible (e.g., a repeat, site-specific positive fecal coliform sample.)
- H. Maintenance Services Division will provide information on recorded message
- I. Customer Services Division will provide information on recorded message

Appendix E

ANNOTATED CODE OF MARYLAND - APPLICABLE EXCERPTS

Reprinted from the Annotated Code of Maryland  
and 1994 Cumulative Supplement

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**ARTICLE 29.****WASHINGTON SUBURBAN SANITARY  
DISTRICT.**

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## TITLE 9.

## MISCELLANEOUS POWERS AND DUTIES OF WSSC.

**§ 9-101. Power to make and enforce rules and regulations; notice;  
effect.**

(a) *Authority of WSSC.* — (1) Except as otherwise provided by this article, the WSSC may adopt rules and regulations to carry out the provisions of this article and any other laws the enforcement and administration of which is vested in the WSSC.

(2) The WSSC may:

(i) Limit or regulate the use and supply of water service and sanitary sewer service on a temporary basis in any area or to any premises served by the WSSC's facilities, as the needs of the occasion and the protection of the WSSC's systems require;

(ii) Adopt rules and regulations not inconsistent with law that the WSSC considers necessary for the public safety, health, comfort, or convenience in the construction, operation, maintenance, expansion, relocation, replacement, renovation, and repair of the WSSC's water system and sanitary sewer system; and

(iii) Fix the forms of permits and specify the nature, type, and amount of information, detail, and engineering data that a person must submit to the WSSC for any permit authorized or required by this article.

(b) *Notice.* — Except for the immediate preservation of the public health and safety or for emergency provisions required to protect the WSSC's systems, the WSSC shall publish separate notices of any new rules and regulations which are authorized by this section at least 30 days before their effective date in at least 1 newspaper published in each county.

(c) *Force and authority of law.* — Any rule or regulation adopted by the WSSC under this section has the force and authority of law. (1981, ch. 805, § 1; 1982, ch. 767, § 1; 1983, ch. 57, § 2; 1987, ch. 685; 1988, ch. 647, § 4.)

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TITLE 18.

MISCELLANEOUS PROVISIONS.

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§ 18-104. Penalties.

(a) A person who violates any of the following provisions is guilty of a misdemeanor and on conviction is subject to a fine not exceeding \$1,000 or imprisonment not exceeding 30 days or both:

- (1) Construction of private or municipal systems . . . . . § 3-103 (a) (3).
- (2) Service connections . . . . . § 3-104.
- (3) Control and disposition of surface waters . . . §§ 3-202 through 3-207.
- (4) Bonds and anticipation notes . . . . . §§ 4-101 through 4-112.
- (5) WSSC rules and regulations (except for those specified in subsections (f) and (g) of this section) . . . . . § 9-101.
- (6) Public utilities construction . . . . . § 10-104.
- (7) Flood control and navigation bonds . . . . . § 13-102.
- (8) Tampering with WSSC system in Anne Arundel County . . . § 14-103.
- (9) Tampering with WSSC system in Howard County . . . . . § 15-105.
- (10) Unlawful use of WSSC property, except for the rules and regulations governing publicly owned watershed property . . . . . § 18-101.
- (11) Leaving dead animals or fecal matter unburied . . . . . § 18-102.

(b) A person who violates §§ 11-101 through 11-117 (Merit System) of this article is guilty of a misdemeanor and on conviction is subject to a fine not exceeding \$500.

(c) A person who violates § 3-206 of this article (special provisions applicable to Takoma Park and Prince George's County, except the City of Bowie) is guilty of a misdemeanor and on conviction is subject to a fine not exceeding \$500 or imprisonment not exceeding 30 days or both.

(d) Any person who violates § 12-106 of this article (prohibited acts) is guilty of a misdemeanor and on conviction is subject to a fine not exceeding \$1,000 or imprisonment not exceeding 1 year or both.

(d-1) A person who violates § 3-109 of this article by committing a prohibited act listed under § 14-308 of the State Finance and Procurement Article is, on conviction, subject to the penalties provided under that section.

(e) A person may be convicted of a second or subsequent violation of any provision of this article or any rule or regulation adopted under this article.

