

POOLESVILLE, MD Comprehensive Plan

June 2024



Town Commissioners Adoption

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Planning Commission Recommendation

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Acknowledgments

A project of this scope and magnitude could not be realized without the support and commitment of many individuals. It is important to acknowledge the vision and leadership of those who assisted in the preparation of the 2024 Town of Poolesville Comprehensive Plan, especially the town's elected and appointed officials, as well as the town staff that supported the technical work required. In addition to those listed below, we would like to thank the many Poolesville citizens who participated in the planning process by attending public meetings and workshops, completing the community survey, or by providing comments.

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Introduction

1.1 Overview

The 2024 Comprehensive Plan reflects the Town's past, current, and future efforts to help the community meet its vision for the future and achieve its full potential. This Plan provides guidance to Town officials, residents, businesses, and other stakeholders for implementing the vision for how the community is to look, develop, preserve, and function in the future by outlining some of the important implementation tools and strategies necessary for its proper execution.

1.2 Purpose of the Plan

This Comprehensive Plan serves as a guide for the growth, development, and provisioning of public services for the Town of Poolesville and its residents. As the primary guide for the future of Poolesville, the Comprehensive Plan is the single most important instrument for guiding local decision-making processes. Specifically, the Comprehensive Plan:

- Presents a future vision driven by community input.
- Sets goals and objectives along with specific actions for local government to help achieve the vision.
- Identifies future infrastructure and service needs as well as priorities.
- Promotes open space and natural resource conservation designed to preserve the community's rural heritage and enhance the overall quality of life.
- Establishes a framework by which short-range plans (zoning requests/appeals, subdivision review, site plan review) and day-to-day decisions can be evaluated regarding their long-term benefit to the community.
- Provides the basis for zoning regulations, subdivision ordinances, and other land use and development-related controls that may be adopted in accordance with this Comprehensive Plan.

1.3 Government Structure

The Town of Poolesville is a municipal corporation as described in Article XI-E of the Maryland Constitution. The powers, duties, and structure of the Town Government are codified in the Town Charter as provided for in Article 23A of the Annotated Code of Maryland.

The Town of Poolesville is a commission form of government consisting of five unpaid elected Commissioners. The Commissioners choose a President and a Vice President. The President of the Commissioners, or the Vice President in case of the president's absence, is the head of the Town Government with the duties and responsibilities specified in the Charter.

While the government, with its elected officials, is responsible for the overall operation of the Town, an appointed Town Manager and Assistant Town Manager oversee the day-to-day management of the Town. In addition to the elected officials and staff, the Commissioners appoint several Town Boards and Commissions. The Planning Commission, being one of those boards, is also empowered by the Maryland Land Use Article to prepare the Comprehensive Plan for the jurisdiction.

1.4 Planning and Growth Context for the Plan

Over the past 10 to 15 years, the vast majority of the goals set forth in previous Poolesville Comprehensive Plans have either been accomplished or are on track to be accomplished in the near future. These include but are not limited to:

- Incremental and limited growth, with decreasing density as development moves away from the Town Center, with a population cap of approximately 6,500.
 - Completion of residential development, including Stoney Springs, Brightwell Crossing, The Reserve at Brightwell Crossing, Westerly Grove, Foxwood Crossing, and Wootton Woods.
 - Planned/Approved residential development within the next few years, including Fishpool, Bricken, Donegan Property, and the Hartz Property.
 - Avoiding annexation of additional property into the Town for growth purposes, given the Town's water and wastewater constraints.
- Emphasis on the Town Center, including infill development within the commercial corridor, and super-priority status given to development or re-development projects within the Commercial District.
 - Infill development within the Business District, including the Dollar General Store, Fishpool, and the Donegan Property.
 - Re-development of existing properties within or near the Town Center.
- Implementation of the Streetscape Plan.
 - Successful takeover of State and County roads within Town boundaries, including Fisher Avenue, Hughes Road, and West Willard Road.
 - Grant funding received for the Fisher Avenue Streetscape Plan, including a roundabout at Fisher Avenue and Wooton Avenue, with expected construction in 2025.
- Ensuring Poolesville schools have opportunities and resources on par with other schools in Montgomery County.
 - Supporting the ongoing construction of the new Poolesville High School.

As a result of these accomplishments, the Town's population is nearing the cap of approximately 6,500, and there are few undeveloped properties within Town boundaries. Therefore, any future growth and development will generally take the form of additional infill and/or redevelopment.

1.5 Organization of the Plan

Based on the guidance from the State of Maryland, the comprehensive plan is organized into the following chapters:

1. **Introduction** – This chapter introduces the Comprehensive Plan, including the purpose of the Plan, a review of Poolesville's planning and growth history, a discussion of Maryland's planning and land use regulations, and information on the public's involvement in the planning process.
2. **Vision and Guiding Principles** – This chapter clearly defines the vision for Poolesville and the guiding principles proposed to achieve that vision within this Comprehensive Plan.
3. **Town Profile** – This chapter summarizes the social, economic, and physical features and forces that influence the Town's land use and community development patterns.

4. **Community Facilities** – This chapter presents an overview of existing government facilities and services, with guidance on the maintenance and development of future facilities and services.
5. **Land Use** – This chapter provides information on existing land uses and directs future land use changes to plan for the community's needs while protecting the Town's natural resources.
6. **Municipal Growth** – This chapter identifies growth patterns, planned growth, and the capacity of land areas within the Town that are available for development, redevelopment, and infill.
7. **Housing** – This chapter presents an overview of current housing trends, challenges, and needs.
8. **Transportation** – This chapter reviews existing conditions of the vehicular, bicycle, pedestrian, and mass transit infrastructure of the Town and provides direction for future improvements.
9. **Economic Development** – This chapter reviews the policies, regulations, and programs the Town has created and manages to promote economic vitality, support local businesses, and create local jobs.
10. **Environmental Resources** – This chapter provides information and guidance on protecting environmental resources and sensitive areas, including streams, wetlands, and their buffers.
11. **Water Resources** – This chapter describes how the Town will manage its water resources and infrastructure to support its infill and redevelopment goals while protecting the environment and public health.
12. **Sustainability** – This chapter addresses what the Town has accomplished to promote sustainability and describes how Poolesville can reduce the vulnerability of individuals and local systems to the impacts of changing weather, climate, environmental, societal, and economic challenges.
13. **Appendix** – Additional information about elements of the plan is included in the appendices.

1.6 Comprehensive Planning Process

Using the 2011 Comprehensive Plan as a baseline, the Planning Commission evaluated existing conditions and trends and incorporated newly available data and studies completed since its adoption. They also identified and analyzed priority issues, evaluating those from the 2011 Plan and new issues that evolved during the planning process.

The 2024 Plan builds on the 2011 Plan process and seeks to exceed the technical analyses and community outreach that helped the 2011 Plan remain applicable over the last decade. Starting with a solid foundation allowed this subsequent effort to enhance and expand upon the hard work that has come before, helping to update the community vision, refine and develop goals and strategies, and identify policies and actions in a fashion familiar to Town residents involved in the process. These goals, strategies, and actions highlighted in the Plan emerged during the planning process and were informed by community and citizen input.

The Planning Commission utilized an outreach process to identify priority issues and visions for the future. In addition to technical analyses, its preparation included a community public opinion survey, stakeholder input meetings, public workshops, and discussions with the Planning Commission and other Town officials. Community outreach was a key component of the comprehensive planning process. The opinions of residents, businesses, property owners, employees, visitors, and other stakeholders helped identify important issues and growth and preservation priorities.

On May 14, 2022, the Town hosted an outdoor Visioning Event on Whalen Commons, branded Envision Poolesville, that more than 35 people attended. At this event, the Planning Commission and project consultants collected community and stakeholder input for the Plan. This input was later used to create the Vision Statement and Guiding Principles, discussed in detail in **Chapter 2**. The outreach activities allowed attendees to share their points of view, concerns, and ideas for the future of Poolesville. The Plan integrates the event's results throughout the document and summarizes results in **Appendix B—Public Outreach**.

The Town also conducted a survey of Town residents, and the survey results are incorporated throughout the document and can be found in **Appendix B - Public Outreach**.



1.7 Using the Plan

As with previous comprehensive plans, this Plan articulates a vision for the Town of Poolesville and provides direction to public and private stakeholders and representatives to help guide the Town as it equitably and sustainably meets residents' current needs while providing a platform for the Town to continue to grow into the future as it preserves its small-town, rural character.

This Plan represents an effort to coordinate land-use decision-making for the Town, representing the social, economic, and environmental realities of today while promoting the balanced services, initiatives, and infrastructure that will be needed in the future. Changes to the Plan may be initiated through private application or State-required reviews and updates by the Town.

The Town seeks to guide its decisions based on the goals and objectives outlined in this Plan and will continue to manage the Town cohesively, considering the thoughts, concerns, and input provided by residents, businesses, property owners, employees, and other stakeholders. **Appendix A-Implementation** summarizes the goals, objectives, and action items for each chapter in this Plan.

1.8 Policy and Legal Context for the Plan

The State of Maryland delegates planning and land use regulatory authority to all incorporated municipalities through the Local Government and Land Use Articles of the Annotated Code of Maryland. The Local Government and Land Use Articles require local jurisdictions to prepare comprehensive plans, zoning ordinances, and subdivision regulations. The Poolesville Planning Commission reviews and updates the Town's Plan for consideration and adoption by the Town Commissioners. The State requires such action at least every 10 years to reflect any social, economic, and physical changes in a community's circumstances and goals over time.

The State of Maryland's twelve Planning Visions (Twelve Visions), outlined in the Smart, Green & Growing legislation of 2009, are incorporated throughout the Plan:

1. **Quality of Life and Sustainability:** A high quality of life is achieved through universal stewardship of the land, water, air, and protection of the environment.
2. **Public Participation:** Citizens are active partners in the planning and implementing of community initiatives.
3. **Growth Areas:** Growth is concentrated in existing population and business centers.

4. **Community Design:** to ensure efficient use of land and transportation resources, a compact, mixed-use, walkable design consistent with existing community character and located near available or planned transit options is encouraged.
5. **Infrastructure:** Growth areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner.
6. **Transportation:** A well-maintained, multimodal transportation system facilitates the safe, convenient, affordable, and efficient movement of people, goods, and services within and between population and business centers.
7. **Housing:** A range of housing densities, types, and sizes provides residential options for citizens of all ages and incomes.
8. **Economic Development:** A healthy economic environment includes business, cultural, and community assets engaged in a synergistic manner for the good of the community.
9. **Environmental Protection:** Land and water resources, including the Chesapeake and coastal bays, are carefully managed to restore and maintain healthy air and water, natural systems, and living resources.
10. **Resource Conservation:** Waterways, forests, agricultural areas, open space, natural systems, and scenic areas are conserved.
11. **Stewardship:** Government, business entities, and residents create sustainable communities by balancing efficient growth with resource protection.
12. **Implementation:** Strategies, policies, programs, funding for growth and development, resource conservation, infrastructure, and transportation are integrated across local, regional, state, and interstate levels.

The Plan addresses these Twelve Visions through its chapters and was prepared to be consistent with, and in consideration of, ongoing efforts in the State and Montgomery County to work toward these Visions. Other major planning legislation enacted by the State guiding this process are as follows:

1.8.1 Economic Growth, Resource Protection & Planning Act

In 1992, and subsequently, the Maryland General Assembly adopted and amended the Economic Growth, Resource Protection, and Planning Act (1992 Act) to articulate the State's growth policy and intent to reduce sprawl, concentrate growth in and near existing development areas, promote economic development, and protect sensitive natural resources.

In 2013, the General Assembly approved House Bill 409, changing the comprehensive plan review period to every ten years to coincide with the Decennial Census. It also required annual reports to be filed with the Maryland Department of Planning (MDP) and a 5-Year Mid-Cycle Review, including a narrative on the comprehensive plan's implementation status.

1.8.2 Smart Growth Legislation

In 1997, the State enacted Smart Growth legislation, giving it programmatic and fiscal authority to encourage local governments to implement "smart growth" planning. The Priority Funding Areas Act directed State funding for growth-related infrastructure to Priority Funding Areas (PFAs), providing a geographic focus for its investments. It designated certain areas as PFAs and established local designation criteria, including permitted density, water and sewer availability requirements, and the designation of growth areas in local comprehensive plans.

1.8.3 Smart, Green & Growing

In 2009, the General Assembly passed three planning bills as part of its Smart, Green & Growing legislation to protect environmental resources and promote sustainable growth across the State:

Smart & Sustainable Growth Act	Planning Visions Implementation	Planning Visions
<ul style="list-style-type: none">•Local jurisdictions must implement and follow adopted comprehensive plans	<ul style="list-style-type: none">•Established State land use goals•Jurisdictions must collect smart growth measures and indicators	<ul style="list-style-type: none">•Established 12 planning visions•Local jurisdictions must submit an annual report on changing development patterns, regulations, and vision implementation

1.8.4 Other Planning Legislation Impacting the Comprehensive Plan

House Bill 1141 Adopted in 2006, HB 1141 requires the inclusion of a comprehensive plan Water Resources Element (WRE) to address the relationship of planned growth to wastewater treatment and disposal, provision of safe drinking water, and prevention of nitrogen and phosphorus non-point source pollution (see **Chapter 11 - Water Resources**). HB 1141 also requires municipalities to prepare a Municipal Growth Element (MGE) as part of their comprehensive plan, identifying areas for future growth through annexation and allowing for coordination around municipal boundaries (see **Chapter 6 - Municipal Growth**).

House Bill 1160 In 2006, HB 1160 established a Workforce Housing Grant Program within the Maryland Department of Housing and Community Development (DHCD). To participate, jurisdictions must adopt a Workforce Housing Element that assesses needs, goals, objectives, and policies that preserve or develop workforce housing (see **Chapter 7 - Housing**).

Sustainable Communities Act The Sustainable Communities Act of 2010 strengthens reinvestment and revitalization in Maryland's older communities by renewing an existing rehabilitation tax credit and creating "sustainable communities" to simplify the framework for designated target areas in the Community Legacy (CL) and Neighborhood Business Works (NBW) programs; establishing a new transportation focus in older communities; and enhancing the role of the Smart Growth Subcabinet (SGSC) in community revitalization (see **Chapter 9 - Economic Development** and **Chapter 12 - Sustainability**).

Sustainable Growth & Agricultural Preservation Act The Maryland General Assembly approved the Sustainable Growth and Agricultural Preservation Act of 2012 (the Septic Bill). This Act allows local jurisdictions to adopt growth tier designations and has associated requirements related to residential subdivisions (see **Chapter 5 - Land Use**).

Sustainable Communities Tax Increment Financing Designation & Financing Law The 2013 Sustainable Communities Tax Increment Financing (TIF) Designation & Financing Law (TIF Law) authorizes local governments to designate places as Sustainable Communities. In turn, they may finance the costs of infrastructure improvements in these areas through the Maryland Department of Transportation (MDOT) designated Transit-Oriented Development (TOD) methods. These approaches include issuing bonds, creating special taxing districts, and tax increment financing. This allows local governments to make significant infrastructure and asset investments in their Sustainable Community areas to spur economic development and ensure the quality of life and livable communities.

The TIF Law provides for new funding uses that include historic preservation, environmental remediation, demolition, site preparation, parking lots, facilities, highways, or transit assets that support Sustainable Community residents, schools, and affordable or mixed-use housing. It allows Sustainable Communities to utilize Maryland Economic Development Corporation (MEDCO) bonding authority to finance, acquire, develop, own, or operate projects for economic development purposes (see **Chapter 9 - Economic Development**).

Vision and Guiding Principles

Town Vision Statement

The Town of Poolesville strives to preserve and emphasize our small-town charm, natural resources, and history, while continuing to promote sustainability and a strong sense of community for all. Our goal is to provide opportunities for our community members to live healthy and active lifestyles through access to essential services, parks and recreation, and high-quality education.

2.1 Vision

As part of the public outreach process for the 2024 Comprehensive Plan, Town officials, residents, business owners, and other stakeholders expressed what they most valued about Poolesville and identified issues that the Town should address over the next 10 to 20 years. Poolesville's Vision Statement was developed through working sessions with the Planning Commission and community input from outreach events.

This Vision and the guiding principles proposed to achieve it, highlighted in subsequent chapters, represent the community's efforts to build on Poolesville's past and strengthen the foundation for its future.

Appendix B- Public Outreach contains information on the Town's public outreach events.

2.2 Guiding Principles

The Poolesville Planning Commission developed the following Guiding Principles to direct this plan.

Growth Through Redevelopment

Poolesville's population is nearing a maximum of approximately 6,500 people. There are almost no undeveloped properties within Town boundaries. The Town anticipates very little future growth in residential and commercial development. The majority of future growth will take the form of redevelopment and infill development in the Town.

Housing that Reflects a Full Range of Choices

Poolesville is committed to offering a balance of housing choices that serve a broad range of incomes, lifestyles, and age groups. This balanced housing stock will allow people to be life-long Poolesville residents, providing opportunities for residents to move into different forms of housing as their needs change over time.

Economic Development that Leverages Poolesville as the Hub of the Upcounty Area

Poolesville recognizes that economic development activities are critical to creating the conditions that enable private enterprises to establish and sustain a mix of commercial, retail, cultural, and service-focused jobs that provide the residents of Poolesville and the surrounding area with local sources of

goods, services, and employment opportunities. One important element to Poolesville's economic health and viability is the reopening and continued operation of White's Ferry.

A “Built Environment” in Harmony with Our Natural Environment

The “built environment” includes all the physical parts of where we live and work (including homes, buildings, streets, open spaces, and infrastructure). In keeping with the Town’s modern environmental stewardship and sustainability ideals, Poolesville will utilize our environmental, human, and economic resources to meet present needs without compromising the ecosystems upon which we depend while planning for the needs of future generations.

Safe, Reliable, and Cost-Effective Water and Wastewater Services

Poolesville strives to supply its residents with high-quality, reliable drinking water at the lowest possible cost. The Town’s wastewater management services will continue to ensure effective, efficient, and environmentally friendly wastewater conveyance and treatment.

Town Profile

Purpose

The Town Profile provides an overview of Poolesville's geographic and demographic profile. It includes a review of the Town's heritage and transportation corridors, population statistics, and projections that offer a snapshot of its demographics over time.

3.1 Overview

The previous Comprehensive Plan outlined important objectives that helped realize Poolesville's vision. Those objectives are still important to the Town and include maintaining the small-town character, enhancing the Town Center, continuing to support and enrich schools, sustaining and promoting the business community and economic development, implementing the plan for park and recreation facilities, protecting the Town's historical heritage, and continuing the protocol for ensuring safe, adequate drinking water and sewer capacity for Town residents.

3.2 Town Geography

3.2.1 Location

Poolesville is in the western part of Montgomery County, Maryland, near the Potomac River and the border of Maryland and Virginia (see **Figure 3-1, Location Map**). The Montgomery County Agricultural Reserve surrounds the Town, but the Town is technically not part of the reserve. The more urban and suburban municipalities east/southeast of Poolesville are Germantown, Gaithersburg, and Rockville, all directly connected to I-270. According to the U.S. Census Bureau, the town has a total area of 3.95 square miles.

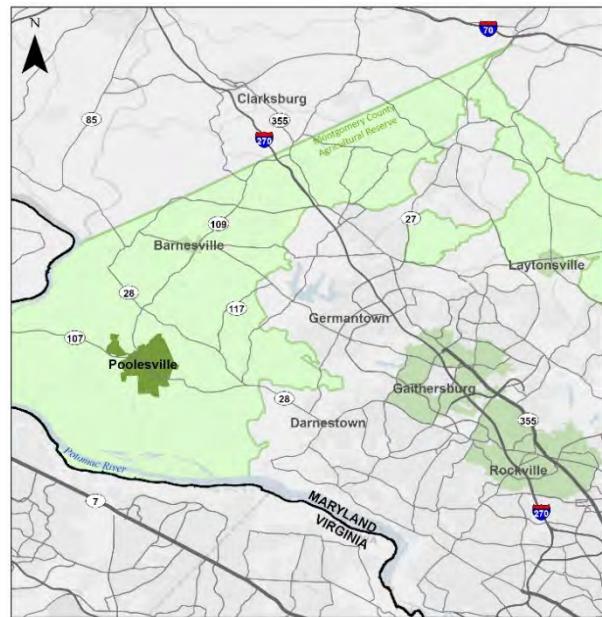


Figure 3-1. Location Map
Source: Wallace Montgomery

3.2.2 Heritage

The Piscataway and members of the Algonquian people initially settled in the area that now contains Poolesville. Most permanent settlements were south of Town, and the Native Americans used the area near Poolesville for hunting camps. The British first settled in Montgomery County in 1715. In 1760, brothers John Poole, Sr. and Joseph Poole, Sr. traveled to the area from Anne Arundel County, MD, and bought 160 acres of land that would later become Poolesville. In 1793, John Poole, Jr. built a log cabin (now the John Poole House) on 15 acres he inherited from his father (In 1806, Joseph Poole, Sr. subdivided the land for himself and his five sons). He used this cabin to run a storefront that would become the Town's first post office in 1810; however, the business failed, and the property went into foreclosure and was divided into several parcels. The Peters, a prominent family who lived in Georgetown, D.C., owned 1,796 acres extending from the center of current Poolesville to the south. The family donated this land in 1820 for a Methodist Episcopal Church, the first of several

churches established in and around the Town. Poolesville was a vital transportation artery during the American Civil War, given the Town's Proximity to the Whites and Edwards ferries. The Union placed Federal troops in the town, the Methodist Church was their headquarters, and the grounds were a cemetery for both Union and Confederate soldiers. Over time, the settlement grew, and the Town was officially incorporated as a municipality in 1867.

3.2.3 Transportation Corridors

The main corridors that serve Poolesville are two state highways: Fisher Avenue and Elgin Road. Fisher Avenue (MD 107) starts at the Maryland and Virginia border and extends through the Town Center to MD 28, which connects to Rockville. Elgin Road (MD 109) extends northeast from the Town Center and intersects MD 28 on the way to I-270 in Hyattstown, north of Clarksburg. The Town's current street pattern expanded outward from the rural town center that is located between these two state highways and the intersection of Fisher Avenue and Cattail Road (see **Figure 3-2, Roadway Map**). Approximately 21.5 total miles of roadways are within the Town.

Pedestrian connectivity has been a Town goal for many years and has been cited in previous plans and the Fisher Avenue Streetscape Plan. Providing sidewalks, safe bike lanes, and walking trails would ensure that residents and pedestrians can walk safely and comfortably to schools, neighborhoods, parks, shopping areas, and events.

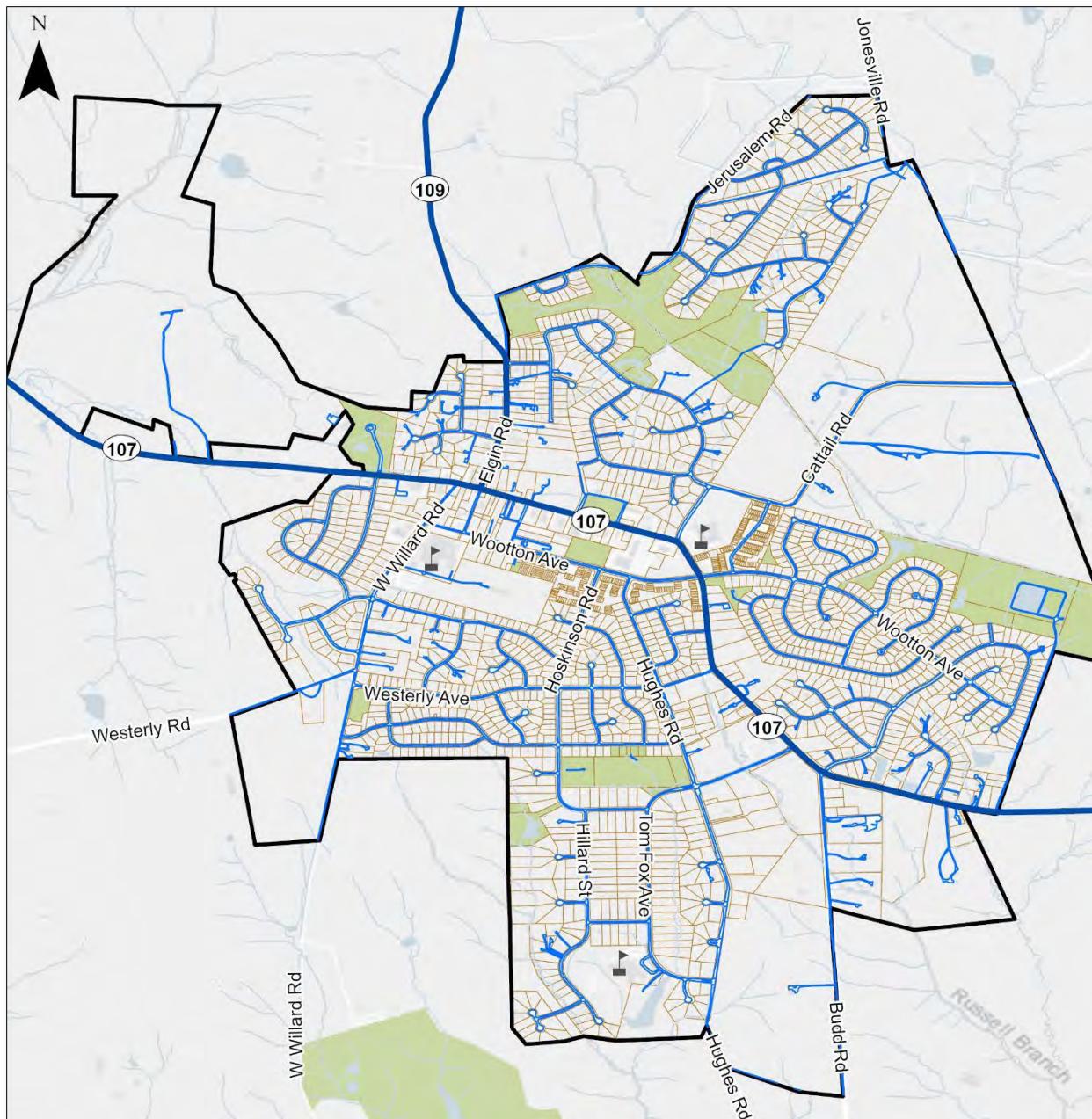


Figure 3-2. Roadway Map
Source: Wallace Montgomery

3.2.4 Chesapeake & Ohio Canal

The Chesapeake and Ohio (C&O) Canal runs directly parallel and east of the Potomac River, from Georgetown in the District of Columbia to Cumberland, MD. Construction of the canal began in 1828 and finished in 1850. In addition to railroads, which existed in the area, local farmers and merchants from the Poolesville area used the canal as a main artery for transporting goods, including lumber, grains, and coal. The canal operated successfully until 1924, when a flood destroyed it beyond repair. Today, the canal is part of the C&O Canal National Historic Park and features the C&O Canal Trail, where visitors can hike, bike, fish, boat, and camp along the Potomac River.

3.2.5 White's Ferry

White's Ferry, which closed in 2020, is located about six miles due west of the Town along White's Ferry Road. Originally known as Conrad's Ferry and established in 1786, it was the last cable ferry service providing a crossing for automobiles, bicycles, and pedestrians over the Potomac River and connecting Montgomery County and Loudoun County, Virginia. Before its closure, the ferry transported between 600 and 800 customers daily, with estimates that it could serve as many as 1,100 to 1,600 daily passengers at peak. The ferry was sold in 2021 to a new owner, Chuck Kuhns. However, reopening the Ferry would require the acquisition of a portion of the Rockland Farm on the Virginia side of the Potomac River, and to date, the parties have not been able to reach an agreement.



3.2.6 Historic District

The Poolesville Historic District is at the intersection of Maryland Route 107 (Fisher Avenue), Maryland Route 109 (Elgin Road), and West Willard Road. It hosts 29 buildings of local architectural or historical significance listed on the National Parks Service's Historic Register.

The buildings represent a diversity of styles and uses, including residential, church, and commercial architecture, as well as small historic accessory uses, such as dairies and smokehouses.

Most are privately owned residences except for the Old Town Hall and the John Poole House, with many dating to the first half of the 19th century. However, a few buildings were constructed in the last two decades of the 18th century, and about ten were built in the late 19th and early 20th centuries.

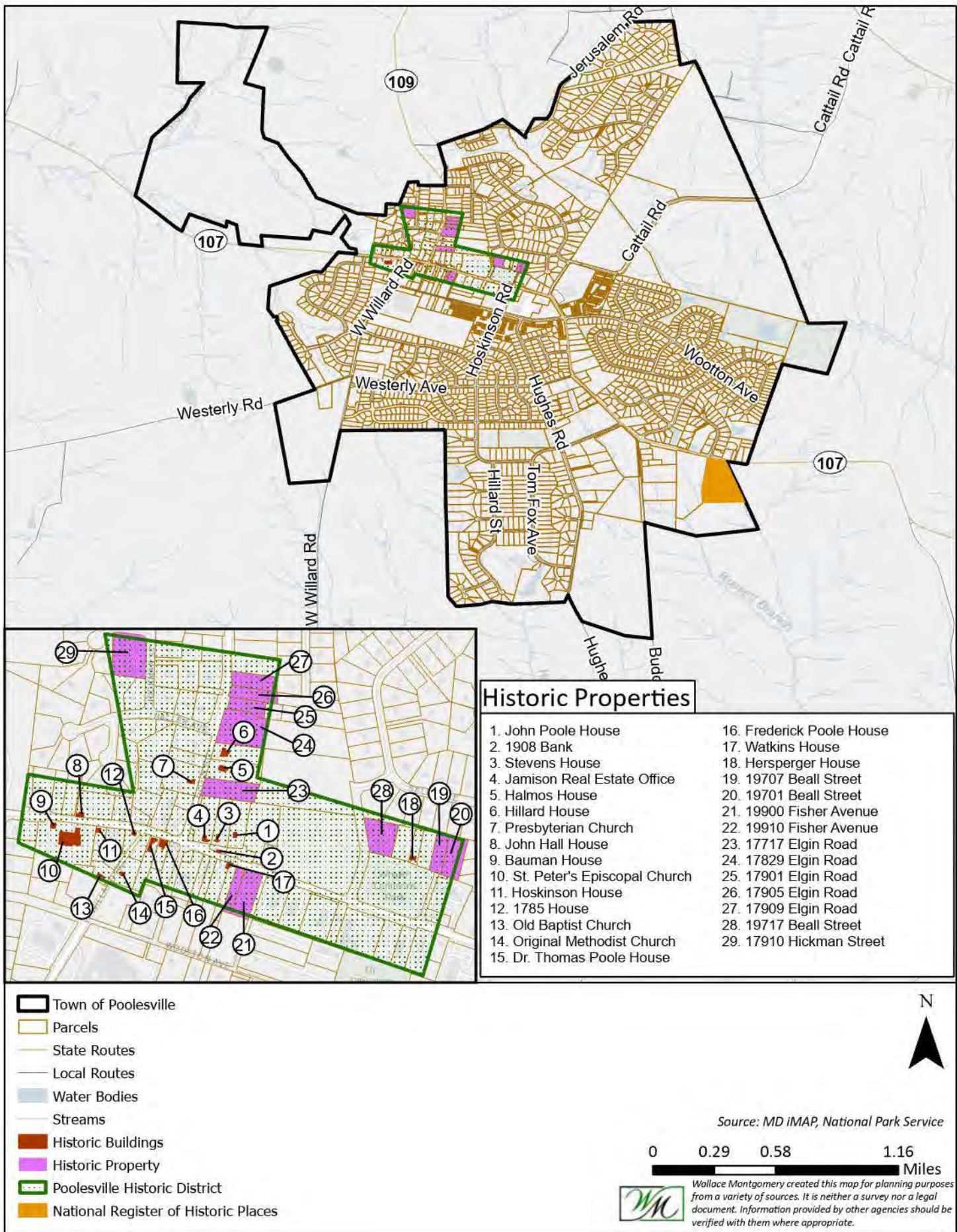
Although several of the earlier buildings have been enlarged and remodeled since their construction, many have managed to retain easily observable vestiges of their former appearance and physically document their owners' developing sophistication and economic prosperity through their stages of updating.

The boundaries of the Poolesville Historic District encompass a collection of 19th—and early-20th-century architecture that, in context, is very significant to the social and economic development of this area of Montgomery County. Unfortunately, fires like those of 1923, 1935, and 1953 destroyed some buildings, creating wide gaps in the streetscapes.

These empty lots have been commercially developed, using building styles that do not harmonize architecturally or aesthetically with the surrounding historic buildings. However, the integrity of the Town has been retained and is worthy of attention at both the local and state levels. Poolesville is primarily an early 19th-century village; the building of private residences and commercial establishments continued well after the Civil War.

This history of settlement dates back to about the middle of the 18th century, when various land grants were given to a small number of individuals who settled what was then Maryland's frontier. These early grants were eventually resurveyed and divided into smaller tracts and individual lots by the close of the 18th century. The Historic District and historic buildings are on **Map 3-1, Historic Resources**.

Map 3-1
Historic Resources
Page 22



3.2.7 County Planning Areas

The Montgomery County Planning Department has created a framework of planning areas to facilitate and support long-term planning.

Montgomery County Planning Areas are subareas of the County whose boundaries were defined many years ago to report demographic and other data. Because the boundaries of these areas have stayed the same over time, it is possible to collect time series data for these areas. These planning areas should not be confused with County Master or Sector Plan boundaries, which may be different.

Montgomery County has three planning zones: Upcounty, Midcounty, and Downcounty. Within these areas, the county creates master plans that recommend land uses, zoning, transportation, schools, parks, libraries, and fire and police stations. The plans also address housing, historic preservation, environmental issues, and pedestrian and trail systems.

Poolesville lies within the larger Poolesville and Vicinity planning area, which is part of the larger Upcounty planning area. The County Planning Areas adjacent to Poolesville are in **Map 3-2, Planning Areas**.

3.3 Demographic Characteristics

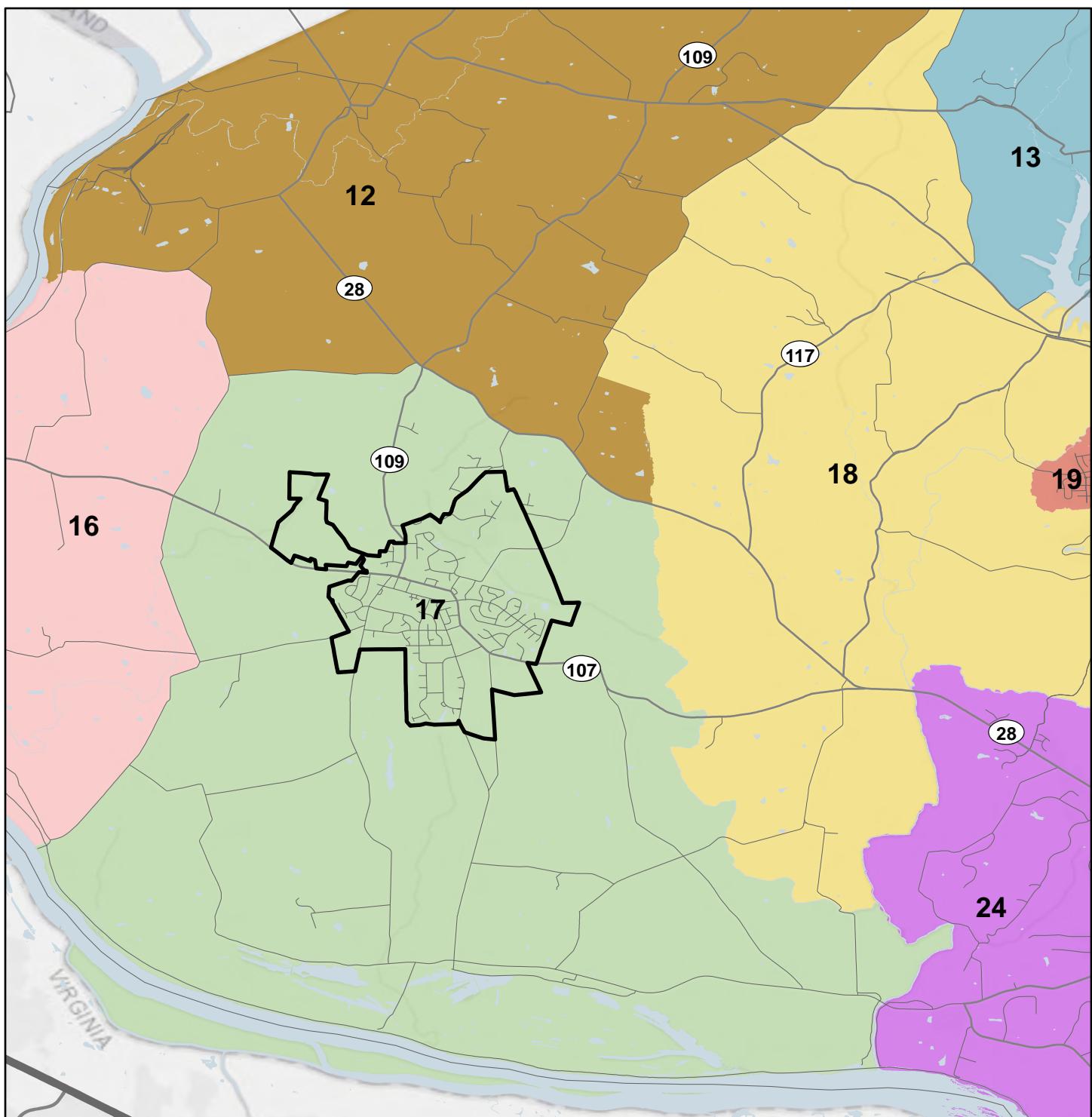
Data included in this section comes from the U.S. Census Bureau. Beginning with the 2010 Decennial Census, the Census Bureau stopped distributing the traditional “long form” survey that historically provided enhanced data. These included detailed social statistics (e.g., educational attainment, household relationships, veteran status, disability status, ancestry, language spoken), economic data (e.g., employment, occupation, income, poverty status), and housing statistics (e.g., unit makeup, year built, value). American Community Survey (ACS) data replaced the long form. ACS data is available in five-year estimates. Due to sampling and surveying errors, the data are not an exact measure of existing conditions.

Please note that housing and economic data are in **Chapter 7—Housing** and **Chapter 9—Economic Development**, respectively.

3.3.1 Population

According to the 2020 U.S. Census Bureau’s data, Poolesville’s population was 5,742, an 18% increase from the 2010 population of 4,883. While County and State populations also increased during this period, those percentage increases were less than half that of Poolesville.

Map 3-2
Planning Areas
Page 24



Town of Poolesville Planning Areas
 US Highways
 State Routes
 Local Routes
 Water Bodies

12 - Dickerson
13 - Clarksburg
16 - Martinsburg
17 - Poolesville
18 - Lower Seneca
19 - Germantown
24 - Darnestown

Source: Montgomery County Planning Department

0 0.75 1.5 3 Miles



Wallace Montgomery created this map for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate.

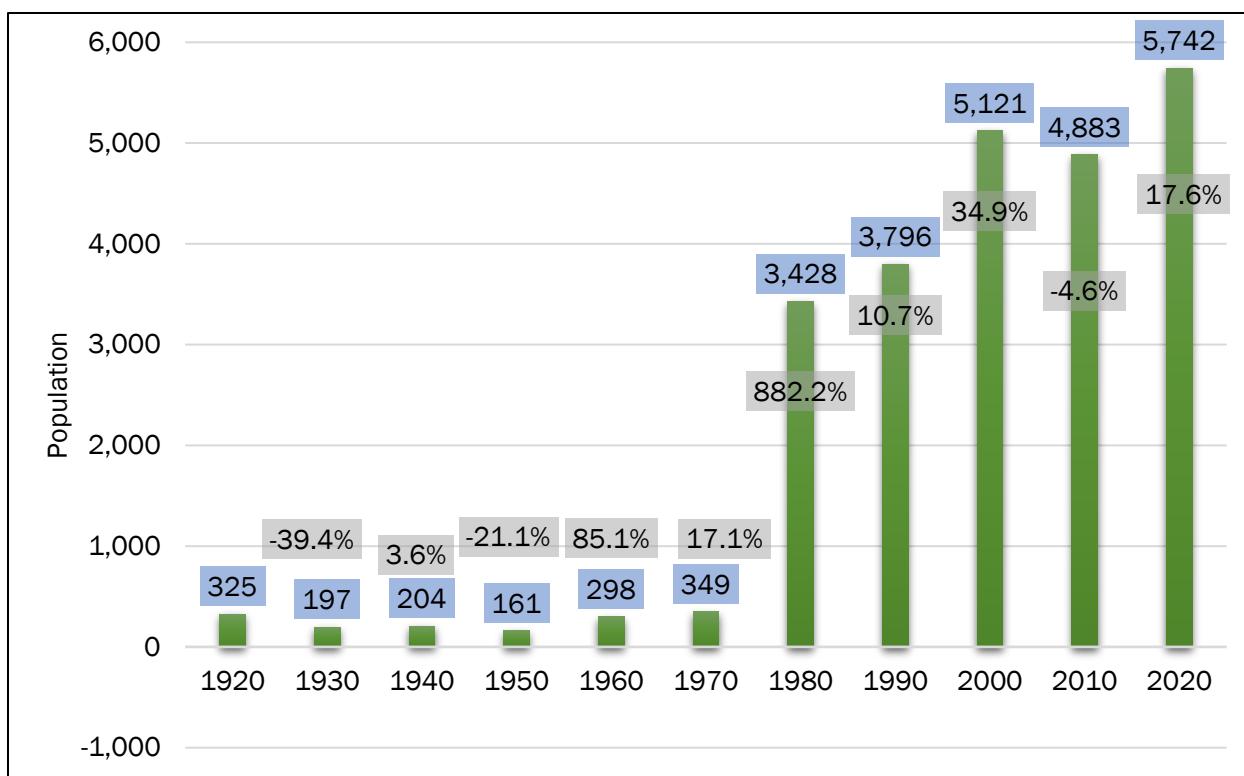


Figure 3-3. Population Trends—Town of Poolesville

Source: U.S. Decennial Census (1920-2020). Note: the percentages indicate the change in population by decade.

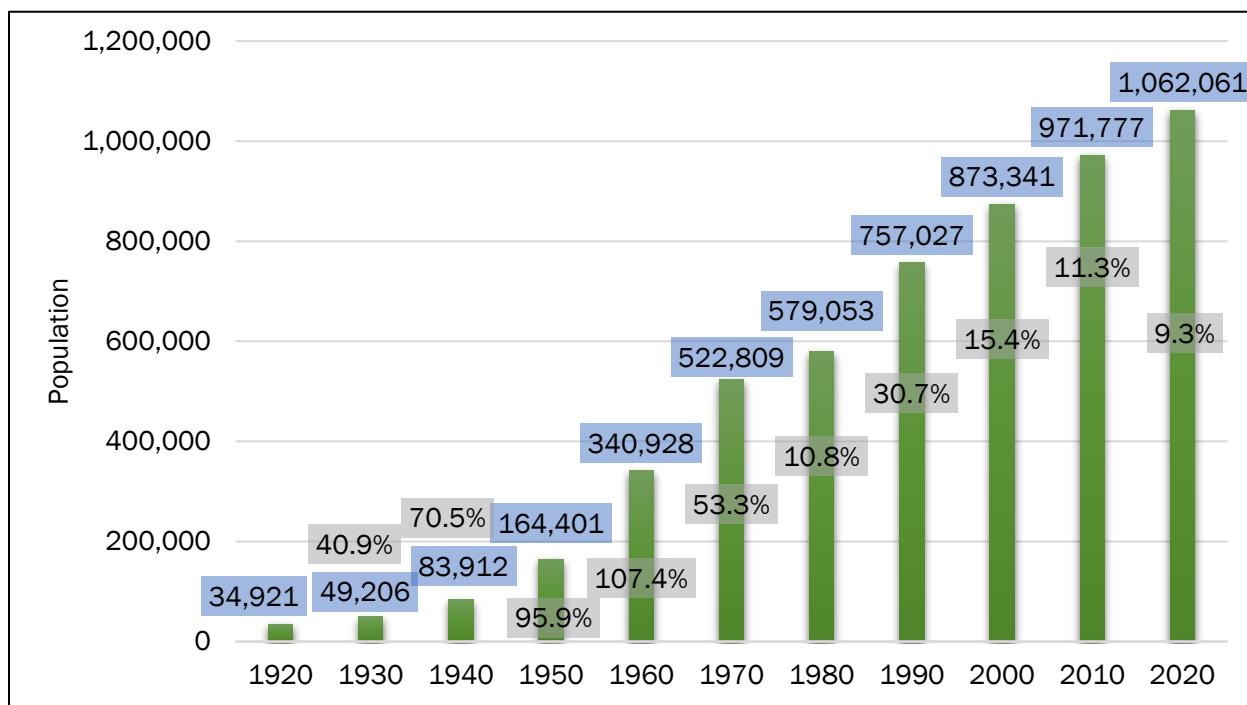


Figure 3-4. Population Trends—Montgomery County

Source: U.S. Decennial Census (1920-2020). Note: the percentages indicate the change in population by decade.

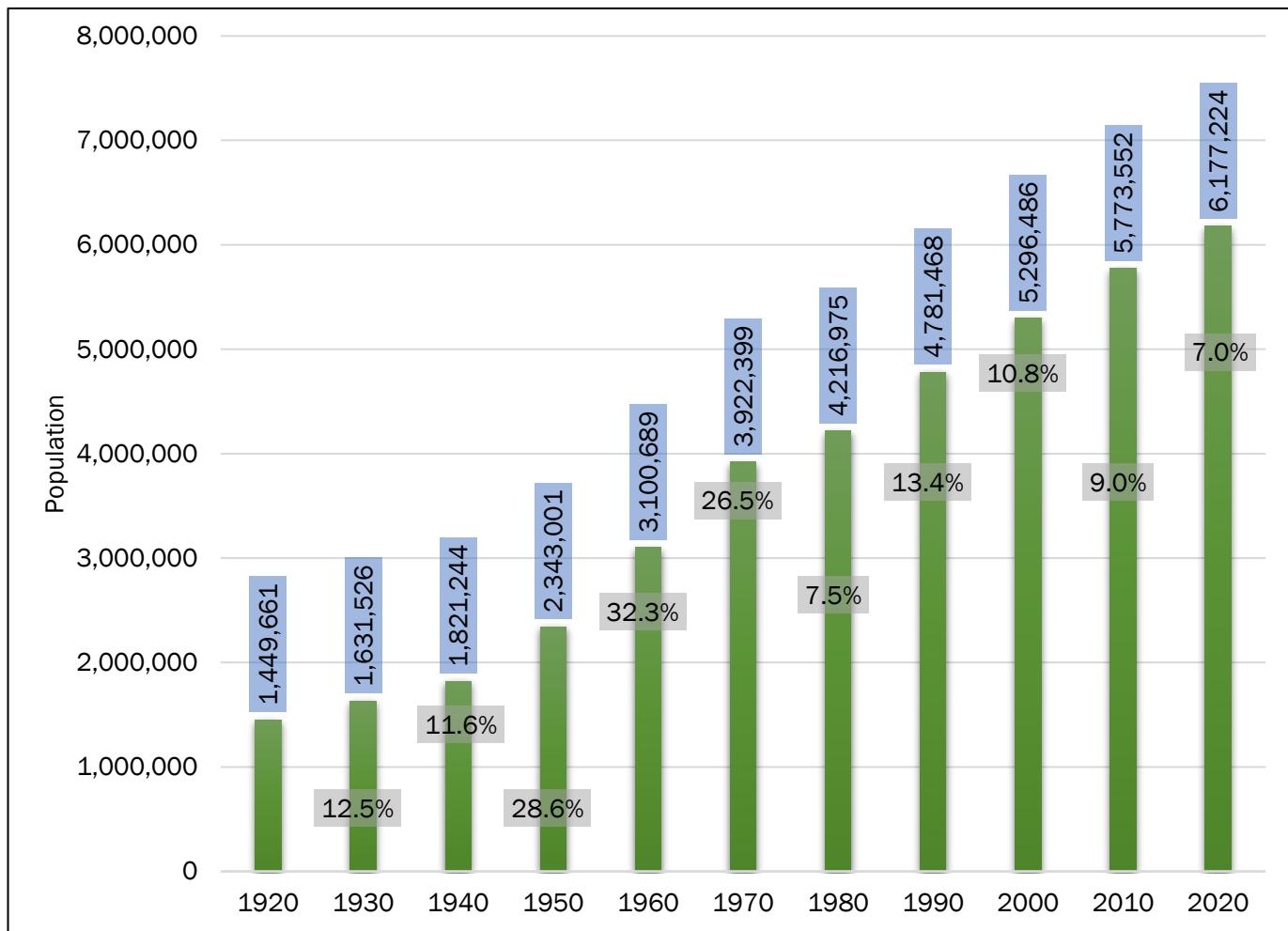


Figure 3-5. Population Trends—State of Maryland

Source: U.S. Decennial Census (1920-2020). Note: the percentages indicate the change in population by decade.

3.3.2 Age

As **Table 3-1, Age Distribution Comparisons** indicates, the Town's population is, on average, older than that of the County and the State. The median age of Town residents increased by 2.3 years during the 2010-2021 period, while the median age of County and State residents increased by 1.3 years during the same period, respectively. The share of the Town's working-age population, or between 20 and 64 years old, is fairly similar to both the County and State; the Town's population over 65 years is less than that of the County and State. Conversely, the share of the Town's population under 5 years and between 5 and 19 years is greater than that of the County and State. *Note that age data is not part of the Decennial Census, so American Community Survey data has been used. Due to this, the total population is different from other datasets using Decennial Census data.*

Table 3-1. Age Distribution Comparisons (2021)

Town		County		State		
Age	No.	%	No.	%	No.	%
Under 5 Years	389	6.9%	64,174	6.1%	363,466	5.9%
5 to 19 Years	1,148	20.2%	205,136	19.3%	1,168,241	18.9%
20 to 64 Years	3,367	59.4%	622,795	59.1%	3,666,948	59.5%
65 Years & Over	762	13.4%	165,096	15.7%	949,890	15.4%
Median Age	41.9		39.6		38.9	
Total Population	5,666		1,057,201		6,148,545	

Source: 2017-2021 American Community Survey

Table 3-2, Age Distribution, shows that the Town experienced changes in the age distribution of its population from 2010 to 2021. The greatest changes are in the population under the 5 years of age group (an increase of 87.8%) and the 65 years and older age group. (an increase of 367.5%).

Table 3-2. Age Distribution (2010-2021)

Age	2010		2021		Change
	No.	%	No.	%	10-21
Under 5 Years	214	4.4%	389	6.9%	87.8%
5 to 19 Years	1,297	26.5%	1,148	20.2%	-11.5%
20 to 64 Years	3,215	65.8%	3,367	59.4%	4.7%
65 Years and Over	163	3.3%	762	13.4%	367.5%
Median Age	39.6		41.9		5.8%
Total Population	4,883		5,666		16.0%

Source: 2006-2010 & 2017-2021 American Community Survey

3.3.3 Race & Ethnicity

Table 3-3 compares the Town's 2020 racial composition to that of the County and the State. **Table 3-4** summarizes changes in the Town's racial composition from 2010-2020. The Town is less racially diverse than either the County or the State. This trend lessened over 2010-2020, as the Town's White population decreased by 2.6%. The most significant change was in the population reporting two or more races, which, due to the Town's small population, increased by 433.3%.

Table 3-3. Racial Composition Comparisons (2020)

Race	Town		County		State	
	No.	%	No.	%	No.	%
One Race	5,102	88.9%	942,799	88.8%	5,695,323	92.2%
White	4,202	73.2%	457,783	43.1%	3,007,874	48.7%
Black or African-American	299	5.2%	197,077	18.6%	1,820,472	29.5%
American Indian & Alaska Native	17	0.3%	7,036	0.7%	31,845	0.5%
Asian	402	7.0%	163,507	15.4%	420,944	6.8%
Native Hawaiian & Pacific Islander	0	0.0%	610	0.1%	3,247	0.1%
Some Other Race	182	3.2%	116,786	11.0%	410,941	6.7%
Two or More Races	640	11.1%	119,262	11.2%	481,901	7.8%
Total Population	5,742		1,062,061		6,177,224	

Source: 2020 U.S. Decennial Census (Redistricting Data)

Table 3-4. Change in Town's Racial Composition (2010-2020)

Race	2010		2020		Change
	No.	%	No.	%	
One Race	4,763	97.5%	5,102	88.9%	7.1%
White	4,315	88.4%	4,202	73.2%	-2.6%
Black or African-American	252	5.2%	299	5.2%	18.7%
American Indian & Alaska Native	25	0.5%	17	0.3%	-32.0%
Asian	101	2.1%	402	7.0%	298.0%
Native Hawaiian & Pacific Islander	1	0.0%	0	0.0%	-100.0%
Some Other Race	69	1.4%	182	3.2%	163.8%
Two or More Races	120	2.5%	640	11.1%	433.3%
Total Population	4,883		5,742		17.6%

Source: 2010-2020 U.S. Decennial Census (Redistricting Data)

Table 3-5 compares the Town's 2020 Hispanic and Latino population composition to that of the County and the State. The Town is less ethnically diverse than the County; however, it closely approximates the State's composition.

Table 3-5. Hispanic & Latino Population Composition Comparisons (2020)

Hispanic or Latino Origin	Town		County		State	
	No.	%	No.	%	No.	%
Hispanic or Latino (of any race)	569	9.9%	217,409	20.5%	729,745	11.8%
Not Hispanic or Latino	5,173	90.1%	844,652	79.5%	5,447,479	88.2%
Total Population	5,742		1,062,061		6,177,224	

Source: 2020 U.S. Decennial Census (Redistricting Data)

Table 3-6 summarizes the Town's population reporting Hispanic or Latino origin since 2010. The absolute number of people reporting Hispanic or Latino origin increased by 228 from 2010-2020, as did the percent change (increasing by 66.9%).

Table 3-6. Change in Town's Hispanic & Latino Composition (2010-2020)

Hispanic or Latino Origin	2010		2020		Change
	No.	%	No.	%	10-20
Hispanic or Latino (of any race)	341	7.0%	569	9.9%	66.9%
Not Hispanic or Latino	4,542	93.0%	5,173	90.1%	13.9%
Total Population	4,883		5,742		17.6%

Source: 2010-2020 U.S. Decennial Census (Redistricting Data)

3.3.4 Educational Attainment

Table 3-7 compares the Town's educational attainment for the population 25 years or older with that of the County and the State. As the table shows, the Town has a lower percentage of residents who have not graduated from high school or received their graduate equivalency (GED) than the County or the State, while concurrently, the percentage of the population with bachelor's degrees or other advanced degrees is higher.

Table 3-7. Educational Attainment (2021)

Education Level	Town		County		State	
	No.	%	No.	%	No.	%
Non-High School Graduates	158	4.3%	63,938	8.7%	391,353	9.2%
High School Graduate (incl. GED)	447	12.2%	95,734	13.1%	1,014,292	23.9%
Some College, No Degree	461	12.5%	93,376	12.8%	782,055	18.4%
Associate degree	305	8.3%	40,215	5.5%	290,613	6.9%
Bachelor's Degree	1,351	36.8%	198,678	27.2%	934,036	22.0%
Graduate Degree or Higher	953	25.9%	237,226	32.5%	828,446	19.5%
Population 25 Years & Over*	3,675	64.9%	729,167	69.0%	4,240,795	69.0%

Source: 2017-2021 American Community Survey. Note: Percent of the population 25 years and over is the percentage of the total population.

Community Facilities

Purpose

The Community Facilities chapter aims to address key issues related to providing adequate public facilities and services over the life of this Plan.

4.1 Overview

Community facilities and services play a vital role in meeting the Town's health, safety, and welfare of its current and future populations. Community facilities, for the purposes of this plan, include all properties and buildings owned by, or providing a service to, the Town of Poolesville.

4.2 Goals and Objectives

1. Provide and preserve park facilities and open space adequate in both location and size to serve the needs of Town residents.
2. Create diverse recreational opportunities, such as a bouldering park, through grants and other funding sources.
3. Coordinate with public, nonprofit, and private sector partners to provide more services and programming while protecting and preserving the Town's historical resources.
4. Partner with Montgomery County Public Schools for schools and essential services demanded by the Town's communities.
 - Advocate for enhancing the learning experience for students with state-of-the-art technology in Town educational facilities and a wellness center at the high school.
5. Continue to work with Montgomery County and the State of Maryland to plan for future needs not provided by the Town, including emergency services, schools, and community facilities, including:
 - A Community Center that will include afterschool, senior, recreational programming, and health services for the Poolesville community.
 - Police Substation
 - A bubble over the swimming pool for use all year long.
 - An expanded library to meet the growing needs of the community.
6. Critically review all facilities and services periodically to determine whether they provide adequate service levels.

4.3 Government and Administration

Poolesville Town Hall

Poolesville built a new Town Hall in 2008 in the center of the Town. The building is adjacent to Whalen Commons Park along Beall Street. Most official Town business takes place at Town Hall, including administration, Town meetings, and Town elections. The main meeting room seats 40 people and is available for local non-profit groups for meetings, seminars, and other similar purposes.



Poolesville Wastewater Treatment Plant and Public Works Yard

The Poolesville Wastewater Treatment Plant, located near Stevens Park, is an enhanced nutrient removal system that enables treatment to meet and exceed the Maryland Department of the Environment's (MDE) regulations. The Town's Public Works Yard is co-located with the plant, which includes storage facilities for equipment and vehicles for both the Parks and Streets Department and the Water and Sewer Department.

4.4 Public Facilities

Public facilities are important to the Town and its community. The capacity of these facilities should be connected to the area's population and its associated growth. As the population increases, facilities should also adjust to meet demands. The Town's primary public facilities are shown on **Map 4-1, Public Facilities**.

Maggie Nightingale (Poolesville) Library

The Poolesville Branch of the Montgomery County Public Library System is located at 19633 Fisher Avenue in a commercial strip adjacent to Whalen Commons Park. The branch has a full borrowing library of books, DVDs, and music, as well as free public Wi-Fi, printing capabilities, and public access computers. The library holds community events throughout the year. These include, but are not limited to, storytelling, movie nights, learning sessions, hobby group meetings, and seasonal arts and crafts programs. While the County does not have current plans to expand the library, the Town should lobby the County to evaluate an expansion of the facility (for more details, see Chapter 5).

Sarah E. Auer Western County Outdoor Pool

Montgomery County owns and operates the Sarah E. Auer Western County Outdoor Pool. This facility is located at 20151 Fisher Avenue and is open from Memorial Day through Labor Day. Amenities include a six-lane, 25-meter main outdoor pool, and an eight-lane, 25-meter swim course with a 1 ½ meter diving board. An activity pool with fountains, sprays, and kiddie slides is also available. A splash pad, snack bar, lawn areas, and bathhouse are on-site for visitors. The facility also offers swim lessons for varying ages, from infants to adults, and competitive swim programs.

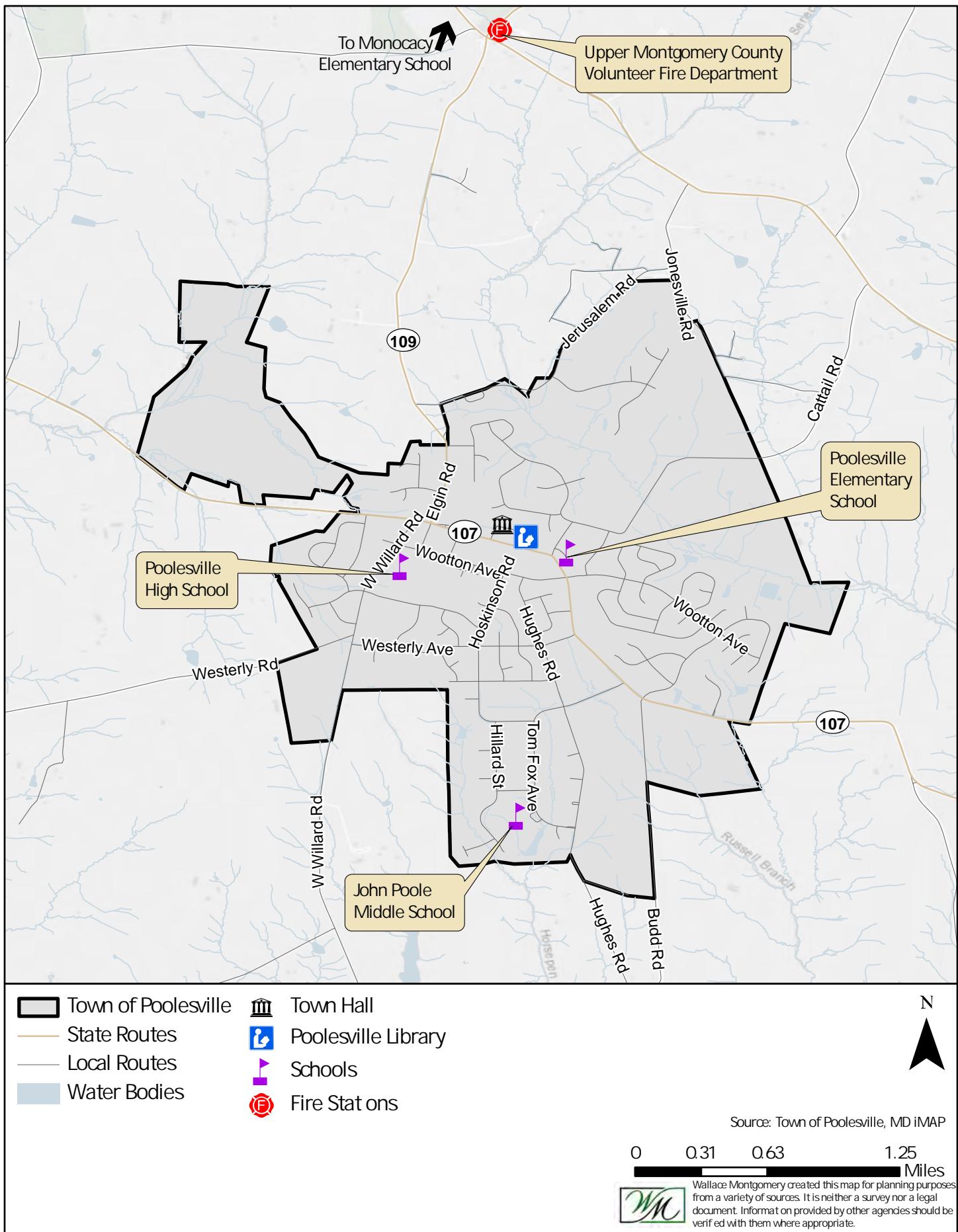
The Town is lobbying the County to build a bubble over the pool. With a growing aging population, many young families, and a competitive swim team, a year-round facility would provide older people with options for physical therapy and rehabilitation, provide healthy recreation for families, and expand training opportunities for the Town's swim team.

The Crossvines and Golf at Crossvines

The Crossvines and Golf at the Crossvines are located just outside of town on West Willard Road. The Crossvines is designed to create economic opportunities and investment in Montgomery County's agricultural tourism and wine-making industry sectors and to support the Montgomery County Agricultural Reserve through educational programming, research facilities, and the provision of demonstration vineyards. The Crossvines property includes the Poolesville Golf Course, a 7,000-yard, 18-hole public golf course, a short game practice area, and a driving range. The site is also home to the Crossvines Winery.



Map 4-1
Public Facilities
Page 33



4.5 Public Safety

The County, State, and volunteer organizations provide various public protection and emergency services to Poolesville. This section provides information on these services.

Fire Services

The Upper Montgomery County Volunteer Fire Department (UMCVFD), Station 14, provides fire and emergency services for the Poolesville area. The station is located at 19801 Beallsville Road, approximately three miles outside the Town. The UMCVFD was developed and supported by the western Montgomery County community members. The facility relies heavily on community involvement to stay successful. Community members are encouraged to volunteer, join as members, help plan events, and attend department fundraisers and events.

Police Services

The Montgomery County Police Department provides services in Poolesville. Police District 1-Rockville, located at 100 Edison Park Drive in Gaithersburg, is responsible for Poolesville emergencies and public safety incidents. While this location effectively serves the Upcountry area of Montgomery County, the Town is advocating for a police substation closer to Poolesville that can respond to issues in Town.

Montgomery County Animal Services and Adoption Center (MCASAC)

The Montgomery County Animal Services and Adoption Center (MCASAC) serves Poolesville and is operated by the Department of Police, Office of Animal Services, located at 7315 Muncaster Mill Road, in Derwood, MD.

This is the County's only open-admission shelter, providing shelter and care to homeless, abused, and neglected animals. Animal Service Officers are available 24-7 to respond to animal emergencies and citizen complaints.

Community Center

The Town is partnering with Montgomery County and the Montgomery County Public Schools (MCPS) to provide Poolesville with a community center. As of Fall 2023, a Program of Requirements (POR) for the center is currently under development.

A future center would provide programs such as mentoring, after-school art programs, exercise and physical fitness programs, and other health programs. In addition, there will be teen programming, such as recreational sports and games. This center will include health and recreation programming for Poolesville's older populations.

4.6 Schools

MCPS serves the Town and has three schools within the Town limits and one school that serves the Poolesville community but is north of the Town. Montgomery County has 210 schools within the district, with 156,246 students enrolled in the 2022 school year.

Poolesville High School

Poolesville High School is located along West Willard Road and Wootton Avenue, near the center of Town. For the 2023 school year, there were approximately 1,307 students (current school capacity is 1170 and will rise to 1508 after the current project) enrolled in grades 9 through 12. In 2021, *Newsweek*

magazine ranked Poolesville High as #31 in America's 100 Best Public High Schools. Rankings are from 1 to 100, with 1 being the best, and are derived from nationwide schools. Scores are determined by data from the U.S. Department of Education, along with surveys, reviews, culture, and diversity.

Feedback was received through the community survey and the public outreach event for this plan that the need for a new school to accommodate growth was large. Ensuring that classrooms can hold the number of students attending and be outfitted with the latest technologies to encourage learning is important to the community and the future generations passing through the building. Sidewalks to provide a safe means of passage for students walking to and from should also be considered.

The need for a wellness center inside the High School was also a consideration. Increasingly, high schools in neighboring Towns and States have begun providing basic health services for students, with parent permission, such as flu shots, emergency contraceptive options, STD testing, counseling, etc. These services are offered in a facility where students can feel safe and have privacy in seeking out those services, which offer an incredible benefit to the well-being of the student body as a whole.



The High School is currently undergoing renovations, which are set to be completed by 2025 and have a total budget of \$130M. This renovation will increase capacity, expand the gym, and create allocated space for a Wellness Center.

John Poole Middle School

John Poole Middle School is located at 17014 Tom Fox Avenue, near the southern limits of the Town boundary. For the 2023 school year, approximately 443 students (the capacity is 478 students) were enrolled in grades 6 through 8, drawing from Poolesville and the surrounding area.

Built in 1997, the Middle School expanded in 2001 to include the Linda Fiore Memorial Gymnasium. There are no current plans for further developments of the Middle School; however, MCPS projects the Middle School to exceed MCPS's desired utilization range starting in 2024-2025.

Poolesville Elementary School

Poolesville Elementary School is located at 19565 Fisher Avenue, near the center of Town. For the 2023 school year, approximately 568 students (the capacity is 562) will be in kindergarten through fifth grade. Built in 1960, Poolesville Elementary's last revitalization project was in 1978, and the last significant work was in 2013, when MCPS installed a generator and a fence. MCPS has no current plans for the school.

The County considers Poolesville Elementary School within the desired utilization range but is projected to exceed that range starting in the 2024-2025 school year. At that point, changes to the school might be considered.

Monocacy Elementary School

Monocacy Elementary School is located at 18801 Barnesville Road outside of Town in Dickerson, Maryland. For the 2023 school year, approximately 167 students (the capacity is 218) were enrolled in kindergarten through 5th grade. Built in 1961, the school was fully revitalized in 1989, including a full-size gymnasium and an enlarged library-media center. Students in Poolesville have the choice of attending either Poolesville Elementary or Monocacy Elementary.

The last major work on the school was renovating its roof in 2009. There are no current plans for further development. The county considers Monocacy Elementary School to fall within the desired utilization range but is projected to exceed that range in the next five years by 2028-2029.

4.7 Parks and Recreation

Parks and recreation are essential to the quality of the Town. Natural resources, wildlife, open space, and recreation add to the quality of life and positively impact the Town's character.

Poolesville has an extensive park and recreational system that offers many parks, an outdoor public pool, and sports fields for residents. The Town's primary park facilities are listed below and can also be found on **Map 4-2, Parks & Recreation.**¹

Whalen Commons Park

Whalen Commons Park is a 3.2-acre park located in the center of Poolesville along Fisher Avenue, near the Town Hall. The park was dedicated to the Whalen family, who donated the land to the Town. The area contains restrooms, an open area, paved trails, and a bandshell for concerts and movie nights. A local farmers' market is held seasonally at this park on most Saturdays in the morning/early afternoon. Whalen Commons Park also includes a parking lot with four electric vehicle charging stations.



Dillingham Park

This 4-acre park is located southeast of Whalen Commons Park along Wootton Avenue and near the town center. It is an open area with an adjacent dog park, skate park, and tot lot.

Campbell Park

Campbell Park is a 2-acre lot located along Wootton Avenue and Fisher Avenue. The lot provides an open space with a trail through an arboretum, pollinator beds, and a little library box.

Wootton Heights Park

This is a 1/3-acre park within the Wootton Heights townhouse development. The park provides a playground for local youths.

¹ Improvements to the Town's parks system are recorded with the county as part of the Montgomery County's Land Preservation, Parks, and Recreation Plan (LPPRP).

Brooks Park

This recreational area is a 1-acre neighborhood park located in the residential field area near Wootton Avenue and Soper Street. The lot offers an open area with a playground for local youths.

L.M. Stevens Park

L.M. Stevens Park is an 11.5-acre park located at the end of Seneca Chase Park Road. This park is one of Poolesville's largest parks and has various recreational activities. Facilities include a bathroom, baseball field, batting cages, a large playground, 3 basketball courts, a fishing pond, an exercise trail, and 6 pickleball courts.

Collier Circle Park

Collier Circle Park is located between Collier Circle and Dowden Circle. This 4-acre park includes a recreation trail, fishing, and open space.

George Deyo Park

This area is a 4-acre park located along West Willard Road and Westerly Avenue. The lot is currently used for sports practices and includes a tot lot, parking lot, and trail system.

Bodmer Park

Bodmer Park is a 1.5-acre park off Bodmer Avenue, directly adjacent to Halmos Park. The lot has a parking lot, a large playground, and a ball field.



Halmos Park

This recreational area is 15 acres and is located off Hoskinson Road, south of Bodmer Avenue. Halmos Park is one of Poolesville's larger parks, with two tennis courts, one basketball court, three baseball fields, one soccer field, an exercise trail, two playgrounds, restrooms, and two parking lots.

Beaver Pond Park

Beaver Pond Park is a small 6.8-acre open space park area directly diagonal to Halmos Park, off Hoskinson Road. Residents also use the pond for fishing.

Elgin Park

Elgin Park is a 6-acre park that is east of Elgin Road. It offers a lacrosse/soccer field, a large playground, bathrooms, an exercise trail, a basketball court, and pavilions. The lot is surrounded by residential homes and 50 acres of protected woodlands by Dry Seneca Creek.

Perkins Park

This is a 28-acre neighborhood park located in the Stoney Spring Development near McNamara Road. The area has a soccer field, a large playground, exercise trails, and exercise equipment.

Lori Gore Park

Lori Gore Park is a small 6,794-square-foot neighborhood park located off McKernon Way along the northern boundary of the Town. The park is an open area with a small playground for local youth.



Hoewing Park

Hoewing Park is a 3.5-acre park located off Budd Road. The park offers soccer fields and a parking area.

Behrend Park

Behrend Park is in the Brightwell Reserve neighborhood and is one of the Town's newest parks. It consists of 1.5 acres and has a playground, gazebo, and benches.

Dry Seneca Creek Park

Dry Seneca Creek Park has twenty-four acres of open space between Tama and the Woods of Tama neighborhoods. This open space includes a trail and a forested stream buffer.

Multi-Purpose Trail System

The multi-purpose trail system is a seven-mile trail that runs throughout the Town's subdivisions and parks. Its purpose is to provide transportation alternatives, pedestrian and bicycle connectivity among the town's neighborhoods, passive recreational opportunities, and the Town's facilities and businesses.

Figure 4-1 shows the connected trail system.

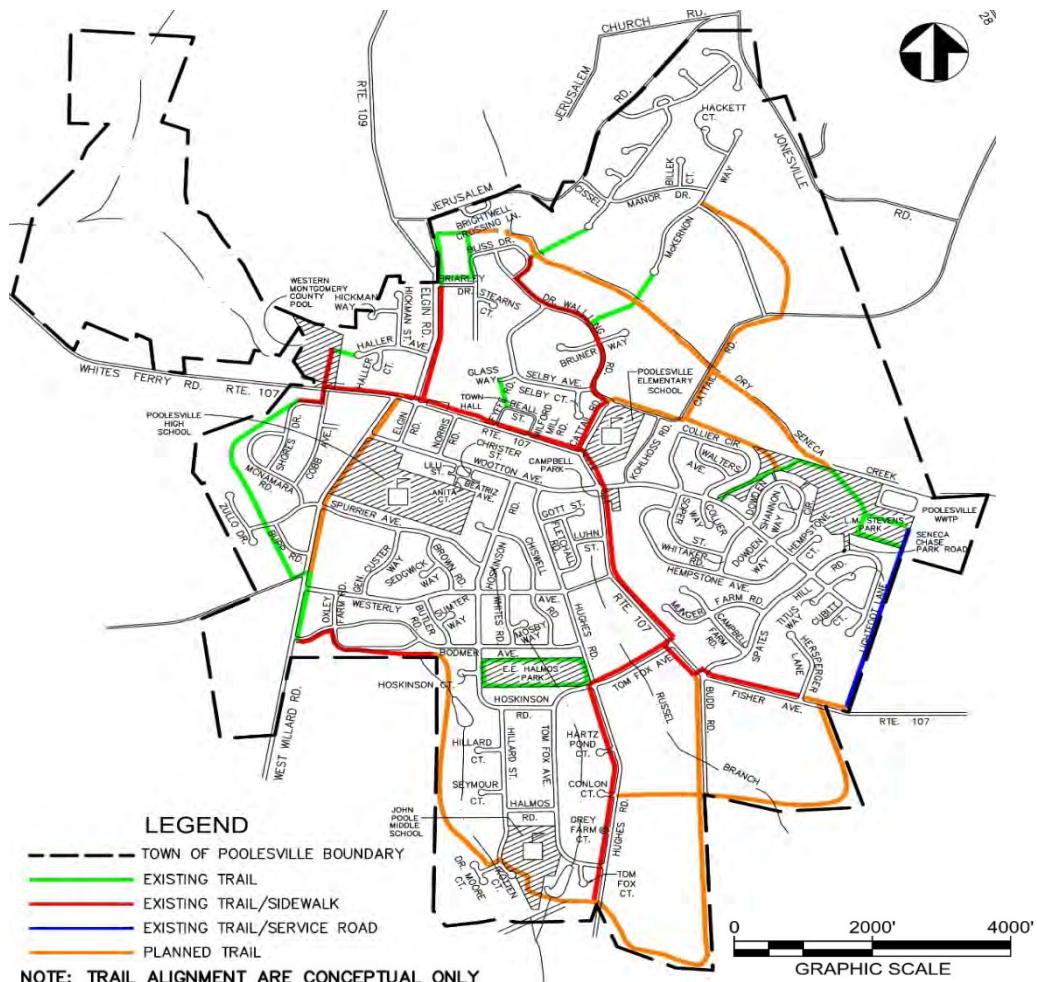


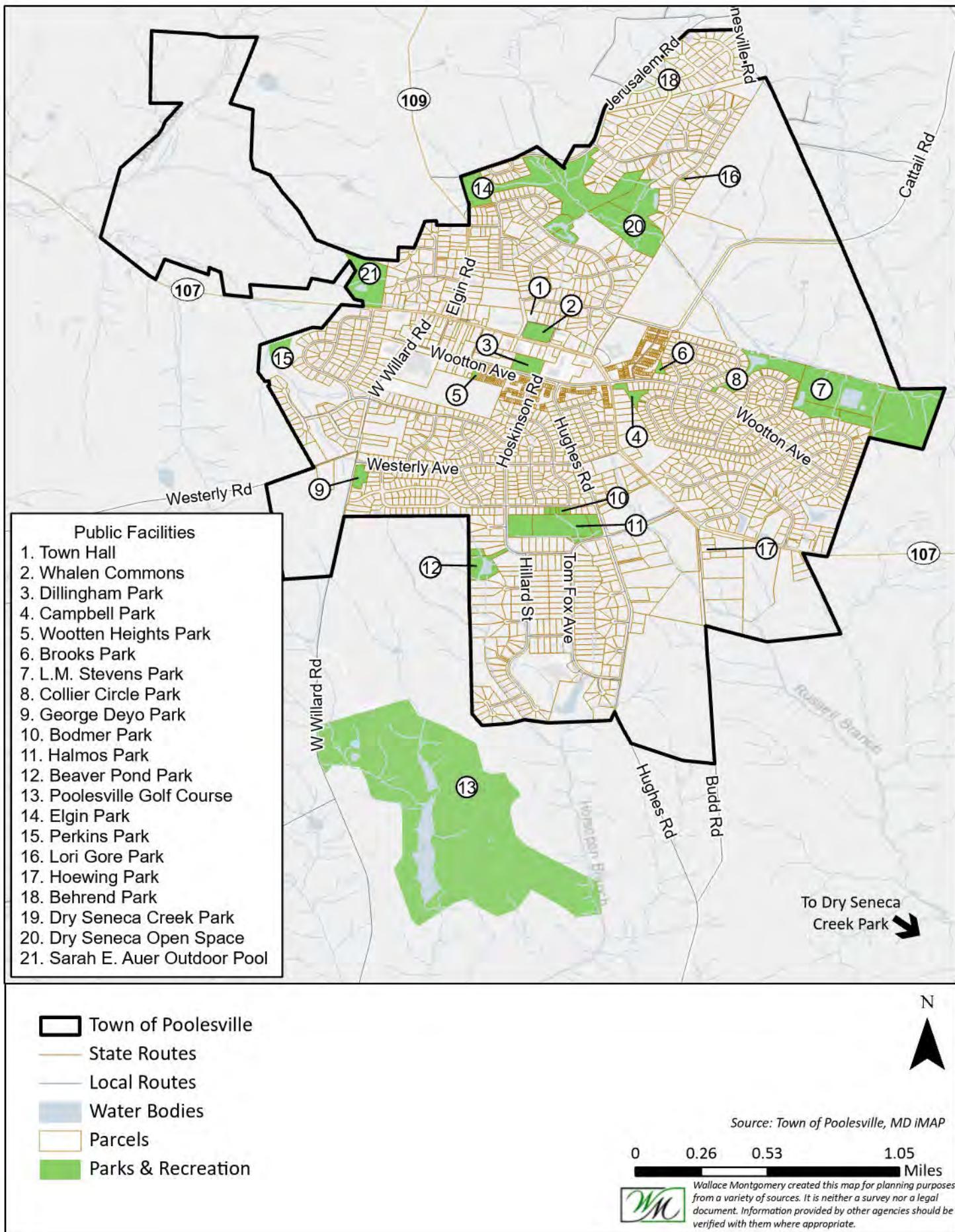
Figure 4-1. Multi-Purpose Trail System

Source: Town of Poolesville

4.8 Park Innovations for the Future

Feedback received through stakeholder interviews, public outreach events, and the community survey revealed residents' desire to look to the future when maintaining and creating parks. The possibility of creating rain and/or pollinator gardens within existing parks and open spaces was presented, as well as creating a parking lot for Electric Vehicle (EV) charging stations to encourage sustainable choices in vehicles, installing bike racks for those who chose that mode of transportation, and expanding the sidewalk network throughout town to promote connectivity and walkability throughout the Town.

Map 4-2
Parks & Recreation
Page 40



Land Use

Purpose

The Land Use chapter provides information on existing land uses and influences and directs future land use changes to plan for the community's needs while safeguarding natural resources and as a guide for the continued evolution of land uses within the Town.

5.1 Overview

This chapter provides information on land use categories within the Town, including zones, recently completed development projects, and future development projects. Information in this chapter works in conjunction with the other chapters, as land use defines a community's physical form and function and provides a framework for all infrastructure-related decisions.

Chapter 6 - Municipal Growth Chapter, discusses the Town's potential growth and constraints, and **Chapter 11 - Water Resources Chapter**, details the Town's water and wastewater infrastructure.

Poolesville is known for its excellent schools, diverse and desirable housing, locally owned businesses, and rich, traditional historical heritage. Many active faith-based and secular organizations provide strong support for the community.

Poolesville's unique geographical location within the 93,000-acre Montgomery County Agricultural Reserve - the largest percentage of preserved agricultural land in the United States and a hard backdrop to any land use decisions contemplated, planned, or projected.



Poolesville's municipal boundaries encompass approximately 2,434.6 acres of land, including about 2,366.4 acres containing 2,199 individual properties or parcels. The remaining 68.2 acres are comprised of roads and public rights-of-way.¹

5.2 Goals and Objectives

Poolesville will help support and enhance the Town's land uses that serve various incomes, lifestyles, and age groups. Proper land use planning will allow people to be lifelong Poolesville residents, affording opportunities as residents' needs change over time.

1. Encourage the redevelopment and revitalization of the Town Center.

¹ Due to how Montgomery County created and maintained its parcel data, there are often small differences in how parcel features are shown and recorded electronically. These differences are particularly notable compared to the Town's land use and zoning records. Within the Town boundaries, small slivers of land do not have clear ownership and may be associated with roadways, public infrastructure, or private property. Where possible and where obvious, these unknown parcels have been assigned to adjacent, larger parcels, for purposes of completing the land use analysis for the Plan. Because of these data irregularities, some tables in this chapter show slight variations in total acreages or parcel counts.

- Ensure that new development and redevelopment complies with the Town's architectural guidelines.
- Coordinate with Montgomery County, the Montgomery County Public Schools, and other agencies to ensure that new public facilities, such as a community center, are located near the Town Center.
- Evaluate increases in densities as a tool to encourage redevelopment.
- Explore and promote Maryland Department of Housing and Community Development program funds and HUD Community Development Block Grant funds for interior and exterior renovations, energy efficiency upgrades, and streetscape improvements.

2. Protect and maintain Poolesville's Small-Town character.
 - Maintain a land use pattern in which land density decreases from the Town center outward.
 - Encourage infill, residential, mixed-use, and redevelopment, especially within the Town Center.
3. Protect residential areas from incompatible land uses.
 - Preserve and improve the integrity of residential neighborhoods by restricting the encroachment of incompatible land uses.
 - Continue to require commercial uses to provide measures designed to reduce impacts and nuisances to adjacent residential areas.
4. Develop within the growth constraints of the Town.
 - Review the Future Land Use Map to identify future rezonings and zoning map amendments for alternative uses such as solar generation, recreation, food hubs, etc.
5. Support and enhance pedestrian and bicycle connections between residential subdivisions, recreational areas, and the Town Center.

5.3 Land Use

Land use policies affect all aspects of community development. Maryland's State land use policies promote smart and sustainable growth that fosters vibrant, livable communities, preserves and protects the environment, and efficiently uses resources. The Maryland General Assembly has passed Numerous acts of legislation to protect the environment and natural resources and to promote sustainable growth across the State. **Chapter 1 – Introduction** outlines legislation affecting Maryland's land use planning and resource preservation.

5.3.1 Land Use Categories

Residential Land Use

Residential land uses are areas that are developed to house individuals and families. These include traditional single-family dwellings, townhomes, and large multi-family apartment buildings.

The section below details the three residential land-use categories, reflecting their differing densities.

- Low Density Detached - single-family detached homes.
- Medium Density Attached - single-family homes may include townhouses, duplexes, and other attached single-family dwellings.
- High-density - multiple-unit housing with the greatest number of people per acre. These types of housing include condominiums, apartments, and cooperatives.

Commercial Land Use

Commercial land uses are for retail or wholesale marketing of goods and services. The County classified commercial use into these two categories:

- Office – any space used for an organization's employees to perform administrative work.
- Retail – any land used as a place for the sale of goods to the public.

Agricultural Land Use

Agricultural land use is any area of property used for cultivating, growing, harvesting, or selling crops and livestock. Agricultural use includes selling and storing agricultural products produced on the property.

Industrial Land Use

Industrial land uses are manufacturing and industrial parks. These can include single industrial uses or multiple capacities.

Warehouse Land Use

Warehouse land use includes wholesale buildings, industrial storage facilities, and mini-storage facilities.

Institutional/Community Facility Land Use

Institutional land use includes land occupied by institutional or cultural establishments for public or private use. Community facilities are buildings or places owned by a public authority and used for the public on a non-profit basis.

Open Space/Recreation/Parks Land Use

Lands categorized as open space are usually undeveloped areas preserved in their natural state. They typically provide the public opportunities for passive recreation on native lands. Recreation and parks also generally fall into this category since they are lands used for public recreational purposes.

Utility Land Use

Utility land uses include right-of-way, wiring, piping, or structures from the following utilities: gas, electric, water, sewage, solid waste, and other facilities, including pipelines and right-of-way.

Vacant Land Use

Vacant land use is areas that have no development or land use activity.

5.3.2 Current Land Use

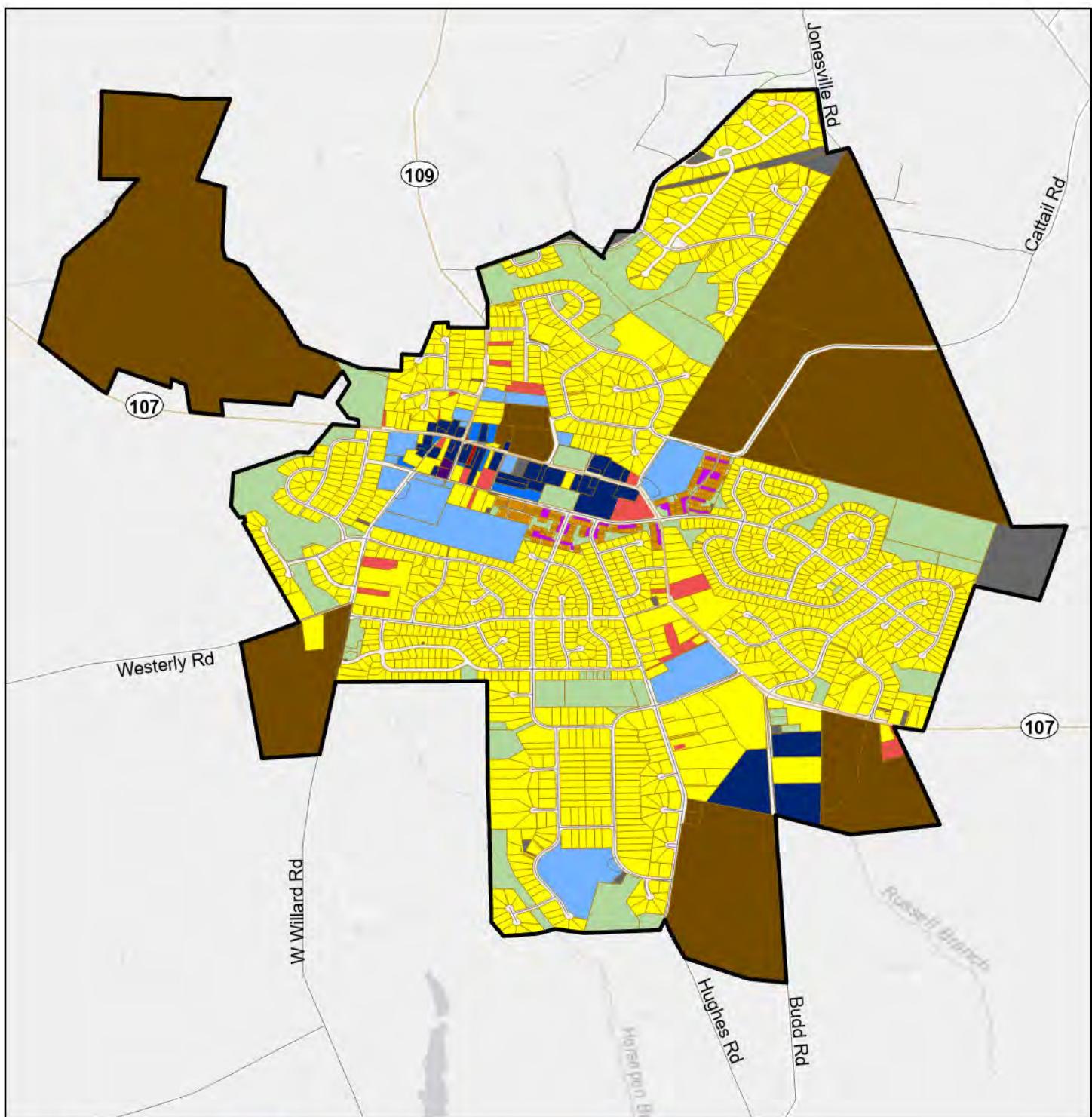
The Town performed an inventory of available land during the comprehensive planning process. **Table 5-1** summarizes Poolesville's existing Land Use by category and number of parcels and compares it to Future Land Use as a comparison. **Map 5-1** shows the Town's Existing Land Use.

Table 5-1. Existing Land Use Summary

Existing Land Use Summary		Future Land Use	
Land Use Category	Total Acres	Total Acres	% Change
Agriculture	787.39	718.06	-9%
Low-Density Detached Residential	940.34	1,035.95	10%
Medium-Density Attached Residential	15.56	33.46	115%
High-Density Residential	0.44	0.0	-100%
Commercial/Retail	60.17	40.33	-33%
Industrial	1.23	1.23	0%
Institutional/Community Facility	97.42	97.45	0%
Commercial/Office	5.68	5.68	0%
Open Space/Recreation/Park	240.36	240.36	0%
Parking	6.43	6.43	0%
Utility	41.81	41.81	0%
Vacant	23.93	0.00	-100%
Transportation/Right of Way	68.2	68.2	0%
Total	2,288.96	2,288.96	

Source: Town of Poolesville, Wallace Montgomery

Map 5-1
Existing Land Use
Page 45



<input type="checkbox"/> Town of Poolesville	<input type="checkbox"/> Commercial/Retail	<input type="checkbox"/> Commercial/Office
<input type="checkbox"/> State Routes	<input type="checkbox"/> High-Density Multi-Family Residential	<input type="checkbox"/> Open Space/Recreation/Park
<input type="checkbox"/> Local Routes	<input type="checkbox"/> Industrial	<input type="checkbox"/> Parking
<input type="checkbox"/> Parcels	<input type="checkbox"/> Institutional/Community Facility	<input type="checkbox"/> Utility
Land Use	<input type="checkbox"/> Low-Density Detached Residential	<input type="checkbox"/> Vacant
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Medium-Density Attached Residential	



Wallace Montgomery created this map for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate.

5.4 Zoning

Poolesville has its own zoning authority, separate from Montgomery County. The purpose of zoning is to divide the land into specific districts related to the community's needs while considering population density and growth. The Town divided the zones into two different general classes, residential and commercial. For additional information on zoning and zoning districts, please refer to the 2014 Poolesville Zoning Ordinance, Number 198.

5.4.1 Zoning Districts

The descriptions of each zoning class are below and are in the Poolesville Zoning Ordinance.

Residential

Residential zoning districts are zones that are developed to house individuals and families. The Town created the residential zoning districts as follows:

- Residential Multi-Family (PR MUL) – Residential properties containing multiple family dwelling units like townhomes.
- Residential (R 1/3) – Residential properties at least 1/3 of an acre in size.
- Residential (R 1/2) – Residential properties at least ½ an acre in size.
- Residential (R ¾) – Residential properties at least ¾ of an acre in size.
- Transition 2+ Acres (PTR 2+) – Parcels at least 2 acres in size.
- Rural Density (PRD) – Parcels that are at least 25 acres in size.

Commercial (P COMM)

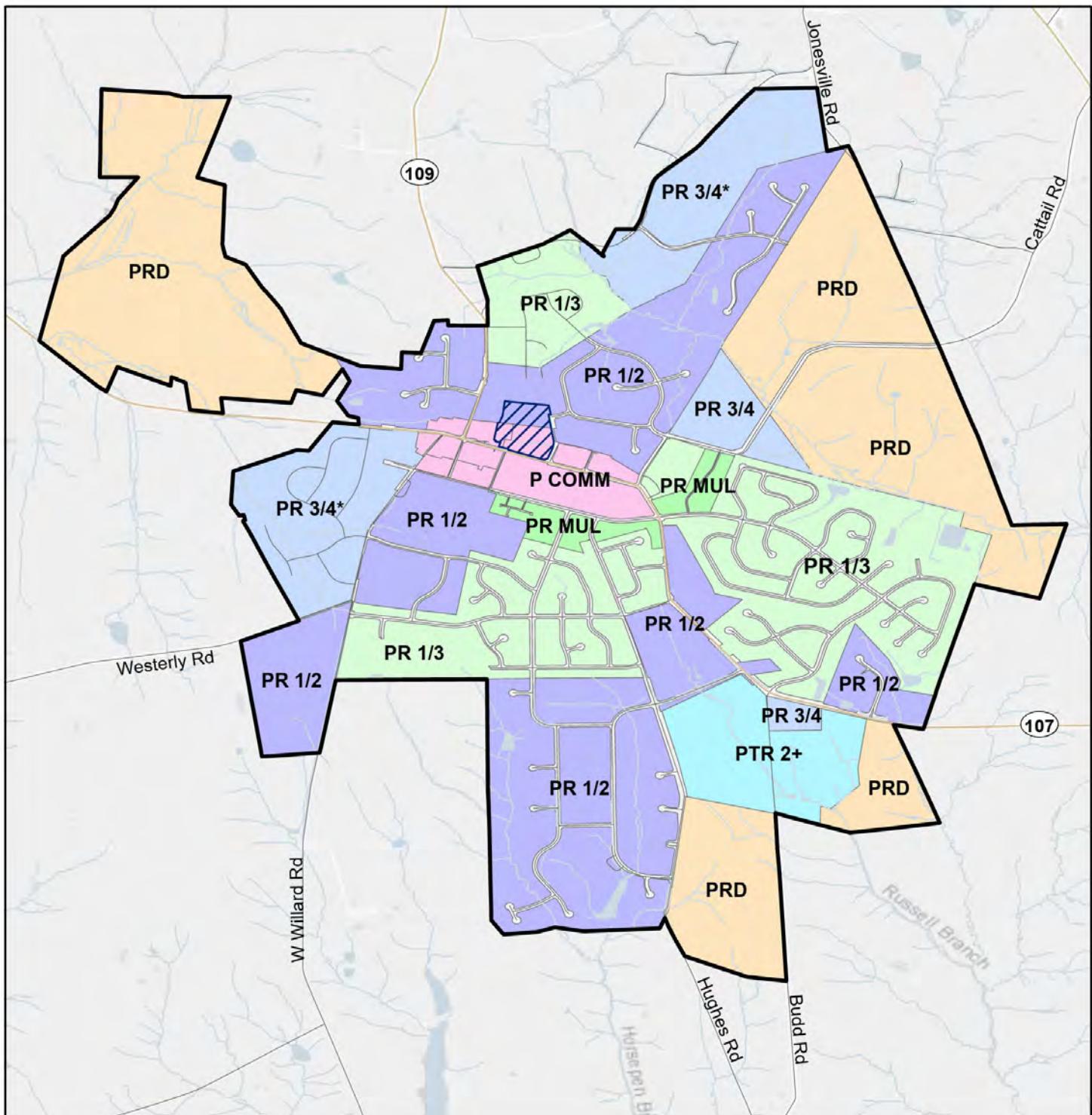
Commercial zones are for businesses, restaurants, retail stores, convenience stores, entertainment stores, or automobile shops; however, they also support mixed uses or residential projects. The purpose of the commercial zone is to create a vibrant Town center that serves as a destination for residents and visitors to walk, shop, dine, live, and interact. Development and redevelopment projects should be harmonious with and enhance the characteristics of the Town Center.

The list of Poolesville's current zoning districts and correlating acreages are in **Table 5-2**. The Zoning districts are also in **Map 5-2, Zoning**.

Table 5-2. Zoning

Zoning District	Acres	
	No.	%
Residential Multi-Family (PR MUL)	32.14	1.4%
Residential 1/3 Acre Lots (R 1/3)	433.21	19%
Residential ½ Acre Lots (R ½)	657.85	28.8%
Residential ¾ Acre Lots (R ¾)	233.35	10.2%
Transition 2+ Acres (PTR 2+)	97.47	4.3%
Rural Density (PRD)	694.48	30.4%
Commercial (P COMM)	67.97	3.0%
Transportation/ROW	68.2	3.0%
Total	2,284.67	

Source: Town of Poolesville, Wallace Montgomery – Note that not all lands within the Town boundary fall into a zone.



- State Routes
- Local Routes
- Water Bodies
- Town of Poolesville
- Village Overlay Zone

Zoning

- P COMM (Commercial)
- PR MUL (Residential Multi-Family)
- PRD (25+ Acres)
- PTR 2+ (2+ Acres)
- PR 1/2 (1/2 Acre Lots)
- PR 1/3 (1/3 Acre Lots)
- PR 3/4 (3/4 Acre Lots)

Note: * Denotes cluster option

Source: Montgomery County 2020 Zoning

0 0.25 0.49 0.99 Miles



Wallace Montgomerry created this map for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate.

Village Overlay Zone

The purpose of the Village Overlay Zone is to create and maintain an economically and culturally viable downtown business district. Developments in the Village Overlay Zone should be walkable and contain a range of housing in an attractive, relevant downtown setting. Part of that effort includes a comprehensive set of design standards that will direct and evaluate future development and redevelopment projects in the Commercial Zone. Enhanced building design projects a positive image that attracts people to the downtown area and will contribute to the vitality and economic success of Poolesville's service providers, retailers, and restaurants.

Infill development and redevelopment offer an excellent opportunity to strengthen development patterns and enhance the Town Center. Projects in the overlay zone should have good design in terms of architecture and linkages with the surrounding properties.

5.5 Annexation

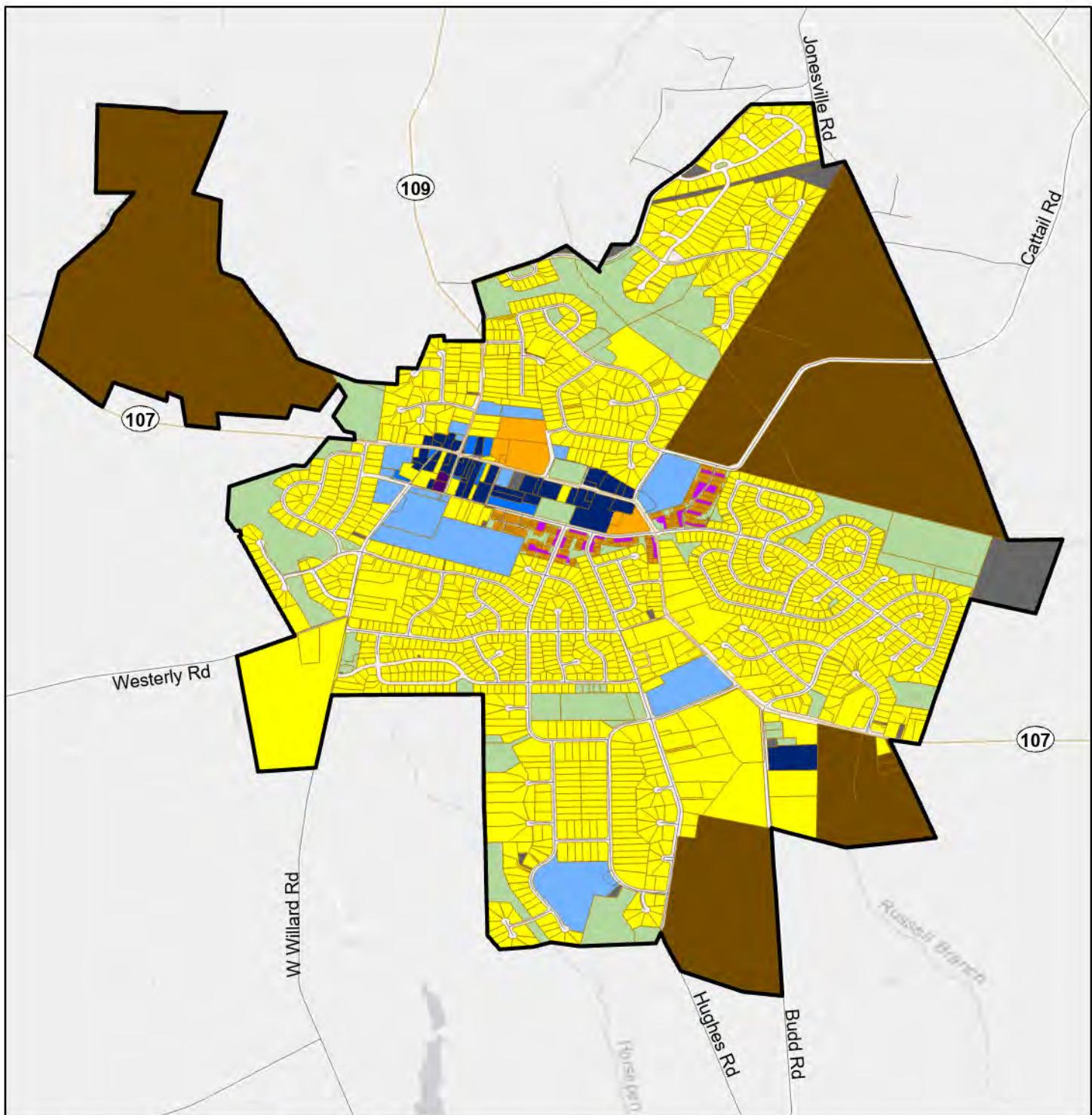
The Town has had no annexations since 1990, nor are any annexations planned for development purposes during the period of this Plan.

5.6 Future Land Use

Poolesville has developed a vision for future land use. Future land use information will serve as a roadmap to guide the development of the Town. **Table 5-1** summarizes Poolesville's proposed Future Land Use by category. **Map 5-3** shows the Town's **Future Land Use**, and **Map 5-4** shows the areas of land use that changed from the existing.

The Future Land Use Map recognizes recent and proposed residential development in the Town since the 2011 Comprehensive Plan and a limited buildout of additional parcels zoned for residential development. It is in keeping with the infrastructure constraints identified in the Municipal Growth and Water Resources Elements and the goals and objectives of this Plan. The redevelopment of existing properties will be the primary source of development in Poolesville, especially in the Town Center. At the same time, the Town emphasizes the importance of protecting its historic structures and village character.

Map 5-3
Future Land Use
Page 49A



Town of Poolesville

Commercial/Retail

Open Space/Recreation/Park

N

State Routes

Industrial

Parking

Local Routes

Institutional/Community Facility

Utility

Parcels

Low-Density Detached Residential

Future Land Use

Medium-Density Attached Residential

Dark Brown

Commercial/Office

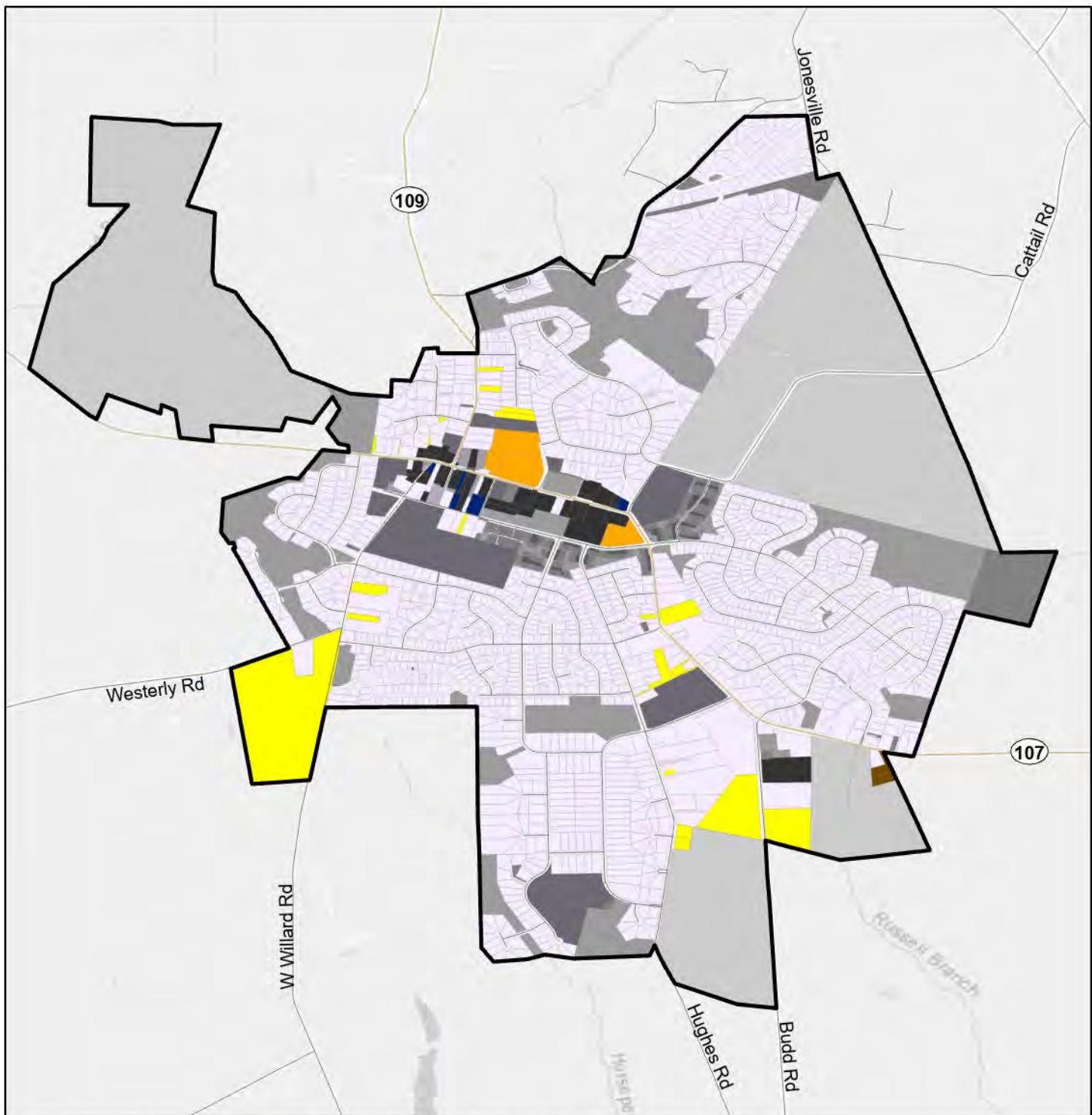
0 0.25 0.5 1 Miles

Source: Town of Poolesville, Wallace Montgomery



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Map 5-4
Future Land Use Changes
Page 49B



Future Land Use Areas that Differ from Current Land Use

	Town of Poolesville
	Interstates
	US Highways
	State Routes
	Local Routes
	Parcels
	Agriculture
	Commercial/Retail
	Institutional/Community Facility/Vacant
	Low-Density Detached Residential
	Medium-Density Attached Residential



0 0.25 0.5 1 Miles

Source: Town of Poolesville, Wallace Montgomery



Wallace Montgomery created this map for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate.

Municipal Growth

Purpose

The Municipal Growth Element (MGE) chapter provides a detailed analysis of population growth, land development, and infrastructure impacts designed to help Poolesville prepare for future development and its effects. Consistent with the State of Maryland's Twelve Planning Visions, this chapter of the Comprehensive Plan is based on requirements in the Maryland Land Use Article §3-112.

6.1 Overview

The MGE identifies growth patterns, planned growth, and the capacity of land areas available for development, redevelopment, and infill. It connects the Town's long-term development policies to a vision of its future character and documents the changes to public services and infrastructure needed to accommodate growth.

6.2 Goals and Objectives

The following goals and objectives have been identified to help support the Town's future development:

1. Encourage redevelopment of existing residential and commercial properties.
 - Encourage infill development within the Commercial Business District.
 - Give super-priority status to development or redevelopment projects proposed within the Town Center, including water and sewer allocation to encourage housing in the Town Center.
 - Emphasize a mix of affordable housing types and projects for young adults and the elderly in future residential projects.
 - Prioritize and invest in public stormwater and related infrastructure needed to support redevelopment in the Commercial District. Review and update the existing Town regulations and policies to ensure that they support this plan's redevelopment and infill goals. These include, but are not limited to, the Poolesville Code, Subdivision Regulations, Architectural Guidelines, Zoning, Village Overlay Zone, and Water and sewer Allocation Plan.
2. Emphasize the Town Center Vision and Streetscape Plan.
 - Promote residential and mixed-use development within the Commercial District.
 - Enhance walkability and pedestrian safety within the Town.
 - Require commercial development or redevelopment to include offset facades, mansards, canopies, and varied roof lines.
3. Avoid annexation of property for growth purposes.
4. Continue to work with Montgomery County and the State of Maryland to plan for future needs not provided by the Town, including emergency services, schools, and community facilities. Priorities for community facilities include a community center, medical services/wellness center, police substation, library expansion, and pool cover.

6.3 Retaining a Small Town, Village Character

Residents want to maintain Poolesville's small-town village character. It is important that residents, businesses, and community leaders understand what that concept means when they become part of the community.

For the purposes of this Plan, a small town or village:

- Is predominantly residential and has supporting commercial and public facilities at or near its center.
- Is compact compared to its surroundings and traditional suburban tract development.
- Is easily distinguishable from surrounding land, which is usually farmland or forests, and is located amid rural or only slightly developed areas; and
- Most importantly, it encourages personal interaction and supports pedestrian and bicycle movement at central gathering places among locals and destinations through mixed land uses.

This description of a “village” reflects the rural, small-town environment that Town residents value and is intended to help guide the development and planning activities of the Town in the future.

6.4 Growth History

The Town’s development history is detailed in **Chapter 3 - Town Profile**. As noted in that chapter and past Comprehensive Plans, Poolesville has functioned as a small but independent rural community since colonial days and for most of its history, with significant population and housing growth not happening until the 1970s, when Poolesville’s population grew tenfold, from 349 in 1970 to 3,428 in 1980. See **Table 6-1. Historic Population Growth and Projections (1970-2020)**

During this period, housing units grew proportionally to serve this population growth, from 134 in 1970 to 1,046 in 1980 and 1,663 by 2010, as shown in **Chapter 7—Housing. Housing growth has continued slowly and steadily through 2020, when** census data show that the number of housing units in the town had grown to 1,901.

Through the past half-century, the Town’s population growth has been supported by the availability of public sewerage and water, but with the Town’s remaining water and wastewater capacity limited, as shown in **Chapter 11 - Water Resources** Poolesville has a development pattern that is nearing buildout, absent further annexations, and significant infrastructure expansion. There are no plans nor desires to expand further, and there will be no annexation for additional development in the foreseeable future.

Given the Town’s desire to retain its small town, village character, this Plan does not designate growth areas or planning areas for purposes of the State’s Smart Growth legislation (see below), as the intent is for the Town to retain its existing boundaries into the foreseeable future.

Table 6-1. Historic Population Growth and Projections (1970-2020)

Year	Population/Projections	% Increase	Housing Units/Projection
1970	349	17.1	134
1980	3,428	882.2	1,046
1990	3,796	10.7	1,172
2000	5,121	34.9	1,622
2010	4,833	-4.6	1,663
2020	5,742	17.6	1901
2030	6,500	13.2	2,100

Source: 1970-2020 U.S. Census; 2006-2010 & 2016-2020 American Community Survey; 2020 ACS 5-Year Estimates; Montgomery County Projections

6.5 Recent Annexations

The Town has had no annexations since 1990, nor are any annexations planned for development purposes during the period of this Plan.

6.6 Priority Funding Area

Poolesville is designated as a Priority Funding Area (PFA) within Montgomery County. The requirement for designating PFAs was established under the 1997 Neighborhood Conservation and Smart Growth Areas Act (Smart Growth) and supports the State Visions for growth as expressed in the 1992 Planning and Zoning Enabling Act (the Land Use Article of the Annotated Code of Maryland).

PFAs are locally designated areas eligible for State funding. PFA designations include municipalities, rural villages, communities, industrial areas, and planned growth areas to be served by public water and sewerage. The intent of the State's Smart Growth legislation, as well as other changes to Maryland laws affecting PFAs, is to marshal the State's financial resources to support growth in existing communities with public infrastructure and to limit development in agricultural or undeveloped areas that are not served by public infrastructure.

The corporate boundaries of Poolesville are contiguous with the Town's PFA. Because the Town has no intention of annexation for growth in the foreseeable future and is not designating Growth Areas in this plan, the current PFA boundary will not change, nor will it need to, because of this Plan.

6.7 Redevelopment and Infill

As discussed further in **Chapter 7 - Housing**, redevelopment, and infill will be the primary sources of new housing in Poolesville, given the Town's infrastructure constraints. Following the 2011 Comprehensive Plan, the Town adopted a "Town Center Vision" to reinforce and protect the Town's village character. At the time, the Town sought to "create a dynamic commercial area in Poolesville that blends the existing strip malls into a core downtown area that is visually appealing, has buildings of the right style, size, and scale that face each other, and that encourages personal interaction and pedestrian movement. Such a core downtown area creates a street character and sense of place that functions as a social magnet, makes walking interesting, and stimulates economic growth and vitality."

The Town recognized this issue in 2015 when it created the Village Overlay Zone to "create and maintain an economically and culturally viable downtown business district" by allowing for higher residential densities in the Town Center through a broader range of housing options, including single-family homes, duplexes, and townhouses.

Over time, the redevelopment and densification of the Town Center can meet the demand for new and more diverse housing in the Town. As also noted in **Chapter 7 - Housing**, almost half of the housing stock in Poolesville is now between 40 and 50 years old, reflecting the 1970s period of rapid residential development. Some of the 1970s-era housing stock has not aged well, and the Town will need to work with housing agencies, community and neighborhood organizations, and stakeholders to rehabilitate or redevelop these properties.

Efforts to create a Town Center, while piecemealed, have been successful and ongoing. In the next decade, a similar emphasis should continue. Redevelopment and infill efforts should include input from residents, business owners, and other community stakeholders to create more vibrant and walkable neighborhoods in the Town Center, including mixed-use development projects and apartments, where appropriate.

6.8 Protection of Sensitive Areas

The Town prioritizes the preservation and protection of natural environmental resources and sensitive areas. **Chapter 10-Environmental Resources and Sensitive Areas** describes the natural resource features within Poolesville.

These sensitive resources include streams, wetlands, and their buffers; floodplains; habitats of threatened and endangered species; agricultural and forested lands intended for resource protection or conservation; soils that are especially prone to erosion or that are typically saturated; steeply sloped areas; and wellhead protection areas.

The Town's goal is to ensure that all future developments are planned, designed, and constructed to conserve sensitive natural resources and promote a healthy and sustainable environment for current and future residents. This will be accomplished by applying all existing Town Ordinances, reviewing plans to ensure that all County, State, and Federal regulatory program compliances have been obtained, and proposing new or modified ordinances as needed to respond to new and emerging issues.

6.9 Development Capacity Analysis

For this Plan, Poolesville completed a Development Capacity Analysis to estimate the number of dwelling units that would exist in the Town (not strictly in the timeframe of the Plan) based on land use classifications, environmental restrictions, vacant and under-developed parcel data, and information about undevelopable lands. See **Table 6-2. Development Capacity Land Use Calculations**

Table 6-2. Development Capacity Land Use Calculations

Land Use Classification	Existing Land Use Acreage	Future Land Use Acreage	Developable Area	Number of Dwelling Units Created
Agriculture	787.3	718.06	285.3	31
Commercial/Retail	60.2	40.33	0.9	2
High-Density Multi-Family Residential	0.44	0.0	0.0	0
Industrial	1.23	1.23	0.0	0
Institutional/Community Facility	97.42	97.45	0.6	1
Low-Density Detached Residential	939.73	1,035.34	16.2	12
Medium-Density Attached Residential	15.56	33.46	0.0	0
Office	5.68	5.68	0.0	0
Open Space/Recreation	226.71	226.71	1.5	0
Parking	6.43	6.43	0.0	0
Utility	56.07	56.07	0.0	0
Vacant	23.93	0.0	0.0	0
Transportation/ROW	68.2	68.2	0.0	0
Total	2,288.96	2,288.96	304.5	46

Source: 1980-2020 U.S. Decennial Census (See Map 6-2)

The estimates are focused on the capacity of the land within current Town boundaries to accommodate future residential development based on these data, along with other assumptions about the percentage of the allowable density achieved when the land is developed. Note that the analysis is not a recommendation for the development of lands; it is a statement of ultimate potential to help guide Poolesville's future land use decisions.

Poolesville has only a limited number of undeveloped parcels not currently under development (with development plans proposed or in process). It is anticipated that 46 additional dwelling units, not currently under review, could be constructed from developable lands designated for residential use in this Plan.

The resulting estimates of potential dwelling units that could be created in Poolesville includes several assumptions regarding their development. First, it is assumed that there will be no change to the zoning of the undeveloped parcels. Any revisions to a parcel's zoning would change its density yield and the number of potential dwelling units. Second, it is assumed that no modifications will be made to the zoning code development standards pertaining to the allowable density yield of the zoning class. Finally, it is assumed that nonconforming uses are not expanded. This means that areas zoned and intended for non-residential uses will not have residential uses, even if residential use may be a permitted activity.

Map 6-1 Development Capacity Analysis shows the data corroborating these calculations.

Tables 6-3, Planned and Approved Residential Development Projects, show the 2023 planned and approved residential developments in the Town.

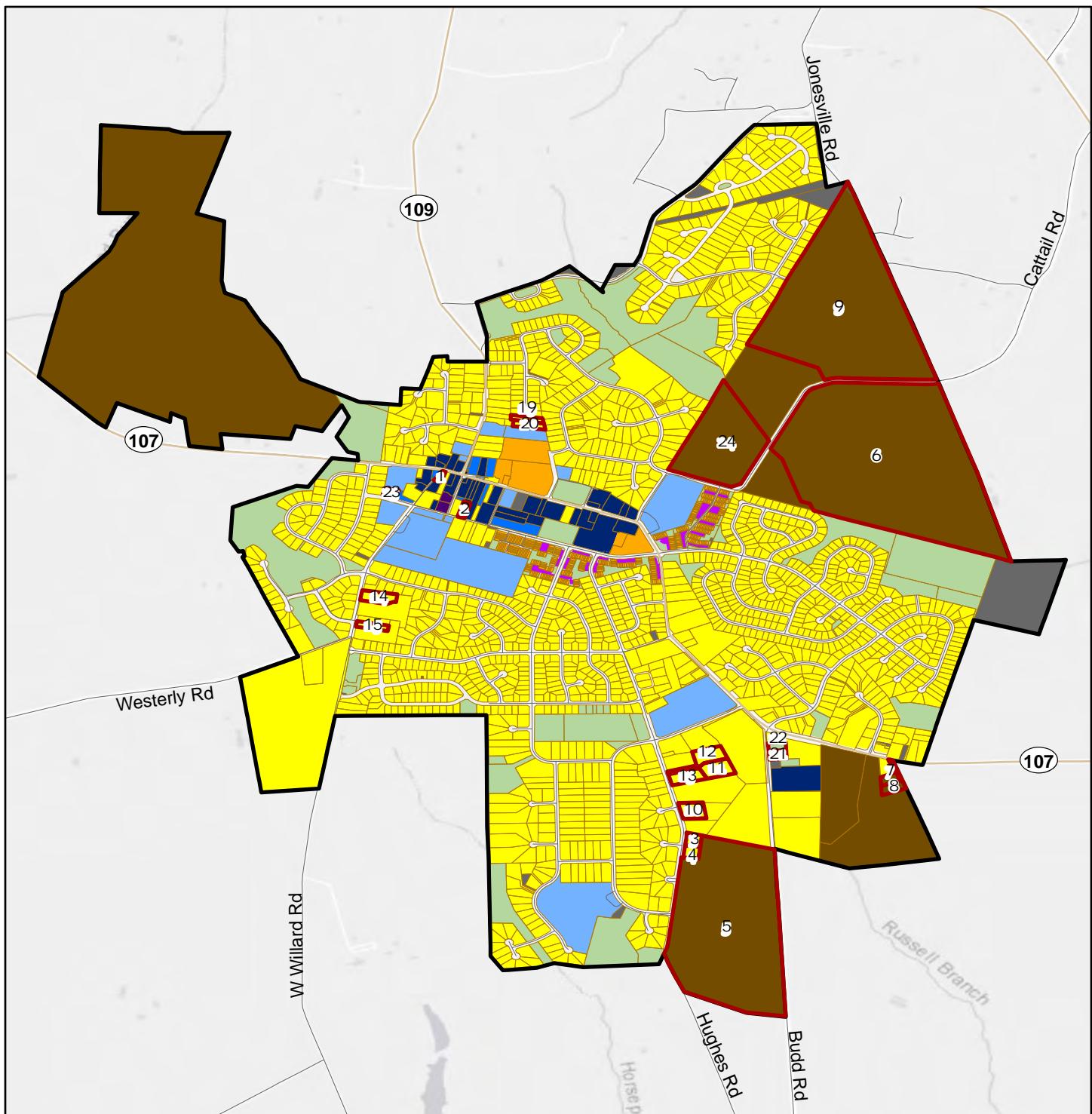
Table 6-3. Planned and Approved Residential Projects (2023)

Project Name	Location (Address)	Number of Residential Units	Intended Use	Year of Approval
Highfill	Hughes Road	1	Single-family residential	In progress
Jamison	Hughes Road	2	Single-Family Residential	In progress
Fox Hunt	Hughes Road	4	Single-Family Residential	In progress
Grace Cottages	Fisher Avenue	3	Single-Family Residential	In progress
Fishpool (Willard Property)	Fisher Avenue	61	Single-Family Residential	In progress
Hartz Property	Fisher Avenue	8	Single-Family Residential	In progress
Donegan Property	Fisher Avenue and Wootton Avenue	39	Multi-Family Residential	Under Planning Commission Review
Bricken Property	West Willard Road	65	Single-Family Residential	Under planning Commission Review

6.10 Impacts on Public Services and Infrastructure

This section identifies the potential impacts additional residents would have on public services, facilities, and infrastructure in Poolesville and the surrounding area. Community facilities are discussed in detail in **Chapter 4 – Community Facilities**.

Map 6-1
Development Capacity Analysis
Page 55



 Town of Poolesville Future Land Use
 State Routes
 Local Routes
 Vacant Parcels
 Vacant Parcels #
 Reference #

 Medium-Density Attached Residential
 Office
 Open Space/Recreation
 Parking
 Industrial
 Commercial/Retail
 Instrumental/Community Facility
 Utility
 Low-Density Detached Residential



Wallace Montgomery created this map for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate.

6.10.1 Public Schools

The Poolesville Cluster is a group of Montgomery County Public Schools (MCPS) schools that includes Poolesville High School, John Poole Middle School, Monocacy Elementary School, and Poolesville Elementary School. Table 6-5 details the amended projected enrollment and space availability. **Map 6-2** shows the location of each school.

Table 6-5. Public Schools

Schools		Actual 22-23	Projections							
			23- 24	24- 25	25- 26	26- 27	27- 28	28- 29	2032	2037
Poolesville HS	Capacity Enrollment Available Space	1170 1309 (139)	1170 1283 (113)	1508 1355 153	1508 1381 127	1508 1396 112	1508 1439 69	1508 1468 40	1508 1490 18	1508 1490 18
John Poole MS	Capacity Enrollment Available Space	478 443 35	478 458 20	478 500 (22)	478 501 (23)	478 490 (12)	478 488 (10)	478 497 (19)	478 510 (32)	478 510 (32)
Poolesville ES	Capacity Enrollment Available Space	562 567 (5)	562 587 (25)	562 591 (29)	562 586 (24)	562 587 (25)	562 602 (40)	562 601 (39)		
Monocacy ES	Capacity Enrollment Available Space	218 167 51	218 186 32	218 186 32	218 198 20	218 207 11	218 218 0	218 217 1		

Source: Montgomery County Public Schools

6.10.2 Libraries

Montgomery County provides library services for the Town. In 2001, a storefront in the Poolesville Towne Center on Fisher Avenue was renovated and became the home of the existing 6,000-square-foot public library. In 2017, the library was renamed the Maggie Nightingale Library, and renovation was completed in 2022.

The Maryland Department of Budget and Management requires that libraries refer to “Maryland’s Planning Guidelines for Libraries” to determine if the level of service is consistent with the population and justify the need for expansion. The planning guidelines rate the area of library space per capita on a scale with three ranges:

- Essential = 1.0 square feet per capita (nationally accepted minimum facility size)
- Enhanced = 1.1 square feet per capita
- Exemplary = 1.2 square feet per capita

The current library is approaching 1.0 square feet per capita. While the County does not have plans to expand the library, the Town should lobby the County to evaluate an expansion of the facility.

6.10.2 Community Center

The Town has partnered with Montgomery County and MCPS to develop a POR (Program of Requirements) for a community center. The center will provide programs like mentoring, after-school art programs, exercise and physical fitness programs, recreational sports and games of various kinds for teens, and senior health programming for Poolesville's older populations.

6.10.3 Public Safety

The Montgomery County Police Department provides police services for Poolesville. With Poolesville's anticipated growth during the next 10 years, Montgomery County should evaluate the need for additional officers based on the commonly used ratio of 1.6 sworn officers per 1,000 residents. The Town is served by the 1D police station, approximately twelve miles from Town Center. The town should continue lobbying for a dedicated police substation.

The Upper Montgomery County Volunteer Fire Department provides fire and emergency medical services in Beallsville, MD, approximately three miles from Poolesville's center. The county's master plan includes the planned addition of residential units and is addressed through its planning process.

The Town follows Washington Suburban Sanitary Commission and Montgomery County guidelines for fire protection. All new roads will be designed for adequate emergency access and fire hydrant placement. Water pressures in Poolesville follow established standards. The Town has 1.5M gallons of water storage capacity for firefighting, designed and constructed per the 2011 Comprehensive Plan population cap.

6.10.4 Recreation

Chapter 4 - Community Facilities of the Comprehensive Plan has a section devoted to Parks and Recreation. It lists all the existing parkland (active and passive) within the Town and its future needs.

The Town consists of 2,434.6 total acres, of which 175.3 acres are stream valleys and an additional 226.7 acres are parkland or open space.

The State of Maryland uses a standard ratio of 30 acres of parkland per 1,000 residents. The jurisdiction should own a minimum of 50%. Poolesville exceeds this standard.

With the growing number of local youths in sports organizations, the overuse of athletic fields, and requests for alternative recreation, the Town should actively seek parkland acquisition and continue to evaluate the need for additional and diverse recreation facilities.

6.10.5 Water and Sewer Facilities

Chapter 11—Water Resources contains a detailed description of the existing water and sewer facilities, plus various other descriptive materials pertaining to each.

6.10.6 Stormwater

Each major development presents challenges to the protection of water quality in Poolesville and the surrounding area. Sand filtration and other control structures are constructed onsite to mitigate the runoff. Before preliminary plan approval, developers must have a conceptual stormwater management plan approved by Montgomery County.

Full analysis and approval by the county are required prior to the final record plat. The County has full jurisdiction over quality and quantity control for stormwater runoff, issuing permits, and performing inspections.

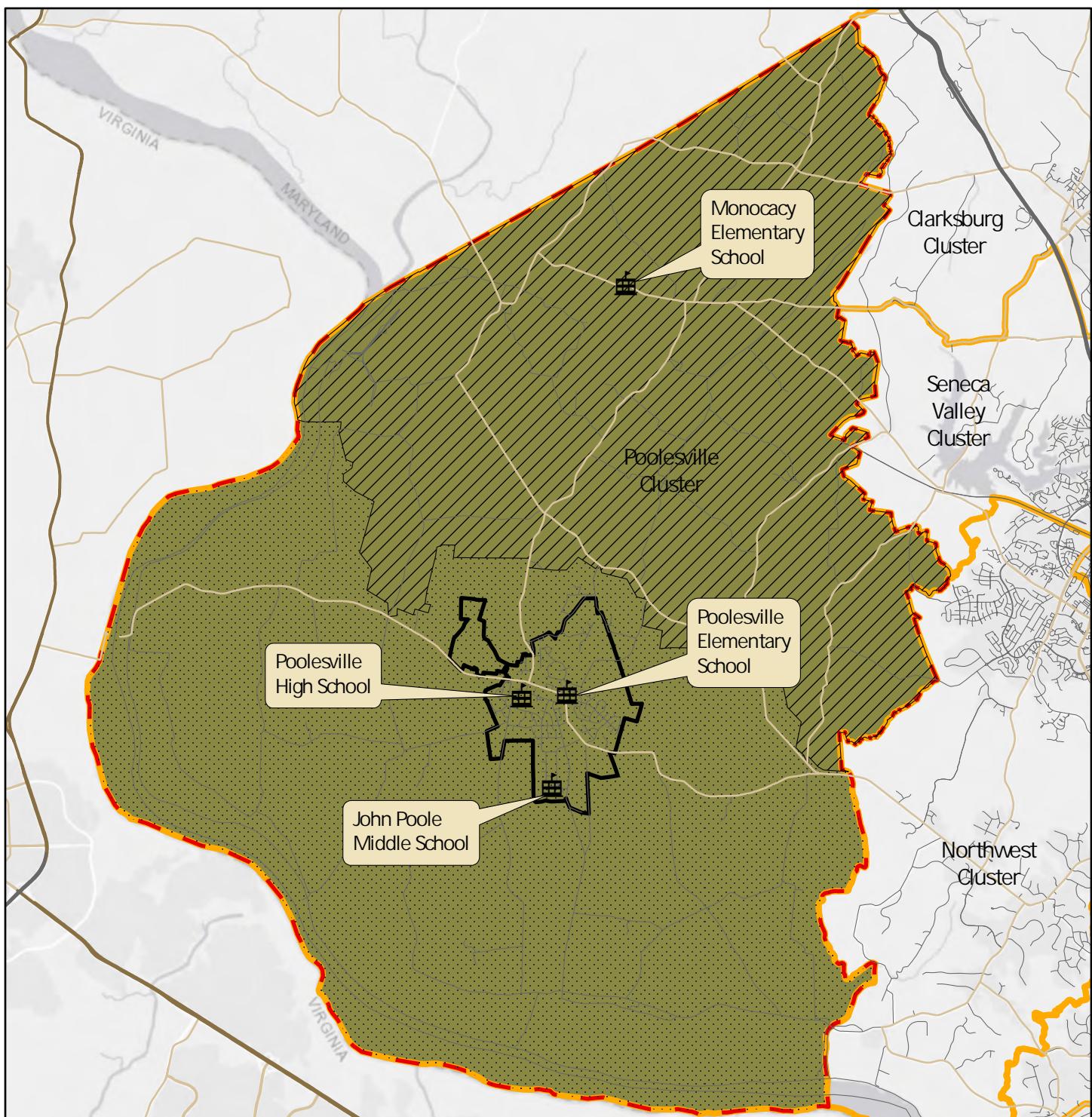
The Town works with the County to maintain the existing stormwater ponds. The Town provides grass cutting and trash pick-up while the County performs structural maintenance. The stormwater conveyance system is owned and maintained solely by the Town.

Additional detailed information on stormwater management can be found in **Chapter 11 - Water Resources**.

6.11 Financing Necessary Facility Expansions

In the past, Poolesville used impact fees to pay the capital costs of infrastructure to support new development. With the limited projected growth, a connection fee was adopted to help offset the capital costs of new treatment facilities, major water distribution lines, elevated storage tanks, sanitary sewer capacity expansion improvements, etc. The connection fee is charged on an equivalent dwelling unit.

Map 6-2
Poolesville Cluster 2022-2023 School Year
Page 59



- Town of Poolesville
- Interstates
- US Highways
- State Routes
- Local Routes
- Cluster Service Area
- Monocacy Elementary School Service Area
- Poolesville Elementary School Service Area
- John Poole Middle School Service Area
- Poolesville High School Service Area
-  School

0 1 2 4 Miles

Source: Town of Poolesville,
Montgomery County, MD iMAP



Wallace Montgomery created this map for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate.

Housing

Purpose

The Housing chapter aims to provide an overview of current housing trends and challenges.

7.1 Overview

This overview follows the vision of Maryland’s Land Use Article §3-114, which recommends that local jurisdictions plan for various housing densities, types, and sizes. The Town also reviewed the requirements of HB 1045, enacted in 2019, which emphasizes adequately providing local, affordable workforce housing and requires local governments to include a housing chapter in their Comprehensive Plan. These guidelines are the basis for this chapter’s housing information and analysis.



The availability of high-quality and affordable housing is important to the Town’s long-term vitality. By encouraging residents to take pride and ownership in the well-being of their homes and neighborhoods, this Chapter of the Comprehensive Plan can create and reinforce a sense of place by providing a variety of housing choices that support and enhance the community’s character and identity.

Throughout this chapter, the Town of Poolesville affirms its responsibilities to plan for affordable and workforce housing and its commitment to further fair housing through its goals, objectives, implementation strategies, and actions.¹ Specifically, the Town strongly supports enforcement of the Fair Housing Act.² And any comparable State laws. In addition, Maryland passed HB 90, which seeks to address fair housing further by working to take “meaningful actions” on issues like historic segregation patterns, among other goals.

Poolesville’s housing stock began as a few farmhouses and single-family homes; however, the Town has grown incrementally over many years; thus, the housing styles, lot sizes, and densities vary throughout the Town. In the 1970s, several subdivisions provided a mix of 1/3-acre single-family homes and about 300 townhomes. The increased availability of public sewage and water enabled this expansion. Since the 1980s, housing construction has been more uniform due partly to the Town’s planning and zoning guidelines. Recent subdivisions have given newer areas of town a more suburban quality. As the Town has expanded in population, Poolesville has also sought to maintain its small town or village character.

¹ The Town drafted the Plan before the Fair Housing guidance was issued by the Maryland Department of Planning; the Town will coordinate with these State agencies to complete the required Fair Housing Assessment upon the issuance of this guidance, which is currently expected in mid-2023.

² The *Fair Housing Act* is a federal law that protects people from discrimination when renting, buying, securing financing for housing, or engaging in other housing-related activities. The prohibitions specifically cover discrimination because of race, color, national origin, religion, sex, disability, and the presence of children.

7.2 Goals and Objectives

The following goals will help advance housing policy for the Town:

1. Support a variety of safe, quality housing choices that are affordable and accessible to households of all ages and abilities, including multi-family and mixed-use housing.
 - Support various housing options for individuals and families of different socioeconomic levels, life stages, and physical needs.
 - Support opportunities to increase the housing supply for the senior population, including developments that support aging in place.
2. Support the ability of Town residents to remain in Poolesville by maintaining a range of housing options, including affordable and workforce housing.
3. Identify, evaluate, and analyze current and future housing needs and trends.
 - Utilize a housing inventory of existing conditions, including housing conditions, age, cost, size, type, tenure, vacancy rate, and projections on future housing needs.
 - Track occupancy for all new housing developments and integrate this data into a GIS-based application or dashboard in collaboration with Montgomery County.
4. Identify incentives for the improvement or redevelopment of housing.
 - Coordinate activities with the Montgomery County Office of Housing and Community Affairs and the MD Department of Housing and Community Development to help homeowners maintain and improve their housing conditions.
 - Identify grants and other funding opportunities, such as engaging nonprofit organizations to assist low to moderate-income residents in supporting home improvements.
5. Take steps to further fair housing throughout the Town.
 - Coordinate with the Maryland Department of Planning and the MD Department of Housing and Community Development to complete the required Fair Housing Assessment upon the issuance of guidance from State agencies.
6. Collaborate with the County to address homelessness and under-housing in the Town so that the County can utilize resources to reduce it.

7.3 Housing Inventory

Much of the data included in this section comes from the U.S. Census Bureau and the American Community Survey (ACS) data. Where possible, The Town used the 2020 Census data; however, more descriptive data is only available from the ACS.

The Poolesville housing market continues to trend upwards, with the median sale price of a single-family home hovering around \$900,000. However, the median home value in Poolesville is \$533,100. In 2022, 11 homes sold, 31.3% fewer than in previous years. Most homes spend an average of 30 days on the market.

7.3.1 Housing Stock

As of 2023, Poolesville's housing stock comprises detached single-family homes (84.5%), with townhomes or multi-unit housing making up the rest of the housing. (15.5%). The Town has no mobile homes or other types of housing units. The total number of housing units is 1,933.

The 2020 Census identified 1,901 housing units in the Town or an increase of 279 units (17.2%) since 2000. This is slightly less growth than in the County and State, which grew 17.3% and 17.9%, respectively, since 2000. **Table 7-1** shows the number of housing units and percent change for the Town, County, and State from 1970 through 2020.³

Table 7-1. Housing Units (1970-2020)

Year	Poolesville		Montgomery County		Maryland	
	No.	% Change	No.	% Change	No.	% Change
1970	134	—	161,378	+66.1%	1,249,814	+33.7%
1980	1,046	+680.6%	216,221	+34.0%	1,570,895	+25.7%
1990	1,172	+12.0%	295,723	+36.8%	1,891,917	+20.4%
2000	1,622	+38.4%	334,632	+13.2%	2,145,283	+13.4%
2010	1,663	+2.5%	375,905	+12.3%	2,378,814	+10.9%
2020	1,901	+14.3%	404,423	+7.6%	2,530,844	+6.4%

Source: 1970-2020 U.S. Census

The Town offers various housing types, including detached single-family dwellings, townhouses, and a few apartments. **Table 7-2** provides the composition of the Town's housing stock in 2000, 2010, and 2023, according to Town data. See **Chapter 5 - Land Use** for the Town's definitions of housing types.

Due at least in part to the Census and ACS respondents' understanding of the housing type question and the margin of error associated with ACS data due to the Town's small sample size, there is a discrepancy between the data reported by the Town in Table 7-2 and data provided by the U.S. Census Bureau.

Table 7-2. Housing Stock Composition (2000-2021)

Housing Type	2000	2010	2023	% Change		
	No.	No.	No.	'00- '10	'10- '23	'00- '23
Single-Family Detached	1,238	1,312	1,661	+5.98%	+26.60%	+34.17%
Single-Family Attached	336	336	353	—	+5.06%	+5.06%
Apartments	6	6	6	—	—	—
Totals	1,580	1,654	2,020	+4.7%	+22.1%	+27.9%

Source: Town of Poolesville

Many government agencies use the number of units in a structure and the number of bedrooms to analyze whether adequate housing is available and affordable. The number of bedrooms, in combination with the number of people living in a unit, provides a ratio of people to rooms, which can measure the extent of overcrowding in households. These statistics can be used to enforce laws, policies, and regulations against discrimination. **Table 7-2** identifies the number of units in a structure,

As shown in **Table 7-3, Bedroom Comparisons**, nearly half of Poolesville's housing units have four bedrooms (49.6%), while the greatest percentage of households have three bedrooms in the County (27.3%) and State (36.7%). This suggests that the housing units found in Poolesville are, on average, larger than those found throughout the County and State.

³Please note that there may be differences in the total number of housing units when analyzing 2006-2010 or 2017-2021 ACS data in this chapter.

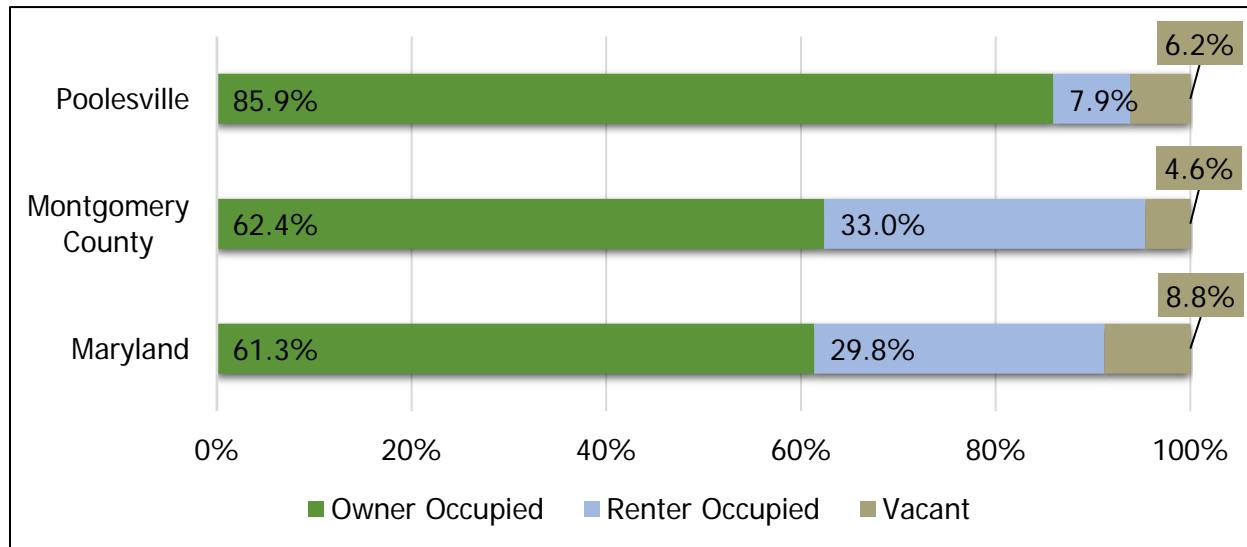
Table 7-3. Bedroom Comparisons (2021)

No. Bedrooms	Poolesville		Montgomery County		Maryland	
	No.	%	No.	%	No.	%
No Bedroom	22	1.1%	10,723	2.7%	48,596	1.9%
1 Bedroom	0	0.0%	50,672	12.6%	257,738	10.2%
2 Bedrooms	40	2.1%	84,196	20.9%	532,174	21.1%
3 Bedrooms	561	29.0%	109,723	27.3%	923,202	36.7%
4 Bedrooms	958	49.6%	97,588	24.3%	555,560	22.1%
5 or More Bedrooms	352	18.2%	49,040	12.2%	199,071	7.9%
Total Housing Units	1,933		401,942		2,516,341	

Source: 2017-2021 American Community Survey. Note: Per ACS definitions, a bedroom is a room used for sleeping (including guest rooms), even if used for other purposes. A room primarily used for other purposes, although also used for sleeping, such as a living room with a fold-out couch, does not count as a bedroom. One-room or studio apartments count as having no bedrooms.

7.3.2 Occupancy and Tenure

Out of the 1,933 total housing units within the Town identified by the 2021 ACS, 85.9% of the units were owner-occupied, and 14.1% of the units listed are renter-occupied. The vacancy rate is 6.2%, with most of those vacancies being for sale only or other vacancies. Compared to the county, the Town has a significantly higher proportion of owner-occupied residences, and vacancy rates are +/- 2% of the County and State numbers (see Figure 7-2). Several resident comments from the survey and the public outreach event noted a desire for more entry-level-type housing for rentals and young families that want to live in the Poolesville area but cannot afford the available single-family housing.

Figure 7-2. Occupancy & Vacancy Rates (2021)

Source: 2017-2021 American Community Survey. Note: Occupancy was determined as of the survey's date.

Table 7-4 summarizes the occupancy and vacancy status for units in Poolesville. Between 2000 and 2021, the vacancy rate increased for both occupied and vacant housing units.

Table 7-4. Town Housing Occupancy (2000-2021)

Occupancy Status	2000		2010		2021		% Change		
	No.	%	No.	%	No.	%	'00- '10	'10- '21	'00- '21
Occupied Housing Units	1,590	98.0%	1,602	97.2%	1,813	93.8%	0.8%	13.2%	14.0%
Vacant Housing Units	32	2.0%	46	2.8%	120	6.2%	43.8%	160.9%	275.0%
Total Housing Units	1,622		1,648		1,933		1.6%	17.3%	19.2%

Source: 2000 U.S. Census, 2006-2010, and 2017-2021 American Community Survey. Note that occupancy was determined at the date of the survey.

Source: 2017-2021 American Community Survey. Note: The ACS calculates occupants per room by dividing the reported number of current residents in each occupied housing unit by the number of rooms in the unit.

As shown in **Table 7-5**, the Town's average owner-occupied household size decreased from 3.26 persons in 2000 to 3.02 persons in 2010 and then increased to 3.07 persons in 2021. Montgomery County had slight increases in average owner-occupied household sizes between 2000 and 2021, with the State also decreasing in 2010 followed by an increase in 2021.

The average renter-occupied household size for the Town increased from 2.81 persons in 2000 to 3.26 persons in 2010 and 3.71 persons in 2021. The County increased from 2.39 persons in 2000 to 2.53 persons in 2010 and 2.66 persons in 2021. The State continued to grow slightly from 2000 to 2021.

Table 7-5. Average Household Size (2000-2021)

Jurisdiction	Owner-Occupied persons			Renter-Occupied persons			Total persons		
	2000	2010	2021	2000	2010	2021	2000	2010	2021
Poolesville	3.26	3.02	3.07	2.81	3.26	3.71	3.13	3.04	3.12
Montgomery Co	2.78	2.81	2.85	2.39	2.47	2.53	2.66	2.70	2.74
Maryland	2.75	2.71	2.73	2.30	2.42	2.39	2.60	2.61	2.62

Source: 2000 & 2010 U.S. Census; 2017-2021 American Community Survey

Table 7-6 shows a breakdown of housing tenancy in the Town, County, and State. Over a third of Town residents have lived in Poolesville since at least 1999. About a quarter of the State and County's population has lived in the state or county since 1999.

Table 7-6. Householder Tenancy (2021)

Year Householder Moved into Unit	Poolesville		Montgomery County		Maryland	
	No.	%	No.	%	No.	%
Moved 2019 or later	30	1.7%	38,850	10.1%	219,503	9.6%
Moved 2010 to 2018	711	39.2%	174,229	45.5%	1,014,062	44.2%
Moved 2000 to 2009	451	24.9%	82,969	21.6%	491,030	21.4%
Moved 1990 to 1999	324	17.9%	46,140	12.0%	286,574	12.5%
Moved in 1989 and earlier	297	16.4%	41,120	10.7%	283,101	12.3%
Total Occupied Units*	1,813	93.8%	383,308	95.4%	2,294,270	91.2%

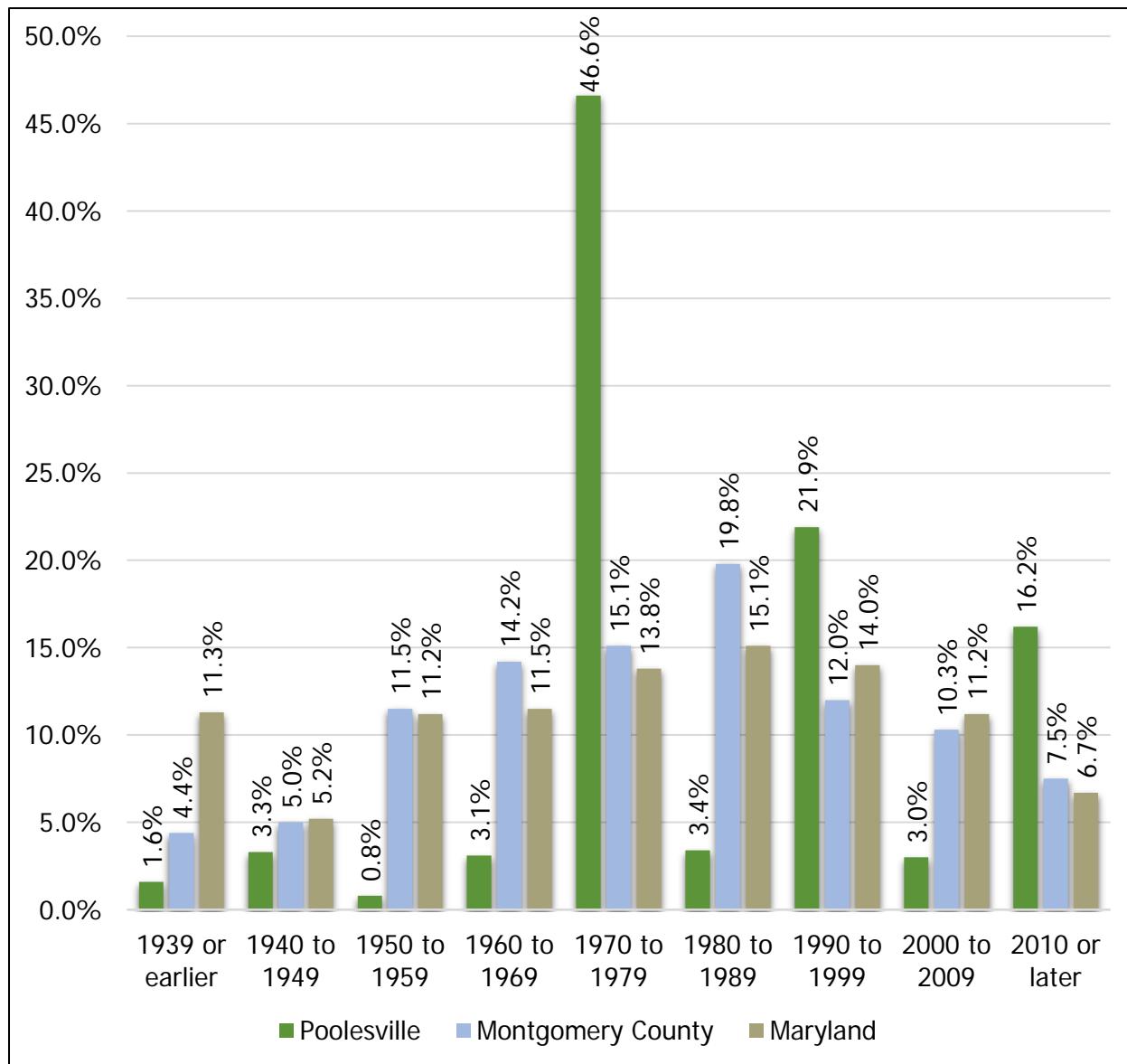
Source: 2017-2021 American Community Survey. Note: The percentage for Total Occupied Units equals the percentage of occupied units compared to the number of units in Poolesville, Montgomery County, and the State of Maryland overall.

7.3.3 Age

As shown in **Figure 7-3**, 91.1% of the Town's housing stock is from the 1970s or newer, with 41.1% built since 1990 and 19.2% since 2000. Only 4.9% of the housing units were constructed before 1940.

There was a significant spike in the number of units (almost half of the Town's stock) built during the 1970s. Structures built before 1970 now meet the age eligibility criteria for listing on the National Register of Historic Places. Approximately 8.8% of the Town's housing structures meet this age criteria.

Figure 7-3. Housing Age (2021)

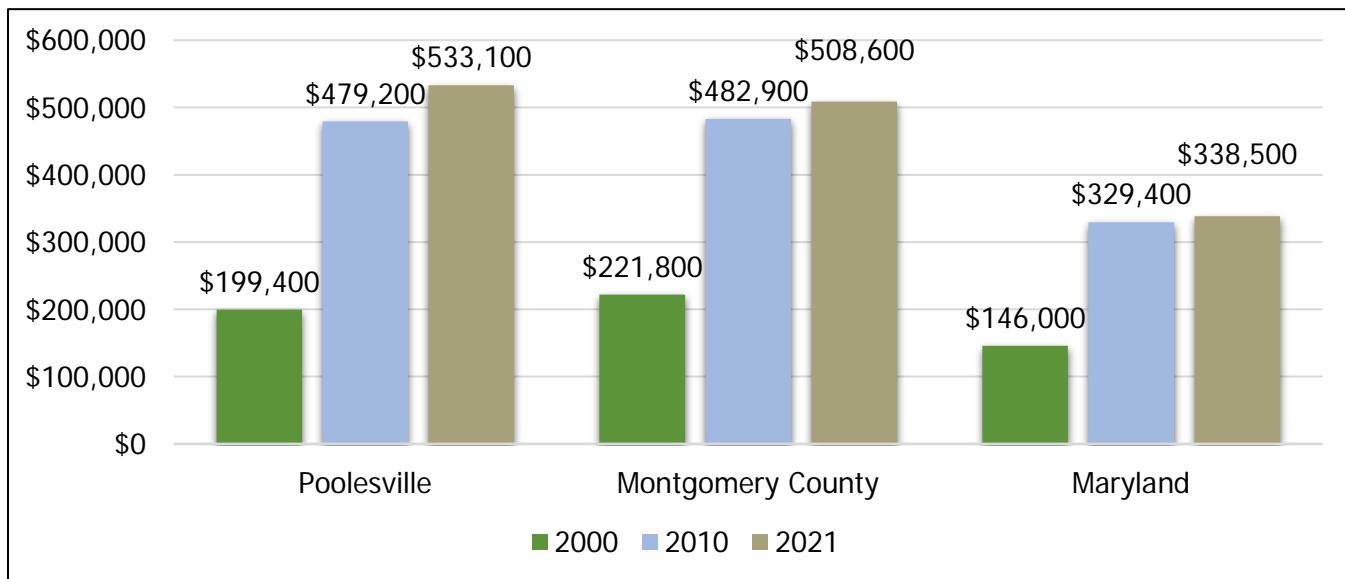


Source: 2017-2021 American Community Survey.

7.3.4 Value and Affordability

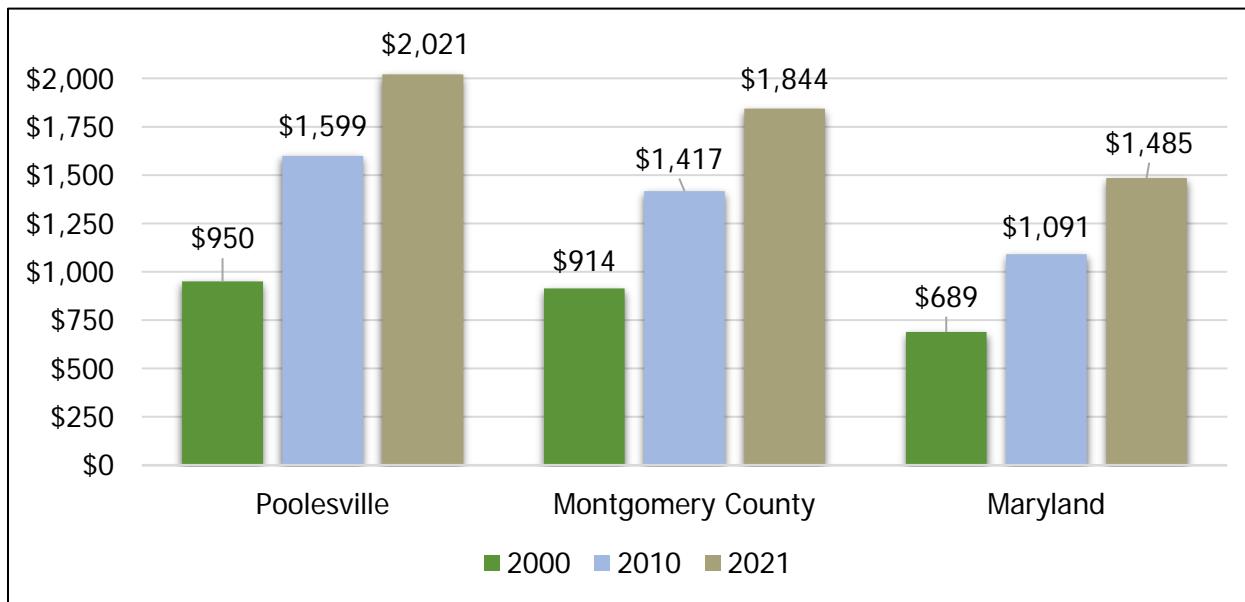
According to Census data, the median value of owner-occupied housing units in 2021 was \$533,100 in Poolesville, while the median gross rent amount was \$2,021. Both amounts are higher than the State's averages of \$338,500 and \$1,415, respectively. Based on the median household income in Poolesville of \$201,607 and the low poverty rate⁴, Poolesville has a high barrier to entry and low affordability for low-income and middle-class households.

Figure 7-4. Median (Owner-Occupied) Housing Values (2000-2021)



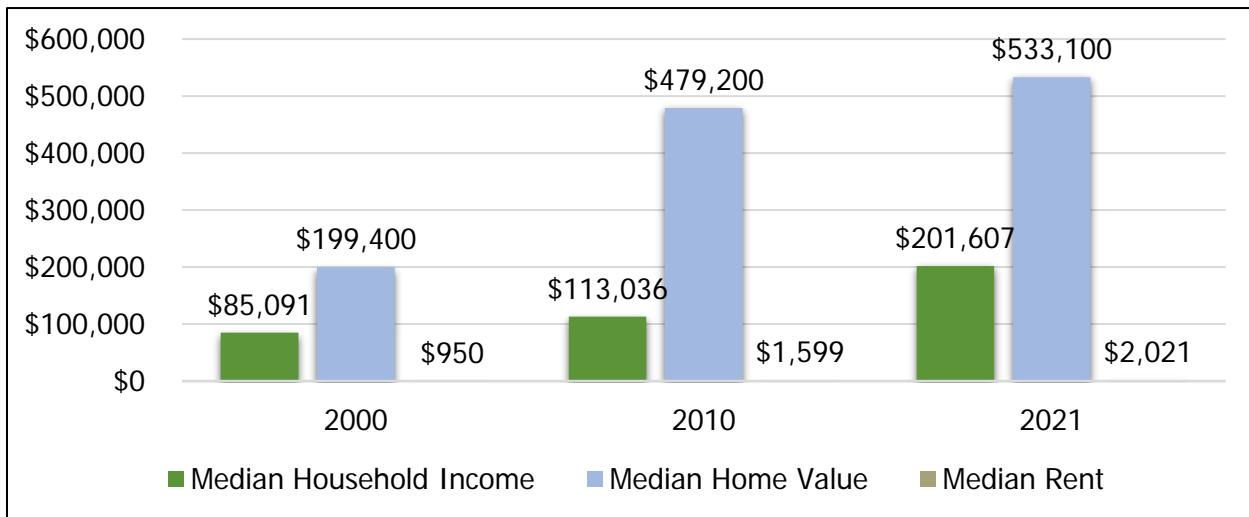
Source: 2000 U.S. Census; 2006-2010 & 2017-2021 American Community Survey

⁴ According to the 2020 Census, the poverty rate in Poolesville is .05%

Figure 7-5. Median Rental Values (2000-2021)

Source: 2000 U.S. Census; 2006-2010 & 2017-2021 American Community Survey

Between 2000 and 2021, median household income in Poolestville increased from \$85,091 to \$201,607, or 136.9% (**Figure 7-6, Median Household Income and Home Value**). While that is a significant amount, median home values increased by 167.3% (from \$199,400 to \$533,100) during the same period. Median rents also increased substantially by 112.7%.

Figure 7-6. Median Household Income & Home Value (2000-2021)

Source: 2000 U.S. Census; 2006-2010 & 2017-2021 American Community Survey

7.3.5 Housing Challenges

Poolesville's housing challenges focus on three key issues: redevelopment, historic preservation, and affordability. These challenges are based on data found in the ACS and input from residents. 30% of residents surveyed in the fall of 2022 were concerned with housing affordability and cost. Residents also noted that housing affordability would enhance the quality of life in Poolesville. Almost a quarter of respondents were in favor of no additional housing development, while 23% were in favor of family homes on large lots, and 21.2% were in favor of entry-level/starter homes.

In the past few decades, the Town has tried to address its housing challenges through land use changes, such as in 1998, when the Commissioners of Poolesville approved Ordinance No. 144: Subdivision Regulations. This ordinance removed "archaic" language and made the regulations more accessible for the public to read. It also clarified that the Poolesville Planning Commission would be the sole responsible body for approving land use developments, variances, and other plat recording procedures.

In 2014, the Town created a 2+ acre residential zone. The properties designated in the zone were previously in the rural zone (25 acres/unit) and were non-conforming as they were under 25 acres in size.

Due to infrastructure constraints and no annexation, the redevelopment of existing properties will be the primary source of new housing in Poolesville, especially in the Town Center. The Town has recognized this and, in 2015, adopted an overlay zone called the Village Concept Overlay Zone. This zone aims to "create and maintain an economically and culturally viable downtown business district; an active effort must be put forth in providing walkable neighborhoods containing a range of housing in an attractive, relevant downtown commercial setting." This zone allows for a greater housing density and various housing options, including single-family homes, duplexes, and townhomes. At the same time, the Town emphasizes the importance of protecting its historic structures and village character. Developers should review the Historic Medley District report outlining Poolesville's prevalent and appropriate architectural themes.

A related concern for redevelopment is the age of homes in Poolesville. As noted above, almost half of the housing stock in Poolesville is between 40 and 50 years old. Some of these developments have not aged well, and the Town is considering ways to work with other entities to rehab or redevelop these properties.

Redevelopment and the age of properties also tie into the issue of affordability. According to the 2021 ACS, the Town had no housing units considered overcrowded or severely overcrowded or lacking in kitchen and plumbing facilities, and the Town has lower levels of cost-burden households than the County or State (see **Table 7-8**). However, the data has shown that in the last 20 years in renter-occupied housing, the number of people in a household has increased by almost one person, and with the rising cost of housing in Poolesville (recent home sales average around \$900,000), issues such as overcrowding and affordability may arise; therefore, the town should prioritize redevelopments that could alleviate this issue such as developments in the overlay zone and mixed-use developments.

Table 7-7. Housing Challenges (2021)

Challenge	Poolesville		Montgomery County		Maryland	
	No.	%	No.	%	No.	%
Overcrowded Units ¹	0	0.0%	8,541	2.2%	36,375	1.6%
Severely Overcrowded Units ²	0	0.0%	4,357	1.1%	16,740	0.7%
Lacking complete kitchen/plumbing facilities ³	0	0.0%	3,535	1.0%	20,986	0.9%
Cost Burdened Renters ⁴	53	39.3%	64,347	50.5%	356,289	50.0%
Cost Burdened Owners (with a mortgage) ⁴	144	10.1%	47,322	26.3%	292,027	26.3%
Cost Burdened Owners (without a mortgage) ⁴	15	6.5%	9,210	13.3%	53,225	12.6%
Total Occupied Rental Units	135		127,449		712,252	
Total Occupied Units with a Mortgage	1,430		179,961		1,111,251	
Total Occupied Units without a Mortgage	231		69,582		423,046	

Source: 2017-2021 American Community Survey. Notes: ¹Overcrowded units are those occupied housing units that the ACS reports as having 1.01 to 1.50 occupants per room; ²Severely Overcrowded Units are those housing units that the ACS reports as having 1.51 or more occupants per room; ³units lacking complete kitchen or plumbing facilities are only reporting those that were occupied at the time of the 2019 ACS; ⁴A household is considered cost burdened if selected monthly housing costs (such as rent and utilities for renters and mortgage, taxes, and insurance for owners) are greater than 30 percent of income.

7.4 Affordable, Workforce, and Attainable Housing

Affordable, workforce and attainable housing are categories of housing related to a household's income. The U.S. Department of Housing and Urban Development (HUD) defines housing as affordable if the cost of occupying the house does not consume more than 30% of the household's income. According to HUD, affordable housing is determined based on the Area Median Income (AMI). Most federal and state governments are focused on programs to assist those whose incomes are below 60% of the AMI. Workforce housing is for those whose incomes are between 60% and 120% of the AMI, and attainable housing is for those making between 80% and 120% of the AMI.

Workforce and attainable housing are unsubsidized at the Federal or State level, and these programs are at the Local level, especially the County level. And because of the acceleration in prices and the lack of housing supply at attainable or workforce price points, many young adult households and others with moderate incomes looking to become homeowners find it difficult to find housing near where they work. This results in increased commute times, greater reliance on transportation infrastructure, less free time, and a lower quality of life. See **Table 7-8** on the importance of Affordable housing.

Table 7-8. Importance of Affordable Housing

For Residents	For the Local Economy	For Town Governments
Reduced financial stress.	More diverse workforce available for critical service jobs	Better able to compete for qualified teachers, police officers, and firefighters.
Money for other life essentials	Better employee retention	Better employee retention/lower turnover
Family stability and well-being	More competitive for business recruitment and retention	Lower response times for personnel called in for emergencies
Higher child educational achievement	Less environmental damage from commuting excessive distances	
Better physical and mental health		

<p>Shorter work commutes freeing time for family and other pursuits</p> <p>Reduced overcrowding</p> <p>Adult children can continue living in the Town.</p> <p>Seniors able to downsize</p>		
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To successfully bridge this gap in Attainable and Workforce housing, future redevelopments should focus on the following:

- **Smaller Homes**—Smaller Homes offer alternative housing options for first-time homebuyers, downsizers, and small households of any age and income level.
- **Value Housing**—Many homebuilders are introducing models to address attainable housing. These scaled-down models often offer greater simplicity regarding option packages and structural components, enabling the homebuilder to deliver products more cost-effectively, thereby increasing the supply of attainable housing.
- **Missing-Middle Housing**—This strategy provides housing options at densities between single-family homes and mid-rise communities whose scale would be compatible (e.g., duplexes, triplexes, courtyard buildings, bungalow courts, and live-work buildings). The scale of these buildings can be attractive, especially when higher density, multi-unit attached housing is perceived as less valuable than traditional single-family homes.
- **Cluster Housing**—Detached cluster homes allow for higher densities than traditional single-family homes but create the traditional feel associated with single-family developments often desired by homebuyers.

7.4.1 Special Needs Housing

HUD defines special needs as frail and non-frail elderly, persons with physical disabilities, homeless persons, persons at risk of becoming homeless, persons with mental or behavioral disabilities, persons with HIV/AIDS, or persons with alcohol or drug addictions or other circumstances. Special needs housing targets these populations, using Federal, State, and Local funds to create more opportunities to assist these individuals with daily life and offer access to case management, housing support, vocational, employment, and other services for clients (and client families) transitioning to independent living. Poolesville can coordinate with local and regional programs to determine how best to alleviate these conditions.

7.5 Public and Assisted Housing

Public and Assisted Housing is not prevalent throughout Poolesville. While there may not be an urgent need, in the future, Poolesville will need to consider the availability of this housing option for its residents.

Coalition Homes is the only developer of permanent supportive housing projects in Montgomery County. They provide affordable housing solutions to help assist those coming out of homelessness. Coalition Homes currently owns and manages 186 units spread geographically across Montgomery

County urban centers, where they provide 24/7 property management services in coordination with support services from the Montgomery County Coalition for the Homeless.

Montgomery County Coalition for the Homeless (MCCH) provides several programs to assist those facing homelessness within Montgomery County, including Poolesville. In March 2022, MCCH opened a state-of-the-art Emergency Men's Shelter, serving 750 clients a year. This facility will provide medical and dental care, employment leads, and support with locating housing. The goal for each client is to support their next step to independence. MCCH also operates ten permanent supportive housing programs that allow people to have access to stable housing and services they may need to ensure that they remain out of homelessness. Typical services provided through those programs include Rental Assistance and Ongoing Support Services. To date, the MCCH Permanent Supportive Housing Programs have had a success rate of 97%.

Transportation

Purpose

The Transportation Chapter reviews the existing conditions of the vehicular, bicycle, pedestrian, and mass transit infrastructure and provides direction for improvements that support the Town's goals.

8.1 Overview

The Town strives to achieve a transportation system that provides a safe, effective, and connected network in and out of the Town boundaries to maintain community sustainability and support future land use.

8.2 Goals and Objectives

1. Improve connectivity to park facilities and the Town Center by adding missing sidewalk connections, adding mid-block crossings with supporting infrastructure, and enhancing pedestrian intersection crossings.
 - prioritize safe connections from neighborhoods to schools and community facilities.
2. Integrate walkability into land use planning and the development review process.
 - improve pedestrian connectivity and safety when reviewing redevelopment projects, streetscape, and other land use planning components.
3. Build on the local and regional popularity of cycling for recreation, commuting, and trips around the Town.
 - Explore the viability of additional bike lanes for local roads.
4. Lobby the County to expand the bus route network and improve access to essential services throughout Montgomery County.
5. Coordinate engineering, enforcement, and education to manage vehicle speeds and deploy speed management techniques for safer and more efficient traffic flow.
6. Lobby County and State officials to make needed transportation infrastructure improvements, including reopening Whites Ferry.
7. Complete the Fisher Avenue Streetscape Project.

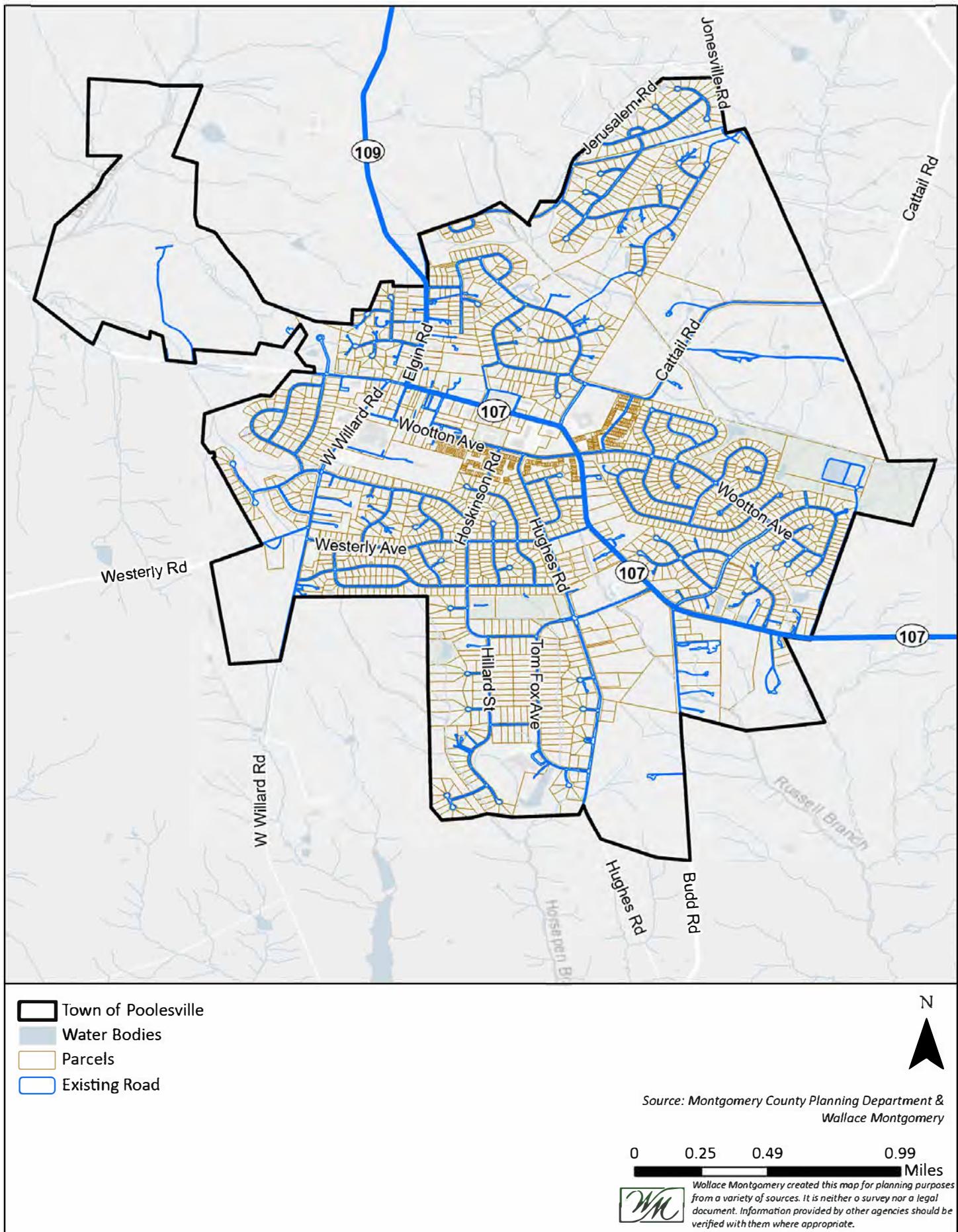
8.3 Overview of the Transportation Network

8.3.1 Roadway System

Poolesville is in the northwest portion of Montgomery County, Maryland, surrounded by the County's agricultural reserve. The Town owns and maintains most roadways within the corporate limits except for Whites Ferry Road, Elgin Road (MD 109), and a portion of Fisher Ave (MD 107). The Town's current street pattern is based upon the expansion from the rural Town Center located between the intersection of Fisher Avenue and Elgin Road (MD 107) and Fisher Avenue and Wootton Avenue.

The Maryland State Highway Administration (SHA) maintains MD 109 and a portion of MD 107. The Town owns and maintains a total of 26.7 miles of roadway. All Town routes are local or municipal routes (MU). See **Map 8-1, Roadway Network**, for a visual of all the existing roadways within the Town.

Map 8-1
Roadway Network
Page 73



8.3.2 Functional Classification

The State and County classify roads based on their function throughout the area. This functional classification defines the role of each roadway and its primary use in the community and surrounding region. The main functional classifications found in Poolesville, according to SHA and the Federal Highway Functional Classification System, are:

Collectors: Collectors provide traffic circulation from local roads and streets to main arterials. They usually provide access to neighborhoods and commercial and industrial areas.

Local Roads: Local Roads are the lowest-classified roads and usually carry lower traffic volumes. They provide residents with access to the higher roadway network. Local roads are often connected in an urban grid of smaller blocks or as a single road directly connected to the main line.

Table 8-1 identifies the main roadway facilities in the Town of Poolesville and their corresponding elements. This table does not include Local routes. Please refer to **Map 8-2, Functional Classification**, for the complete roadway system.

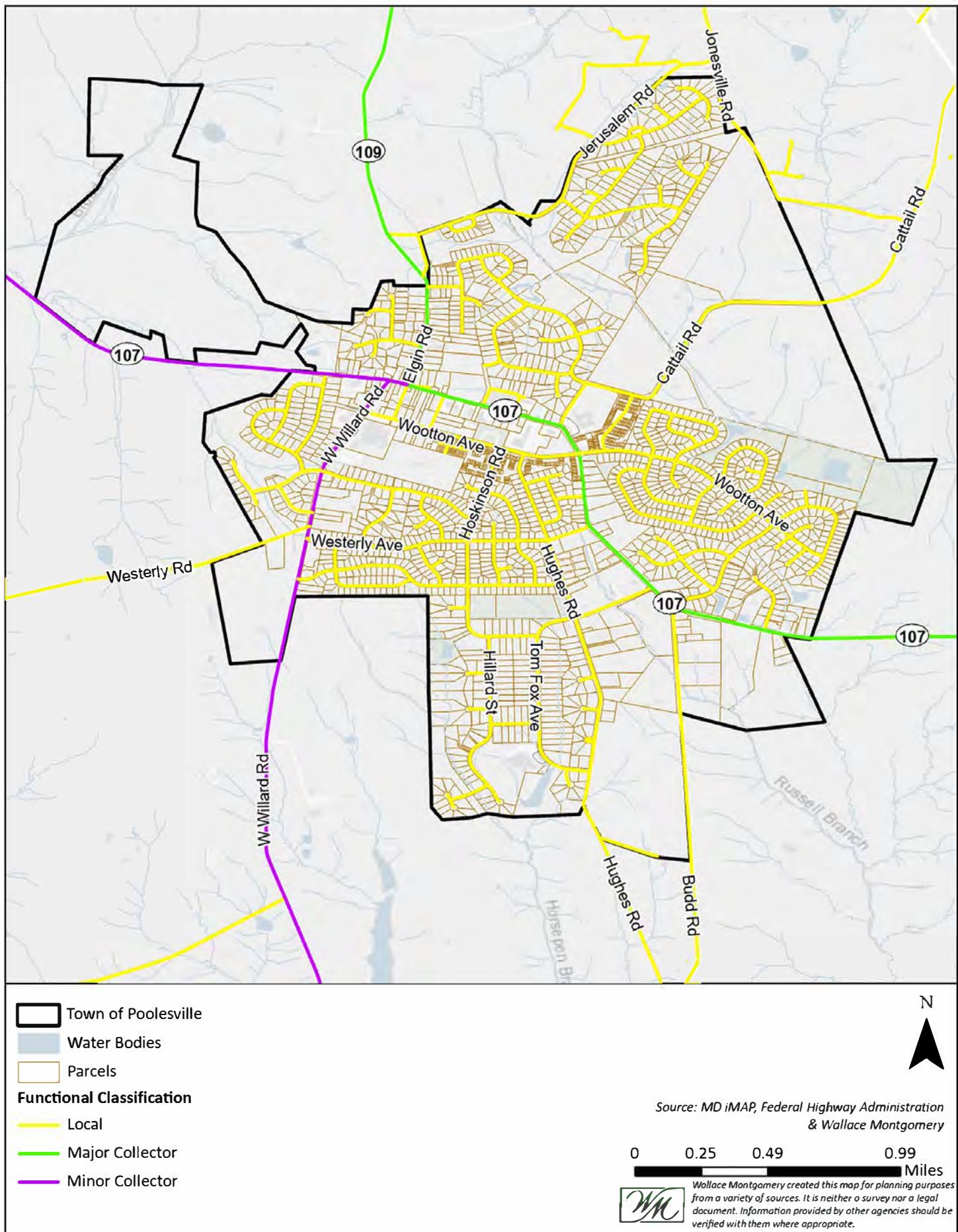
Table 8-1. Roadways

Roadway	Route Number	Functional Classification	Number of Lanes	Sidewalk	Bicycle Lanes	On-Street Parking
Elgin Road	MD 109	Major Collector	2	Partial	No	No
Fisher Avenue	MD 107	Major/Minor Collector	2	Partial	No	No
West Willard Road	MU 143	Minor Collector	2	Partial	No	No

Source: MDOT SHA

Street Type designations in Poolesville benefit the Town's planning and design efforts as they combine street functional class with the community environment the street serves. Fisher Avenue is a wonderful example of a street that changes land use context. Thus, planning and design approaches are based on the section of the street, from connecting the Town limits to residential sections and the centerpiece of the Town Center. Street Types define right-of-way lines and the corresponding vision of the street.

Map 8-2
Functional Classification
Page 75



8.3.4 Existing Roadway Elements

The Town's current roads comply with the American Association of State Highway and Transportation Officials (AASHTO) planning and design guidelines and the Americans with Disabilities Act (ADA), except for Beall Street and part of Westerly Avenue. Both roadway sections have limited rights-of-way for improvements.

The Town uses regulatory signage for most of its traffic control, except for illuminated speed radar signs and flashing crosswalks deployed on Fisher Avenue. There are no signalized intersections (traffic lights); all are unsignalized with Manual of Uniform Traffic Control Devices (MUTCD) compliant stop signs and markings. Most roads' posted speed limit ranges from 25 to 30 mph, except for Fisher Avenue. Some segments of this road (owned by Montgomery County) have a posted speed limit of 40 mph.

8.3.5 Rustic Roads

Montgomery County has a Rustic Roads Program that preserves some historic and scenic roads. Preserving the roads includes maintaining certain physical features, right-of-way, and agricultural character, with limited maintenance or improvements. The program currently includes 99 roads within the County, with an additional 20 nominee roads in consideration. Some sections of roadway, such as Jerusalem Road, abut the Town boundary and are commuter routes. Portions of this roadway do not meet the original designation requirements, and the County should evaluate these segments for their ongoing inclusion in the program. No Town roadways within the Town are Rural Rustic Roads.

8.3.6 Traffic Conditions

Understanding traffic congestion levels quantifies the transportation mobility goal related to vehicular travel. While viewed as the primary performance measure in transportation in the past, the Town now weighs safety and multimodal accessibility above this traditional measure. The main type of traffic analysis is Average Annual Daily Traffic (AADT). **Table 8-2** shows the AADT for the main roadway segments in Poolesville as identified by MDOT SHA. To calculate the AADT, MDOT SHA uses multi-direction vehicle volume and divides it by 365 Days (one year).

Table 8-2. AADT

Roadway	Route Number	Functional Classification	AADT
Elgin Road	MD 109	Major Collector	2,912
Fisher Avenue	MD 107	Major/Minor Collector	6,361
West Willard Road	MU 143	Minor Collector	2,634

Source: SHA 2018 data

8.3.7 Scenic Byway

The National Scenic Byways Program is a voluntary, community-based program administered through the Federal Highway Administration (FHWA) to recognize, protect, and promote America's most outstanding roads. National Scenic Byways recognizes 184 roads in 48 states as National Scenic Byways or All-American Roads. National Scenic Byway Designation is based on the road's characteristics, such as regional significance within at least one of these intrinsic quality categories: scenic, natural, historic, recreational, archaeological, or cultural. The byway must also demonstrate strong community support

and develop a detailed corridor management plan that describes its preservation, marketing, and improvement strategies.

The Antietam Campaign Scenic Byway is a 90-mile scenic and historic driving tour that follows the route of Robert E. Lee's September 1862 Maryland Campaign during the U.S. Civil War. The byway begins in Whites Ferry, where Lee crossed into Maryland from Virginia, and ends near Sharpsburg, MD, at the Antietam National Battlefield. Within Poolesville, the byway follows east along MD 107 to the John Poole House and continues north along MD 109.

The Chesapeake and Ohio Canal Scenic Byway follows nine Maryland routes and traces the historic Chesapeake and Ohio Canal path. The byway is approximately 236 miles long, connects Cumberland to Washington, D.C., and passes through Poolesville. Within the Town, MD 109 and MD 107 are both designated parts of this Scenic Byway.

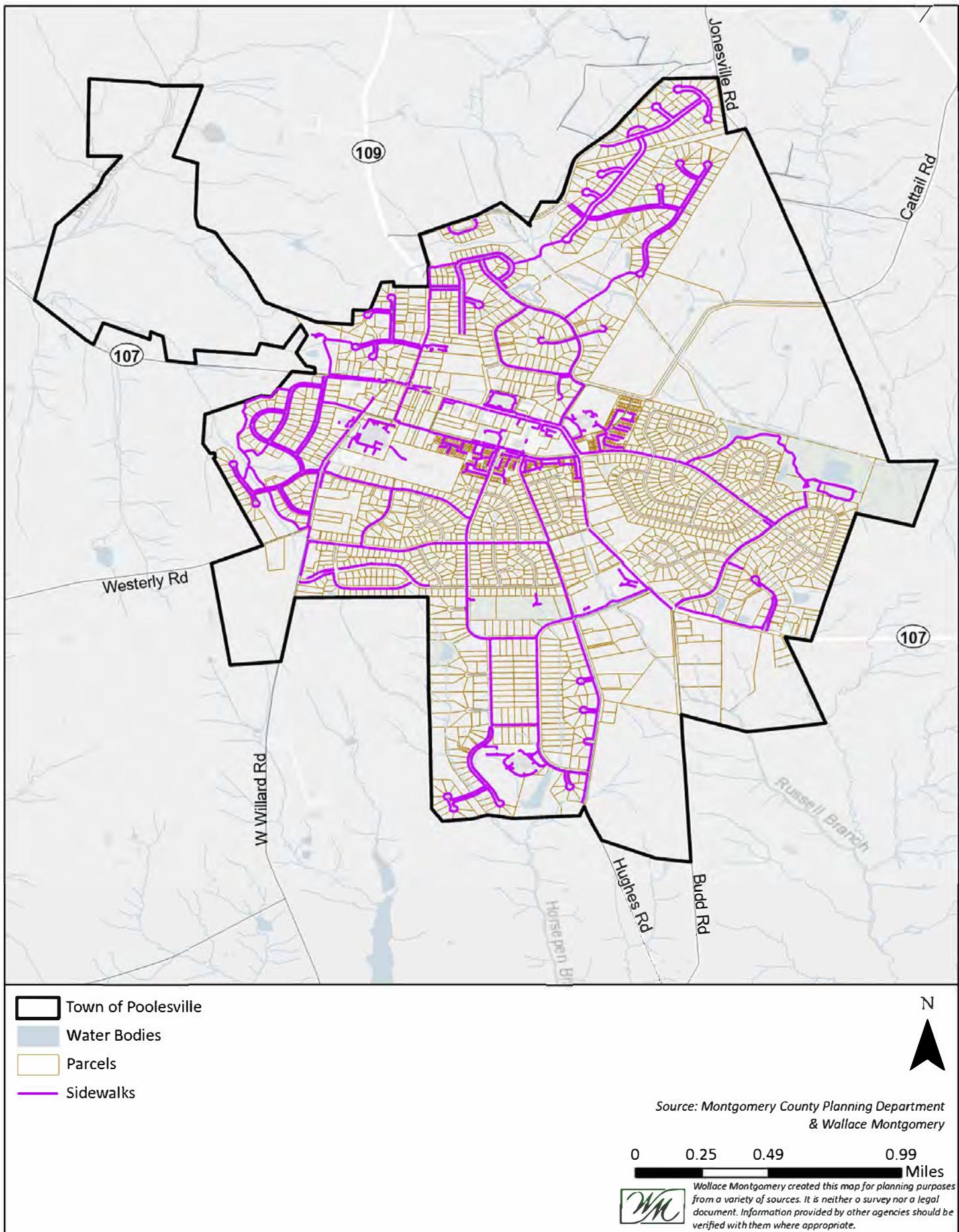
8.4 Multi-Modal Facilities

8.4.1 Pedestrian Facilities

Poolesville is committed to maintaining The Town Center, which benefits residents and fosters a greater sense of community. Safe and connected sidewalks allow pedestrians to safely walk to the Town Center, Parks, and other points of interest. The Town has an extensive network of existing sidewalks in residential and commercial areas. Future projects within the Town should plan for sidewalk updating and expansions in areas with none. All proposed sidewalks should follow the Americans with Disabilities Act (ADA), including curbs and gutters, where appropriate. All existing sidewalk locations are on [Map 8-3, Sidewalk Facilities](#).



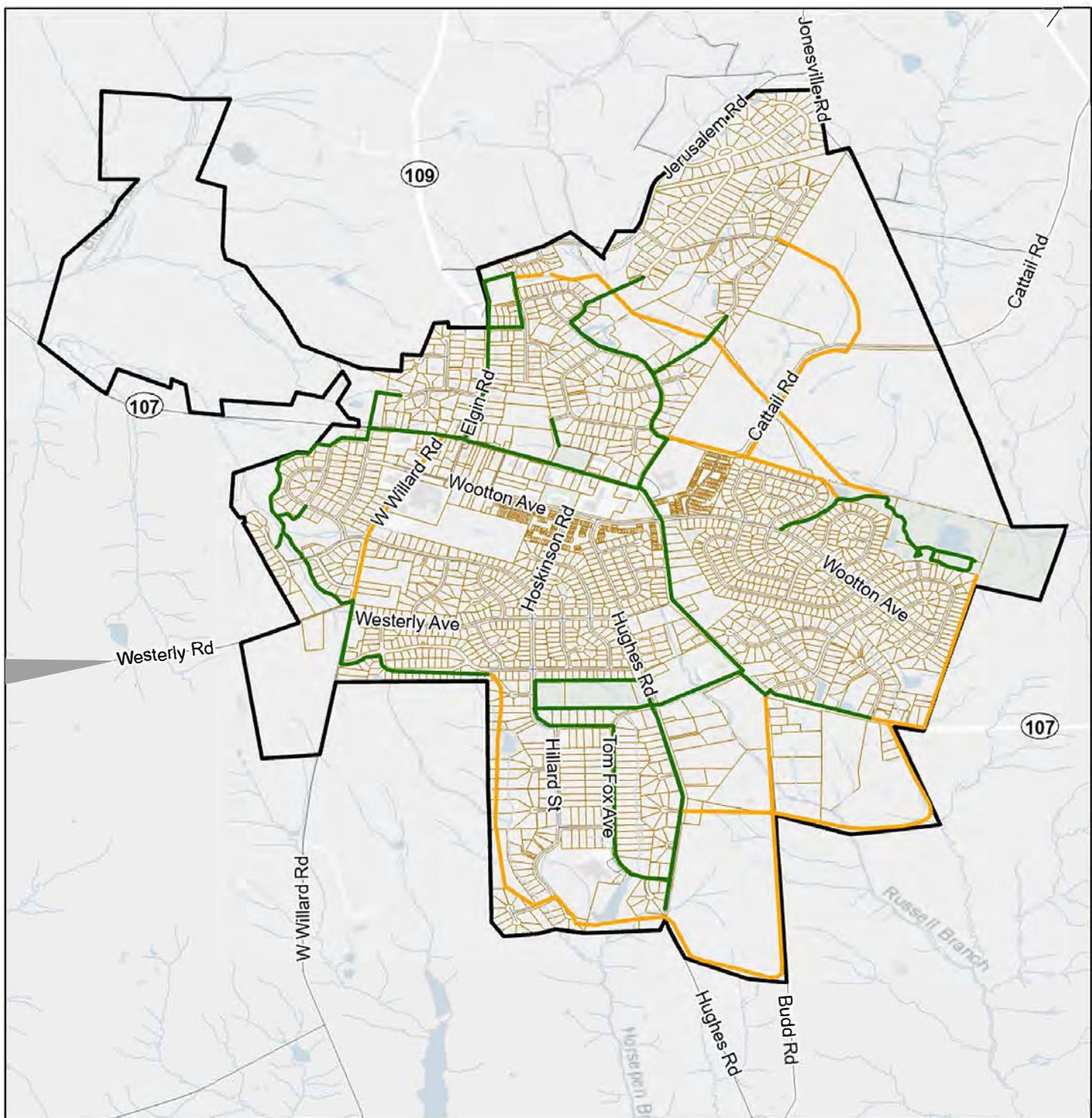
Map 8-3
Sidewalk Facilities
Page 78



8.4.2 Bicycle Facilities

Bicycling is a supported form of transportation in Poolesville, and the Town strives to promote a bicycle-friendly community. Bicycle facilities provide cyclists a safe environment to protect them from vehicular traffic. Typical bicycle facilities are bike lanes, shared roadways, trails, and cycle tracks. The Fisher Avenue Streetscape Plan includes a bike lane. Otherwise, there are no designated bike lanes, marked shared roadways, or cycle tracks within the Town. Biking residents either share the road with vehicles or utilize walking trails. The Town should continue planning for bicycle additions and improvements to create a connected, safer bike network. Existing walking trails that residents use to bike or walk are on **Map 8-4, Pedestrian Bicycle & Trail System**.

Map 8-4
Pedestrian & Bicycle Trail System
Page 80



- Town of Poolesville
- Water Bodies
- Parcels
- Existing Trails
- Proposed Trails



Note: Trail Alignments are conceptual only.

Source: Town of Poolesville

0 0.25 0.49 0.99 Miles



Wallace Montgomery created this map for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate.

8.4.3 Bicycle Conditions

Bicycle Level of Traffic Stress (LTS) is an analysis that rates a roadway segment, bike lane, or crossing based on the traffic stress it imposes on cyclists. The LTS uses factors such as traffic speed, volume, and number of lanes to score the LTS on a scale of 1-5. Where 1 has the lowest stress level, and 5 prohibits bicycle access. **Table 8-3, MDOT LTS Scales**, shows the various stress levels in the Town. In Poolesville, MD, 107 (Fisher Avenue) is the only main roadway with a higher level of traffic stress varying from a 3-4 rating. The remaining roads have less stress with an LTS rating of 1 or 2. See **Map 8-5, Bicycle Level of Traffic Stress (LTS)** for all the routes.