(f) A person who violates § 9-101 of this article (rules and regulations governing publicly owned watershed property) has committed a WSSC infraction and shall pay to the WSSC a civil fine as provided in § 18-104.1 of this article.

(g) A person who violates any of the following provisions has committed a WSSC infraction and shall pay to the WSSC a civil monetary fine as provided in § 18-104.2 of this article:

- (1) Rules and regulations governing sewer cleaning . . . . . § 3-301.
  - (2) Rules and regulations governing plumbing . . . . . § 8-101, § 8-102, § 8-103, § 9-101, § 14-102, or § 15-104.
  - (3) Rules and regulations governing erosion and sediment control for utility construction . . . . . § 9-101.
  - (4) Rules and regulations governing gasfitting . . . . . § 9-102.  
(1981, ch. 805, § 1; 1982, ch. 767, § 1; ch. 768, § 1; ch. 769, § 2; 1983, ch. 57, § 2; 1984, ch. 673; 1986, ch. 770; 1987, ch. 505; 1989, ch. 5, § 1; 1992, ch. 1989.)
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## Appendix F

## RELATED PLANS, AGREEMENTS AND PUBLICATIONS

COPIES OF THE FOLLOWING CURRENT PLANS, AGREEMENTS, AND PUBLICATIONS ARE MAINTAINED AT THE CONTROL CENTER:

Emergency Water Use Restrictions For the WSSD—SOP - 1995  
COG Water Supply Emergency Agreement - 1979  
COG Metropolitan Washington Water Supply Emergency Plan - 1994  
Potomac River Low Flow Allocation (LFA) Agreement - 1978  
    LFA Agreement Modification No. 1 - 1982  
    LFA Agreement Modification No. 2  
    LFA Agreement Ancillary Agreement No. 1  
    LFA Agreement Memorandum Of Intent  
Water Supply (Drought) Coordination Agreement - 1982  
    Drought-Related Operations Manual (abridged)  
Potomac River Reservoir Agreements  
    Contract For Future Water Supply Storage In The Bloomington Reservoir  
    Novation Agreement For Initial Water Supply In Bloomington Reservoir  
    Original MD Water Authority Contract For Water Supply In Bloomington  
    Novation Agreement Regarding DC's Payment To The Potomac Water Authority  
    Bloomington Lake Payment Agreement  
    Little Seneca Lake Cost-Sharing Agreement  
    Savage Reservoir Maintenance And Operation Cost-Sharing Agreement  
Plan For Actual Or Threatened Tampering With Water Supply - Part I (METRO) - 1983  
Plan For Actual Or Threatened Tampering With Water Supply - Part II (WSSC) - 1983  
Toxics Threat Manual - 1987  
Emergency Action Plan - Little Seneca Dam - 1990  
Emergency Action Plan - Brighton Dam - 1989  
EPA General Public Notification For Public Water Systems - 1989

COPIES OF THE FOLLOWING INACTIVE PLANS, AGREEMENTS, AND PUBLICATIONS ARE MAINTAINED AT THE CONTROL CENTER FOR REFERENCE ONLY:

COG Water Supply Emergency Plan -1979  
WSSC Emergency Operating Center Operations Manual - 1981  
WSSC Water Demand Reduction Plan - 1981  
    Plan A - Water Shortage Alert Stage - 1981  
    Plan B - Water Shortage Restriction Stage—Voluntary Up To 15% - 1981  
    Plan C-1 - Water Shortage Emergency Stage—Mandatory 15% To 40% - 1981  
    Plan C-2 - Water Shortage Emergency Stage—Mandatory 40% To 60% - 1981  
    Plan C-3 - Water Shortage Emergency Stage—Mandatory 65% Plus - 1981  
Emergency Water Use Restrictions - Montgomery County High Zone—SOP - 1990  
Emergency Water Use Restrictions - Bowie Zone—SOP - 1990





***APPENDIX G***

***FINAL DRAFT  
WATER AND SEWER EXTENSION NEEDS  
FOR EXISTING NEIGHBORHOODS (EXCERPT)***

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# FINAL DRAFT – Water and Sewer Extension Needs for Existing Neighborhoods

Prepared by the Subgroup on Unserved and Underserved Areas for the Bi-County Infrastructure Funding Working Group