Table 8-3. MDOT LTS Scales

MDOT LTS Scale		
LTS	Target Audience	Bicycle Facility Types
0	All ages and abilities	Rail-trails, shared-use paths
1	Almost everyone	Protected bikeways, side paths
2	Interested but concerned	Bike lanes, bike boulevards
3	Enthused and confident	Bike lanes, shared lanes, shoulders
4	Strong and fearless	No bike facility or bike lane on a major roadway
5	Bicycle Access Prohibited	The managing roadway agency prohibits bicycle access

Source: MDOT SHA

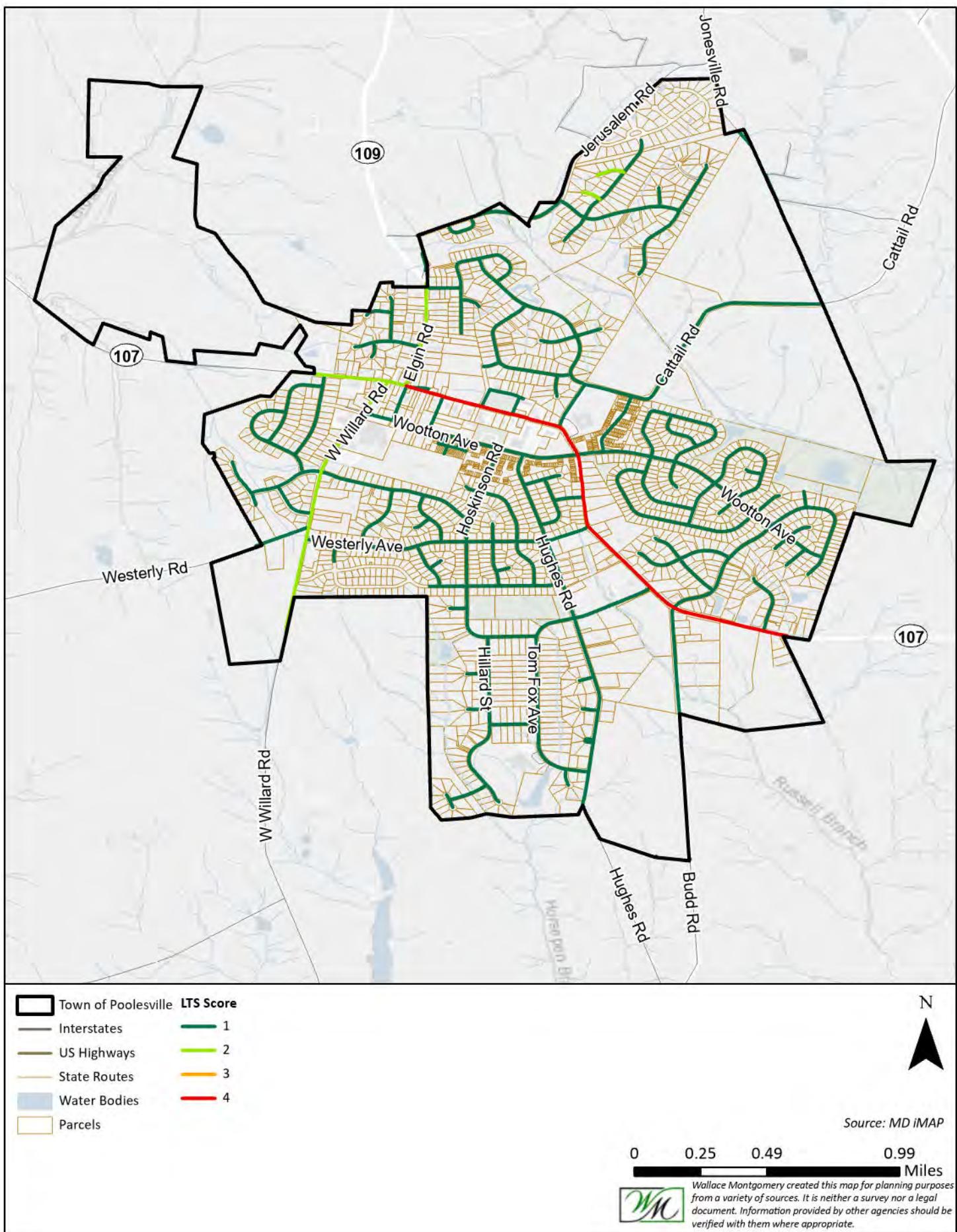
8.4.4 Transit Services

Montgomery County Department of Transportation provides Ride On bus service to Poolesville. The local route that serves the Town is Ride On Route 76. Route 76 travels through Poolesville Monday through Friday. The main Poolesville route travels from MD 107 (Fisher Avenue) to W Willard Road and from W Willard Road to Wootton Avenue to connect back to MD 107. See **Map 8-6, Existing Transit**, for the complete route. Route 76 connects Poolesville to The Washington Metropolitan Area Transit Authority (WMATA) Shady Grove Metro station. Poolesville should continue to advocate for improved service with Montgomery County's Division of Transit Services.

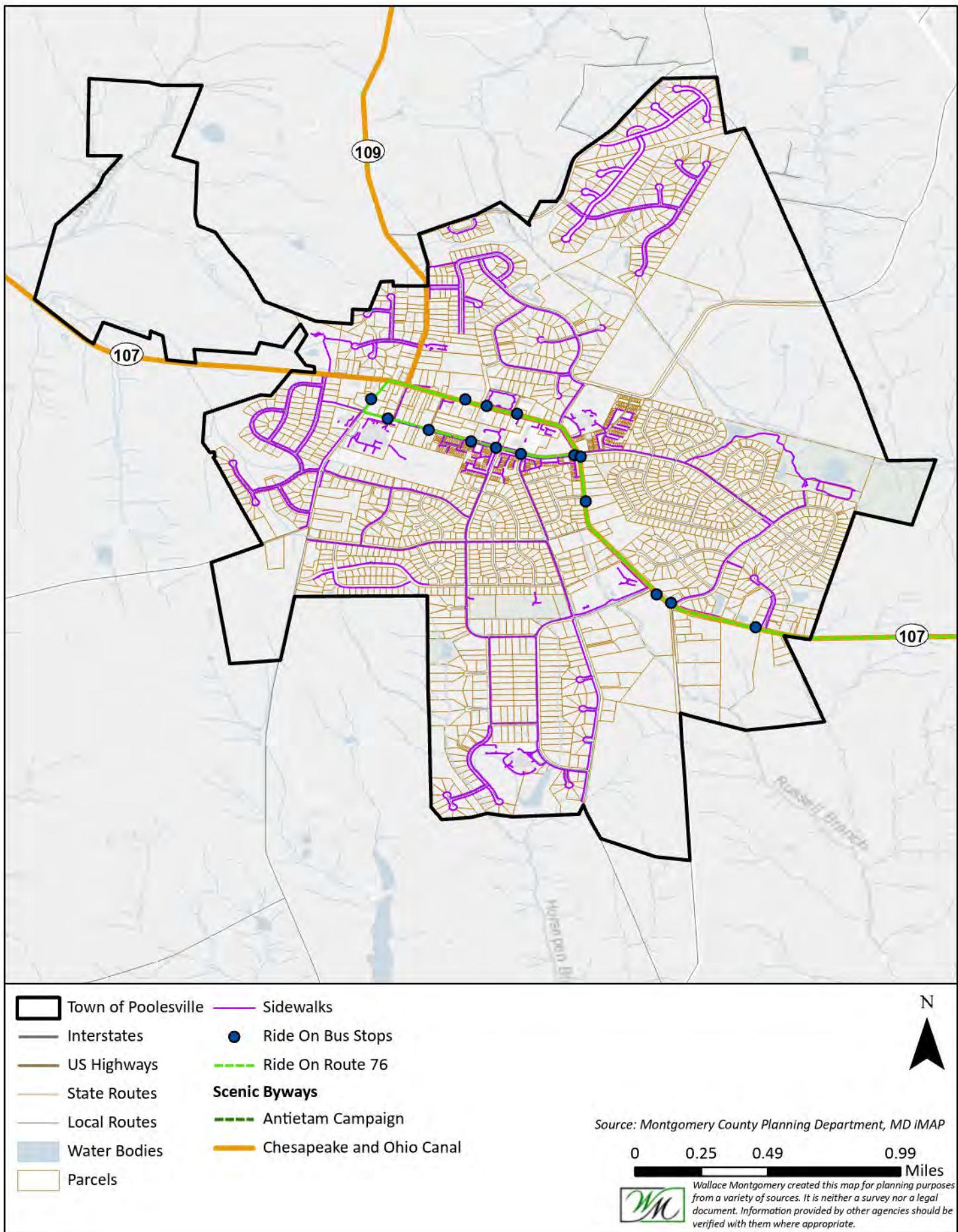
8.4.5 Rail Services

No official rail lines are located within the Town of Poolesville; however, residents can utilize a local MARC line. The MARC Brunswick line serves Germantown, Boyds, Barnesville, Dickerson, and Point of Rocks, all within a half-hour car ride or less from Poolesville. The Brunswick line runs from Martinsburg, West Virginia, to the District of Columbia (DC) and provides weekday service.

Map 8-5
Bicycle Level of Traffic Stress (LTS)
Page 82



Map 8-6
Existing Transit
Page 83



8.5 Critical Areas of Concern

8.5.1 White's Ferry

White's Ferry is a historic cable ferry crossing the Potomac River, connecting Maryland to Virginia. In December 2020, ferry operations ceased due to disputes and lawsuits related to the ownership and access to the Virginia-side landing.

The Ferry is a vital part of the Western County and Poolesville. It connects Route 107 to Poolesville, which is truly the Town's "Main Street." While the number of cars passing each day (600 to 800) can seem small in terms of how much daily traffic moves along Route 15, it is a large traffic flow in Poolesville. Many small, local, often family-owned businesses make up the commercial fabric of Poolesville. Traffic from White's Ferry is an important contributor to their success.



In 2021, Loudon County, VA, and Montgomery County, MD, commissioned a study analyzing the current data about the Ferry's operations and similar operations to aid the County in considering short-term and long-term alternatives. The alternatives presented were restarting the ferry service for immediate use, restoring the service short-term, or enhancing the service for long-term use.

Poolesville officials have and should continue to lobby State and County officials on both sides of the river to come together to develop options that can lead to a long-lasting solution to get the ferry operating.

8.5.2 State Roads

The Town has and should continue to lobby State officials for improvements to commuter roads used by residents. One challenge limiting the improvements is that the State Highway Administration (SHA) applies regulations and policies designed for urban areas in rural areas. The Town will seek to address this challenge through the appropriate political channels.

The Town has received several complaints regarding the lack of a safe pedestrian crossing at MD Route 107 and Spates Hill Road intersection. The Town requested the installation of a pedestrian refuge island or another safety feature at the intersection to improve safety. SHA reported that the number of vehicular/pedestrian accidents does not warrant improvements at this time.

MD Route 109 (Elgin Rd) and Haller Ave is an intersection of concern. This intersection is an area with a mix of residential and commercial buildings, is situated near a curve, and serves as a pedestrian crosswalk and school bus stop. Residents have reported several near misses between vehicular traffic and pedestrians.

Another area of frequent complaints is just East of Hersperger Lane along MD Route 107. A drainage pipe crosses under the roadway, is undersized, drains slowly, and floods during significant rainfall events.

A segment of MD Route 107 just east of the Town limits currently experiences chronic accident problems. It is at a sharp horizontal curve located ½ mile east of the Town limits. Drainage improvement to this curve, conducted by the State in 2001, helped with wet weather safety. However, a significant number of vehicles still misjudge the severity of the curve and strike power poles or fencing. The Town should advocate for the SHA to redesign this portion of MD Route 107.

Farther east is the intersection of MD Routes 28 and 107, which should be reconfigured to improve visibility and safety. The Town and County should jointly request that the State add these safety enhancement projects to the State's Capital Improvements list.

8.6 Transportation Projects and Plans

8.6.1 Road Paving Program

Poolesville professionally inspects and prioritizes the Town's roadways as part of its Capital Investment Program. The Town awards Road paving projects every two years, with an overall goal of repaving each road every 20 years.

8.6.2 The Montgomery County Bicycle Master Plan

This 2018 Bicycle Master Plan is a framework to establish a network of low-stress bikeways in Montgomery County. The plan identifies four main goals to enhance the bicycling community.

- Increase bicycling rates in Montgomery County.
- Create a highly connected, convenient, and low-stress bike network.
- Provide equal access to low-stress bicycling for all community members.
- Improve bike safety.

The plan also recommends incorporating more bike parking throughout the County while also following the Bicycle Facility Design Toolkit to help guide planners and designers with future bike systems.

Economic Development

Purpose

The Economic Development chapter serves as a guide for economic development. It describes the Town's economic condition and outlines the goals and strategies needed to support its long-term economic viability.

9.1 Overview

Economic development refers to the policies, regulations, and programs created to promote economic vitality, support local businesses, create local jobs, and ensure the highest possible quality of life for Town residents. This chapter serves as a guide for economic development as it describes the Town's economic condition and outlines the goals and strategies needed to support its long-term economic viability.

Economic development is one of Maryland's 12 Planning Visions and has significant implications for land use. The Town has spent considerable time developing strategies to protect and enhance its long-term economic future, including zoning changes and streetscape planning.

Poolesville's business community provides goods and services for residents of the Town and the surrounding area. These enterprises include medical offices, banks, daycare facilities, a small grocery and hardware store, a drug store, automobile services and gas stations, HVAC, plumbing and electrical services, restaurants, and retail establishments.



Given Poolesville's location in Montgomery County's Agricultural Reserve, Poolesville businesses also serve residents of the surrounding agricultural and rural areas, as well as visitors to the Town and people who may be passing through as they make use of the recreational areas in adjacent areas of the County and the region as well as commuters. Other businesses located in the surrounding area provide services on a regional level and provide employment and other benefits to Town residents.

In addition to Poolesville's storefront establishments and offices, several home-based businesses are integral to the Town's business base. Moreover, according to the American Community Survey in 2021, 28.9 % of residents worked from home, significantly higher than Montgomery County and the State of Maryland (see **Figure 9-6**). This is likely due to the COVID-19 pandemic's effect on business operations, which made virtual and remote work possible for larger numbers of workers. This has had the potential to increase the number of people within the Town during business hours, with the potential (and need) to patronize local businesses.

Poolesville also recognizes the need to diversify and strengthen its economic base by leveraging cultural assets, tourism, and recreation for growth and sustainability. This combination provides a strong foundation for stimulating economic growth through agritourism, arts, heritage tourism, events, and more. Arts and culture are natural partners and can play a significant role in economic development.

The business community is vital to Poolesville as a source of goods and services. Without a functioning, attractive, safe, and accessible business community, residents would have to travel miles for needed goods and services.

A vibrant business community continues to provide employment opportunities to residents, contributes to Poolesville's small-town character, provides a place for interaction among residents, and supports local charities, youth athletics, and other activities that bring residents together and foster a sense of community in the Town.

9.2 Goals and Objectives

The Town of Poolesville recognizes that economic development activities are critical to creating the conditions that enable private enterprises to establish and sustain a mix of commercial, retail, and service-focused jobs that provide Poolesville and the surrounding area residents with local sources of goods and services and employment opportunities.

The following goals and objectives support Poolesville's economic vitality:

1. Preserve and enhance the small-town character of the Town Center as the hub for activity for Poolesville and the surrounding region.
 - Implement the Town's Streetscape Plan.
 - Partner with the Poolesville Area Chamber of Commerce and other local businesses to promote "shop local" and other campaigns.
 - Develop a marketing plan to raise awareness of local arts and cultural attractions, including wineries, breweries, restaurants, and local events.
 - Develop and expand community events on Whalen Commons.
2. Support efforts to reopen White's Ferry as an opportunity to improve connections between Poolesville and Northern Virginia and improve access from the Town to regional outdoor and recreational activities.
3. Work with Montgomery County and local and state agencies to ensure that the Town and Western Montgomery County residents have access to local job opportunities and living wages, as well as quality education, training, and support services.
 - Support employment opportunities within the Town to provide residents with additional local employment options.
 - Explore the development of a Small Business Incubator within the Commercial District.
4. Work with the County and State to incentivize specialty and unique businesses to locate in Poolesville.
5. Pursue non-retail businesses that will maintain a workforce in Town during the business day.
 - Look for opportunities to work with local businesses to expand their workforce to provide a new and expanded customer base for other retail businesses, restaurants, and services in Town.
6. Reexamine the recommendations from the Economic Development Opportunities for the Town of Poolesville report from 2012 for opportunities to develop place-based economic development strategies.

- Look for opportunities to leverage the Town's advantages in Agriculture, Outdoor and Recreational Activities, and Business Growth and Retention, as outlined in the 2012 report, and revisit the viability of the report's recommendations.

7. For the agricultural sector, explore ideas such as a Food Hub, agricultural processing services, a Farm/Agricultural Incubator, and a Food Innovation Center.

- Maintain and enhance the Town's regional support for the needs of the surrounding farms/rural developments.

9.3 Economic Characteristics

Although Poolesville primarily functions as a bedroom community with local businesses, the Town is subject to regional and national economic and demographic trends that affect the Town's economy and labor force to varying degrees. Nationally, as the population ages, younger generations increasingly make up the primary workforce. The nation's senior population is also challenging assumptions regarding older employees. Longer life spans and longer work lives will increase tax generation and consumerism.

Conversely, many younger adults often leave the areas where they grew up after completing their education, searching for alternative economic, social, and cultural opportunities. The nature of work has also changed with automation, causing dramatic shifts in employment opportunities and needs.

9.3.1 Employment & Labor

According to the 2017-2021 American Community Survey (ACS), there were 3,113 Poolesville residents in the labor force¹, of which 2,953 (67.2% of the Town's workforce) were employed within the civilian labor force. This percentage was about the same as Montgomery County and 3.9% higher than the State of Maryland.

An additional 36 Poolesville residents (0.8% of the Town's aged 16+ population) served in the Armed Forces; this percentage was slightly higher than the State and about twice that of Montgomery County. See **Table 9-1, Employment Status**, for the comparisons.

Table 9-1. Employment Status (2021)

Jurisdiction	Civilian Labor Force				Armed Forces		Total Labor Force			
	Employed		Unemployed							
	No.	%	No.	%						
Poolesville	2,953	67.2%	124	2.8%	36	0.8%	3,113			
Montgomery County	562,955	67.1%	28,727	3.4%	3,417	0.4%	595,099			
Maryland	3,120,977	63.3%	175,507	3.6%	33,795	0.7%	3,330,279			

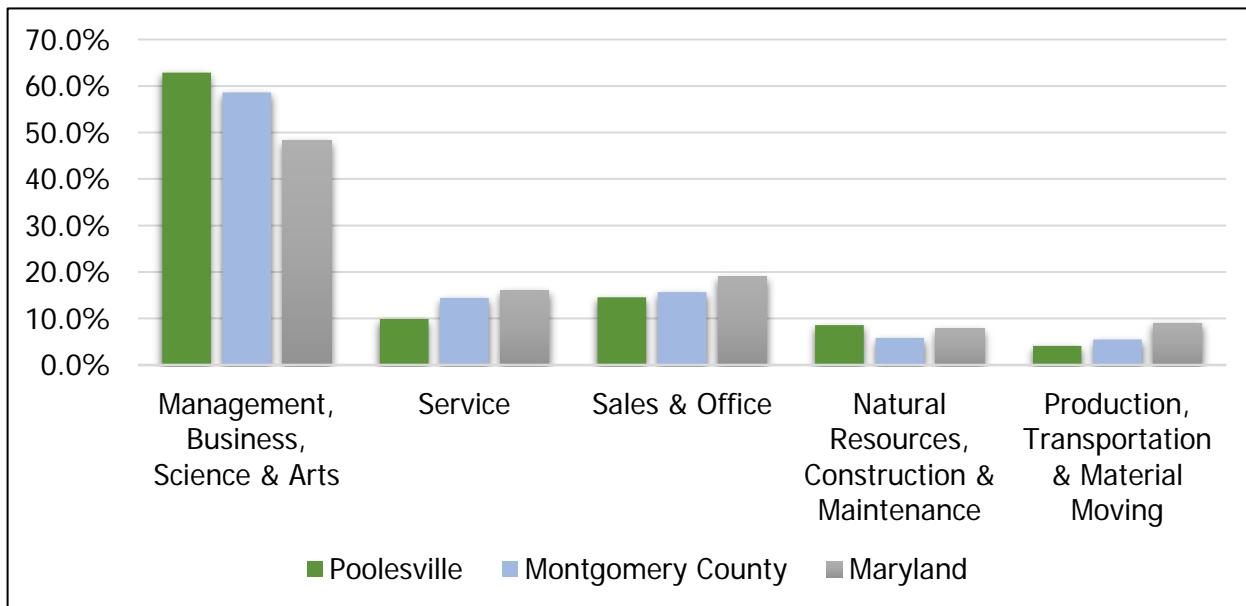
Source: 2017-2021 American Community Survey

Across the U.S., the labor force participation rate has been steadily declining for two decades. It has remained relatively flat since 2014, hovering slightly over 60 %. Maryland has a stronger participation rate (63.3%) than the nation, as does Montgomery County, with a participation rate of 67.1%. Poolesville's labor participation rate is almost the same as the County's.

¹ The labor force is defined as the town's population over 16 years of age.

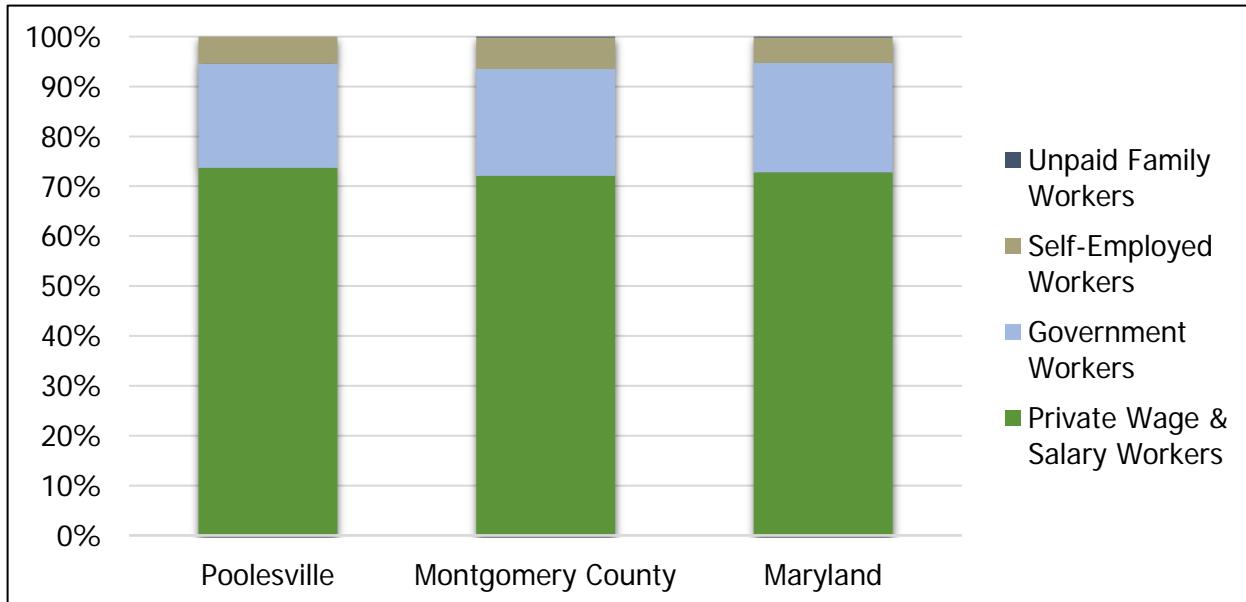
The 2020 ACS shows that Poolesville residents' occupations are more strongly centered in Management, Business, Science, and the Arts than the County and State percentages for this category. **Figure 9-1, Employment by Occupation**, shows the percentages employed in various occupations and how they compare to Montgomery County and the State.

Figure 9-1. Employment by Occupation (2021)



Source: 2017-2021 American Community Service

Figure 9-2, Class of Worker, shows that the type of employment that Poolesville residents have (private



sector, government workers, self-employed, and unpaid family workers) are proportionately similar to Montgomery County and the State as a whole, as of 2021. About 74 % of Poolesville residents work for private-sector employers, while 5.4 % are self-employed. Figure 9-2. Class of Worker (2021)

Source: 2017-2021 American Community Service

9.3.2 Income & Poverty

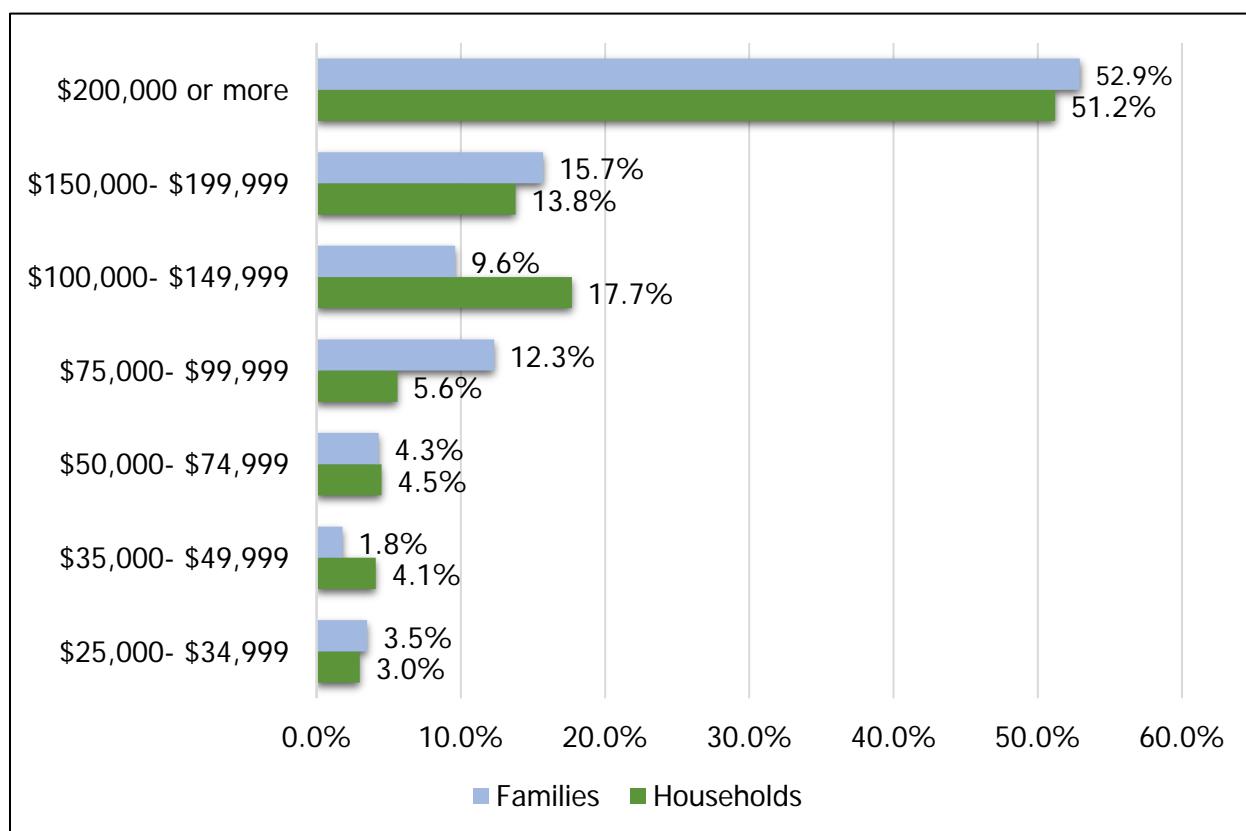
As of the 2021 ACS, the Town had 1,813 households and 1,355 families. Of those, 3.5% of families and 3.0% of households had annual incomes less than \$35,000, while 52.9% of families and 51.2% of households had incomes greater than \$200,000. (See Figure 9-3, Poolesville Income Ranges).

Table 9-2. Annual Income (2021)

Income	Amount in Dollars		
	Poolesville	Montgomery Co.	Maryland
Median Household Income ²	\$201,607	\$117,345	\$91,431
Median Family Income ³	\$209,219	\$140,347	\$111,378
Per Capita Income	\$64,621	\$59,384	\$45,915

Source: 2017-2021 American Community Survey

Figure 9-3. Income Ranges (2021)



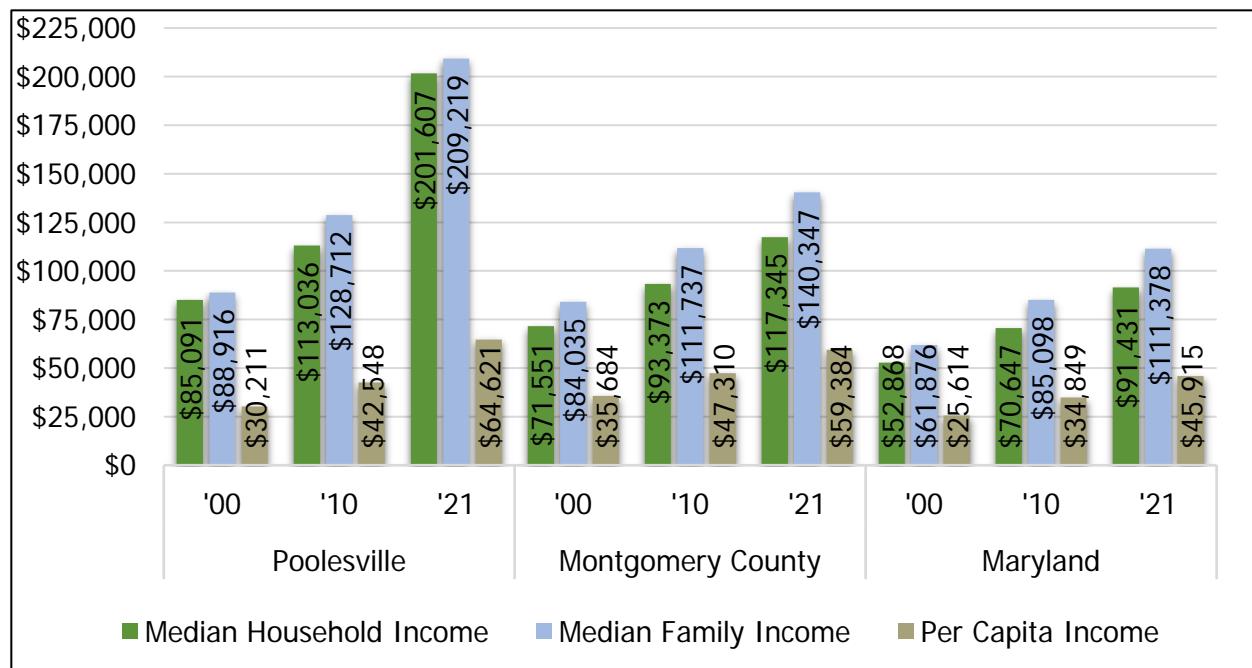
² According to the U.S. Census Bureau, “household income” is defined as the sum of the income of all people 15 years and older living in the household. A household includes related family members and all the unrelated people, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit, is also counted as a household.

³ According to the U.S. Census Bureau, “family income” is defined as the sum of the income of all family members 15 years and older living in the household. Families are groups of two or more people (one of whom is the householder) related by birth, marriage, or adoption and residing together; all such people (including related subfamily members) are considered as members of one family.

Source: 2017-2021 American Community Survey

Figure 9-4. Income Comparisons (2000-2021) shows that median household income among Poolesville residents has increased significantly since 2010, from \$113,036 to \$201,607. This growth is much higher than in Montgomery County and the State.

Figure 9-4. Income Comparisons (2000-2021)



Source: 2000 Decennial Census; 2006-2010 & 2017-2021 American Community Survey

Table 9-3, Source of Income (2021) shows that, while 85.7 % of households in Poolesville gain their income from earnings (a slightly higher percentage than Montgomery County, but 6.3 % higher than the State as a whole), the percentage of Town households whose source of income is retirement savings is also higher than the County and the State as a whole.

Meanwhile, the percentage of Town households whose primary source of income is Social Security is slightly higher than the County but lower than the State as a whole. Note that data in this table reflect the number or percentage of households—which includes related family members and all the unrelated people, if any, who share the housing unit—whose income comes from identified sources.

Table 9-3. Source of Income (2021)

Jurisdiction	Earnings	Social Security	Retirement	Supplemental Security	Cash Public Assistance	Food Stamps/ SNAP
Poolesville	1,553 (85.7%) \$205,305	458 (25.3%) \$27,751	484 (26.7%) \$40,350	59 (3.3%) *NR	57 (3.1%) *NR	30 (1.7%)
Mont. Co.	325,973 (85.0%) \$156,348	94,334 (24.6%) \$23,493	79,355 (20.7%) \$49,318	11,843 (3.1%) 9,889	7,508 (2.0%) 4,329	25,619 (6.7%)
Maryland	1,866,608	645,900	559,508	100,628	56,927	238,288

	(81.4%) \$120,231	(28.2%) \$21,671	(24.4%) \$37,029	(4.4%) \$10,744	(2.5%) \$3,820	(10.4%)
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Source: 2017-2021 American Community Survey. Note: Number is a number of households, percentage is the percentage of households, and dollar amount is the average income for that source. *NR = not reported.

Table 9-4. Poverty (2021)

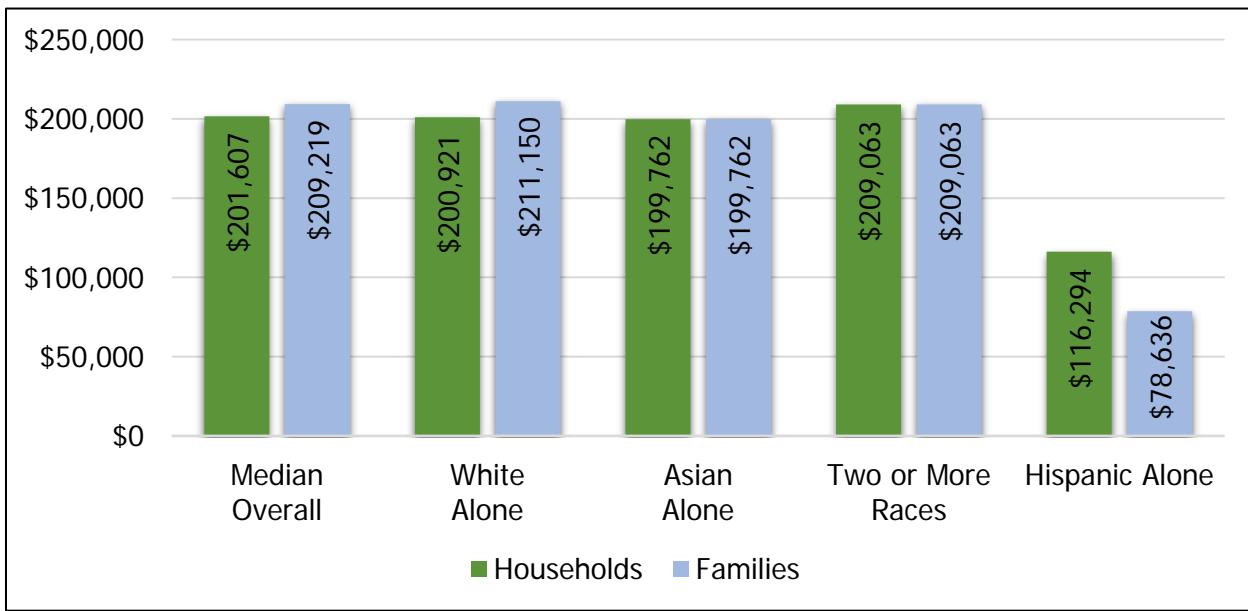
Description	% Below Poverty Level		
	Poolesville	Mont. Co.	Maryland
Total Population	5,666	1,057,201	6,148,545
All people	0.5%	7.0%	9.2%
Under 18 years	—	8.8%	11.9%
18 years and over	0.6%	6.5%	8.4%
65 years and over	0.1%	7.2%	8.0%
People in families	—	5.3%	6.7%
Unrelated individuals 15 years and over	6.2%	16.0%	19.7%

Source: 2017-2021 American Community Survey. Note: The top row indicates the total number of people within respective jurisdictions, not those below the poverty level.

9.3.3 Equity in the Economy

Figure 9-5, Median Household Income by Race & Ethnicity, shows that median household income among racial and ethnic groups is similar across all categories in Poolesville except those households only made up of Hispanics alone.

Figure 9-5. Median Household Income by Race & Ethnicity (2021)



Source: 2017-2021 American Community Survey. Note: The races and ethnicities in this chart are the only ones reported for the 2017-2021 ACS. Other categories that the ACS did not report were probable due to confidentiality issues with sample size.

9.3.4 Commuting Patterns

Commuting data allows the Town to understand what proportion of the workforce lives in the place where they work and what proportion commutes outside Poolesville for other employment opportunities.

When a community has more people leaving for work than coming in, it is a "bedroom community" or "commuter town." On the other hand, if a community has more people coming in than leaving for work, it is called a "commercial center." Given Poolesville's demographic characteristics and the relatively small size of its employment base, Poolesville functions as a bedroom community in the regional economy. As shown in **Table 9-5, Job Inflow and Outflow** (for the years 2010 and 2019, the latest year available), about 95 % of Poolesville residents who are employed commute to jobs outside of the Town, while only 4.9 % of employed Poolesville residents in 2019 worked in the Town. Moreover, according to the American Community Survey in 2021, 28.9 % of residents worked from home, which is significantly higher than Montgomery County and the State of Maryland (see **Figure 9-6**).

Of the workers employed in Poolesville, 82.9 % lived outside of Poolesville, and 17.1 % resided within it. One trend evident in the data is that the percentage change among workers in Poolesville jobs who live in or outside the Town increased significantly during the 2010s (35.6 percent).

Table 9-5. Job Inflow & Outflow (2010-2019)

	2010		2019	
	No.	%	No.	%
Employed in town	756		802	
Live outside town	655	86.6%	665	82.9%
Live inside town	101	13.4%	137	17.1%
Employed residents in town	2,632		2,807	
Commute outside town	2,531	96.2%	2,670	95.1%
Employed & live in town	101	3.8%	137	4.9%

Source: U.S. Census Bureau, *On the Map*. Note: 2019 is the latest year of data available.

Among Poolesville residents who commute, Rockville is the most popular destination (**Table 9-6, Location of Worker Home & Employment**). Among the workers in Poolesville jobs, the largest number, at 17.1%, live in the Town. For local workers who live outside of Poolesville, Germantown is the most common location where they live.

It is unclear whether the COVID-19 pandemic has changed these patterns, but it is worth looking at this data attribute in the future to see if this pattern has changed.

Table 9-6. Location of Worker Home & Employment (2019)

Where Poolesville Residents are Employed			Where Poolesville Workers Live		
Location	No.	%	Location	No.	%
Rockville, MD	349	12.4%	Poolesville, MD	137	17.1%
Washington, DC	203	7.2%	Germantown, MD	64	8.0%
Gaithersburg, MD	176	6.3%	Frederick, MD	26	3.2%
Bethesda, MD	151	5.4%	Gaithersburg, MD	23	2.9%
Poolesville, MD	137	4.9%	Rockville, MD	18	2.2%
North Bethesda, MD	126	4.5%	Aspen Hill, MD	16	2.0%
Germantown, MD	97	3.5%	Ballenger Creek, MD	16	2.0%
Frederick, MD	76	2.7%	Damascus, MD	13	1.6%
Potomac, MD	69	2.5%	Montgomery Village, MD	13	1.6%
Silver Spring, MD	57	2.0%	Olney, MD	13	1.6%
All Other Locations	1,366	48.7%	All Other Locations	463	57.7%

Total Residents	2,807	Total Workers	802
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Source: U.S. Census Bureau, *On the Map*. Note: 2019 is the latest year of data available. Top 10 locations shown.

Because of these commuting patterns, Poolesville residents, on average, travel farther to their jobs than workers in Montgomery County and Maryland, as shown in **Table 9-7, Worker Travel Time**. As of 2021, the 2,112 Poolesville workers identified in the American Community Survey traveled an average of 41.1 minutes to their jobs. 27.2 % traveled less than 30 minutes, 21.8 % had a commute between 60 and 89 minutes, and 6.3 % traveled more than 90 minutes. For these latter two categories, these proportions were much higher than the comparable figures for the County and State.

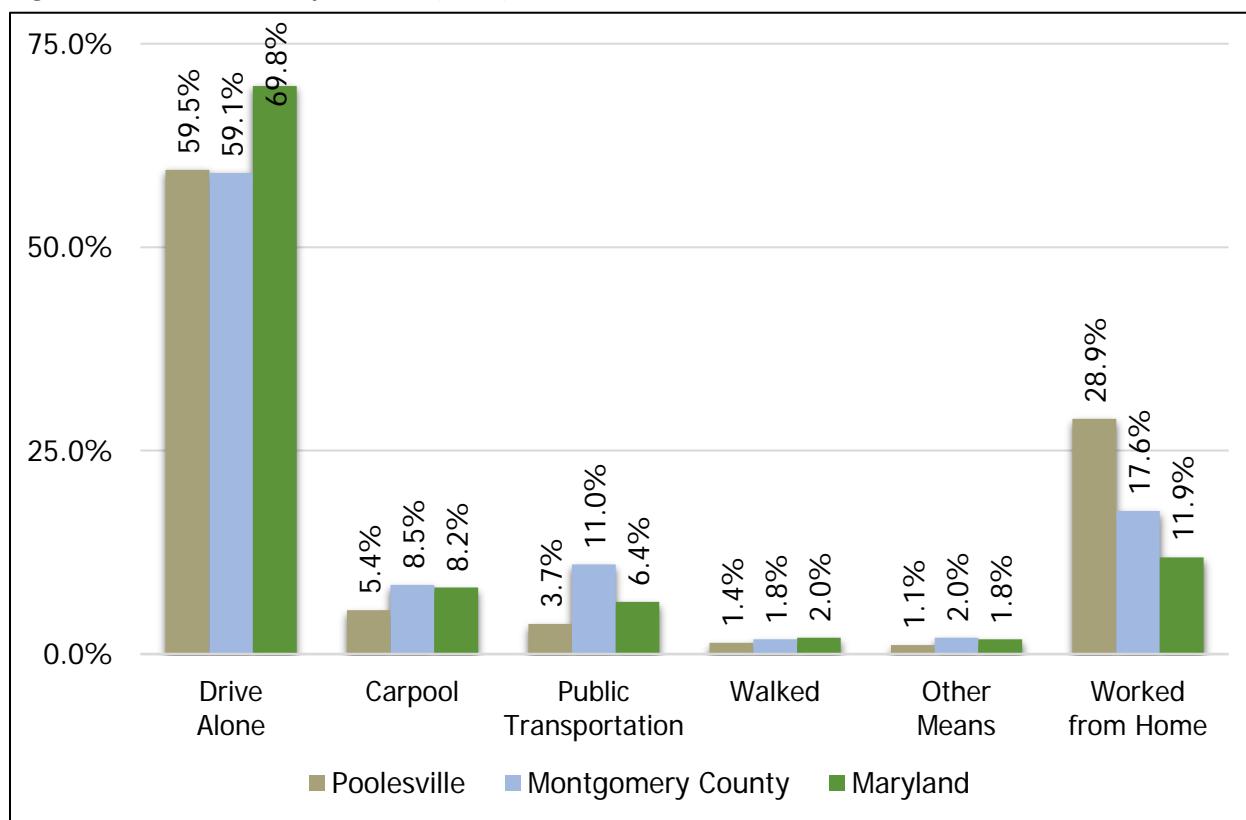
This data demonstrates the potential benefits to Poolesville residents of working from home to mitigate the amount of time commuting.

Table 9-7. Worker Travel Time (2021)

Length of Commute	Poolesville		Montgomery County		Maryland	
	No.	%	No.	%	No.	%
Less than 5 min.	158	7.5%	5,115	1.1%	45,650	1.7%
5 to 9 minutes	20	0.9%	20,205	4.4%	163,290	6.0%
10 to 14 minutes	107	5.1%	35,445	7.8%	256,188	9.4%
15 to 19 minutes	43	2.0%	49,253	10.8%	335,702	12.3%
20 to 24 minutes	112	5.3%	54,258	11.9%	348,297	12.8%
25 to 29 minutes	136	6.4%	31,392	6.9%	176,347	6.5%
30 to 34 minutes	257	12.2%	74,729	16.4%	410,994	15.1%
35 to 39 minutes	225	10.7%	20,129	4.4%	108,996	4.0%
40 to 44 minutes	193	9.1%	31,728	7.0%	148,999	5.5%
45 to 59 minutes	269	12.7%	63,068	13.8%	328,160	12.0%
60 to 89 minutes	460	21.8%	55,781	12.2%	286,588	10.5%
90+ minutes	132	6.3%	15,011	3.3%	115,461	4.2%
Average Length	41.1 minutes		33.8 minutes		32.5 minutes	
Total Workers	2,112		456,114		2,724,672	

Source: 2017-2021 American Community Survey. Note: Total includes all workers aged 16 and over who did not work at home.

The Worker Transportation data from the American Community Survey also shows the option of working from home (**see Figure 9-6**). The proportion of Poolesville workers working from home in 2021 was 28.9 %, significantly higher than Montgomery County and the State of Maryland.

Figure 9-6. Worker Transportation (2021)

Source: 2017-2021 American Community Survey

9.3.5 White's Ferry

White's Ferry, located about six miles due west of the Town along White's Ferry Road, closed in 2020. Originally known as Conrad's Ferry and established in 1786, it was the last cable ferry service providing a crossing for automobiles, bicycles, and pedestrians over the Potomac River and connecting Montgomery County and Loudoun County, Virginia. Before its closure, the ferry transported 600 and 800 customers daily, with estimates that it could serve as many as 1,100 to 1,600 daily passengers at peak.

The Owners of White's Ferry sold the ferry in 2021 to owners who sought to reopen and upgrade the service. Restoring the ferry would also provide a direct route between Poolesville and Leesburg, Virginia, nine miles from point to point and 11 miles by road. However, reopening the Ferry would require the acquisition of a portion of the Rockland Farm on the Virginia side of the Potomac River, and to date, the parties have not been able to reach an agreement.

Since the closure, Montgomery County and Loudoun County, Virginia, have been reviewing potential solutions to restore the service. The Town would benefit economically from this connection due to increased commuter traffic and tourism to the outdoor and recreational sites in and around Poolesville.

9.4 Employment by Industry

Table 9-10, Employment by Industry (2010-2021), shows the distribution of Poolesville workers by industry and the change in these categories over the past decade, according to the American Community Survey.

The largest employment category, Professional Services, grew by more than 11.4 %, while the second largest in 2010, educational services, health care, and social assistance, shrunk by 43.3 % in this period. Employment in manufacturing more than doubled in this period, while the number of people working in wholesale trade was up by almost 800 %, partly because of the low number of workers in this sector in the base year of 2010.

Table 9-10. Employment by Industry (2010-2021)

Industry	2010		2021		Change	
	No.	%*	No.	%*	No.	%
Agriculture, forestry, fishing & hunting, mining	14	0.5%	0	0.0%	-14	-100.0%
Construction	340	11.6%	428	14.5%	88	25.9%
Manufacturing	105	3.6%	272	9.2%	167	159.0%
Wholesale trade	10	0.3%	89	3.0%	79	790.0%
Retail trade	334	11.4%	188	6.4%	-146	-43.7%
Transportation & warehousing, utilities	50	1.7%	17	0.6%	-33	-66.0%
Information	89	3.0%	109	3.7%	20	22.5%
Finance & insurance, real estate, rental & leasing	106	3.6%	150	5.1%	44	41.5%
Prof, scientific & mgmt., admin & waste mgmt. svcs.	563	19.3%	627	21.2%	64	11.4%
Educational svcs, health care & social assistance	556	19.0%	315	10.7%	-241	-43.3%
Arts, entertainment & rec, accom. & food svcs	268	9.2%	200	6.8%	-68	-25.4%
Other services, except public administration	153	5.2%	176	6.0%	23	15.0%
Public administration	331	11.3%	382	12.9%	51	15.4%
Employed population 16+	2,919	+59.7%	2,953	+52.1%	34	1.2%

Source: 2006-2010 & 2017-2021 American Community Survey. Note: *%ages based on civilian employed population aged 16 and over. **Percentages are based on the ratio of the civilian employed population aged 16 and over compared to the total population.

9.5 Place-Based Economic Development Considerations

As a small municipality located within one of the nation's largest metropolitan areas, Poolesville can develop place-based economic development strategies that take advantage of the Town's location within Montgomery County and the Washington D.C. region, its rich history, and strong rural village character.

The 2011 Comprehensive Plan noted that Poolesville's rural village character differentiates it from most other places in the county. The Plan also noted that a key attribute of a small town or village is how the residential, commercial, educational, and governmental components of the Town need to function well together. If any of these elements were to fail, the Town's economic viability could be negatively affected.

The Town recognized the significant role of the local business community in the 2011 Plan and supported the desire of residents to have more shops and restaurants in the commercial district. The plan also supported a Town Center and gateway concept that sought to:

- Blend existing strip malls into a core Town Center area.
- Create a Town Center that serves as a social magnet for residents and visitors to walk, shop, dine, and interact.
- Create gateways at the east and west entrances to the Town Center, with a roundabout on the east and an architectural structure on the west.

- Encourage multi-use in-fill development in the Town Center with on-street or rear parking and
- Incorporate pedestrian and bike-friendly designs into any changes to the Town Center area.

Since the 2011 Comprehensive Plan, local efforts have helped develop underutilized properties on Fisher Avenue. However, further efforts are still needed to ensure that Poolesville has adequate and thriving retail and restaurant facilities catering to residents and visitors. Continuing to implement the Town's Streetscape Plan will bolster these efforts.

9.5.1 Economic Development Opportunities

In 2012, Poolesville commissioned Orion Ventures, LLC, to complete a business development analysis entitled Economic Development Opportunities for the Town of Poolesville. The report was prepared in response to a market study by Thomas Point Associates in 2007.

Although much has changed since then, the recommendations of the 2012 report merit renewed consideration as part of its long-term economic development strategy. The report highlights the Town's unique amenities and nearby resources, such as the John Poole House, White's Ferry, the C&O Canal National Historic Park, the Potomac River, and Sugarloaf Mountain. In addition, it emphasized established advantages such as nationally recognized schools, a high median income, and proximity to many agricultural attractions in the region. The attractiveness of Poolesville as a rural village could be leveraged to develop a Small Business Incubator in conjunction with other initiatives to bring more varied uses to the Commercial District.

Many of Poolesville's local attractions are associated with the cultural economy. Whalen Commons boasts a band shell that provides concerts and outdoor entertainment for the community and visitors. The combination of nature, culture, and local heritage provides a solid foundation for stimulating economic growth and prosperity through tourism, education, and employment. These tangible contributions to the local and cultural economy, such as employment, tourist spending, and supporting local artists, help grow the cultural economy, attract new businesses and entrepreneurs, and increase visitors.

The principal economic development objectives are to attract a broad array of visitors and provide activities/events encouraging them to come and extend their stay. Strategies to encourage overnight accommodation will also be important.

Poolesville's location within Montgomery County also provides proximity to Agriculture and many high-quality outdoor and recreational opportunities. Among these are the Sugarloaf Mountain Recreation Area, near Dickerson, Seneca Creek State Park, east of Poolesville, and Seneca Creek, near Gaithersburg. The C&O Canal National Historic Park is a regional destination supporting various outdoor activities, including hiking, camping, and biking.

In addition to outdoor recreational activities, the Town will continue to explore historical tourism opportunities. To that end, the Heritage Montgomery Management Plan was adopted and made a part of the comprehensive plan of Montgomery County in 2002, and the Town of Poolesville was included within the boundaries. This update of the comprehensive plan, when adopted by the Town of Poolesville, incorporates by reference all portions of the Heritage Montgomery Management Plan, except those portions solely relating to other jurisdictions within the Montgomery County Heritage Area, as part of the comprehensive plan.

The Town should consider leveraging agriculture, outdoor, and recreational activities. For the agricultural sector, these ideas include a Food Hub, agricultural processing services, a Farm/Agricultural Incubator, and a Food Innovation Center.

The 2012 report also noted the high percentage of Poolesville residents working out of their homes.

Environmental Resources and Sensitive Areas

Purpose

The Environmental Resources and Sensitive Areas chapter provides information and guidance on protecting environmental resources and sensitive areas, including streams, wetlands and their buffers, floodplains, habitats of threatened or endangered species, steep slopes, and agricultural or forested lands. These sensitive areas can be vulnerable to adverse impacts from development activities, residential use, and certain types of agricultural practices.

10.1 Overview

The Town of Poolesville recognizes the importance of protecting its natural resources by establishing and strengthening regulations and preparing for the future as climate change becomes an increasing threat. This chapter has been prepared considering the State of Maryland's Twelve Planning Visions, particularly the visions related to environmental protection, resource conservation, quality of life, and sustainability.

10.2 Goals and Objectives

The following have been identified to help advance Environmental policy for the Town:

1. Preserve and enhance The Town's natural environment, open spaces, and sensitive areas.
2. Prepare for and protect the Town residents from the pending impacts of climate change.
3. Continue to achieve adequate, sustainable water resources and water quality.
4. Protect all residents in an equitable manner from environmental impacts.
5. Provide access to environmental resources to all residents in an equitable manner.
6. Reduce pollution, restore ecosystems, and balance the built and natural environment within the Town.

The strategies in this section will be implemented through existing Town Ordinances, reviewing plans to ensure that all County, State, and Federal regulatory program compliances have been obtained, and by proposing new or modified ordinances as needed.

The Town also coordinates with Montgomery County (Stormwater Plan approval authority), the State of Maryland and the U.S. Army Corps of Engineers (for permits within designated wetlands), the Federal Emergency Management Administration (which delineates the 100-year floodplain), and other agencies review when evaluating the submittal of preliminary plans for development.

During the initial preliminary review process, a Natural Resource Inventory is required that includes significant tree groves, scenic or historic areas, streams, drainage areas, outstanding natural topographic features, wells, wetlands, and 100-year flood plains. Development plans must identify each of these resources at a level of detail consistent with applicable Town, County, State, and Federal regulations prior to submittal to the Town for approval.

10.3 Guiding Principles and Legislation

The State's Land Use Article, which incorporates the provisions of the 1992 Economic Growth, Resource Protection, and Planning Act, requires local governments to include a "Sensitive Areas" element in their

Comprehensive Plans. This element must include goals, objectives, principles, policies, and standards designed to protect the following sensitive areas from the adverse impacts of development:

- Streams or wetlands and their buffers
- Floodplains
- Habitats of threatened or endangered species
- Steep Slopes
- Agriculture or forest lands intended for resource protection or conservation
- Other areas in need of special protection

Maryland Land Use Article also requires municipal comprehensive plans to include a Mineral Resources Element. The element must incorporate land use policies and recommendations for regulation necessary:

- To balance mineral resource extraction with other land uses.
- To the extent feasible, prevent the preemption of mineral resource extraction by other uses.

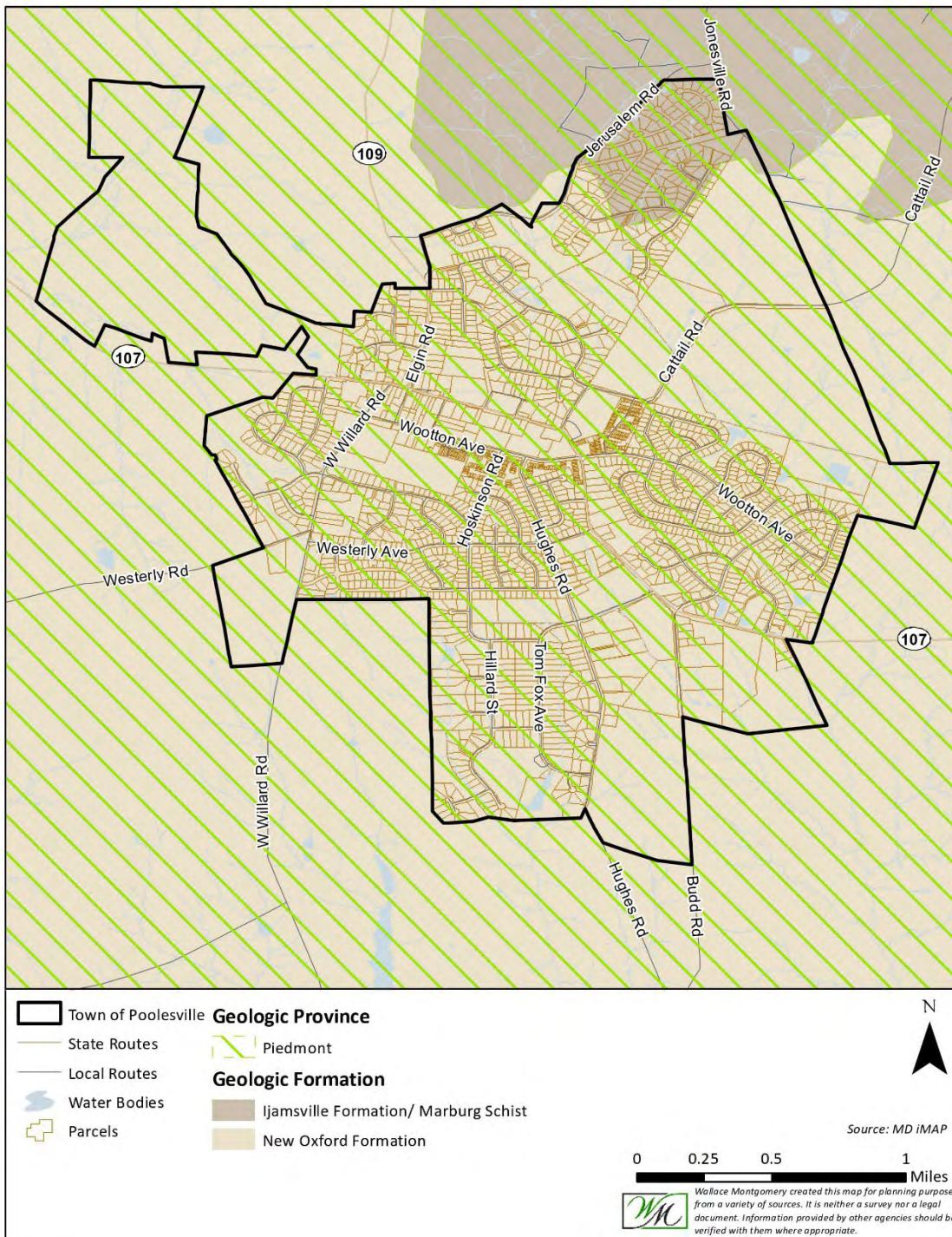
For purposes of this plan, Poolesville extracts only water for local use and no other recorded mineral resources.

In addition to the required sensitive areas, this chapter discusses other environmental resources within the Town. Poolesville has a comprehensive program in place to protect sensitive resources, including adherence to State and Federal regulations and protections within the Town Code, regulations, and ordinances. The Town will continue to monitor state, federal, and county regulation changes with respect to natural resources protection and update ordinances as necessary.

Interpreting the physiography, or the physical geography, of a location is important for understanding the natural physical and climatic characteristics of a specific area and is helpful for determining natural land cover and constraining human land use. The Town is in the Piedmont Plateau geophysical region of the State of Maryland (**See Map 10-1, Geology**). The Piedmont Plateau consists of geologic formations comprising hard, crystalline igneous, and metamorphic rocks. The layers that make up the Piedmont Plateau extend from the inner edge of the Coastal Plain westward to Catoctin Mountain, to the easternmost boundary of the Blue Ridge Province.



Map 10-1
Geology



Poolesville's surface elevation ranges from its lowest point at 300 feet above sea level in the southernmost part of the Town to 494 feet above sea level in the northeastern limits of the Town. The topography is relatively flat with no significant steep slopes and drains toward the Dry Seneca Creek basin, Russell Branch of Dry Seneca Creek, Horsepen Branch, and branches of Broad Run.

The most current soil survey data is a product of the National Cooperative Soil Survey (NCSS), a joint effort of the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), other federal and State agencies, and local partnerships. The soil survey data identifies specific soil types and their limitations. Soil types are important in determining whether they can support development. Examples of constraining factors can include steep slopes, wetness, depth to bedrock, frost action, shrink/swell, erosion factors, and flooding.

Three classes of natural soil drainage are recognized for the Town. General definitions for each represented drainage class and the percent of soils in the Town associated with each drainage class, as defined by the USDA, are below:

Well drained (60 percent of soils in Poolesville): Water is removed from the soil readily but not rapidly. Internal free water occurrence commonly is deep or very deep; annual duration is not specified. Water is available to plants throughout most of the growing season in humid regions.

Moderately well drained (23 percent of soils in Poolesville): Water is removed from the soil somewhat slowly during some periods of the year. Internal free water occurrence commonly is moderately deep and transitory through permanent rock.

Poorly drained (17 percent of soils in Poolesville): Water is removed so slowly that the soil is wet at shallow depths periodically during the growing season or remains wet for long periods. Most terrestrial plants that are not adapted to particularly wet conditions cannot be grown unless the soil is artificially drained. The occurrence of internal free water is shallow or very shallow and common or persistent. The soil, however, is not continuously wet directly below plow-depth.

The remainder of the land (less than 1 percent) is not classified by drainage class, as it is water or developed land.

Table 10-1, Poolesville Soils, groups soil descriptions by their drainage class, which refers to the frequency and duration of wet periods under conditions similar to those that were present when the soil formed (**See Map 10-2, Soils & Steep Slopes**). Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized: excessively drained, somewhat excessively drained, well-drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained.



Map 10-2
Soils & Steep Slopes

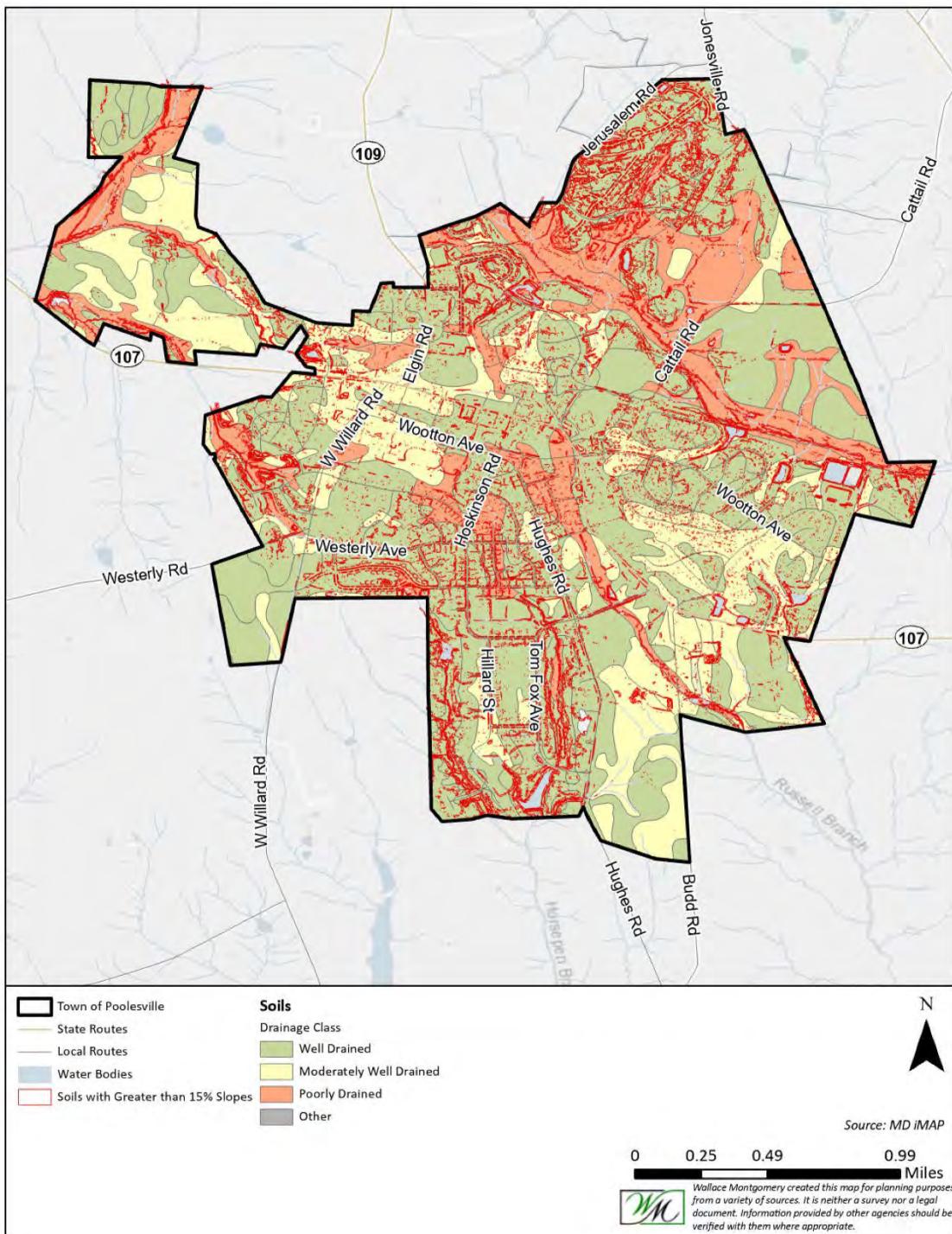


Table 10-1. Poolesville Soils

Hydrologic Soil Group	Drainage Class	Soil Types
B, C, D	Well drained	Penn silt loam, Bucks silt loam, Brinklow-Blocktown channer silt loams, Brentsville sandy loam, Goresville and Bucks soils, Blocktown channery silt
C, C/D, D	Moderately well drained	Readington silt loam, Rowland silt loam, Codorus silt loam, Glenville silt loam, Hibler silt loam
B/D, C/D, D	Poorly drained	Glenville silt loam, Bowmansville-Melvin silt loams, Hatboro silt loam, Croton silt loam

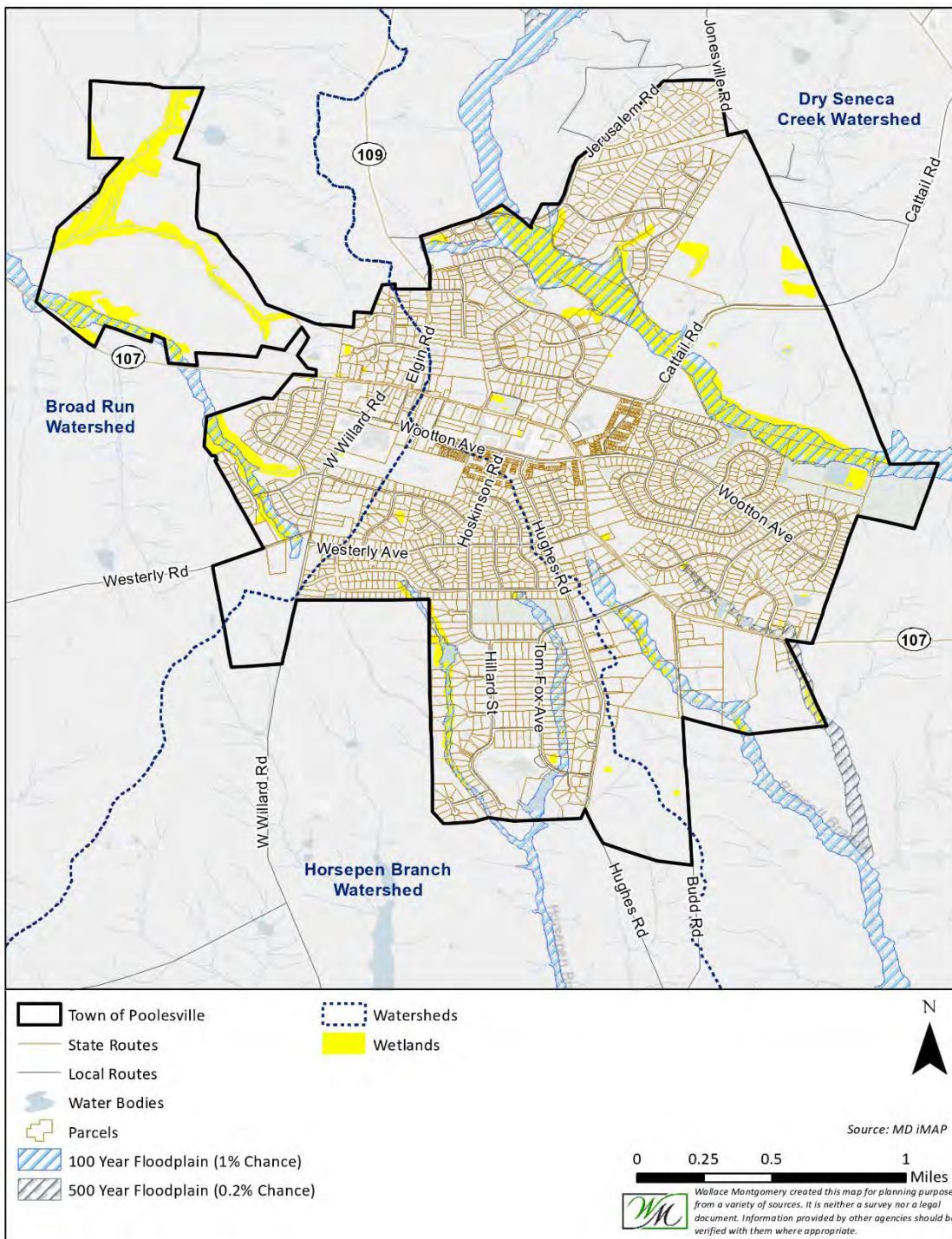
10.4 Streams and Stream Buffers

Streams and their buffers are valuable to people and vital to natural resources. They are used for irrigation, provide important spawning grounds for fish and shellfish, and help support other kinds of wildlife. Streams also support commercial and recreational fishing and attract outdoor enthusiasts such as hunters, boaters, and birdwatchers. Streams are vulnerable to adverse impacts from development activities, residential uses, and certain types of agricultural practices, making their protection and regulation a vital aspect of town planning.

Streams include any natural or engineered watercourse that conveys stormwater runoff and maintains a base flow for at least nine months of the year. The Town of Poolesville contains a network of tributaries, streams, and creeks that eventually feed into the Chesapeake Bay. The streams and creeks located within Poolesville are Dry Seneca Creek, Russell Branch of Dry Seneca Creek, Horsepen Branch, and branches of Broad Run. (**See Map 10-3, Environmental Features**).



Map 10-3
Environmental Features



Streams are categorized by the U.S. Army Corps of Engineers (USACE) based on the balance and timing of stormflow and base flow components. Stormflow refers to streamflow that is influenced by precipitation events, such as rain and snow/snowmelt, while base flow refers to the streamflow that is sustained between those precipitation events. These include:

- **Ephemeral Streams:** These streams flow only during or immediately after periods of precipitation.
- **Intermittent Streams:** These streams flow only during certain times of the year. Seasonal flow in an intermittent stream usually lasts longer than 30 days per year.
- **Perennial Streams:** These streams flow continuously during both wet and dry times. Baseflow is dependably generated from the movement of groundwater into the channel.

Stream buffers are areas along the lengths of stream banks established to protect streams from human disturbances. They are defined by the State as an existing, naturally vegetated area or an area established in vegetation and managed to protect aquatic, wetlands, shoreline, and terrestrial environments from man-made disturbances (COMAR 27.02.05).

Buffers are a best management technique that reduces sediment, nitrogen, phosphorus, and other runoff pollutants by acting as a filter, thus minimizing damage to streams. Buffers also provide and improve habitat for birds and other animals, and they can serve as areas for hiking, hunting, and nature observation. Healthy buffers hold soil in place, can provide a refuge for threatened animals and plants, filter stormwater runoff pollutants, hide predators from their prey, and keep streams shaded and cool. The effectiveness of buffers depends on their width and other factors such as steep slopes, soil erodibility, and wetlands.

Stream buffers ideally include:

- Floodplains, where most streamside wetlands are formed and where energy dissipation, natural filtration, food storage, and water storage occur.
- Stream banks and steep slopes, which should remain intact to prevent erosion from clogging the stream bed and provide habitat for plants and animals.
- Streamside forests and other vegetation provide habitat, stabilize banks, provide shading, reduce pollutants, and produce leaf litter supporting a host of microscopic shredders, filter feeders, and decomposers that form the base of a healthy stream food chain.

The Town recommends that intermittent and perennial streams be surrounded with a 100-foot buffer, measured from the top of each normal bank.

Groundwater is a major source of the Town and the County's existing and future water supply. The land area that overlays the aquifers, which contribute water to the public water supply well, is known as the Town's Wellhead Protection Area. Both the aquifer systems providing the community water supply and the wellhead protection area are integrally connected with many surface waters and streams, making protection of both groundwater and surface waters critical for protecting public health, safety, and welfare. The designation of the Wellhead Protection Area and careful regulation of activities within these districts ensures a future supply of safe and healthy drinking water. For more information on the Wellhead Protection Area, see **Chapter 11—Water Resources**.

10.5 Wetlands, Floodplains & Flood Hazards

Wetlands are defined by wetland hydrology, hydric soils, and hydrophytic vegetation. They are particularly important to reduce or mitigate flooding impacts, maintain and improve water quality, and provide habitat for various plant and animal species. **Map 10-3, Environmental Features**, shows that approximately 300.9 acres (approximately 12.4 percent of the Town) are covered in mapped wetlands. All of the Town's wetlands are classified as palustrine or freshwater wetlands.

While the United States Geological Survey (USGS) and the Maryland Department of Natural Resources (DNR) both provide generalized mapping of wetland areas, the specific location and extent of wetlands require a site-by-site analysis. Final delineation of wetland locations is typically required as part of the development review process. Where detailed wetland delineations have not yet been completed, hydric soil mapping can provide one indicator of possible wetland locations that should be examined further. Hydric soil mapping is available from the U.S. Natural Resource Conservation Service (NRCS). Soil mapping for the Town is shown on **Map 10-2, Soils & Steep Slopes**.

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or filled material into wetlands under the provisions of *Section 404 of the Clean Water Act*. The USACE district office determines whether various activities, such as placement of fill material, levee, and dike construction, mechanized land clearing, land leveling, transportation infrastructure construction, and dam construction, require a permit.

The State (through MDE) regulates nontidal wetlands under the Maryland Nontidal Wetlands Protection Act and ensures there is no overall net loss of non-tidal wetland acreage and reviews the following construction activities: grading or filling, excavating, or dredging, changing the existing drainage pattern, disturbance of water levels or water table, or destroying or removing vegetation. Permits are required for activities that alter a non-tidal wetland or wetland buffer.

If an activity impacts a wetland, a joint permit application to the MDE and the USACE will need to be submitted and, in some cases, mitigation will be required. Activities that require permits include excavating, filling, changing drainage patterns, disturbing the water level or water table, grading, and removal of vegetation in a nontidal wetland or within a 25-foot buffer.

The Town has taken the position that wetlands, the 100-year floodplain, and a 25-foot buffer to the floodplain are to be placed into a conservation easement. This process serves two purposes:

1. To aid the Town in creating ecological niches for diverse species growth and
2. To provide the Town with the ability to enforce no construction or extremely limited construction within conservation easements.

10.5.1 Floodplains and Flood Hazards

In 2018, the MDE prepared the *Maryland Model Floodplain Management Ordinance* (FPMO) in response to the requirement that local jurisdictions adopt regulations that are fully compliant with the requirements of the National Floodplain Insurance Program (NFIP). For most communities, the requirement to update regulations is triggered by revisions to the Flood Insurance Rate Maps (FIRMs) and associated Flood Insurance Study (FIS).

The floodplain or special flood hazard area is a graphic representation of the base flood on FEMA's Flood Insurance Rate Maps (FIRMs). The base flood is the flood expected to have a 1 percent chance of being equaled or exceeded in any given year. In a 30-year period, there is a 26 percent chance that a structure in the floodplain will be flooded by a 100-year flood event.

There are 292 acres of FEMA-mapped 100-year flood zone in the Town, which equates to approximately 12 percent of the Town's total land area. Additionally, there are 25 acres of FEMA-mapped 500-year flood zones, which equates to approximately 1% of the Town's total land area.

The Town reviews floodplains through the required preliminary plan submissions. The Town also coordinates reviews with *Montgomery County's floodplain Regulations* (COMCOR 19.45.01 – Floodplain Regulations), and any proposed construction activities within these defined areas will also have to comply with the County's Floodplain Regulations.

Undisturbed floodplains serve a variety of functions, having important public purposes and benefits. They moderate storm floodwaters, absorb wave energies, and reduce erosion and sedimentation. Wetlands found within floodplains help maintain water quality, recharge groundwater, protect fisheries, and provide habitat and natural corridors for wildlife. Stream buffers found within floodplains also help to maintain water quality. Safeguarding the many natural functions performed by the floodplain benefits adjoining and downstream communities by minimizing the risks (and costs) associated with the loss of life and property, contributing to the maintenance of water quality and quantity that may directly affect drinking water supplies and recreation opportunities, and in many cases helping to restore the health of the Chesapeake Bay.

It is important to note that FIRMs provide an analysis of flood scenarios based on past events and data. They indicate areas of high, moderate, and low risk. Future conditions are not considered. FEMA FIRMs do not account for:

- Shoreline erosion, wetland loss, subsidence, or relative sea rise
- Upland development or topographic changes
- Degradation or settlement of levees and floodwalls
- Changes in storm frequency and severity
- Effects of multiple storm events

While some of these factors do not impact the Town directly, or have as great an impact as others, it is important to be aware that approximately 25 percent of flood damages nationally occur to structures that are outside of FEMA mapped flood hazard areas and that few, if any, standards exist nationwide for development in the areas immediately adjacent to the floodplain or outside of mapped floodplain areas.

To help the Town review proposed developments, developers are required to provide detailed base flood elevation information to the Town. The Town provides this information to FEMA and request revisions to floodplain maps with more accurate data as needed.

In 2000, the *Stafford Act* enacted the *Disaster Mitigation Act* and, by FEMA's Interim Final Rule published in 2002, established in the Maryland Code that each Maryland jurisdiction adopt and maintain a Hazard Mitigation Plan (HMP). The HMP ensures eligibility for funding and technical assistance from State and federal hazard mitigation programs. It addresses natural hazards determined to be of high and

moderate risk as defined by the updated results of the local hazard, risk, and vulnerability summary. Natural hazards continue to be evaluated during five-year update cycles and include sea level rise and coastal resiliency planning priorities.

FEMA most recently issued updates to Poolesville's FIRMs on 9/29/2006.¹ Floodplains are shown on **Map 10-3, Environmental Features**; however, copies of the official FIRMs may be viewed at Town Hall.

10.6 Habitats of Rare, Threatened & Endangered Species

The Federal Endangered Species Act of 1973 requires a list of endangered and threatened species and the protection of those species and their ecosystems. The primary State law that allows and governs the listing of endangered species is the Nongame and Endangered Species Conservation Act (Md. Natural Resources Code Ann. §10-2A). This Act is supported by regulations that contain the official State Rare, Threatened, and Endangered Species list.

The Wildlife and Heritage Service Natural Heritage Program tracks the status of more than 1,100 native plants and animals that are among the rarest in Maryland and most in need of conservation efforts. The current Rare, Threatened, and Endangered Species List for Montgomery County (2021) includes a total of 39 animals and 119 plants.

Protecting animal and plant species and their habitats is important for many reasons. These animal and plant species contribute to the Town's environmental quality, making it an attractive place to live. Additionally, the abundance of animal and plant species supports outdoor recreational activities such as hunting, boating, wildlife viewing, and hiking.

Habitats of these rare, threatened, and endangered species are defined as areas that, due to physical or biological features, provide important elements for the maintenance, expansion, and long-term survival of threatened and endangered species. This area may include breeding, feeding, resting, migratory, or overwintering areas. Physical or biological features include (but are not limited to) the structure and composition of the vegetation, faunal community, soils, water chemistry, and quality; and geologic, hydrologic, and microclimatic factors.

Map 10-4, Ecological Areas includes significant wildlife assessment areas in the Town including Targeted Ecological Areas and FIDS habitats. These areas may need special management or protection because of their importance to conservation of threatened or endangered species. The Town should continue to pursue all efforts to protect habitats of threatened and endangered species by adopting regulations protecting these species from habitat loss.

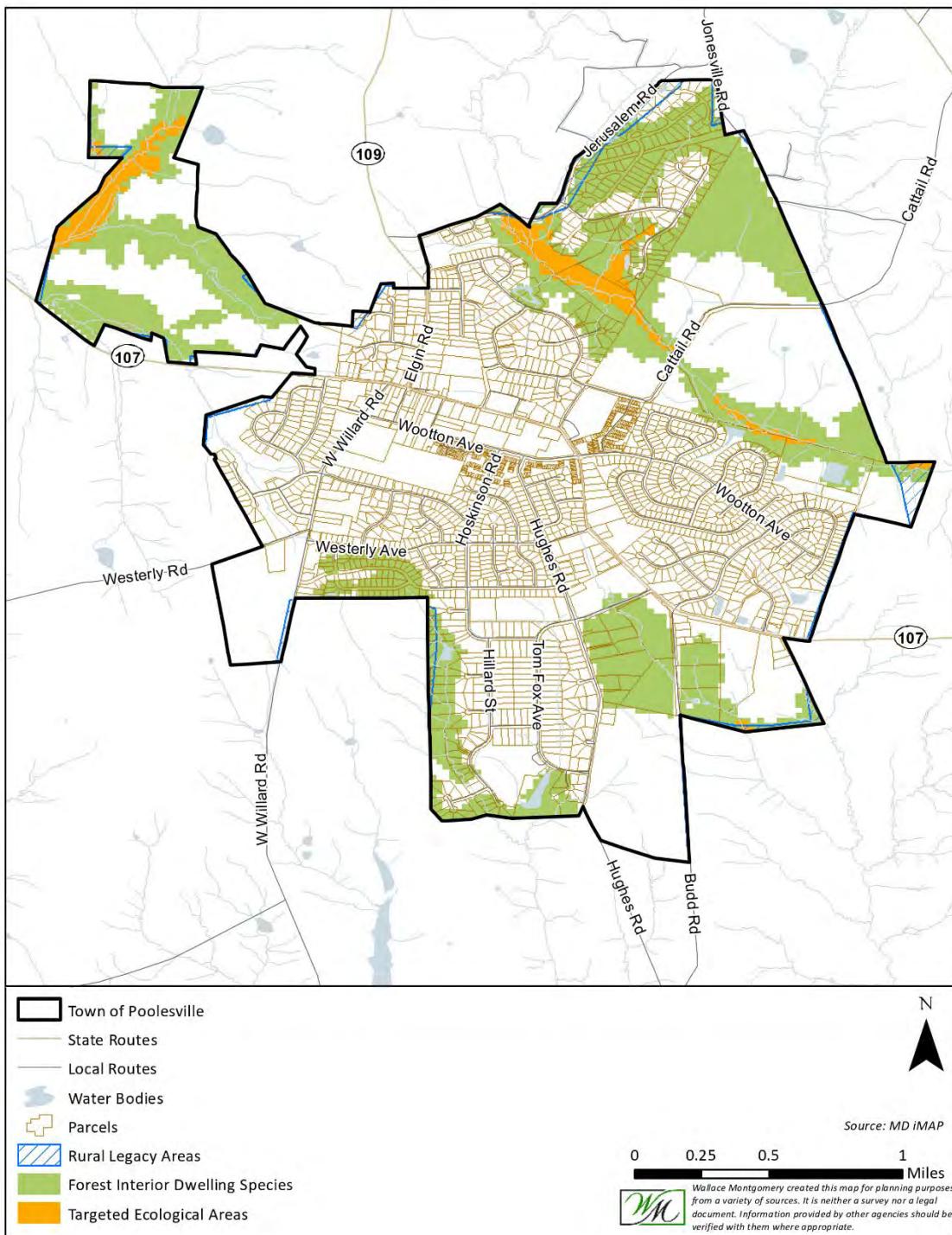
Further protection of woodlands or forested lands will have a positive impact on targeted ecological areas and wildlife habitats, contribute to ecological balance, and offer sustained recreational opportunities for residents. Development in these areas should be discouraged, and if development does occur, techniques to reduce impacts on targeted ecological areas and wildlife habitats should be utilized. Control of non-native invasive species within ecological areas will further protect wildlife and habitats from degradation.

¹ The map panels for Poolesville are 24031C0141D, 24031C0142D, 24031C0143D, 24031C0144D, 24031C0281D, and 24031C0144D.



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**Map 10-4
Ecological Areas**



10.7 Conservation Lands

Agriculture is defined as all methods of production and management of livestock, crops, vegetation, and soil. It also includes the activities of feeding, housing, and maintaining animals such as cattle, dairy cows, sheep, goats, hogs, horses, and poultry. Within the Town of Poolesville, 403 acres of farmland are currently held in conservation easements under the Maryland Agricultural Land Preservation Foundation (MALPF). This statewide program was established in 1977 with the primary goal of preserving enough agricultural land to maintain a viable local base of food and fiber by limiting the development of such land.

The Town continues implementation of its Forest Conservation Ordinance (*Chapter 7-1 – 7-30, Poolesville Code*), which is in full compliance with the *Maryland Forest Conservation Act* (Natural Resources Article, Sections 5-1601 – 5-1612, Annotated Code of Maryland). The main purpose of this Act is to minimize the loss of Maryland's forest resources during land development by making the identification and protection of forests and other sensitive areas an integral part of the site planning process. Depending on the type or size of the proposed development, Forest Stand Delineations and Forest Conservation Plans may be required, consistent with the Town Code.

In 2016, the Town amended the Town's Forest Conservation Ordinance, which also includes a Chapter titled "Community Tree Ordinance," which regulates trees on public and private Forest conservation easements while balancing the need for the reasonable use and enjoyment of real property by its citizens. This section serves to provide parameters for the planting, maintenance, and removal of trees; to encourage and require the protection of existing trees on the streets, on public spaces, and on private grounds; and to establish a standard for sound arboricultural practices within the Town.

A forest is defined as a biological community dominated by trees and other woody plants covering a land area of 10,000 square feet or greater. A forest includes areas that have at least 100 live trees per acre, with at least 50% of those trees having a two-inch or greater diameter at 4.5 feet above the ground. A forest also includes areas that have been cut but not cleared. A forest does not include orchards. Currently, 114 acres of land are in forest conservation easements within the Town of Poolesville under the Forest Conservation Ordinance and Forest Conservation Act.

The Town's Parks and Streets Department is primarily responsible for the maintenance, management, and planting of trees in public parks and on streets.

Water Resources

Purpose

The Water Resource Element (WRE) chapter promotes smart growth policies and principles to protect natural resources while providing connections to Chapter 5, Land Use, and Chapter 6, **Municipal Growth**.

11.1 Overview

The WRE chapter describes how Poolesville will manage its water resources and infrastructure to support its growth and development goals while protecting the environment and public health.

This chapter covers water supply, wastewater treatment, stormwater management, water quality, and climate change impact and reflects the Town's vision statement to preserve the small-town charm, natural resources, and history while continuing to build a sustainable community with opportunities for all ages and abilities to live active lifestyles.

The WRE chapter is based on the State's WRE Guidance Update, which provides best practices and recommendations for local governments to address water-related limitations and opportunities in their planning process.

This chapter addresses the existing water resources, including impacts on growth encompassing a 20-year planning period. Areas of consideration are identified to provide water and sewer capacity for current needs and future growth.

11.2 Goals and Objectives

1. Protect and conserve the existing drinking water supply and distribution system.
 - Protect the groundwater wells through increased infiltration, enhanced forest regeneration, open space, and smart growth to allow recharge of the aquifer.
 - Complete the water main replacement program in the two oldest subdivisions, Westerly and Wesmond.
2. Provide safe drinking water to serve existing customers and future demands.
 - Periodically review the Wellhead Protection Plan and the abandonment of septic systems to protect the Town's source water.
 - Continue coordinating with MDE and EPA on water quality monitoring and strategies to test and remove per- and polyfluoroalkyl substances (PFAS) from drinking water.
 - Develop strategic planning to assess the feasibility of centralized treatment facilities for water sources to test, monitor, and treat more efficiently.
3. Provide adequate wastewater treatment and conveyance capacity to serve existing and future demands.
 - Continue to perform routine assessments of the current wastewater conveyance system and implement proven cost-effective repairs, replacements, and upgrades to reduce inflow and infiltration into the system.

- Develop a creative communications program to inform the public about disconnecting rain gutters and sump pumps from the sewerage collection system to reduce inflow and infiltration.
- Communicate to the public the importance of reducing FROG (fats, rags, oils, and grease) that causes decreased pipe capacity, blockages, and increased maintenance costs.

4. Reduce the overall stormwater runoff discharge.

- Maintain coordination and compliance with Montgomery County with Municipal Separate Storm Sewer Systems (MS4) permit requirements and the Chesapeake Bay's total maximum daily load (TMDL) goals.
- Continue to support the use of bioswales, pervious pavements, and other methods to allow for increased stormwater percolation.

5. Plan for resiliency for potential floods and/or droughts caused by climate change.

- Use plan reviews to ensure that natural and native vegetation is preserved and/or planted along waterways, wetlands, and riparian buffers.
- Educate property owners on options to better withstand climate change threats offered by the Maryland Department of the Environment (MDE).
- Examine and document threats to streams and their buffers due to climate change impacts (e.g., nuisance flooding, intense storms).

11.3 Water System

11.3.1 System Overview

Poolesville owns and operates an independent groundwater supply system that currently serves approximately 2,000 billable customers (or 6,000 residents). The system is comprised of 12 wells that operate based upon the levels of the two storage tanks (a 500,000-gallon elevated and a 1,000,000-gallon standpipe) and 26 miles of ductile iron water pipe. When the water levels reach a predesignated level, the wells are activated and fill the tanks. This process maintains pressure in the system, and the wells operate approximately 12-15 hours per day.

The wells are strategically located throughout the Town. As each major subdivision was approved, the developers were required to add a water supply source to support the growth. While each well is activated by the tank levels, they provide treatment prior to a point of entry into the distribution system independently. Depending on the water quality characteristics, treatment varies from chlorine and radon removal to filtration.

11.3.2 Water Source

Poolesville relies entirely upon groundwater wells withdrawing from the New Oxford Formation to supply the needs of its residents and businesses. Poolesville's groundwater supply has been studied and reviewed at frequent intervals. Currently, there are nine wells in production: one temporarily offline, two under construction, and one planned for future construction. The wells are in the headwaters of four watersheds – Horsepen Branch, Russell Branch, Dry Seneca Creek, and Broad Run. These watershed areas are defined based on the land surface topography and delineate the catchment areas of the creeks and streams. The Town wells are assigned to a watershed-based on well location.

All the wells are constructed as open bedrock wells in fractured sandstone/siltstone bedrock. Groundwater in the aquifer flows through an interconnected network of fractures and/or bedding planes in the bedrock (collectively referred to as ‘fractures’). The wells are operated so that the water level in the well remains above the depth of the uppermost water-yielding fracture to prevent dewatering of the fracture, and well pumping is stopped if water levels in the well approach the uppermost water-yielding fracture. Most of the recharge of the aquifer beneath Poolesville comes from precipitation that falls directly within the boundaries of the Town or immediately to the northwest.

Table 11-1 provides information on the groundwater wells.

Table 11-1. Well Information

Well Number	Aquifer	Permit Number	Depth (Feet)	Diameter (Inches)	Sustainable Yield (GPM)	Status
2	New Oxford Formation	MO-70-0046	453	6	80	Offline for PFAS remediation
3		MO-70-0075	285	6	40	Online for existing residences
4		MO-73-1584	600	6.5	35	Under Construction
5		MO-73-2905	500	6	90	Online for existing residences
6		MO-81-0765	500	8	100	Online for existing residences
7		MO-88-2384	700	8	30	Online for existing residences
8		MO-93-0007	500	8	50	Online for existing residences
9		MO-04-4194	800	8	47	Online for existing residences
10		MO-03-5831	762	8	offline	Offline Indefinitely
11		MW-94-1933	1,200	8	50	Online for existing residences
12		MO-94-3610	500	8	45	Online for existing residences
13		MO-94-1215	500	8	50	Online for existing residences
14		MO-94-1859	700	8	30	Under Construction
15			500	8	48	Planned Well

Source: Town of Poolesville

11.3.3 Current and Future Water Demand

This Comprehensive Plan maintains the population cap of 6,500 persons to limit the demands on the municipal water supply and the Town’s wastewater treatment system. Five water allocation permits are issued to the Town by the Maryland Department of Environment (MDE) and collectively allow for a daily average withdrawal of 650,000 gallons per day (GPD) on a yearly basis and a daily average of 910,000 GPD in the month of maximum use. The withdrawal permit amounts are based on the watershed area within the Town boundary, recharge rate, and 100 GPD per person for the planned population.

The available volume of groundwater is approximately equivalent to 1.5 million gallons per day (GPD) or 1,000 gallons per minute (GPM). Using a 3-year average from 2019 to 2022, Poolesville used an average of 525,000 gallons of drinking water per day. **Table 11-2** shows the MDE Water Appropriation Permits.

Table 11-2. Poolesville MDE Water Appropriation Permits

MDE Permit ID	Wells	Watershed	Permitted Daily Average (GPD)	Permitted Daily Month Maximum Use (GPD)
MO1970G007(13)	2, 4, 6, 8, 11, 14	Horsepen Branch	293,000	388,000
MO1970G107(02)	3, 5	Dry Seneca Creek	142,000	200,000
MO2004G003(03)	13	Dry Seneca Creek	52,500	73,400
MO1970G207(15)	7, 9, 10	Russell Branch Watershed	115,000	182,000
MO2044G006(04)	12, 15	Broad Run	47,500	66,600
Total			650,000	910,000

Source: Town of Poolesville

Historically, Poolesville has utilized an annual daily average of 524,000 GPD with a peak average of approximately 638,000 GPD based upon the previous five years. **Table 11-3** is a historical summary of the Town's water demands.

Table 11-3. Historic Water Demands

Year	Annual Daily Average (GPD)	Month-of-Maximum Use Demand (GPD)	Calculated Peak Factor
2013	468,406	572,740	1.22
2014	438,319	583,691	1.33
2015	500,928	612,278	1.22
2016	461,659	571,854	1.24
2017	469,502	527,156	1.12
2018	510,432	598,165	1.17
2019	505,039	571,149	1.13
2020	548,034	696,617	1.27
2021	516,083	663,883	1.29
2022	539,917	662,167	1.23
3-year average	534,678	674,222	1.26
5-year average	523,901	638,396	1.22
10-year average	495,832	605,970	1.22

1. Historic peak factor is calculated to confirm it is less than the MDE 910,000 GPD peak factor of 1.4 (or 140 GPD/person)

Poolesville's water supply allocation policy applies 325 GPD per household for single-family dwellings and 275 GPD for townhomes for average daily demand. With the current housing projects approved or under review, future growth and water/sewer allocations will be reserved for infill, redevelopment, or special projects. (See the anticipated municipal growth in **Chapter 5 – Land Use**.) **Table 11-4** details the current housing projects and water demand.

Table 11-4. Future Water Demands (Large Developments Only)

Project Name	Units	GPD
Fishpool	61	19,825
Hartz	8	2,600
Donegan	39	10,725
Bricken	65	21,125
Total	173	54,275

Source: Town of Poolesville

11.3.4 Water Resource Protection

Poolesville's groundwater is generally of high quality and routinely monitored for contaminants. All water is treated with chlorine to protect against bacteriological contamination. It is, however, particularly susceptible to contamination because of the thin soil cover and extensive fracturing of the underlying shale and sandstone. In 2006, the Town adopted a Wellhead Protection Ordinance and completed a source water assessment to identify and reduce the threat of groundwater contamination.

In 2021, the Town commissioned S.S. Papadopoulos to develop a water supply evaluation (**Appendix G-Water Supply Evaluation**). The report focused on quantity, quality, and vulnerabilities, including climate change. The report noted that most aquifers in the Piedmont are unconfined aquifers (also called water-table aquifers), meaning that there is no overlying impermeable layer to protect groundwater from surface-based sources of contamination. The water table represents the top of the unconfined aquifer. Because they do not have a protective layer above them, unconfined aquifers are susceptible to contamination from substances released on or near the surface, including fertilizers, pesticides, road salt, leaking underground storage tanks, and runoff from impermeable surfaces.

During this same period, the MDE and Montgomery County considered the potential adverse impacts to groundwater due to climate change. The County, in the Hazard Mitigation Plan, recommended a study to determine the feasibility of connecting a supplemental water line from WSSC (approximately 12 miles away). The MDE supported the supplemental water supply concept and suggested that additional sources could include redundant wells.