July 2014

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## EXECUTIVE SUMMARY

### Statement of Problem

Generally, unserved and underserved areas are those properties served by wells and/or septic systems (i.e. not connected to WSSC water and sewer systems). These unserved and underserved areas are located in the counties' defined water and sewer envelopes, indicating they may be within close proximity to existing water and sewer mains or were approved for construction of mains and extension of water and sewer line. However, the extension of service to these properties—even over relatively short distances—is too expensive to allow them to connect. These properties are typically older homes that were constructed prior to development of modern design criteria and regulations. Consequently, individual on-site systems were constructed on lots:

- That may not meet modern standards for septic system placement
- That lack areas approved for replacement wells or septic systems
- That may not have approvable repair or replacement areas for on-site systems

Because the operating lives of septic systems are typically estimated to be 30 ± years, the issue of unserved and underserved areas has been growing and is expected to continue to grow as septic systems age and fail.

The cost of extending new the water and sewer systems to serve these properties, whether desired by the homeowner or required due to a failing well or septic system, is too expensive to be initiated. Twenty years ago, WSSC constructed and financed community water and sewer lines and assessed a front foot benefit charge to homeowners. This system took advantage of economies of scale by spreading large infrastructure costs over a large number of properties resulting in an average front foot benefit assessment that was affordable. In the late 1990's, WSSC stopped constructing water and sewer lines for new subdivisions, instead relying on developers of those subdivisions to construct and finance these mains. This shift eliminated the benefits of economies of scale to the detriment of individual homeowners. Consequently, it has become next to impossible for the homeowners to upgrade these older houses to community water and/or sewer service, even when necessary due to failed or failing on-site systems.

This problem also works against fundamental goals in each County's Comprehensive Water Supply and Sewerage Systems Plan:

- That these plans establish public service envelopes based on adopted service policies and county-wide land use planning recommendations.

- Further, that water and sewer service policies, and infrastructure extension and financing mechanisms, act to promote the use public service within these envelopes both for new development and for existing development still using on-site systems.

Note: this report focuses primarily on sewer extensions as these are more costly and more difficult to attain sewer suitability. The findings, processes, and alternatives discussed in this report are equally applicable to both sewer and water extensions.

### **Bi-County Infrastructure Funding Working Group**

WSSC established the Bi-County Infrastructure Working Group (“The Working Group”) in 2010 to identify options for lowering the trajectory of rate increases. These options included obtaining access to alternative and/or less costly sources of revenue or methods of funding for operational and capital requirements in the context of the growing need to rehabilitate, upgrade and replace water and wastewater infrastructure and related facilities. The Working Group is comprised of representatives from the executive and legislative branches of Montgomery and Prince George’s Counties, one WSSC Commissioner from each county, and WSSC staff. One of the policy issues identified for study by the Working Group is the extension of public water and/or sewer service to unserved and underserved areas of Montgomery and Prince George’s Counties.

### **Subgroup on Unserved and Underserved Areas**

A Subgroup of the Working Group was created to further study this issue and to develop possible alternatives to the existing funding mechanism. The Subgroup included staff members from the two counties and WSSC:

- Shirley Branch, Prince George’s County, Department of Environmental Resources
- Chris Cullinan, WSSC, Finance Office
- Dave Lake, Montgomery County, Department of Environmental Protection
- Manfred Reichwein, Prince George’s County, Health Department
- Alan Soukup, Montgomery County, Department of Environmental Protection
- Tom Traber, WSSC, Finance Office (retired 2013)

The scope of the Subgroup’s efforts included:

- Documenting the current unserved and underserved conditions in each County
- Evaluating the pros/cons of current system using “sample communities” from each County
- Evaluation of financing criteria and alternatives
- Policy challenges/deficiencies of current system

- Identifying a roadmap to an “improved” system of extending water and sewer service to unserved and underserved areas
- Develop financing options/funds to implement an “improved” system

The Subgroup met seven times during 2013 and made three presentations to the Working Group and two presentations to WSSC Commissioners. These presentations functioned as educational presentations and progress reports. This report is comprised of the research and information presented to the Working Group and Commissioners.

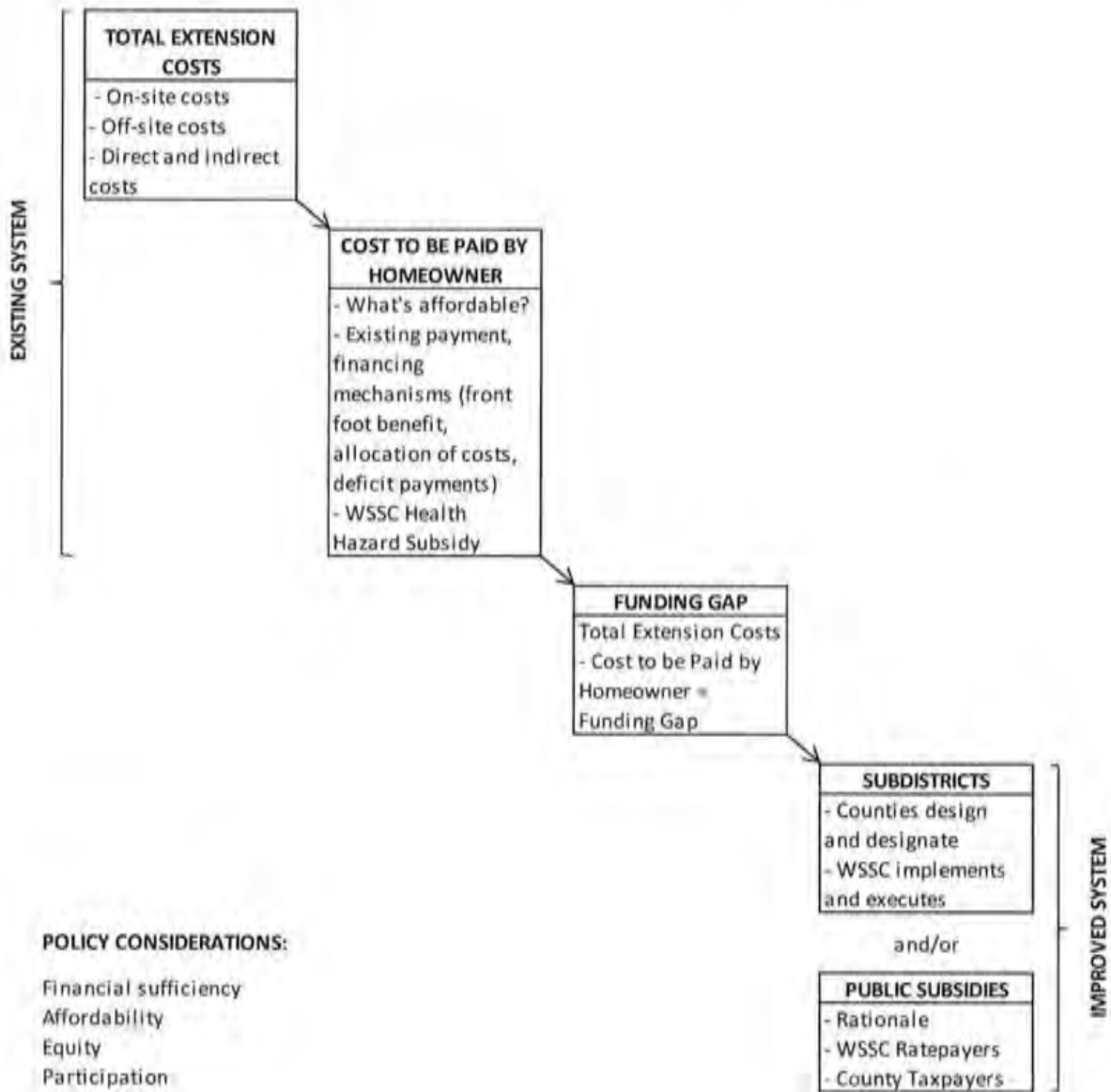
### **Findings of the Subgroup Regarding the Current System of Extensions**

The current system of financing extensions is flawed. This is evident in the fact that since 2005, only sixteen extensions have been completed. The current front foot benefit system was designed to pool large and small extensions and allocates costs over a large number of connections which made extensions affordable. The current system does not work for small scale extensions, including health hazard situations. The current system has significant financial and policy challenges including affordability for applicants, financial sufficiency, equity and participation. Maintaining the status quo is not a sustainable, viable solution for systematically addressing the issue of unserved and underserved areas. The current system is not economical for failed systems or communities requesting service.