The Town should investigate potential additional wells for redundancy. Based upon the theoretical recharge of the aquifer within the Town boundaries, supplemental wells may require annexing additional land.

In 2023, monitoring for per- and polyfluoroalkyl substances, also known as PFAS, has been mandated by MDE. These substances are a group of over 5,000 human-made compounds that have been used since the 1940s and can be found in a wide range of consumer and industrial products and processes. PFAS released to the air, soil, ground- or surface water can enter nearby drinking water sources. To assess the presence of PFAS in drinking water sources, the MDE and EPA have initiated assessments from Community Water Systems.

Sample analysis taken on August 23, 2022, by the Maryland Department of the Environment detected elevated levels of PFOA or PFOS in the water samples collected from Well 2 and Well 3. While there are no national or state Maximum Contaminant Levels (MCLs) for PFAS in drinking water, the EPA released interim health advisories for PFOA and PFOS. A Tier 2 Public Health Advisory Notice was mailed to every resident, and Wells 2 and 3 were taken offline. Since the Health Advisory was issued, Poolesville officials

have been working with MDE and has developed a pilot program for removing these contaminants from the drinking water. Carbon-activated charcoal filtration units were installed at Well 3, and smaller bench-top corn-based filtration units are being tested on both Wells 2 and 3. Once sufficient analysis is gathered, the MDE allowed Well 3 to be brought back online with filtration. A determination of the two types of media will be made to compare removal rates, cost, and ongoing maintenance. Once this step is complete, Poolesville will look to broaden the treatment of other wells as needed.

In May 2023, Poolesville received EPA results from PFAS sampling that occurred on February 7, 2023. One or more PFAS from sampling at several Poolesville wells were reported above the U.S. EPA lifetime health advisory (HA) level in preliminary results (i.e., laboratory-approved but not yet reviewed by EPA). With increased monitoring and treatments being implemented, Poolesville is considering centralized treatment facilities to test, monitor, and remove contamination more efficiently.

11.4 Wastewater System

11.4.1 System Overview

The wastewater system consists of 26 miles of various sized sanitary sewer lines and 6 pumping stations which collects and treats wastewater at the Town of Poolesville Wastewater Treatment Plant (WWTP) located at 18901 Fisher Avenue, which is owned and operated by the Town.

In 2023 the Town's Wastewater Treatment Plant began a construction upgrade to enhanced nutrient removal (ENR) treatment. The upgrade will include denitrification filters, which is a process by which nitrates are reduced to gaseous nitrogen through anaerobes (low oxygen). A readily biodegradable carbon source, methanol will be used to facilitate this process.

The project that is anticipated to be completed by the summer of 2024 was made possible through an \$8.5M Maryland Department of the Environment Grant. These funds are collected from Maryland's resident's water bills through the Bay Restoration Fund.

Chesapeake Bay Restoration Act: This Act and subsequent policies, programs, and regulations address Bay restoration. This Act established the Chesapeake Bay Restoration Fund administered by MDE for upgrading the 66 largest wastewater treatment plants to Enhanced Nutrient Reduction (ENR) standards. This Act established the Septic Upgrade Program to remove nitrogen and the fee paid by onsite sewage disposal system (OSDS) or septic users to fund the upgrade of septic systems through the Septic Upgrade Program.

The WWTP has a 750,000 GPD permitted capacity. The plant currently experiences average sewage outflows of 554,000 GPD (3-year average) with daily peak flows as high as 2,141,000 GPD during storm events and monthly peak flows as high as 1,113,000 GPD (occurred in 2018). Treated effluent is released into Dry Seneca Creek which flows into the Seneca Creek. **Figure 11.1, Point of Discharge Location** shows the location of the Poolesville WWTP and outfall location.

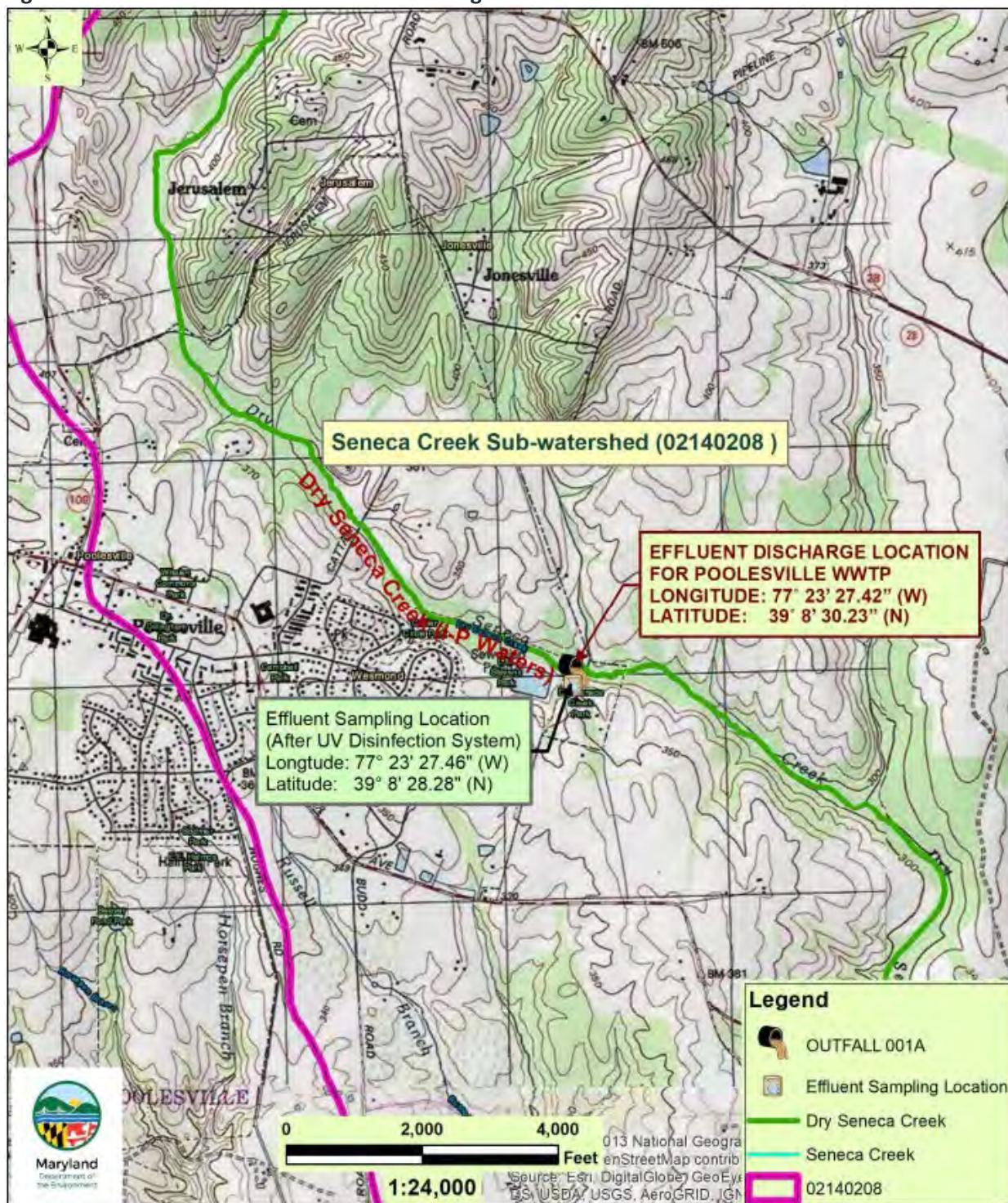
The Town is required to treat and monitor for several contaminants that could be harmful to the environment. Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Kjeldahl Nitrogen (TKN), Ammonia, Phosphorous, and Nitrogen limits are set by the MDE and sampled weekly. **Table 11-5** details the permit limitations.

Table 11-5. WWTP Permitted Discharge Limits

Effluent Characteristics	Loading Rate (lbs/day)			Concentration (mg/l)		
	Monthly Average	Weekly Average	Daily Average	Monthly Average	Weekly Average	Daily Average
BOD ₅	63	94	N/A	10	15	N/A
TSS	63	94	N/A	10	15	N/A
TKN (5/1 to 10/31)	20.6	31	N/A	3.3	5.0	N/A
TKN (11/1 to 4/30)	Report	Report	N/A	Report	Report	N/A
Total Ammonia as N (5/1 to 10/31)	4.4	N/A	22.2	0.7	N/A	3.6
Total Ammonia as N (11/1 to 4/30)	10.6	N/A	28.2	1.7	N/A	4.5
	Total Monthly Loading Rate (lbs/month)		Annual Maximum Loading Rate (lbs/year)		Monthly Average Concentration (mg/l)	
TSS	Report		68,525		10	
Total Phosphorus-P	Report		685		Report	
Total Nitrogen-N	Report		9,137		Report	

Source: Town of Poolesville

Figure 11-1. Poolesville WWTP Point of Discharge Location



11.4.2 Current and Future Wastewater Demand

The Town is required by MDE to track the annual wastewater discharge averages. This data is used to calculate pounds of contaminants discharged as well as ensuring capacity allocations are not exceeded.

Table 11-6 details this data.

Table 11-6. Historic WWTP Averages and Peak Factor

Year	WWTP Operations (outflow)			Calculated Monthly Peak Factor
	Daily Average (GPD)	Peak Daily Flow (GPD)	Peak Monthly Flow (GPD)	
2013	671,000	1,997,000	998,000	1.49
2014	630,000	2,022,000	1,045,000	1.66
2015	534,000	1,769,000	946,000	1.77
2016	492,000	1,936,000	1,125,000	2.29
2017	482,000	1,471,000	664,000	1.38
2018	765,000	2,141,000	1,113,000	1.45
2019	609,000	1,863,000	927,000	1.52
2020	603,000	1,832,000	957,000	1.59
2021	517,000	1,628,000	825,000	1.60
2022	541,000	1,546,000	673,000	1.24
3-year average	554,000	1,669,000	818,000	1.48
5-year average	607,000	1,802,000	899,000	1.48

1. The calculated monthly peak factor is to confirm it is less than the monthly design flow peak factor of 1.68.

Table 11-7 details the current housing projects and wastewater demand. Poolesville's wastewater allocation policy applies 325 GPD per household for single-family dwellings and 275 GPD for townhomes for average daily demand.

With the current housing projects approved or under review, future growth and water/sewer allocations will be reserved for infill, redevelopment, or special projects. (See the anticipated municipal growth in **Chapter 5 – Land Use**.) The Town develops and submits annual wastewater management plans and capacity reports to MDE to ensure over-allocation does not occur.

Table 11-7. Future Wastewater Demand for Poolesville

	Units	GPD
Fishpool	61	19,825
Hartz	8	2,600
Donegan	39	10,725
Bricken	65	21,125
Total	173	54,275

Source: Town of Poolesville

11.5 Stormwater Management

11.5.1 Overview

Montgomery County is the regulatory authority for stormwater management within the Town of Poolesville under the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System Discharge Permit (MS4) Number 20-DP-3320 MD00068349 (effective November 5, 2021, through November 4, 2026).

During this five-year permit cycle, the County is required to:

- Add and maintain stormwater management facilities.
- Restore degraded streams.
- Reduce stormwater pollution to meet water quality goals established through Total Maximum Daily Loads (TMDLs).
- Develop and implement a public outreach and education program.
- Conduct preventative maintenance inspections of all stormwater management facilities.
- Implement laws and programs to reduce stormwater pollution.

Poolesville provides input on stormwater practices to Montgomery County and supports the County's stormwater management efforts. The Town provides the maintenance of the facilities including mowing, trash removal and aeration, and recognizes that proper stormwater management practices promote infiltration recharge to the groundwater aquifer.

As of 2023, Poolesville has a population of approximately 6,000 residents, and the corporate limits encompass 2,435 acres based on GIS data. There are no plans nor desire to annex additional property into the Town limits at this time. It is anticipated that the population may increase by 500 residents over the next 20 years. The anticipated growth is planned within the downtown commercial and residential zones and will be a mix of single-family and townhomes. To prevent this growth from having a negative impact on stormwater management, land development should protect natural resources, including environmentally sensitive areas and forests, through concentrated development and preservation of open space.

As of 2023, a total of six septic systems remain in operation. The age and condition of these systems are monitored by the Montgomery County Health Department. Poolesville code prohibits new septic systems and requires all new housing units to connect to the wastewater treatment system. The Town's Wastewater Treatment Discharge Permit, effective December 1, 2022, sets Total Nitrogen limits at 9,137 lbs and Total Phosphorous at 685 lbs. **Table 11-8** indicates the permitted loads.

Table 11-8. Nutrient Loadings

	Nitrogen Loading (lbs/yr)		Phosphorous Loading (lbs/yr)	
	Current	Proposed	Current	Proposed
Sewer	7,008	9,137	221	685
Septic	228	228	0	0
Stormwater	0	0	0	0
Total	7236	9137	221	685

1. *Current Nitrogen and Phosphorous Loadings are from the Final Fact Sheet for Permit 20-DP-0781 Summary of Effluent Quality and Compliance History during Previous Discharge Permit (12-DP-0781) Cycle January 2017 to February 2022.*
2. *Nitrogen Loading = number of septic systems x number persons/household x 9.5 lbs/person/year x 0.4 transport loss factor used by the Chesapeake Bay Program. Assumed 3.25 persons per household.*
3. *Nutrient Loadings not monitored for Stormwater*

* Non-point source nutrient loading calculations are ongoing.

11.6 Flood Resiliency and Climate Action Adaptation

Urban and riverine flooding is a growing issue in Maryland. Accordingly, Maryland updated its *Stormwater Management Law, Environment Article 4-201.1*, effective June 1, 2021. The statute now requires local governments to plan for more frequent floods caused by climate change and to reduce flood-induced pollutants to local waters and the Chesapeake Bay.

Climate change is also expected to increase the risk of drought, which could affect water supply, and hotter weather caused by climate change will lead to increased evapotranspiration and water demand. Prolonged and more frequent droughts are of particular concern to Poolesville, given the water supply depends on an underground aquifer that relies on precipitation for recharge. The strategy to address this concern is to continuously monitor groundwater levels, detect water supply leaks, and implement capital projects aimed at replacing water mains.

Appropriating resources to planning for climate change can be a cost-effective use of staff time and opportunities to dedicate resources to prevent flooding or water shortages will be continuously evaluated. Additional water storage capacity and redundant wells should be considered for planned new growth.

Sustainability

Purpose

The Sustainability Chapter ensures that the community is informed, well-prepared, and adaptable to be successful for generations to come. It addresses what has been accomplished and how communities can reduce the vulnerability of individuals and local systems to the impacts of changing weather, climate, environmental, societal, and economic challenges.

12.1 Overview

Planning for sustainability and overcoming patterns that result in resource depletion, climate instability, and economic and social stresses requires holistic problem-solving. Throughout this Plan, sustainable attributes are integrated to address housing, land use, and economic development. This section focuses on protecting and enhancing our environment, using natural resources prudently, minimizing waste and pollution, and moving to a low-carbon economy. Sustainable planning can provide the necessary analysis, communitywide involvement, and education to create the momentum required to respond to these challenges.

The Town of Poolesville, surrounded by Montgomery County's Agricultural Reserve, recognizes its responsibility to minimize negative impacts on human health and the environment while supporting a diverse, equitable, and vibrant community and economy.

12.2 Goals and Objectives

1. Become a Maryland Smart Energy Community.
2. Support a zero-waste policy, promoting waste prevention, reduction, dual-stream recycling, and composting.
3. Continually improve our environmental performance by setting annual goals to reduce our energy consumption and measuring our results.
 - Implement the adopted Renewable Energy Policy to develop and initiate a Renewable Energy Action Plan to map out how the community will sustain its 80 percent Renewable Energy Goal.
 - Implement the adopted Energy Efficiency Policy to reduce per-square-foot electricity consumption in municipal facilities by 15 percent.
 - Track electricity consumption of Town facilities to identify opportunities for energy savings.
4. Address energy consumption and investment in sustainable energy to set its course to achieve overall carbon neutrality as soon as possible, in line with county and state targets.
 - Implement portions of the Montgomery County Climate Action Plan that will positively impact Poolesville residents and businesses.
5. Look for opportunities to reduce our environmental impact.
 - Add zero-emission vehicles to the Town's fleet.
 - Expand the use of pervious pavement in public, town-owned areas as a stormwater management tool and encourage builders and developers to consider pervious pavement for new streets and driveways.
 - Encourage builders and developers to use energy-efficient products.

- Encourage the protection of pollinators by restoring and enhancing green space and by planting local, native wildflowers, shrubs, and trees.

12.3 Sustainable Maryland

Sustainable Maryland is a certification program for municipalities in Maryland that want to support green initiatives, save money, and take steps to sustain their quality of life over the long term.

Sustainable Maryland Certified is a collaborative effort between the Environmental Finance Center (EFC) at the University of Maryland and the Maryland Municipal League.

The Sustainable Maryland Certified designation recognizes the Town's commitment to an array of sustainability initiatives led by local leaders, residents, businesses, and non-profit organizations. Poolesville was initially awarded this distinction at the 2015 Maryland Municipal League Conference.

To achieve Sustainable Maryland Certified status, local Poolesville residents, community leaders, and municipal staff and officials formed a "Green Team" and worked with Poolesville Green, Inc., a local non-profit, to complete a variety of sustainability-related actions such as, but not limited to the following:

- Infrastructure improvements for the Town, including installation of LED streetlights and permeable concrete.
- Development and maintenance of the Poolesville Community Garden.
- Development and maintenance of the Chestnut Tree Orchard.
- Developed and implemented the Pet Waste Education Program.
- Development and maintenance of a solar array to help power the Town's wastewater treatment plant.
- The establishment of "green" schools and other public facilities.
- Development of a Water Conservation Outreach Plan.

To maintain this prestigious designation, recertification every three years is required. In 2021, the Town, again achieved the Sustainable Maryland certification in recognition of the Town's commitment to sustainable principles and practices. Poolesville maintains that certification with the efforts of the Sustainable Poolesville Committee and the support of the community and Commissioners.

12.4 Sustainable Poolesville Committee

The Sustainable Poolesville Committee, established in 2014, is a volunteer board of Poolesville residents with diverse backgrounds. The overall mission of the Sustainable Poolesville Committee is to create a cleaner, safer, and healthier community. The Committee promotes awareness of sustainability issues, identifies opportunities for the Town to cost-effectively reduce its environmental impact, facilitates initiatives to capture these opportunities, acts in an advisory capacity to the Town government on issues regarding sustainability, and provides input on the goals and objectives in this chapter. All sustainability goals are pursued through a collaborative effort between local government, schools, nonprofit and faith-based organizations, businesses, and residents.

12.5 Solar Array



In 2014, Poolesville celebrated the completion of a 1.1 mega-watt solar array system at the Poolesville wastewater treatment plant. This made Poolesville the only municipality in Montgomery County and one of the first three municipalities in Maryland with its own fully operational source of renewable solar energy.

The project was developed through a public-private partnership between Poolesville, Standard Solar, Inc., and energy provider UGI Corporation. The energy-generating system comprised of 4,480 solar panels promises to yield both reduced energy costs for the Town and innovative educational opportunities for local students studying environmental science.

The Town entered into a 20-year agreement with UGI Corporation to purchase the electricity generated by the system to cover the \$2.7 million cost of the project. Poolesville will still be served by Potomac Edison, but the solar panels will generate electricity to offset energy costs for the Town's larger facilities. At the end of the 20-year agreement period, the Town will have the option to purchase the solar facility at a "fair market value." Considerations should be evaluated to determine the ongoing viability and ownership of the solar array system.

12.6 Tree City USA

The Tree City USA program, sponsored by the Arbor Day Foundation in cooperation with the U.S. Forest Service and the National Association of State Foresters, provides direction, technical assistance, public attention, and national recognition for urban and community forestry programs in thousands of towns and cities.

A Tree Planting report and budget are prepared every year by the Parks, Recreation and Streets Board and are submitted by the Sustainable Poolesville Committee as part of the annual Tree City USA application. The Town has been involved in this program since 2017. Poolesville achieved Tree City USA recognition by meeting the program's four requirements:

- Establishing a Tree Board or Department.
- Adopting a Tree Care Ordinance.
- Funding an annual community forestry budget of at least \$2 per capita.
- Holding an Arbor Day observance and proclamation.

The annual recertification benefits the environment by reducing energy costs, improving stormwater management, and protecting against erosion. Additionally, properly placed trees can increase property

values, and participation in the Tree City USA program helps residents feel good about the places they live and work.

12.7 Community Wildlife Habitat

Wildlife habitat certification is a way of creating, improving, and monitoring wildlife habitats both nationally and regionally. They also come in a variety of settings, from backyards to commercial sites to communities. The Community Wildlife Habitat Certification project is part of the Town's continuing efforts at sustainability.

In 2016, Poolesville partnered with the National Wildlife Federation (NWF) to register with the NWF's community wildlife habitat program. The Sustainable Poolesville Committee has set the goal to encourage as many homes, places of worship, businesses, farms, and other locations as possible to become certified as NWF habitats. As of July 2020, the total number of backyard habitats is 86, which includes 71 residential, four schools, five businesses/farms, two places of worship, one museum, two local government facilities, and a community garden.

12.8 Pollinator Habitat

Pollinator habitat refers to areas that provide food, shelter, and nesting sites for pollinators, such as bees, butterflies, and birds.

In recent years, Poolesville has created multiple successful pollinator habitats. Through Town committees, staff, and partnerships with local youth organizations, these pollinator-friendly native plants have been planted at the solar array, parks, and open spaces.

Planting a suite of flowering native plant species in open areas helps to support declining pollinator populations while also providing multiple benefits for the environment and the community, such as:

- Enhancing biodiversity and ecosystem services, including pest control and crop pollination.
- Protecting soil and water quality by reducing runoff and erosion.
- Sequestering carbon and mitigating climate change.
- Improving rural aesthetics and recreation opportunities.



Poolesville should continue to promote these habitats and look for additional opportunities to expand.

12.9 Trash and Recycling

Poolesville continues its efforts to maximize waste reduction, recycling, and management of multiple waste streams.

Since 2015, the Town of Poolesville has provided community shredding and electronics recycling at its annual Big Flea event. The Big Flea is a large-scale community yard sale located on Whalen Commons. At

the 2019 event, the Town shredded 9,725 pounds of paper and collected 640 gallons of paint for recycling. In 2020, 9,420 pounds of paper was shredded, and 258 gallons of paint was collected. An electronics collection dumpster was also supplied for both events through a partnership with Montgomery County Solid Waste Management and was filled with old televisions, computers, and cell phones. The shredder truck contractor and Solid Waste Management personnel were assisted by community volunteers.

In 2023, the Town converted from single-stream recycling to dual-stream recycling to increase reclamation rates. 'Single Stream Recycling' refers to when all recyclable items are placed into one bin for collection. Users do not need to further separate items into any subcategories.

'Dual Stream Recycling' refers to when users need to separate recyclable items into subcategories – like mixed paper and commingled containers (plastic, glass, and metal). The pre-sorted material that goes with dual-stream processing offers a less contaminated product. This allows recyclers to benefit from more pure materials at the end of their process and higher reclamation rates in comparison to single-stream operations.

In 2023, the Sustainable Poolesville Committee began surveying residents about the desire to compost food waste. The Committee will be investigating options, costs, and interest to develop a community program.

12.10 Locally Sourced Foods

With the absence of a local grocery store to provide fresh meats and produce, the Town has encouraged and supported local farmers and vendors through farmer markets and alternative sources.

The Poolesville Farmers Market was first established in 2018 as part of the Town's "Friday on The Commons" summer event. After being on hiatus during 2020 due to COVID-19 restrictions, the market returned to Whalen Commons in early 2021. The market is held every summer Saturday, 9 am to 1 pm, typically including vendors from local farms, merchants, and artisans.



The Poolesville Community Garden is a community-wide collaborative effort hosted by Poolesville Presbyterian Church (PPC) and initially facilitated by the local nonprofit Poolesville Green, Inc. The garden is managed by a community committee comprised of Town citizen gardeners. Two local Master Gardeners advise and participate in the committee. The Town supports the garden through contributions such as access to water, mulch, soil for raised beds, and advertising. The garden is in its fifth successful year and continues to grow as community involvement and teen service-learning contributions increase.

In 2023, the Poolesville Commissioners recruited a firm to study the feasibility of developing a Grocery Co-op in Town. While the project has been met with much enthusiasm, the study is ongoing and expected to be completed in late 2023.

12.11 Solar Co-Ops

Since 2017, Poolesville has annually joined other county municipalities in promoting the Montgomery County Solar Co-op, which accepted homeowner participants from January to May 31. A solar co-op is a group of homeowners in a defined geographic area who use their combined purchasing power to ensure they receive the most competitive solar installation. Information sessions for the co-op are held in Poolesville, with meeting space provided by the Town of Poolesville and the local non-profit Poolesville Green, Inc. In 2021, Poolesville became a promotional partner for the Maryland Capital Area Solar Co-op. This new solar co-op is open to all residents and small businesses in Montgomery, Prince George's, and Frederick Counties in Maryland.

12.12 LED Streetlights

In 2018, the Town embarked on another phase of replacements in the Wesmond Subdivision. A total of 28 mercury vapor and sodium lights were replaced with LED streetlights. Public Works staff performed the installation, assisted by a licensed electrician.

In 2022, the Town was awarded a \$92,000 Maryland Energy Administration grant to help fund a \$184,000 LED streetlight replacement project. The project consisted of converting all streetlights, including more than 700 mercury, metal halide, and sodium fixtures, to LEDs. In the future, all new residential developments in the Town will be required to install LED streetlights.

12.13 Water Conservation Plan

The Town's Water Conservation Plan compiles and describes the Town's past and ongoing efforts to ensure the long-term viability of Poolesville's water supply through:

- Well management demand, forecast, and planned improvements.
- Water accounting
- Loss Prevention
- Consumer Education using resident's water bills and the Town's website to provide information on:
 - residential and business water conservation measures
 - home water audits
 - trees/shrubs/plants sustainable in our climate
- Public Alert System and the steps that would be taken in the event of a drought or some other form of water emergency.

The plan will be reviewed and updated as required every five years.

Currently, The Town has accumulated more than \$320,000 for the replacement of water lines in two of its oldest neighborhoods. Through an ongoing quarterly leak detection program, the Town has identified these areas to be the largest contributors to lost water.

Poolesville has contracted with an outside hydrologist to study the water system and aquifer and include potential climate change impacts. The study will provide valuable data in determining future planning and will become part of the Comprehensive Plan upon its completion. The Town also continues to support Montgomery County requirements for high-efficiency fixtures and encourages residents in older homes to do the same.

12.14 Electric Vehicles Chargers

In July 2016, Town Commissioners initiated efforts to promote electrical vehicle use by entering into a grant agreement with the Electrical Vehicle Institute for the installation of two Level 2 electric vehicle charging stations on Whalen Commons.

In August 2020, two additional Level 2 EV charging stations were installed on Whalen Commons. The chargers are free to the public. Additionally, although not sponsored by the Town, two level 3 EV charging stations were installed at Total Automotive and Diesel Service, a local business, as part of a private initiative by the owners and are available to the public during business hours.

12.15 Climate Change

The Town of Poolesville is susceptible to the impacts of climate change. Temperatures in the northeast United States have increased by almost two degrees Fahrenheit since 1895. Projections anticipate additional increases in temperatures, which means the frequency, intensity, and duration of heat waves are expected to increase in the future. Warmer temperatures also allow for higher rates of evaporation as well as a higher capacity for that warmer air to hold water vapor. When rain-triggering conditions are favorable, the additional water vapor in the air is released in the form of heavier precipitation. The effects of these climate change issues have the potential for major impacts on the Town, and mitigation of the effects is an integral part of what will shape Poolesville in the coming years.

The *2015 Maryland Commission on Climate Change (MCCC) Act* required the MCCC and its participating agencies to develop an action plan and firm timetable for mitigation of and adaptation to the likely consequences and impacts of climate change in Maryland. In February 2021, MDE released the *2030 Greenhouse Gas Reduction Act (GGRA) Plan*, which is a plan that sets a clear and unifying path for the State to dramatically reduce greenhouse gas emissions that contribute to climate change.

12.15.1 Heavy Precipitation Events

Climate change is expected to result in more frequent heavy precipitation events. This can lead to flooding, especially in areas with inadequately sized drainage infrastructure. This flooding can result in safety hazards, inaccessible roadways, travel delays, and damage to buildings or other infrastructure. Poolesville's infrastructure and its ability to handle such events contribute to how effectively the area can be evacuated and how it can prevent damage from these events. Planning for these events also contributes to how successfully the Town and emergency services can respond to these events. Poolesville should continue to assess the vulnerability of older commercial and residential structures in preparation for the higher frequency of heavy rainfall events. In addition, the Town will continue to monitor the impact of events on its infrastructure and capacity to handle heavy precipitation events. Current flooding associated with heavy precipitation can be due to restricted or blocked drainage at storm drains. Continued maintenance is needed to help minimize flooding during heavy precipitation events.

12.15.2 Temperature Rise

Another key issue surrounding climate change is a steady rise in temperature. Rising temperatures will result in a longer growing season, heat waves, and more days where it does not cool off at night. This has many implications for infrastructure and human health. Air conditioning systems in buildings may not be sized appropriately for increasing temperatures, and shorter, milder winters may mean residents are dealing with more ticks and mosquitoes.

Of particular concern are vulnerable populations who may not have access to air conditioning in the summer. Although temperature is not something that can be controlled, there are ways for the Town to prepare for a possible increase. Tree planting and shade contribute greatly to heat dispersion. Making sure buildings are up to code for cooling systems will also mitigate the effects of long-term temperature changes. Educating people on how to deal with heat waves and erratic weather helps prepare the population for such events and can be a successful way to prevent the dangers of high temperatures.

12.15.3 Air Quality

Air quality is projected to decline under a business-as-usual scenario, especially in the eastern U.S., which increases the risk of cardiovascular and respiratory issues. The American Lung Association reviews overall air quality elements and reports an assessment on a regional basis. Montgomery County has a “B” rating.

The Town is dedicated to preserving natural resources for its residents. Although land use regulations do not typically account for the regulation of air quality, by contributing less carbon, using multimodal pathways, promoting more sustainable modes of transportation, and integrating open space, the Town hopes to incrementally decrease its emissions to improve air quality.

Reducing greenhouse gas emissions can be accomplished, in part, through nature-based solutions such as preserving and increasing the number of trees and acreage of forest land. Trees and forest land can offset emissions through carbon sequestration that occurs with photosynthesis.

APPENDIX A – Implementation

Overview

This Comprehensive Plan is a tool for the Town to make planning and policy decisions regarding limited growth, redevelopment, and preserving our natural resources. The overall quality of life for Poolesville's residents depends on implementing this Plan. This Plan will influence future policies and decisions through regulations and capital improvement programs.

The implementation of this Plan will happen both proactively and reactively. Proactively, the Town will establish the priorities, rules and processes, and timelines for implementation of the goals and objectives. Reactively, Town planners will respond to development/redevelopment requests using the guiding principles of this Plan.

The Town will continue to work collaboratively with residents, business owners, property owners, and other relevant stakeholders to review the progress made in meeting the goals and objectives.

Following the adoption of the Comprehensive Plan, the Planning Commission and Commissioners will annually assess the Comprehensive Plan's goals and objectives along with other emerging issues in the Town to develop a list of ongoing, immediate, short-term, mid-term, and long-term activities. From this list, the Town will identify a list of priority projects and activities and update this list of priority projects as progress is made.

One approach to identify these activities is to determine what has been done, what has not been done, what has changed since the Plan was written, and what should be added to the Plan, using the Twelve Planning Visions, as discussed in **Chapter 1 - Introduction**, to help categorize and prioritize these activities.

The Comprehensive Plan is required by state statutes to be updated no less than once every ten years. The Town of Poolesville will adhere to the following comprehensive plan review timeline:

- **Five-year Review** – Within five years of plan adoption, the Planning Commission will thoroughly review the document to determine whether revisions are warranted. Following the review, the Planning Commission and staff will prepare a report summarizing their findings and present it to the Town Commissioners.
- **Ten-year Update** – Within ten years of plan adoption, the Planning Commission will update the plan as required by Maryland's Land Use Article.

The goals and objectives of each of the chapters in the Poolesville Comprehensive Plan are outlined below. The goals and objectives are consistent with the State of Maryland's Twelve Planning Visions, as discussed in **Chapter 1 - Introduction**.

Implementation – Goals and Objectives

Community Facilities – Chapter 4

<p>1. Provide and preserve park facilities and open space adequate in both location and size to serve the needs of Town residents.</p>
<p>2. Create diverse recreational opportunities, such as a bouldering park, through grants and other funding sources.</p>
<p>3. Coordinate with public, nonprofit, and private sector partners to provide more services and programming while protecting and preserving the Town's historical resources.</p>
<p>4. Partner with Montgomery County Public Schools for schools and essential services demanded by the Town's communities.</p> <ul style="list-style-type: none">Advocate for enhancing the learning experience for students with state-of-the-art technology in Town educational facilities and a wellness center at the high school.
<p>5. Continue to work with Montgomery County and the State of Maryland to plan for future needs not provided by the Town, including emergency services, schools, and community facilities, including:</p> <ul style="list-style-type: none">A Community Center that will include afterschool, senior, recreational programming, and health services for the Poolesville community.Police SubstationA bubble over the swimming pool for use all year long.An expanded library to meet the growing needs of the community.
<p>6. Critically review all facilities and services periodically to determine whether they provide adequate service levels.</p>

Land Use – Chapter 5

- 1. Encourage the redevelopment and revitalization of the Town Center.**
 - Ensure that new development and redevelopment complies with the Town's architectural guidelines.
 - Coordinate with Montgomery County, the Montgomery County Public Schools, and other agencies to ensure that new public facilities, such as a community center, are located near the Town Center.
 - Evaluate increases in densities as a tool to encourage redevelopment.
 - Explore and promote Maryland Department of Housing and Community Development program funds and HUD Community Development Block Grant funds for interior and exterior renovations, energy efficiency upgrades, and streetscape improvements.
- 2. Protect and maintain Poolesville's Small-Town character.**
 - Maintain a land use pattern in which land density decreases from the Town center outward.
 - Encourage infill, residential, mixed-use, and redevelopment, especially within the Town Center.
- 3. Protect residential areas from incompatible land uses.**
 - Preserve and improve the integrity of residential neighborhoods by restricting the encroachment of incompatible land uses.
 - Continue to require commercial uses to provide measures designed to reduce impacts and nuisances to adjacent residential areas.
- 4. Develop within the growth constraints of the Town.**
 - Review the Future Land Use Map to identify future rezonings and zoning map amendments for alternative uses such as solar generation, recreation, food hubs, etc.
- 5. Support and enhance pedestrian and bicycle connections between residential subdivisions, recreational areas, and Town Center.**

Municipal Growth Element Chapter 6

<p>1. Encourage redevelopment of existing residential and commercial properties.</p> <ul style="list-style-type: none">• Encourage infill development within the Commercial Business District.• Give super-priority status to development or redevelopment projects proposed within the Town Center, including water and sewer allocation to encourage housing in the Town Center.• Emphasize a mix of affordable housing types and projects for young adults and the elderly in future residential projects.
<p>2. Prioritize and invest in public stormwater and related infrastructure needed to support redevelopment in the Commercial District.</p>
<p>3. Review and update the existing Town regulations and policies to ensure that they support the redevelopment and infill goals of this plan. These include but are not limited to the Poolesville Code, Subdivision Regulations, Architectural Guidelines, Zoning, Village Overlay Zone, and Water & Sewer Allocation Plan.</p>
<p>4. Emphasize the Town Center Vision and Streetscape Plan.</p> <ul style="list-style-type: none">• Promote residential and mixed-use development within the Commercial District.• Enhance walkability and pedestrian safety within Town.• Require commercial development or redevelopment to include offset facades, mansards, canopies, and varied roof lines.
<p>5. Avoid annexation of property for growth purposes.</p>
<p>6. Coordinate with Montgomery County and the State of Maryland for future needs not provided by the Town, including emergency services, schools, and community facilities. Priorities for community facilities include a community center, medical services/wellness center, police substation, library expansion, and pool cover.</p>

Housing – Chapter 7

<p>1. Support a variety of safe, quality housing choices that are affordable and accessible to households of all ages and abilities, including multi-family and mixed-use housing.</p> <ul style="list-style-type: none">• Support various housing options for individuals and families of different socioeconomic levels, life stages, and physical needs.• Support opportunities to increase the housing supply for the senior population, including developments that support aging in place.
<p>2. Support the ability of Town residents to remain in Poolesville by maintaining a range of housing options, including affordable and workforce housing.</p>
<p>3. Identify, evaluate, and analyze current and future housing needs and trends.</p> <ul style="list-style-type: none">• Utilize a housing inventory of existing conditions that includes housing conditions, age, cost, size, type, tenure, vacancy rate, and projections on future housing needs.• Track occupancy for all new housing developments and integrate this data into a GIS-based application or dashboard in collaboration with Montgomery County.
<p>4. Identify incentives for the improvement or redevelopment of housing.</p> <ul style="list-style-type: none">• Coordinate activities with the Montgomery County Office of Housing and Community Affairs and the MD Department of Housing and Community Development to help homeowners maintain and improve their housing conditions.• Identify grants and other funding opportunities, such as engaging nonprofit organizations to assist low to moderate-income residents to support home improvements.
<p>5. Take steps to further fair housing throughout the Town.</p> <ul style="list-style-type: none">• Coordinate with the Maryland Department of Planning and the MD Department of Housing and Community Development to complete the required Fair Housing Assessment upon the issuance of guidance from State agencies.
<p>6. Collaborate with the County to address homelessness and under-housing in the Town so that the County can utilize resources to reduce it.</p>

Transportation – Chapter 8

- 1.** Improve connectivity to park facilities and the Town Center by adding missing sidewalk connections, adding mid-block crossings with supporting infrastructure, and enhancing pedestrian intersection crossings.
 - prioritize safe connections from neighborhoods to schools and community facilities.
- 2.** Integrate walkability into land use planning and the development review process.
 - improve pedestrian connectivity and safety when reviewing redevelopment projects, streetscape, and other land use planning components.
- 3.** Build on the local and regional popularity of cycling for recreation, commuting, and trips around the Town.
 - Explore the viability of additional bike lanes for local roads.
- 4.** Lobby the County to expand the existing bus route network and improve access to essential services throughout Montgomery County.
- 5.** Coordinate engineering, enforcement, and education to manage vehicle speeds and deploy speed management techniques for safer and efficient traffic flow.
- 6.** Lobby County and State officials to make needed transportation infrastructure improvements, including reopening Whites Ferry.
- 7.** Complete the Fisher Avenue Streetscape Project.

Economic Development – Chapter 9

- 1.** Preserve and enhance the small-town character of the Town Center as the hub for activity for Poolesville and the surrounding region.
 - Implement the Town's Streetscape Plan.
 - Partner with the Poolesville Area Chamber of Commerce and other local businesses to promote "shop local" and other campaigns.
 - Develop a marketing plan to raise awareness of local arts and cultural attractions including wineries, breweries, restaurants, and local events.
 - Develop and expand community events on Whalen Commons.
- 2.** Support efforts to reopen White's Ferry as an opportunity to improve connections between Poolesville and Northern Virginia and improve access from the Town to regional outdoor and recreational activities.
- 3.** Work with Montgomery County and local and state agencies to ensure that the Town and Western Montgomery County residents have access to local job opportunities and living wages, as well as quality education, training, and support services.
 - Support employment opportunities within the Town to provide residents with additional local employment options.
 - Explore the development of a Small Business Incubator within the Commercial District.
- 4.** Work with the County and State to provide incentives to specialty and unique businesses to locate in Poolesville.
- 5.** Pursue non-retail businesses that will maintain a workforce in Town during the business day.
 - Look for opportunities to work with local businesses to expand their workforce and to provide a new and expanded customer base for other retail businesses, restaurants, and services in Town.
- 6.** Reexamine the recommendations from the Economic Development Opportunities for the Town of Poolesville report from 2012 for opportunities to develop place-based economic development strategies.
 - Look for opportunities to leverage the Town's advantages in Agriculture, Outdoor and Recreational Activities, and Business Growth and Retention, as outlined in the 2012 report, and revisit the viability of the report's recommendations.
- 7.** For the agricultural sector, explore ideas such as a Food Hub, agricultural processing services, a Farm/Agricultural Incubator, and a Food Innovation Center.
 - Maintain and enhance the Town's regional support for the needs of the surrounding farms/rural developments.

Environmental Resources and Sensitive Areas – Chapter 10

1. Preserve and enhance the Town's natural environment, open spaces, and sensitive areas.
2. Prepare for and protect the Town residents from the pending impacts of climate change.
3. Continue to achieve adequate, sustainable water resources and water quality.
4. Protect all residents in an equitable manner from environmental impacts.
5. Provide access to environmental resources to all residents in an equitable manner.
6. Reduce pollution, restore ecosystems, and balance the built and natural environment within the Town.

Water Resource Element Chapter 11

- 1. Protect and conserve the existing drinking water supply and distribution system.**
 - Protect the groundwater wells through increased infiltration, enhanced forest regeneration, open space, and smart growth to allow recharge of the aquifer.
 - Complete the water main replacement program in the two oldest subdivisions, Westerly and Wesmond.
- 2. Provide safe drinking water to serve existing customers and future demands.**
 - Periodically review the Wellhead Protection Plan and the abandonment of septic systems to protect the Town's source water.
 - Continue coordinating with MDE and EPA on water quality monitoring and strategies to test and remove per- and polyfluoroalkyl substances (PFAS) from drinking water.
 - Develop strategic planning to assess the feasibility of centralized treatment facilities for water sources to test, monitor, and treat more efficiently.
- 3. Provide adequate wastewater treatment and conveyance capacity to serve existing and future demands.**
 - Continue to perform routine assessments of the current wastewater conveyance system and implement proven cost-effective repairs, replacements, and upgrades to reduce inflow and infiltration into the system.
 - Develop a creative communications program to inform the public about disconnecting rain gutters and sump pumps from the sewerage collection system to reduce inflow and infiltration.
 - Communicate to the public the importance of reducing FROG (fats, rags, oils, and grease) that causes decreased pipe capacity, blockages, and increased maintenance costs.
- 4. Reduce the overall stormwater runoff discharge.**
 - Maintain coordination and compliance with Montgomery County with Municipal Separate Storm Sewer Systems (MS4) permit requirements and the Chesapeake Bay's total maximum daily load (TMDL) goals.
 - Continue to support the use of bioswales, pervious pavements and other methods to allow for increased stormwater percolation.
- 5. Plan for resiliency for potential floods and/or droughts caused by climate change.**
 - Use plan reviews to ensure that natural and native vegetation is preserved and/or planted along waterways, wetlands, and riparian buffers.
 - Educate property owners on options to better withstand climate change threats offered by the Maryland Department of the Environment (MDE).
 - Examine and document threats to streams and their buffers due to climate change impacts (e.g., nuisance flooding, intense storms).

Sustainability – Chapter 12

<p>1. Become a Maryland Smart Energy Community.</p>
<p>2. Support a zero-waste policy, promoting waste prevention, reduction, dual stream recycling, and composting.</p>
<p>3. Continually improve our environmental performance by setting annual goals to reduce our energy consumption and measuring our results.</p> <ul style="list-style-type: none">• Implement the adopted Renewable Energy Policy to develop and initiate a Renewable Energy Action Plan to map out how the community will sustain its 80 percent Renewable Energy Goal.• Implement the adopted Energy Efficiency Policy to reduce per-square foot electricity consumption by 15 percent in municipal facilities.• Track electricity consumption of Town facilities to identify opportunities for energy savings.
<p>4. Address energy consumption and investment in sustainable energy to set its course to achieve overall carbon neutrality as soon as possible, in line with county and state targets.</p> <ul style="list-style-type: none">• Implement portions of the Montgomery County Climate Action Plan that will positively impact Poolesville residents and businesses.
<p>5. Look for opportunities to reduce our environmental impact.</p> <ul style="list-style-type: none">• Add zero-emission vehicles to the Town's fleet.• Expand the use of pervious pavement in public, town-owned areas as a stormwater management tool and encourage builders and developers to consider pervious pavement for new streets and driveways.• Encourage builders and developers to use energy efficient products.• Encourage protection of pollinators by restoring and enhancing green space and by planting local, native wildflowers, shrubs, and trees.

APPENDIX B – PUBLIC OUTREACH

COMMUNITY SURVEY RESPONSES

STAKEHOLDER INTERVIEWS

PLANNING COMMISSION HOMEWORK

VISIONING EVENT DATA GATHERED

TOWN OF POOLESVILLE ♦ COMPREHENSIVE PLAN UPDATE

THE FOLLOWING PAGES CONTAIN THE POOLESVILLE COMMUNITY SURVEY RESPONSES. THE SURVEY RECEIVED A TOTAL OF 537 RESPONSES. RESPONSES BELOW ARE SUMMARIZED. FULL RESPONSES AND ANALYTICS ARE PROVIDED IN THE ATTACHED DATA DOCUMENT.

QUESTION 1

WHERE DO YOU LIVE?

- **Live in Poolesville – 89.01%**
- Own other property in Poolesville – 5.21%
- Own a “brick and mortar” business in Poolesville – 2.23%
- Own a “home based” business in Poolesville – 5.40%
- Work in Poolesville – 8.94%
- Visit Poolesville – 6.33%
- Live in 20837 outside of Town limits – 5.77%

QUESTION 2

IF YOU LIVE IN POOLESVILLE, DO YOU:

- **Own your home – 96.78%**
- Rent your home – 3.22%

QUESTION 3

I'VE LIVED IN POOLESVILLE FOR:

- 2 years or less – 17.60%
- 2-5 years – 13.95%
- 6-10 years – 19.53%
- 11-20 years – 14.59%
- **20+ years – 34.33%**

QUESTION 4

I LIVE IN POOLESVILLE BECAUSE: (top 4 responses)

- **Small town atmosphere – 67.38%**
- Schools – 62.66%
- Safety/low crime - 43.78%
- Rural character – 42.49%

QUESTION 5

MY AGE IS:

- Under 18 – 1.34%
- 18-24 – 0.96%
- **25-64 – 79.92%**
- Over 65 – 17.78%

QUESTION 6

IF YOU COULD BRING ONE BUSINESS TO POOLESVILLE, WHAT WOULD IT BE (business name or type)?

- Grocery Store
- Sit-down restaurant
- Medical facilities
- Senior Housing/Living Community
- Bowling/Youth Activity Center

QUESTION 7

WHAT'S ONE BUSINESS YOU WOULD NOT WANT TO SEE COME TO POOLESVILLE (business name or type)?

- 7-11 or gas station
- Fast food restaurants
- Walmart
- Bar/Liquor Store
- Pizza shop

QUESTION 8

HOW CONCERNED ARE YOU ABOUT:

- Drinking Water – 45.59%
- Wastewater treatment/capacity – 41.24%
- **Preserving small town character – 72.13%**
- Too much growth/growth pressure – 55.42%
- Too little growth/development – 15.53%
- Housing affordability/cost – 29.81%
- **Keeping local businesses – 79.22%**
- Climate change – 55.28%
- Traffic/congestion – 40.79%
- Crime/safety – 50.92%
- Adequate public facilities – 47.82%
- Adequate public transportation – 24.64%
- Public space maintenance/upkeep – 50.21%
- Private property maintenance – 30.58%
- **Loss of farmland – 58.56%**
- Public health (of community, access) – 53.72%

Other concerns raised included concerns about historic preservation, pedestrian safety, senior housing, medical facility access, the loss of Whites Ferry, and issues within the current political leadership and council.

QUESTION 9

BASED ON YOUR RESPONSES TO THE PREVIOUS QUESTION, WHAT IS YOUR #1 CONCERN?

- **Too much growth/growth pressure – 24.73%**
- Preserving small town character – 20.22%
- Keeping local business – 12.04%

QUESTION 10

RANK THE IMPORTANCE OF THE FOLLOWING FACTORS TO QUALITY OF LIFE: (top 3 answers provided)

- **Local Schools – 29.6%**
- Basic Shopping Needs – 17.93%
- Safety/Low Crime – 14.51%

QUESTION 11

WHAT'S ONE THING YOU WOULD LIKE TO SEE CHANGED TO IMPROVE QUALITY OF LIFE IN POOLESVILLE?

- Grocery store
- Better school facilities (particularly the High School)
- Local police station
- Re-open the ferry
- Support local businesses
- Revitalize downtown area
- Affordable housing
- Community Center/youth activities
- More trails/sidewalks/overall connectivity

QUESTION 12

WHAT ARE POOLESVILLE'S GREATEST STRENGTHS AND ASSETS?

- Small town character
- Open space
- Sense of community
- Schools

QUESTION 13

WHAT ARE THE MOST CRITICAL ISSUES FACING POOLESVILLE TODAY AND IN THE FUTURE?

- Growth and development
- Water quality
- Infrastructure – water/wastewater capacity to serve growth in housing
- Lack of recreational activities for youth
- Failing Downtown businesses
- Re-opening Whites Ferry
- Lack of grocery store

QUESTION 14

WOULD YOU LIKE TO SEE THE FOLLOWING IN POOLESVILLE? (top three answers)

- **More programs for seniors – 83.87%**
- Expand parks/recreation facilities – 82.39%
- More programs for teens – 79.74%

Other suggestions included the addition of a grocery store, re-opening the ferry, prohibition of further development within the Town, and revitalization of Downtown

QUESTION 15

CONSIDERING POOLESVILLE'S EXISTING FACILITIES, WHAT NEW OR ADDITIONAL FACILITIES ARE NEEDED? (top three answers)

- **Community Center/indoor facility – 59.67%**
- Seasonable bubble for County pool – 46.23%
- Multi-use trails – 38.92%

Other suggestions included indoor sports complex, police substation, and roller/ice skating rinks.

QUESTION 16

DO YOU SUPPORT THE FOLLOWING TYPES OF RESIDENTIAL DEVELOPMENT IN POOLESVILLE? (top three answers)

- **No additional housing development – 24.02%**
- Single family homes on large lots – 23.00%
- Entry level/starter homes – 21.22%

Other comments included the need for more affordable housing, the need for senior housing, the need for re-development in lieu of new development, and for an overall reduction in development.

QUESTION 17

IN THE SPACE BELOW, PLEASE PROVIDE ANY ADDITIONAL COMMENTS ON ISSUES, SUGGESTIONS OR SOLUTIONS OF IMPORTANCE TO YOU FOR POOLESVILLE'S FUTURE THAT SHOULD BE CONSIDERED IN THE COMPREHENSIVE PLAN'S DEVELOPMENT:

** Note: seven pages of responses were provided – we have noted a few answers that seemed to be echoed among several of the submissions. The complete listing of answers is provided in the survey analytics attached.*

- Police substation
- Discourage development
- Affordable housing
- Focus on infrastructure improvements
- Update the schools
- Senior Housing
- Protect agriculture
- Improve the overall streetscape

TOWN OF POOLESVILLE ♦ COMPREHENSIVE PLAN UPDATE

STAKEHOLDER INTERVIEW: Fair Access Committee

Stakeholder: Fair Access Committee

Date: August 24, 2022

WM Team: Larry Marcus, Nichole Davis

STAKEHOLDER INFORMATION

Email:

Phone:

Department:

DISCUSSION TOPICS

What is the Fair Access Committee's Mission Statement?

- Need a sustainable community that can provide daily needs and services to enhance the residents' daily lives; making it viable on its own regardless of a smaller population.
- 2018 – Fair Access Committee created; Kacey Anderson (Chief of County Planning) stated that he wanted to create 15 minute communities; Poolesville has the building blocks to make it a 15 minute community with walkability and more services to provide assistance to the community.

Who specifically does Fair Access aim to help?

- A lot of people cannot access medical facilities easily – hoping in the future to be able to provide a health clinic of some sort;
- if you are going to make life better for everyone, you need to give them access to as many services as possible;

What are the Committee's priorities?

- Clinic or some sort of medical facility could be part of the community center, but something like it needs to happen;
- Year round pool would be a nice enhancement not just for kids, but for the older generation. 12% of the population is older than 65. They currently go down to Germantown instead of staying local;
- Reopen white's ferry – could be so much more (see comments below about museum)

What are the Committee's short and long term projects?

- Summerhill Townhouses – built in the early 70's, in really bad shape; need to be revitalized and is one of the few low income housing areas
- 2008 - a resolution was created to create a community events coordinator; how do we become more of a town that can support a quality of life for people? need something a little different – need something with an economic development aspect; how can we discuss things like lowering rent in shopping centers so that stores can survive and would be interested in coming to Poolesville;

Can you differentiate for us Western Monroe County vs. Poolesville opportunities?

- Western Monroe County has a lot more services available based on the population – Poolesville could have that as well but it will take focused efforts and investments; income is not the same in Poolesville as in most of Western MC.

- W. Montgomery Co. is an anomaly; build a museum about ferry's – encourage tourism and use of the ferry again; missing b&b's and hotels to encourage people to come; a lot of African American history – Sugarland community has a museum about slavery; People come through Town and don't even realize that Sugarhill Mountain is there.

TOWN OF POOLESVILLE ♦ COMPREHENSIVE PLAN UPDATE

STAKEHOLDER INTERVIEW: SUSTAINABILITY COMMITTEE

Date: September 2, 2022

WM Team: Lawrence Marcus

STAKEHOLDER INFORMATION

Email: DJE020883@hotmail.com; DMStreet51@gmail.com

Phone: (301) 518-8408

Department: Sustainability Committee

DISCUSSION TOPICS

The interview addressed the theme of continuing to emphasize a green, energy efficient, healthy, and environmentally sensitive Poolesville. After introductions and review of the Committee's formal testimony for the plan update, the interview focused on the Comprehensive Plan components and the role of sustainability in each area.

Housing:

1. The Committee supports growth targeted in locations close to the Town Center and at the appropriate density to ensure adequate public facilities / functionality. The Willard Property was discussed as an example of opportunity if planned in a sustainable manner.
2. Development review: the Committee member offered progressive requirements in the approval of new / redevelopments, aligning with guidance from the State of Maryland.
3. Aging in place: The Committee agrees with the Chamber of Commerce that senior housing would be a good fit for the Town, particularly if essential services were easily accessible within the Town.

Transportation:

1. The Committee supports the continued focus on pedestrian improvements and streetscape plans for the center of Town.
2. The Committee emphasized the need for expanded Ride-on transit service to key destinations outside the Town, beyond peak travel periods to improve transit accessibility and mode shift from single occupant vehicles.
3. The Committee believes that a sustainable Town is a safe place for people to walk. Calming traffic / controlling vehicle speeds within the Town and approaching the town was discussed in detail, with the goal of improving street safety.

Environment / Sustainability

1. The Committee supports an anti-littering program.
2. Recycling: The Committee has been monitoring the quality of the waste program and seeks a dual stream recycling / sorting program.
3. The Committee is engaged with the Sustainable Maryland Program and Poolesville has a Bronze certification.

Below is the list of recommendations from the Committee to the Poolesville Planning Board, reviewed during the interview:

1. The Town has proven the use of pervious pavement as an effective stormwater management tool. To the maximum extent possible, the Town should expand pervious pavement by re-paving all public parking areas as well as parking lots Town parks and other town-owned properties. The Town should also encourage future builders/developers to consider pervious pavement for new streets and driveways.
2. The current LED streetlight replacement program should be continued so that all streetlights are upgraded by 2025. This will help reduce electricity use and lead to lower energy costs for the town. Further, the Town should make every effort to more systematically track electricity consumption by facility which could help the town identify further opportunities for energy savings.
3. As town-owned vehicles and other equipment near their end of useful life, the Town should evaluate the use of electric or hybrid models as replacements where practical, or, as a minimum, seek the most fuel-efficient models available. In addition, the town should undertake a means to accurately track fuel usage and annual mileage by vehicle for the current fleet in order to identify less-fuel-efficient units for earlier replacement. Looking toward the possibility of more town-owned electric vehicles in the future, the town should also consider installing EV charging stations at the Public Works facility.
4. In an effort to ensure any further new growth in Poolesville is as sustainable as possible, the Town should consider requiring that builders offer home buyers sustainable options such as low-flow water fixtures, Energy Star appliances, high performance windows and doors, and efficient (LED) lighting. The Town should also encourage builders/developers to consider net-zero designs for residential buildings. A net-zero energy design means the total amount of energy used yearly by a building is equal to or less than the amount of energy created onsite. Net-zero energy buildings are made possible through the use of innovative technologies and renewable (solar) power generation.
5. With Poolesville embarking on a downtown revitalization sometime in the future through the Fisher Avenue Streetscape design program, the Town should ensure the design includes features that would increase bicycle and pedestrian safety. Additional pedestrian-controlled crosswalks should be installed at high-foot traffic points along Fisher Avenue, especially near Poolesville Elementary School.
6. The Town should ensure protection of pollinators by modeling pollinator-friendly practices. Where possible pollinator habitat should be restored and/or enhanced by designating areas to preserve as green space, and by planting local, native wildflowers, shrubs and trees. Large unused turf grass areas, such as in Dillingham Park and at the Town water pumping stations, should be considered for pollinator habitat or rain gardens.
7. Climate change is a reality the Town will face in the near future, and everything possible must be done to mitigate the consequences. Therefore, to the maximum extent possible, the Town should take positive steps to adapt those portions of the Montgomery County Climate Action Plan having the greatest future impact on Poolesville residents and businesses.

TOWN OF POOLESVILLE ♦ COMPREHENSIVE PLAN UPDATE

STAKEHOLDER INTERVIEW: POOLESVILLE AREA CHAMBER OF COMMERCE

Date: 8/25/2022

WM Team: Lawrence Marcus

STAKEHOLDER INFORMATION

Name: Thomas Kettler

Email: tek@kettlerforlineshomes.com

Phone: 301-370-4326

Department: President, Poolesville Area Chamber of Commerce

DISCUSSION TOPICS

The interview followed the discussion points presented in the Chamber's testimony on the Comprehensive Plan Update in 2021.

The Comprehensive Master Plan is about looking into the future and taking steps to improve the quality of life in Poolesville. The PACC's recommendations offer the dual advantages of (1) improving the Town for its residents as well as (2) improving the draw for visitors to our Town, both of which in turn will strengthen the environment for local businesses. With this in mind, the Chamber makes the following recommendations for consideration for the Comprehensive Plan:

1) Continue to refine and implement the Streetscape Plan for the Commercial Business District (CBD) of Poolesville (Fisher Ave from Wootton Ave to the Sarah Auer Aquatic Center).

- The PACC encourages the Town to push the gateway concept for both ends of Fisher Ave in the CBD.
- The Town should explore creative ideas to enhance the CBD, such as creating pocket green spaces and gardens, plus adding attractive lighting, benches, etc.
- Create opportunities for public art along Fisher Ave (permanent and temporary). For example, the recent addition of Chamber-initiated murals painted on the side of Bassett's Restaurant is an excellent example of a joint art project involving the Town Government, the Chamber, and Bassett's and has been well received.
- The Chamber applauds the Town for the takeover of Fisher Ave in the CBD, which allowed the Town to install two flashing light crosswalks to improve pedestrian safety. The town could not get State Highway to install the safety lights as long as the State maintained the road.

Gateway design features should welcome travelers to the Town and be designed to influence driver behavior to reduce travel speed to a safe level. One gateway location should be placed at Fisher & Wootton.

2) Assist in efforts to get White's Ferry re-opened and bolster the Town's connection to the C&O Canal through expanded involvement in the C&O Trust's Canal Town program, Lock House rental program, etc.

Chamber asked that the plan emphasize the importance of the ferry for economic development, while controlling the impacts of the traffic traveling through the community.

3) Work with the Fair Access Committee to push for full implementation of the long-overdue new Poolesville High School with increased capacity. See notes from Fair Access Committee interview for more details.

Chamber supports the efforts of the Fair Access Committee, including the need for essential services located within the Town beyond school capacity referenced in the testimony.

4) Explore the creation of an accessible "Poolesville Visitors Center" possibly working with the Historic Medley District, Heritage Montgomery, and Visit Montgomery to look for ways for the Town to leverage and expand Ag and Heritage Tourism in the area.

This topic was discussed at length, with the Chamber emphasizing their support for this center. The Chamber values their relationship with the HMD.

5) Continue on-going work on the Town's water and sewer infrastructure, the key to achieving the Town's projected goal 6500 residents in Town.

- The Town needs to study the 2020 Census numbers and per household size for a realistic sense of future population trends in Town and public services necessary to support such projected population. Recently released 2020 US Census figures show Poolesville with a population as of the Census of 5742. Locate a portion of the residents close to the CBD to further activate the area and support the local businesses.

The Chamber finds it critical that the Town continues to provide and update adequate public facilities is a foundational element for economic and community growth. The Chamber supports residential growth closer to the CBD, such as on the Willard Property. The Chamber also desires multifamily and senior housing growth, preferably in walking distance to the CBD.

6) Continue to market to non-retail businesses to come to Town to help bolster a weekday customer base for new employees at those types of companies.

The Chamber hopes to provide residents an opportunity to work close to home, including flexible zoning for live/work parcels.

7) Work with County and State funding sources to add to the Town's available funding to push for construction of projects that would benefit Town residents and attract visitors to Town, such as:

- Enclose all or a portion of the Sarah Auer Aquatic Center for year-round use of the pool facility.
- Construct Community Center/Senior Center/Health Clinic (since this does not appear to be co-located at new PHS).
- Explore the construction of a Town Municipal Parking Lot with bike racks (maybe Ride-Share bikes) near the CBD for Town events and reduce the impact on business parking lots. Include appropriate directional signage for out-of-town visitors to make a more welcoming experience.
- As demand warrants, add additional EV charging stations in the CDB.
- Create a Grant program to provide funding to local businesses for improvements such as beautification or facade upgrades. One specific recommendation is to provide money for installation/upgrades to grease traps for restaurants which would, in turn, reduce Town water and sewer expenses included by clearing repeated blockages to main sewer lines.

8) The PACC feels that the Town should hire or contract a grant writing service to pursue County and State grant money.

- The Town has benefited from State Open Space money for park construction and received money to help construct the Poolesville Town Hall. The Town is also in a Maryland state-certified Heritage Area and is therefore eligible for MHAA financial incentives. For example, the Town received \$100,000 to help fund the Whalen Commons Band Shell and restrooms. These grants are a financial resource for the Town, and an investment in a grant writer would produce grants above the cost of these services.

The Chamber and WM believe there are many creative opportunities to secure local, state, and federal grants as outlined in the testimony.

TOWN OF POOLESVILLE ♦ COMPREHENSIVE PLAN UPDATE

THE FOLLOWING PAGES CONTAIN THE POOLESVILLE PLANNING COMMISSION'S HOMEWORK RESPONSES, REQUESTED AS A FOLLOW-UP ACTIVITY TO THEIR OCTOBER 13, 2021 MEETING.

QUESTION 1

THE TOWN'S CURRENT COMPREHENSIVE PLAN WAS ADOPTED IN 2011. HOW HAS POOLESVILLE CHANGED SINCE THAT TIME?

- Agritourism
- Affluence
- Culture/cultural diversity
- Demographic shifts
- Desire to keep small/charming
- Dollar General opening
- Friday on the Commons
- Grape crush facility
- Greater acceptance of change
- Greater service expectations
- Grocery delivery services
- Higher-paid employees
- High local school rankings
- Historic preservation/emphasis
- Increase in home prices (2)
- Land Brew Brewery
- Large-scale youth tournaments
- Less of a bedroom community
- Loss of grocery store
- Markoffs Haunted Forest
- More Ag Reserve appreciation
- More daytime activity
- More homes (2)
- More international families
- More tourists
- More work from home
- More walking to destinations
- Residential land developed
- Small-scale convention area
- Sustainability
- Village Overlay Concept plan to develop lot in town center rejected
- Walkability
- Water/sewer capacity/allocation issues (2)
- Wineries

QUESTION 2

WHAT ARE YOUR TOP PRIORITIES OR AREAS OF CONCERN THAT YOU HOPE TO SEE ADDRESSED IN THE COMPREHENSIVE PLAN UPDATE?

- Affordable housing
- Bolster local businesses
- Changing keywords
- Creating viable downtown
- Destination econ. development
- Medical facility access
- Openness to redevelopment
- Pandemic impacts
- Population growth expectations
- Proximity to C&O Canal
- Recreation center
- Residential infill
- Town history
- Transportation needs
- Water/sewer capacity issues (3)

QUESTION 3

WHAT DO YOU LIKE MOST/LEAST ABOUT THE CURRENT COMPREHENSIVE PLAN?

- Challenging to find info
- Challenging to read
- Community information (2)
- Comprehensive outreach
- Easily identify goals
- Easily identify next steps
- Expanded vision statement
- Inclusive of diversity
- More comprehensive
- More user-friendly
- Photos
- Support sustainability
- Sustainable infrastructure
- Update architectural guidelines
- Visual appearance

QUESTION 4

IS THERE ANYTHING IN THE CURRENT COMPREHENSIVE PLAN THAT IS A "MUST KEEP?"

- Economic development
- Emphasis on historic assets
- Relationship with water supply
- Schools
- Small town charm
- State required elements
- Streetscape
- Town center
- Walkability
- Water/sewer

QUESTION 5

WHAT AREAS DOES THE CURRENT COMPREHENSIVE PLAN NOT ADDRESS THAT IT SHOULD?

- Added graphics
- Affordable housing
- Community events
- Diversity (2)
- Format improvements
- History
- Needed community resources
- Public health
- Water/sewer status (2)

SWOT ANALYSIS

STRENGTHS: INTERNAL ELEMENTS THAT GIVE THE TOWN AN EDGE OR COMPETITIVE ADVANTAGE. THESE CAN BE UNIQUE ASSETS, SKILLS, OR RESOURCES THAT POOLESVILLE CAN USE TO ITS BENEFIT.

- Agriculture
- Bicycling opportunities
- Capped growth potential
- Civil War connections (2)
- Easy commute
- Electric charging stations
- Farm markets
- Historic buildings
- Pick-your-own farms
- PHS renovation
- Post-pandemic attitudes
- Proximity to C&O Canal
- Proximity to urban attractions
- Rural location
- Safe (2)
- School system (4)
- Small size (2)
- Walkable
- Wineries

WEAKNESSES: INTERNAL ELEMENTS THAT HINDER THE TOWN'S ABILITY TO REACH OPTIMAL PERFORMANCE AND PREVENTS POOLESVILLE FROM REACHING ITS GOALS. THE ULTIMATE GOAL IS TO MAKE IMPROVEMENTS TO THESE.

- Distance from C&O Canal
- External commutes
- External youth activities
- Lack of attractions
- Lack of Town office staff
- Lack of restaurants
- Lack of services
- Local business longevity
- Not leveraging farm markets
- Not leveraging wineries
- Reduced developer interest
- Reduced investor interest
- Separatism from Mont. Co.
- Water/sewer resiliency

OPPORTUNITIES: EXTERNAL CIRCUMSTANCES AND POTENTIAL SITUATIONS THAT CAN BE USED OR EXPLOITED TO BENEFIT POOLESVILLE. THEY ARE BEYOND THE TOWN'S CONTROL, BUT POOLESVILLE CAN MAKE THE MOST OF THEM.

- Ag destination businesses
- Agricultural Reserve
- Attract new businesses
- Breweries/distilleries
- Civil War history
- Community center
- County pool bubble
- Fair Access Committee
- Farm-to-table dining
- Ferries (2)
- Grape crushing facility/winery
- Leverage nearby businesses
- Proximity to C&O Canal (2)
- Sugarloaf Mountain
- Sustainable practices
- Utilize County resources

THREATS: EXTERNAL CIRCUMSTANCES THAT POSE A THREAT TO POOLESVILLE'S CURRENT OR FUTURE ABILITY TO ACHIEVE WHAT IT WANTS TO. THE TOWN SHOULD MITIGATE OR AVOID THESE POTENTIALLY DAMAGING EFFECTS.

- Ag Reserve advocacy
- Climate change (2)
- Distance to services
- Keep Magnet Program at PHS
- Water/sewer capacity
- White's Ferry closing (2)



COMMUNITY VISIONING EVENT

SATURDAY, MAY 14, 2022

FEEDBACK SUMMARY

The following summary reflects public comments received at the Visioning Event, held by the Town and Wallace Montgomery (WM) on Saturday, May 14th, to gather feedback from community stakeholders in reference to the Comprehensive Plan Update. The comments have been noted verbatim, with clarification where appropriate based on WM's interaction with participants.

Transportation

- Roundabout please at Wootton & Fischer
- Need to keep east-bound Fisher Ave. turn lane at Fisher & Elgin; roundabout at Elgin & Fisher
- I love the roundabout proposed for Fisher & Wootton
- Improve road connection to front locals, etc.
- Wootton/Fisher roundabout would be excellent "entry" to downtown Poolesville
- Turn from westerly left onto Fisher feels pretty dangerous

Pedestrian Access

- Please put a crosswalk on the road between the Old Town Hall – connecting locals and Poolesville Tire and Auto/Calleva Farm Store
- Would be great to have an easement/walking path from the houses next to the Methodist Church to behind there through to Town Hall. Would avoid having to go all the way to the main four-way stop.
- Crosswalks for PES – overflow parking for all PES events are @ CVS/TSC lot. Crosswalk necessary & Fisher & Cattail/on hillside of CVS and sidewalk on PES side not complete.
- From Steven's PK – we need a safe way to walk/bike from Steven's back way out to solar field down access road, RT on Fisher & back to existing sidewalk on Fisher and into Town;
- More sidewalks near K2, residential areas
- Sidewalk on our side of Elgin Road (even side)
- Need to make sure sidewalks connect all schools and main streets (no sidewalk from Willard to Fisher – walk in grass)
- More pedestrian crossings on Fisher
- Complete sidewalk connection Fisher Ave
- Additional crosswalks especially by pool
- Sidewalks or both sides of Fisher Avenue – especially by the John Poole House/Locals, etc.
- Sidewalks that are in good repair and exist in all neighborhoods to promote people not walking/running in the street

Multi-Modal Movements

- In-town circulator bus to bring kids and seniors to the new pool, shops, and new community center from ALL of the surrounding communities and the Town. Not everyone drives. An EV Van – 12 to 15 passengers – on a regular daytime schedule.
- I'm hoping the bus 76 will run all day, not just mornings and evenings
- Need bus to go to Barnesville and Medical Taxi's to support western MC residents who don't/can't drive
- Need a bus route for high school students to get to school; if you live less than 2 miles from the school, does the teenager need to walk? I'm concerned about my child having to walk to high school.

Beautification and Community Improvements

- Build a Community Creative Center or open the High School Gym to the public on the weekends like other MCPS high schools
- Paint the water tower
- Need a bus route for high school students to get to school; if you live less than 2 miles from school, does the teenager need to walk? I'm concerned about my child having to walk to high school.
- More parks and open areas
- More outdoor seating areas
- Farmers Market
- Re-open White's Ferry!

Accessibility

- It would be nice to have a town bus for those who can't drive
- More accessible areas for wheelchairs

Dedicated Bike Lanes

- Bike trail to the MARC train
- Bike trail connecting Poolesville to Kentlands
- Bike trail from TAMA to Lewis Orchard
- Make Wootton bicycle "bypass" to Fisher
- I'm hoping for a bicycle trail to White's Ferry and to Edward's Ferry
- Connection of bike trails so we don't have to drive or risk kids' safety on roads to C&O Canal
- Additional bike trails
- (Verbal comment received; email also received as follow-up): make Poolesville a world-class bicycle community. (1) internal Town circulation for school, children, business access, residents reduced reliance on automobiles; (2) improve "spokes" from surrounding locations/activities to the Town with on and off-street facilities; and (3) improve building access to be pedestrian and bike friendly.

Controlled Development and Growth

- Town ordinances that limit commercial property owned by folks outside of Poolesville that either sits vacant and is not remodeled/maintained

Safety

- For safety reasons we “NEED” 3 or more speed bumps on W. Williard (?) Road across PHS as we commonly see trucks, cars speeding way over the speed limit
- More crossing lights on Fisher – spaces for kids going to school, at Wootton for same
- Soper & Wooten – cars don’t stop at 4-way stop when driving on Wooten

Overview

This Comprehensive Plan is a tool for the Town to make planning and policy decisions regarding limited growth, redevelopment, and preserving our natural resources. The overall quality of life for Poolesville's residents depends on implementing this Plan. This Plan will influence future policies and decisions through regulations and capital improvement programs.

The implementation of this Plan will happen both proactively and reactively. Proactively, the Town will establish the priorities, rules and processes, and timelines for implementation of the goals and objectives. Reactively, Town planners will respond to development/redevelopment requests using the guiding principles of this Plan.

The Town will continue to work collaboratively with residents, business owners, property owners, and other relevant stakeholders to review the progress made in meeting the goals and objectives.

Following the adoption of the Comprehensive Plan, the Planning Commission and Commissioners will annually assess the Comprehensive Plan's goals and objectives along with other emerging issues in the Town to develop a list of ongoing, immediate, short-term, mid-term, and long-term activities. From this list, the Town will identify a list of priority projects and activities and update this list of priority projects as progress is made.

One approach to identify these activities is to determine what has been done, what has not been done, what has changed since the Plan was written, and what should be added to the Plan, using the Twelve Planning Visions, as discussed in **Chapter 1 - Introduction**, to help categorize and prioritize these activities.

The Comprehensive Plan is required by state statutes to be updated no less than once every ten years. The Town of Poolesville will adhere to the following comprehensive plan review timeline:

- **Five-year Review** – Within five years of plan adoption, the Planning Commission will thoroughly review the document to determine whether revisions are warranted. Following the review, the Planning Commission and staff will prepare a report summarizing their findings and present it to the Town Commissioners.
- **Ten-year Update** – Within ten years of plan adoption, the Planning Commission will update the plan as required by Maryland's Land Use Article.

The goals and objectives of each of the chapters in the Poolesville Comprehensive Plan are outlined below. The goals and objectives are consistent with the State of Maryland's Twelve Planning Visions, as discussed in **Chapter 1 - Introduction**.

Overview

A development capacity analysis (“capacity analysis” or the *analysis*) is a study conducted during the Comprehensive Planning process to provide a municipality with insight into its development pipeline and what could eventually be developed in the jurisdiction based on the current and future land use categories designated in the Comprehensive Plan, and the average development yields in these categories as defined in the Zoning Ordinance.

This analysis can be used to evaluate the growth capacity of the jurisdiction; determine future needs for public water and sewer systems and other public facilities; and to estimate the cost of public infrastructure needed to serve areas of future growth.

This appendix details the process by which a Development Capacity Analysis was performed for the Town of Poolesville for use in the development of the Municipal Growth Element (Chapter 6 of the Plan).

Methodology

The principal set of tools used for this analysis are Geographic Information Systems, or GIS. GIS is essentially a suite of software and processes that represent land use, zoning, parcel ownership, and similar datasets on a two-dimensional computer image. GIS enables planners to perform spatial analyses, or to solve problems and answer questions about facilities, properties and other elements that can be mapped.

Much of the Town of Poolesville is already mapped within GIS data layers, as Montgomery County is a leader in GIS technology and applications and includes most local municipalities in their datasets.

There are several principal datasets used in a development analysis: parcel boundaries and ownership data; existing land use; future land use; and a vacant land inventory. For Poolesville, parcel data is maintained by Montgomery County, which last updated the Town’s datasets in early 2023. Existing and future land use datasets, as well as a vacant land inventory, were developed for this Comprehensive Plan Update.

Existing Land Use data were developed by reviewing the State of Maryland’s high-resolution aerial imagery and assigning land use designations to all parcels and land areas within the Town. The Land Use schema used for this effort is a modified Anderson Land Use Classification consistent with Maryland Department of Planning’s (MDP) statewide Land Use Land Cover dataset.

While this land use assignment was largely performed parcel by parcel, some large parcels that appeared to contain additional (undeveloped) residential capacity had areas “carved out” from the larger parcel to reflect large scale land use divergences. In other words, if a large parcel had a single home located near the front of a parcel, and large forested area near the back, the forested area was split into a separate land use polygon feature that represented the forested area, while the area encumbered by the residential unit was labeled as a low density residential use. After drafting the initial existing land use dataset, Town of Poolesville staff reviewed it to ensure that designations from the aerial imagery were accurate. One round of updates to the existing land use data was performed to correct initial assumptions.

During this initial phase, several parcels were identified as vacant and put into their own dataset. After confirming these parcels were indeed vacant with Town staff, the datasets were updated to reflect the

Town's input, and the vacant land inventory was finalized. This dataset would form a critical piece of the development capacity analysis.

Next, the planning team worked in tandem with Town staff to identify desired future land use areas for the Comprehensive Plan. Using a process like the one used for the existing land use dataset, each land area within the Town was designated for a future land use type. For most of the Town, existing and future land use designations were not changed. For example, almost all land designated as low-density residential remained so.

However, for areas that had an increase in residential density proposed in the future, or were vacant or under-developed, the planning team calculated how many homes or commercial businesses could be developed within the Town based on average zoning yields for these categories in the Town.

For each of these areas, an approximate developable area was calculated. This amount excluded mapped and known natural resources (such as streams and wetlands) that are prohibited from development. Then, to determine a baseline development capacity (that is, the amount of development that could occur under existing land use designations and yields), the planning team used the parcels' underlying zoning provisions, specifically the minimum lot size, to estimate the number of new residential lots that could be subdivided, minus a development modifier that reflects the guidance provided by MDP.

This approach reflects the fact that developers typically achieve only 85 percent of the maximum allowed capacity due to the need to install infrastructure such roads and stormwater management systems. This analysis generates an estimate of the number of new residential units that could be developed within the existing land use categories. (This methodology differs from that used in an analysis intended to calculate non-residential development capacity.)

After the existing capacity was developed, the analysis was repeated using the Town's future land use categories. The planning team calculated the minimum average lot size allowed by zoning for the new residential land use categories (if, for example, three zoning classes could support medium density residential land uses, the minimum lot size for those three zones would be averaged and used for the analysis) and performed a similar calculation for commercial land uses and zones. The vacant and under-developed parcel features were then examined, and the same calculations applied as in the existing capacity analysis, generating projections for the build out of the Town under the future land use conditions proposed in the 2024 Comprehensive Plan.

APPENDIX A:

WATER SUPPLY

Poolesville's Water Supply

Introduction

Poolesville currently relies entirely upon groundwater to supply the needs of its residents and businesses. Generally, unless it has been contaminated by some type of human activity such as industrial contaminants or by water-borne pathogens, groundwater provides a higher quality source of potable water than surface water, such as that from a river or lake. This is because the water is purified as it passes through the soil on its way to the subsurface aquifer or water-bearing region below the surface. Poolesville's groundwater supply has been studied and reviewed at frequent intervals. Because of the fractured bedrock aquifer underlying Poolesville, a perfect understanding of groundwater flow and availability may never be reached irrespective of the level of additional studies.

The Hydrologic Cycle

All groundwater has its source from precipitation. It is therefore helpful to explain the path -- or hydrologic cycle -- that water takes before it reaches consumers.

The term hydrologic cycle refers to the constant, never-ending movement of water above, on and below the earth's surface (Figure 1). It begins with evaporation from exposed moist surfaces, lakes, rivers, streams, the ocean and the active transport by plants from the soil to the air -- a process known as evapotranspiration. The moisture forms clouds, which return the water to the earth as precipitation.

Precipitation—rain, melted snow, and hail--wets the land and begins to infiltrate into the ground. Infiltration rates are greatest in forests, growing on sandy soils and least in open land with clayey and silty loam soils. In Poolesville, the soils are generally silty and have a low permeability. During low to moderate rainfalls much of the water infiltrates; however, when the rate of precipitation exceeds the rate of infiltration, such as during heavy thunderstorms, overland flow or runoff begins.

The first infiltration provides soil moisture. After the soil becomes moist, the excess percolates slowly down through the layers of unsaturated soil to the saturation zone. In

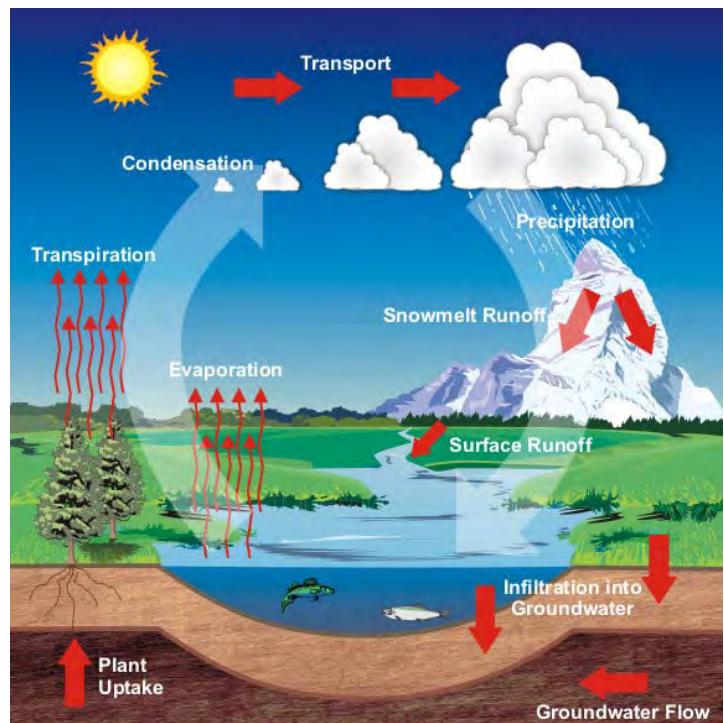


Figure 1. The hydrologic cycle

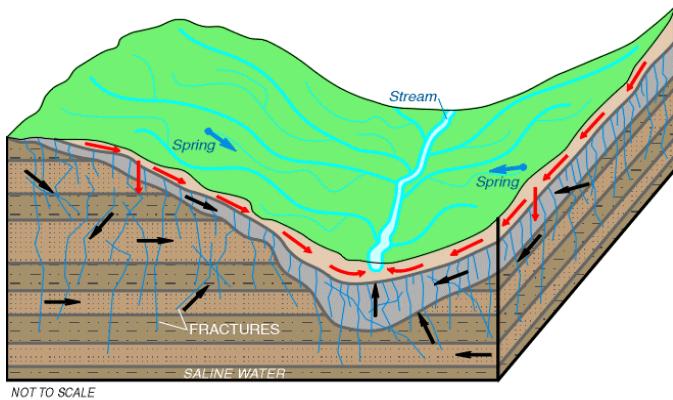


Figure 2.
Diagram of ground water occurrence in jointed and creviced consolidated sedimentary rocks.

discharge (Figure 3). In the Poolesville area, discharge sites are generally seeps in the bottoms of streams and particularly into the Potomac River. The orientation of fractures and the movement of groundwater beneath Poolesville is generally in a northwest to southeast direction⁵.

Water reaching streams and rivers, both by overland flow and from groundwater discharge, moves to the sea (down the Potomac River) where it is evaporated and begins the cycle anew.

Geology

The underlying geology effects Poolesville's water supply in many ways. To the north and northeast of Town, the land is predominantly underlain by phyllite. Phyllite is ancient, gray-green crystalline rock that has a slaty appearance with lustrous bands of mica.

To the west and northwest of Town, there is a diabase dike. Diabase is molten rock that welled-up from the earth's core millions of years ago. In this case, the molten rock filled a long, wide fracture in the sedimentary rock that runs between Dickerson and Beallsville, then west of

Poolesville's case, there is a very thin layer of soil overlying a thick mantle of sandstone, shale and/or siltstone (Figure 2) deposited on the earth millions of years ago during the Triassic geologic period (known to geologists as the New Oxford Formation of the Newark Group)⁵. Because of this thin layer of soil, Poolesville's groundwater is highly susceptible to contamination from events that occur on the land surface.

Below the water table, the soil will be saturated until some type of confining layer stops the downward flow of water. Most of the groundwater available to Poolesville is located in crevices, fissures and fracture lines that run through the underlying bedrock (Figure 2). Groundwater-underlying Poolesville moves downward and sideways to sites of

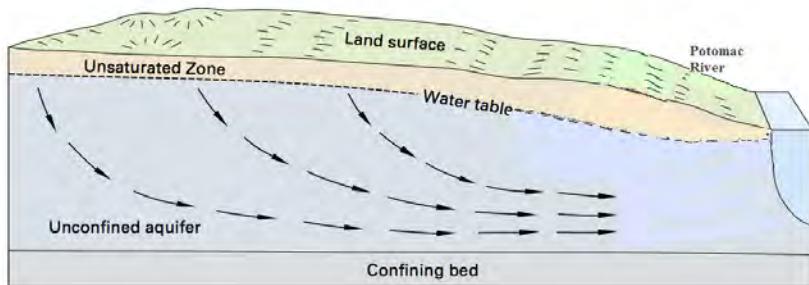


Figure 3. Stylized movement of ground water towards the Potomac River. Groundwater normally flows as a muted image of the land's surface. Poolesville's water movement primarily occurs in cracks and fractures. *(source:1)

Poolesville to the Potomac River. Because the diabase is essentially impermeable, groundwater to the west of the dike is separated from that to the east of it. This fact has positive ramifications for Poolesville. One benefit of this dike's existence is that any groundwater contamination that might arise from leaks in the Dickerson landfill liner will most likely move west and south towards the Potomac River and much less likely contaminate Poolesville's water supply.

Unfortunately, the dike also limits the recharge area of the groundwater aquifer underlying Poolesville. The groundwater supplying Poolesville's wells is fed from a relatively small watershed. In fact, most of the recharge of the aquifer beneath Poolesville comes from precipitation that falls directly within the boundaries of Town or immediately to the northwest of it. Thus, if one pictures a layer of approximately 10 inches of water covering the surface of land in Town (1,940 undeveloped acres), it will provide an idea of the amount of groundwater theoretically available to the community through Town wells. The volume is approximately equivalent to 1.5 million gallons per day (GPD) or 1000 gallons per minute (GPM).

The rock immediately beneath the surface soils in the area of the Town contains numerous fissures, cracks and crevices (Figure 2). Unlike some areas of the country that are underlain with relatively homogeneous, unconfined deposits of coarse sands and gravels that form relatively uniform aquifers, the groundwater generally is channelized in these cracks and crevices. While the cracks and fractures may be several thousand feet long, they are generally no wider than a person's small finger and may be only one to two feet high or less.

In a fractured rock aquifer, almost all of the groundwater flow is through a few open joints with the bulk of the aquifer contributing very little water. Transmissivity is defined as the rate that the aquifer can deliver water to a well through its entire thickness ^{1, 3, 5}. The rate of movement of water through the fractures is very high, but averaging this over the entire, largely non-producing, thickness of the aquifer gives a low value ². Thus, Poolesville's water is more or less confined to small cracks and the yield of a well generally depends upon the number of fractures that it intercepts: the greater the number of fractures, the higher the yield.

While the water can be transmitted to the wells in the fractures fairly fast, the fact that most of the aquifer is composed of rock means that the ability of the aquifer to store water is limited primarily to that in the fractures themselves. Once water is drawn out of a fracture (in other words - sucked dry), there is little water within the "pores" of the rock to replace it. Replacing the water in the fractures depends upon recharge from precipitation.

While yields from the New Oxford Formation are relatively low compared to unconsolidated rock aquifers found in other parts of the country, yields from phyllite are even lower. Otton reported yields from such wells rated at 0.5 to 25 GPM ⁵. The median yield for 9 of these wells was 7 GPM.

Drawdown

As water is pumped from a well, it decreases the water pressure in the fractures near it. As long as the rate of pumping does not exceed the transmissivity, the level of water in the well should remain relatively constant. During winter and spring months when groundwater is being recharged from above, recharge is greater than pumpage and Poolesville's well levels increase. During the summer months, however, when there is little recharge and the rock itself cannot give up much stored water, the levels in the wells typically decrease.

Well Yield and Usage

Well yields shown in Table 1 are the sustainable yield that is expected during a drought period, with yields potentially higher during periods of average or greater rainfall. These rates should allow the wells to run continuously without stressing the aquifer. The average daily usage of water for the Town for the last 2 years (2021-2022) was 516,000 gpd and 541,000 gpd respectively.

Table 1
(Characteristics of Poolesville's Eleven Wells)

Well Number	Aquifer	Depth (Feet)	Diameter (Inches)	Sustainable Yield (gpm)
2		453	6	100
3		285	6	60
4		600	6.5	35
5		500	6	100
6		500	8	100
7		700	8	40
8		500	8	60
9		800	8	95
11		1,200	8	60
12		500	8	70
13		500	8	60

The Water System

Presently, Poolesville has eleven wells in production and/or permanently connected to our water system. All water is treated with chlorine to protect against bacteriological contamination. Well # 2 has a filtration unit, which was installed in 2004 due to water bearing fractures located close to the surface. Wells 7 & 9 are equipped with radon and alpha emitter treatment systems. Wells 2 & 3 are undergoing a PFAS removal pilot test with granular activated charcoal filtration.

Additional wells, Well 14 (under construction) and well 15 (Cattail Jamison) have been identified and will be brought into service in the future.

A telemetry system in each well house operates the wells dependent on the level of the elevated storage tank. All of the wells in service are equipped with flow regulating valves, which allow operators to set the pumping rate and prevent it from exceeding drought-pumping

conditions. This added protection ensures that each well's major water bearings zones are not dewatered. All wells, the 500,000-gallon elevated storage tank, and the 1 million gallon standpipe storage tank are protected with a security system.

Permitting

The Maryland Department of the Environment issues all Water Appropriation Permits for municipal systems. Permits are issued for each watershed and the available withdrawal is based upon the recharge area of the watershed within the Town boundaries. Poolesville consists of four watersheds: Horsepen Branch, Broad Run, Dry Seneca Creek and Russell Branch.

The following table shows the “theoretically” available groundwater based upon each watershed’s area using a recharge of 254 gallons per day per acre. The Broad Run and Dry Seneca Creek Watersheds, have remaining groundwater capacity, while the Russell Branch and Horsepen Branch Watersheds are fully allocated. As the table indicates, the Town is allowed to withdraw more water from the Horsepen Branch watershed than is theoretically recharged because the withdrawal permit and the establishment of these wells occurred prior to the existing allocation methodology.

Watershed	Area (acres)	“Theoretically” Available groundwater (gpd)	Average Daily Allocation on a yearly basis (gpd)	Average Daily Allocation for Max. Month (gpd)	Potential Well capacity (gpd)	Remaining Available Groundwater (gpd)
Horsepen Branch (wells 2, 4, 6, 8 & 11)	588	149,000	293,000	388,000	597,600	0
Broad Run (well 12)	551	140,000	47,500	66,600	66,600	92,500
Dry Seneca Creek (wells 3,5 & 13)	973	247,000	194,500	273,400	303,400	52,500
Russell Branch (wells 7, 9 & 10)	450	115,000	115,000	182,000	359,000	0
Totals	2,562	651,000	650,000	909,600	1,326,600	145,000

Once the Jamison-Cattail well is placed on-line, it will effectively “tap-out” the Dry Seneca Creek watershed. Future well explorations should focus in the Broad Run watershed area as this area has approximately 92,500 gpd (64 gpm) of available groundwater supply.

Threats to Our Groundwater

Poolesville's groundwater is generally of high quality and meets all current drinking water standards. In 2006 the Town adopted a Wellhead Protection Ordinance that reduces the threat to groundwater from contamination arising from stationary sources. The EPA and MDE review and test for newly identified sources of contamination on a regular basis. If and when a contaminant is identified the Town acts quickly under the direction of the MDE to alleviate the threat. A threat from mobile sources of contamination will always remain from tank trucks carrying such products as gasoline, home heating fuel and pesticides. Appropriate contingency plans for this occurrence have also been developed. The Town should continue to develop additional well fields as far removed from potential sources of contamination as possible. Further, the Town should pursue abandonment of in-Town private well and septic systems to limit this as a potential source of groundwater contamination. The Wellhead Protection Area is delineated as the corporate limits and in some areas, extends beyond Town boundaries. The Town believes the present planning process that reviews new development applications and changes in use provides a degree of protection for the Town's water supply.

As far back as 1981, however, the limited purification capabilities of Poolesville's thin soils were recognized⁵. It was estimated that if a chemical contaminant of the same viscosity as water was spilled at the intersection of Routes 109 and 107 (1,300 ft. from the nearest well), it would take anywhere from 9.5 months to four years to reach the well. At the faster rate of movement, a spill 100 feet from a well would contaminate it in approximately 22 days. The estimates made in 1981 recognized that the actual rates of movement through the aquifer might be much faster due to the fracturing and crevicing of the rock⁵.

In 1991, Maryland Department of the Environment's Water Supply Program conducted a wellhead protection demonstration project for Poolesville⁴. Using various methods, MDE produced maps depicting the areas that needed to be protected from contamination to ensure that the Town's water supply remained safe. The study concluded:

Since the wells are located throughout the Town, all of the Town is part of the WHPA. The impact of current land use can be assessed through groundwater monitoring and further protection of the supply can be achieved through land use controls.

Groundwater in the Poolesville area appears to be particularly susceptible to contamination because of the thin soil cover and extensive fracturing of the underlying shale and sandstone.

Drought

On July 14, 1999, the COG Board of Directors established a "Task Force on Water Supply Issues" to review the region's water supply systems, drought emergency plans, and long-term water supply plans and needs. The "Water Supply and Drought Awareness and Response Plan" contains four stages and is currently designed primarily for those customers who use the

Potomac River for water supply. The Task Force will continue to focus its efforts on the expansion of this plan to incorporate other water supply systems (i.e., small public utilities, groundwater and agriculture), and development of a year-round wise water use campaign. The Task Force will also continue to address the relationships between water supply and the environment.

Looking Ahead to the Future

The well exploration efforts in 2001-2002 identified wells to meet the present and future needs of the Town's residents. All of these wells have been either constructed or funded in the Town's Capital Planning Process or through future Impact Fees. Any additional well exploration should be conducted in the Broad Run watershed. This would allow the Town to exceed its water supply demands and provide water if a contamination event occurred which permanently disabled one or more of our wells.

Finally, the owners of the vast majority of land south of Poolesville have sold-off their Transfer Development Rights and can never be developed in densities higher than one house per 25 acres. Thus, the land will remain primarily undeveloped and at low risk from chemical contamination. The Town will need to work with MDE to secure the necessary water rights for lands outside of Town.

Other Sources of Water

Alternatives to groundwater that have been previously explored, include developing a treatment plant on the Potomac River and connecting to the Washington Sanitary Sewer Commission (WSSC), which obtains its water from the Potomac River.

While both of these options are viable, neither is preferable to continued reliance upon groundwater to serve the needs of the Town. Not only would the Town be required to make a very large financial commitment to either option, but also the quality of potable water delivered to Town residents would decrease.

Conclusions

A great deal is known about Poolesville's water supply, far more than most small communities in Maryland. The water is generally located only within the fractures in the rock that underlay the Town. Wells that intercept these fractures are productive. Tapping into fractures that are not interconnected with others is essentially the same as tapping into a new aquifer. Because of the thin layer of soil overlying consolidated rock, the Town's groundwater supply is very susceptible to contamination.

While there will be an adequate supply of potable water to meet the Town's present and future needs under normal conditions, prudence dictates that additional yield be incorporated into the system to safeguard against unforeseen well operation problems or groundwater contamination.

The Town is limited by both physical and administrative considerations in where it can seek new groundwater sources. Well sites within the Town proper, except for the Broad Run watershed on the west side of Town (MDE permitting limitations), have been nearly exhausted. Additional wells within the boundaries (except for the northwest corner) will probably intersect the zones of influence of existing wells.

If the Town considers expanding its water supply outside of its corporate boundaries, they will need to pursue the use water rights with individual properties. MDE should be part of this pursuit since that agency will ultimately issue any appropriation permit to the Town for expansion of its water use. Alternatives of treating and piping Potomac River water to Town or connecting to WSSC will be very costly and provide a lower quality water than the Town now enjoys from its well fields.

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The following numbered sources of information represent the factual basis for this report. Copies of each are available for inspection at Town Hall.