### **Framework for Moving Toward an “Improved System”**

The Subgroup identified a framework for moving forward from the current system to an improved system. The framework involves several decision points and requires the coordinated efforts of Montgomery County, Prince George’s County, and WSSC. The following figure illustrates the framework for moving forward including several decision points to be addressed.

Figure 1: Decision-Making Framework for Moving Toward an "Improved System"



## **The Improved System: Sub Districts**

The Subgroup suggested sub districts as a possible improved system for funding water and sewer extensions. Sub districts would spread large infrastructure costs over a large number of properties and would remedy a number of the challenges and issues under the current system. Both the counties and WSSC have experience using sub districts to finance capital program infrastructure projects, but the concept has never been used for water distribution or sewer collection systems. The fundamental goal is to equitably allocate the large costs of extending public sewer extensions over a large number of properties to be served. The current health hazard extension system results in large costs which are not financially viable for individual applicants who initiate extension projects. In cases where an extension is able to serve more than one property, abutting property owners may opt out of connecting to the new main. This places more of the financial burden on the applicant, which raises significant questions of equity. The sub district mechanism, along with modifications to WSSC front foot benefit assessment policies, has the potential to mitigate these characteristics of the current system. The sub district mechanism would also provide those who directly benefit from connecting to the public sewer system pay for the extension costs.

## **Conclusions and Next Steps**

Maintaining the status quo is not a viable, sustainable solution to what is expected to be an increasing number of failing water wells and/or septic systems. An improved system for addressing the extension of water and sewer service has been identified along with a process for moving toward the improved system. Both the counties and WSSC have roles to play in the improved system. This will require unified leadership from the counties and the Commission including the commitment of resources to educate, plan, and lay the foundation for the improved process.

By consensus, the Working Group accepted the Subgroup's findings and framework for moving toward an improved system. The Working Group transmitted its consensus to WSSC's Commissioners. WSSC's Commissioners unanimously accepted the findings of the Subgroup on March 19, 2014 and authorized the transmittal of such findings to the legislative and executive branches of the two counties. The counties will be asked to endorse this concept and discussion and move forward toward an improved system. This will necessitate spending time and resources to more fully develop the process forward. The worth of this effort will be evident by the commitment of time, talent, and financial resources. The unified leadership of the Commission and counties will be required to move toward an improved system.

## **CURRENT UNSERVED AND UNDERSERVED CONDITIONS**

This section of the report documents the Commission's experience in constructing residential service lines and the current unserved and underserved conditions in each County.

### **WSSC**

Prior to 1998, WSSC was responsible for the design, construction and financing of all water and sewer extensions built within the Sanitary District. This included all types of projects ranging from large multi-part subdivisions to those serving just one property. The Commission would build and pay for the mains and then recover costs by assessing properties front foot benefit charges.

In 1997, a WSSC task force benchmarked with local jurisdictions and recommended changing the process by which subdivision lines are built and financed. At that time, WSSC's General Bonds (which funded subdivision line construction) were 50% of WSSC's total \$1.8 billion outstanding debt, and the General Bond portion on the Commission annual debt service was 46%. In WSSC's FY'98 budget, debt service costs were 49% of total expenses. The rating agencies and the counties were becoming concerned about the large percentage of total revenues that were devoted to debt service. Since General Bonds were almost half of the debt service, the Counties and the Commission decided to eliminate the General Bond debt by having developers build the subdivision lines and turn them over to the Commission. This was the method used by virtually all jurisdictions. Over time, this would eliminate the majority of new General Bond issuances, and lower the debt service percentage of the operating budget.

The Counties were concerned about the effect that overlapping debt would have on their ratings. Utilizing assessed values to allocate WSSC's debt (since an ad valorem assessment would use assessed values), Montgomery County was allocated approximately 66% of the total and Prince George's was allocated 34%. This meant that of WSSC \$1.8 billion in debt, the Rating Agencies would use \$1.2 billion for Montgomery County and \$0.6 billion for Prince George's. The Counties wanted WSSC to lower the overlapping debt, and the General Bond was the most logical one to reduce by having developers pay for and build the subdivision lines and turn them over to the Commission.