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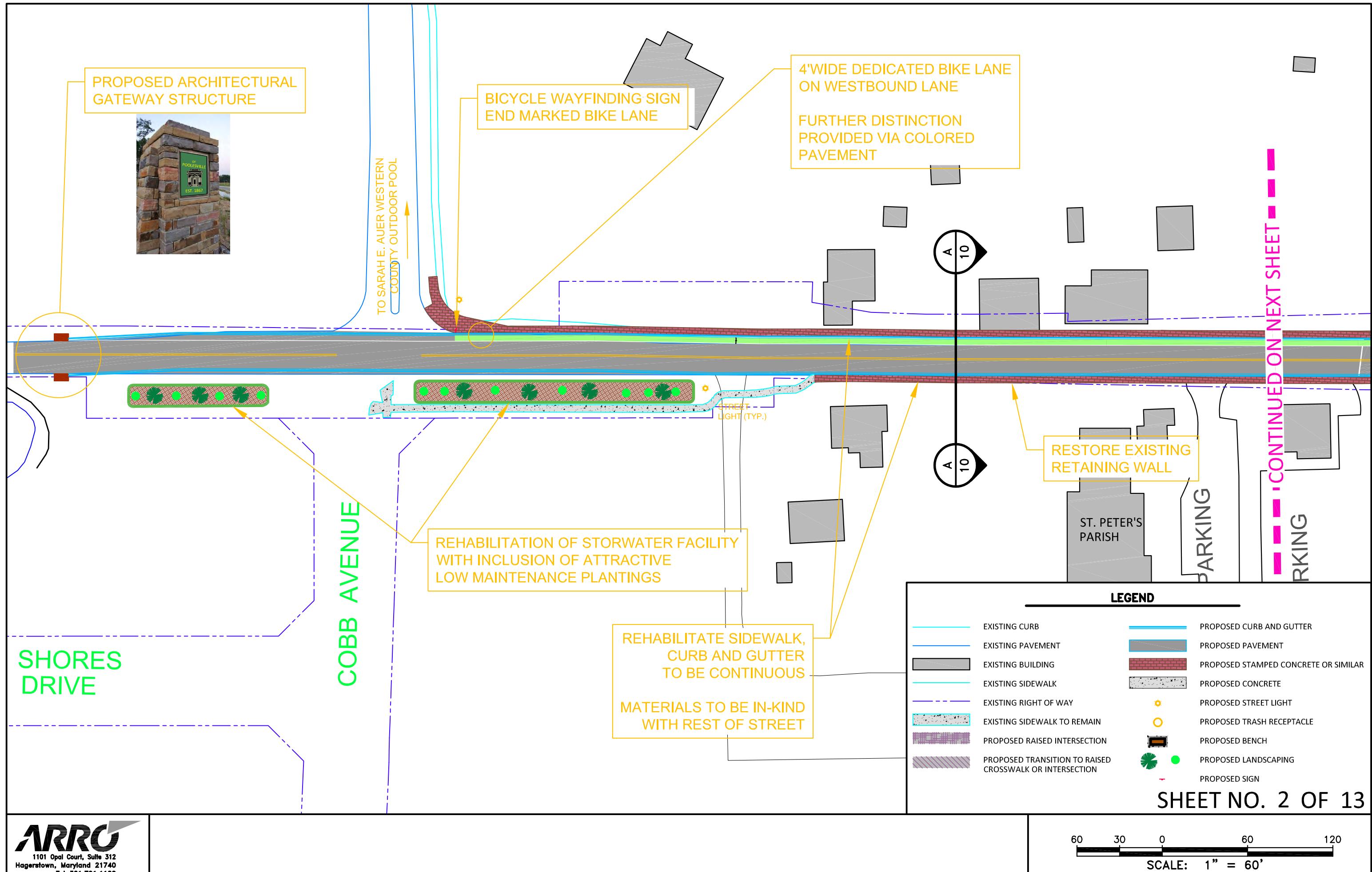
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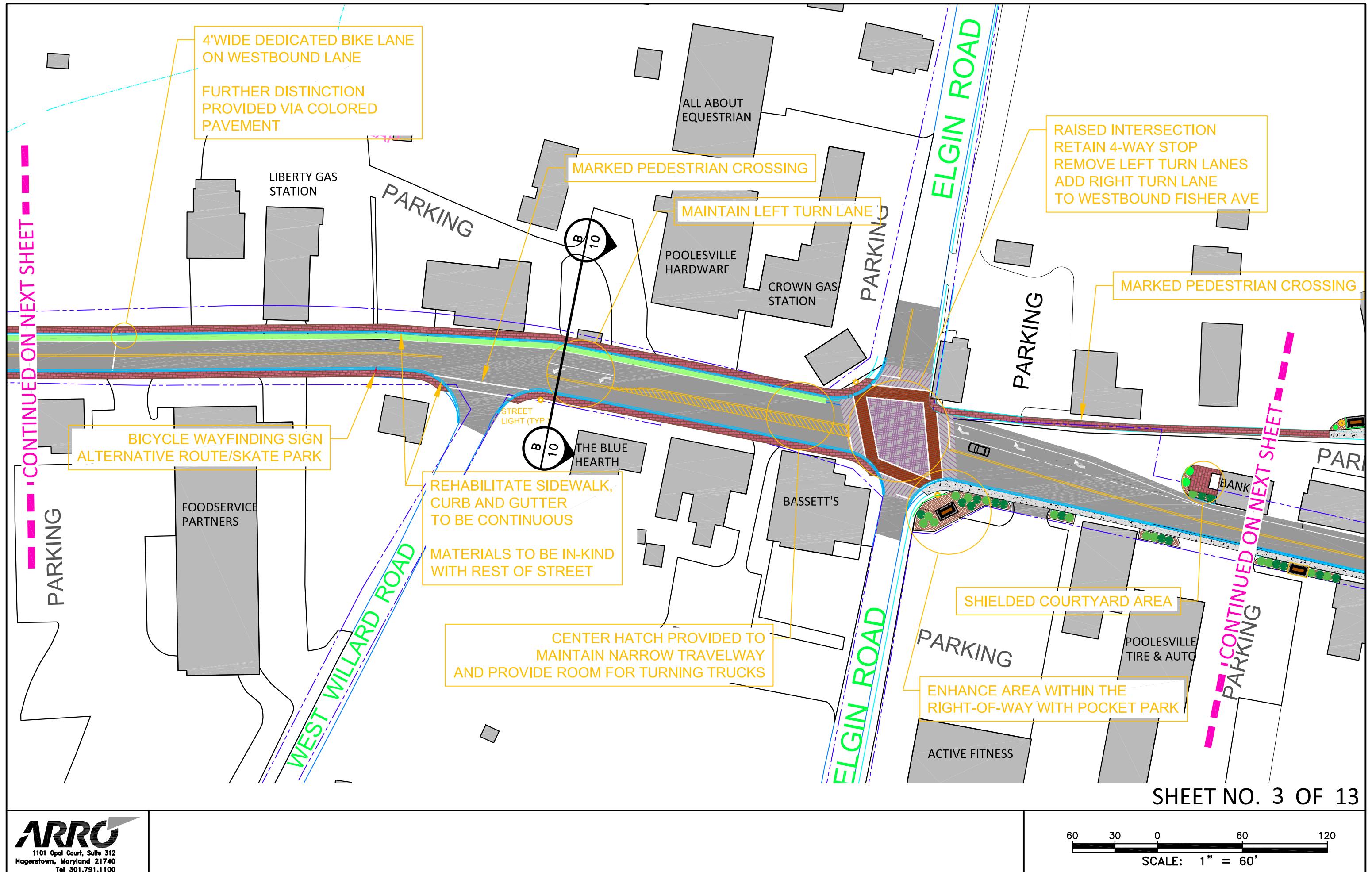
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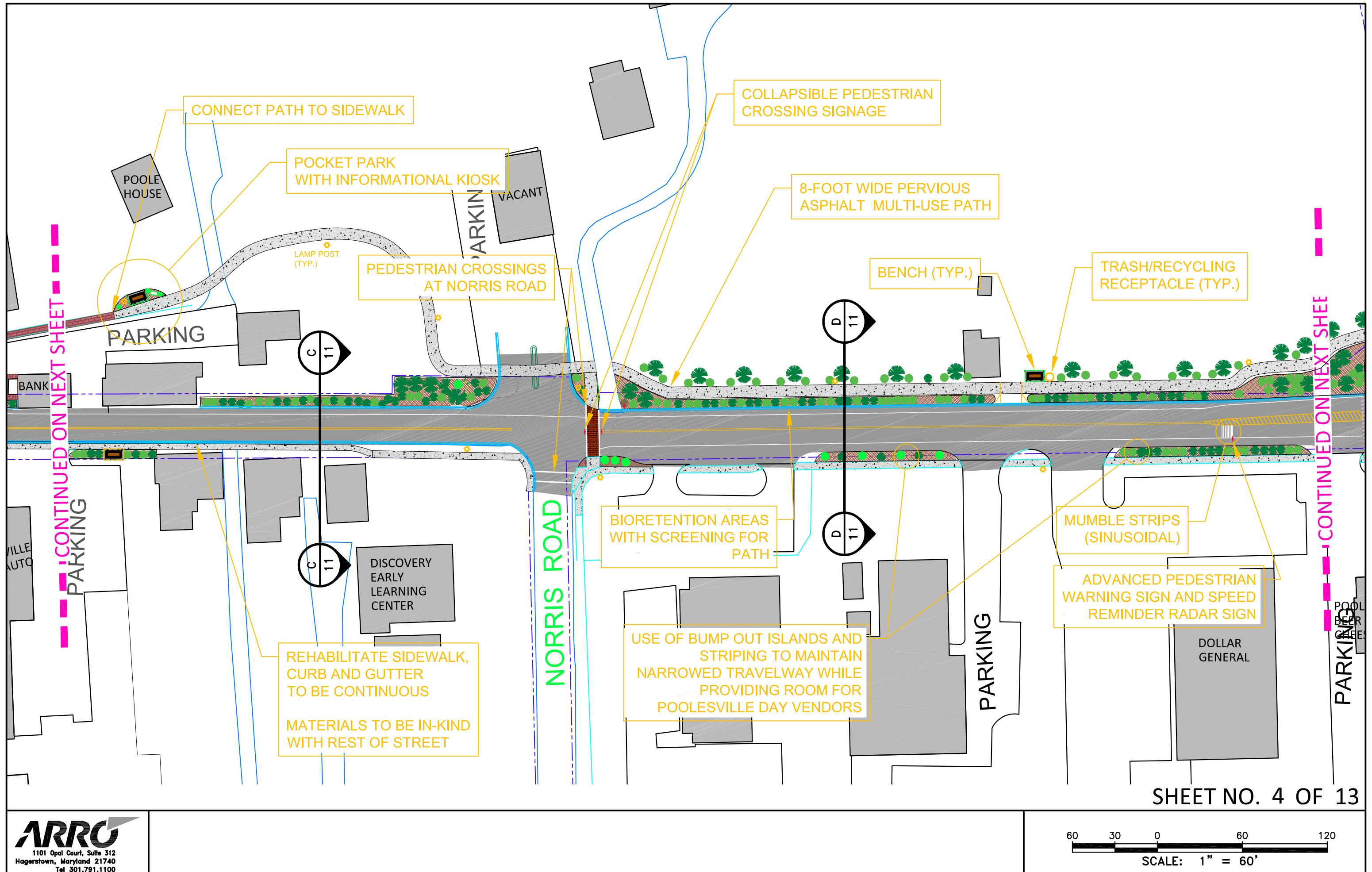
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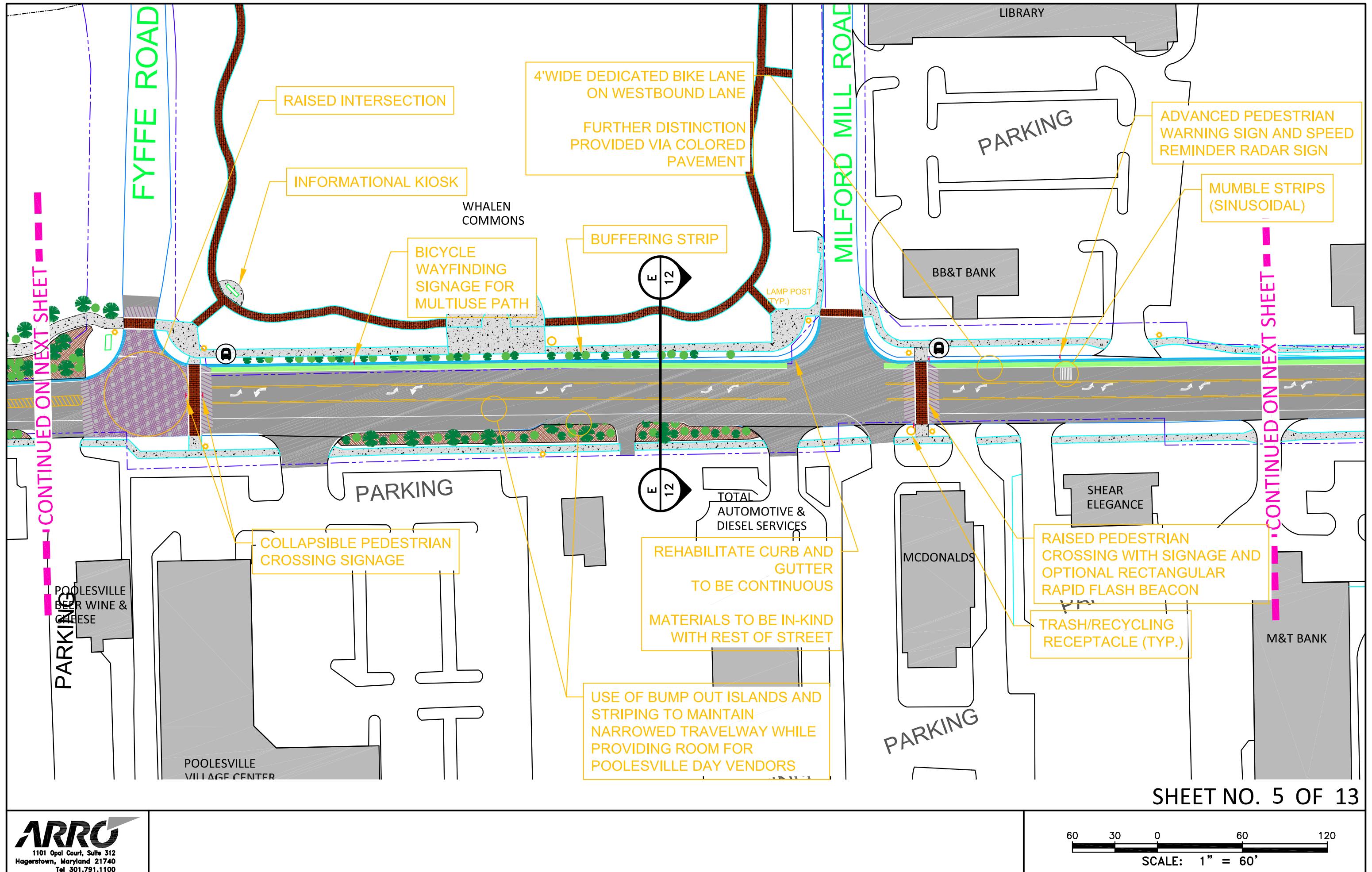


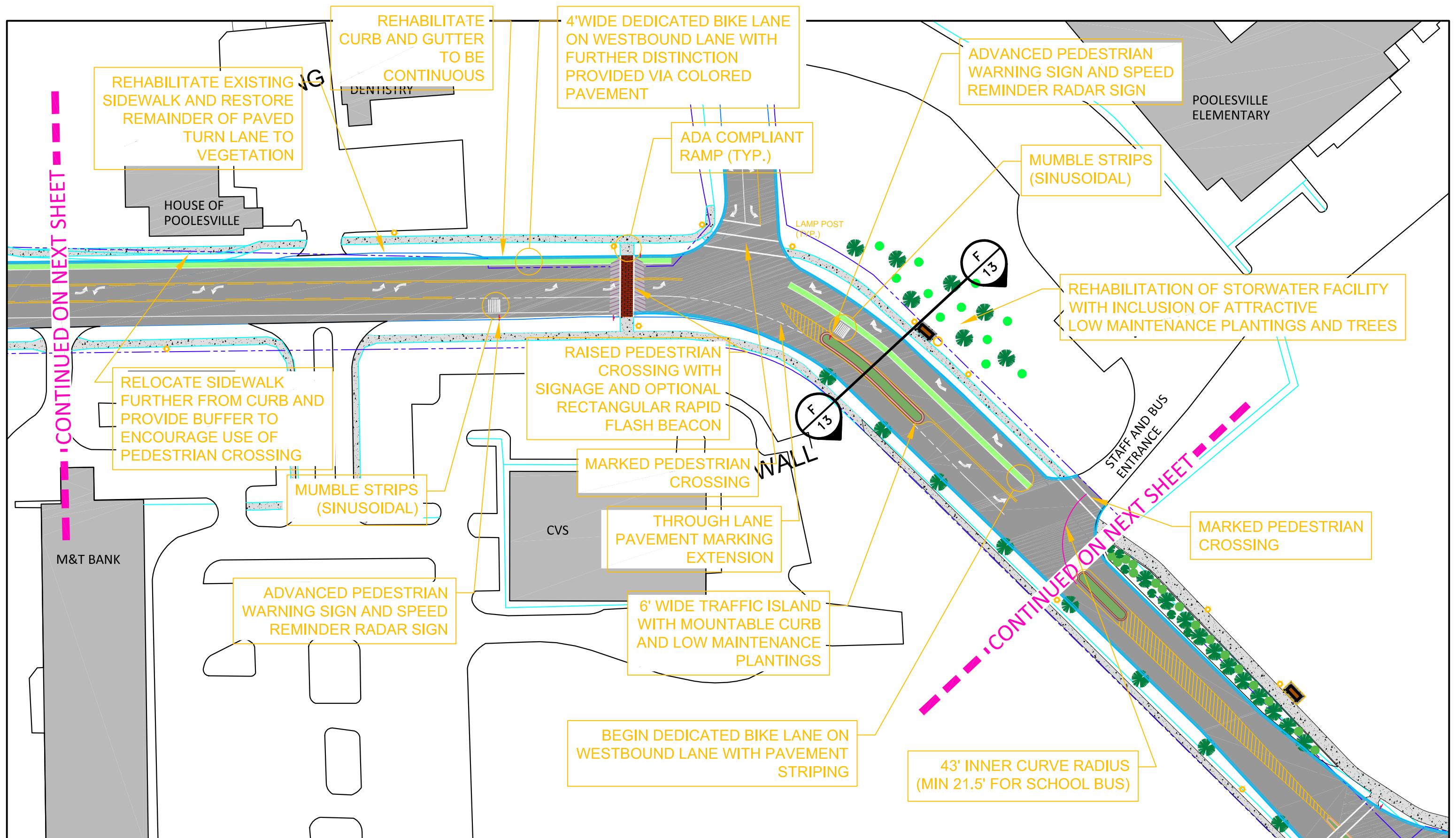
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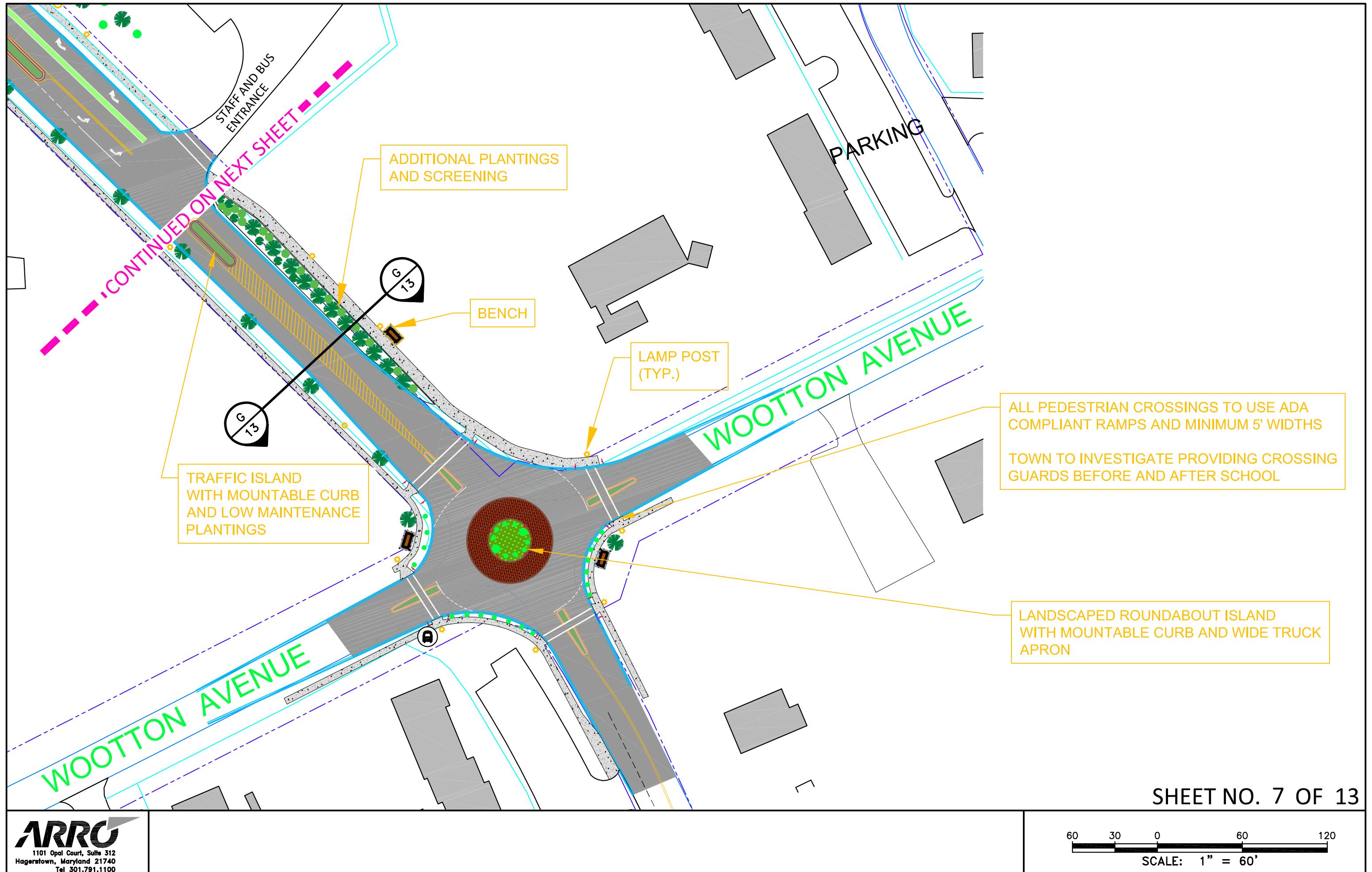


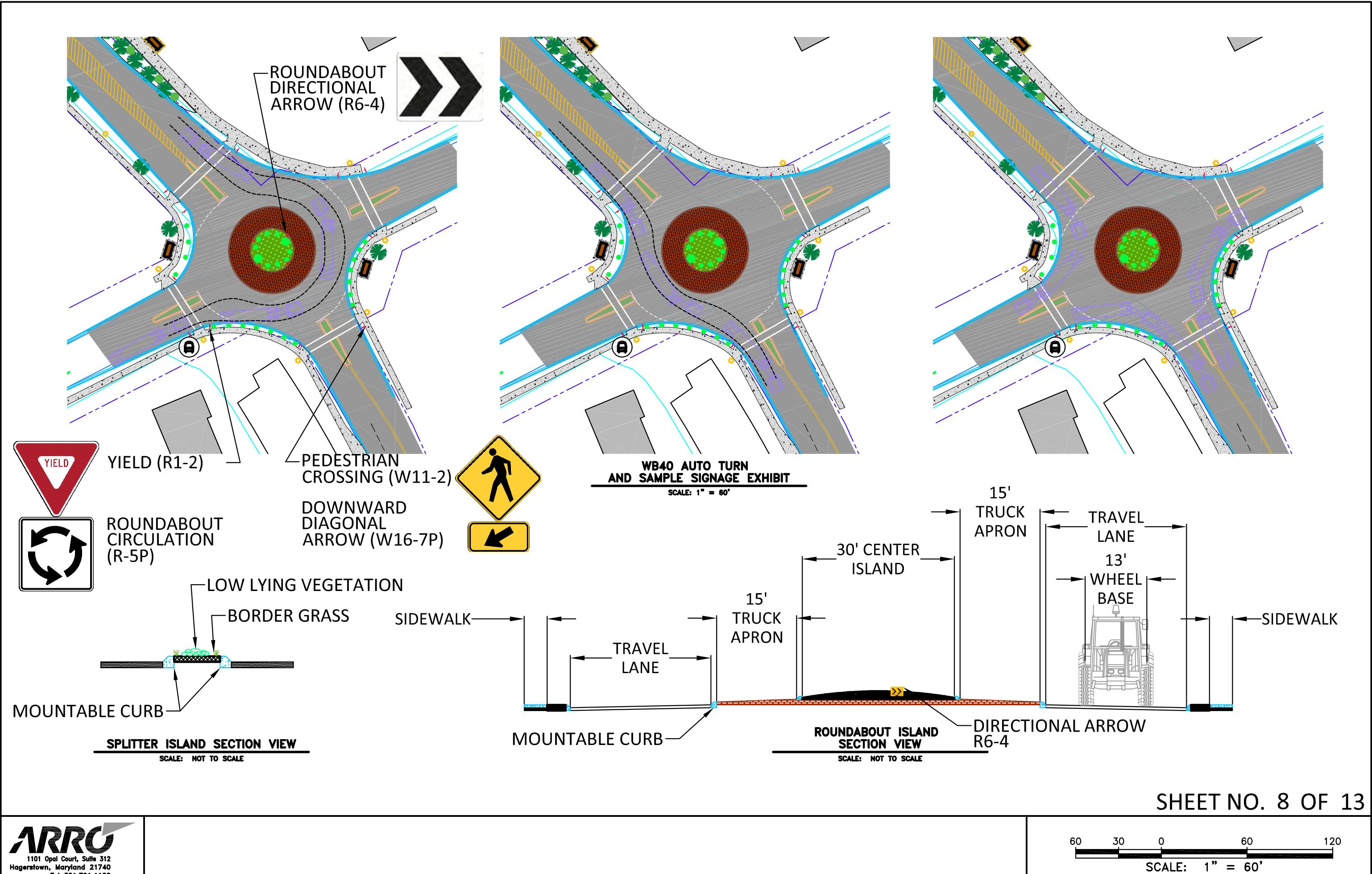




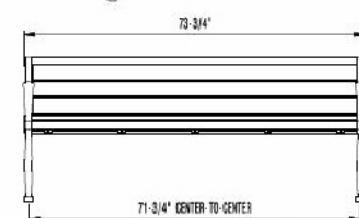
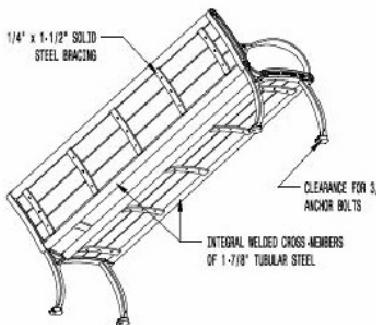
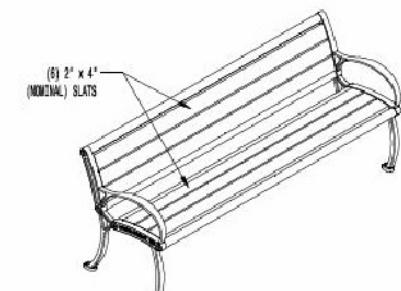
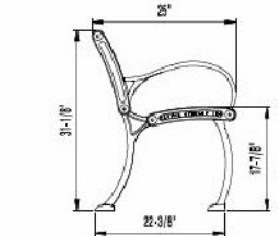


SHEET NO. 6 OF 13





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STANDARD BENCH WITH DUCTILE IRON END FRAMES

SHOW: STANDARD 6-FOOT LENGTH

AVAILABLE OPTIONS:

POWDER COATING

10 STANDARD COLORS, 2 OPTIONAL METALLIC COLORS, CUSTOM COLORS (INCLUDING THE RAL RANGE)

SLAT TYPES

RECYCLED PLASTIC SLATS (NOT 2ND SITE SYSTEMS)

COLORS: GRAY, MAPLE, CHERRY, AND WALNUT

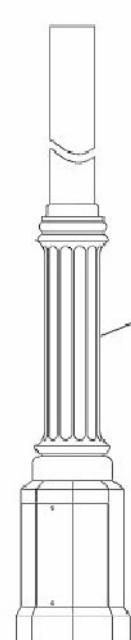
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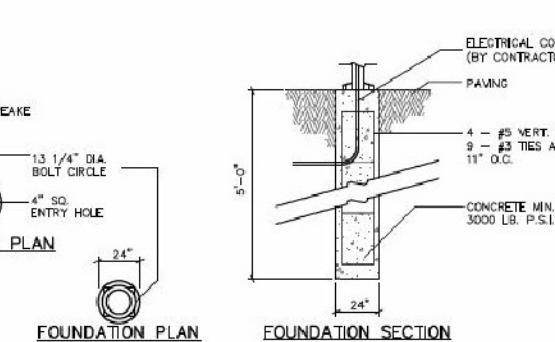
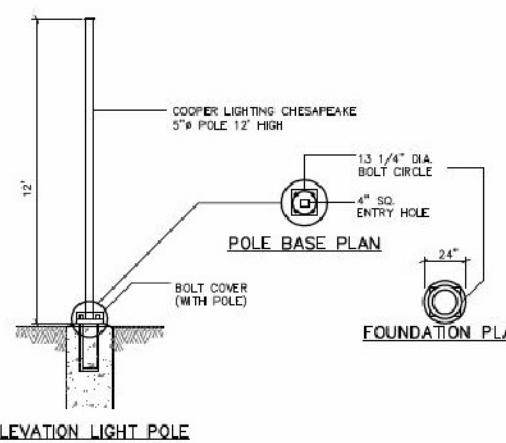
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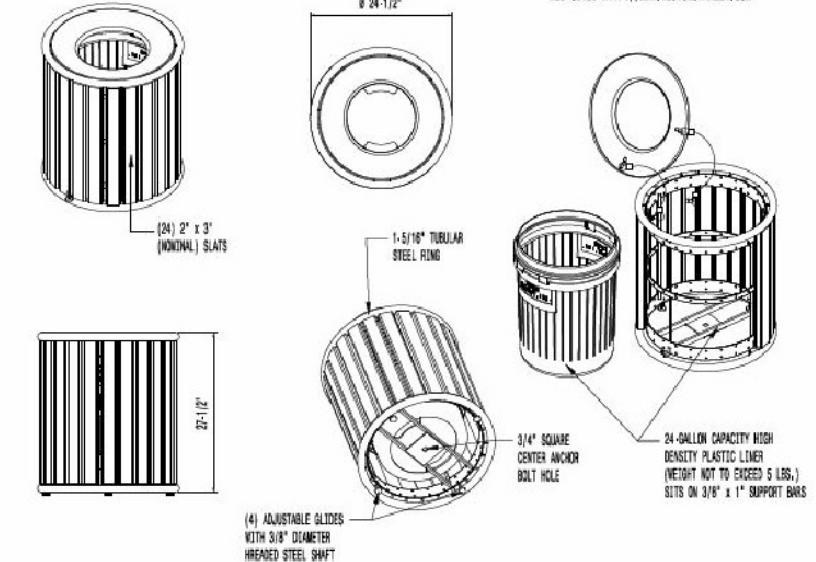


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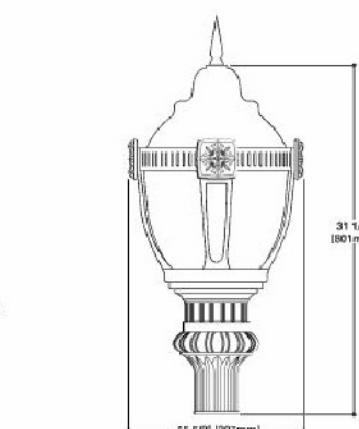


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11 STANDARD COLORS, CUSTOM COLORS
(INCLUDING THE RAL RANGE)

SLAT TYPES

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MODIFIED MOUNTABLE CURB

LOW LYING VEGETATION
BORDER GRASS
MOUNTABLE CURB
ISLAND DETAIL

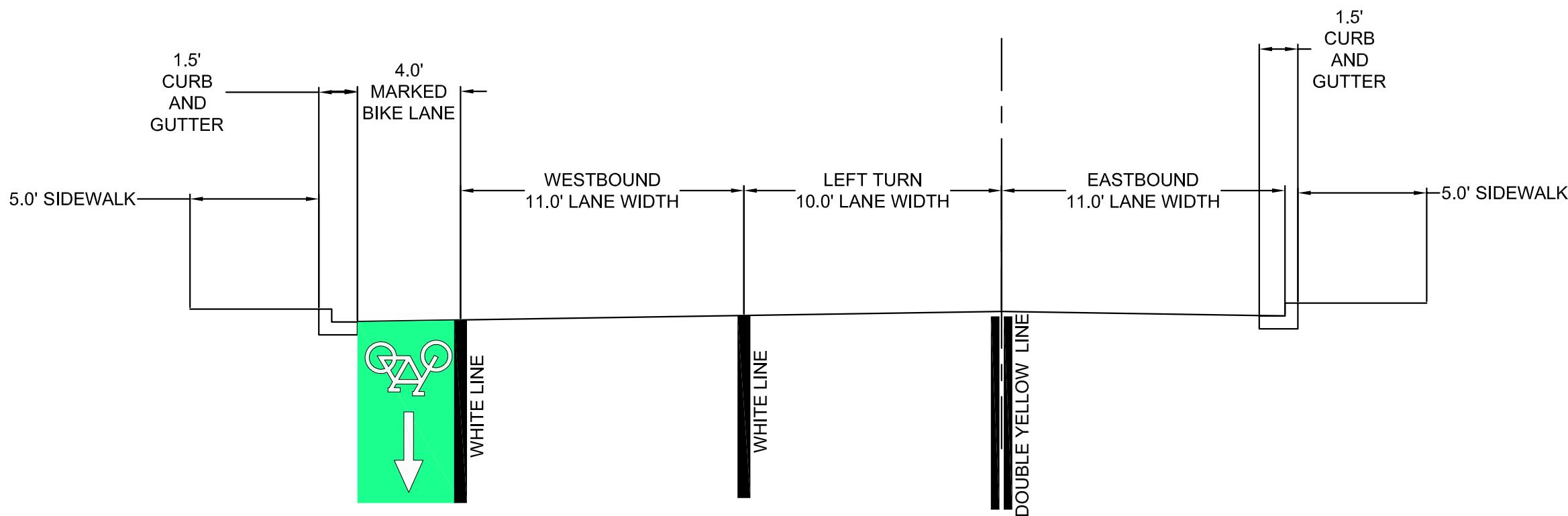
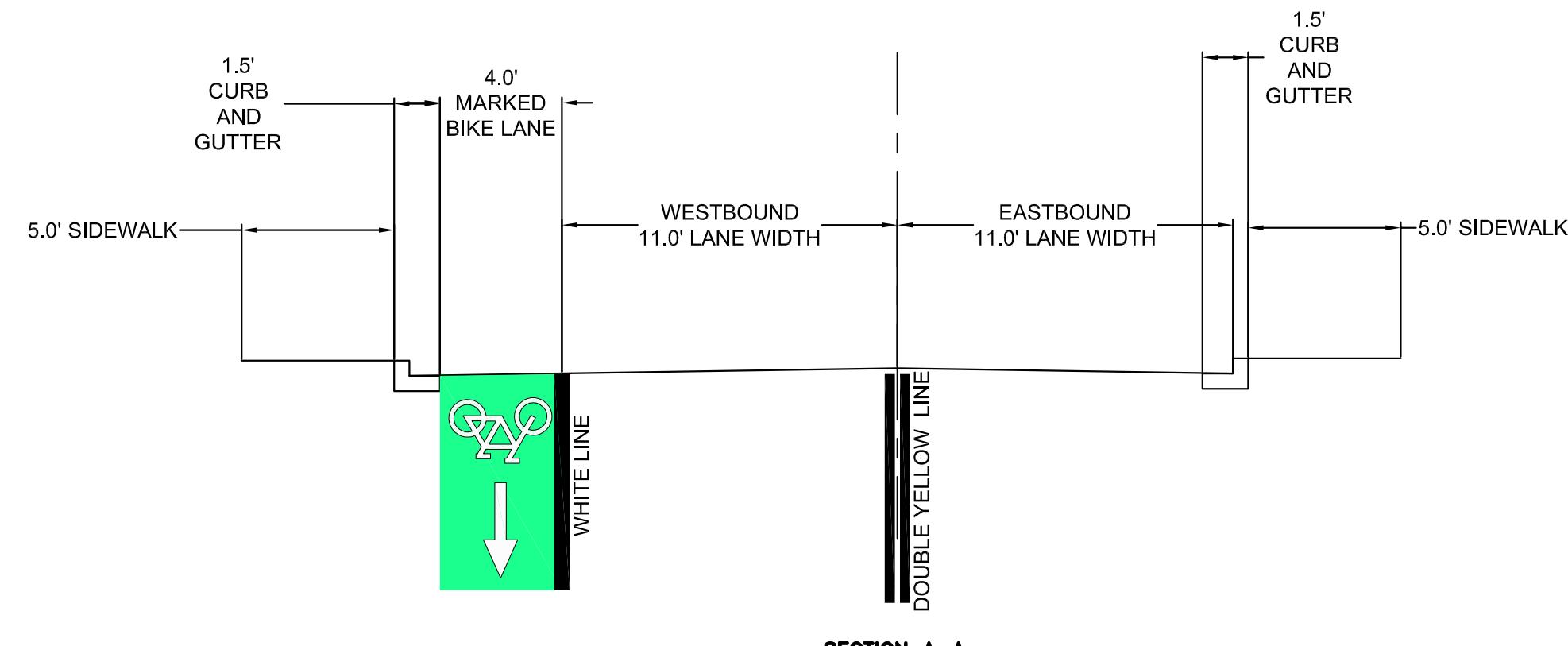
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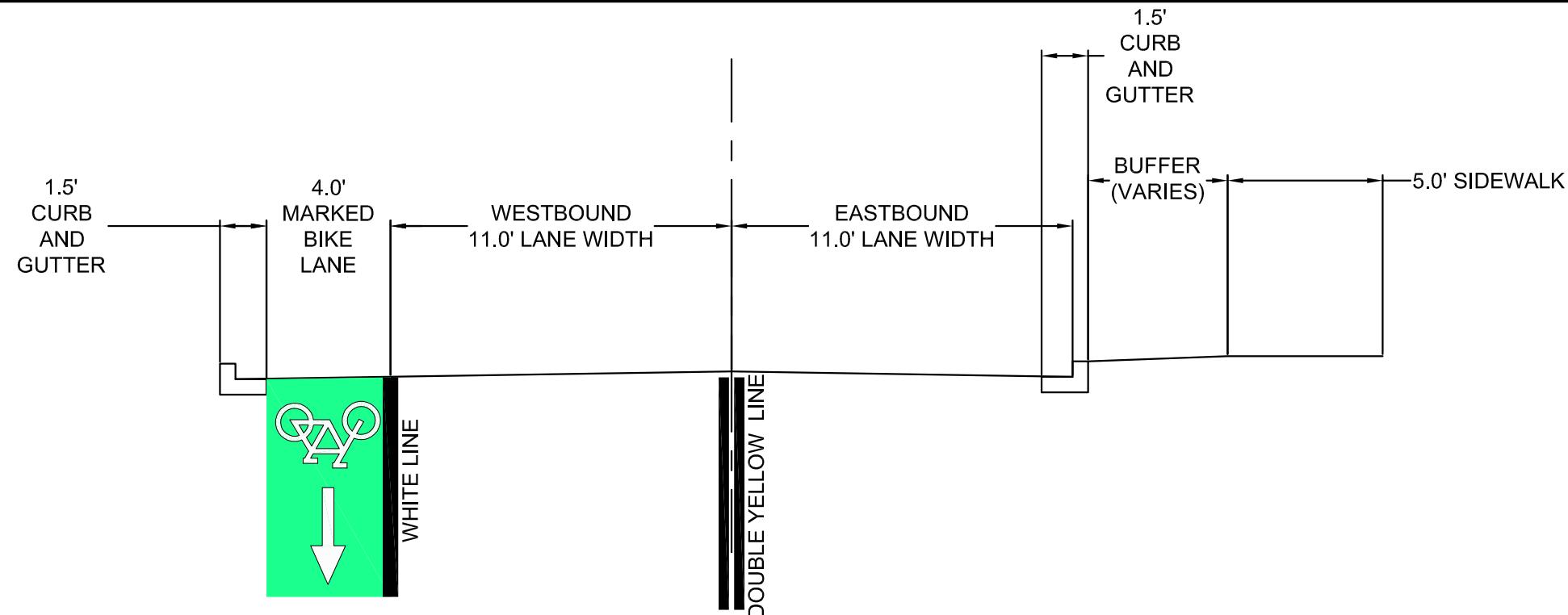
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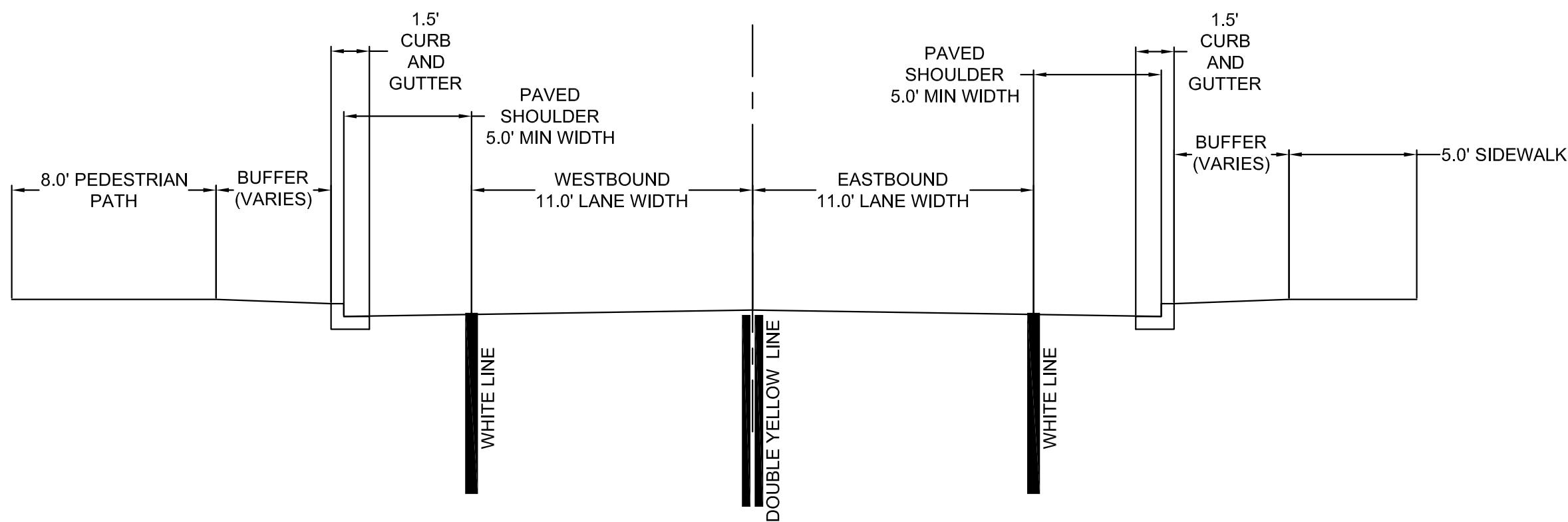
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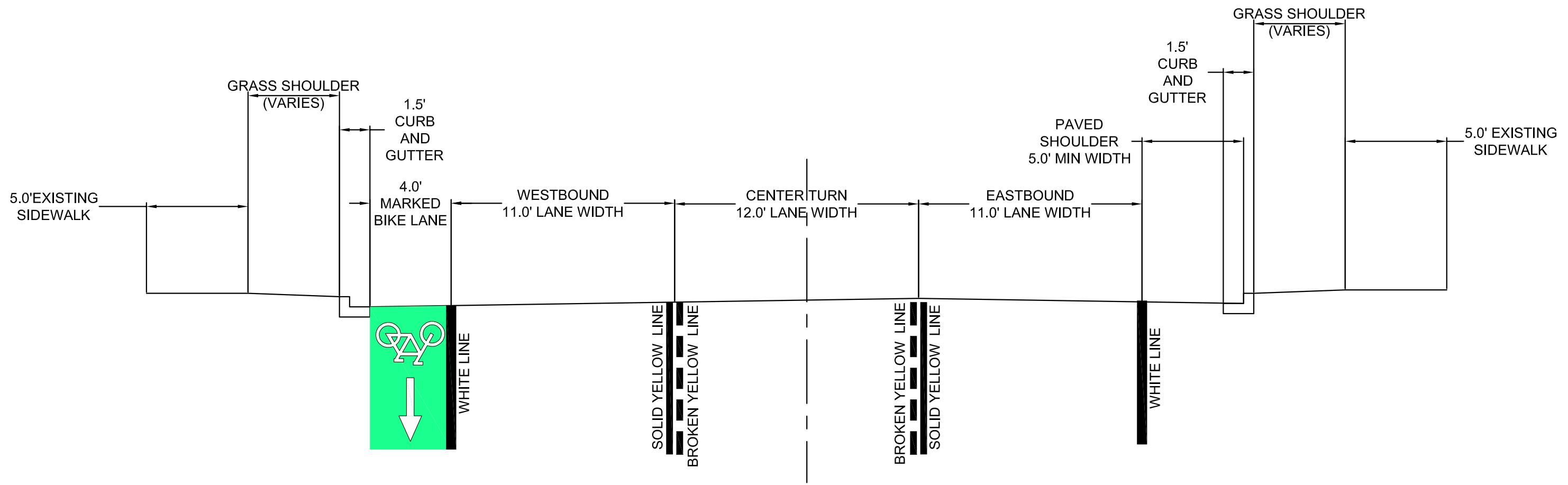


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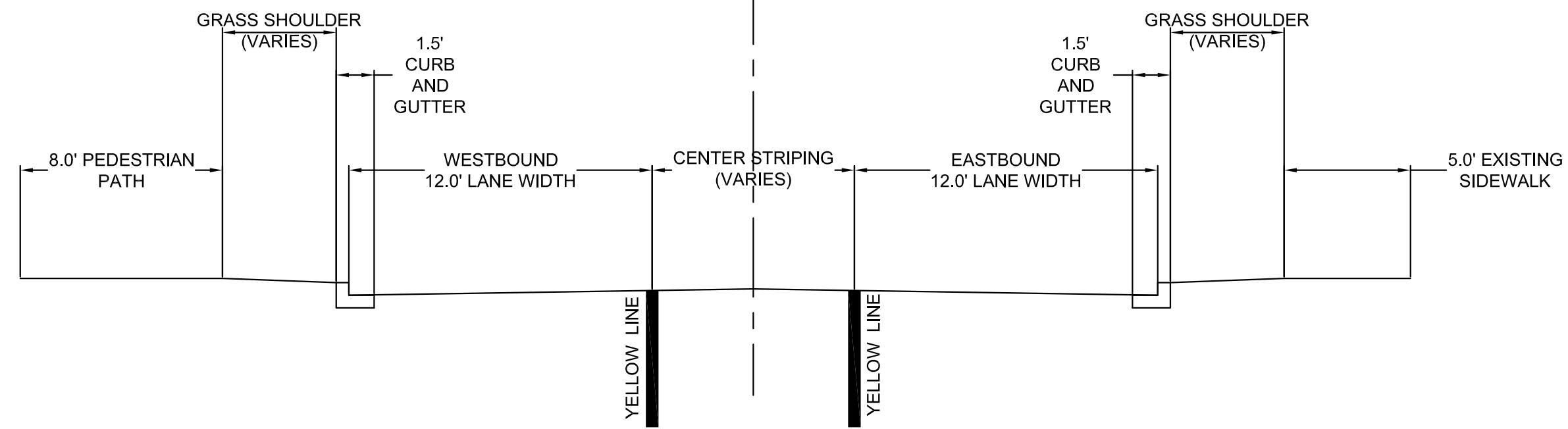
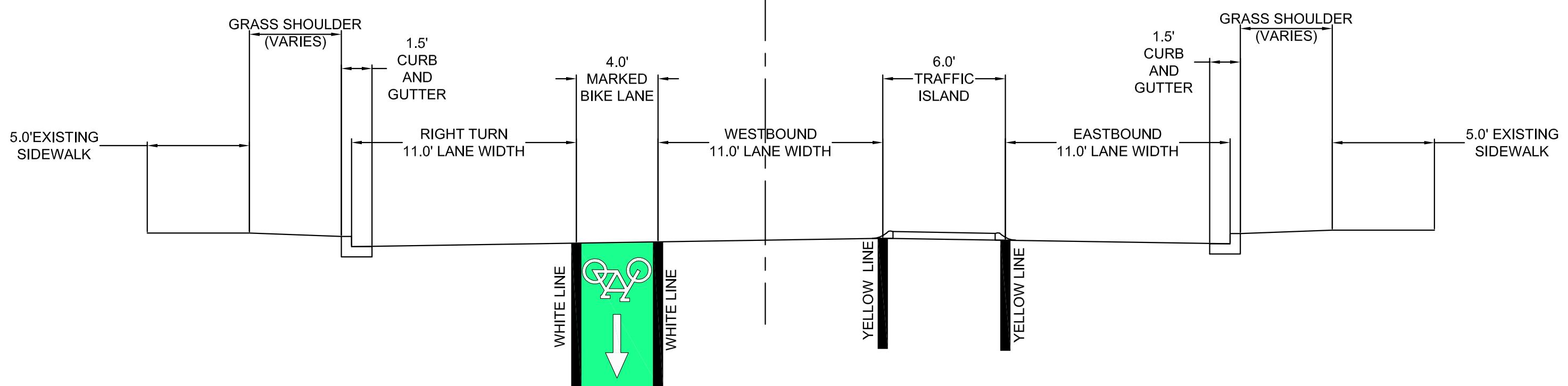


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SHEET NO. 13 OF 13



FAIR ACCESS

FOR WESTERN MONTGOMERY COUNTY

* ALL NEW POOLESVILLE HIGH SCHOOL

* COLLOCATED COMMUNITY SERVICES CENTER

WHITE PAPER ON THE **ECONOMY OF WESTERN MONTGOMERY COUNTY**



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EXECUTIVE SUMMARY

- **Western Montgomery County's economic, business and social structures simply do not fit the metrics often used in the rest of the more populated, suburban/urban Montgomery County to decide public policy and budget issues. The area, which incorporates the bulk of the Agricultural Reserve, is a rural oasis in the midst of large areas of population concentration down-county where more urban-style problems exist.**
- Western Montgomery County's economy is not based on large corporate investments and operations, large chain stores, major high-rise and housing development, or large government facilities, as is the case in much of the densely populated, down-county areas. Instead, the "hub" of the Town of Poolesville is anchored to the collective operation and success of the many "spokes" scattered throughout the rural landscape or located in the Town of Poolesville in the form of small, often family-owned local businesses, artists and craftsman, restaurants, farms, vegetable and fruit markets, wineries, breweries, historic sites, and outdoor recreation or park locations.
- Agriculture is at the heart of the Agricultural Reserve's economic foundations. However, many businesses and citizens in Western Montgomery County are not involved in farming. In order for all who call the area home to have a chance to thrive, those who envisioned it knew it would have to incorporate a range of other activities that rely on rural and open spaces for their success to spur prosperity as broadly as possible. Both the 1964 Wedges and Corridors General Plan that led to the adoption of the Agricultural Reserve in 1981, and the Thrive 2050 master plan, the first update to the 1964 Wedges and Corridors General Plan in nearly 60 years, note that the Agricultural Reserve includes not only farming, but also a vast array of historical sites, outdoor recreation areas, and more recently wineries, breweries, and vegetable and fruit markets.
- **Thrive 2050 explicitly notes the importance of tourism for the Agricultural Reserve.**
"Awareness of - and access to - the Agricultural Reserve should be improved by providing ways for people throughout the county to experience and take full advantage of this unique resource. Our residents and visitors should not miss out on opportunities to learn about the county's rural heritage, eat and drink locally produced food and beverages, and participate in outdoor activities such as hiking, biking, camping, and fishing."
- **Despite the amazing breadth of assets throughout Western Montgomery County and the findings of both the 1964 Wedges and Corridors General Plan and the Thrive 2050 master plan, the County Government has done very little to develop solid and informative data on the entirety of the Western Montgomery County economy, particularly how small businesses and tourism contribute to economic vibrancy. The county does have extensive information regarding the economic health and contributions of the agricultural sector in the Agricultural Reserve, which is vital and important.**
- Information compiled in this report, while not comprehensive, suggests that tourism-based activities generate a great deal of economic activity beyond agriculture alone in Western Montgomery County and Agricultural Reserve. One study suggests that the economic impact of the promotional and grant-making activities of Heritage Montgomery alone totaled **\$376.1 million annually**. More than **\$50 million** was generated in state and local taxes, and all of this activity supported some **5,300 jobs**, according to the study.
- **Other economic data suggests that spending on tourism throughout the Agricultural Reserve generates indirect economic impacts, meaning that dollars spent on a visit in one location often generate revenue in other areas of the local economy.**

EXECUTIVE SUMMARY

BASED ON OUR RESEARCH, WE MAKE THE FOLLOWING RECOMMENDATIONS:

01 The Town of Poolesville serves as the vital “hub” for Western Montgomery County’s many “spokes,” and the county should treat it as an equal partner in promoting and adopting policies and programs to enhance the economy of the area.

02 The “hub” — the Town of Poolesville — can help support more visitors to Western Montgomery County by ensuring that the town has the facilities and programs that other areas in the county enjoy. Needed improvements include:

- A new community center with clinic space to provide needed health care services near where Western Montgomery County residents live; and
- Enclosing the swimming pool so it becomes a year-round facility that can hold competitions and events, practices, provide recreational opportunities, and help those who are recovering from injuries or are aging to improve their health.

03 Continue improving the “spokes” in Western Montgomery County, like the recently opened Crossvines grape crushing facility, restaurant, and events venue, including:

- Reopening and investing in White’s Ferry so it can handle more traffic and become a more attractive historic site as well as a commuter link;
- Devoting more resources and effort via Visit Montgomery to identify more tourism opportunities;
- Promote the “spokes” in and around the Town of Poolesville, including the possibility of building a museum devoted to the history of ferries at White’s Ferry and the construction of a performing arts complex in the “Historic West End” of town; and
- More research needs to be done so we can understand how best to improve the Western Montgomery County economy and drive tourism.

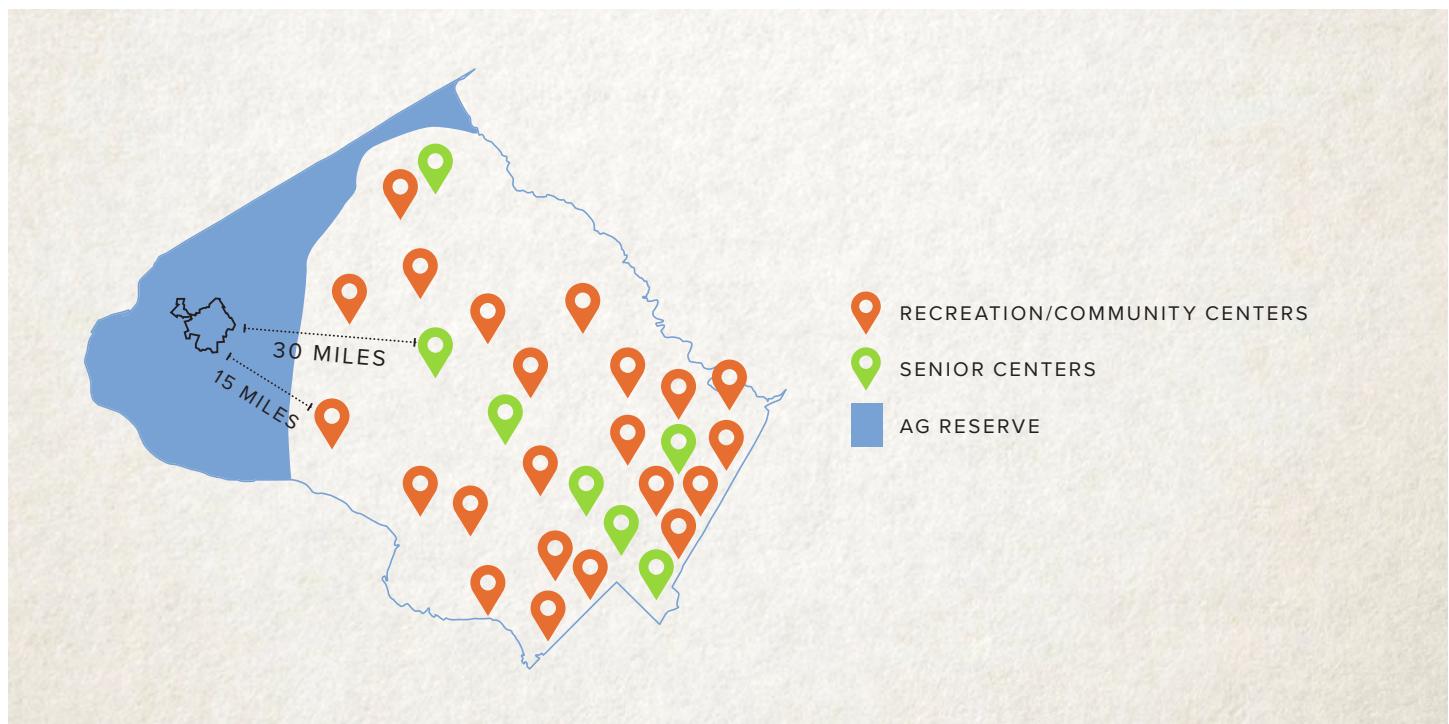


INTRODUCTION AND THESIS

Western Montgomery County's economic, business and social structures simply do not fit the metrics often used in the rest of the much more populated, suburban/urban Montgomery County to decide public policy and budget issues. The area is a rural oasis in the midst of large areas of population concentration down-county, where more urban-style problems exist. This rural area of 93,000 acres called the Agricultural Reserve was created by policies adopted by Montgomery County that prohibited large-scale development, did not allow sewer lines to be extended to the Agricultural Reserve, and created special transfer rights that provided incentives to preserve rural land and develop areas in the more densely populated down-county areas. The bulk of the Agricultural Reserve is encompassed by Western Montgomery County, which is coterminous with the new County Council District 2.

Western Montgomery County's economy is not based on large corporate investments and operations, large chain stores, major high-rise and housing development, or large government facilities, as is the case in much of the densely populated down-county areas. Instead, the "hub" of the Town of Poolesville is anchored to the collective operation and success of the many "spokes" scattered throughout the rural landscape or located in the Town of Poolesville in the form of small, often family-owned local businesses, restaurants, farms, vegetable and fruit markets, wineries, breweries, historic sites, and outdoor recreation or park locations.

All of these "spokes" attract visitors from many areas who are interested in everything from buying fresh, locally grown vegetables to visiting historical sites to hiking, biking, or watching wildlife. Western Montgomery County already has many elements for economic success, but it can truly become an even more robust center of growth and vitality for the entire county based on tourism, outdoor activities, outdoor entertainment, and leisure, as well as agriculture.



THE ORIGINS OF THE AGRICULTURAL RESERVE

While many know of or have visited the Agricultural Reserve, far fewer likely know its history, it is commonly understood to have been created in part to help preserve large areas of land that could support farming and other related activities, such as harvesting wood. Policies that formed the Agricultural Reserve prohibited large developments or the construction of major buildings or shopping centers through a complex series of zoning policies.

While agriculture is at the heart of the Agricultural Reserve's economic foundations, those who envisioned it realized very early on that its viability would have to include a range of other activities that rely on rural and open spaces. To quote the 1964 Wedges and Corridors General Plan developed by the predecessor to today's Maryland National Capital Parks and Planning Commission (MNCPPC) that led eventually to the creation of the Agricultural Reserve:

"The many different land uses appropriate in rural areas usually have two things in common: they require large amounts of land, and they are directly related to natural resources.

Therefore, the well-being and stability of rural uses depend upon the conservation and proper development of natural resources."

The report goes on to note that in addition to agriculture, outdoor activities and parks are natural and important parts of what would eventually make the Agricultural Reserve thrive. It quotes a study by the U.S. Department of Agriculture on this point:

"The Department of Agriculture's program includes measures to strengthen family farms but recognizes that 'probably the most promising potential source of new economic opportunities in many rural areas is to be found in providing commercial enterprises, and various services connected with outdoor recreation and tourism.' This is especially applicable to rural areas lying at the edges of major cities. **Rural income protection and expansion is a basic goal of the Department of Agriculture and, likewise, should be a basic goal of the public authorities in the Regional District (i.e., the name used in the report to refer to the yet-to-be-created Agricultural Reserve).**

Success in reaching this goal means success in promoting a healthy rural environment for the open space wedges recommended in this General Plan."

Even in the very early formative stages of the Agricultural Reserve's creation, it was recognized that "Rural Income Protection" (the term used in the report) was an important goal of the policies that would shape the Agricultural Reserve. The phrase acknowledges that the economy of rural areas is different and, in order to remain vibrant, requires different policies and programs from those used in urbanized areas. It was also clearly recognized that while farming and agricultural pursuits were vital aspects of the Agricultural Reserve's success, it was also very important to support and promote other activities that rely on open spaces and natural environments, **including recreation and tourism.**

At the time Agricultural Reserve policies were being considered, some raised concerns that the sparse population in the area (only about 12,000 to 15,000 people live in the entire Agricultural Reserve) and large expanses of farm and forest lands might lead policymakers to forget about and ignore the needs of those in the area. The more than one million people who live mostly in down county urbanized areas are more visible, and their problems may seem more pressing. Since the county and state have almost no presence in Western Montgomery County (other than the schools in the area), county departments and employees do not regularly come to the area to understand its needs. As an editorial in the Washington Post authored by leaders in the Fair Access Committee put it in 2018:

"Nearly a third of western Montgomery County — the Agricultural Reserve — is protected from development under proposals made in the 1960s. The resulting 93,000 acres of green farms and forests is a thing of beauty, a respite for many, and a significant economic and environmental asset. There is a dark side to it, however, and many of the 15,000 residents who live here suffer the consequences. For decades, the county has neglected to invest in the people and students who live or attend high school in the western part of the county."



THE ORIGINS OF THE AGRICULTURAL RESERVE

Preserving land by prohibiting or constraining development should not mean that the county and state fail to invest in the needs of the citizens of Western Montgomery County. As the planners who shaped the Agricultural Reserve in 1964 understood all too well, not only could it happen, but it did.

The county tried for many years to take away the few county resources that existed in Western Montgomery County. Citizens had to fight for decades just to keep Poolesville High School open. Efforts were made by the county to close Poolesville High School beginning in the 1950s. Those efforts did not end until the Global Ecology Program was formed at the high school by a Poolesville High School teacher in the 1980s. The county also tried to close Monocacy Elementary School during that time.



In 2018, citizens and the Town of Poolesville came together to fight back against the neglect and lack of equity in services that has plagued Western Montgomery County for decades. They established the Fair Access Committee, and its first move was to develop a white paper (**Framework for a Multi-Use Facility With a New High School in Western Montgomery County**) that spelled out a vision for the Town of Poolesville and the broader county starting with the rebuilding and modernization of Poolesville High School. The schools serving Western Montgomery County are central to the community, but the area also lacks access to community and social services available elsewhere in the county,

like a community center. Following county policy, the Fair Access Committee proposed a community center that would be collocated with the new high school. This would save money but also reduce the footprint of county facilities, making our approach a much better fit with the Agricultural Reserve. This novel approach not only got the attention of county leaders but also gained the enthusiastic support of then-county schools superintendent Jack Smith.

The county makes virtually no recreation programs available to Western Montgomery County residents, in large part because it has no facilities in which to offer programs like mentoring, after-school art programs, exercise and physical fitness programs, a variety of programs for seniors, and recreational sports and games of various kinds for teens. In its 2010-2030 facilities planning report, the Recreation Department acknowledges this problem:

"Long-term planning efforts should address the Poolesville/ Western County area because it has few facilities even though population numbers may not indicate it is warranted."

Not only does this comment acknowledge the need for county facilities to offer recreation and community programs of various kinds, it once again points to the unique situation in the Western Montgomery County due to its rural nature, small population and distance from other facilities.

The white paper laid out a compelling, fact-based vision for needed facilities and county investments in Western Montgomery County. But it also made the case that Western Montgomery County, which encompasses a large portion of the Agricultural Reserve, must be seen as a vital part of the county and not just an idyllic and much-loved place of open spaces and farms. It is a place where nearly 15,000 county residents live, far from most of the services available to other Montgomery County residents. The Agricultural Reserve can't thrive if many of those who live here can't live a healthy life and take advantage of the many benefits of living in Montgomery County.

HEALTH CARE, POVERTY, AND ACCESS TO MEDICAL SERVICES

Distance, isolation, hidden need, and lack of population define many of the challenges for those living in Western Montgomery County. Approximately 2,500 aging adults (people over 60) live in Western Montgomery County. In terms of poverty, the statistics are hard to compile from the Census data. However, the county has compiled what it calls an “Equity Focus Map.” That map shows that in the Census tract that encompasses the Dickerson and Barnesville zip codes, 28 percent of the households are considered “low income.” In the Census tract that encompasses the entire Town of Poolesville zip code, more than 17 percent of households are considered “low income.” While the Town of Poolesville itself has a high median income (which often is cited as evidence that Western Montgomery County does not have as many social problems as in other parts of the county), there are clearly many pockets of poverty in Western Montgomery County.

Most in Western Montgomery County are at least 10 miles, and many much further than that, from access to a senior center, community center, medical facilities, specialists of any kind, or even grocery stores. The local charitable services organization Western Upper Montgomery County (WUMCO) Help serves those in need in the area. Based on WUMCO’s data serving clients who have no means of visiting doctors or medical services conveniently and regularly, it is likely that a significant number of older citizens in the Agricultural Reserve live alone, is chronically ill, have mental health illnesses, and cannot drive either because they cannot afford a car, or their medical condition forbids it.

Without the ability to drive, getting to see the medical specialists so many WUMCO clients need to visit is very difficult. The county bus service only runs to the Town of Poolesville, and it does not extend to other areas like Dickerson, Barnesville, or Beallsville. The existing bus line runs along a route that takes it to the Metro in Gaithersburg. The bus does not stop in Germantown or Rockville, where many doctors have offices. WMATA, which provides “call to schedule” pick-up and drop-off bus rides in many parts of the county, does not do so in Western Montgomery County.

The service only operates where a scheduled bus service exists, and in the entire Western Montgomery County, the only place that is served by a public bus is the Town of Poolesville.

The county health department recently found that of all 36 zip codes studied within the county, the Town of Poolesville zip code ranked last regarding overall health outcomes and on other health metrics such as emergency room visits. Heavy use of emergency rooms and mental health walk-in clinics can indicate that patients are unable to get to doctors for regular consults. Dr. Travis Gayles, the county’s former health officer, acknowledged that the lack of nearby and convenient medical services could be a contributing factor in this situation.

The Town of Poolesville has two local primary care physicians serving Western Montgomery County. The ratio of primary care doctors to patients is about 1 to 7,500 in Western Montgomery County and about 1 to 740 for the rest of the county. While some of those served by WUMCO do visit the local doctors, there are simply too many of these clients to be given care by these two physicians.



Montgomery County just adopted a new master plan called Thrive 2050. It is a direct successor to the 1964 Wedges and Corridors Plan General Plan. As the first update to the plan in nearly 60 years, it includes a section about the Agricultural Reserve.

Thrive 2050 notes that the Agricultural Reserve includes not only farming but a vast array of historical sites, outdoor recreation areas, wineries, breweries, and vegetable and fruit markets. It then goes on to make this statement regarding the importance of these many attractions:

“The Wedges and Corridors plan did not fully articulate how the broader public should expect to benefit from maintaining a rural pattern over much of the county’s land area. The plan explained that land preservation is important to recreation, agriculture, and conservation of natural resources but did not describe how people living in urban parts of the county would access these opportunities. The result is that many people who live outside what became the Agricultural Reserve are unfamiliar with it and do not take full advantage of opportunities to visit, enjoy and develop an appreciation for the value of continued preservation of land for farming, recreation, and environmental stewardship. Awareness of - and access to - the Agricultural Reserve should be improved by providing ways for people throughout the county to experience and take full advantage of this unique resource. Our residents and visitors should not miss out on opportunities to learn about the county’s rural heritage, eat and drink locally produced food and beverages, and participate in outdoor activities such as hiking, biking, camping, and fishing.”

It is clear that this statement is, in part, acknowledging that not enough has been done to promote the many attractions that lay within the Agricultural Reserve. It also points to how actively encouraging and enticing people to visit these many sites, parks, and businesses benefits the economy of the entire county and, most importantly, the residents of the Agricultural Reserve who live in Western Montgomery County.

The report goes on to make recommendations concerning the Agricultural Reserve, designed not only to preserve it but to help it remain healthy and vibrant for all of its residents:

“(The county should) Maximize the benefits of the Agricultural Reserve through policies designed to ensure the continued viability of farming as an economically productive and sustainable activity, discourage sprawl, facilitate a broad range of outdoor recreation and tourism activities, conserve land and natural resources, and promote practices that advance environmental quality. . . While farming should remain the primary use in the Agricultural Reserve, the area set aside for the rural pattern also provides opportunities for recreation, tourism, and natural resource conservation, uses that must be acknowledged and supported. The Agricultural Reserve improves the attractiveness and livability of the county because it provides opportunities for locally grown food, outdoor recreation, education, and tourism. The continued preservation of the Agricultural Reserve, along with the county’s park system, also protects the county’s forests, wetlands, meadows, and streams, supports biodiversity and natural habitats, and protects watersheds, aquifers, and water quality.”





The report contains a number of measures that can be used to assess the success of its policy recommendations regarding the Agricultural Reserve:

- Total acres of farmland, natural habitats, forests, and environmentally sensitive areas protected
- Economic productivity of farming
- Amount of space for outdoor recreation and variety of activities supported
- **Number of visitors from outside the Agricultural Reserve for recreation, commerce, and tourism**

In order to show increases in the number of visitors from outside the Agricultural Reserve for “recreation, commerce, and tourism,” the county will need to do a better job of promoting the benefits of visiting and spending time in the Agricultural Reserve. The more visitors who come to Western Montgomery County, the better the economy and the more the “hub and spokes” that support its citizens will thrive.

THE “HUB AND SPOKE” ECONOMY OF WESTERN MONTGOMERY COUNTY

As the 1964 Wedges and Corridors General Plan that led to the Agricultural Reserve's creation and the newly adopted Thrive 2050 master plan make clear, the Agricultural Reserve's health and vibrancy depend not only on agriculture but also on tourism and visitors coming to see the many historic sites, sample the farm markets, hike, bike, and canoe, dine at unique family or locally owned restaurants, and relax at wineries and breweries. Western Montgomery County and the broader Agricultural Reserve include all of these attractions and more, as are detailed below. The benefits to Montgomery County and, indeed, the entire DMV include:

- Its role as a heat and carbon sink and an environmental asset for the region;
- The production and access to fresh food and a thriving farm economy;
- Its role as a playground and outdoor wonderland for the entire DMV with a wide range of attraction; and
- The preservation of rural cultural and agricultural history and heritage.

Given all of these benefits, it is vital that the rural economy of Western Montgomery County remains protected and enhanced through appropriate policies and programs.

The many improvements and investments needed in the area, from reconstructing the nearly 100-year-old high school to a new community center and a year-round pool, are all part of a broader vision that supports a diverse, thriving, and economically viable rural Western Montgomery County. The “hub” of the Town of Poolesville provides support for this vision by offering access to a modern, state-of-the-art high school, a new community center, health care services, and a year-round swimming pool. It also includes many historical sites and Whelan Commons, an open green space for the town with a bandstand that is the site for year-round entertainment.

The many “spokes” around the Town of Poolesville in Western Montgomery County include a rich array of historical sites of interest, particularly African American communities, many of which blossomed around the Town of Poolesville right after the Civil War, wineries including the new Grape Crush facility, breweries, farms and orchards, and outdoor recreation opportunities such as at White’s Ferry and the C&O Canal, as well as Sugarloaf Mountain among other places. All of them benefit from having a vibrant center in the Town of Poolesville. The broader county benefits from all of this economic activity helping Montgomery County thrive.

As the “hub” of the Town of Poolesville improves and offers more services and programs like those available in the rest of the county, helping to attract visitors, and as more “spokes” like Crossvines emerge in Western Montgomery County, a virtuous cycle takes shape. The “hub and spokes” reinforce and support each other, benefitting from visitors while the number and range of visitors expand and increase. Western Montgomery County truly becomes a center of more sustainable growth and vitality for the entire county based on tourism, outdoor activities, outdoor entertainment, and leisure, with its base remaining firmly linked to agriculture and farming.



OVERVIEW OF WESTERN MONTGOMERY COUNTY'S ATTRACTIONS

A listing of some of the many attractions in Western Montgomery County (excluding the many historic old houses throughout the area) illustrates the viability and importance of both the “hub and spoke” vision and the need to adopt a multi-faceted and active plan to attract more visitors to the area.

HISTORICAL SITES		
Name	Location	Attraction
Sugarland Ethno-History Project	Dawsonville	African American History Site
John Poole House	Poolesville	Site of the Original House Built by the Founder of Poolesville
Warren Church	Martinsburg	African American History Site
Rosenwald School	Poolesville	Historic School Established by the Rosenwald Foundation for African American Children
Jonesville	Poolesville	African American History Site
Big Woods	Dickerson	African American History Site
Seneca School House	Poolesville	Original One Room School House
Old Bank Building	Poolesville	Original Building Constructed in 1906, Now Headquarters of Historic Medley District

FRESH FOOD FARM STANDS		
Name	Location	Products
Lewis Orchard	Dickerson	Fresh Vegetables, Apples, Peaches, Other Fruits
Kingsbury's Orchard	Dickerson	Apple, Peaches, Other Fruits
Homestead Farm	Dawsonville	Fresh Vegetables, Pick Your Own Fruits
Deere Valley Farm - Opening Soon	Dickerson	Farm Produce, Meats
Savages Farm Market	Dickerson	Fresh Meats



OVERVIEW OF WESTERN MONTGOMERY COUNTY'S ATTRACTIONS

OUTDOOR ENTERTAINMENT AND COMMUNITY ACTIVITIES		
C&O Canal	Runs from the southern edge of Montgomery County by White's Ferry and up to the northern border of the county	Hiking, Biking, Swimming, History, Boating
Sugarloaf Mountain	Dickerson	Hiking, Nature Watching, Panoramic Views
McKee-Besher Wildlife Preserve	Poolesville	Natural Swamps, One of the Largest Fields of Sunflowers in Maryland
White's Ferry	Dickerson	Last Operating Ferry on the Potomac River, Panoramic and Historical Drive
Whalen Commons	Poolesville	Community Events, Poolesville Day Main Area
Calleva	Dickerson	Summer Camps and Outdoor Learning Experiences for Kids
Riverworks	Beallsville	Art Programs, Educational Experiences

LOCAL FOOD, WINERIES AND BREWERIES		
Crossvines	Poolesville	Winery, Restaurant
Landmade	Poolesville	Brewery, Light Fare
Rocklands	Poolesville	Winery
Sugarloaf Winery	Comus	Winery
Wind Ridge	Poolesville	Winery
Locals	Poolesville	Local Foods, Bands



OVERVIEW OF WESTERN MONTGOMERY COUNTY'S ATTRACTIONS

A look at the many events that occur annually in Western Montgomery County, including in the Town of Poolesville, hosted by organizations ranging from the Town of Poolesville to the Poolesville Seniors to the Historic Medley District and many others, also makes it clear that there is much to see and do in Western Montgomery County.

The Town of Poolesville alone sponsors dozens of events all summer on its town green of Whalen Commons, including Friday on the Commons events like “Red, White and Brews” and “Bark in the Park.” It also sponsors events with bands, brews, or wine and food like “Springfest” and “Wine Down in the Park.” Events for families are sponsored by the town, too, such as “Wet, Wacky and Wild,” a summer water-themed event.

In addition to these events, volunteers supported in part by a grant from the town manage the annual **Poolesville Day** celebration that attracts close to 10,000 people. Family and friends walk along Fisher Avenue to Whalen Commons and enjoy musical performances by top bands, arts and crafts vendors, food and beverages, kids’ activities, livestock displays, skateboarding demos, an old-style parade, an antique car show, and the largest electric vehicle show on the East Coast.

The town also sponsors a **Holiday Lighting Ceremony**. The entire Whalen Commons is covered with holiday light displays of various kinds. Santa comes to the Commons on the fire truck. Kiddie rides are offered, including a Santa train, and Santa arrives at his home to talk to the children. Food trucks, music, chainsaw ice cutting, and smores around the campfire are all available.

While this is an incredible list of events, keep in mind these are only those offered by the town. Many volunteer groups, such as artisan groups, Riverworks Art Center, Historic Medley District, Poolesville Seniors, and many others, offer events all year long. County-wide groups like Visit Montgomery also sponsor annual events in Western Montgomery County.

Despite the amazing breadth of assets throughout Western Montgomery County, from all that can be determined through our research, the County Government has done very little to develop solid, informative economic data on Western Montgomery County, particularly how small businesses and tourism contribute to economic vibrancy and how to enhance it. The county does have extensive information regarding the economic health and contributions of the agricultural sector in the Agricultural Reserve, which is vital and important. It does not have similar information on contributions made to the economy of Western Montgomery County due to tourism and visits to the many attractions listed above that are located in the area.

Fortunately, a number of organizations have pulled together useful information on various aspects of the tourism economy of Western Montgomery County. This information can be used to begin to form a picture of the true economic health of the Agricultural Reserve. Looking at this data, it becomes clear that tourism-based activities generate a great deal of economic activity beyond agriculture alone. This is not to belittle in any way the importance of farming, but as the creators of the Agricultural Reserve noted 60 years ago in the 1964 Wedges and Corridors General Plan, agriculture alone will not ensure the health and success of the Agricultural Reserve or the well-being of those living in it.



THE ECONOMIC EVIDENCE SUPPORTING THE “HUB AND SPOKE” MODEL

Western Montgomery County’s economic model, due to its rural nature, open lands, forests, and sparse population, is far different from that of much of the rest of the county. Looking at news reports and media announcements, government studies, and even the strategic plan for the Montgomery County Economic Development Committee (MCEDC), it appears that much of the focus and resources spent by the county is used to attract and retain major biotech firms, research institutions, medical facilities, and government offices. Given the fact that the county generates nearly \$81 billion in economic activity annually, it seems Western Montgomery County’s economy is lost in much of the strategy and investment planning the county does to promote a strong economy.

“In fact, MCEDC offers this comment in its 2022 strategic plan adopted by the County Council: While this plan identifies critically important goals to strengthen Montgomery County’s economy and create new opportunities for residents and businesses, it is not designed to be exhaustive. **An industry sector that is not expressly referenced does not mean it has lesser significance or priority. For example, the travel and tourism industry is an important local sector but is not highlighted in the plan because the separate parallel activities and programs tied to it are more focused and comprehensive in nature.** The same applies to other important sectors such as restaurants, retail, and the service industry, which complete a full 360-degree view of the county’s economy.”

It is not clear at all what the MCEDC means when it says that the tourism and travel industry was not included in its plan because “the separate parallel activities and programs tied to it are more focused and comprehensive in nature.” What is clear is that much of the focus of the plan is on attracting major biotech firms, research institutions, and government offices and retaining jobs in these sectors. Yet, long before these sectors became a mainstay of the economy in Montgomery County, agriculture and tourism built around the open areas of the Agricultural Reserve were—and continue to be—a strong and important presence.

To be fair, there are recommendations and programs in the plan focused on helping promote strong small businesses, and since small, locally owned, and often family-owned businesses are the backbone of Western Montgomery County, this will help. But leaving out strategies focused on how to promote more visits and tourism to the many attractions in Western Montgomery County as part of the MCEDC strategic plan implies our economy is not a priority.

Visit Montgomery, the tourism promotion organization for the county, does have active programs to promote travel and visits to Montgomery County. Recently, the Fair Access Committee and the Town of Poolesville actively reached out to the organization to inform them of the many events the town and other local groups hold each year. While they were aware of some, it is fair to say a number were not on their radar. They also acknowledge they do not have much data on the economic benefits of tourism in Western Montgomery County. Without such data, it is difficult to see how well strategic planning to promote tourism in Western Montgomery County can be undertaken.

Fortunately, a number of organizations have taken an independent look at various topics that shine a light on the agricultural or tourism economy of the Agricultural Reserve and Western Montgomery County. Together, these reports suggest that the total value of all of the tourism-related activity and the shopping and patronage of the many historical sites, restaurants, and fruit and vegetable stores in Western Montgomery County generates far more economic activity than is likely recognized. Again, this is not to belittle agriculture because it was at the heart of the founding of the Agricultural Reserve and remains an important underpinning of its economic strength.

As both the original 1964 Wedges and Corridors General Plan and the Thrive 2050 master plan point out, though, the vitality of the Agricultural Reserve’s economy must include not only agriculture but also tourism-related activities of many kinds. The reports outlined below, while not comprehensive, provide some idea of the scope of the benefits to the local economy in Western Montgomery County through tourism.



THE ECONOMIC EVIDENCE SUPPORTING THE “HUB AND SPOKE” MODEL

In the **Heritage Montgomery Economic Impact Study**, the non-profit Heritage Montgomery, which promotes historic preservation, education, and visitation in Montgomery County, prepared an assessment of the overall economic impacts of visitors who come to see the county’s diverse historic sites, homes, trails, parks, and hiking sites. It found that the economic impact of just the promotional and grant-making activities of Heritage Montgomery totaled **\$376.1 million annually**. More than **\$50 million** was generated in state and local taxes, and all of this activity supported some **5,300 jobs**.

While not all of the economic activity in the report was driven by historic or outdoor sites located in Western Montgomery County, it should be noted that a substantial share of the sites included in the report is in the Agricultural Reserve. Because the policies underlying the Agricultural Reserve prohibit major development, it tends to preserve many historic sites, and a great many of the outdoor venues in the county are located in the Agricultural Reserve as well.

Another study recently looked at the growth of wineries and breweries in Montgomery County. The study, **The Status of Farm Alcohol Production in Montgomery County**, was an outgrowth of the decision in 2018 by the County Council to establish conditions under which alcohol can be produced and associated events can take place as an accessory used to farming in the Agricultural Reserve. The study found that between 2018 and 2019, the total number of licensed breweries in the Agricultural Reserve went from three to four (Landmade, the newest brewery, opened right outside the Town of Poolesville), and licensed wineries grew from two to four (Windridge is one of those wineries which opened just south of the Town of Poolesville on Route 28), the number of full-time jobs in those businesses nearly doubled to 50, and the number of visitors skyrocketed from approximately 2,000 to 28,000.

A third study looked at the impact of food production on the diets of residents of the DMV and their access to fresh food. Fruit and vegetable farms, such as Lewis’s Orchard, Kingsbury’s Orchard, Rockland Farms, Savage’s Farm, Deer Valley Farm, Homestead Farm, One Acre Farm, and many others, grow a variety of fruits and vegetables that come straight out of the gardens to be purchased by visitors. In the study, **What Our Region Grows to Eat and Drink**, National Capital Farms.org reported that 53 percent of American adults seek out locally grown or locally produced foods, with almost half of the survey respondents stating they were willing to pay 10 percent more for these foods. Many consumers perceive local food as fresher, healthier, and better tasting. In addition, consumers want to know their farmers and support local businesses.

In the Washington Ag Region, the report noted, there continues to be demand for locally grown food. The region’s high median household income, in part, has helped fuel demand, as people are able to spend more on products they perceive as superior.



THE ECONOMIC EVIDENCE SUPPORTING THE “HUB AND SPOKE” MODEL

THE REPORT FOUND THAT:

“ . . . Direct-to-consumer sales and direct farm sales have grown (in the DMV). Between 2002 and 2012, there was a 25 percent increase in the number of farms involved in direct-to-consumer sales and a 137 percent increase in direct-to-consumer sales. Similarly, in 2015 Maryland and Virginia contributed \$84 million and \$217 million, respectively, in direct farm sales. **Local agriculture is not just a feel-good marketing strategy. It benefits both the farmers and the local economy. Buying local food allows farmers to keep more of the retail food dollar and creates benefits through the multiplier effect. The baseline multiplier for buying locally is 1.4 to 2.6, depending on the locale and commodity. The larger the multiplier, the more a dollar circulates in a region and can create more income, wealth, and jobs.”**

This last point regarding economic multipliers is very important when it comes to tourism in Western Montgomery County. In economics, a multiplier refers to the tendency for a dollar to “pass through many hands” as it goes through the economy. For example, a fruit and vegetable farm not only takes in revenue from visitors, it then pays its employees, purchases fertilizer to put on its plants, fuel for its tractors, and containers to store and transport its vegetables and fruits. The employees will spend money on the local economy.

Indirect economic impacts also occur due to tourism. For example, a tourist may plan to take an all-day hike at Sugarloaf Mountain. On the way there, they may purchase food and fuel in the Town of Poolesville or Dickerson. At the end of the day, they may decide to dine at a local restaurant. This, too, is an example of a multiplier effect, a common feature of tourism.

Travel and tourism, according to some studies, create almost 11 percent of the total available jobs worldwide in both the direct and indirect tourism sectors. Studies in Montgomery County suggest the total impact of tourism in the county is nearly \$2.5 billion. A significant portion of this figure relates to the economic value of overnight stays, especially hotel rentals, so it does not consider the sorts of activities noted earlier. In fact, the total may be higher, given the lack of solid data on many aspects of the Western Montgomery County economy.

In sum, tourism is a vital part of the Montgomery County economy. Given this fact and the supporting data we have found in this report, and the fact that the county’s economy is not growing as fast as some of its rivals in the DMV, it is even more important than ever that more data and solid information about tourism in Western Montgomery County be developed. Using this data, a sustained focus on tourism and attracting visitors to Western Montgomery County and the Agricultural Reserve and more supportive policies of this industry should be developed by the county and other organizations that are actively engaged in this issue.



THE UNIQUE ROLE OF WHITE'S FERRY



One especially unique aspect of the economy of Western Montgomery County is the role of White's Ferry. The ferry has been closed for more than two years due to a contract dispute between two parties. The fact that the ferry is privately owned should not blind us to the fact that it is a vital public service. If any other critical transportation link in the county or state was suddenly blocked by some sort of contract disagreement, none of us would tolerate such a long closure.

The ferry is a transportation mode that has worked for our region for 240 years. It is a direct and vital commuter connection between two of the most traveled counties in the region, both of which have extensive high-tech sectors and jobs.

The ferry's unique characteristics help preserve the rural landscape on both sides of the river, in particular, helping the Agricultural Reserve in Western Montgomery County to thrive. It allows traffic to flow while effectively metering it so it does not overwhelm the rural roads and towns of the area. It is vital to the economy of Western Montgomery County and the Town of Poolesville, but it is also an important part of the cultural and historical legacy of the area. It is a reminder of the past that is still a vital part of today.



THE UNIQUE ROLE OF WHITE'S FERRY



The Town of Poolesville is at the center of the Agricultural Reserve and by far the most affected jurisdiction. Ferry traffic runs right through the town on its central avenue. The economic and social impacts on the Town of Poolesville and on those living on both sides of the rural expanse around the ferry due to its closure is substantial. The Town of Poolesville has two main roads that travel to or by it – Route 107 or White's Ferry Road and Route 28. Route 28 is a main north-south commuter road and lies a couple of miles to the east of the Town of Poolesville. Commuters or visitors who do not have a reason to go to the Town of Poolesville to shop, visit local attractions, historical sites, or farm stores, or commute simply drive right by our town. White's Ferry Road is the main street for the town and attracts commuters, students, and weekend visitors who either visit or drive through to get to Virginia. As they do, they often stop and shop, eat, and purchase items from local stores.

The spur-of-the-moment stops in the Town of Poolesville that occur as drivers to and from the ferry go through town are vital to the local business community. Without the ferry, the Town of Poolesville's economy has suffered, forcing residents to commute two or more hours to get to their jobs. For people looking to purchase a home in the Town of Poolesville, this is a big factor in the decision-making process. Some have chosen not to settle in the town because of the ferry situation. Businesses have lost traffic — in some cases, up to 20 percent. The owners of the four commercial malls in town say that the ferry's closure is the biggest impediment they face in attracting new tenants.

The impacts of the ferry's closure are larger on the Town of Poolesville than the number of car crossings per day (800 or so) might suggest. Citizens are ten miles from the nearest grocery store, more than 15 miles from many medical specialists, and ten or more miles from community centers, clinics, or senior centers. Due to the small, spread-out population of the Agricultural Reserve, the local economy is based mostly on small, often locally or family-owned businesses. They cannot easily handle what might seem to some to be small reductions in car traffic. To the town, the shutdown has been an economic ball and chain.

Based on data in the 2021 Joint Study on White's Ferry, the total number of excess mileage driven between the Town of Poolesville and Leesburg and back amounts to about 9 million miles, a waste of fuel and environmentally damaging. The study also shows the economic impact of reopening the ferry on factors such as fewer miles driven, reduced lost work time, and money paid to ferry employees and invested in ferry operations (leaving out things like the impacts of more visits to stores and restaurants) could add up to \$24 million over the next decade.

The total economic impacts of lost tourism to both Loudoun County and Montgomery County have nowhere been calculated, but the 2021 ferry study found heavy traffic on the weekends coming from Virginia to Maryland to visit the C&O Canal, Sugarloaf Mountain, historical sites, wineries, and breweries. These visits are almost certainly less frequent or less spur of the moment than they once were.



CONCLUSIONS AND RECOMMENDATIONS

- Western Montgomery County includes a number of small towns and communities, including Barnesville, Dickerson, Boyds, and Beallsville. At its heart is the Town of Poolesville, by far the largest jurisdiction and the location of the largest number of local businesses, including restaurants, hardware and farm stores, gift shops, and auto repair shops. It is also the site of the county's outdoor swimming pool (the Sarah E. Auer Memorial Pool), three of the four cluster schools, including Poolesville High School, John Poole Middle School, and Poolesville Elementary, a green space in the center of town (Whelan Commons) where many events are held, parks of many kinds including a skate park, and miles of pathways and sidewalks. **With all of these resources, the Town of Poolesville serves as the vital “hub” for Western Montgomery County’s many “spokes,” and the county should treat it as an equal partner in promoting and adopting policies and programs to enhance the economy of the area.**
- The “hub” of the Town of Poolesville can help support more visitors to Western Montgomery County by ensuring that the town has the facilities and programs that other areas in the county enjoy that not only attract visitors (i.e., a year-round swimming pool) but helps improve life for all residents of Western Montgomery County. The county has moved to reconstruct Poolesville High School, so it will be transformed into a 21st-century center for learning, sports, and student art programs. Other needed improvements include:
 - A new community center that includes clinic space to provide needed health care services where Western Montgomery County residents live and supply facilities and equipment to provide a range of opportunities for our youth and the elderly, including mentoring programs, after-school programs, exercise and fitness programs, gym space for sports of all kinds for young and old, and a “safe space” for kids to unwind and socialize; and
 - Enclosing the swimming pool so it becomes a year-round facility that can hold competitions and events, practices, provide recreational opportunities, and help those who are recovering from injuries or are aging to improve their health.
- Continue making improvements in the “spokes” in Western Montgomery County, like the soon-to-be-opened Crossvines grape crushing facility, restaurant, and events venue, including:
 - Reopening White’s Ferry now and investing in needed capital improvements as outlined in the November 2021 report on the ferry so that it can handle more traffic and operate more efficiently;
 - Devote more resources and effort via Visit Montgomery to identify opportunities to attract more visitors, look for ways to enhance the tourist experience in Western Montgomery County (i.e., through some form of BnB or small motel for overnight stays), and partner actively and intensively with groups in Western Montgomery County to better promote and highlight the tourist opportunities in the area. The many African American historical sites should be a special focus of such efforts;
 - Look for opportunities to promote more locations in the “spokes” around the Town of Poolesville, including the possibility of building a museum devoted to the history of ferries at White’s Ferry. The National Park Service is in the midst of developing a major master plan that would include improvements to make the 67 acres of parkland around the ferry a new destination for visitors. Now is the time to consider the idea of building such a museum in addition to the campground enhancements already being considered; and
 - Studies and research need to be done to substantially improve our understanding of how to enhance the economic vitality of Western Montgomery County. Work also needs to be done to significantly improve and expand efforts to promote and attract visitors to Western Montgomery County. Finally, all of this work should be put to use by developing a robust strategy and policy framework that will drive future improvements. These efforts will take resources, but the payback both to economic growth and the lives of Western Montgomery County residents can be substantial.



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Water Supply Evaluation for the Town of Poolesville, Maryland



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October 7, 2021

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Prepared for:

The Town of Poolesville, Maryland

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Executive Summary

This report provides an assessment of the municipal water supply for the Town of Poolesville, MD (the Town). The purpose of the assessment is to evaluate the Town water demand and the ability of the current municipal water supply system to satisfy the water demand. Of particular interest is understanding if the municipal water supply can accommodate additional water use demands resulting from potential Town growth and climate change.

The Town's municipal water supply consist of 13 wells constructed as open bedrock wells in fractured bedrock. Water withdrawals by the Town are used by households, businesses, and schools located within the Town boundary. Five water allocation permits are issued to the Town by the Maryland Department of Environment (MDE) and collectively allow for a daily average withdrawal of 650,000 gallons per day (GPD) on a yearly basis and a daily average of 910,000 GPD in the month of maximum use.

The primary conclusions from the water demand analyses are presented below as answers to a series of questions.

1. How does the average daily water demand compare to the MDE-permitted allocation?
 - The daily average water demand during the past 3 years (2018 through 2020) was about 521,000 GPD. The current MDE-permitted water withdrawal for the Town is 650,000 GPD for all water allocation permits, or about 20% greater than the current average daily water demand.
2. How does the month-of-maximum-use water demand compare to the MDE-permitted allocation?
 - The current average water demand during the month of maximum use is about 622,000 GPD. The current MDE-permitted water use for the Town during the month of maximum use is 910,000 for all water allocation permits, or about 32% greater than the current average demand during the month of maximum use.
3. What is the projected water demand from increased population and how does that compare to the MDE-permitted allocations?
 - Increasing the Town population by an additional 700 residents to a population of about 6,500 would be accompanied by an additional water demand of about 70,000 GPD, for an average water demand of about 591,000 GPD, which is about 59,000 GPD less than the current permitted average demand of 650,000 GPD (or 91%) for all allocation permits.
 - If the average water demand were to increase by 70,000 GPD to 591,000 GPD, the month-of-maximum-use demand would be expected to increase by about 195,000 GPD to a total demand of about 786,000 GPD, which is less than the permitted daily rate during the month of maximum use of 910,000 GPD for all allocation permits.
4. Where is additional water available for pumping based on the permit allocations and well pumping records?

- Additional daily withdrawals are available on a permit basis in the Horsepen Branch, Russell Branch, Dry Seneca 3-5, and Dry Seneca 13 Permit Groups, with excess withdrawals occurring in the Broad Run Permit Group. The average available additional withdrawal capacity during the past 3 years was about 129,000 GPD. The available withdrawals are sufficient to provide an additional 70,000 GPD if the Town population were to increase to 6,500 residents.
- Additional permitted withdrawals are available during the month of maximum use in the Horsepen Branch, Russell Branch, Dry Seneca 3-5, and Dry Seneca 13 Permit Groups, with excess withdrawals occurring in the Broad Run Permit Group. The average withdrawals available for the month-of-maximum-use demand are about 257,000 GPD. These available withdrawals during the month of maximum use are sufficient to provide for the additional 195,000 GPD if the Town population were to increase by 700 residents.