In 1998, WSSC proposed legislation requiring that subdivision lines be constructed at the expense of the owner/developer. House Bill 824 was sponsored by the Montgomery County and Prince George's County delegations and supported by WSSC. HB 824 was passed and phased in over three years.

This change has had a significant impact on the costs associated with the smaller projects needed for health hazard and single residential extension projects. The cost of constructing service extensions for these health hazards and single residential dwelling units has always been very expensive, but these few, costly projects were offset by the many, less costly developer projects that WSSC constructed. In a

typical year, there are several hundred of the large developer projects constructed versus only a few dozen health hazard or single residential units built. These large projects had economies of scale that lowered the average cost for all jobs. Also, the large projects involved construction in unimproved areas while the health hazard or single residential projects usually involve construction in improved areas that involve impacts to pavement and other utilities and the need for traffic control. These legislative changes resulted in a situation that makes it increasingly more difficult for homeowners to afford water and sewer extensions through WSSC.

WSSC currently has two processes for constructing residential service lines. The first process for constructing service lines is when WSSC builds the extension in already developed areas. This report focuses on WSSC built extensions.

The second process is the Service Extension Process (SEP) is for developer built and financed extensions for new development. Under the SEP process, preliminary subdivision plans that are submitted to Montgomery County, Prince George's County, or MNCP&PC for approval will be reviewed by the WSSC to determine the availability of water and sewer service, make recommendations, and note special conditions. A representative from WSSC will attend the development review committee meetings in Montgomery County and the subdivision review committee meetings in Prince George's County to discuss WSSC's findings with the Applicant and the committee. General review comments will be provided at the MNCP&PC meeting. It should be understood that new and additional review comments are likely when more detailed information on the proposed public extension(s) is provided during the Hydraulic Planning Analysis and System Integrity Review processes for SEP projects. A full description of the SEP process can be found on the Commission's website:

<http://wsscwater.com/home/jsp/content/sep-process-step1.faces>.

The next two sections of the report document the current unserved and underserved sewer conditions in each County. The counties agreed to review areas consisting of five (5) or more greater lots where septic systems are in use and, do not have access to or availability of sewer mains on main line extensions.

### **Prince George's County**

The Prince George's County Department of Environmental Resources analyzed sewer service GIS data and determined there are approximately 4,977 properties on septic systems within the sewer service envelope. Typically, these properties are located in 30+ year old neighborhoods and subdivisions, constructed prior to being planned for sewer service, or before sewer service was made available. It was expected that lots would connect when sewer service was made available via constructed mains and extensions, and would relinquish the use of septic systems. However, these lines have either gone unconstructed or not constructed within a reasonable distance for lot owners to connect, and the costs

to extend and connect beyond their means. Staff identified approximately 4,977 properties on septic systems for which 2,087 properties (approximately 42%) are within these underserved areas. The figure below summarizes the current conditions by Council District in Prince George's County. The map depicts the approximately locations (countywide) of underserved areas that met the criteria of five (5) or greater lots.

Figure 2: Summary of Current Conditions in Prince George's County by Council District

Council District	Approximate Septic Usage	Approximate Underserved areas	Approximate Residences	Approximate (Post-sewer) septic use
1	578	5	100	478
2	14	0	0	14
3	57	1	5	52
4	381	6	85	296
5	171	2	30	141
6	1,103	17	825	278
7	139	1	7	132
8	688	19	250	438
9	1,846	39	785	1,061
<b>TOTAL</b>	<b>4,977</b>	<b>90</b>	<b>2,087</b>	<b>2,890<sup>1</sup></b>

**Assumptions/Observations:**

*Unsewered/underserved areas are based upon the criteria of five (5) or more residential lots ;*

*Approximate septic usage is based upon review of lots having no abutting sewer lines*

*District 2 - no underserved areas for the criteria used*

*District 6 - includes residential subdivisions i.e. Brock Hall, Brock Hall Manor & Brock Hall Gardens (@450 homes)*

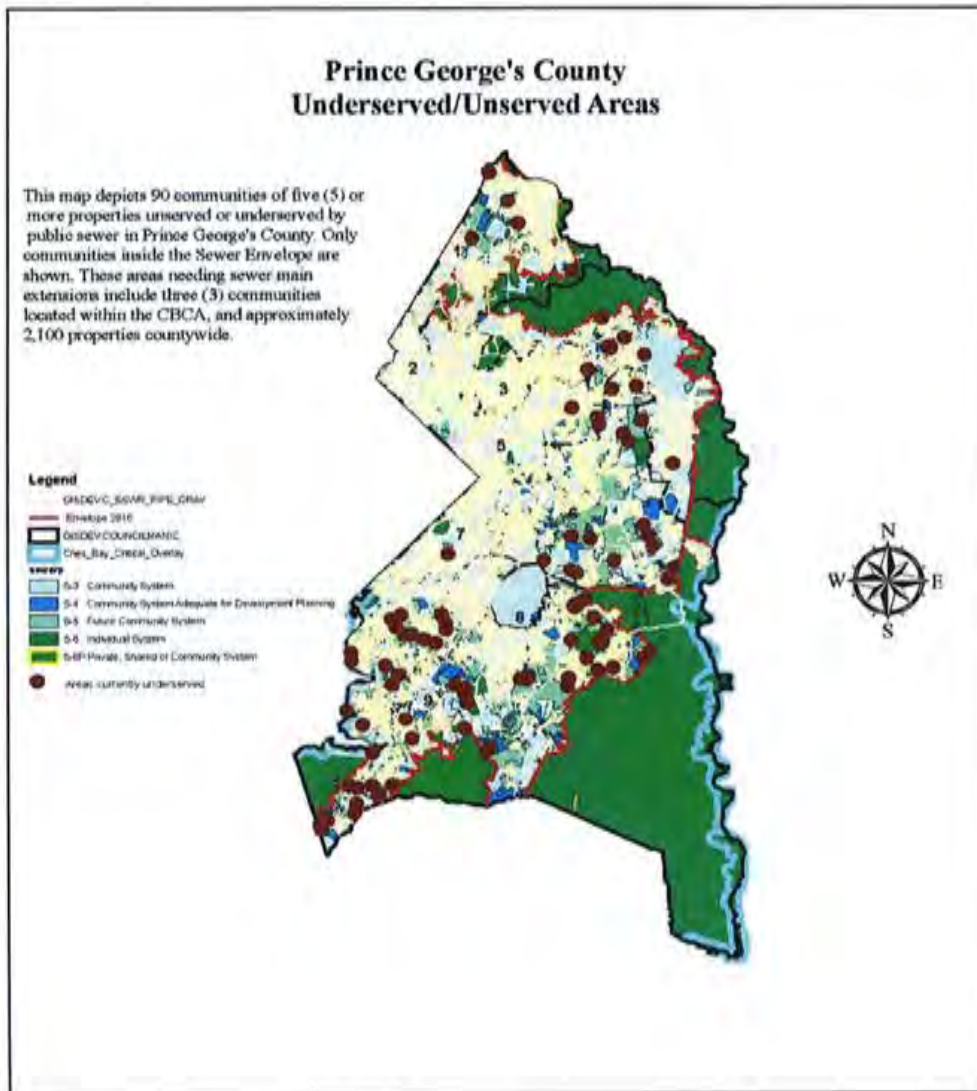
*District 8 - includes 3 communities located within the Chesapeake Bay Critical Area (@40 homes)*

*District 9 - includes residential subdivisions i.e. Pleasant Springs, Early Manor, Wards , New England (@260 homes)*

*(1) - of this 2,890 number, some would remain on septic systems by choice, constraints, costs and distance to sewer mains*

The following map graphically depicts this summary information.