5. What is the projected water demand resulting from increased air temperature and reduced precipitation?

- Correlation of the Town's water demand and precipitation suggests that reduced precipitation correlates to about a 10% increase in water demand during a drought year.
- Town water demand increases when the maximum daily air temperature rises above 80°F. As air temperatures increase, water withdrawals are expected to increase with the number of hot summer days. Each day with a maximum air temperature of 100°F, would translate to an additional water demand of about 55,000 gallons.

6. What is the sustainable yield of the wells under drought conditions?

- S.S. Papadopoulos & Associates, Inc. (SSP&A) estimated a minimum sustainable well yield based on an analysis of the depth to water in the well, operational well yield, and hours of pumping during periods of low regional water levels. This rate is a conservative estimate of the well yield when the well is under stress due to drought conditions, and that will not dewater the uppermost water-yielding fracture. Under conditions of higher regional water levels, the well yields would be higher.

7. How does the sustainable yield compare to the MDE water use allocations?

- Collectively, the SSP&A-estimated sustainable yield is about 932,000 GPD from all wells, which is greater than the MDE-permitted allocation of 650,000 GPD and the month-of-maximum-use allocation of 910,000 GPD. This indicates that the existing Town water supply is sufficient to provide the MDE-permitted withdrawal rates during drought conditions and during the month of maximum use.
- A comparison of the SSP&A-estimated minimum sustainable yield for wells within each Permit Group to the MDE permit allocation indicates that, except for the Russell Branch Permit Group, the minimum sustainable yield for each Permit Group is greater than the MDE-permitted allocation, and the wells are capable of providing water to meet the permit allocations. For the Russell Branch Permit Group, the sustainable well yield is less than the MDE permit allocation only because well 10 is offline and not included in the analysis. If well 10 was included in the analysis, sufficient yield would be available.

8. What is the expected water demand if the town population increases to 6,500 people, and there is a drought and increased air temperatures due to climate change?

- The average daily demand on an annual basis resulting due to increase to 700 persons (6,500 total population), in addition to a 10% increase in demand due to drought, and thirty additional 100°F days, would be about 655,000 GPD, which is close to the current MDE permit allocation of 650,000 GPD.
- For the month-of-maximum-use demand in the same scenario, the water demand would be about 786,000 GPD with a population of 6,500 persons, about 865,000 GPD during a drought year, and about 920,000 GPD during a year with 30 days of 100°F temperatures, as compared to the MDE permit allocation of 910,000 GPD.
- The sustainable well yield during drought conditions estimated herein for the current well field is about 932,000 GPD (not including well 10). This yield is sufficient to supply the water demand in the scenario discussed above.
- In total, the current municipal water supply is sufficient to provide the average daily demand and the month-of-maximum-use demand, as permitted by the MDE, and as used by the Town, including increased population to 6,500 persons, drought conditions, and increased air temperatures.
- The Town may consider adding an additional well for additional redundancy particularly if extreme drought conditions are realized or if an existing well becomes inoperable due to water quality or other issues.

In addition, a groundwater flow model was constructed to simulate the elevation of the water levels in the aquifer and the capture zone of the Town wells under a set of scenarios. The scenarios evaluate pumping at 521,000 GPD and at 932,000 GPD, under two conditions of recharge to the aquifer, including drought conditions. In all scenarios, the water levels in the aquifer near the pumping wells remain above the uppermost water-yielding fracture in the pumping well.

REPORT

Section 1

Introduction and Background

The following is an assessment of the water demand and municipal water supply for the Town of Poolesville, MD (the Town), prepared by S.S. Papadopoulos & Associates, Inc. (SSP&A). This assessment evaluates the Town water demand and the ability of the current municipal water supply system to satisfy the water demand. Of particular interest is understanding if the municipal supply can accommodate additional water demands based on potential Town growth and climate change. Water withdrawals by the Town are used by households, businesses, and schools located within the Town boundary.

The Town water withdrawals are evaluated both in terms of how they compare to the withdrawals permitted by the Maryland Department of Environment (MDE) and to the minimum sustainable yield of the wells during drought conditions. The MDE-permitted withdrawals are the ‘allowable’ withdrawals, whereas the minimum sustainable yield is the amount of water that the wells are estimated to produce under drought conditions without causing damage to the well.

This evaluation of the Town water supply is directed at answering the following questions:

1. How does the average daily water demand compare to the MDE-permitted allocation?
2. How does the month-of-maximum-use water demand compare to the MDE-permitted allocation?
3. What is the projected water demand from increased population and how does that compare to the MDE-permitted allocations?
4. Where is additional water available for pumping based on the MDE permit allocations and well pumping records?
5. What is the projected water demand resulting from increased air temperature and reduced precipitation?
6. What is the sustainable yield of the wells under drought conditions?
7. How does the sustainable yield compare to the MDE water use allocations?
8. What is the expected water demand if the town population increases to 6,500 people, and there is a drought and increased air temperatures due to climate change?

Background

Poolesville, Maryland is a relatively small town located in western Montgomery County, Maryland, with a land area of about 2,400 acres (**Figure 1**) and a population of about 5,750.

Development of the Town municipal water supply began in 1969 (Otton, 1981) and currently consists of 13 water supply wells located within the Town Boundary. A summary of the wells is provided in **Table 1** and well locations are shown in **Figure 1**. All the wells are constructed as open bedrock wells in fractured sandstone/siltstone bedrock. Groundwater in the aquifer flows through an interconnected network of fractures and/or bedding planes in the bedrock

(collectively referred to as ‘fractures’). The wells are operated so that the water level in the well remains above the depth of the uppermost water-yielding fracture to prevent dewatering of the fracture, and well pumping is stopped if water levels in the well approach the uppermost water-yielding fracture. The depth of the uppermost water-yielding fracture for each well is included in **Table 1**.

The Town is located within the Agricultural Reserve area of Montgomery County and is surrounded by agricultural land use and forested areas (**Figure 2**). The Agricultural Reserve is a 93,000-acre area assigned to agricultural land use and limited development; the area was set aside as part of the 1980 Master Plan for the County with the intention of protecting farmland in the County and to prevent urban sprawl.¹

MDE Water Appropriation and Use Permits

The Town water withdrawals are permitted by the MDE Water Management Administration through five Water Appropriation and Use Permits as summarized in **Table 2**. Each Water Appropriation and Use Permit is assigned to a municipal water well or group of wells and describes the permitted water withdrawal in terms of a daily average calculated on an annual basis and a daily average for the month of maximum use. The withdrawal permits are developed by the MDE so that the rate of groundwater withdrawal is not expected to exceed the capacity of the aquifer under drought conditions.

The MDE Water Allocation and Use permits are assigned based on the watershed where a well is located. The appropriation is based on the watershed area and recharge rate within the Town boundary, so that the appropriation does not exceed expected recharge to the aquifer under drought conditions. The MDE water allocations are adjusted to drought conditions with allowance for maintaining the surface-water baseflow in the streams and losses to impermeable surfaces.

The current MDE-permitted withdrawal rates, municipal wells, and assigned watershed locations are summarized in **Table 2**. For water appropriation permits that include more than one well, a Permit Group name is referred to in this report for simplicity; the Permit Groups are defined in **Table 2**. The five MDE permits in combination allow a daily average of 650,000 GPD on a yearly basis and a daily average of 910,000 GPD during the month of maximum use.

The Town is located at the headwaters of four watersheds – Horsepen Branch, Russell Branch, Dry Seneca Creek, and Broad Run (**Figure 3**). These watershed areas are defined based on the land surface topography and delineate the catchment areas of the creeks and streams. The Town wells are assigned to a watershed based on well location.

The MDE water allocations are based on the Town’s acreage within each of these watershed areas, however, groundwater contributions to the watershed do not necessarily follow these surface delineations. Deeper groundwater flow likely crosses between these catchment areas, especially in areas where groundwater withdrawal has lowered water levels below the local stream elevations. Also note that well 5, located close to the boundary between the Dry Seneca Creek and Broad Run watersheds, appears to be located within the Broad Run watershed, although

¹ <https://montgomeryplanning.org/planning/communities/upcounty/agricultural-rural-open-space/>.

it is assigned to the Dry Seneca Creek watershed by the MDE. The watershed areas and the Town water allocation is discussed further in Section 7.

Town Population, the 2011 Poolesville Master Plan, and New Home Construction

The Poolesville Master Plan (2011) established a population cap of 6,500 persons to limit the demands on the municipal water supply and the Town's wastewater treatment system. The most recent estimate of Town population is 5,742 persons based on the April 1, 2020 U.S. Census (U.S. Census Bureau, 2020) and the number of persons per household is 3.47 persons (based on 2015 to 2019 data from the U.S. Census). The number of building permits issued for new homes during 2020 was 14,² so an additional 49 persons were added to estimate the population at the end of 2020 as 5791 persons, or approximately 5800 persons (14 homes * 3.47 persons per home = 49 persons; and 5742 + 49 = 5791 persons). Compared to the 2020 Census data, this leads to a potential growth of about 700 persons within the current Poolesville Master Plan (6500 – 5800 = 700 persons). Using an estimate of 100 gallons per day per person for the water demand,³ an additional water demand of about 70,000 GPD would be needed to accommodate an additional 700 persons. Further, at 3.47 persons per home, this leads to a potential growth of an approximately 200 homes (700 persons / 3.47 persons per home = 201.7 homes).

The 2010 U.S. Census data indicate that there was a population of 4,883 persons as of April 1, 2010. Based on U.S. Census data, Town population grew by 859 persons between 2010 and 2020. Building permit information from Montgomery County indicates that about 450 new homes have been constructed in the Town since 2005 (including Stoney Springs, Brightwell Crossing, Reserve at Brightwell Crossing, Westerly Grove, and the small development between Hughes Road and Fisher Avenue); 117 of these permits were issued in 2019, and 14 were issued in 2020.²

² Montgomery County Government, 2021, <https://mcgov-gis.maps.arcgis.com/apps/webappviewer/>.

³ The average Maryland citizen uses almost 100 gallons of water per person per day.
<https://mde.maryland.gov/programs/water/waterconservation/pages/athome.aspx>.

Section 2

Geology, Hydrogeology, and Recharge

Geologic Setting

The Town of Poolesville is located in the Piedmont physiographic province of Maryland. In geologic terms, the Town is located within the northern portion of the Culpeper Basin, a half-graben structural basin of early Mesozoic age. About 250 million years ago, the basin was filled with terrestrial sediments and intruded by basaltic magma, resulting in a thick sequence of westward dipping siltstone/sandstone bedrock with local diabase intrusions.

Bedrock units described in the Poolesville area include the Triassic age Poolesville member of the Manassas Sandstone and the Balls Bluff members of the Bull Run Formation, both described as Upper Triassic age siltstone, sandstone and shale bedrock. The sandstone/siltstone units are thin to medium-bedded and commonly are intensely jointed (Otton, 1981) and dip toward the west at about 10 to 25 degrees (Davis, et al., 2001). The sandstone/siltstone units are also referred to as the New Oxford Formation and collectively comprise much of the upper bedrock underlying the Poolesville area. The very northern portion of the area within the Poolesville Town boundary is underlain by the Marburg Formation which is a Cambrian-age phyllite (Davis, et al., 2001 and Edwards, 2012), and these phyllite rocks underly the Triassic siltstone/sandstone rocks at depths of 600 feet or more (Otton, 1981). Less than 1 mile west of the Town, lenticular diabase intrusions of lower Jurassic age occur in a staggered pattern as shown in **Figure 4**. The diabase dikes are relatively impermeable to groundwater flow and their presence can result in compartmentalization of groundwater flow, effectively limiting groundwater flow from one side of the dike to the other (Pierce and Ryan, 2003).

Hydrogeologic Setting

Groundwater in the Maryland Piedmont occurs primarily in bedrock fractures and bedding planes that yield water to wells that intersect the fracture network. A basic introduction to ground water and wells in the Maryland Piedmont is included as **Appendix A**.

Groundwater in the Poolesville area originates as precipitation that infiltrates into the ground during rain/snow events as part of the hydrologic cycle. The groundwater represents that portion of the precipitation that infiltrates into the subsurface and into the underlying aquifer. The amount of groundwater that is added to the aquifer is measured in terms of the recharge, commonly reported as inches per year, where,

$$\text{Recharge} = \text{Precipitation} - \text{Runoff} - \text{ET} +/\!- \Delta S$$

and where,

ET = evapotranspiration, and

ΔS = change in groundwater storage.

These parameters are typically estimated for a watershed area and the MDE relies on estimates of recharge as part of the water allocation process for groundwater withdrawal permits. This water-balance approach allows for an estimate of the water available in a watershed for

withdrawal during drought conditions while maintaining base flow in the streams within the watershed.

Recharge Estimates

Hammond (1999) estimated the recharge for the Poolesville area, based on the Seneca Creek basin⁴ at 625 GPD/acre or 8.4 inches per year, and further estimated that the effective drought year recharge rate is 56% of the average year rate (350 GPD/acre, or 4.7 inches per year). This drought recharge is an estimate of the average amount of water added to the groundwater system during a drought year. The MDE water allocation method subtracts an amount necessary to protect base flow in the streams (68 GPD/acre) and 10% loss due to impermeable surfaces, yielding a rate of 254 GPD/acre. This recharge rate approximates the value applied by the MDE to estimate the amount of water allocated to the Town within each of the watershed areas.

To update the recharge estimates of Hammond (1999) using more recent data, SSP&A estimated recharge for the Seneca Creek basin⁴ using the hydrograph separation technique included in the U.S. Geological Survey (USGS) Groundwater Toolbox⁵ for the fifty-year period 1970 to 2020 (**Figure 5**). The analysis yields an average recharge of 10.3 inches per year, with the lowest recharge of 4.0 inches per year occurring in 2002.

For the purposes of the MDE water allocation methods, the drought-year recharge estimates used by the MDE (Hammond, 1999) are considered representative of the Poolesville area, as the drought recharge of 4.7 inches (350 GPD/acre) of Hammond (1999) is comparable to the 50-year low recharge of 4.0 inches per year. During non-drought years, recharge to the aquifer is considerably higher based on SSP&A's analysis, with an average recharge of about 10 inches per year, or about 20% higher than the recharge rate used by Hammond (1999) and the MDE to develop the Town water allocation permits.

⁴ Based on the USGS stream gauge at Seneca Creek in Dawsonville, MD, located about 4 miles E-SE of Poolesville.

⁵ <https://www.usgs.gov/software/groundwater-toolbox-a-graphical-and-mapping-interface-analysis-hydrologic-data>.

The Groundwater Toolbox estimates baseflow using six different methods. All methods provided similar estimates. The estimates using the H-SEP sliding interval method are plotted on Figure 5. HYSEP is described further in Sloto and Crouse, 1996.

Section 3

Evaluation of Town Water Demand

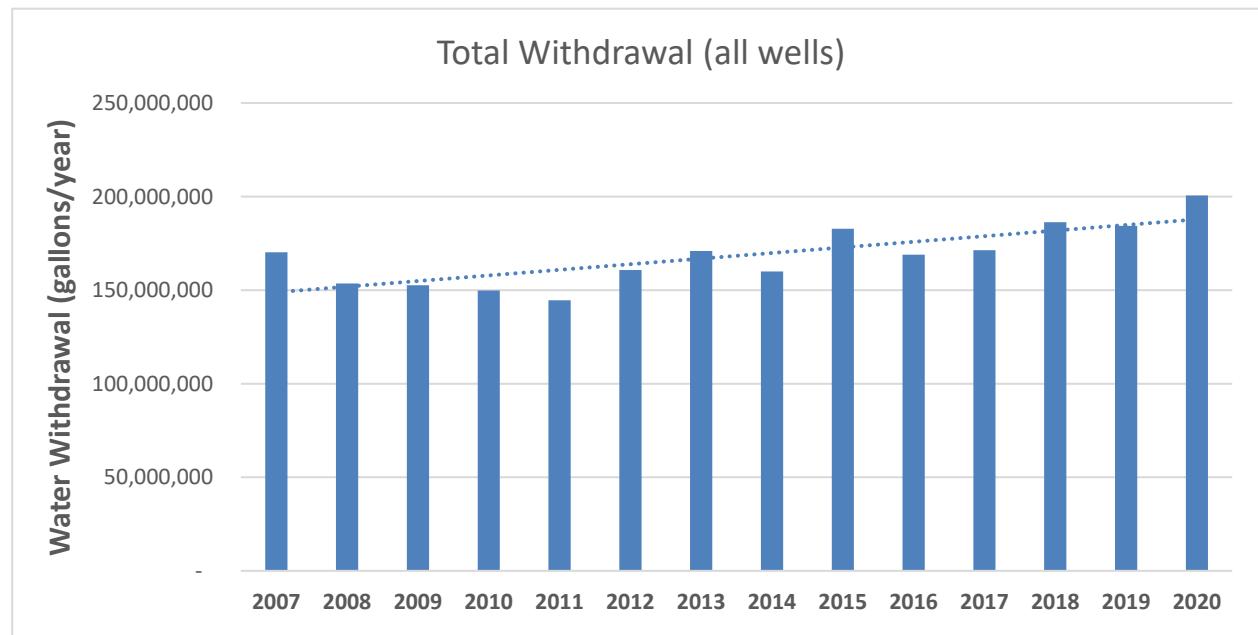
Town Water Use Data

The Town of Poolesville maintains daily records of water use for all of the Town water wells. Total gallons of water pumped, pumping rate in gallons per minute (GPM), and hours of pumping are monitored daily. The daily data collected by Town staff are recorded as total gallons pumped from one day to the next and the time (hours) that the well was operational. The daily withdrawal rate in GPM value is then calculated based on these daily records. Electronic records of these data from May 2007 through mid-May 2021 were obtained from the Town and these data were compiled into a relational database to facilitate analyses of the water-use data.

Water Use Evaluation

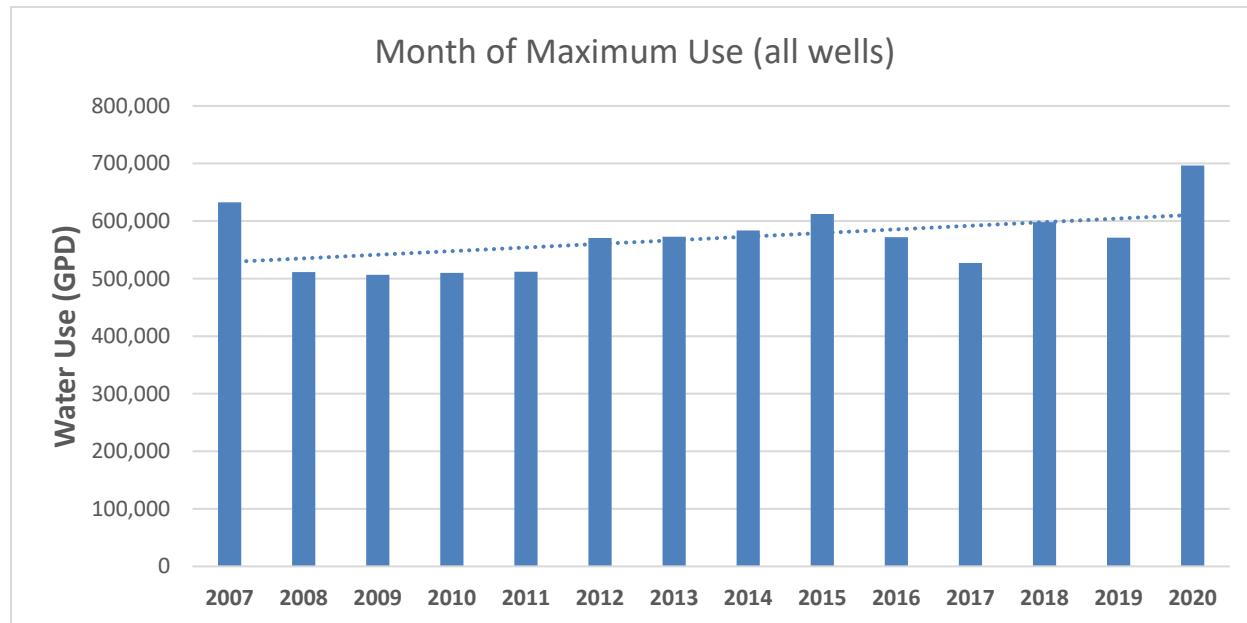
Current Water Demand

Water use during 2007 through 2020 is summarized in the figure below and in **Table 3**. Although water demand fluctuates year-to-year, water demand has generally increased over time, with the highest water demand during 2020. The water demand during 2020 was about 10% higher than both 2018 and 2019. Because there were a limited number of homes added to the Town during 2020 and the maximum air temperature during 2020 was similar to 2019, the increased demand during 2020 was likely impacted by the increased number of residents staying at home during the COVID-19 pandemic and increased water withdrawals in December 2020 during a series of water main breaks.



Water demand during 2020 was about 548,000 GPD, and the daily average demand during the past 3 years (2018 through 2020) was 521,168 gallons, or about 521,000 GPD, which is interpreted as the current average daily water demand.⁶ The current MDE-permitted water use for the Town is 650,000 GPD total for all water allocation permits, or about 20% more than the current average water demand.

Water withdrawals for all wells during 2007 through 2021 during the month of maximum use per year is summarized in the figure below and in **Table 3**.



Water demand during the month of maximum use has generally increased over time, with the highest water-use month occurring in July 2020. As noted above, the water demand during 2020 was higher than both 2018 and 2019, with the 2020 water demand likely impacted by increased number of residents staying at home during the COVID-19 pandemic. Water demand during July 2020 was about 697,000 GPD, compared to about 598,000 GPD in 2018 and about 571,000 GPD in 2019.

The daily average water demand during average water demand during the month of maximum use during 2018 to 2020 was 621,617 gallons, or about 622,000 GPD, which is interpreted as the current average demand during the month of maximum use. The current daily average water use permitted by the MDE for the month of maximum use is 910,000 for all water

⁶ The past three years of water use data were used to determine the average daily use for the Town as the data in 2020 appear to be impacted by increased teleworking by Town residents and water main breaks in December 2020. Note that the maximum air temperature during 2020 was similar to 2019 and the temperature in 2018 was slightly cooler. Water demand in 2021, based on preliminary data through July, was less than 2020; the July 2021 water demand averaged 533,750 GPD versus about 697,000 GPD in July 2020.

allocation permits, or about 32% more than the current average demand during the month of maximum use.

Daily Withdrawals - May 2007 to mid-May 2021

The total daily water withdrawals from May 2007 through mid-May 2021 are shown in **Figure 6**. The day of highest water demand occurred on July 18, 2020 with total withdrawals of about 879,000 gallons. The maximum water demand typically occurs during the summer months of May to September, with the exception of the elevated water demand during December 2020 to January 2021. The elevated water demand during December 2020 to January 2021 correlate to reports of water main pipeline breaks, which occur most commonly during the colder months.

Water Demand and Population

Comparing the 2010 and 2020 water demand data and population data, the average water demand per resident was about 85 GPD/CP (gallons per day per capita) in 2010 and about 95 GPD/CP in 2020, which are slightly less than the commonly-used estimate of 100 GPD/CP for municipal water use. If the Town population were to grow by an additional 700 residents to a population of 6,500, there would be an additional water demand of about 70,000 GPD (49 GPM), for an average water demand of about 591,000 GPD, which is about 59,000 GPD less than the current permitted average demand of 650,000 GPD (or 91%) for all allocation permits. An increase of 70,000 GPD then, is within the capacity of the current MDE allocation for Town water withdrawals based on the daily average water demand.

Comparing the average daily water demand to the month-of-maximum-use demand per year, the ratio between the average daily use and maximum monthly demand ranges from 1.13 to 1.33 (see **Table 3**). If the average water demand were to increase by 70,000 GPD, to 591,000 GPD, the month-of-maximum-use demand would be expected to increase by about 195,000 GPD to a total of about 786,000 GPD (using the ratio of 1:1.33), which is 86% of the permitted daily rate during the month of maximum use of 910,000 GPD for all allocation permits. An increase of 195,000 GPD during the month of maximum use as the result of an increase in population of 700 persons is within the capacity of the current MDE-permitted allocation for Town water withdrawals based on the average daily month-of-maximum-use water demand.

Below is an evaluation of current water use within each Permit Group. This evaluation identifies where additional water withdrawals could occur, as compared to the MDE Water Allocation and Use Permits, which prescribe pumping limits for each Permit Group.

Average Daily Use per Permit Group

The average daily water withdrawal calculated on an annual basis for each well Permit Group is provided in **Table 4** and summarized in **Figure 7**. Water withdrawals are evaluated for years 2008 through 2020 as the data for 2007 and 2021 were incomplete.⁷ The “Permit Available Withdrawal” is the difference between the MDE-permitted rate and the actual average daily withdrawal and indicates where allocated but unused withdrawals occur. The actual water

⁷ Water use data were not available for January through April 2007 in electronic format, and data after May 24, 2021 were not available at the time of data compilation.

withdrawal within each Permit Group and a comparison to the MDE-permitted allocation are discussed below.

Horsepen Branch – Water withdrawal in the Horsepen Branch Permit Group (wells 2, 4, 6, 8, 11, and 14) was less than the average daily permitted value for all years during the period evaluated (2008 through 2020), with water use of 50% to 73% of the permitted rate. The average daily withdrawals available during 2018 to 2020 in the Horsepen Branch Permit Group was about 100,000 GPD. The withdrawal capacity of two wells in the Horsepen Branch Permit Group are not fully represented in the 2018 to 2020 average daily withdrawals, since well 11 came online in September 2019, and well 14 is not yet online. The withdrawal capacity of these two wells combined is estimated to be about 115,000 GPD.

Dry Seneca 3-5 – Daily average water withdrawal in the Dry Seneca 3-5 Permit Group (wells 3 and 5) slightly exceeded the current permitted rate of 142,000 GPD during the period 2008 and 2009. The rate of withdrawal since 2015 has ranged from 85 to 98 percent of the permitted rate and the average daily withdrawals available during 2018 to 2020 in the Dry Seneca 3-5 Permit Group was about 5,700 GPD.

Russell Branch – Daily average water withdrawal in the Russell Branch Permit Group (wells 7, 9, and 10) exceeded the permitted daily average rate of 115,000 GPD during 2008 and 2015 but since 2017 has been at 81 to 83% of the permitted rate. The average daily withdrawals available during 2018 to 2020 in the Russell Branch Permit Group was about 20,000 GPD.

Dry Seneca 13 – Daily average water withdrawal in the Dry Seneca 13 Permit Group (well 13) has been less than the permitted rate since the well began operation in October 2009. The average daily withdrawals available during 2018 to 2020 in the Dry Seneca 13 Permit Group was about 8,000 GPD.

Broad Run – Daily average water withdrawal in the Broad Run Permit Group (well 12) has exceeded the permitted daily average rate since 2018. The average daily withdrawals during 2018 to 2020 in the Broad Run Permit Group exceeded the permitted rate by about 4,200 GPD. Well 12 came online in October 2009.

Average Daily Water Availability in Permit Groups

Based on the analyses presented above, additional water is available for withdrawal on a permit basis in the Horsepen Branch, Russell Branch, Dry Seneca 3-5, and Dry Seneca 13 Permit Groups, with excess withdrawals occurring in the Broad Run Permit Group (**Table 5**). Much of the available withdrawals are in the Horsepen Branch Permit Group. The average available additional daily withdrawal during the past 3 years (2018 to 2020) was about 129,000 GPD. The available withdrawals on an average daily use basis; therefore, are sufficient to provide an additional 70,000 GPD if the Town population were to increase to 6,500 residents.

Month of Maximum Use

The daily average water demand and the daily average demand during the month of maximum use collectively for all wells during the period 2007 through 2020 is summarized in **Table 3**. The month-of-maximum-use demand for total water withdrawals occurs most often during the summer months of June through September, however the month-of-maximum-use demand in several years occurred during the fall/winter months of November to January.

Month of Maximum Use – per Permit Group

Groundwater withdrawals during the month of maximum use from May 2007 through May 2020 for each Permit Group in comparison to the permitted withdrawal rate are summarized in **Table 6** and **Figure 8**. Although the daily data from 2007 is incomplete, 2007 is included in the analysis as the month of maximum use often occurs during the summer months, which is covered by the 2007 data set. The month-of-maximum-use demand remained below the permitted rate for all Permit Groups, with the exception of five instances as discussed below.

Horsepen Branch – Water use during the month of maximum use in the Horsepen Branch Permit Group (wells 2, 4, 6, 8, 11, and 14) remained below the permitted rate during the time period evaluated. The average withdrawals available during the month of maximum use during 2018 to 2020 in the Horsepen Branch Permit Group was about 125,000 GPD. The month-of-maximum-use demand occurred during the summer months of May through September, except for 2013 and 2014, where November and January, respectively, were the months of maximum use.

Dry Seneca 3-5 – Water use during the month of maximum use in the Dry Seneca 3-5 Permit Group (wells 3 and 5) remained below the permit rate of 200,000 GPD except during 2009, where an average of 219,426 GPD were withdrawn during December. The average withdrawals available during the month of maximum use during 2018 to 2020 in the Dry Seneca 3-5 Permit Group was about 40,000 GPD. The month-of-maximum-use demand in the Dry Seneca 3-5 Permit Group occurred most often during the colder months of December through March, with about 65% of the occurrences, and with June, August, and September the month of maximum use about 35% of the time.

Russell Branch – Water use during the month of maximum use in the Russell Branch Permit Group (wells 7, 9, and 10) remained below the permitted rate of 182,000 GPD except for 2007, where an average rate of 190,542 GPD were withdrawn during July. The average withdrawals available during the month of maximum use during 2018 to 2020 in the Russell Branch Permit Group was about 69,000 GPD. The month-of-maximum-use demand occurred during the cold weather months of November through January about 60% of the time, with the remaining occurrences in July, September, and October.

Dry Seneca 13 – Water use during the month of maximum use in the Dry Seneca 13 Permit Group (well 13) has been less than the permitted rate of 73,400 GPD except for November 2009 where an average of 76,197 GPD were withdrawn. The average withdrawals available during the month of maximum use during 2018 to 2020 in the Dry Seneca 13 Permit Group was about 19,000 GPD. The month-of-maximum-use demand occurred during the colder weather months of November through January half of the time, with the remaining occurrences in May, June, and August.

Broad Run – Water use during the month of maximum use in the Broad Run Permit Group (well 12) remained below the permitted rate of 66,600 GPD until 2020 and 2021, where 68,084 GPD were withdrawn in July of 2020 and 74,611 GPD were withdrawn in January 2021, resulting in excess withdrawals of about 2,000 GPD and 8,600 GPD, respectively. The average withdrawals available during the month of maximum use during 2018 to 2020 in the Broad Run Permit Group was about 3,600 GPD. The month-of-maximum-use demand occurred during the colder months of November through February 50% of the time, with the remaining occurrences in May through September.

Based on the data presented above, additional permitted withdrawals are available for the month of maximum use in the Horsepen Branch, Dry Seneca 3-5, Russell Branch, and Dry Seneca 13 Permit Groups to meet additional Town water demand, with excess withdrawals occurring occasionally in the Broad Run Permit Group. The average withdrawals available for the month of maximum use, based on 2018 to 2020 data, amount to about 257,000 GPD available for the month-of-maximum-use demand. These available withdrawals, as permitted by the MDE, are sufficient to provide for the additional 195,000 GPD if the Town population were to increase by 700 residents.

The months of maximum use for the Permit Groups occurred more often during cold weather months, which is contrary to the common assumption that the hot summer months drive the period of maximum use. The elevated water use during the cold weather months is attributed to water loss during water main pipeline breaks, which occur most commonly during the colder months.

Section 4

Temperature, Precipitation and Town Water Demand

Air temperature and precipitation are relevant to the Poolesville water supply because increased air temperatures can increase water demand, and since precipitation provides the water in the shallow water-table aquifer, changes in precipitation directly influence the availability of water in the aquifer.

Long-term climate change is expected to alter temperature and precipitation patterns in Maryland. During the next century, average precipitation is likely to increase during the winter and spring but not change significantly during the summer and fall.⁸ Based on climate models, the average air temperatures in Maryland are predicted to increase by 2.5°F over the next few decades.⁹ When global climate change reaches the 2°C benchmark (predicted in the next 50-60 years), the average Maryland summer and winter will be 6°F (3.3°C) higher than preindustrial levels.¹⁰

Historical precipitation and air temperature data were obtained for nearby Dulles International Airport and are summarized in **Figure 9**.¹¹ The linear trendlines of precipitation and air temperature indicate increasing trends during the period of record shown in **Figure 9**.

Air Temperature and Water Demand

A regression model was used to evaluate if there is a functional relationship between maximum daily temperature and total groundwater withdrawals. Seven-day trailing moving averages of daily maximum temperature and total gallons pumped per day were calculated for the period between January 1, 2016 and December 31, 2021 using NOAA climatology records and the municipal pumping records. Those moving averages were used in a generalized linear model to evaluate changes in water use in relation to daily maximum air temperature.¹² A particular strength of this model versus a linear regression is the ability to predict and evaluate smooth nonlinear responses to changes in a variable.

The regression model fit on this dataset shows a varying response of increasing temperature depending on the temperature itself (**Figure 10**). For mild temperatures in the 50s through the

⁸ <https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-md.pdf>.

⁹ Dupigny-Giroux, L.A., E.L. Mecray, M.D. Lemcke-Stampone, G.A. Hodgkins, E.E. Lentz, K.E. Mills, E.D. Lane, R. Miller, D.Y. Hollinger, W.D. Solecki, G.A. Wellenius, P.E. Sheffield, A.B. MacDonald, and C. Caldwell, 2018, Northeast. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 669–742. doi: 10.7930/NCA4.2018.CH18.

¹⁰ https://www.geo.umass.edu/climate/stateClimateReports/MD_ClimateReport_CSRC.pdf.

¹¹ Dulles International Airport is located in Dulles, VA, approximately 12 miles south of Poolesville. The climate data was obtained from NOAA's Global Historical Climatology Network.

https://www1.ncdc.noaa.gov/pub/data/cdo/documentation/GHCND_documentation.pdf

¹² A Generalized Additive Model was used for this analysis; Hastie and Tibshirani, 1986.

mid-70s, there is very little response to temperature change. As the maximum temperature increases to the 80s and 90s, water use increases with increasing temperature, and at an increasing rate as the temperature climbs. At 80°F, water use increases at a rate of 5,000 GPD/degree F, whereas at 90°F, water use increases at a rate of 5,500 GPD/degree F. At temperatures below about 50°F, the water withdrawal rates are impacted by increased water withdrawals due to water main breaks, which typically occur during the winter months.

A series of graphs of daily precipitation, maximum temperature, and total gallons pumped across all system wells annually from 2007 to 2020 are included in **Appendix B**. In addition to raw daily data, 15-day moving averages of maximum temperature and total water use are included in each plot to highlight seasonal trends and interaction between temperature and water use. In general, periods of high temperature correspond to elevated water withdrawal. Some short-term variation in water use may be explained by periods of precipitation departing from normal or water main breaks during periods of colder weather.

As noted above, water withdrawals for the Poolesville municipal water system increase with air temperatures above about 80°F, and as a result, water withdrawals are expected to increase with the number of hot summer days. There is significant uncertainty with quantifying the impacts of a warming climate on water withdrawals, but as an example, each day with a maximum air temperature of 100°F, would require an additional water demand of about 55,000 GPD, or about 10% of the current daily Town water demand. This equates to an increase of about 150 gallons per day on an annual basis.

In a scenario with 30 additional days with a maximum air temperature of 100°F, the average daily water demand on an annual average would increase by about 4,500 GPD, or about 1% of the current daily water demand. During the month of maximum use, the daily demand would increase by about 55,000 GPD for each day with temperatures of 100°F.

Precipitation and Water Demand

During the period 2007 through 2020, the single year with lowest precipitation was 2007, where the area received about 2/3 of the average precipitation (27 inches as compared to a 40-year average of about 42 inches) and air temperature was only slightly higher than average (**Figure 9**). A comparison of precipitation trends with the Town water demand is shown on **Table 3**. During 2007 the Town water demand was about 10% higher than 2008, which was a non-drought year with a similar average of daily maximum temperature. This suggests that reduced precipitation correlates to an increase of about 10% in water demand during a drought year.

Section 5

Regional Water Levels and Impact on Well Performance

During the last 40 years, the most severe drought occurred during the period 1997 to 2002 where annual precipitation was less than 40 inches in 5 out of the 6 years. Periods of reduced precipitation during 2007 through 2020 occurred during 2007, 2012, and 2015 to 2017 (where total precipitation was below 40 inches per year in 2015 and 2016 and just above 40 inches per year in 2017) (**Figure 9**).

Evaluations of water levels measured in wells are useful for identifying periods of reduced recharge to the aquifer, or drought conditions. Water-level data are available through the USGS for a groundwater monitoring well located about 4.5 miles north of Poolesville in Barnesville, MD (well MO cc 14) (**Figure 11**). Similar to the Poolesville municipal supply wells, this well is a fractured bedrock water-table well and it is useful for evaluating regional water levels and seasonal trends in water levels over time. As shown in **Figure 11**, the water levels follow a seasonal pattern with higher water levels typically occurring in the winter to early spring months, when precipitation is more abundant, followed by lower water levels during the drier summer-fall months. This pattern is consistent with the recharge conditions of the region, where most of the recharge to the aquifer occurs during the winter to spring months in response to increased precipitation and reduced evapotranspiration. Periods of low water levels in monitoring well MO cc 14 coincide with periods of low precipitation, notably during the periods of 1997 to 2002, 2007, and 2016, with a less pronounced impact observed in 2012 and 2010 (**Figure 11**). During these periods, water levels in this well decline about 15 to 20 feet from early in the year to late fall/winter.

Water-level data collected using a continuous data recorder from a residential water supply well located just outside the Town Boundary are shown in **Figure 12**. During the period of record (September 2009 to December 2020) periods of at least 4 consecutive months of water levels below about 40 feet depth occurred during 2010, 2012, 2016 to 2017, and 2019.

Water-level data from these wells collectively indicate that water levels in the regional aquifer were lower during 2002, 2007, 2010, 2012, 2016, and 2019.

Impacts of Recharge/Precipitation on Well Yields

Previous investigations have reported that well yields of the Poolesville wells decline during the summer/fall months by as much as 50% compared to winter/spring months due to lowered water levels in the aquifer (Otton, 1981, and Hammond, 1999). A comparison of operational well yields for the early versus late months of years with reduced precipitation (2012, 2016, and 2019) indicate that, although well yields decline in some wells, the decline is much more limited than observed by Otton (1981) and Hammond (1999). The observed decline in yield late in the year is 79% to 97% of the yield during the early part of the year. The reason for the limited decline in yield during the drier years is likely due to the improved management of the town water supply in that wells are shut down when the water levels approach the upper water-yielding zones, and the expanded well field allows for pumping from more wells to distribute the pumping demand.

Section 6

Estimates of Minimum Sustainable Well Yield

Assessments of regional water levels, precipitation, and the response in well yield and pumping water level in Town wells are discussed below. These assessments evaluated the behavior of the wells during periods of reduced recharge to determine a reliable well yield for each well during drought conditions. These assessments are semi-qualitative and carry uncertainty as there are many variables that are not controlled in the data set; however, they provide a realistic evaluation of well performance based on operational data. Missing from the evaluation are the influence of parameters such as well interference, which is beyond the scope of this investigation.

Graphs of daily well yield (in GPM), the measured depth to water in the well, and hours of pumping during 2007 to mid-2021 are shown in **Figures 13** through **21**. Note that the daily data collected by Town staff are recorded as total gallons pumped from one day to the next and the time (hours) that the well was operational. The daily withdrawal rate in GPM value is then calculated based on these daily records.

For the Town wells, which are fractured bedrock wells, the critical parameter to consider in estimating well yield is the depth of the uppermost water-yielding fracture and maintaining the water level in the well above this fracture. The Town wells are operated such that pumping stops if the water level in the well approaches within a few feet of the uppermost water-yielding fracture to prevent damage to the well due to dewatering the fracture network. Although the well will still produce water, maintaining the water level at the appropriate level is critical for maintaining well ‘health’ and long-term well performance.

Below is a review of well yield and water-level responses in Town wells during the period of record with emphasis on the periods of seasonal low water levels and/or reduced precipitation during 2007, 2012, 2016 and 2019. A minimum sustainable yield is estimated for each well; this rate is approximately the observed sustained rate during late summer/fall when regional water levels were low, and preferably when the well was producing at/near 24 hours a day. This rate is a conservative estimate of the reliable sustainable yield when the well is under stress due to drought conditions, and that will not dewater the uppermost water-yielding fracture (which may result in damage to the well). This rate is similar or slightly lower than the estimated sustainable drought yield provided by Hammond (1999) or SSP&A (2009 and 2016) based on aquifer test data (**Table 1**). Additional methods of analysis were considered; however, because the wells are not pumped continuously for an extended period of time during drought conditions, the wells were not sufficiently stressed to further refine the drought yield estimates. The results of this assessment are included in **Table 1** as the SSP&A-estimated minimum sustainable yield.

Well 2 – Reductions in well yield are limited and less than 10% and the depth to water increases during the drier years (**Figure 13**). Well 2 is often pumped close to 24 hours a day but has been offline during the winter months since 2015. A minimum yield of 80 GPM is estimated based on well performance in late 2007 and 2019-2020. Note that the depth to water approaches the upper water-yielding zone of 220 feet during the late summer/fall months.

Well 3 – Well yields declined during the summer of 2012, 2016, and 2019 by about 20% and the depth to water increased, but the observed response is similar to other time periods during

the summer/fall months, and water levels remain above the upper-water-yielding zone of 220 feet depth (**Figure 14**).¹³ When well 3 was pumped 24 hours a day during October-November 2009, well yield declined to about 40 GPM, which is estimated to be the minimum sustainable rate.

Well 4 – Well 4 was not evaluated as there are limited data and the well was not pumping during these time periods. The sustainable yield estimate of 35 GPM from Hammond (1999) is interpreted as the minimum sustainable yield for well 4.

Well 5 – Well yields decline during the summer of 2012, 2016, and 2019 (with reductions up to 20%) but well yield remains higher or similar to other years. The depth to water increased during the summer of 2016 to the lowest levels during the period of record but remained above the upper water-yielding zone of 390 feet depth (**Figure 15**). During October-November 2009, well 5 was pumped 24 hours a day and well yield ranged from 90 to 96 GPM. A minimum sustainable yield of 90 GPM is estimated for well 5.

Well 6 – The response in well 6 during 2012, 2016, and 2019, is similar to well 5 with reduced yield (up to 15%) and increased depth to water but the response is similar to other summer/fall time periods (**Figure 16**). Water levels approached the upper water-yielding zone in the summer of 2016 but well yields remained above 100 GPM and yields remained above 100 GPM when pumped more than 20 hours per day. A minimum sustainable yield of 100 GPM is estimated for well 6.

Well 7 – Limited impact on well yields of 10% was observed in 2019 and water-level responses are similar to other periods (**Figure 17**). When well 7 was pumped at 24 hours a day in late 2009, well yield declined to between 34 and 23 GPM. During late October 2015, well 7 was pumped close to 24 hours a day for 7 out of 8 days and well yield was between 32 to 35 GPM. A minimum sustainable yield of 30 GPM is estimated for well 7.

Well 8 – Well yield declined about 7% and the depth to water increased during 2012 but water levels remain above the upper water-yielding zone of 217 feet. During 2016, no significant impact on well yield was noted and water levels were similar to other periods. During 2019, well yields declined about 17% but the cause may be operational changes rather than aquifer stresses (**Figure 18**). Well 8 was pumped 24 hours a day for 6 days in early July 2009 and well yield ranged from 46 to 49 GPM. A minimum sustainable yield of 50 GPM is estimated for well 8.

Well 9 – Well yields in well 9 declined from 5 to 10% in 2016 and 2019, with no decline noted in 2012. Water levels were low during 2016 but were similar to water levels observed during other time periods (**Figure 19**). Well 9 was pumped close to 24 hours a day sporadically and well yield remained over 100 GPM, but the sustainable yield was estimated at 47 GPM by Hammond (1999) based on aquifer test data analyses. A minimum sustainable yield of 47 GPM is estimated for well 9.

¹³ Note that the increased depth to water at the end of 2012 and 2018 are suspected to be typos, where the water level was probably 100 feet higher than recorded (It is suspected that an errant leading “1” was included in the record, so that a depth of 160 feet was probably 60 feet. This interpretation provides a better match to the anticipated recovery of water levels that would coincide with an increase in the sustained pumping rates.

Well 10 – Well 10 has been offline since 2010 due to water-quality issues and the sustainable yield was not evaluated due to insufficient data. Well 10 was estimated by Hammond (1999) to yield about 70 GPM.

Well 11 – Well 11 came online in September 2020 and was not evaluated further due to insufficient data. The well yield was estimated by SSP&A (2009) at 50 GPM, which is the minimum sustainable yield estimated for this well.

Well 12 - Well yield and water levels decline about 12% in 2012 but are similar to observations during other years. The well sustained a pumping rate of greater than 70 GPM from 2015 through mid-May 2021 but operated an average of about 10 hours a day. Water levels decreased during 2016 and remain lowered but were above the upper water-yielding zone with no significant impact on well yield (**Figure 20**). In late 2009, the well was pumped for 24 hours a day for 60 days at an average pumping rate of 43 GPM. During this period water levels declined but remained above the upper water-yielding zone of 233 feet. The minimum sustainable yield of well 12 is estimated to be 45 GPM.

Well 13 – Well yield and water levels declined during the summer of 2012, 2016, and 2019 with water levels approaching the upper water-yielding zone at 155 feet during all 3 periods. The well was pumping at 60 to 80 GPM and only for about half the day (**Figure 21**). Well 13 was pumped for 24 hours a day in late 2009 for 60 days at an average pumping rate of 53 GPM (with a target rate of 51 GPM). During this period water levels declined but remained above the upper water-yielding zone. The minimum sustainable yield for well 13 is estimated to be 50 GPM.

Well 14 – Well 14 is not yet online. The sustainable yield under drought conditions for well 14 was estimated by SSP&A (2016) at 30 GPM.

Based on the operational data collected during 2007 through 2020 and prior analyses, the wells are estimated to be capable of withdrawing water at the minimum yield rates noted above and summarized in **Table 1**. The Town wells normally pump less than 24-hours a day and as the wells are not routinely stressed under the conditions of 24-hour daily pumping during seasonally low water levels, further refinement of the minimum estimated yields based on the existing dataset is not feasible. As noted previously, these pump rates are estimated as the sustainable well yield under drought conditions and define the conservative low-end estimate of the sustainable yield of these wells when water levels are seasonally low and the aquifer is under stress. Under conditions of higher regional water levels, the sustainable yields would be higher.

Section 7

MDE Allocation and Estimated Sustainable Yield

A summary of the SSP&A-estimated minimum sustainable yield for all wells and the MDE water allocation limits for each Permit Group are provided in **Table 7**. Collectively, the SSP&A minimum sustainable yield estimated herein for Town wells is about 932,000 GPD (not including well 10), which is greater than the MDE-permitted allocation of 650,000 GPD and the month-of-maximum-use allocation of 910,000 GPD, which indicates that the existing Town water supply is sufficient to provide the permitted rates during drought conditions and during the month of maximum use. In terms of Town water demand, using the minimum sustainable yield for wells estimated herein, a daily yield of about 932,000 GPD is available from the existing wells, which is nearly double the average daily water demand during 2018-2020 of 521,000 GPD.

A comparison of the SSP&A-estimated minimum sustainable yield for wells within each Permit Group to the MDE permit allocation (**Table 7**) indicates that, except for the Russell Branch Permit Group, the minimum sustainable yield for each Permit Group is greater than the permitted daily average allocation, indicating that the wells in each Permit Group are capable of providing the MDE-permitted allocation. For the Russell Branch Permit Group, the MDE permit allocation of 115,000 GPD slightly exceeds the minimum sustainable yield of the wells of about 111,000 GPD but only because well 10 is omitted from the minimum sustainable yield as this well is offline due to water-quality issues.¹⁴ If well 10 was included in the analysis, an additional 101,000 GPD would be available.

A comparison of the SSP&A-estimated sustainable well yield to the average pumping rate during 2018 through 2020, is shown in **Table 8**.¹⁵ From these data it is evident that all wells in the Horsepen Branch Permit Group could be pumped at a higher rate than they were operated at during 2018-2020; well 7 could be pumped at about twice the operational rate; well 9 is pumped at/near the minimum sustainable rate; and wells 3, 5, 12, and 13 are pumped at between 64 and 88% of their estimated minimum sustainable yield.

Water Balance Analysis

The MDE total allocation to Town wells is based on a water balance method that includes a water service area of 2,562 acres with about 282 GPD per acre of recharge, for a total water allocation of 650,000 GPD. It appears that the distribution of the water allocation has been adjusted by the MDE to allow for additional withdrawals in watersheds that have multiple wells, as discussed below.

The acreage of each watershed area within the Town boundary and the MDE-permitted allocation are provided in **Table 9**. Note that the acreage used in prior assessments appears to overestimate the total acreage by about 5%. The acreage estimates by SSP&A herein are based

¹⁴ The minimum sustainable yield of well 10 is about 70 GPM; this additional yield was omitted from the Permit Group well yield estimates.

¹⁵ The average pumping rate in GPM is calculated as the total gallons pumped annually divided by the number of minutes in the year.

on GIS mapping of the catchment areas and the Town boundary delineation received from the Town engineer. The reduced acreage of the Town within each watershed, if applied by the MDE in water allocation, would result in an allocation of about 618,000 GPD rather than the current allocation of 650,000 GPD.

Looking further at water allocation and the watershed areas (**Table 9**), the column “MDE-Permitted Allocation in Watershed” is the current MDE-permitted water allocation in each watershed and the column “SSP&A Calculated per MDE Water Balance Methods” is the water availability calculated using MDE water-balance methods with the acreage estimated by SSP&A and the same recharge of 282 GPD/acre. The column “Difference = MDE-Permitted minus SSP&A Calculated” is the difference between the prior 2 columns. This comparison illustrates that the MDE has overallocated water in the Horsepen and Russell Branch watersheds (by about 161,000 GPD and 8,200 GPD, respectively), and under allocated water in the Broad Run and Dry Seneca Creek watersheds (by about 90,000 GPD and 47,000 GPD, respectively).

Scenario Discussion

Based on the analyses presented herein, the Town water demand under a scenario of a population of 6,500 persons, a drought year, and 30 additional days with an air temperature of 100°F is summarized in **Table 10**. The average daily demand on an annual basis due to an increase of 700 persons (6,500 total population), a 10% increase demand during a drought, and thirty additional 100°F days, would be about 655,000 GPD, which is close to the current MDE permit allocation of 650,000 GPD.

For the month-of-maximum-use demand in the same scenario, the water demand would be about 786,000 GPD with a population of 6,500 persons, about 865,000 GPD during a drought year, and about 920,000 GPD during a year with 30 days of 100°F temperatures, as compared to the MDE permit allocation of 910,000 GPD. For this analysis, the month of maximum use was calculated at 1.33 times the average daily demand. This ratio likely overestimates the month-of-maximum-use demand but is provided as a conservative estimate. The impact of 100°F temperatures is expected to increase the month-of-maximum-use demand by about 55,000 GPD.

The sustainable well yield during drought conditions estimated herein for the current well field is about 932,000 GPD (not including well 10). This yield is sufficient to supply the water demand in the scenario discussed above.

For the normal seasonal (summer to fall) drought conditions in the scenario above, there is sufficient water availability in the Town water supply. As noted in Section 4, the average precipitation in Maryland is expected to increase in the winter and spring months and remain about the same in the summer and fall. Increased precipitation during the winter/spring will recharge the underlying aquifer, which is important for increasing the availability of groundwater during the drier summer months. The estimated recharge and long-term precipitation shown in **Figures 5** and **9** indicate increasing trends over time, which suggests that groundwater availability also will increase over time. Of concern, however, is the occurrence of multi-year drought conditions, which can more severely impact water availability than the ‘normal’ seasonal drought. The Town may consider adding an additional well(s) for redundancy, particularly if extreme drought conditions occur or if an existing well becomes inoperable due to water quality or other issues.

The MDE allocation and use permits are renewed at a minimum every 12 years, and if long-term climate change or population growth were to significantly impact water demand, it is anticipated that the MDE permits would be amended to reflect the increased demand required by the Town.

Section 8

Groundwater Flow Model

A steady state groundwater flow model was constructed to evaluate the water table surface in response to pumping scenarios and to delineate the capture zone for the pumping wells.¹⁶ The model was developed as a tool to simulate the change in water levels due to Town pumping under a range of pumping and recharge conditions.

The model area extends from Great Seneca Creek drainage system on the east, the Little Monocacy River and Tenmile Creek drainage to the north and is bound by the Potomac River on the south and west – the model extent and model grid are shown in **Figure 22**. A quadtree grid was used to focus cell refinement along surface water features and close to the pumping wells.

The model structure includes 4 layers as follows, for a total thickness of 820 feet:

- Layer 1 – weathered bedrock, 20 feet thick and hydraulic conductivity of 5ft/d
- Layer 2 – siltstone/sandstone bedrock, 150 feet thick and hydraulic conductivity of 0.5 ft/d
- Layer 3 – siltstone/sandstone bedrock, 200 feet thick and hydraulic conductivity of 0.2 ft/d
- Layer 4 – siltstone/sandstone bedrock, 450 feet thick and hydraulic conductivity of 0.2 ft/d

The groundwater model was developed using MODFLOW-USG.¹⁷ The Potomac River was specified as constant head, all other streams within the model domain are simulated with the Modflow drain package.

Four scenarios were evaluated as follows:

- The average annual pumping rates during 2018-2020 (521,000 GPD), with 8 inches of recharge;
- The average annual pumping rates during 2018-2020 (521,000 GPD), with 4 inches of recharge (drought conditions);
- Pumping all wells at the SSP&A sustainable yield rates (932,000 GPD) with 8 inches of recharge; and,
- Pumping all wells at the SSP&A sustainable yield rates (932,000 GPD) with 4 inches of recharge (drought conditions).

The 2018-2020 average annual pumping rates and the SSP&A minimum sustained yield pumping rates are shown in **Table 8**. The 2018-2020 pumping rate is a daily average of 521,000 GPD and the SSP&A minimum sustainable yield rates are a daily average of 932,000 GPD.

¹⁶ The capture zone delineates the three-dimensional region that contributes the groundwater extracted by a pumping well or drain.

¹⁷ MODFLOW-USG-version “USG-Transport v.1.8.0”, a finite difference flow simulation code originally developed by the USGS as MODFLOW-USG, but is currently maintained by its author, Sorab Panday, for GSI Environmental Inc. (Panday et al., 2017; Langevin et al., 2020).

The simulated model results are shown as a series of figures, discussed below.

The simulated water levels and capture zones for the 2018-2020 average annual pumping rate (521,000 GPD) and 8 inches of recharge are shown in **Figure 23**. The capture zone for each of the pumping wells is shown as a colored region, which delineates the area that is contributing groundwater to the pumping well. The capture zones for some wells extend beneath the land surface to the upland area northeast of the Town – in these areas, deeper groundwater is flowing beneath the surface water drainage (Dry Seneca Creek) and is captured by the pumping wells, with shallow groundwater discharging to the creek. The water-level contours in **Figure 23** illustrate the cone of depression or lowered water levels around each pumping well. Wells with higher pumping rates have a more pronounced cone of depression and a larger capture zone.

The simulated water levels and capture zones for the 2018-2020 average annual pumping rate (521,000 GPD) and 4 inches of recharge are shown in **Figure 24**. The results are similar to **Figure 23**, but due to the reduced recharge and drought conditions, the capture zones are wider and extend further upgradient. The cone of depression and lowered water levels around the pumping wells are more pronounced.

The simulated water levels and capture zones for the two scenarios based on the SSP&A minimum sustainable well yield rates (932,000 GPD) are shown in **Figures 25** and **26**, with 8 inches of recharge (**Figure 25**) and 4 inches of recharge (**Figure 26**). In both scenarios, the water-level elevations are lower than the prior scenarios, due to the increased pumping, and the capture zones are larger and extend further upgradient. The largest zone of capture and lowest water levels occur in the scenario with 4 inches of recharge, which represents significant drought conditions, and all of the wells pumping at their minimum sustainable rates.

The simulated water-level elevations illustrated in **Figures 23** through **26** are water levels in the aquifer and not specifically the water level in the pumping well. Simulating the depth to water in the pumping well is challenging as the wells experience well losses during pumping; these well losses and well behavior are difficult to predict and are beyond the ability of this model simulation. Based on the predicted water levels in the aquifer; however, the water levels are at least 25-feet above the depth of the upper water-bearing zone in each pumping well, for all scenarios. This suggests that the well field can sustain the pumping rates under these conditions of recharge without dewatering the upper water-yielding fracture in the pumping wells.

Section 9

Summary and Conclusions

Background

- The water supply for the Town of Poolesville is provided by 13 water supply wells located within the Town boundary. The Town is located at the headwaters of four watersheds – Horsepen Branch, Russell Branch, Dry Seneca Creek, and Broad Run. The Town wells are assigned to a watershed based on well location.
- The MDE water allocation and withdrawal permits are assigned based on the watershed where a well is located. The appropriation is based on the watershed area and recharge rate within the Town boundary, so that the appropriation does not exceed expected recharge to the aquifer under drought conditions.
- The five water allocation permits issued to the Town of Poolesville by the MDE together allow for a daily average withdrawal of 650,000 GPD on a yearly basis and a daily average of 910,000 GPD in the month of maximum use.

Conclusions from the analyses completed are presented as answers to the questions presented in Section 1 of this report and are listed below.

1. How does the average daily water demand compare to the MDE-permitted allocation?
 - The daily average water demand during the past 3 years (2018 through 2020) was about 521,000 GPD. The current MDE-permitted water withdrawal for the Town is 650,000 GPD for all water allocation permits, or about 20% greater than the current average daily water demand.
2. How does the month-of-maximum-use water demand compare to the MDE-permitted allocation?
 - The current average water demand during the month of maximum use during 2018 to 2020 was about 622,000 GPD. The current MDE-permitted water use for the Town during the month of maximum use is 910,000 for all water allocation permits, or about 32% greater than the current average demand during the month of maximum use.
3. What is the projected water demand from increased population and how does that compare to the MDE-permitted allocations?
 - Increasing the Town population by an additional 700 residents to a population of about 6,500 would be accompanied by an additional water demand of about 70,000 GPD, for an average water demand of about 591,000 GPD, which is about 59,000 GPD less than the current permitted average demand of 650,000 GPD (or 91%) for all allocation permits.
 - If the average water demand were to increase by 70,000 GPD to 591,000 GPD, the month-of-maximum-use demand would be expected to increase by about 195,000 GPD to a total demand of about 786,000 GPD, which is less than the permitted daily rate during the month of maximum use of 910,000 GPD for all allocation permits.

4. Where is additional water available for pumping based on the permit allocations and well pumping records?
 - Additional daily withdrawals are available on a permit basis in the Horsepen Branch, Russell Branch, Dry Seneca 3-5, and Dry Seneca 13 Permit Groups, with excess withdrawals occurring in the Broad Run Permit Group. The average available additional withdrawal capacity during the past 3 years was about 129,000 GPD. The available withdrawals are sufficient to provide an additional 70,000 GPD if the Town population were to increase to 6,500 residents.
 - Additional permitted withdrawals are available during the month of maximum use in the Horsepen Branch, Russell Branch, Dry Seneca 3-5, and Dry Seneca 13 Permit Groups, with excess withdrawals occurring in the Broad Run Permit Group. The average withdrawals available for the month-of-maximum-use demand are about 257,000 GPD. These available withdrawals during the month of maximum use are sufficient to provide for the additional 195,000 GPD if the Town population were to increase by 700 residents.
5. What is the projected water demand resulting from increased air temperature and reduced precipitation?
 - Correlation of the Town's water demand and precipitation suggests that reduced precipitation correlates to about a 10% increase in water demand during a drought year.
 - Town water demand increases when the maximum daily air temperature rises above 80°F. As air temperatures increase, water withdrawals are expected to increase with the number of hot summer days. Each day with a maximum air temperature of 100°F, would translate to an additional water demand of about 55,000 gallons.
6. What is the sustainable yield of the wells under drought conditions?
 - SSP&A estimated a minimum sustainable well yield based on an analysis of the depth to water in the well, operational well yield, and hours of pumping during periods of low regional water levels. This rate is a conservative estimate of the well yield when the well is under stress due to drought conditions, and that will not dewater the uppermost water-yielding fracture. Under conditions of higher regional water levels, the well yields would be higher.
7. How does the sustainable yield compare to the MDE water use allocations?
 - Collectively, the SSP&A-estimated sustainable yield is about 932,000 GPD from all wells, which is greater than the MDE-permitted allocation of 650,000 GPD and the month-of-maximum-use allocation of 910,000 GPD. This indicates that the existing Town water supply is sufficient to provide the MDE-permitted withdrawal rates during drought conditions and during the month of maximum use.
 - A comparison of the SSP&A-estimated minimum sustainable yield for wells within each Permit Group to the MDE permit allocation indicates that, except for the Russell Branch Permit Group, the minimum sustainable yield for each Permit Group is greater than the MDE-permitted allocation, and the wells are capable of providing water to meet the permit allocations. For the Russell Branch Permit Group, the sustainable well yield is less than

the MDE permit allocation only because well 10 is offline and not included in the analysis. If well 10 was included in the analysis, sufficient yield would be available.

8. What is the expected water demand if the town population increases to 6,500 people, and there is a drought and increased air temperatures due to climate change?
 - The average daily demand on an annual basis resulting due to an increase to 700 persons (6,500 total population), in addition to a 10% increase in demand due to drought, and thirty additional 100°F days, would be about 655,000 GPD, which is close to the current MDE permit allocation of 650,000 GPD.
 - For the month-of-maximum-use demand in the same scenario, the water demand would be about 786,000 GPD with a population of 6,500 persons, about 865,000 GPD during a drought year, and about 920,000 GPD during a year with 30 days of 100°F temperatures, as compared to the MDE permit allocation of 910,000 GPD.
 - The sustainable well yield during drought conditions estimated herein for the current well field is about 932,000 GPD (not including well 10). This yield is sufficient to supply the water demand in the scenario discussed above.
 - In total, the current municipal water supply is sufficient to provide the average daily demand and the month-of-maximum-use demand, as permitted by the MDE, and as used by the Town, including increased population to 6,500 persons, drought conditions, and increased air temperatures.
 - The Town may consider adding an additional well for additional redundancy, particularly if extreme drought conditions are realized or if an existing well becomes inoperable due to water quality or other issues.

In addition, a groundwater flow model was constructed to simulate the elevation of the water levels in the aquifer and the capture zone of the Town wells under a set of scenarios. The first two scenarios include pumping the Town wells at 521,000 GPD, which is the average annual pumping rate during 2018-2020, with 8 inches of recharge, and also with 4 inches of recharge to simulate drought conditions. The other two scenarios include pumping the Town wells at the SSP&A-estimated minimum sustainable rate (932,000 GPD) with 8 inches of recharge, and then with 4 inches of recharge to simulate drought conditions. In all scenarios, the water levels in the aquifer near the pumping wells remain above the uppermost water-yielding fracture in the pumping well.

Section 10

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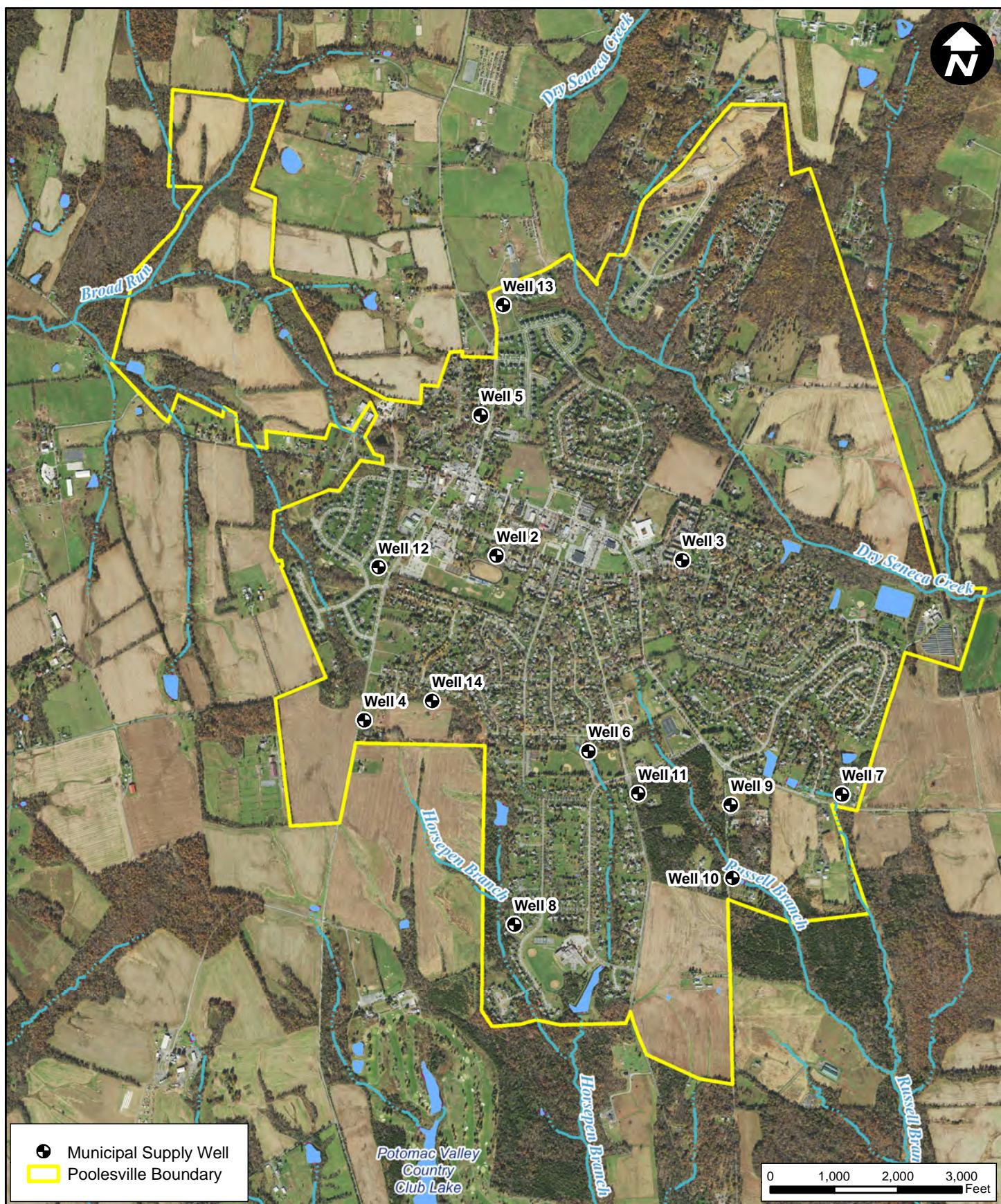
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FIGURES



Note: Aerial imagery date is November 2018.

Figure 1 Location Map

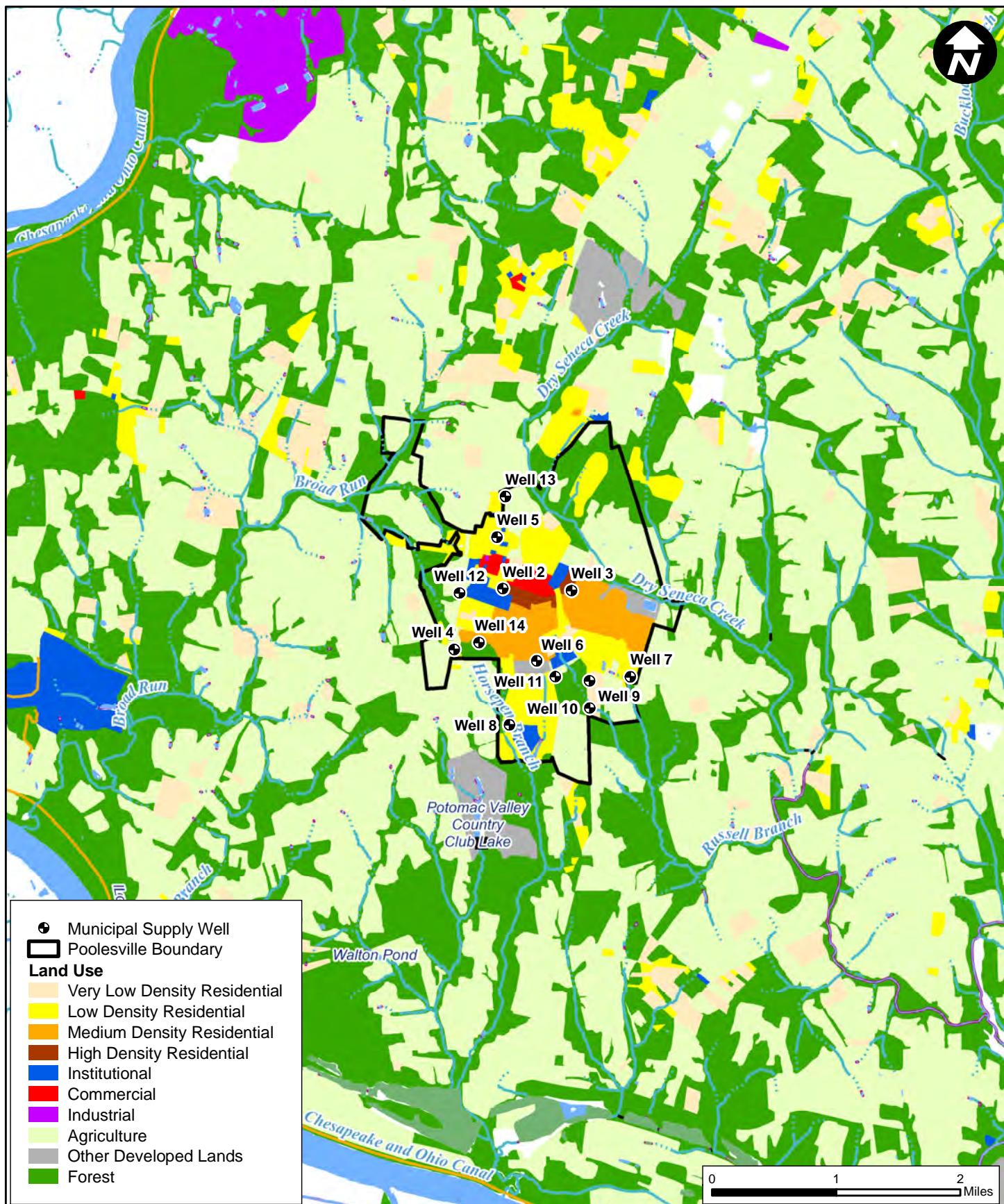


Figure 2 Land Use

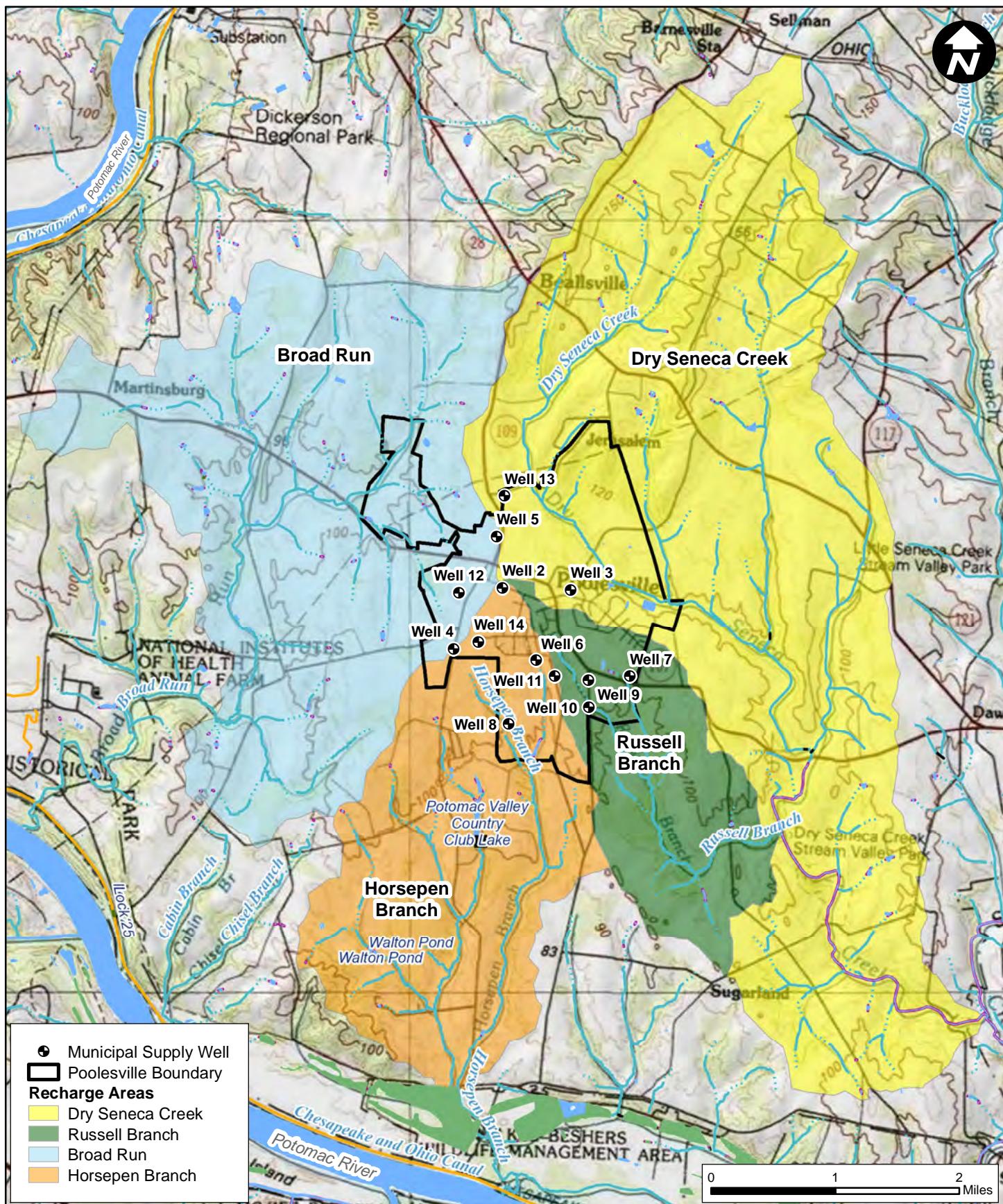
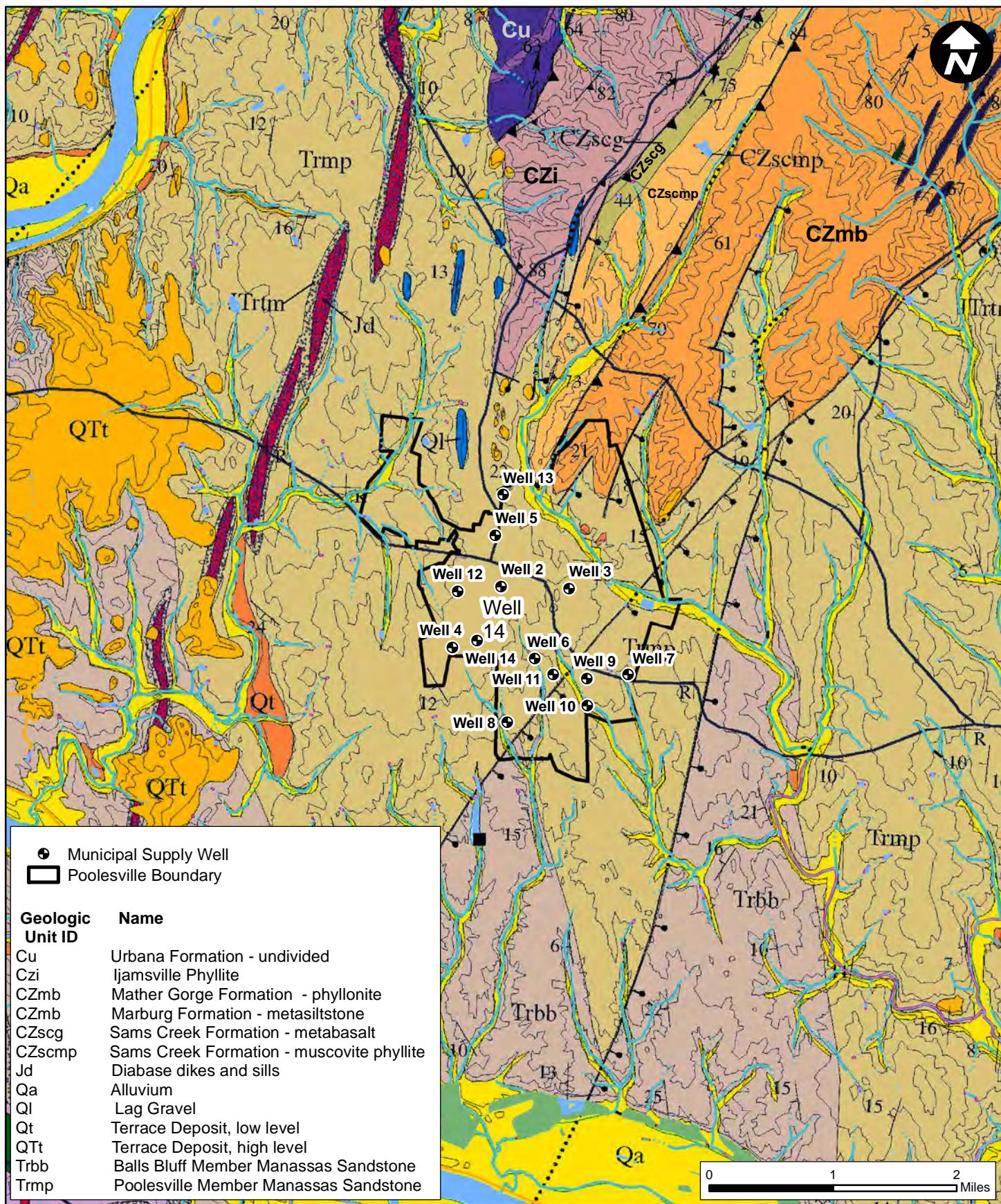


Figure 3 Recharge Areas and Surface Topography



Source: Southworth, S., 2002. Digital Geologic Map and Database of the Frederick 30' x 60' Quadrangle, Maryland, Virginia, and West Virginia. U.S. Geological Survey Open-File Report 02-437.

Figure 4 Geology and Surface Topography

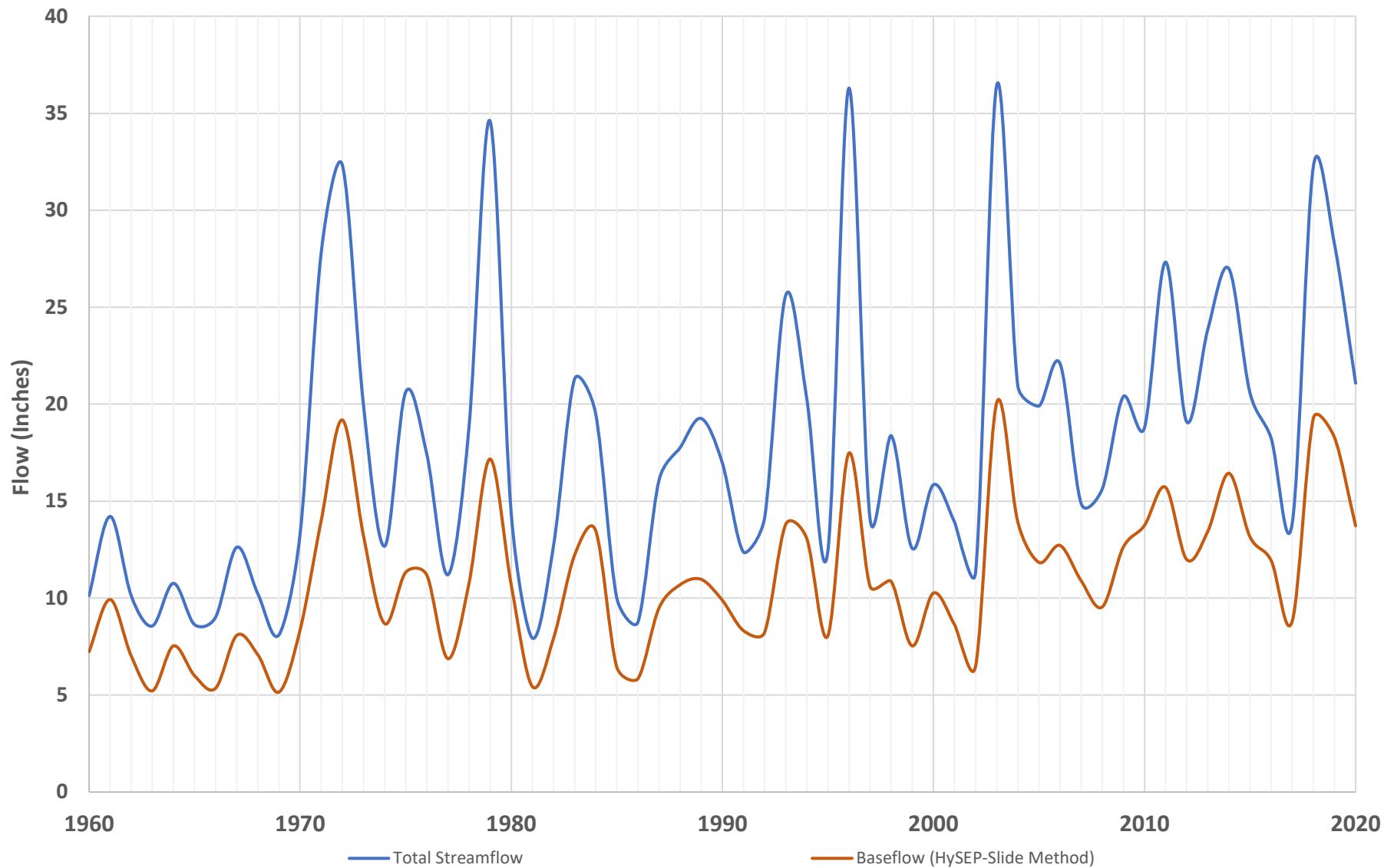


Figure 5 Recharge and Streamflow - Little Seneca Creek, Dawsonville, MD

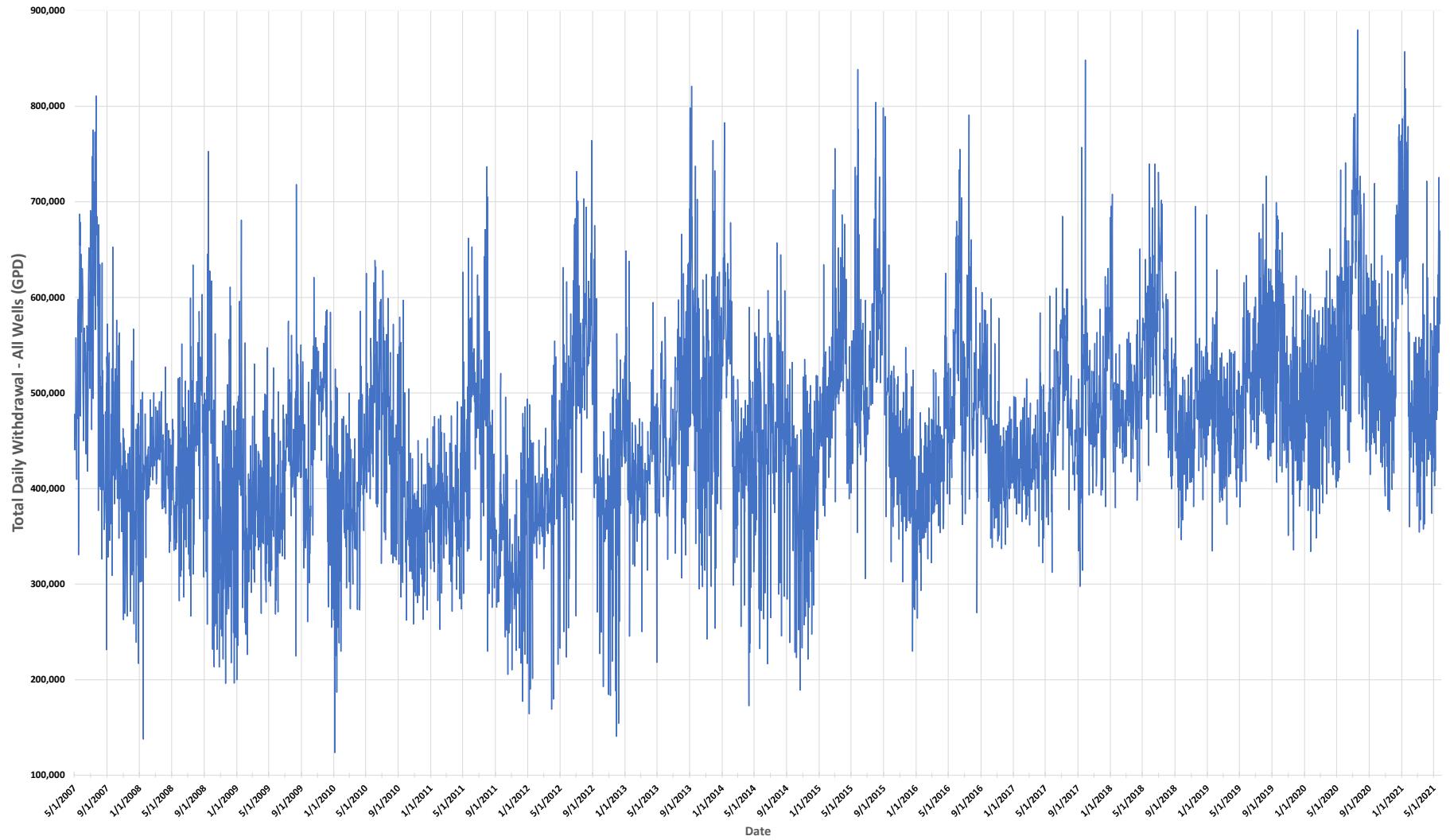


Figure 6 Total Daily Withdrawal May 2007 to May 2021

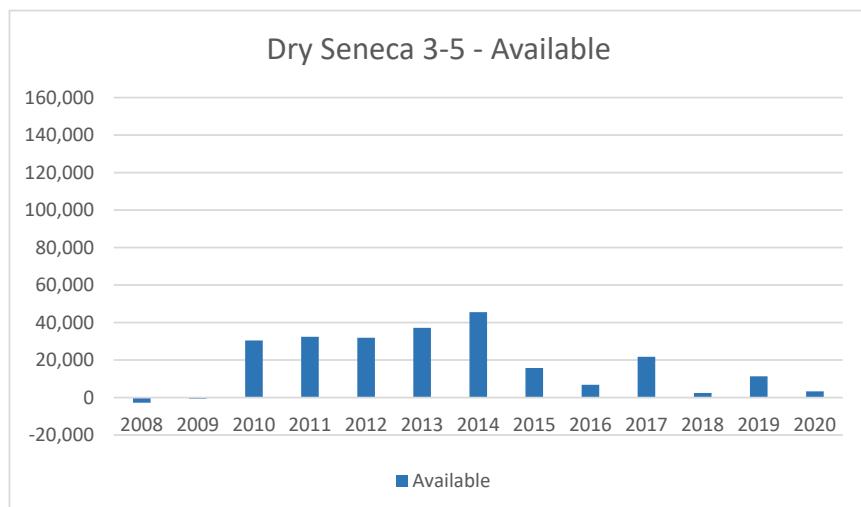
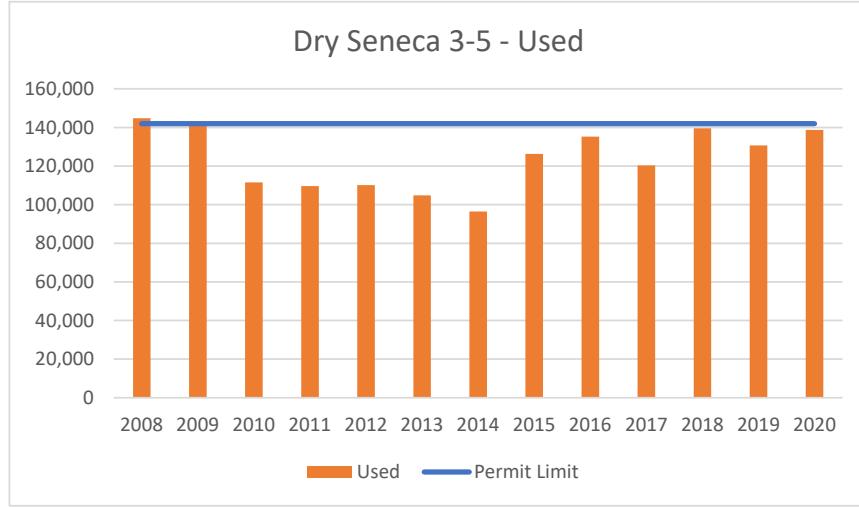
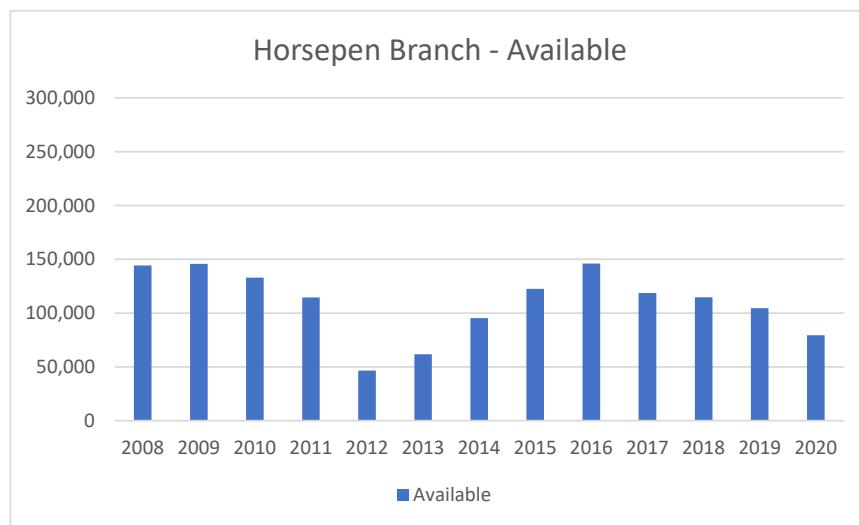
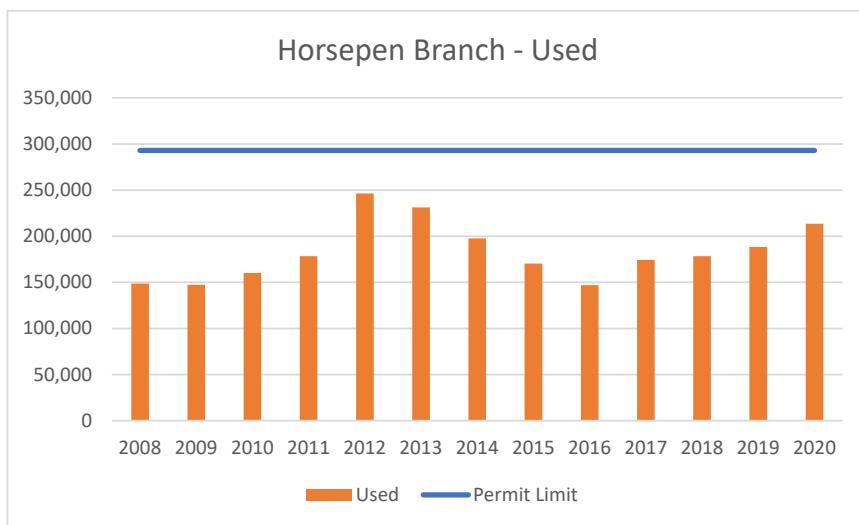


Figure 7 Average Annual Daily Withdrawal for Permit Groups (Page 1 of 3)

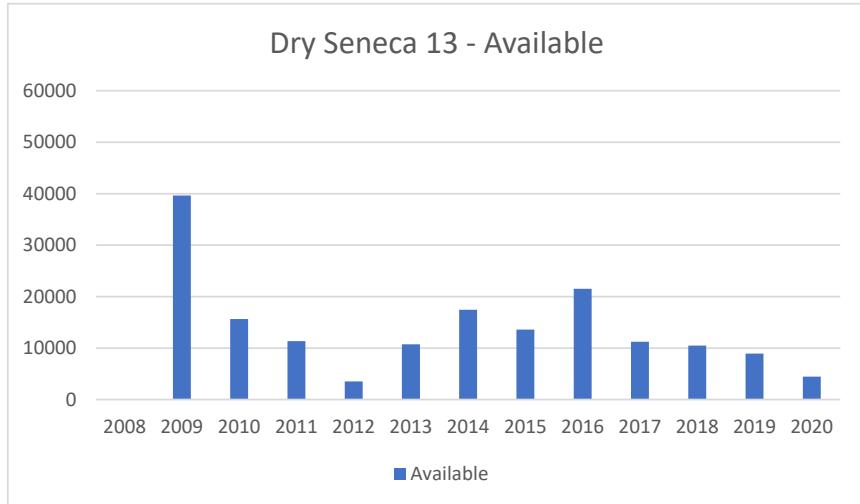
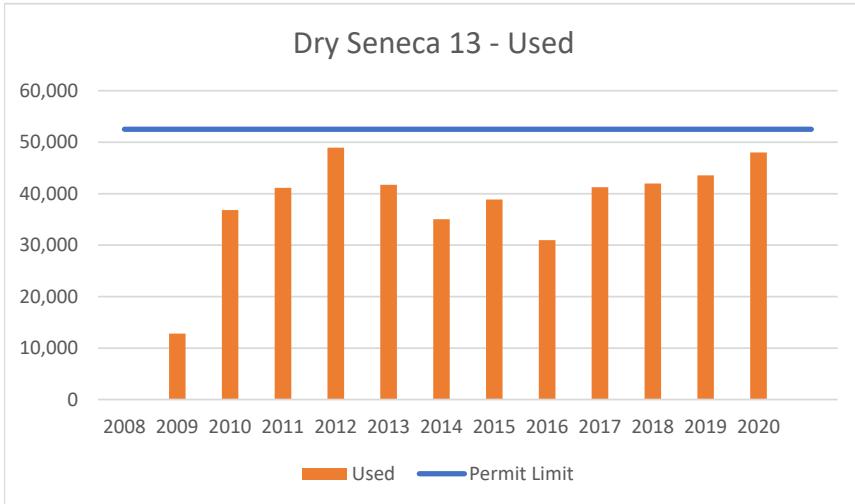
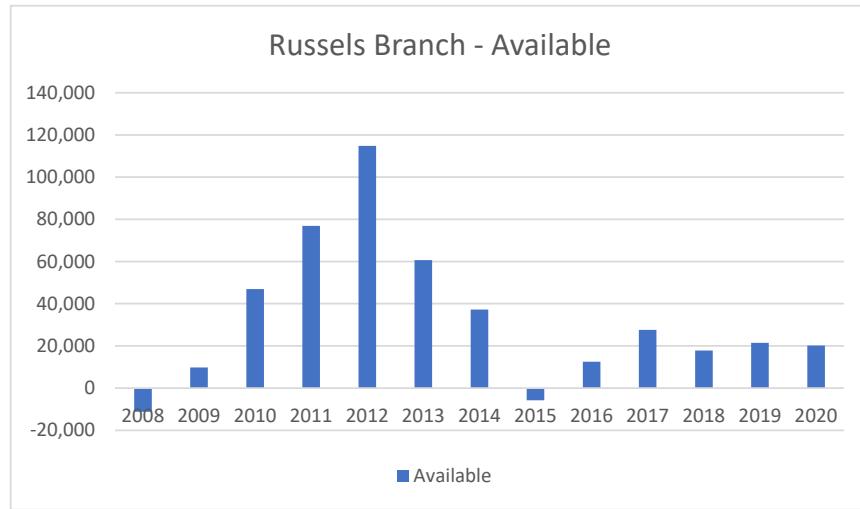
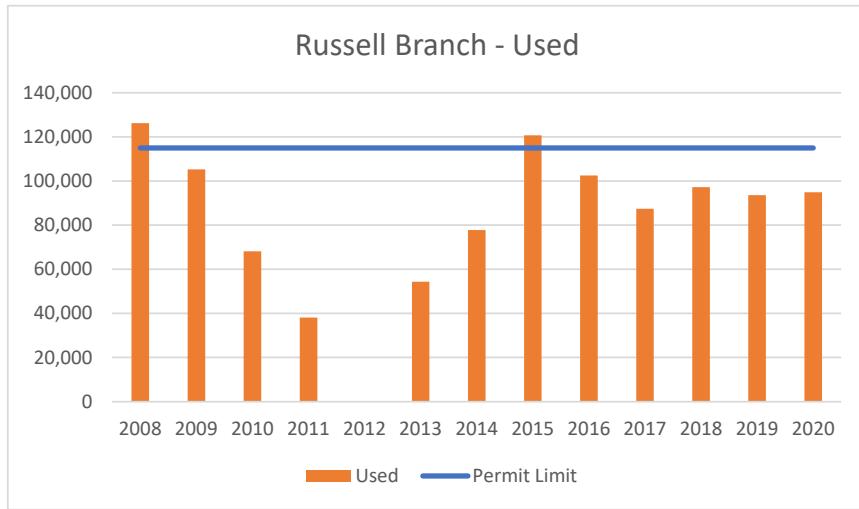