Figure 3: Map of Current Conditions in Prince George's County



## Montgomery County

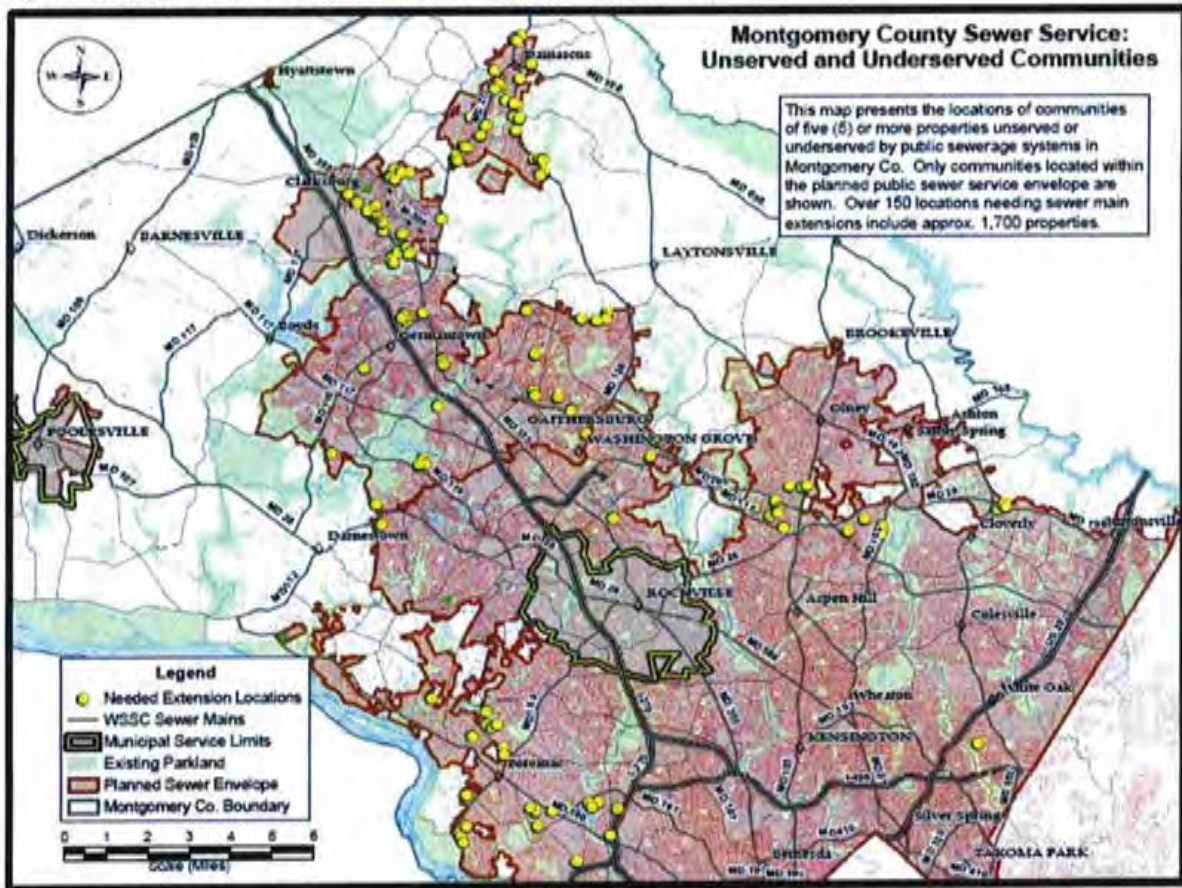
Within Montgomery County's defined community water and sewer service envelopes are properties that were initially developed on and continue to be served by individual, on-site wells and septic systems. These homes on these properties were typically constructed either prior to the area being planned for community water or sewer service or before community systems were available. These homes are commonly 30 to 60+ years old. They are often located near areas that have subsequently been planned for subdivision and development; where water and sewer infrastructure has been built for the newer development. Accordingly, it is not uncommon for these older houses on wells and septic systems to be located near (within 1,000 feet) existing community water and sewer infrastructure. They are often surrounded by the newer development using community water and sewer systems.

In some cases, homes using private, on-site systems only require a connection to an existing WSSC main. However, many other properties using wells and septic systems do not have access to existing WSSC water and/or sewer mains; requiring new main extensions for service. Subgroup members from Montgomery County reported that approximately 150 neighborhoods within the county's defined water/sewer service envelopes, but without existing access to WSSC service, contain more than 1,700 homes that currently continue to use on-site systems.<sup>1</sup> As illustrated in the following map, although these neighborhoods are scattered widely across the county, there are identified clusters of affected neighborhoods in areas such as Clarksburg, Damascus, Germantown, Norbeck, and Potomac.

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<sup>1</sup> To maintain consistency with the analysis provided by Prince George's County Department of Environmental Resources, the Montgomery County Department of Environmental Protection evaluated only those neighborhoods within the defined community service envelopes where at least five properties lacked access to community water and/or sewer service.

Figure 4: Map of Current Conditions in Montgomery County



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