Figure 7 Average Annual Daily Withdrawal for Permit Groups (Page 2 of 3)

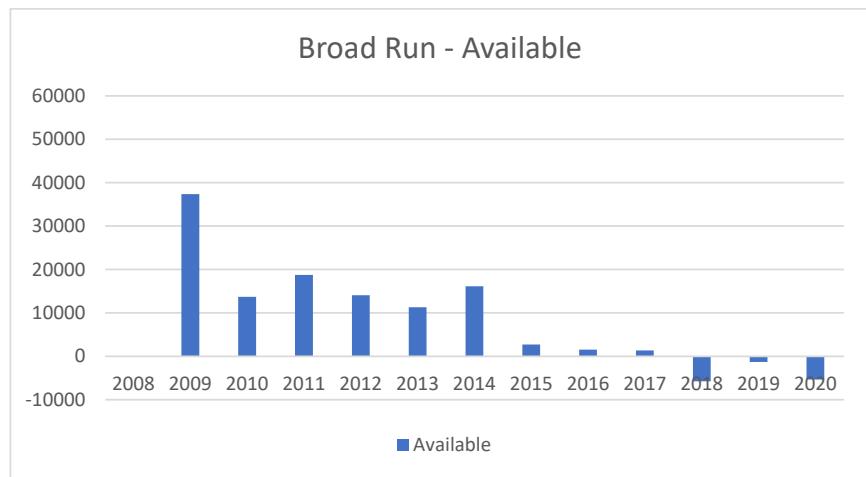
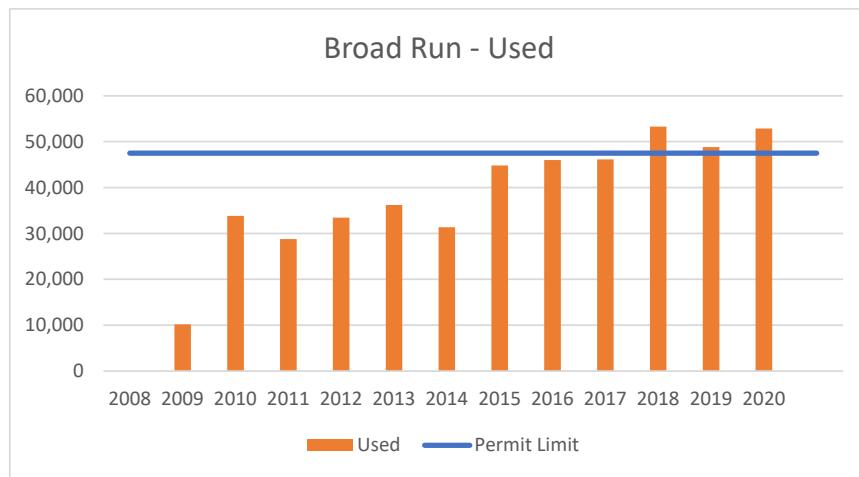


Figure 7 Average Annual Daily Withdrawal for Permit Groups (Page 3 of 3)

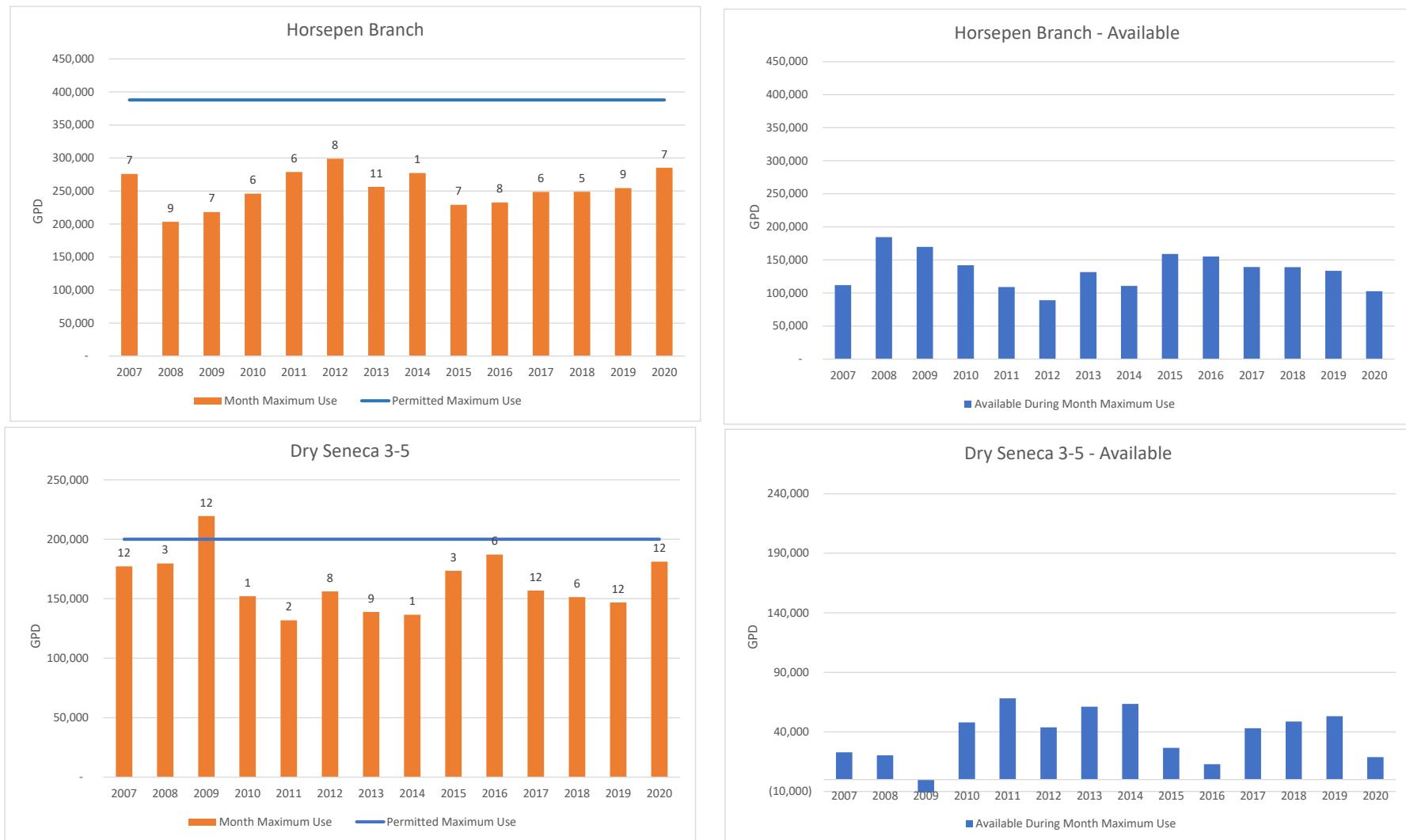


Figure 8 Month of Maximum Use for Permit Groups (Page 1 of 3)

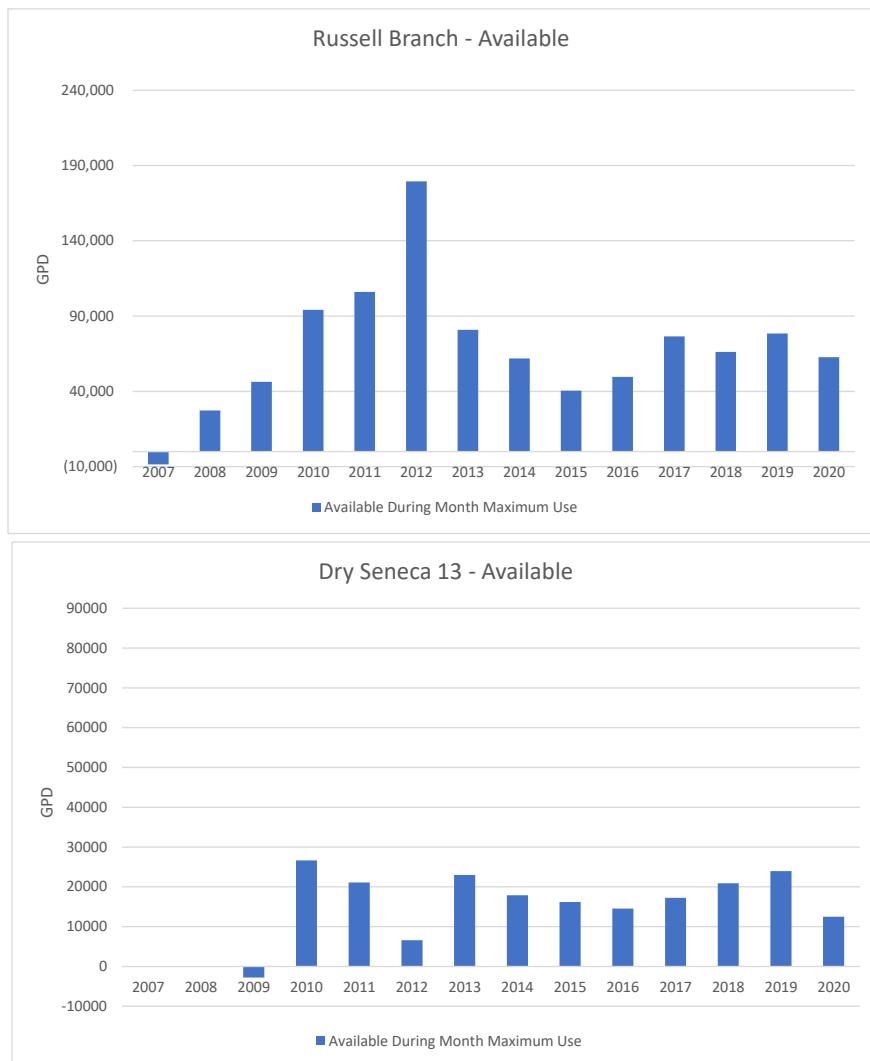


Figure 8 Month of Maximum Use for Permit Groups (Page 2 of 3)

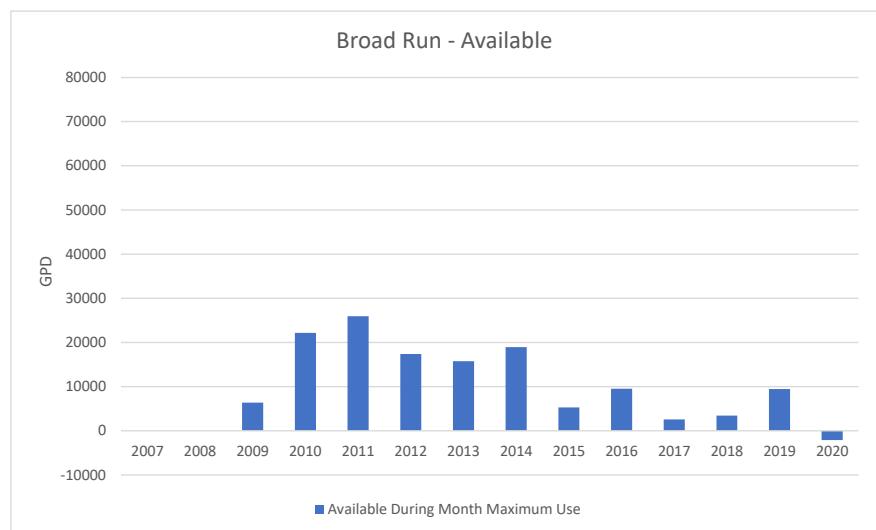
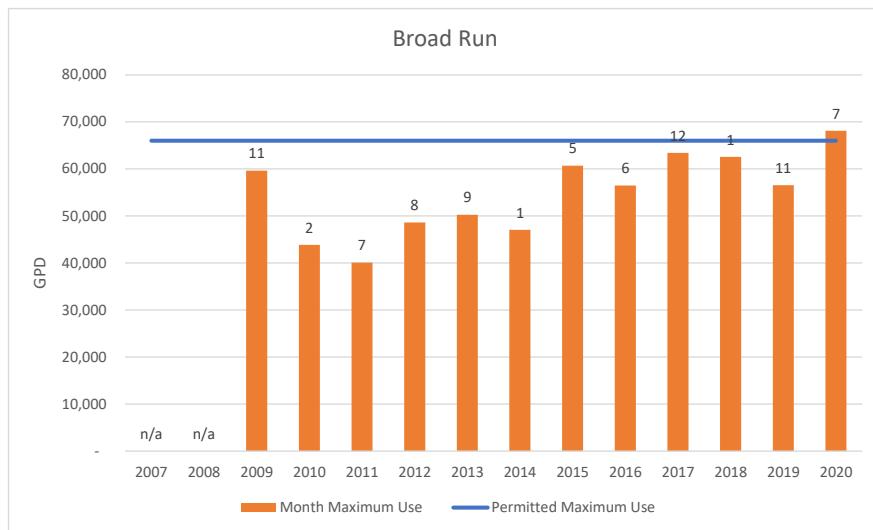


Figure 8 Month of Maximum Use for Permit Groups (Page 3 of 3)

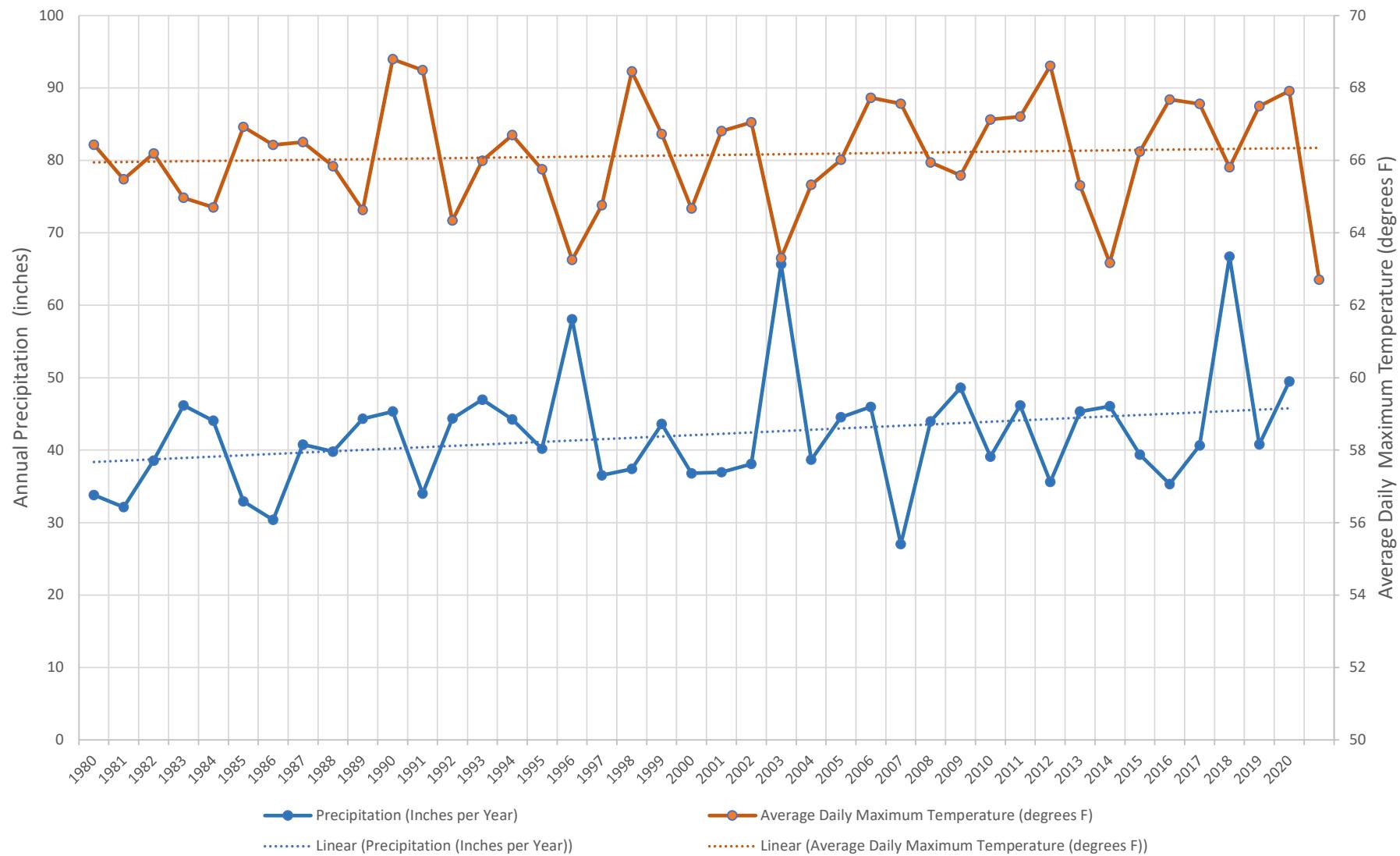


Figure 9 Historic Air Temperature and Precipitation - Dulles International Airport, VA

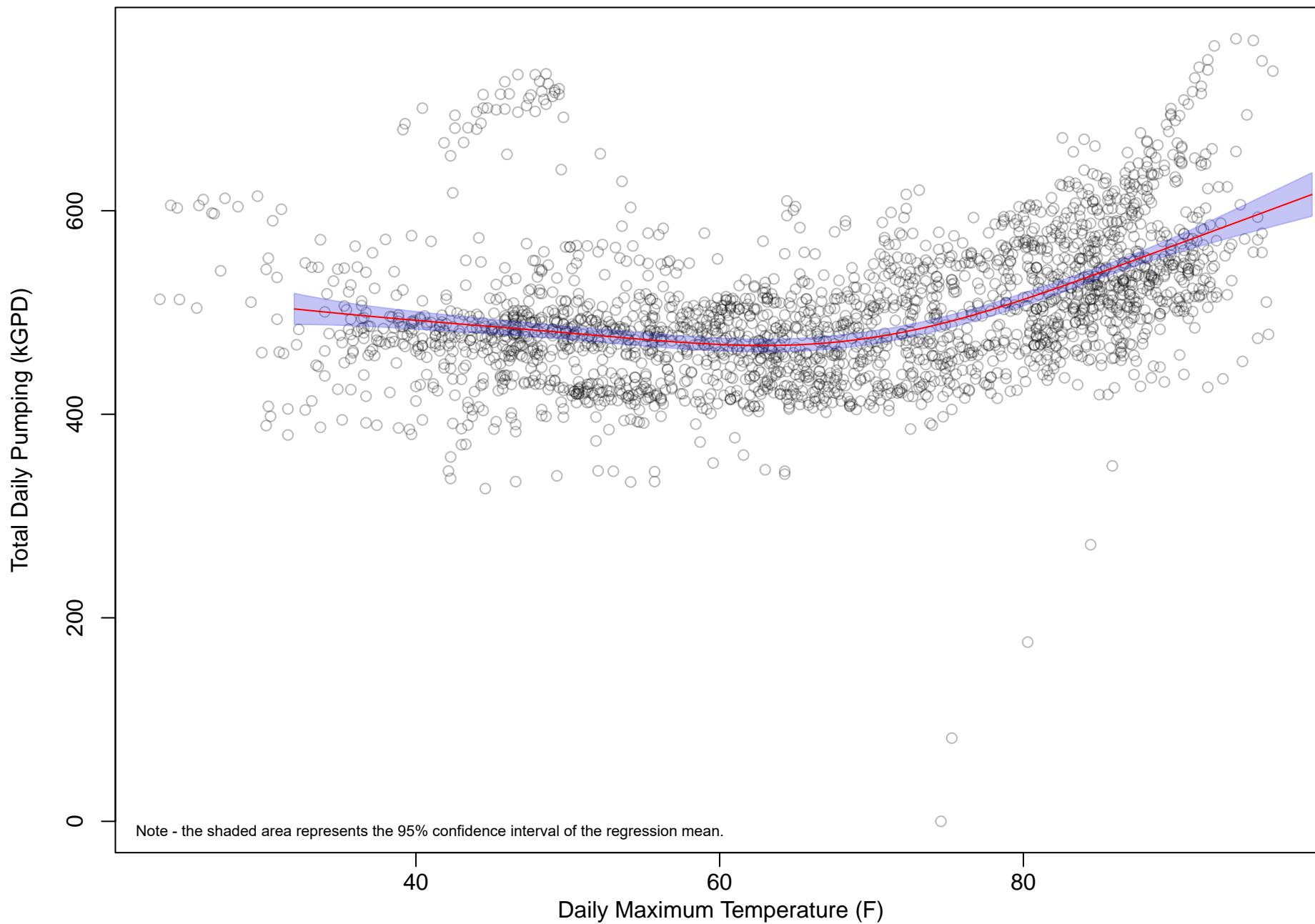


Figure 10 Air Temperature and Water Withdrawal

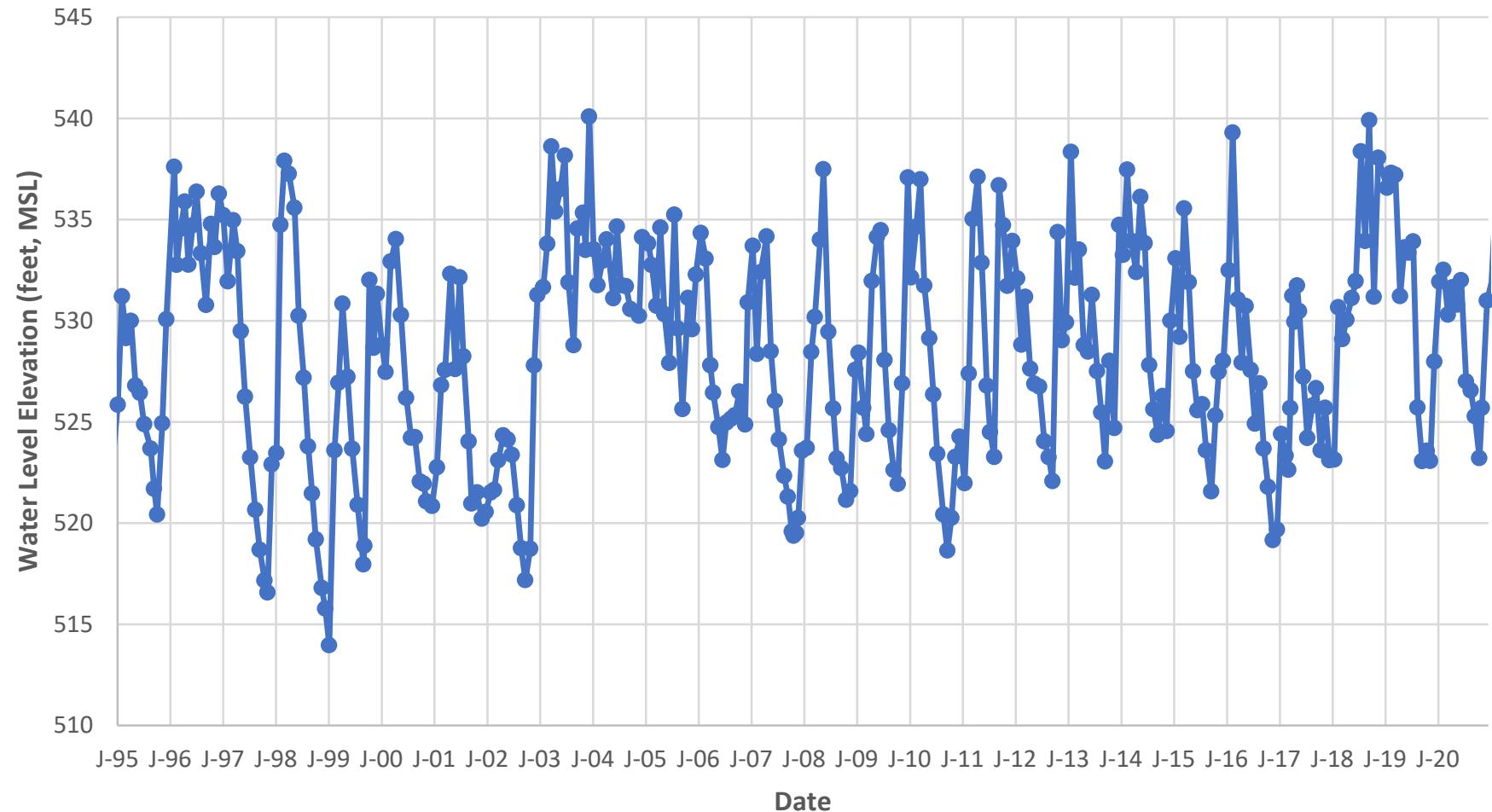


Figure 11 Hydrograph of Water Levels in USGS Well MO cc 14

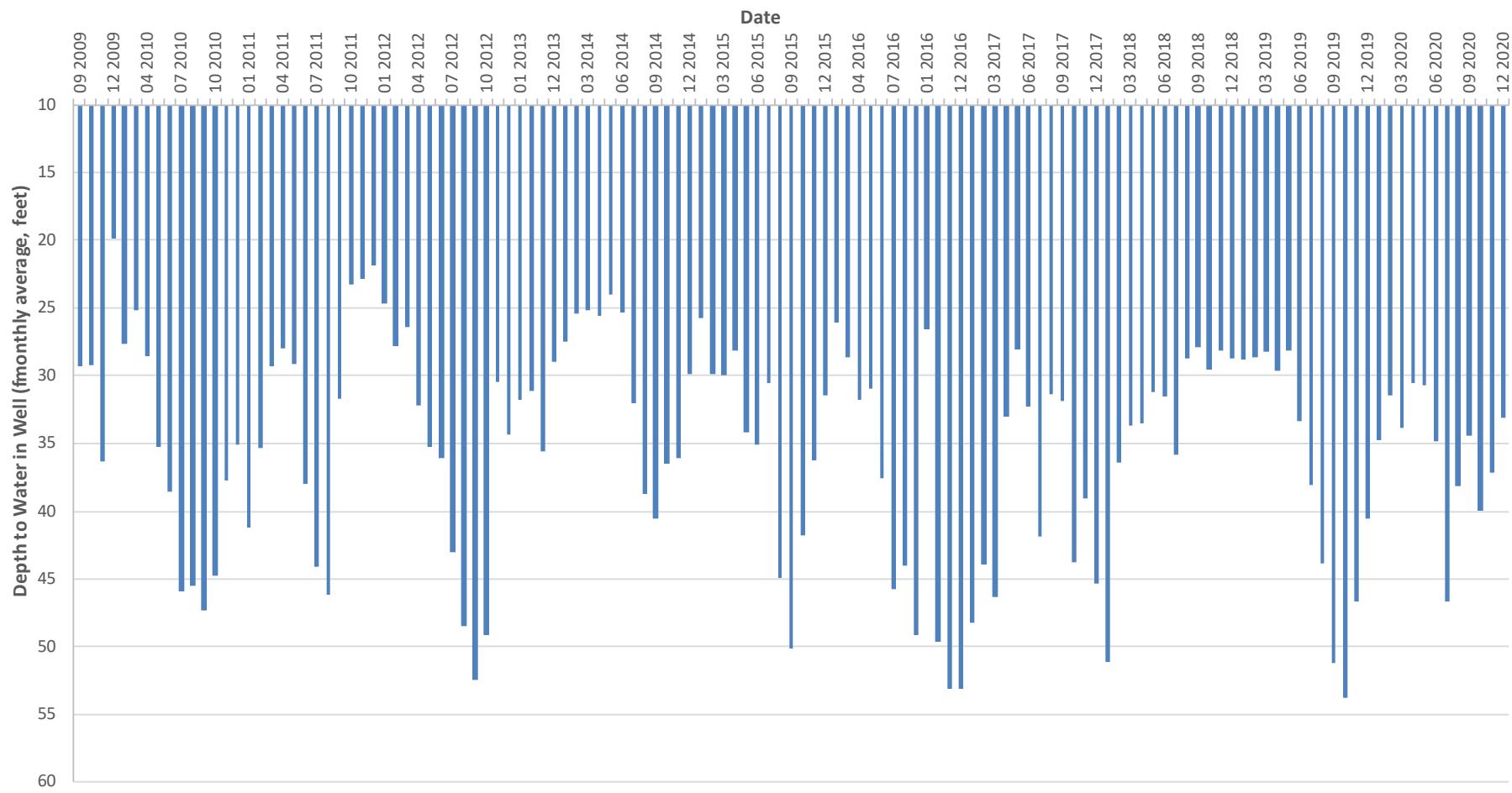


Figure 12 Water Level in Nearby Residential Water Supply Well

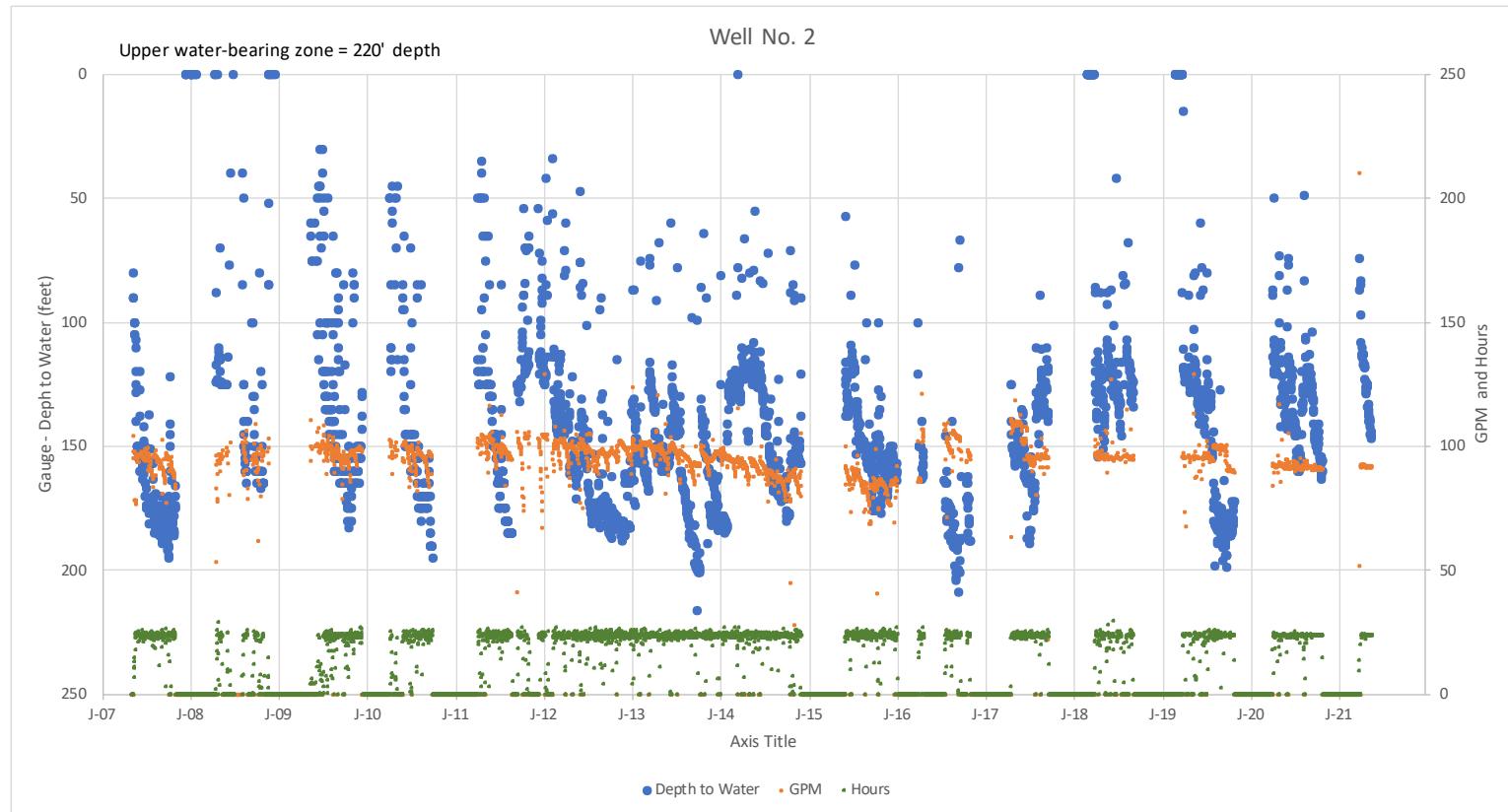


Figure 13 Daily Yield, Depth to Water, and Hours of Pumping - Well 2

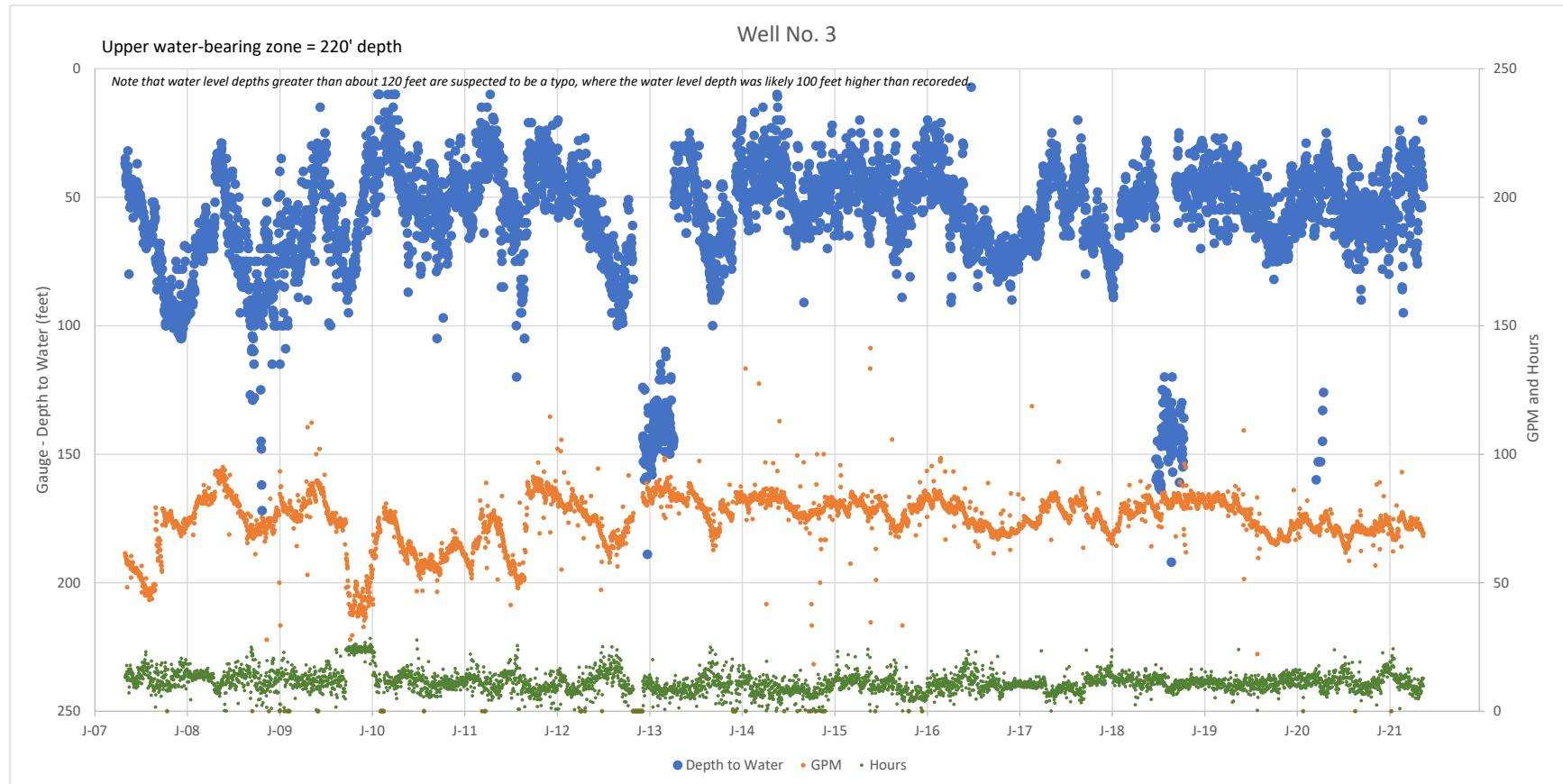


Figure 14 Daily Yield, Depth to Water, and Hours of Pumping - Well 3

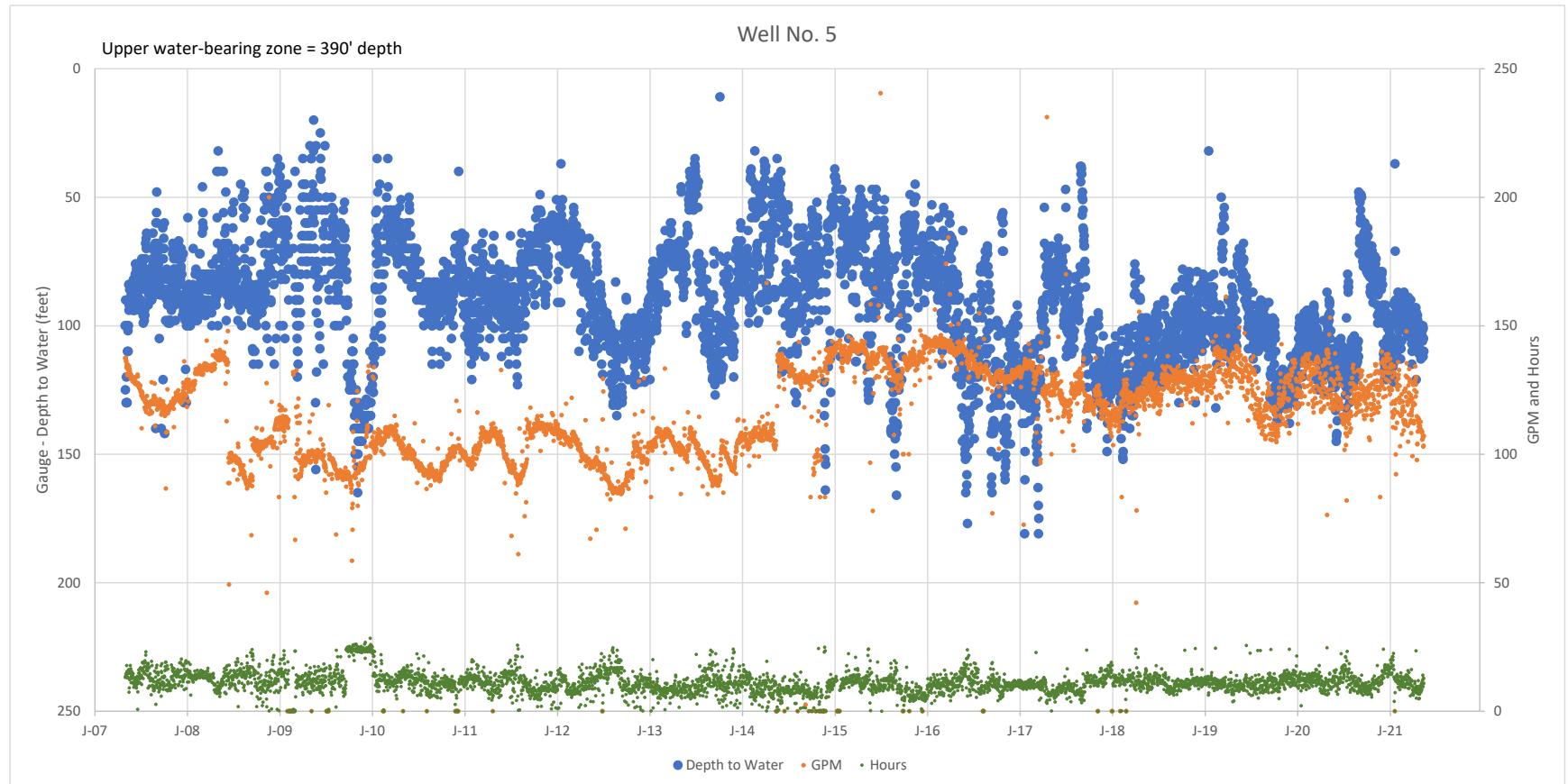


Figure 15 Daily Yield, Depth to Water, and Hours of Pumping - Well 5

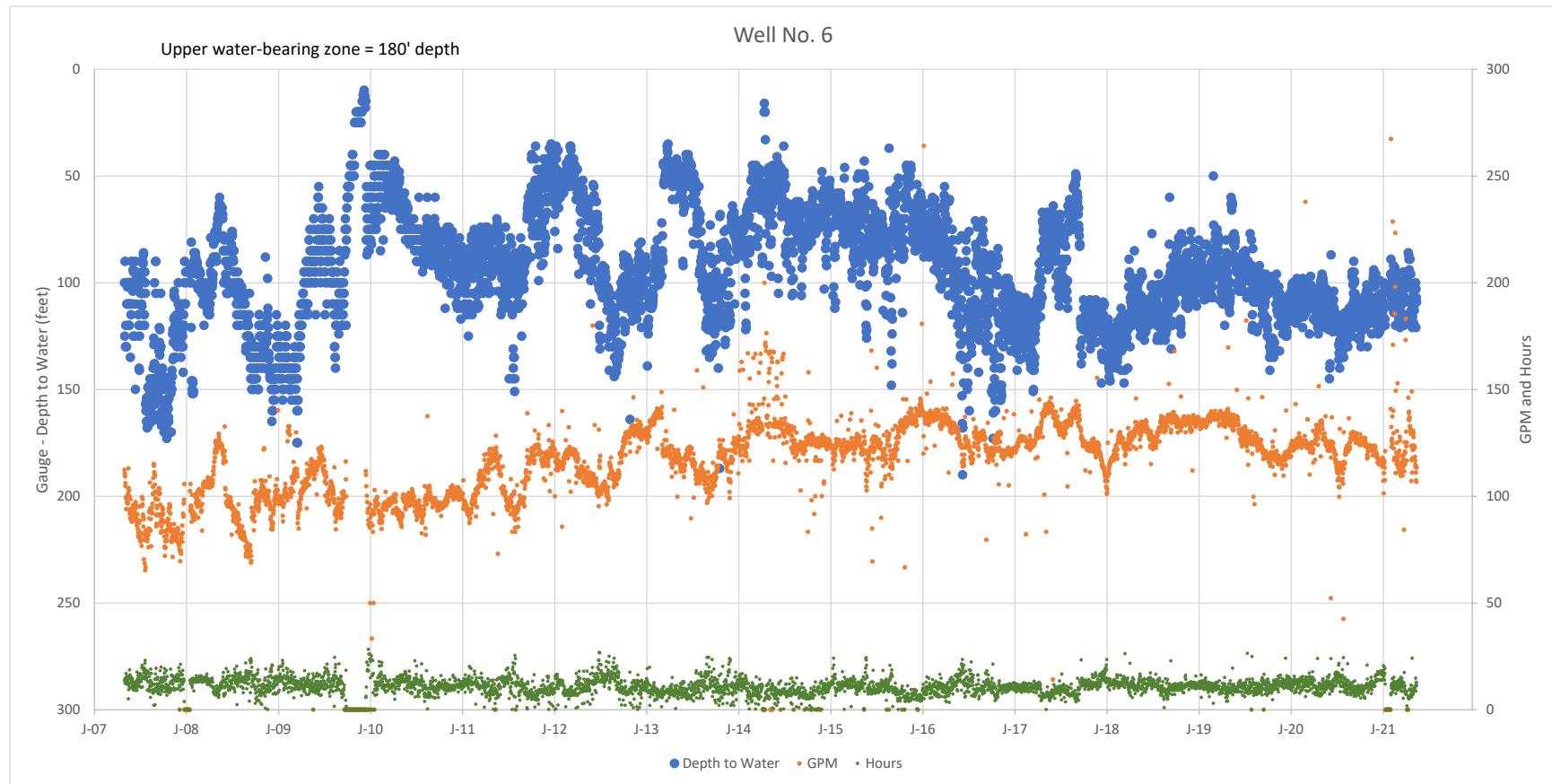


Figure 16 Daily Yield, Depth to Water, and Hours of Pumping - Well 6

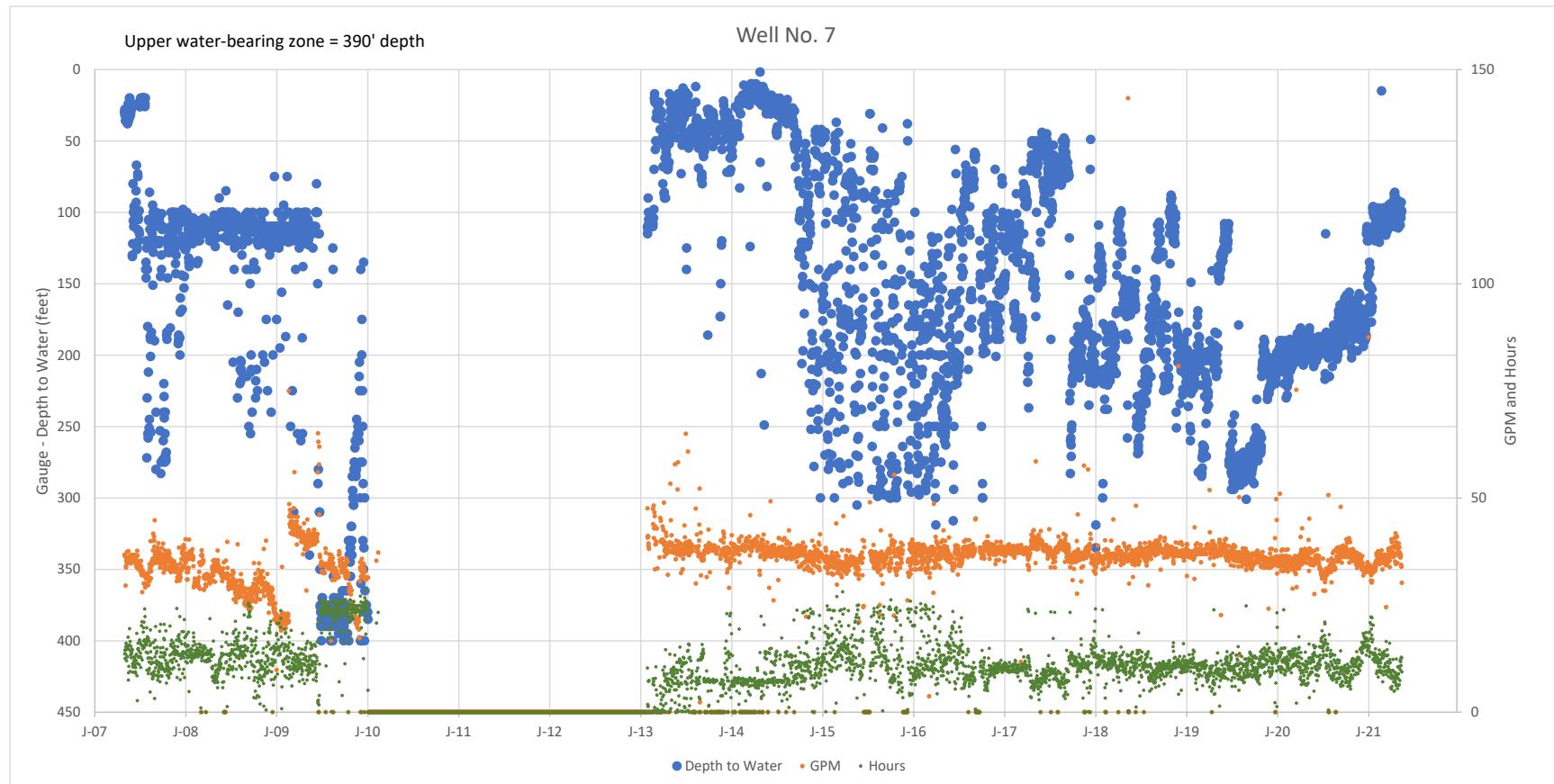


Figure 17 Daily Yield, Depth to Water, and Hours of Pumping - Well 7

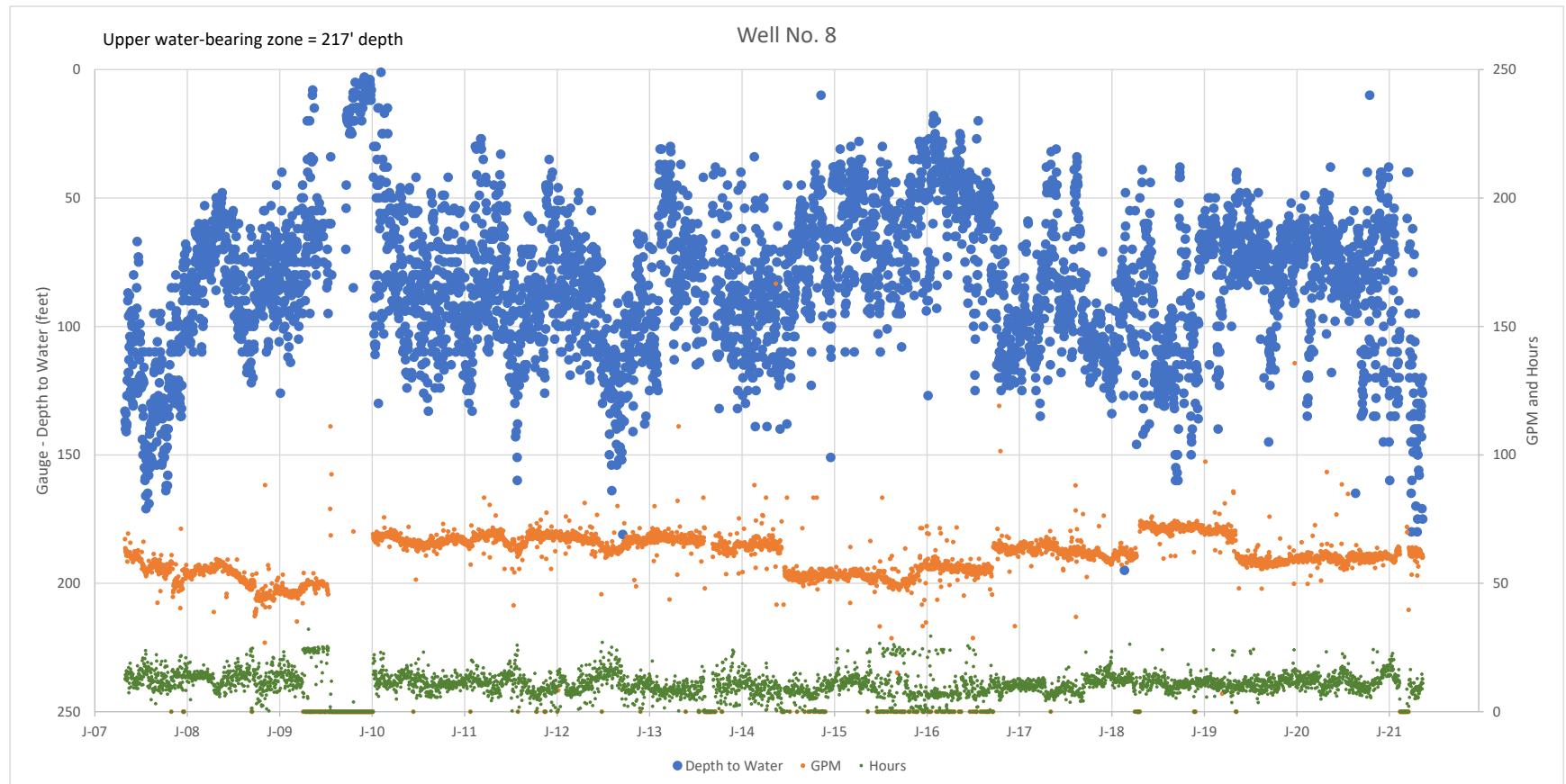


Figure 18 Daily Yield, Depth to Water, and Hours of Pumping - Well 8



Figure 19 Daily Yield, Depth to Water, and Hours of Pumping - Well 9

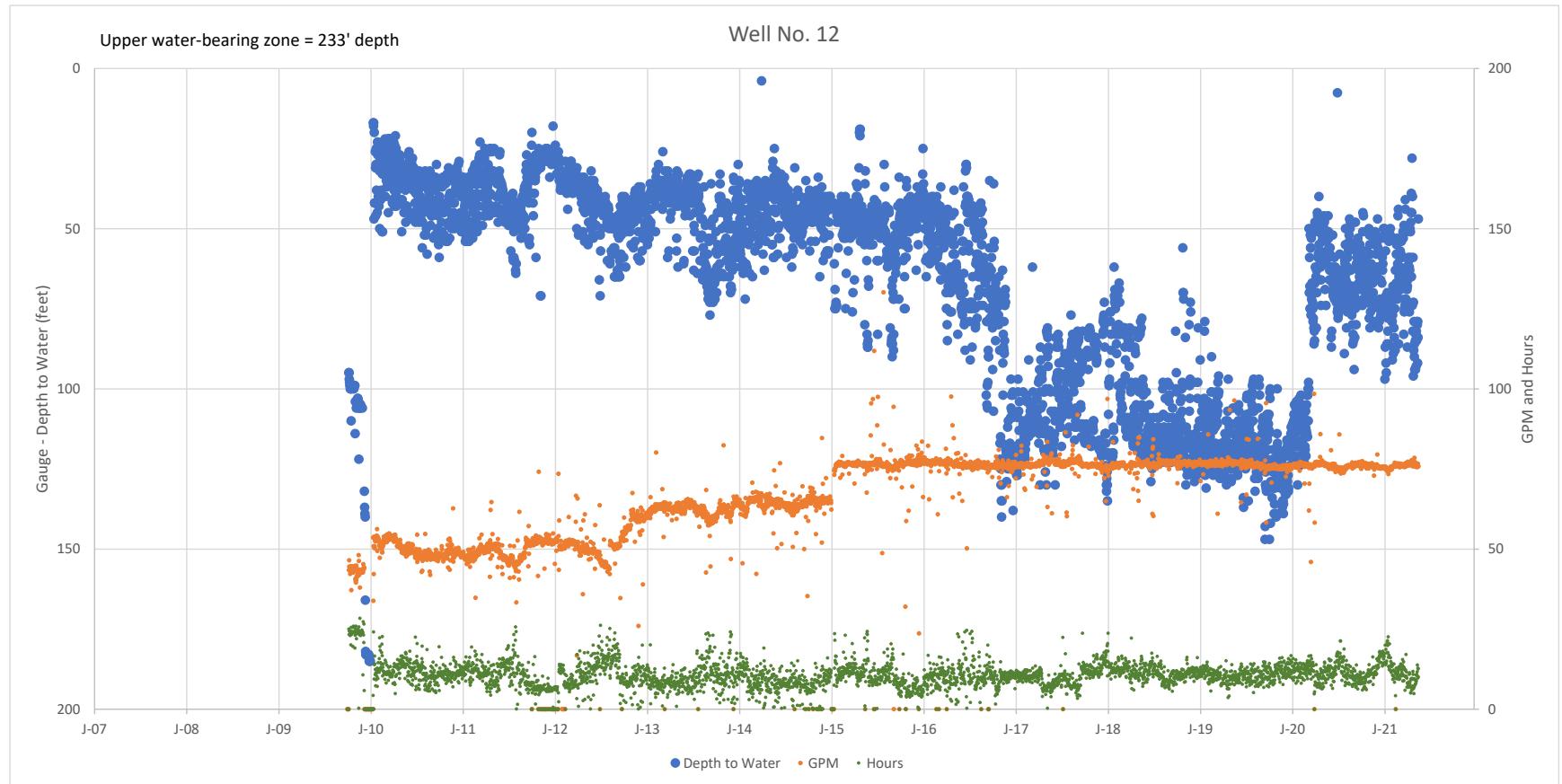


Figure 20 Daily Yield, Depth to Water, and Hours of Pumping - Well 12

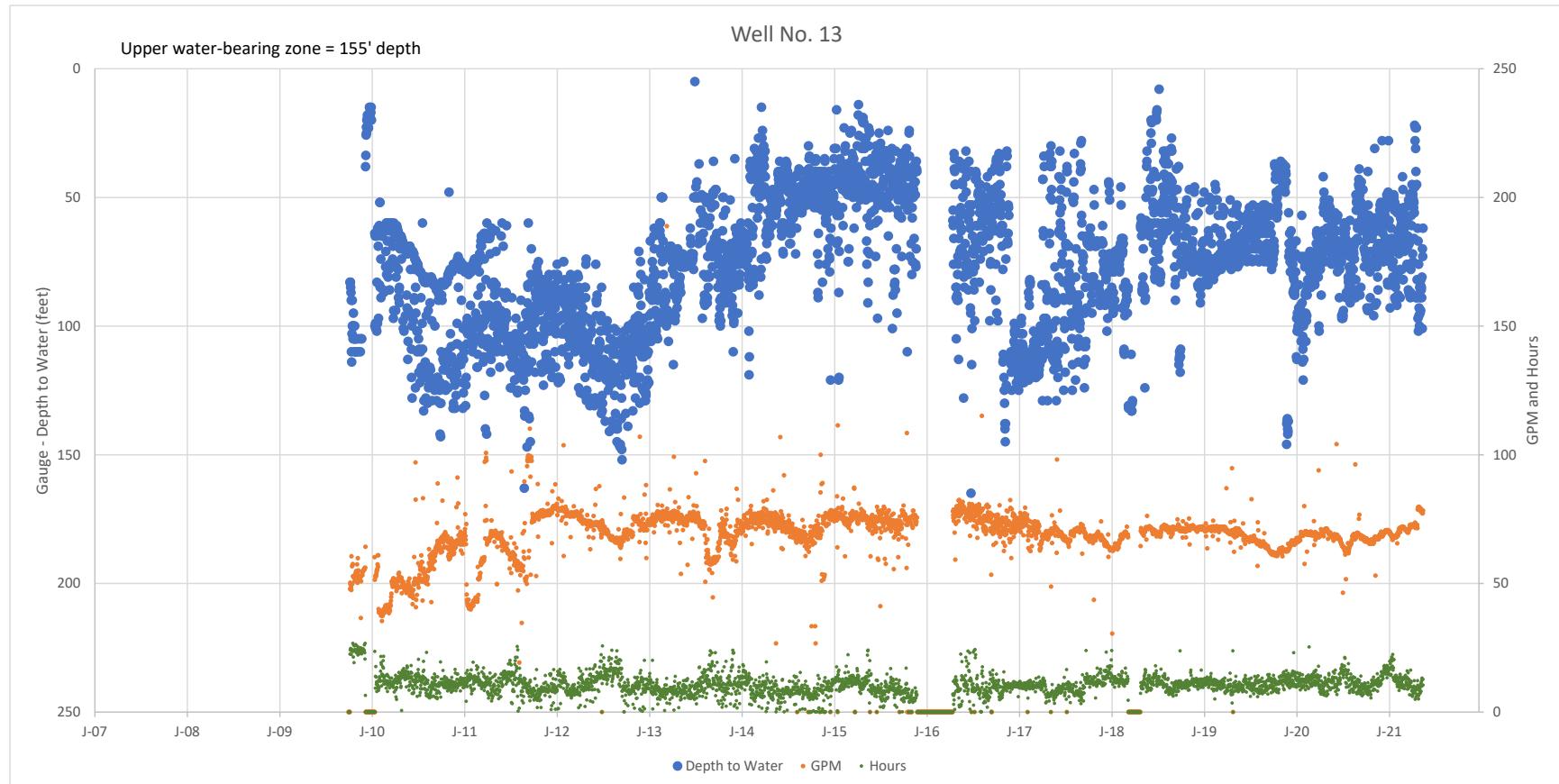


Figure 21 Daily Yield, Depth to Water, and Hours of Pumping - Well 13

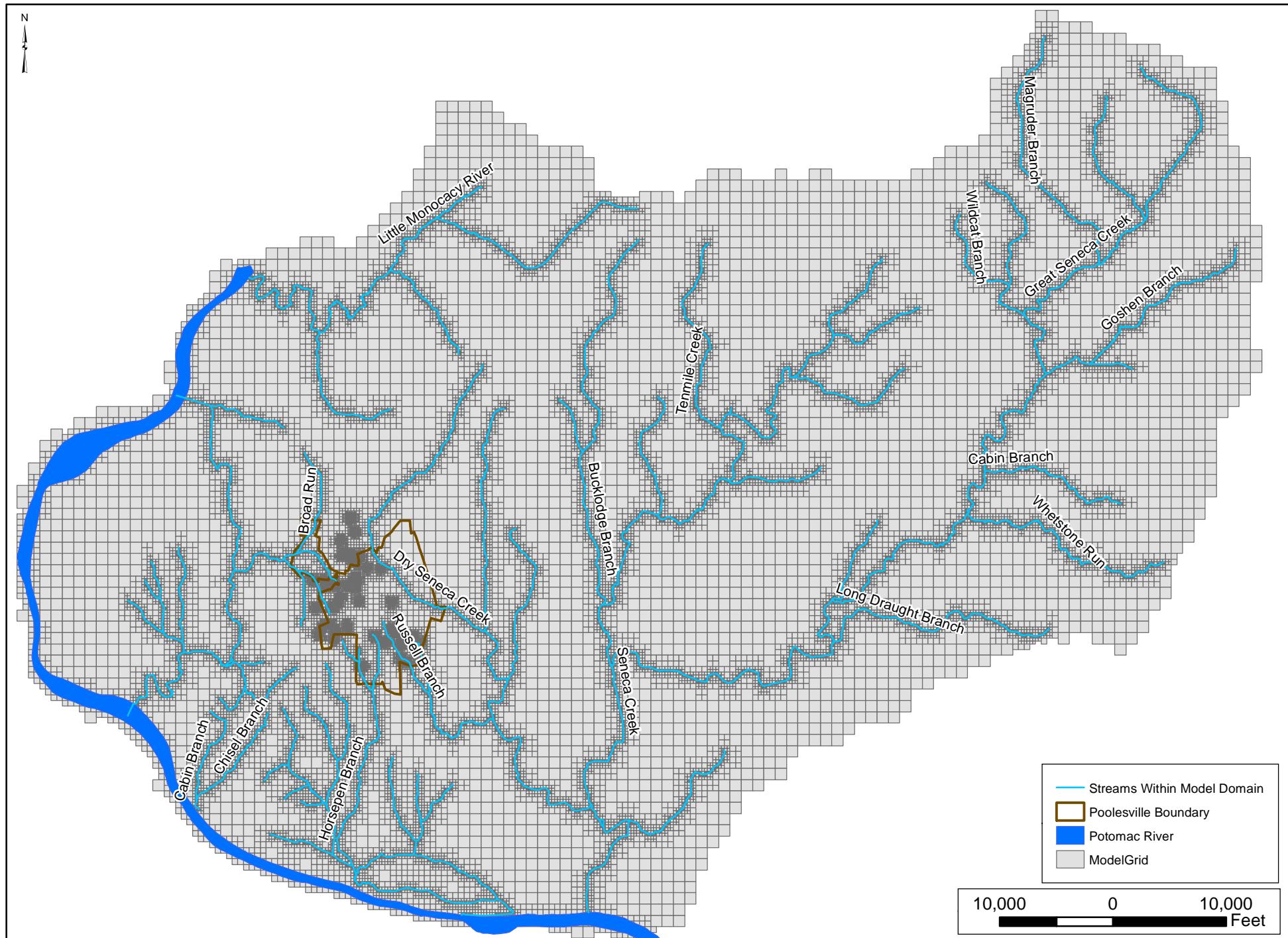


Figure 22 Model Extent and Model Grid

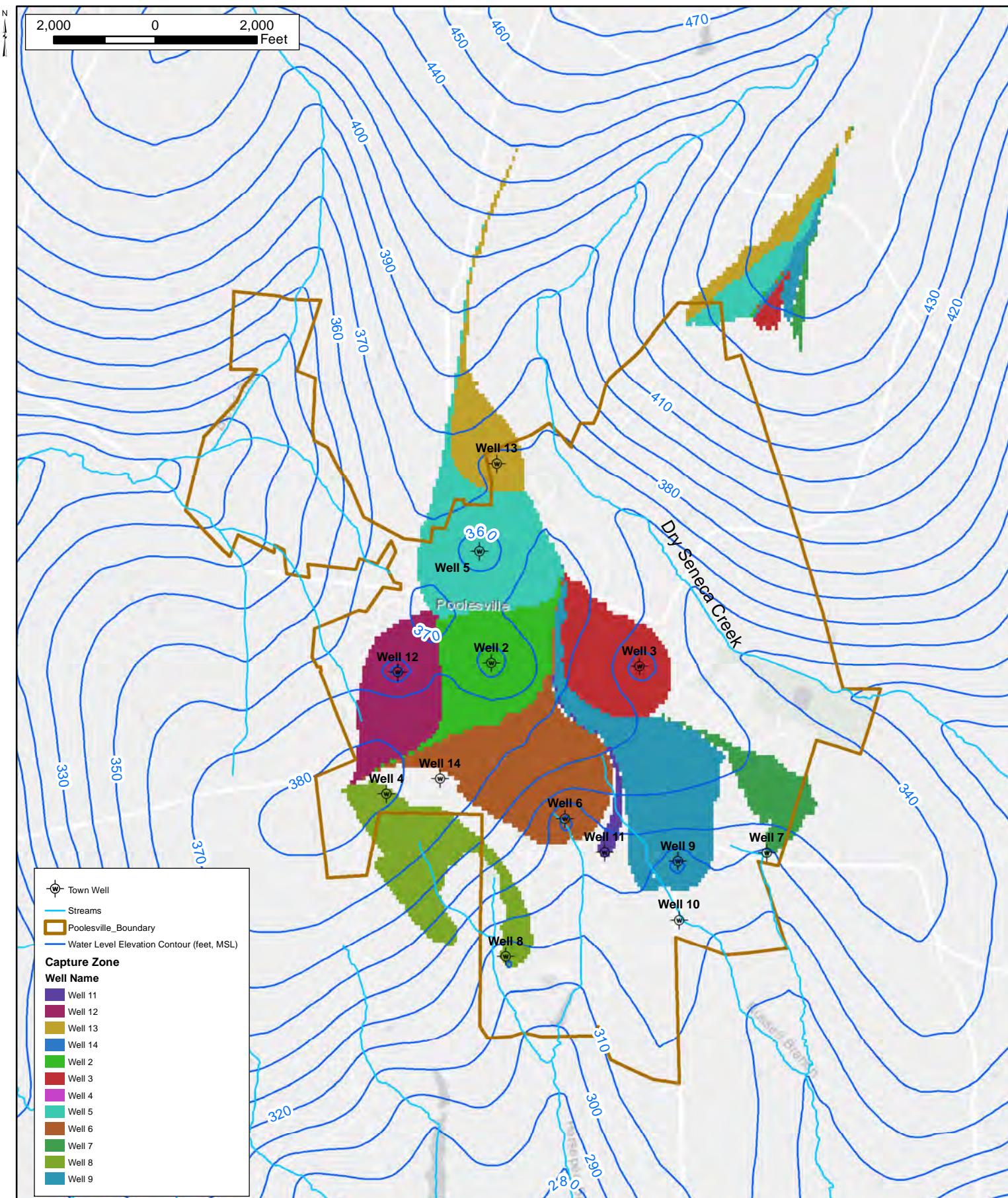


Figure 23 Simulated Water Level Elevation and Capture Zones -
8" Recharge and 521,000 GPD Pumping Rate

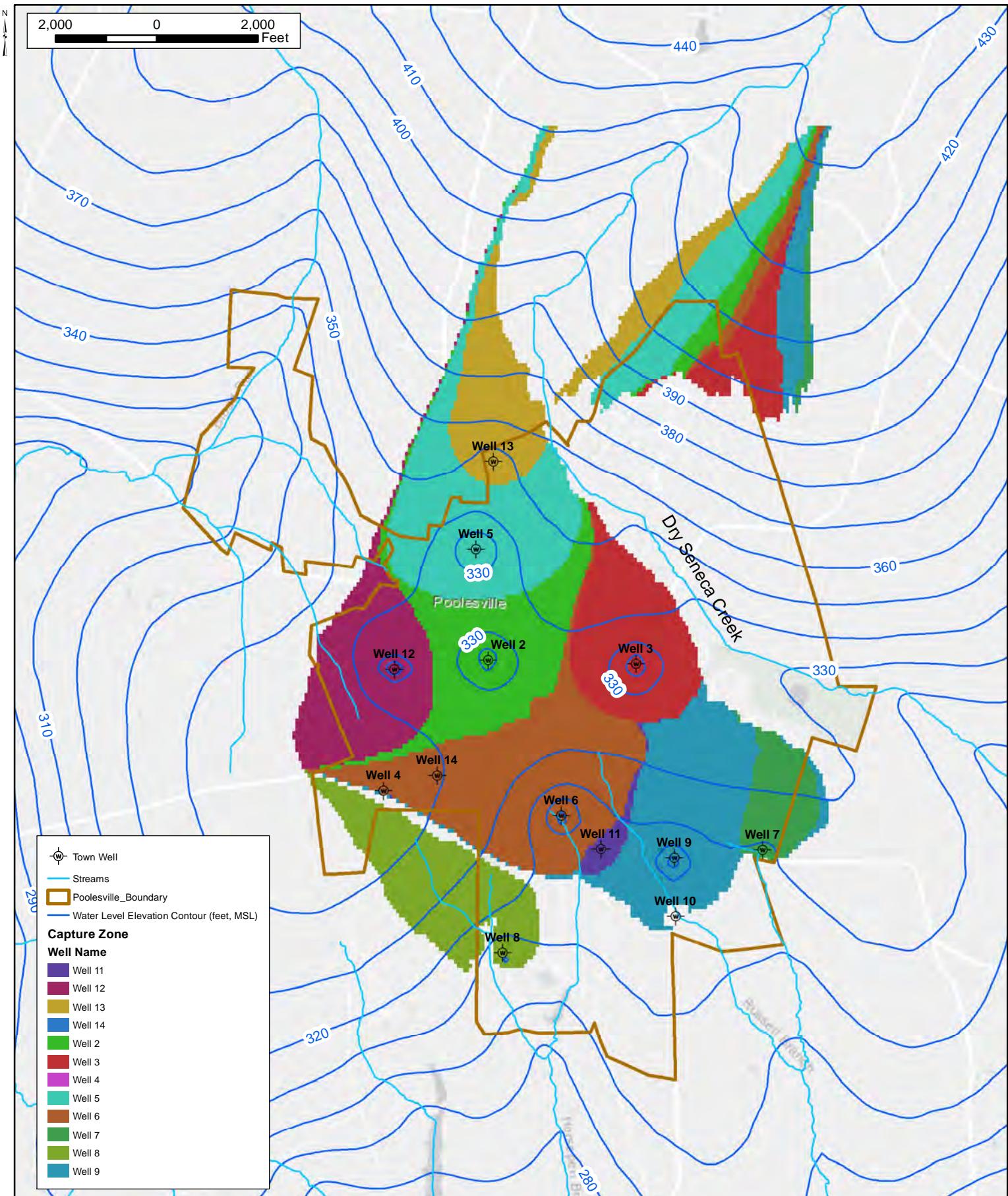


Figure 24 Simulated Water Level Elevation and Capture Zones -
4" Recharge and 521,000 GPD Pumping Rate

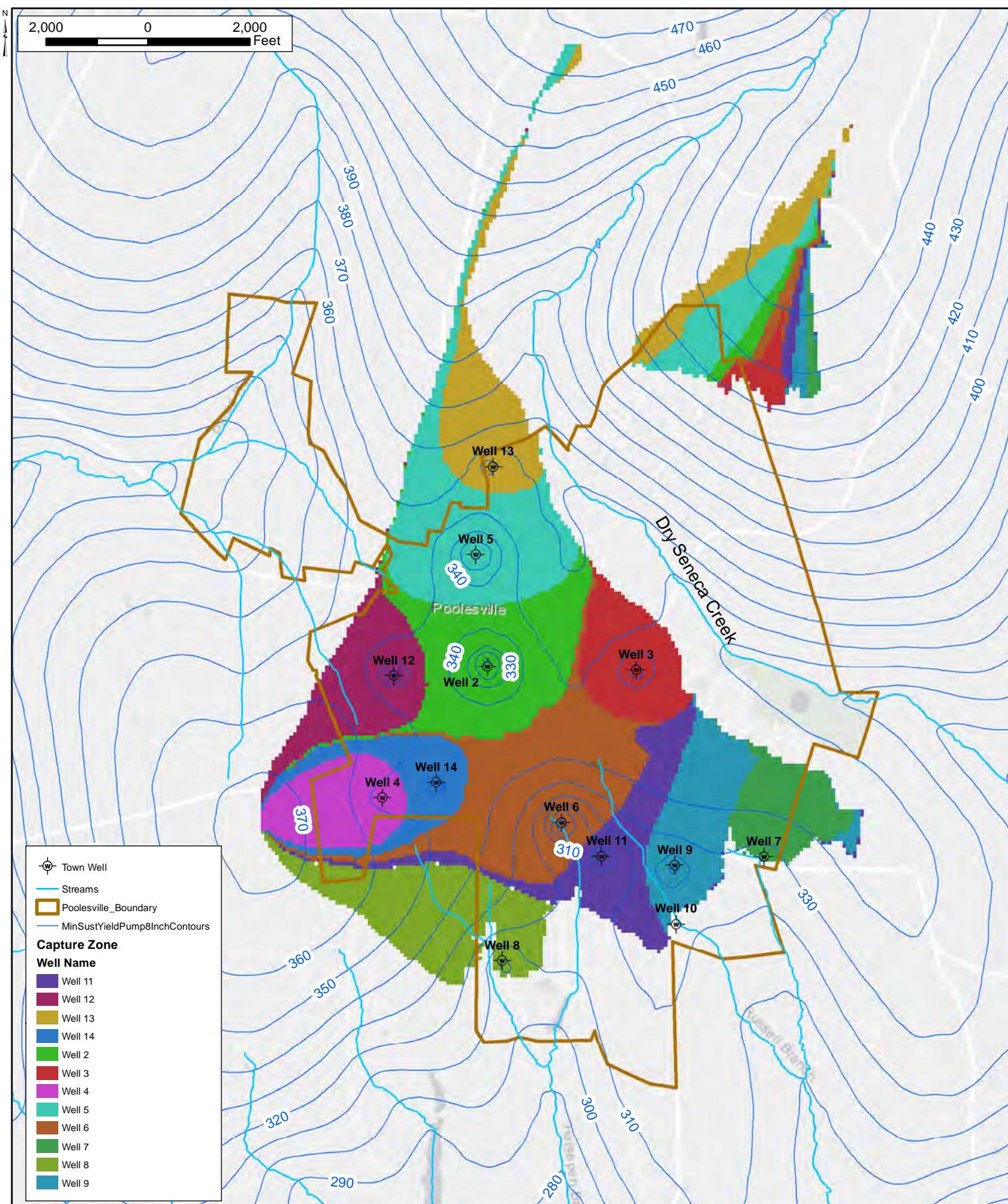


Figure 25 Simulated Water Level Elevation and Capture Zones - 8" Recharge and 932,000 GPD Pumping Rate

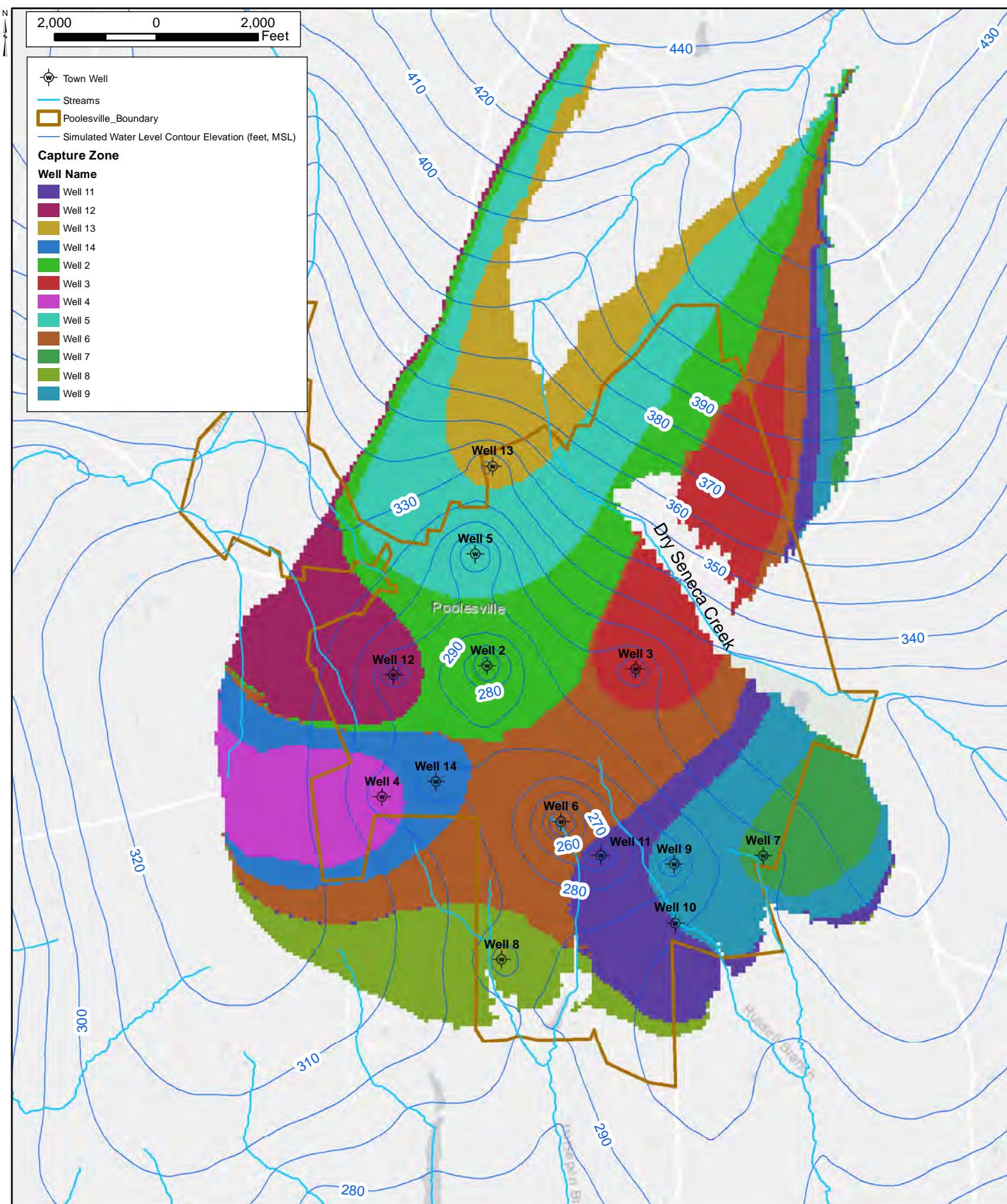


Figure 26 Simulated Water Level Elevation and Capture Zones -
4" Recharge and 932,000 GPD Pumping Rate

TABLES

Table 1
Well Information

Well ID	State Permit Number	Other Well Name	Diameter (inches)	Sustained Yield (GPM) ¹	Sustained Yield (GPM) ²	SSP&A Estimated Minimum Sustainable Yield (GPM)	Well Depth (feet)	Depth Upper Water Yielding Zone (feet) ³	Depth to Top of Bedrock (feet)	Source
2	MO-70-0046	-	6	100	100	80	450	220	4	Hammond, 1999
3	MO-70-0075	-	8	60	60	40	285	220	?	Hammond, 1999
4	MO-73-1584	-	8	40	35	35	600	270	1	Hammond, 1999
5	MO-73-2905	-	8	100	100	90	500	390	8	Hammond, 1999
6	MO-81-0765	-	8	110	130	100	500	180	?	Hammond, 1999
7	MO-88-2384	-	8	45	55	30	700	390	?	Hammond, 1999
8	MO-93-0007	-	8	65	60	50	500	217	?	Hammond, 1999
9	MO-04-4194	Powell	8	125	47	47	800	220	?	Hammond, 1999
10	MO-03-5831	Cahoon	6	75 - offline	69 - off line	off line	762	440	?	Hammond, 1999
11	MW-94-1933	Rabanales	8	100	50	50	1200	600 (SSP&A, 2009)	?	SSP&A 2009
12	MO-94-3610	Stoney Springs or Schraf	8	72	72	45	500	233	16	2011 Master Plan; MDE well permit
13	MO-94-1215	Brightwell or Elgin	8	51	51	50	500	155	2	2011 Master Plan; MDE well permit
14	MO-94-1859	Westerly	8	34	30	30	700	160 (SSP&A, 2016)	10	SSP&A, 2016

Notes:

¹ Town of Poolesville Master Plan, December 5, 2011.

² Hammond, 1999, and water supply permits by MDE, SSP&A 2009, and SSP&A 2016.

³ SSP&A, 2010, unless noted otherwise.

Table 2**MDE Water Appropriation Permits - Town of Poolesville**

MDE Permit ID	Wells	Watershed	Permitted Daily Average (GPD)	Permitted Daily Average Month Maximum Use (GPD)	Well Permit Group Name
MO1970G007(13)	2	Horsepen Branch	293,000	388,000	Horsepen Branch
	4				
	6				
	8				
	11				
	14				
MO1970G107(02)	3	Dry Seneca Creek	142,000	200,000	Dry Seneca 3-5
	5				
MO2004G003(03)	Elgin (13)	Dry Seneca Creek	52,500	73,400	Dry Seneca 13
MO1970G207(05)	7	Russell Branch Watershed	115,000	182,000	Russell Branch
	9				
	10				
MO2004G006(04)	Schraf (12)	Broad Run	47,500	66,600	Broad Run
		Total	650,000	910,000	

Table 3**Annual Water Demand and Month-of-Maximum-Use Demand - All Wells**

Year	Total Gallons Pumped	Annual Average GPD	Month of Maximum Use	Month-of-Maximum-Use Demand (GPD)	Ratio of Maximum Use to Average Annual Use
2007	170,273,895	466,504	July	632,693	1.32
2008	153,608,429	419,695	September	511,489	1.22
2009	152,633,112	418,173	November	506,723	1.21
2010	149,807,036	410,430	June	510,036	1.24
2011	144,557,418	396,048	June	512,015	1.29
2012	160,746,481	439,198	August	570,504	1.30
2013	170,968,252	468,406	September	572,740	1.22
2014	159,986,572	438,319	January	583,691	1.33
2015	182,838,626	500,928	August	612,278	1.22
2016	168,967,025	461,659	June	571,854	1.24
2017	171,368,152	469,502	December	527,156	1.12
2018	186,307,672	510,432	July	598,165	1.17
2019	184,339,275	505,039	September	571,149	1.13
2020	200,580,545	548,034	July	696,617	1.27

Average Annual GPD**from 2018 to 2020****521,168****621,977**

Table 4**Average Daily Withdrawal on Annual Basis for Permit Groups**

MDE Permit ID	Permit Group	Year	Average Daily Pumping on Annual Basis for Permit Group (GPD)	Permit Rate (GPD)	Exceed Permit Daily Average?	"Permit-Available" Withdrawal (GPD)	% of Permit Average Pumped
MO1970G007(13)	Horsepen Branch	2007	204,585	293,000		88,415	<i>incomplete year</i>
MO1970G007(13)	Horsepen Branch	2008	148,682	293,000		144,318	51
MO1970G007(13)	Horsepen Branch	2009	147,270	293,000		145,730	50
MO1970G007(13)	Horsepen Branch	2010	160,090	293,000		132,910	55
MO1970G007(13)	Horsepen Branch	2011	178,444	293,000		114,556	61
MO1970G007(13)	Horsepen Branch	2012	246,458	293,000		46,542	84
MO1970G007(13)	Horsepen Branch	2013	231,284	293,000		61,716	79
MO1970G007(13)	Horsepen Branch	2014	197,671	293,000		95,329	67
MO1970G007(13)	Horsepen Branch	2015	170,390	293,000		122,610	58
MO1970G007(13)	Horsepen Branch	2016	146,944	293,000		146,056	50
MO1970G007(13)	Horsepen Branch	2017	174,344	293,000		118,656	60
MO1970G007(13)	Horsepen Branch	2018	178,372	293,000		114,628	61
MO1970G007(13)	Horsepen Branch	2019	188,407	293,000		104,593	64
MO1970G007(13)	Horsepen Branch	2020	213,533	293,000		79,467	73
MO1970G007(13)	Horsepen Branch	2021	187,123	293,000		105,877	<i>incomplete year</i>
MO1970G107(02)	Dry Seneca 3-5	2007	147,292	142,000	Y	-5,292	<i>incomplete year</i>
MO1970G107(02)	Dry Seneca 3-5	2008	144,786	142,000	Y	-2,786	102
MO1970G107(02)	Dry Seneca 3-5	2009	142,673	142,000	Y	-673	100
MO1970G107(02)	Dry Seneca 3-5	2010	111,572	142,000		30,428	79
MO1970G107(02)	Dry Seneca 3-5	2011	109,629	142,000		32,371	77
MO1970G107(02)	Dry Seneca 3-5	2012	110,142	142,000		31,858	78
MO1970G107(02)	Dry Seneca 3-5	2013	104,860	142,000		37,140	74
MO1970G107(02)	Dry Seneca 3-5	2014	96,481	142,000		45,519	68
MO1970G107(02)	Dry Seneca 3-5	2015	126,273	142,000		15,727	89
MO1970G107(02)	Dry Seneca 3-5	2016	135,252	142,000		6,748	95
MO1970G107(02)	Dry Seneca 3-5	2017	120,295	142,000		21,705	85
MO1970G107(02)	Dry Seneca 3-5	2018	139,528	142,000		2,472	98

Table 4**Average Daily Withdrawal on Annual Basis for Permit Groups**

MDE Permit ID	Permit Group	Year	Average Daily Pumping on Annual Basis for Permit Group (GPD)	Permit Rate (GPD)	Exceed Permit Daily Average?	"Permit-Available" Withdrawal (GPD)	% of Permit Average Pumped
MO1970G107(02)	Dry Seneca 3-5	2019	130,668	142,000		11,332	92
MO1970G107(02)	Dry Seneca 3-5	2020	138,719	142,000		3,281	98
MO1970G107(02)	Dry Seneca 3-5	2021	128,917	142,000		13,083	<i>incomplete year</i>
MO1970G207(05)	Russell Branch	2007	126,192	115,000	Y	-11,192	<i>incomplete year</i>
MO1970G207(05)	Russell Branch	2008	126,227	115,000	Y	-11,227	110
MO1970G207(05)	Russell Branch	2009	105,234	115,000		9,766	92
MO1970G207(05)	Russell Branch	2010	68,107	115,000		46,893	59
MO1970G207(05)	Russell Branch	2011	38,088	115,000		76,912	33
MO1970G207(05)	Russell Branch	2012	213	115,000		114,787	0
MO1970G207(05)	Russell Branch	2013	54,324	115,000		60,676	47
MO1970G207(05)	Russell Branch	2014	77,758	115,000		37,242	68
MO1970G207(05)	Russell Branch	2015	120,693	115,000	Y	-5,693	105
MO1970G207(05)	Russell Branch	2016	102,486	115,000		12,514	89
MO1970G207(05)	Russell Branch	2017	87,452	115,000		27,548	76
MO1970G207(05)	Russell Branch	2018	97,247	115,000		17,753	85
MO1970G207(05)	Russell Branch	2019	93,572	115,000		21,428	81
MO1970G207(05)	Russell Branch	2020	94,889	115,000		20,111	83
MO1970G207(05)	Russell Branch	2021	89,630	115,000		25,370	<i>incomplete year</i>
MO2004G003(03)	Dry Seneca 13	2007	0	52,500		well offline	well offline
MO2004G003(03)	Dry Seneca 13	2008	0	52,500		well offline	well offline
MO2004G003(03)	Dry Seneca 13	2009	12,836	52,500		39,664	24
MO2004G003(03)	Dry Seneca 13	2010	36,832	52,500		15,668	70
MO2004G003(03)	Dry Seneca 13	2011	41,129	52,500		11,371	78
MO2004G003(03)	Dry Seneca 13	2012	48,956	52,500		3,544	93
MO2004G003(03)	Dry Seneca 13	2013	41,748	52,500		10,752	80
MO2004G003(03)	Dry Seneca 13	2014	35,044	52,500		17,456	67
MO2004G003(03)	Dry Seneca 13	2015	38,890	52,500		13,610	74

Table 4**Average Daily Withdrawal on Annual Basis for Permit Groups**

MDE Permit ID	Permit Group	Year	Average Daily Pumping on Annual Basis for Permit Group (GPD)	Permit Rate (GPD)	Exceed Permit Daily Average?	"Permit-Available" Withdrawal (GPD)	% of Permit Average Pumped
MO2004G003(03)	Dry Seneca 13	2016	30,987	52,500		21,513	59
MO2004G003(03)	Dry Seneca 13	2017	41,265	52,500		11,235	79
MO2004G003(03)	Dry Seneca 13	2018	41,996	52,500		10,504	80
MO2004G003(03)	Dry Seneca 13	2019	43,567	52,500		8,933	83
MO2004G003(03)	Dry Seneca 13	2020	48,024	52,500		4,476	91
MO2004G003(03)	Dry Seneca 13	2021	48,731	52,500		3,769	<i>incomplete year</i>
MO2004G006(04)	Broad Run	2007	well offline	47,500		well offline	well offline
MO2004G006(04)	Broad Run	2008	well offline	47,500		well offline	well offline
MO2004G006(04)	Broad Run	2009	10,159	47,500		37,341	21
MO2004G006(04)	Broad Run	2010	33,829	47,500		13,671	71
MO2004G006(04)	Broad Run	2011	28,757	47,500		18,743	61
MO2004G006(04)	Broad Run	2012	33,429	47,500		14,071	70
MO2004G006(04)	Broad Run	2013	36,190	47,500		11,310	76
MO2004G006(04)	Broad Run	2014	31,366	47,500		16,134	66
MO2004G006(04)	Broad Run	2015	44,805	47,500		2,695	94
MO2004G006(04)	Broad Run	2016	45,990	47,500		1,510	97
MO2004G006(04)	Broad Run	2017	46,145	47,500		1,355	97
MO2004G006(04)	Broad Run	2018	53,290	47,500	Y	-5,790	112
MO2004G006(04)	Broad Run	2019	48,826	47,500	Y	-1,326	103
MO2004G006(04)	Broad Run	2020	52,868	47,500	Y	-5,368	111
MO2004G006(04)	Broad Run	2021	50,934	47,500	Y	-3,434	<i>incomplete year</i>

Table 5**Comparison of Actual and Permitted Withdrawals in Well Permit Groups - 2018 to 2020**

Permit Group	2018 through 2020			2020 only		
	Average GPD on Annual Basis for Permit Group	Average "Permit-Available" GPD	% of Permit Average Pumped	Average GPD on Annual Basis for Permit Group	Average "Permit-Available" GPD	% of Permit Average Pumped
Horsepen Branch	193,438	99,562	66	213,533	79,467	73
Dry Seneca 3-5	136,305	5,695	96	138,719	3,281	98
Russell Branch	95,236	19,764	83	94,889	20,111	83
Dry Seneca 13	44,529	7,971	85	48,024	4,476	91
Broad Run	51,661	-4,161	109	52,868	-5,368	111
Total	521,168	128,832		548,034	101,966	

Table 6
Month-of-Maximum-Use Demand for Permit Groups

MDE Permit ID	Permit Group Name	Year	Calendar Month of Maximum Usage	Average GPD	Permitted Daily Average for Month of Maximum Use (GPD)	Exceed Permit?	Available Withdrawal (GPD)	% of Permit Used
MO1970G007(13)	Horsepen Branch	2007	7	275,971	388,000		112,029	71
MO1970G007(13)	Horsepen Branch	2008	9	203,443	388,000		184,557	52
MO1970G007(13)	Horsepen Branch	2009	7	218,194	388,000		169,806	56
MO1970G007(13)	Horsepen Branch	2010	6	245,907	388,000		142,093	63
MO1970G007(13)	Horsepen Branch	2011	6	278,830	388,000		109,170	72
MO1970G007(13)	Horsepen Branch	2012	8	298,926	388,000		89,074	77
MO1970G007(13)	Horsepen Branch	2013	11	256,250	388,000		131,750	66
MO1970G007(13)	Horsepen Branch	2014	1	277,271	388,000		110,729	71
MO1970G007(13)	Horsepen Branch	2015	7	229,013	388,000		158,987	59
MO1970G007(13)	Horsepen Branch	2016	8	232,784	388,000		155,216	60
MO1970G007(13)	Horsepen Branch	2017	6	248,648	388,000		139,352	64
MO1970G007(13)	Horsepen Branch	2018	5	248,913	388,000		139,087	64
MO1970G007(13)	Horsepen Branch	2019	9	254,417	388,000		133,583	66
MO1970G007(13)	Horsepen Branch	2020	7	285,274	388,000		102,726	74
MO1970G007(13)	Horsepen Branch	2021	4	234,510	388,000		153,490	60
MO1970G107(02)	Dry Seneca 3-5	2007	12	177,184	200,000		22,816	89
MO1970G107(02)	Dry Seneca 3-5	2008	3	179,648	200,000		20,352	90
MO1970G107(02)	Dry Seneca 3-5	2009	12	219,426	200,000	Y	-19,426	110
MO1970G107(02)	Dry Seneca 3-5	2010	1	152,061	200,000		47,939	76
MO1970G107(02)	Dry Seneca 3-5	2011	2	131,864	200,000		68,136	66
MO1970G107(02)	Dry Seneca 3-5	2012	8	156,155	200,000		43,845	78
MO1970G107(02)	Dry Seneca 3-5	2013	9	138,873	200,000		61,127	69
MO1970G107(02)	Dry Seneca 3-5	2014	1	136,561	200,000		63,439	68

Table 6
Month-of-Maximum-Use Demand for Permit Groups

MDE Permit ID	Permit Group Name	Year	Calendar Month of Maximum Usage	Average GPD	Permitted Daily Average for Month of Maximum Use (GPD)	Exceed Permit?	Available Withdrawal (GPD)	% of Permit Used
MO1970G107(02)	Dry Seneca 3-5	2015	3	173,445	200,000		26,555	87
MO1970G107(02)	Dry Seneca 3-5	2016	6	187,113	200,000		12,887	94
MO1970G107(02)	Dry Seneca 3-5	2017	12	156,900	200,000		43,100	78
MO1970G107(02)	Dry Seneca 3-5	2018	6	151,333	200,000		48,667	76
MO1970G107(02)	Dry Seneca 3-5	2019	12	146,855	200,000		53,145	73
MO1970G107(02)	Dry Seneca 3-5	2020	12	181,171	200,000		18,829	91
MO1970G107(02)	Dry Seneca 3-5	2021	1	185,271	200,000		14,729	93
MO1970G207(05)	Russell Branch	2007	7	190,542	182,000	Y	-8,542	105
MO1970G207(05)	Russell Branch	2008	9	154,656	182,000		27,344	85
MO1970G207(05)	Russell Branch	2009	1	135,674	182,000		46,326	75
MO1970G207(05)	Russell Branch	2010	5	87,886	182,000		94,114	48
MO1970G207(05)	Russell Branch	2011	1	75,965	182,000		106,035	42
MO1970G207(05)	Russell Branch	2012	12	2,517	182,000		179,483	1
MO1970G207(05)	Russell Branch	2013	12	101,176	182,000		80,824	56
MO1970G207(05)	Russell Branch	2014	11	120,176	182,000		61,824	66
MO1970G207(05)	Russell Branch	2015	8	141,463	182,000		40,537	78
MO1970G207(05)	Russell Branch	2016	2	132,396	182,000		49,604	73
MO1970G207(05)	Russell Branch	2017	10	105,451	182,000		76,549	58
MO1970G207(05)	Russell Branch	2018	1	115,813	182,000		66,187	64
MO1970G207(05)	Russell Branch	2019	11	103,609	182,000		78,391	57
MO1970G207(05)	Russell Branch	2020	7	119,305	182,000		62,695	66
MO1970G207(05)	Russell Branch	2021	1	121,742	182,000		60,258	67
MO2004G003(03)	Dry Seneca 13	2007	n/a	0	73,400		n/a	0

Table 6
Month-of-Maximum-Use Demand for Permit Groups

MDE Permit ID	Permit Group Name	Year	Calendar Month of Maximum Usage	Average GPD	Permitted Daily Average for Month of Maximum Use (GPD)	Exceed Permit?	Available Withdrawal (GPD)	% of Permit Used
MO2004G003(03)	Dry Seneca 13	2008	n/a	0	73,400		n/a	0
MO2004G003(03)	Dry Seneca 13	2009	11	76,197	73,400	Y	-2,797	104
MO2004G003(03)	Dry Seneca 13	2010	12	46,754	73,400		26,646	64
MO2004G003(03)	Dry Seneca 13	2011	6	52,282	73,400		21,118	71
MO2004G003(03)	Dry Seneca 13	2012	8	66,830	73,400		6,570	91
MO2004G003(03)	Dry Seneca 13	2013	8	50,429	73,400		22,971	69
MO2004G003(03)	Dry Seneca 13	2014	1	55,508	73,400		17,892	76
MO2004G003(03)	Dry Seneca 13	2015	5	57,208	73,400		16,192	78
MO2004G003(03)	Dry Seneca 13	2016	6	58,857	73,400		14,543	80
MO2004G003(03)	Dry Seneca 13	2017	12	56,149	73,400		17,251	76
MO2004G003(03)	Dry Seneca 13	2018	6	52,507	73,400		20,893	72
MO2004G003(03)	Dry Seneca 13	2019	1	49,437	73,400		23,963	67
MO2004G003(03)	Dry Seneca 13	2020	12	60,885	73,400		12,515	83
MO2004G003(03)	Dry Seneca 13	2021	1	69,483	73,400		3,917	95
MO2004G006(04)	Broad Run	2007	n/a	0	66,000		n/a	0
MO2004G006(04)	Broad Run	2008	n/a	0	66,000		n/a	0
MO2004G006(04)	Broad Run	2009	11	59,619	66,000		6,381	90
MO2004G006(04)	Broad Run	2010	2	43,832	66,000		22,168	66
MO2004G006(04)	Broad Run	2011	7	40,061	66,000		25,939	61
MO2004G006(04)	Broad Run	2012	8	48,593	66,000		17,407	74
MO2004G006(04)	Broad Run	2013	9	50,249	66,000		15,751	76
MO2004G006(04)	Broad Run	2014	1	47,040	66,000		18,960	71
MO2004G006(04)	Broad Run	2015	5	60,701	66,000		5,299	92

Table 6
Month-of-Maximum-Use Demand for Permit Groups

MDE Permit ID	Permit Group Name	Year	Calendar Month of Maximum Usage	Average GPD	Permitted Daily Average for Month of Maximum Use (GPD)	Exceed Permit?	Available Withdrawal (GPD)	% of Permit Used
MO2004G006(04)	Broad Run	2016	6	56,470	66,000		9,530	86
MO2004G006(04)	Broad Run	2017	12	63,407	66,000		2,593	96
MO2004G006(04)	Broad Run	2018	1	62,546	66,000		3,454	95
MO2004G006(04)	Broad Run	2019	11	56,525	66,000		9,475	86
MO2004G006(04)	Broad Run	2020	7	68,084	66,000	Y	-2,084	103
MO2004G006(04)	Broad Run	2021	1	74,611	66,000	Y	-8,611	113

Table 7
Comparison of Sustainable Yield Estimates and Permit Allocation

MDE Permit ID	Wells	Watershed	MDE Permitted Daily Average (GPD)	MDE-Permitted Daily Average Month Maximum Use (GPD)	SSP&A-Estimated Minimum Sustainable Yield per Permit Group (GPD)
MO1970G007(13)	2	Horsepen Branch	293,000	388,000	496,800
	4				
	6				
	8				
	11				
	14				
MO1970G107(02)	3	Dry Seneca Creek	142,000	200,000	259,200
	5				
MO2004G003(03)	Elgin (13)		52,500	73,400	
MO1970G207(05)	7	Russell Branch Watershed	115,000	182,000	110,880
	9				
	10				
MO2004G006(04)	Schraf (12)	Broad Run	47,500	66,600	64,800
		Total	650,000	910,000	931,680

Table 8
Average Annual Pumping and Estimated Minimum Sustainable Yield

MDE Permit ID	Wells	Watershed	Average Annual Pumping Rate (GPM)			Average Annual Pumping - 2018 to 2020 (GPM)	Estimated Minimum Sustained Yield - SSP&A (GPM)
			2018	2019	2020		
MO1970G007(13)	2	Horsepen Branch	30	45	49	41	80
	4		0	0	0	0	35
	6		63	57	60	60	100
	8		31	29	30	30	50
	11		0	0	10	3	50
	14		0	0	0	-	30
			Permit Group Total	124	131	148	134
MO1970G107(02)	3	Dry Seneca Creek	38	33	35	35	40
	5		59	57	62	59	90
		Permit Group Total	97	91	96	95	130
MO2004G003(03)	Elgin (13)	Dry Seneca Creek	29	30	33	31	50
MO1970G207(05)	7	Russell Branch Watershed	16	16	16	16	30
	9		51	49	49	50	47
	10		0	0	0	-	-
		Permit Group Total	68	65	66	66	77
MO2004G006(04)	Schraf (12)	Broad Run	37	34	37	36	45
					Total:	362	647

Table 9
Water Availability Based on Watershed Acreage

Watershed	Acreage Reported in Master Plan 2011	Acreage Estimated by SSP&A	MDE Permitted Allocation in Watershed (GPD)	SSP&A Calculated per MDE Water Balance Methods (GPD)	Difference = MDE Permitted Minus SSP&A Calculated (GPD)
Broad Run	551	542	47,500	137,671	-90,171
Dry Seneca Creek	973	953	194,500	241,789	-47,289
Horsepen Branch	588	519	293,000	131,847	161,153
Russell Branch	450	421	115,000	106,821	8,179
Total	2,562	2,435	650,000	618,128	31,872

Table 10
Water Demand Scenario Summary

Item	Current Demand (GPD)	Demand with Population Increase of 700 Persons (GPD)	Average Daily Demand - Population to 6,500 and Drought (10% increase) (GPD)	Average Daily Demand- Population to 6,500, Drought and 30 days @ 100°F (GPD)	MDE Permit Rate (GPD)	Estimated Yield SSP&A (GPD)
Daily Demand	521,000	591,000	650,100	654,621	650,000	932,000
Month of Maximum Use	622,000	786,030	864,633	919,633	910,000	

APPENDICES

Appendix A

Ground Water and Wells in the Maryland Piedmont



Ground Water and Wells in the Maryland Piedmont

Ground water is the primary source of drinking water for most residents in the rural areas of Maryland. Ground water occurs in a variety of hydrogeologic settings, reflecting the geological diversity of the State. This fact sheet describes ground water and wells in the Piedmont physiographic province of Maryland, and the factors associated with well-water availability and quality.

Geology of the Maryland Piedmont

The Piedmont physiographic province in Maryland is located between the Blue Ridge and Coastal Plain provinces (figure 1). The Piedmont is underlain primarily by metamorphic and igneous crystalline rocks, with smaller amounts of sedimentary rocks. Over time the rocks have been folded, faulted, and fractured to varying degrees, and the region is commonly referred to as fractured-rock terrane (Nutter and Otton, 1969). The boundary between the Piedmont and Coastal Plain provinces is known as the Fall Line, and it separates the hard, fractured rocks of the Piedmont from the unconsolidated sediments of the Coastal Plain.

Unlike the Coastal Plain sediments, where ground water flows through pore spaces between the sediment grains, the Piedmont aquifers are composed of mineral grains that are tightly connected and do not easily transmit water. However, the fractures that have developed in the rocks over time are capable of conveying sufficient quantities of water to a well.

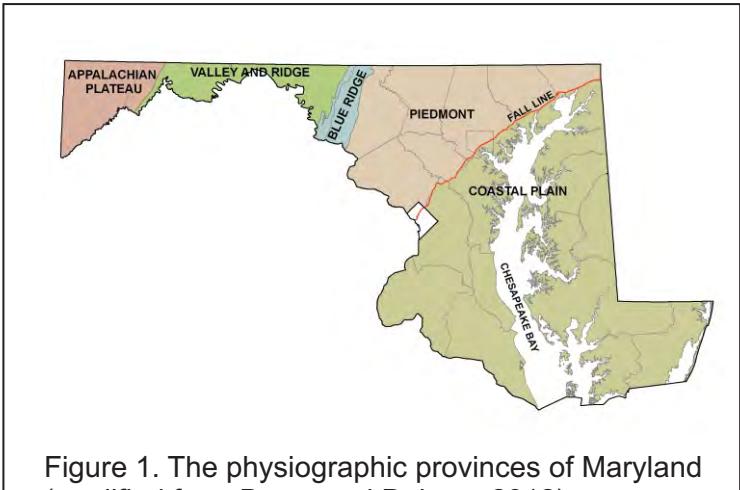


Figure 1. The physiographic provinces of Maryland (modified from Burgy and Duigon, 2012).

Where does ground water come from?

Ground water in the Maryland Piedmont is derived from rain and snow that falls within the watershed where the well is located. By contrast, ground water in the Maryland Coastal Plain may have traveled many miles from where it entered the ground-water system to where it is withdrawn from a well. In the Piedmont, precipitation percolates downward through the soil and rock until it reaches the water table (the point below which the ground is saturated with water) (figure 2). The saturated zone below the water table is called an aquifer.

Most aquifers in the Piedmont are unconfined aquifers (also called water-table aquifers), meaning that there is no overlying impermeable layer to protect ground water from surface-based sources of contamination. The water table represents the top of the unconfined aquifer. Because they do not have a protective layer above them, unconfined aquifers are susceptible to contamination from substances released on or near the surface, including fertilizers, pesticides, road salt, leaking underground storage tanks, and runoff from impermeable surfaces.

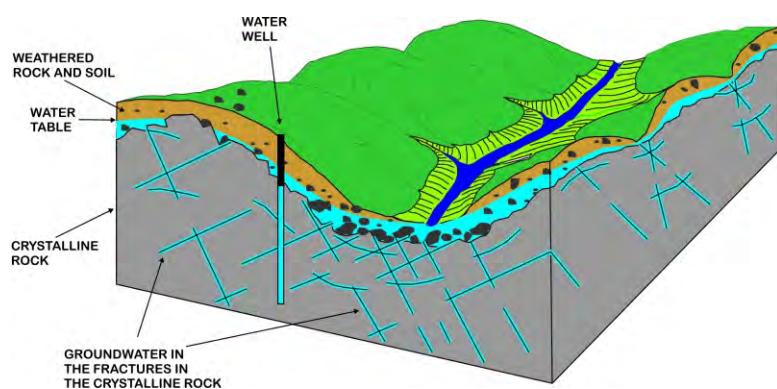


Figure 2. Block diagram showing the location of the ground water in fractured-rock terrane (modified from Heath, 1983).

What factors affect the yield of my well?

In the Piedmont, most ground water is stored in the overburden (the weathered material that overlies bedrock), and is transmitted to the well via fractures that intercept the well bore (figure 3). The number of fractures, topographic position of the well (hill or valley), thickness of overburden above the aquifer, amount of precipitation, and type of rock are all factors that can influence well yield (Nutter and Otton, 1969). Because many fractures are close to vertical, adjacent wells of similar depths can have very different yields because they may not intercept the same number of fractures.

Characteristics of wells and ground water in the Maryland Piedmont

- Wells in the Piedmont are typically drilled to a depth of several hundred feet. The upper part of the well is drilled through overburden (weathered material derived from the underlying rock). The lower part of the well is drilled through unweathered bedrock. Because aquifer permeability tends to decrease with depth, the open hole is used largely to store water.
- Casing is installed in the upper part of the well to keep the well from collapsing. Well-construction regulations in central Maryland require wells to have a minimum casing length of 20 feet and a minimum seating distance of 2 feet into unweathered bedrock (Code of Maryland Regulations, 2012)
- The lower part of the well is usually left open (that is, no lining or screen is installed). Water enters the open hole through fractures that connect the open hole to the saturated overburden (figure 3).
- Well yields in the Piedmont are typically low (a few gallons per minute). This is because the water is stored in fractures, unlike in the Coastal Plain, where water is found in sandy, unconsolidated aquifers. Yields are often higher in wells drilled in marble or highly fractured rock.
- Piedmont wells are more likely to be affected by drought and other climatic events than are Coastal Plain wells, because they draw water from unconfined aquifers.
- Water quality in the Piedmont is typically slightly acidic (pH 5 to 7) and typically contains low amounts of dissolved solids. Elevated levels of nitrate (from septic effluent, or current/former agricultural land use) and chloride (from road salt) are common contaminants.

References

Burgy, K. and Duigon, M.T., 2012, Preliminary assessment of factors affecting well yields in the fractured rock terrane of Frederick County and portions of Carroll and Montgomery Counties, Maryland: Maryland Geological Survey Report of Investigations No. 79, 104 p.

Code of Maryland Regulations, 2012, Well Casing: Title 26 (Department of the Environment), Subtitle 04 (Regulation of Water Supply, Sewage Disposal, and Solid Waste), chap. 04 (Well Construction), Regulation 07D (3) <http://www.dsd.state.md.us/comar/getfile.aspx?file=26.04.04.07.htm>. Accessed 29 April 2013.

Heath, R.C., 1983, Basic ground-water hydrology: U.S. Geological Survey Water Supply Paper No. 2220, 84 p.

Nutter, L.J., and Otton, E.G., 1969, Ground-water occurrence in the Maryland Piedmont: Maryland Geological Survey Report of Investigations No. 10, 56 p.

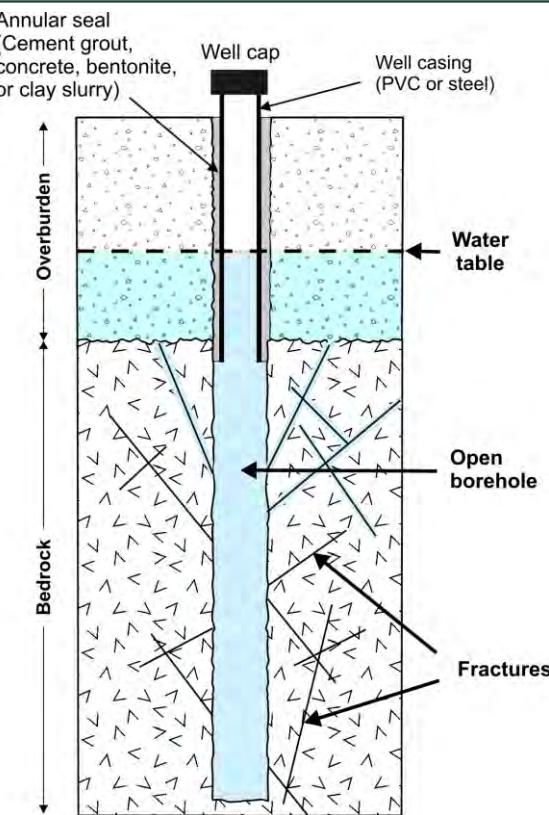


Figure 3. Diagram showing typical well construction in fractured-rock terrane (from Burgy and Duigon, 2012).

For additional information, please contact:

MARYLAND GEOLOGICAL SURVEY
Maryland Department of Natural Resources
Jeffrey P. Halka, Director
2300 Saint Paul St., Baltimore, MD 21218-5210
Phone 410-554-5500 Fax 410-554-5502
DNR Publication No: 12-3112013-630: April 2013
Document available online at <http://www.mgs.md.gov>

Additional DNR contact information:
Toll free in Maryland 1-877-620-8DNR
Outside of Maryland 1-410-260-8400
TTY users call via the MD Relay
dnr.Maryland.gov



Appendix B

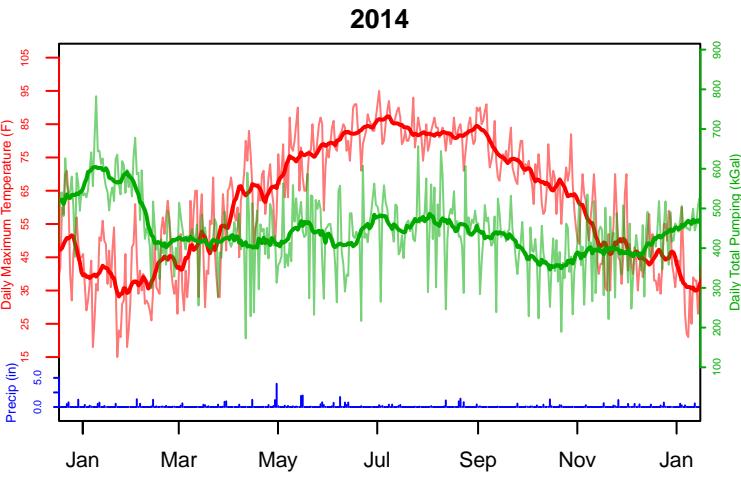
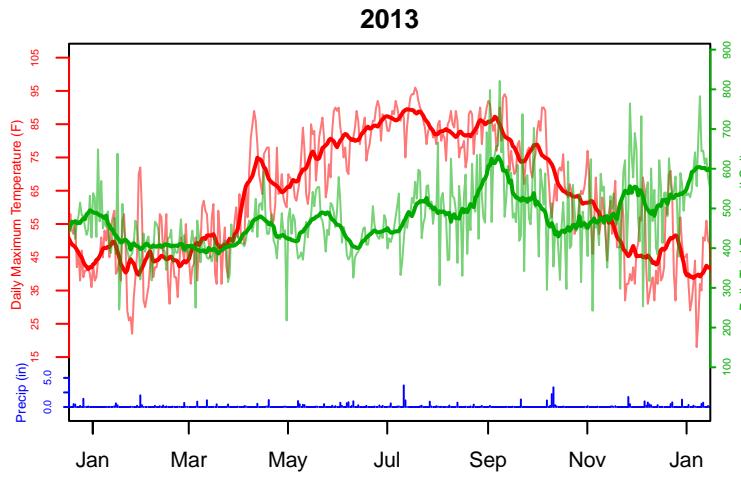
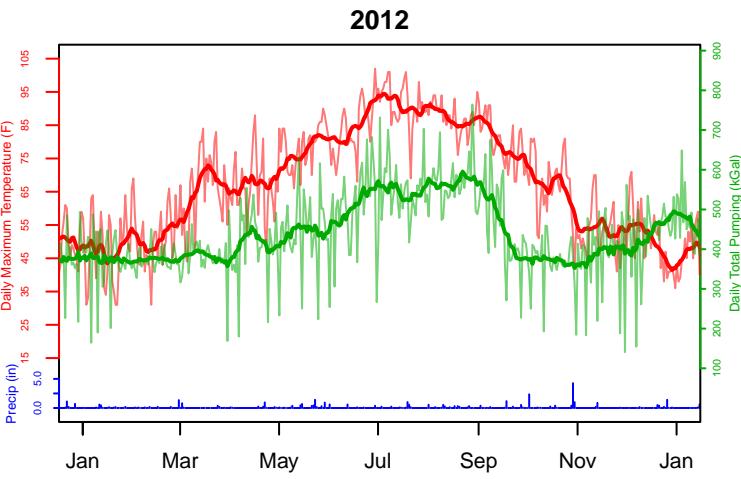
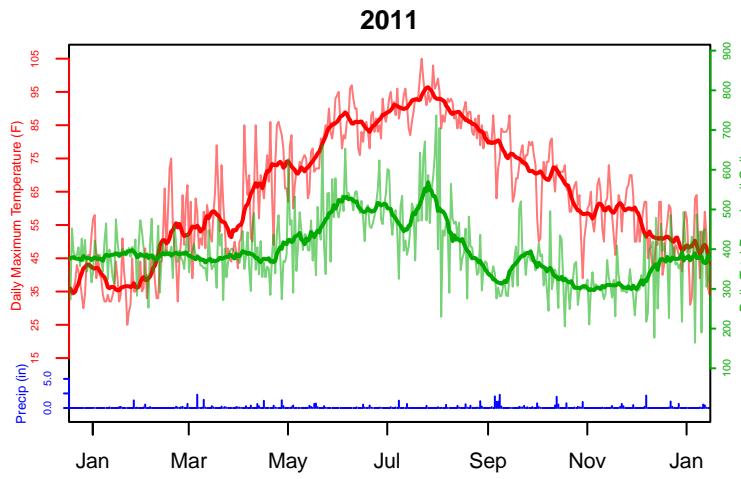
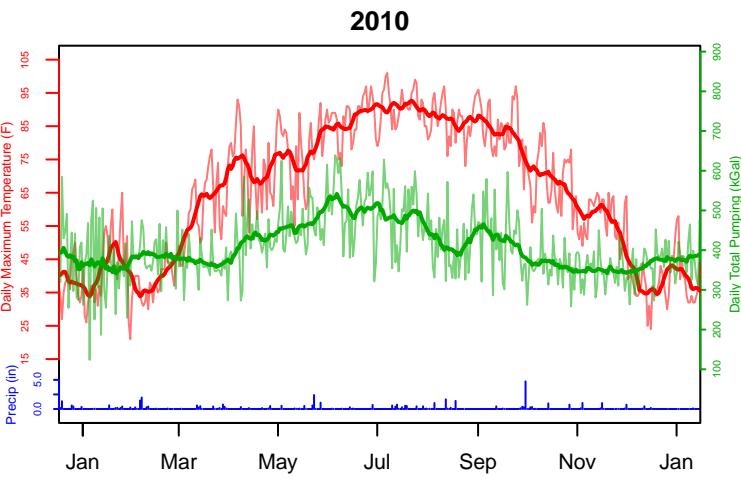
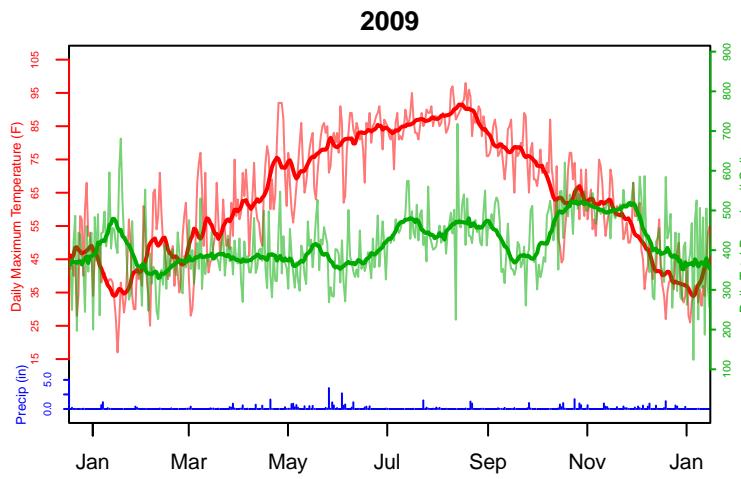
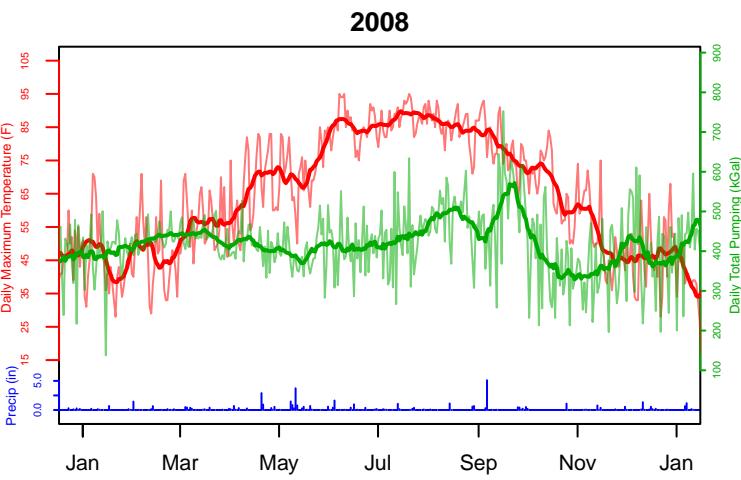
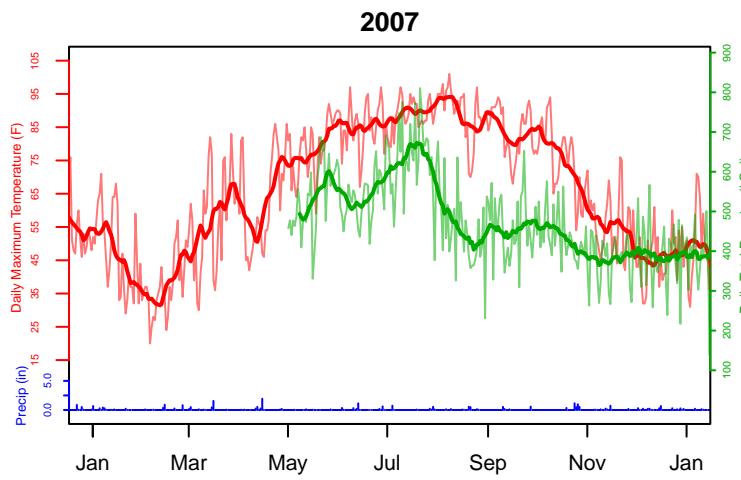
**Precipitation, Maximum Air Temperature,
and Total Gallons Pumped – 2007 to 2020**



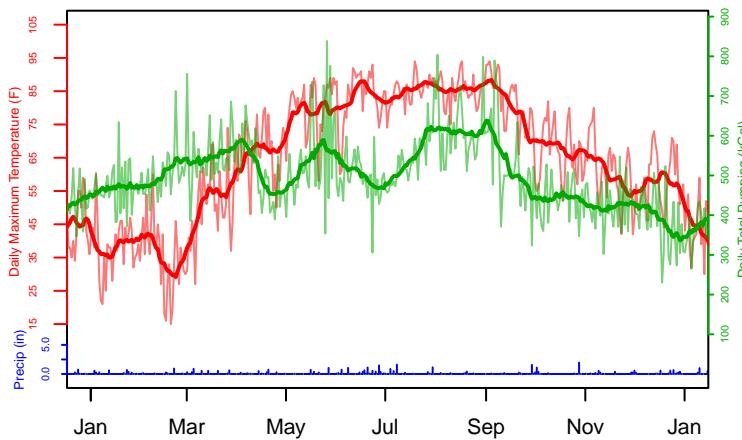
Appendix B

Introduction

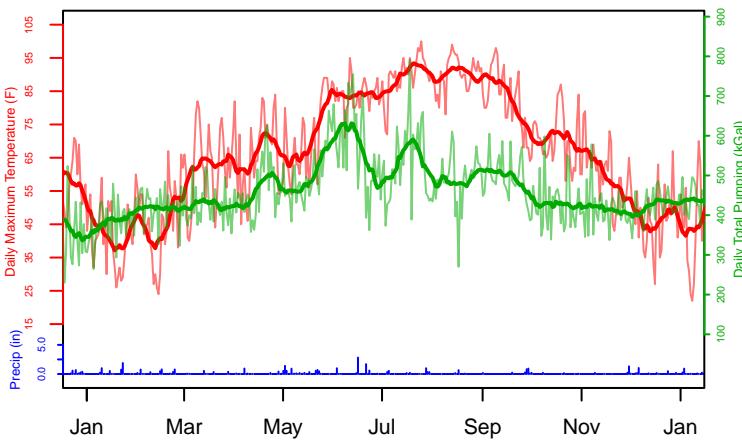
Appendix B consists of a series of graphs that illustrate the correlation between air temperature, precipitation, and water withdrawals for the Town of Poolesville. Each graph covers one year of data and includes the daily maximum temperature (light red line), 15-day moving average of maximum air temperature (darker red line), total water withdrawals on daily basis (light green line), and the 15-day average of daily withdrawals (darker green line), with daily precipitation shown in blue at the bottom of each figure. In general, periods of high temperature correspond to elevated water withdrawal. Some short-term fluctuation of increased water use may be explained by periods of low precipitation, and during the winter months, by increased withdrawals due to water main breaks.



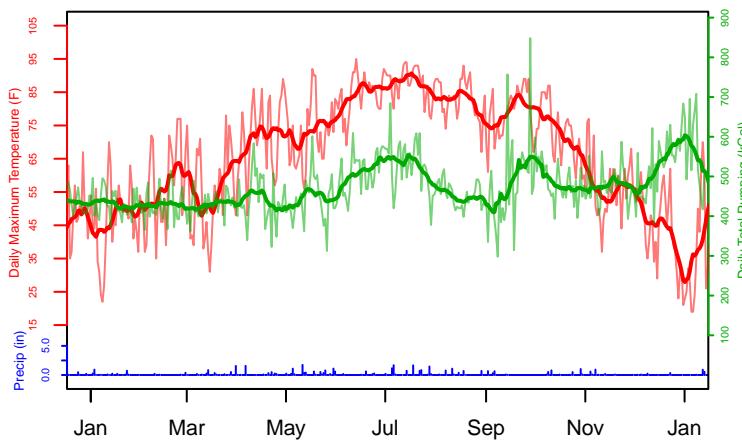
2015



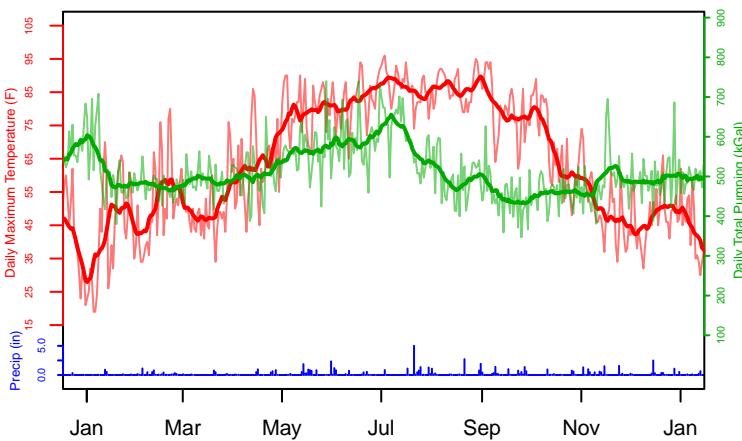
2016



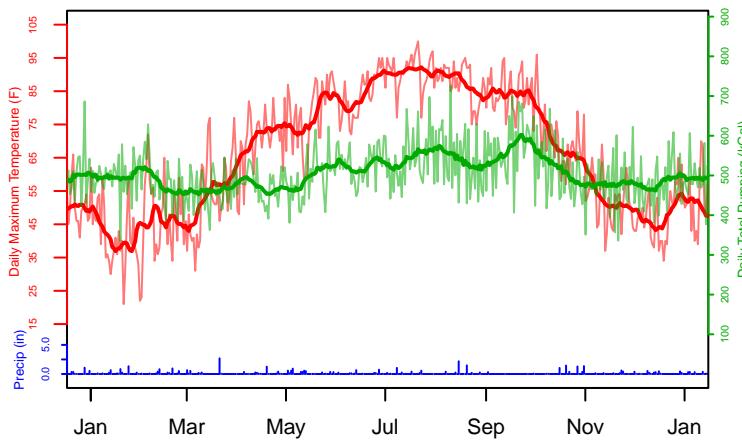
2017



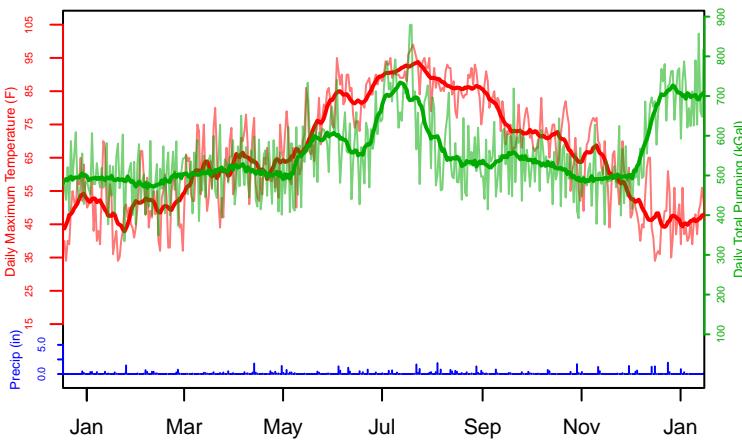
2018



2019



2020



This appendix is intended for general guidance only. In the event of a conflict between these acronyms/definitions and a formal, legal definition established by a Town ordinance, the legal definition shall prevail.

ACRONYMS

AG	Agricultural District	MS4	Municipal Separate Storm Sewer System
AMI	Area Median Income	NC	Neighborhood Conservation District
APFO	Adequate Public Facilities Ordinance	NHTSA	National Highway Traffic Safety Administration
BAT	Best Available Technology	NPDES	National Pollutant Discharge Elimination System
BMP	Best Management Practices	NWI	National Wetlands Inventory
DESAC	Department of Emergency Services Advisory Council	ONRW	Outstanding National Resource Waters
DNR	Maryland Dept. of Natural Resources	PFA	Priority Funding Area
EDC	Economic Development Commission	PPA	Priority Preservation Area
ENR	Enhanced Nutrient Removal	PPP	Public/Private Partnership
ESD	Environmental Site Design	PRAB	Parks & Recreation Advisory Board
FEIS	Final Environmental Impact Statement	RCA	Resource Conservation Area
FIDS	Forest Interior Dwelling Species	ROD	Record of Decision
GED	General Education Development	SDAT	Maryland State Dept. of Assessment & Taxation
GIS	Geographic Information System	SRC	State-Rated Capacity
HVAC	Heating, Ventilation & Air Conditioning	SSPRA	Sensitive Species Project Review Areas
I&I	Infiltration and Inflow	TAZ	Traffic Analysis Zone
IBI	Index of Biotic Integrity	TDR	Transferrable Development Right or Transfer of Development Rights
IDA	Intensely Developed Area	TIZ	Target Investment Zone
ISP	Internet Service Provider	TMDL	Total Maximum Daily Load
LA	Load Allocation	U.S.	United States [of America]
LDA	Limited Development Area	US DOD	U.S. Dept. of Defense
LEED	Leadership in Energy & Environmental Design	US DOT	U.S. Dept. of Transportation
LOD	Limit of Disturbance	US EPA	U.S. Environmental Protection Agency
LOS	Level of Service	US HUD	U.S. Dept. of Housing & Urban Development
LTS	Level of Traffic Stress	VMT	Vehicle Miles Traveled
MALPF	Maryland Agricultural Land Preservation Foundation	WLA	Waste Load Allocation
MD	Maryland	WQS	Water Quality Standard
MDE	Maryland Dept. of the Environment		
MDOT	Maryland Dept. of Transportation		
MES	Maryland Environmental Service		
MET	Maryland Environmental Trust		
MHAA	Maryland Heritage Area Authority		
MOS	Margin of Safety		
MOU	Memorandum of Understanding		
MPDU	Moderately Priced Dwelling Unit		

DEFINITIONS

A

Adaptive Reuse: The modification of a building to make it suitable for a use for which it was not originally constructed. An adaptive reuse shall not increase the floor area of the existing building by more than 25%.

Adequate: Sufficient for a specific requirement.

Adequate Public Facilities Ordinance (APFO): Ordinance that provides a growth management process that will enable the Town to provide adequate public schools, roads, and other infrastructure facilities in a timely manner and achieve growth objectives.

Afforestation: Establishment of a forest on an area from which forest cover has been absent for a long period of time; planting of trees in an open area that is not presently in forest cover; adding additional tree stock to meet required afforestation thresholds; establishment of a forest according to procedures set forth in the Forest Conservation Technical Manual.

Age in Place: The ability to grow old in one's own residence, rather than moving to an assisted living or nursing facility, often accomplished by retrofitting the residence to respond to decreased mobility.

Agribusiness: Economic activities of farms including those undertaking commercial agricultural production and those related businesses that produce, harvest, refine, and market raw agricultural commodities into food, fiber, and energy into final products for sale and distribution to local, regional, state and global markets. Encompasses all the economic activities that are related to commercial agricultural production, the process and refinement of raw farm products into consumable goods, and the agriculture-related service industry, which supports the production and distribution of agricultural products. Includes but is not limited to animal husbandry; crop production; machinery sales and repair; fertilizer production and distribution; specialized farming; food, fiber, and energy processing and manufacturing; packaging, transportation, wholesale and retail trade, and the distribution of food, fiber, and energy products.

Agricultural Easement: See *Easement, Agricultural.*

Agriculture: All methods of production or management of livestock, poultry, crops, vegetation,

and soil, other than commercial logging and timber harvesting operations, and includes but is not limited to tillage, plowing, seeding, fertilization, pest control, harvesting, maintenance of best management practices, and marketing; feeding, housing, grazing, raising, and maintaining animals such as cattle, dairy cows, sheep, hogs, poultry, and equine and the handling of their by-products; orchards, nurseries, vineyards, cheese making, winery, and U-pick operations; and silviculture, sod production, and aquaculture.

Agritourism: An accessory farm-based business which is secondary to the primary agricultural use of the properties where activities such as on-farm processing of agricultural products and agritourism occur. Agritourism is a series of activities conducted on a farm and offered to the public or to invited groups for the purpose of education, recreation, or active involvement in the farm operation. These activities may include, but are not limited to, farm tours, hayrides, corn mazes, seasonal petting farms, farm museums, guest farm, pumpkin patches, "pick your own" or "cut your own" produce, classes related to agricultural products or skills, and picnic and party facilities offered in conjunction with the above.

Aquaculture: The farming or culturing of finfish, shellfish, or other aquatic plants or animals in natural or artificial water bodies or impoundments. Aquaculture includes the hatching, cultivating, planting, feeding, raising, and harvesting of aquatic plants and animals and the maintenance and construction of necessary equipment, buildings, and growing areas. Cultivation methods include seed or larvae development and grow-out facilities, fish pens, shellfish rafts, racks and longlines, seaweed floats, and the culture of clams and oysters on tidelands and subtidal areas. Related activities such as wholesale and retail sales, processing, and product storage facilities are not included in this definition.

Area Median Income (AMI): The median household income for the area adjusted for household size as published and annually updated by the U.S. Department of Housing and Urban Development.

Assimilative Capacity: The capacity of a natural body of water to receive wastewaters or toxic materials without deleterious effects and without damage to aquatic life or humans who consume the water.

Automated Vehicle: Fully automated, autonomous, or “self-driving” vehicles are those where operation of the vehicle occurs without direct driver input to control the steering, acceleration, and braking and are designed so the driver is not expected to constantly monitor the roadway while operating in self-driving mode.

B

Barren Land: Unmanaged land having sparse vegetation.

Base Realignment & Closure (BRAC): The congressionally authorized process the US DOD has used to reorganize its base structure to more efficiently and effectively support our military forces, increase operational readiness, and facilitate new ways of doing business.

Best Available Technology (BAT): Systems designed to provide suitable conditions for aerobic and anaerobic activity to reduce nitrogen discharge from onsite sewage disposal. MDE has approved various technologies for use.

Best Management Practices (BMP): Conservation practices or systems of practices and management measures that control soil loss and reduce water quality degradation caused by nutrients, animal waste, toxic substances and sediment. Agricultural BMPs include, but are not limited to, strip cropping, terracing, contour stripping, grass waterways, animal waste structures, ponds, minimal tillage, grass and naturally vegetated filter strips, and proper nutrient application measures.

Breeding Bird Area: A forested area where the occurrence of interior dwelling birds, during the breeding season, has been demonstrated as a result of on-site surveys using standard biological survey techniques.

Budget: The Town’s Annual Budget has two primary components:

- **Capital:** Funds major improvements to Town facilities and infrastructure.
- **Operating:** Includes personnel costs and annual facility operating costs.

Buffer: A naturally vegetated area or vegetated area established or managed to protect aquatic, wetland shoreline, and terrestrial environments from man-made disturbances.

Buffering: The act of reducing the effects of one land use on another, usually through landscaping, fencing, architectural design, or distance standards applied in the siting of structures and site activities.

Building Permit: A permit (or other final approval) required before the construction, extension, conversion, alteration, or reconstruction of a structure.

Bulk Regulations: The combination of controls (i.e. lot size, floor area ratio, coverage, open space, yards, height, setback) that determine the maximum size and placement of a building on a lot.

C

Capacity, Design: The average daily volume or flow that a transportation or infrastructure facility is designed to accommodate

Capital Improvement Program (or Plan) (CIP): An annually revised document that guides the Town’s investments in public facilities and infrastructure during a five-year time horizon.

Capital Project (Improvement or Investment): Land acquisition, purchase of equipment, or construction of structure necessary for public facility construction or expansion.

Character: The result of the combination of various features and traits of an area as defined by the predominant pattern of physical scale, land use, building and site design, natural and historic features, and the vision for the area as expressed in adopted plans. Not all elements affect community character in all cases; a community usually draws its distinctive character from a few elements.

Chesapeake Bay Critical Area: All land and waters defined in §8-1807 of the Natural Resources Article, Annotated Code of Maryland, including all waters of, and lands under, the Chesapeake Bay and its tributaries to the head of tide as indicated on the state wetlands maps and all state and private wetlands designated under Title 16 of the Environment Article, Annotated Code of Maryland; and all lands and water areas within 1,000 feet of the landward boundaries of state or private wetlands and the heads of tides designated under Title 16 of the Environment Article, Annotated Code of Maryland.

Civilian Labor Force: All persons 16 years and over in the civilian noninstitutional population classified as either employed or unemployed.

Cluster Development or Subdivision: A residential development that allows variation in lot sizes without an increase in overall density and that preserves open space, tree cover, and similar natural features.

Colonial Nesting Water Birds: Herons, egrets, terns, and glossy ibis. For purposes of nesting, these birds colonize in relatively few areas, at which time, the regional populations of these species are highly susceptible to local disturbances.

Commercial Harvesting: A commercial operation that would alter the existing composition or profile of a forest, including all commercial cutting operations done by companies and private individuals for economic gain.

Commercial Seafood Operation: All matters relating to the harvest of seafood, including boats leaving and returning at all hours; painting of crab pots; the use of bait, salt, paints, dust, and power tools; the maintenance of boats and any and all other equipment; the running and operation, noise, smell, and presence of machinery and equipment associated with commercial seafood operating at any and all hours; activities of workers and the operation of boats, generators, ice making, refrigerated trucks, chum trucks, boilers, steam generators, cooking, fork lifts, heating equipment, cooling equipment, soft crab shedding equipment, tanks, pallets, cooking baskets, and drums.

Commercial Use: Any development approved by the Town or a municipality that involves the retail or wholesale marketing of goods and services. Commercial uses are categorized as follows:

— **High Commercial Use:** Includes the following and other similar uses of comparable intensity, scope, character, and impact: bowling alleys; package stores/stores selling liquor, beer, or soft drinks (in sealed containers, not for consumption on-premises); retail sales or stores; recreational vehicle sales; convenience stores; convenience stores with gas pumps; fast-food restaurants; gasoline service stations; taverns; bars; shopping centers; regional shopping centers; new and used vehicle sales/service and repair with exterior storage and/or repair areas; light manufacturing and assembling of goods in conjunction with retail or wholesale sales (provided that all manufacturing and

assembling activities are conducted indoors and such activities are clearly subordinate to the principal commercial use of the property).

— **Medium Commercial Use:** Includes the following and other similar uses of comparable intensity, scope, character, and impact: auto accessory stores; commercial or trade schools (e.g., dance studios, schools for martial arts); grocery stores and supermarkets (excluding convenience stores); laundries; theaters and auditoriums (indoor); boat sales and repair; furniture sales; garden centers, garden supplies, and greenhouses; lawnmower and garden equipment sales; auto repair with repair areas; warehouses with no exterior storage; and non-fast-food restaurants.

— **Low Commercial Uses:** Includes the following and other similar uses of comparable intensity, scope, character, and impact: business or professional offices; medical offices and clinics; veterinary offices; all other office uses; barbershops and hairdressers; deli, coffee shops, ice cream stores and stands; dry cleaners; light mechanical repair stores (e.g., watch, camera, bicycle, television); photography; tailoring; upholstering and upholstery stores; print/copy shop; banks and other financial facilities; service businesses; and travel agencies.

Community Design: Compact, mixed-use, walkable design consistent with the community character of existing neighborhoods that emphasizes the use of land, resources, preservation, and enhancement of natural systems; open spaces and recreational areas; and historical, cultural; and archeological resources.

Community Facility: Facilities financed by public revenues and available for use by the public (e.g., roads, schools, sewerage treatment plants).

Community Pier: Boat docking facilities associated with subdivisions and similar residential areas, and with condominium, apartment, and other multi-family dwelling units; does not include private piers and commercial marinas.

Community Sewerage System: 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.

Compatibility: A measure of the degree to which two uses can exist side-by-side without one use adversely impacting the other.

Complete Streets: A Town policy that aims to improve transportation options and safety by ensuring that alterations to transportation systems are implemented to provide all users regardless of age or ability with a comprehensive and connected multimodal network.

Comprehensive Plan: The most recently adopted Plan text and all accompanying maps, charts, and explanatory material and all its amendments. A document, officially adopted by the local governing body, which spells out the manner a municipality, Town, or county sub-area must develop. Typically, it includes a map showing proposed future land use and anticipated transportation and community facilities. It also contains policies for protecting environmental features and recommendations for amending local development-related ordinances in a manner that helps achieve its objectives. It must also explain how the jurisdiction will provide water for development and address the handling of sewage treatment plant discharges. Municipal comprehensive plans must explain how anticipated growth will impact community facilities and the environment and identify areas where growth will occur. The plan has legal significance in that zoning, provision of water and sewer, and other local actions and other actions must be consistent with its recommendations. Comprehensive plans capture how people want their communities to function and grow. Local jurisdictions must review their comprehensive plans every five years and update them every ten.

Conditional Use: Uses that must be reviewed on a case-by-case basis to evaluate their appropriateness for a particular location.

Connected Vehicle: Vehicles that use any of a number of different communication technologies to communicate with the driver, other cars on the road (vehicle-to-vehicle), roadside infrastructure (vehicle-to-infrastructure), and the “Cloud.” The technologies for autonomous cars, connected cars, and advanced driver assistance systems overlap.

Connectivity: The measurement of a system of streets with multiple routes and connections serving the same origins and destinations. An interconnected roadway network can accommodate more multimodal travel demands than a roadway network with limited connectivity.

Conservation Easement: See *Easement, Conservation.*

Corridor:

— (roadway): A principal link or gateway within the community as well as the land uses along these routes.

— (wildlife): An area of habitat connecting wildlife populations separated by human activities or structures (e.g., roads, development, or logging).

Cost of Living: The cost of maintaining a certain standard of living measured by the average cost of the basic necessities of life (e.g., food, shelter, clothing). A rise in the cost of living reflects the rate of inflation.

Cover Crop: The establishment of a vegetative cover to protect soils from erosion and to restrict pollutants from entering the waterways. Cover crops can be dense, planted crops of grasses or legumes, or crop residues, such as corn, wheat, or soybean stubble, which maximize infiltration and prevent runoff from reaching erosive velocities.

Critical Area: See “Chesapeake Bay Critical Area.”

Critical Workforce: Individuals employed in the Town as teachers (full-time); law enforcement officers (full-time), including correctional officers; emergency medical technicians (full-time); active members of a volunteer fire company for the past 12 months, including both firefighters and emergency medical technicians.

Cul-de-sac: A local street with one outlet, having a paved, circular turn-around area at the closed end.

Cultural Heritage: The legacy of physical artifacts and intangible attributes of a group or society.

Cultural Landscape: A geographic area that includes both cultural and natural resources associated with a historic event, activity, or person or exhibits other cultural or aesthetic values.

Culvert: A tunnel carrying a stream or open drain under a road or railroad.

Curb Cut: A ramp cut into an elevated curb to allow smooth passage between the sidewalk and the street.

D

Density: The number of dwelling units allowed per acre of base site area, rounded to the next lowest whole number.

— **Bonus:** A bonus that allows a developer to build more units than allowed by-right in the Zoning Ordinance.

—, **Development:** The number of dwelling units allowed per acre based on zoning, after deducting environmentally sensitive lands.

Depth to Groundwater: The shallowest depth to a wet soil layer (i.e. water table) at any time during the year, expressed in centimeters from the soil surface, for components whose composition in the map unit is equal to or exceeds 15%.

Developer: A person who engages in development.

Development: Division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of structures; any use or change in use of structures or land; extension of use of land; or clearing, grading, or other movement of land for which permission may be required pursuant to the *Town Code*.

—, **Active Adult:** Developments with age-restricted occupancy, where at least one occupant must be over the age of 55.

—, **Infill:** Development that takes place on vacant or underutilized parcels within an already-developed area.

Development Density: The number of dwelling units allowed per acre based on zoning, after deducting environmentally sensitive lands.

Development Intensity: The carrying capacity or degree to which an area of land can be physically developed, to the fullest extent possible. The development intensity of a land area is determined by the degree of suitability it has after deducting conservation measures. A development intensity factor may be assigned based on land suitability, sensitive water resources, and infrastructure. Development intensity can be controlled by density for residential development as well as through floor

area ratio on the parcel level for commercial, mixed use, and industrial developments.

Development Review: The Town process for reviewing and approving grading and construction, alterations to existing buildings, and subdivisions.

Dwelling: A building or portion of a building that is designated or used for residential purposes.

— **Multi-Family:** A planned residential development consisting of more than one dwelling unit (such as duplexes, townhouses, cottage homes, apartments or multiplex) that involves the identification and protection of required open space and is accomplished pursuant to design and improvement standards set forth in *Town Code*.

— **Single-Family:** A dwelling designed for single-family residential use and occupied by not more than one family and having no roof, wall, or floor in common with any other dwelling unit, including site-built homes, modular homes, and double-wide manufactured homes.

— **Duplex (Two-Family):** A two-family dwelling, either stacked or sharing a common wall, designed for and occupied exclusively as the residence of not more than two families, whether as renters or owners, each living as an independent housekeeping unit.

— **Unit:** A principal building, room, or group of rooms providing, or intended to provide, living quarters for not more than one family.

— **Unit, Market Rate:** A dwelling unit, the value of which is not controlled by *Town Zoning & Subdivision Regulations* or other artificial means.

— **Unit, Moderately Priced (MPDU):** A dwelling unit offered for sale or rent to eligible persons and sold or rented under *Town Zoning & Subdivision Regulations* and meeting all outlined eligibility requirements.

E

Easement: The authorization by a property owner for the use by another and for a specified purpose of any designated part of the property.

—, Agricultural: A nonpossessory interest in land that restricts the conversion of use of the land, preventing nonagricultural uses.

—, Conservation: A nonpossessory interest in land that restricts the manner that the land may be developed in an effort to conserve natural resources for future use.

Economic Center: An area of the Town where economic development has recently or traditionally occurred and where a significant percentage of residents and commuters work located in or near incorporated Towns.

Economic Development: The process of improving a community's well-being through job creation, business growth, and income growth, as well as through improvements to the wider social and natural environment that strengthen the economy.

Economic Indicators: Data and information assembled and evaluated to determine the fiscal health or welfare of a community, which the Town should review and assess in connection with determining their plans and policies.

Ecotourism: Environmentally responsible travel and visitation to relatively undisturbed natural areas to enjoy and appreciate nature and its past or present accompanying cultural features, which promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations.

Effluent Disposal: The disposal or treatment of sewage, water, or other liquid, either partially or completely treated, or in its natural state, whether generated on- or off-site, including sewage treatment plants, berm infiltration ponds, spray irrigation facilities, and other state and Town approved facilities and activities.

Employed Persons: All persons who, during the reference week (the week including the 12th day of the month), did any work as paid employees, worked in their own business or profession or on their own farm, or worked 15 hours or more as unpaid workers in an enterprise operated by a member of their family; or were not working but who had jobs from which they were temporarily absent because of vacation, illness, bad weather, childcare problems, maternity or paternity leave, labor management dispute job training, or other family or personal reasons, whether or not they were paid for the time

off or were seeking other jobs. Each employed person is counted only once, even if he or she holds more than one job.

Endangered Species: Any species of fish, wildlife, or plants that have been designated by the Secretary of the Department of Natural Resources. Designation occurs when the continued existence of these species as viable components of the State's resources are determined to be in jeopardy, including any species determined to be endangered pursuant to the federal Endangered Species Act, 16 U.S.C. § 1531 et seq., as amended.

Enhanced Nutrient Removal (ENR): The use of technologies that allow wastewater treatment plants to provide an advanced level of treatment, dramatically reducing nitrogen and phosphorus discharge in effluent. Its goal is to achieve effluent nutrient concentrations of a maximum of 3.0 milligrams per liter (mg/l) total nitrogen and 0.3 mg/l total phosphorus.

Environmental Site Design (ESD): Using small-scale stormwater management practices, nonstructural techniques, and better site planning to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources. ESD features include optimizing conservation of natural features (e.g., drainage patterns, soils, vegetation); minimizing use of impervious surfaces; slowing runoff to maintain discharge timing and increase infiltration and evapotranspiration; and using other approved nonstructural practices or innovative stormwater management technologies.

Ephemeral Stream: A stream that flows only briefly during and following a period of rainfall.

Equity: A condition of equality achieved by being intentional about improving quality of life for underserved, under-resourced, and vulnerable populations.

Erosion: The process where wind, water, ice, or gravity wear away the land surface.

Erosion and Sediment Control: The practice of preventing or controlling wind or water erosion, including containing eroded soil so that it does not wash off and cause water pollution to a nearby waterbody. Can also refer to an individual practice or device designed to prevent, control, or contain erosion and sediment. The State has a statewide

erosion and sediment control program that establishes regulatory criteria and procedures to control sediment-laden runoff from land disturbing activities.

F

Facilities Plan: Plans developed by specific agencies or service providers for strategic planning and capital budgeting purposes that typically include more detailed projections of capital facility and/or operational needs.

Farm: A parcel or combination of parcels under the same ownership that is classified as an agricultural use by the Maryland Department of Assessment and Taxation; used for agricultural purposes, including farming, dairying, pasturing, agriculture, horticulture, floriculture, viticulture, aquaculture, silviculture, and animal and poultry husbandry; includes necessary accessory uses for packing, treating, or storing produce that are purely secondary to and support normal agricultural activities conducted on the parcel; and does not include the business of garbage feeding of hogs or other animals or the raising of such animals as rats, mice, monkeys, and the like for use in medical or other tests and experiments.

First-time Homebuyer: A homebuyer who has not owned a home as their primary residence in the three years prior to closing on the new home (some exceptions apply).

Fiscal Impact Analysis: A tool that seeks to connect planning and local economics by estimating the public costs and revenues that result from property investments. This type of analysis enables comparison of revenues to costs associated with new development, indicating whether local government can meet new demands for services.

Fisheries Activities: Commercial water-dependent fishery facilities including structures for the packing, processing, canning, or freezing of finfish, crustaceans, mollusks, and amphibians and reptiles and also including related activities, such as wholesale and retail sales, product storage facilities, crabshedding, off-loading docks, shellfish culture operations, and shore-based facilities necessary for aquaculture operations.

Fisheries Habitat Protection Areas (HPA): Habitats of rare, threatened and endangered species, anadromous fish spawning areas, submerged aquatic vegetation, forest interior dwelling bird

habitat, colonial water bird nesting sites, and natural heritage areas. Inside the Chesapeake Bay Critical Area, HPAs also include the buffer and buffer expansions, non-tidal wetlands, historic waterfowl staging areas, and other plant and wildlife habitats of local significance.

Floating Zone: A zoning district with specific conditions of approval that a development application must meet before revising the official zoning map.

Flood: A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters or the unusual and rapid accumulation or runoff of surface waters from any source.

Flood Insurance Rate Map (FIRM): An official map on which the Federal Emergency Management Agency (FEMA) has delineated special flood hazard areas (SFHA) to indicate the magnitude and nature of flood hazards, to designate applicable flood zones, and to delineate floodways, if applicable. FIRMs that have been prepared in digital format or converted to digital format are referred to as "Digital FIRMs (DFIRM)."

Flood Insurance Study (FIS): The official report in which the Federal Emergency Management Agency has provided flood profiles, floodway information, and the water surface elevations.

Flood Zone: A designation for areas that are shown on Flood Insurance Rate Maps (FIRMs):

Zone A: Special flood hazard areas (SFHA) subject to inundation by the 1% annual chance (100-year) flood; base flood elevations (BFEs) are not determined.

Zone AE & Zone A1-30: Special flood hazard areas (SFHA) subject to inundation by the 1% annual chance (100-year) flood; base flood elevations (BFEs) are determined; floodways may or may not be determined. In areas subject to tidal flooding, the limit of moderate wave action (LiMWA) may or may not be delineated.

Zone AH & Zone AO: Areas of shallow flooding, with flood depths of one to three feet (usually areas of ponding or sheet flow on sloping terrain), with or without BFEs or designated flood depths.

Zone B & Zone X (shaded): Areas subject to inundation by the 0.2% annual chance (500-year) flood; areas subject to the 1% annual chance (100-year) flood with average depths of less than one foot or with contributing drainage area less than one square mile; and areas protected from the base flood by levees.

Zone C & Zone X (unshaded): Areas outside of zones designated A, AE, A1-30, AO, VE, V1-30, B, and X (shaded).

Zone VE & Zone V1-30: Special flood hazard areas (SFHA) subject to inundation by the 1% annual chance (100-year) flood and subject to high-velocity wave action.

Floodplain: Any land area susceptible to being inundated by water from any source.

Floodplain Management: The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to, emergency preparedness plans, flood-control works, and floodplain management regulations.

Floor Area Ratio (FAR): The ratio between the total floor area on all stories of a structure to the gross area of the lot on which the structure is located. FAR is often used to regulate the size of commercial and industrial buildings without controlling their external shape.

Forecast: An advance calculation of a future condition using relevant data and statistics.

Foreclosure: A legal procedure where property used as security for a debt is sold to satisfy the debt in the event of default in payment of the mortgage note or default of other terms in the mortgage document. The foreclosure procedure brings the rights of all parties to a conclusion and passes the title in the mortgaged property to either the holder of the mortgage or a third party who may purchase the realty at the foreclosure sale, free of all encumbrances affecting the property subsequent to the mortgage.

Forest: A biological community dominated by trees and other woody plants covering a land area of one acre or more; includes forests that have been cut but not cleared.

Forest Interior Dwelling Species (FIDS): Species of birds that require relatively large forested tracts in

order to breed successfully (e.g., flycatchers, warblers, vireos, woodpeckers).

Forest Management: The protection, manipulation, and utilization of the forest to provide multiple benefits (e.g., timber harvesting, wildlife habitat).

Freeboard:

Functional Classification: A classification used to describe a roadway's purpose or the degree to which its primary function is to provide access to adjacent land uses or mobility for longer-distance travel.

G

General Fund: The primary fund, used by a government entity, to record all resource inflows and outflows that are not associated with special-purpose funds. The activities paid for through the general fund constitute the core administrative and operational tasks of the government entity.

Geographic Information System (GIS): A computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface.

Goal: A general, overall, and ultimate purpose, aim, or end toward which the Town will direct effort.

Grading: Disturbance of the earth, including clearing, excavating, filling, hydraulic fill, stockpiling of earth materials, grubbing, or topsoil disturbance, or a combination of any of these operations, including logging and timber removal.

Green Building: The practice of designing and constructing buildings to increase the efficiency with which they use energy, water, and raw materials, in order to reduce impacts on human health and the environment.

Green Infrastructure: A connection of natural, ecological, recreational, historic, and cultural areas.

Green Roof: A roof, partially or completely covered with vegetation and soil, planted over a waterproofing membrane.

Greenfield: Undeveloped sites for development.

Greenway: Any scenic trail or route set aside for travel or recreational activities.

Groundwater: Water held underground in the soil or in pores and crevices in rock, often used to supply wells and springs.

Growth Allocation: An area of land calculated as 5% of total Resource Conservation Area (RCA) designated land within the Critical Area (excluding tidal wetlands and federally owned land), that the Town Council may convert to more intensely developed areas.

Growth Area: Those lands designated and identified as most appropriate for future growth and residential density.

Growth Management: A dynamic process to anticipate and accommodate development needs that balances competing land use goals and coordinates local and regional interests.

H

Heritage Area: Locally designated and State certified regions with high concentrations of historic, cultural, and natural resources. Heritage areas rely on public and private partners who make commitments to preserving historic, cultural, and natural resources for sustainable economic development through heritage tourism.

Heritage Tourism: A type of tourism oriented around appreciation of an area's archaeological, historic, and cultural heritage.

Historic District: A geographically defined area that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. Individual elements separated geographically but linked by association or history may also make up a district.

Historic Preservation: The act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property.

Historic Property: A district, site, building, structure, or object significant in history, architecture, engineering, archeology, or culture at the national, state, or local level.

Historic Structure: Any structure or cultural resource, including but not limited to residential, agricultural, and commercial buildings, that is at least 50 years of age or otherwise deemed to be of exceptional historical significance to the Town due to its association with historic events or activities; association with persons who are important to the community or to specific developments of history; embodiment of distinctive characteristics of a type, period, method of construction, or the work of a

master; or potential to provide important information about history or prehistory.

Homeless: The characterization of an individual living in a place not meant for human habitation, unsheltered, or in an emergency shelter or transitional housing.

Horticulture: Science and cultivation of a garden, orchard, or nursery

Household: One or more people who occupy a housing unit.

—, **Family:** Includes a householder and one or more people living in the same household who are related by birth, marriage, or adoption. All people in a household who are related to the householder count as members of that family. A family household may include people not related to the householder.

—, **Non-Family:** Consists of a householder living alone (i.e. a one-person household) or where the householder shares the home only with people sharing no relations (e.g., a roommate).

Housing:

—, **Affordable:** Housing for which the household is paying no more than 30% of their annual income for gross housing costs, including utilities.

—, **Age-Restricted:** A residential complex containing multifamily or apartment dwellings designed for and occupied by persons 55 years or older, which may include a congregate meals program in a common dining area.

— **Cost:** Rent for a rental housing unit or mortgage principal and interest, real property taxes, and insurance for a housing unit that is for sale.

— **Cost Burden:** Paying more than 30% of household income toward rent or for mortgage principal and interest, real estate taxes, and insurance.

—, **Fair:** The purpose of creating laws to prevent discriminatory housing practices; adding specific prohibitions relating to

discrimination in housing; or providing remedies for discrimination in housing.

—, **Low-Income:** Housing that is affordable for a household with an aggregate annual income that is less than 60% of the area median income.

— **Stock:** The total number of dwelling units (e.g., houses, apartments) in an area.

—, **Supportive:** Collectively refers to housing for persons who may be considered disabled, handicapped, or in recovery from chemical dependency, under federal or State law, and includes developmental disability facilities (i.e. group home, neighborhood home, rest (family care) home); mental health facilities (i.e. group home); licensed sober house; and self-governed sober house.

—, **Transitional:** A type of supportive housing for homeless or at-risk homeless but is not housing specifically targeted to serve persons who are considered disabled, handicapped, or in recovery from chemical dependency.

— **Unit:** A single unit of a structure providing or intended to provide complete living and sleeping facilities for one or more persons.

—, **Workforce:** Housing that is affordable to households earning incomes within the range of 60% to 120% of the area's median household income and includes single-family homes, townhouses, condominiums, starter homes, and apartments affordable to area workers.

of stored lumber, outdoor storage or display, and junkyards.

Impervious Surface Ratio: The total impervious surface area of a lot or site divided by the base site area.

Income:

—, **Area Median (AMI):** The midpoint of a region's income distribution—half earn more than the median and half earn less; published and annually updated by HUD.

—, **Extremely Low:** Income at or below the greater of 30% of area median income or the federal poverty level.

—, **Very Low:** Income at or below 50% of area median income.

—, **Low:** Income at or below 80% of area median income.

—, **Moderate:** Income 50%-80% of area median income.

Index of Biotic Integrity (IBI): An index that is used to determine the health and integrity of the fish community in a waterway, or the numeric measure of the biological completeness of a system. The IBI is a comprehensive, rapid bio-assessment technique that can be applied on a relatively large scale.

Indicators: A tool for community assessment and measurement of various aspects or factors of the health, safety, and welfare of our community. Indicators measure impacts, evaluate criteria, and are used to help link the past to the present and the present to the future.

Industrial Use: Any development approved by the Town or a municipality that has the following characteristics and includes the following categories of use:

— **Light Industrial Use:** Industrial uses that include wholesale distribution and manufacturing activities generally conducted indoors where nuisances associated with the use (e.g., noise, odor, smoke, dust) are minimal; blacksmith shops; boat building; mini-warehouses (with and without outdoor storage); materials sales or storage yards (excluding asphalt or concrete mixing); bulk materials or machinery storage (fully enclosed); boat or auto repair; carpet and rug cleaning plants; contractors' offices;

Impact Fee: Any charge, fee, or assessment that is levied as a condition of issuance of a building permit or development approval; and intended to fund any portion of the costs of capital improvements or any public facilities.

Impaired Waterbody: A waterbody (e.g., stream reaches, lakes, waterbody segments) with chronic or recurring monitored violations of the applicable numeric or narrative water quality criteria.

Impervious Surface: Any man-made surface that is resistant to the penetration of water, including areas

equipment storage yards; dry cleaning and laundry plants serving more than one outlet; extermination shops; food processing and packing plants; fuel oil storage and sales; furniture cleaning plants and refinishing shops; lumberyards; manufacturing (including the production, processing, cleaning, testing, and distribution of materials, goods, foodstuffs, and products) in plants with less than 500 employees on a single shift; mirror supply and refinishing shops; monument works; ornamental iron workshops; pilot plants; printing plants; scientific (e.g., research, testing, experimental) laboratories; trade shops (including cabinet, carpentry, planning, plumbing, refinishing, paneling); truck terminals; wholesale business and storage (not including warehouse clubs that can be joined for a membership fee where a variety of goods are offered in bulk at wholesale or discounted prices); showrooms; and incidental retail stores (not exceeding 25,000 square feet of floor area) associated with building and plumbing supply distribution operations.

— **Heavy Industrial Uses:** Industrial uses that have severe potential for negative impacts on any uses located relatively close to them; differ from light industrial uses in that they require unenclosed structures that are large, tall, and unsightly (e.g., concrete batching plants); have severe potential for generation of odor and may involve large amounts of exterior storage; because of their scale, are likely to have a regional impact; include public airports and heliports; manufacturing activities (including outdoor storage), a significant part of which may be conducted outdoors, where nuisances associated with the use (e.g., noise, odor, smoke, dust), are significant; asphalt or concrete mixing plants; unenclosed bulk material or machinery storage; motor or rail terminals; and manufacturing (including the production, processing, cleaning, testing, and distribution of materials, goods, foodstuffs, and products) in plants at least 500 employees on a single shift.

Infill Development: Development that takes place on vacant or underutilized parcels within an already-developed area.

Infiltration: Groundwater (or groundwater influenced by surface or sea water) that enters sewer pipes through defective pipe joints, broken pipes, and other openings.

Infiltration and Inflow (I&I): Excess water that flows into sewer pipes from groundwater and stormwater. I&I causes dilution of sanitary sewers, decreasing the efficiency of wastewater treatment and potentially causing sewage volumes to exceed design capacity.

Inflow: Surface water that enters the wastewater system from sump pumps, cross-connections with storm drains and downspouts, holes in utility access covers, and from yard, roof, and cellar drains.

Infrastructure: Publicly supported infrastructure includes transportation networks, schools, parks, libraries, police stations, firehouses, and public water and sewer. Smart Growth directs State investment in these facilities to existing communities and areas designated by local governments for future growth. Adequate and well-maintained infrastructure in these areas is a cornerstone of Smart Growth; without it, growth will be inadvertently directed further from established communities.

Institutional Use: Uses approved by the Town or a municipality, including outdoor recreational uses; passive recreational uses; picnic areas, public and private parks, garden plots, and beaches; institutions such as aquariums, youth camps, cemeteries, churches, conference centers associated with nonprofit institutions, community or recreational centers, gymnasiums, privately owned libraries or museums, indoor recreational centers, public or private schools, indoor skating rinks (ice or roller), indoor swimming pools, tennis, racquetball, handball courts, rural country clubs, and all other indoor recreational uses; institutional residential uses; public services; public utilities; family day-care centers; and group day-care centers.

Intensely Developed Area (IDA): An area of at least 20 adjacent acres or the entire upland portion of the critical area within the boundary of a municipality, whichever is less, where residential, commercial, institutional, or industrial developed land uses predominate and where relatively little natural

habitat occurs. An intensely developed area has housing density equal to or greater than four dwelling units per acre; industrial, institutional, or commercial uses concentrated in the area; or public sewer and water collection and distribution systems that currently serve the area and housing density greater than three dwelling units per acre.

L

Land Management: The process of managing the use and development of land resources.

Land Trust: A private, nonprofit organization that actively works to conserve land through land or conservation easement acquisition or by its stewardship of such land or easements.

Land Use: A description of how land is occupied or used.

— **Existing:** A description of how land is currently being used, which establishes a reference point for identifying areas suitable for change and redevelopment or areas appropriate for preservation.

— **Future:** How the County and its residents envision the future use of lands, depicted in an adopted comprehensive plan as the Future Land Use Map.

Land Use/Land Cover: A description of how much of a region is covered by various land uses and is determined by analyzing satellite and aerial imagery. Land use/land cover is not synonymous with land use or zoning. The classification definitions below are those provided by the Maryland Department of Planning (source of land use/land cover data) and may be different than Town definitions of similar subject matter.

— **Agriculture:** Includes the following categories:

— **Cropland:** Field crops and forage crops.

— **Feeding Operations:** Cattle feed lots, holding lots for animals, hog feeding lots, poultry houses, and commercial fishing areas (including oyster beds). Also includes agricultural building breeding and training facilities, storage facilities, built-up areas associated with a

farmstead, small farm ponds, and commercial fishing areas.

— **Orchards/Vineyards/Horticulture:** Areas of intensively managed commercial bush and tree crops, including areas used for fruit production, vineyards, sod and seed farms, nurseries, and green houses.

— **Pasture:** Land used for pasture, both permanent and rotated; grass.

— **Row & Garden Crops:** Intensively managed truck and vegetable farms and associated areas.

— **Commercial:** Retail and wholesale services. Areas used primarily for the sale of products and services, including associated yards and parking areas. This category includes airports, telecommunication towers, and boat marinas.

— **Industrial:** Manufacturing and industrial parks, including associated warehouses, storage yards, research laboratories, and parking areas. Warehouses that are returned by a commercial query are categorized as industrial. Also included are power plants.

— **Institutional:** Elementary and secondary schools, middle schools, junior and senior high schools, public and private colleges and universities, military installations (built-up areas only, including buildings and storage, training, and similar areas), churches, medical and health facilities, correctional facilities, and government offices and facilities that are clearly separable from the surrounding land cover. This category includes campgrounds owned by groups/community groups (e.g., Girl Scouts), sports venues.

— **Residential, High-Density:** Attached single-unit row housing, garden apartments, high-rise apartments/condominiums, mobile home and trailer parks; areas of more than 90% high-density residential units, with more than 8 dwelling units per acre.

— **Residential, Low-Density:** Detached single-family/duplex dwelling units, yards and associated areas. Areas of more than 90% single-family/duplex dwelling units, with

lot sizes of less than five acres but at least one-half acre (.2 dwelling units/acre to 2 dwelling units/acre).

— **Residential, Medium-Density:** Detached single-family/duplex, attached single-unit row housing, yards, and associated areas. Areas of more than 90% single-family/duplex units and attached single-unit row housing, with lot sizes of less than one-half acre but at least one-eighth acre (2 dwelling units/acre to 8 dwelling units/acre).

— **Transportation:** Transportation features include major highways, light rail or metro stations, and large “Park ‘N Ride” lots, generally over 10 acres in size.

— **Undeveloped Land, Forest:** Includes the following categories:

— **Brush:** Areas that do not produce timber or other wood products but may have cut-over timber stands, abandoned agriculture fields, or pasture. Characterized by vegetation types such as sumac, vines, rose, brambles, and tree seedlings.

— **Deciduous:** Forested areas in which the trees characteristically lose their leaves at the end of the growing season. Included are such species as oak, hickory, aspen, sycamore, birch, yellow poplar, elm, maple, and cypress.

— **Evergreen:** Forested areas in which the trees are characterized by persistent foliage throughout the year. Included are such species as white pine, pond pine, hemlock, southern white cedar, and red pine.

— **Mixed:** Forested areas in which neither deciduous nor evergreen species dominate, but in which there is a combination of both types.

— **Undeveloped Land, Other Undeveloped:** In addition to barren land, includes the following categories:

— **Bare Exposed Rock:** Areas of bedrock exposure, scarps, and other natural accumulations of rock without vegetative cover.

— **Bare Ground:** Areas of exposed ground caused naturally, by construction, or by other cultural processes. Landfills (cultural process) are included in this category.

— **Beaches:** Extensive shoreline areas of sand and gravel accumulation, with no vegetative cover or other land use.

— **Open Urban Land:** Urban areas whose use does not require structures, or urban areas where non-conforming uses characterized by open land have become isolated. Included are golf courses, parks, recreation areas (except areas associated with schools or other institutions), cemeteries, and entrapped agricultural and undeveloped land within urban areas.

— **Water:** Rivers, waterways, reservoirs, ponds, bays, estuaries, and ocean.

— **Undeveloped Land, Wetlands:** Forested or non-forested wetlands, including tidal flats, tidal and non-tidal marshes, and upland swamps and wet areas.

Land Use Plan: A long-term guide for how development should occur in Poolesville that provides a framework for making decisions on development and allocation of public resources.

Lands Available:

— **for Preservation:** Undeveloped lands that may have capacity for development. A technical term that meets the State’s requirement for measuring the theoretical estimate for development capacity to estimate development rights that can be preserved.

— **for Development:** Undeveloped lands that may have capacity for development. A technical term that meets the State’s requirement for measuring the theoretical estimate for development capacity.

Leadership in Energy and Environmental Design (LEED): A program that sets standards used internationally for the design, construction, and

maintenance of environmentally sustainable buildings and infrastructure.

Level of Service (LOS): Quantitative standards established to determine how well a facility is operating.

Level of Traffic Stress (LTS): An approach that quantifies the amount of discomfort that people feel when they bicycle close to traffic. The LTS methodology assigns a numeric stress level to streets and trails based on attributes such as traffic speed, traffic volume, number of lanes, frequency of parking turnover, ease of intersection crossings and others.

Leverage: To use a small initial investment to influence additional investment.

Limit of Disturbance (LOD): The area(s) where a developer must contain construction and development activity, including development and construction of the principal building and permitted accessory structures, play areas, and on-site septic tanks, utilities, drainage, and other services.

Limited Development Area (LDA): An area that is currently developed with low- or moderate-intensity uses, which contains areas of natural plant and animal habitats and where the quality of runoff has not been substantially altered or impaired. A limited development area has housing density ranging from one dwelling unit per five acres up to four dwelling units per acre; areas not dominated by agriculture, wetland, forest, barren land, surface water, or open space; areas having public sewer, public water, or both; or areas meeting the definition of intensely developed areas above, less than 20 acres in size.

Living Shoreline: A protected, stabilized coastal edge made of natural materials such as plants, sand, or rock. Unlike a concrete seawall or other hard structure, which impedes the growth of plants and animals, living shorelines grow over time.

Lot (of record): Any validly recorded lot in the Town Land Records that, at the time of its recordation, complied with all applicable laws, ordinances, and regulations.

Lot Coverage: The percentage of a total lot or parcel that is occupied by a structure, accessory structure, parking area, driveway, walkway, or roadway; covered with gravel, stone, shell, impermeable decking, pavers, permeable pavement, or any man-made material.

Low Stress: A condition where bicyclists experience little discomfort due to traffic, determined by a Level of Traffic Stress (LTS) analysis.

M

Maintenance: The repair and other acts intended to prevent a decline in the condition of a structure, premises, or equipment below the standards established by Town Code and other applicable law.

Mean High Water Line: The average level of high tides at a given location.

Mixed-Use Development: A flexible approach to land use planning, combining a variety of uses, including housing, employment, commercial and open space uses on a single development site or on adjacent sites within a designated area in accordance with a unified design.

Mode Share: The percentage of travelers using a particular type of transportation or number of trips using said type.

Moderately Priced Dwelling Unit (MPDU): A dwelling unit that is offered for sale or rent to eligible persons or the Housing Department and sold or rented is offered for a maximum sales price based on number of bedrooms, to be determined by the Housing Department by calculating the amount of monthly income available for mortgage principal and interest and calculating a monthly payment for a 30-year term mortgage at market interest rate, ensuring that the monthly payment is less than or equal to the above calculation; the sales price of which shall be recalculated each year by the Housing Department by taking the maximum base prices and adjusting them according to changes in the consumer price index; is offered for a monthly rental price of 80% percent US HUD's fair market rents if the landlord pays all utilities (i.e. heat, water, sewer, electric, trash) or 65% of US HUD's fair market rents if the landlord does not pay all utilities; and the monthly rental price of which shall be recalculated each year by the Housing Department based on US HUD's recalculation of fair market rents.

Multimodal: A term referring to facilities designed for and used by more than one mode of transportation (e.g., walking, cycling, automobile, public transit).

Multimodal Transportation Network: The physical network of connections among various modes of transportation (e.g., walking, cycling, automobile, public transit).

N

National Wetlands Inventory (NWI): An inventory of wetlands as identified by the U.S. Fish & Wildlife Service, typically including wetlands that are 5 acres or larger in size; additional wetlands may exist.

Natural Heritage Area: Any communities of plants or animals that are considered to be among the best statewide examples of their kind and are designated by regulation by the Secretary of the Department of Natural Resources.

Neighborhood Character: See “Community Design.”

Net Buildable Area: The portion of a lot that may be developed after all district regulations and site development standards have been calculated, equal to the base site area less those portions of a lot set aside to meet the requirements for setbacks, open space, landscape surface area, pervious surface area, forest conservation requirements, resource protection, and any other area regulations that prohibit development set forth in the Town Code.

Net Zero: Resulting in neither a surplus nor a deficit of something specified, when gains and losses are added together.

Non-Point Source Pollution: Pollution generated by diffuse land use activities rather than from an identifiable or discrete facility. It is conveyed to waterways through natural processes, such as rainfall, storm runoff, or groundwater seepage rather than by deliberate discharge. Non-point source pollution generally is not corrected by end-of-pipe treatment, but rather by changes in land management practices.

Nonconforming Use: A use that the County allowed when it came into existence but that is no longer allowed under the law in effect in the zoning district in which the use is located.

Nuisance Flooding: In accordance with §3-1001 of the Natural Resource Article of the Maryland Annotated Code high tide flooding that causes a public inconvenience. Nuisance flooding is associated with high tides that flow back through the stormwater system, increasing/raising the level of groundwater, and overtopping the banks and edge of waterways. Nuisance flooding is an indicator of rising water levels in the Chesapeake Bay and its tributaries. Areas that were previously dry now flood during high tides because the water elevation is high enough to lap over the banks of waterways and to

enter stormwater systems through outfalls that were previously high enough to prevent backflow, while allowing outflow.

Nuisance Property: A condition or use of a property that interferes with neighbors' use or enjoyment of their property; endangers life, health, or safety; or is offensive to others.

Nutrient Load: The quantity of nutrients (e.g., nitrogen, phosphorus) entering an ecosystem during a given period.

O

On-Street Bicycle Facilities: Any street specifically designated or designed by the County or State for the use of bicycles or for shared use by bicycles and other transportation modes, including bike lanes, shared lane markings (i.e. sharrows), etc.

Open Space: Lands designated on a site plan or subdivision plat to be preserved in accordance with the provisions found in Town Code.

Overlay: An area where the Zoning Code specifies added requirements to superimpose on a base/underlying area, which may or may not alter the base/underlying area requirements.

P

Paratransit: Transportation services that supply individualized rides without fixed routes or timetables.

Parcel: An area of land with defined boundaries under unique ownership.

— **Noncontiguous:** A parcel included within a development plan that is not contiguous with the developed parcel; is to be designated as open space where only those uses specified in Town Code.

— **Receiving:** A parcel that is eligible to receive development rights from a transferor parcel, including a parcel in any zoning district, except the Agricultural (AG) or Noncritical Area Neighborhood Conservation (NC) Districts that is located within the geographic boundaries of a growth area; and a parcel in any Countryside (CS) or Neighborhood Conservation (NC) District located within the Chesapeake Bay Critical Area.

Park-and-Ride: Parking lots with public transport connections that allow commuters and other people to leave their vehicles and transfer to a bus, rail system (e.g., rapid transit, light rail, commuter rail), or carpool for the remainder of the journey. Owners leave their vehicles in the parking lot during the day and retrieve them upon return.

Planning Commission: An appointed body that advises the governing body on all matters related to the planning of growth and development, including the comprehensive plan, zoning, subdivision, and other issues (e.g., proposed rezoning, variances, special exceptions, development-related ordinances), generally with the authority to approve subdivision plats and other development plans. The Planning Commission oversees the drafting of the Comprehensive Plan and its amendments, holds public hearings, and advises the governing body on its adoption.

Policy: A specific statement of principle or intent that implies clear commitment by the Town or agency.

Population Growth: An increase in the number of people that live in a country, state, county, or municipality.

Preserved Lands: All lands subject to legal instruments or restrictions that prohibit development including, but not limited to, conservation easements, covenants, and deed restrictions made pursuant to the Maryland Environmental Trust (MET) or private nonprofit land trust; the Maryland Agricultural Land Preservation Foundation (MALPF); a TDR transfer instrument; a noncontiguous development; or a planned residential development.

Preservation Planning: A process that organizes preservation activities in a logical sequence including identification, evaluation, registration, and treatment of historic properties.

Priority Funding Area (PFA): Existing communities and places where local governments want State investment to support future growth. In accordance with the 1997 Priority Funding Areas Act, the State directed funding for projects that support growth in PFAs, which are areas identified by the Town and designated by the State where the state, town, and municipalities want to target their efforts to encourage and support economic development and new growth.

Priority Preservation Area (PPA): Areas containing productive agricultural or forested soils, areas capable of supporting profitable agricultural and forestry enterprises where productive soils are lacking, and areas governed by local policies that stabilize the agricultural and forested land base so that development does not convert or compromise agricultural or forest resources.

Projection: Forecasts of future conditions, based on existing conditions, trends, data, expected events, and local policies.

Public/Private Partnership: A cooperative arrangement between two or more public and private sector entities, typically of a long-term nature, involving government(s) and business(es) that work together to complete a project or to provide services to the population.

Public Service: A service intended to serve all members of a community (e.g., fire, police, emergency medical services).

Q

Quality of Life: The degree to which a community or an individual perceives the ability to function physically, emotionally, and socially, which includes all aspects of community life that have a direct influence on the physical and mental health of its members.

R

Recreational Uses:

— **Outdoor:** Areas of active recreational activities including, but not limited to, jogging, cycling, tot-lots, playfields, playgrounds, outdoor swimming pools, tennis courts, and golf courses.

— **Passive:** Recreational uses including, but not limited to, arboretums, areas of hiking, nature areas, and wildlife sanctuaries.

Redevelopment: New construction on a site that has pre-existing uses or renovation of existing uses on a site.

Redistricting: The process of changing school attendance zones within a school district.

Reforestation: The natural or intentional restocking of existing depleted forests and woodlands, usually occurring through deforestation.

Rehabilitation: The preservation or improvement of substandard housing or commercial buildings.

Residential Use: Any use approved by the Town or a municipality for existing or proposed dwelling units, including but not limited to single-family residential dwellings, single-wide manufactured homes, single-family clusters, manufactured home communities, commercial apartments, multifamily units, and first floor apartments.

Resilience: The capacity of individuals, communities, institutions, businesses, and systems to survive, adapt, and grow independent of the chronic stresses (e.g., high unemployment, poor or overtaxed infrastructure, water shortages) and acute shocks (e.g., floods, disease outbreaks, terrorist attacks) they experience. Resilience is often framed in terms of anticipated and experienced shocks related to climate change.

Resource Conservation Area (RCA): An area characterized by nature-dominated environments (i.e. wetlands, forests, abandoned fields), resource-utilization activities (i.e. agriculture, forestry, fisheries activities, aquaculture), and where density is less than one dwelling unit per five acres or the dominant land use is agriculture, wetland, forest, barren land, surface water, or open space.

Revitalization: The imparting of new economic and community life in an existing neighborhood, area, or business district while at the same time preserving the original building stock and historic character.

Rezoning: Changing the zoning classification assigned to an individual property.

— **Comprehensive:** During this process, the Board of Commissioners review and update all the zoning maps for a designated area according to the current Future Land Use Map.

— **Map Amendment:** The method where an individual may request that a property be reclassified to correct any mistakes made by the Board of Commissioners during the last comprehensive process or to recognize a change in the character of the neighborhood that would necessitate a change in the zoning.

Riparian Habitat: A habitat that is strongly influenced by water and that occurs adjacent to streams, shorelines, and wetlands.

Rural Legacy Areas: Areas established through Maryland's Rural Legacy Program for the purpose of establishing greenbelts of forests and farms around rural communities to preserve their cultural heritage and sense of place; preserving critical habitat for native plant and wildlife species; supporting natural resource economies (e.g., farming, forestry, tourism, outdoor recreation); and protecting riparian forests, wetlands, and greenways to buffer the Chesapeake Bay and its tributaries from pollution run-off.

S

Safe: Free from danger and hazards that may cause accidents or disease.

Saltwater Intrusion: The movement of saline water into freshwater aquifers, which can lead to degradation of groundwater (e.g., drinking water) and other consequences. Saltwater intrusion may occur naturally, be caused by human activities (e.g., groundwater pumping from coastal freshwater wells), or caused by sea level rise. Extreme events (e.g., hurricane storm surges) can worsen the intrusion.

Sea Level Rise (SLR): The increase in the level of the world's oceans, primarily driven by the expansion of seawater as a result of higher temperatures and the added water from melting ice sheets.

Sensitive Areas: Streams and their buffers, floodplains, habitats of threatened and endangered species, steep slopes, agricultural or forest land intended for resource protection or conservation, and tidal and nontidal wetlands.

Sensitive Species Project Review Areas (SSPRA): The general locations of documented rare, threatened, and endangered species as created and updated by staff of the Wildlife and Heritage Service.

Setback: A minimum distance between a lot line and a structure.

Shared Use Path: Typically, a paved off-street trail that provides a high level of safety and comfort for pedestrians and bicyclists of all ages and abilities.

Silviculture: The cultivation of forest trees.

Smart Growth: A set of planning principles that can blend and meld with unique local and regional conditions to achieve a better development pattern. It is an approach to achieving communities that are socially, economically, and environmentally sustainable. Smart Growth provides choices—in

housing, transportation, jobs, and amenities—using comprehensive planning to guide, design, develop, manage, revitalize, and build inclusive communities and regions. It also advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices.

State-Rated Capacity (SRC): The maximum number of students that a facility can accommodate without significantly hampering delivery of the educational program.

Steep Slopes: Slopes of 15% grade or higher.

Stormwater: Water that originates from a precipitation event.

Stormwater Management: A system of vegetative and structural measures that control the increased volume and rate of surface runoff caused by human-made changes to the land or that reduce or eliminate pollutants that surface runoff might otherwise carry.

Strategy: A specific action by Town government to implement plan policies (e.g., adoption of a new ordinance, implementation of a new program).

Streetscape: The environment of the street right-of-way as defined by adjacent private and public buildings, pavement, street lighting, and furniture and the use of the right-of-way.

Subdivision: Any division or redivision of a tract, parcel, or lot of land into two or more parts by means of mapping, platting, conveyance, change, or rearrangement of boundaries. All subdivisions are also developments.

— **Administrative:** Adjustment, movement, or elimination of a common property line between two or more existing lots of record as authorized by the *Town Zoning & Subdivision Ordinance*.

— **Cluster:** A residential subdivision in which single-family residential dwelling units are concentrated in a discrete area of the existing lot, creating and protecting significant open space in accordance with the district regulations found in the *Town Zoning & Subdivision Regulations*.

— **Large-Lot:** A residential subdivision where single-family residential lots are of sufficient

size such that on-site lands are protected and the character of the entire community is preserved in accordance with the regulations set forth in the Town Code.

— **Major:** Any subdivision other than an administrative or minor subdivision.

— **Minor:** The subdivision of land into no more than seven lots, including the creation of any required easements or rights-of-way.

Subwatershed: Any of several parts of a watershed that drain to a specific location.

Surface Water: Water found on top of the Earth's surface (e.g., rivers, creeks, wetlands).

Sustainability: The maintenance or enhancement of economic opportunities and community well-being, occurring while protecting and restoring the natural environment on which people and economies depend, to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable Community: A community whose prospects for long-term vitality are good with consideration of characteristics (e.g., housing opportunities and choices; walkability within towns and planned residential neighborhoods; community and stakeholder collaboration; distinctive, attractive communities and neighborhoods with a strong sense of place; predictable, fair, and cost-effective development decisions; mix of land uses; preservation of open space, neighborhoods, architecture, historic/cultural resources, and environmental areas; variety of transportation choices; design standards for development and public space) and consisting of strong, attractive, and economically thriving neighborhoods.

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Considerations often include environment, equity, and economy (also known as the triple bottom line).

Sustainable Smart Growth Management Strategy: The Town strategy to create sustainability through preservation and conservation of agricultural land and natural and cultural resources while managing growth to reduce sprawl by directing growth in and around existing communities and planned development areas, promoting economic development and protecting sensitive natural

resources, while continuing to reaffirm the Town's vision of maintaining a quintessential rural community.

T

Targeted Ecological Areas: Areas of lands and watersheds with high ecological value, identified as conservation priorities by the Maryland Department of Natural Resources (DNR) using a variety of methods developed by agency ecologists. These lands include large blocks of forests and wetlands, rare species habitats, aquatic biodiversity hotspots, and areas important for protecting water quality. (Also known as Greenprint Area.)

Total Maximum Daily Load (TMDL): A regulatory term in the U.S. Clean Water Act, describing a plan for restoring impaired waters that establishes the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards (WQS). TMDLs are a tool for implementing State water quality standards, based on the relationship between pollution sources and instream water quality conditions. A TMDL addresses a single-pollutant or stressor for each waterbody and is the sum of the individual waste load allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources and natural background, and a margin of safety (MOS), which can be expressed in terms of mass per time, toxicity, or other appropriate measures that relate to a State's water quality standard.

Traffic: Pedestrians, ridden or herded animals, vehicles, streetcars, buses, and other conveyances, either singly or together, that use roads for purposes of travel.

Traffic Analysis Zone (TAZ): An area delineated by state and/or local transportation officials for tabulating traffic-related data, especially commuting statistics.

Traffic Congestion: A condition involving slower speeds and longer trip times.

Transfer of Development Rights: The transfer of development rights from a transferor parcel to a receiving parcel by an instrument of transfer that includes any intermediate transfers to or among transferees.

Transferable Development Right (TDR): A development right transferred to a receiving parcel, either by deed, easement, or other legal instrument.

— **Transferee:** A person to whom development rights are transferred and all persons who have any lien, security interest, or other interest with respect to development rights held by a transferee.

— **Transferor:** A person who transfers development rights and all persons who have any lien, security interest, or other interest with respect to development rights held by a transferor.

U

Unemployed Persons: All persons who had no employment during the reference week, were available for work (except for temporary illness), and had made specific efforts to find employment some time during the 4-week period ending with the reference week. Persons who were waiting to be recalled to a job from which they had been laid off need not have been looking for work to be classified as unemployed.

Unemployment Rate: The ratio of unemployed to the civilian labor force expressed as a percent.

Urban Design: The process of giving form, in terms of aesthetics and function, to the arrangement of buildings on a specific site, in a neighborhood, or throughout a community, which addresses the location, mass, and design of various components of the environment and combines elements of planning, architecture, and landscaping.

V

Vehicle Miles Traveled (VMT): A measure used to estimate automobile use on a daily or annual basis, incorporating the number of vehicle trips and the lengths of those trips, and expressing the total miles traveled by all vehicles on a given roadway or roadway network.

Variance: A modification of density, bulk, dimensional, or area requirements in the *Zoning Ordinance* that is not contrary to the public interest and where, because of the property's particular conditions that are not caused by any action taken by the applicant, a literal enforcement of the *Zoning Ordinance* would result in unnecessary hardship or practical difficulty.

Vision: A statement of philosophy and basic community values and aspirations for the future of the Town that sets the overall tone for the goals, policies, and strategies in the plan.

Viticulture: The study or science of grapes and their culture.

W

Walkable: A measure of how safe and attractive an area is to people of all ages, abilities, ethnicities, and incomes to walk for transportation, wellness, and fun. Walkable areas typically provide pedestrian connectivity between neighborhoods, shopping centers, schools, and other local destinations.

Waste Management: The activities and actions required to manage solid waste from its inception to its final disposal, including the collection, transport, treatment, and disposal of waste, together with monitoring and regulation of the waste management process.

Wastewater: Water that has been used for washing, flushing, manufacturing, etc. and so contains waste products (i.e. sewage).

Water Antidegradation Policy: Maryland's antidegradation policy ensures that water quality supports designated uses. U.S. EPA regulations provide for three tiers of protection:

— **Tier 1 Waters:** Tier 1 mandates that water uses and the level of water quality necessary to protect the uses designated by the Clean Water Act are maintained and protected. Tier 1 specifies minimum standards (i.e. support of balanced indigenous populations and contact recreation), often referred to as "fishable-swimmable."

— **Tier 2 Waters:** Tier 2 specifies existing high-quality water that is better than the minimum needed to support fishable-swimmable uses. While water quality can be slightly impacted, the State Antidegradation Policy identifies procedures that must be followed before an impact to Tier 2 water quality can be allowed. Tier 2 protects water that is better than the minimum specified for that designated use.

— **Tier 3 Waters:** Tier 3 governs high-quality waters considered outstanding national resources (e.g., waters of national and state parks and wildlife refuges) or waters of

exceptional recreational or ecological significance. Tier 3 guidelines prevent any action that would threaten the quality of these waters, with the possible exception of short-term activities (e.g., road construction, park improvements) that would have no lasting impacts. Maryland is developing Tier 3 protection for these Outstanding National Resource Waters (ONRW).

Water Quality: The physical, biological, chemical, and aesthetic characteristics of water.

Watershed: The area within a topographic divide above a specified point on a stream that drains into that stream.

Wetland: A lowland area (e.g., marsh), saturated with moisture all or part of the year. Standards for defining wetland boundaries consider hydrology, vegetation, and soil conditions.

— **Nontidal:** Those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and which under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (i.e. hydrophytic vegetation); and are regulated under Title 16 of the Environment Article, Annotated Code of Maryland.

— **Private:** Wetlands transferred by the State by a valid grant, lease, or patent confirmed by Article 5 of the Declaration of Rights of the Constitution to the extent of the interest transferred.

— **Statewide Priority:** Wetlands identified by MDE based on *Prioritizing Sites for Wetland Restoration, Mitigation, and Preservation in Maryland*.

— **Tidal:** State wetlands defined as any land under the navigable waters of the State below the mean high water line, affected by the regular rise and fall of tide, and private wetlands defined as any land not considered State wetlands bordering or lying beneath tidal waters that is subject to regular or periodic tidal action (i.e. the rise and fall of the sea produced by the attraction of the sun and moon uninfluenced by the wind or any other circumstance) and supports aquatic growth.

Workforce Development: Various programs and initiatives aimed at improving the job skills of the Town's residents and helping residents find and keep quality jobs.

Z

Zoning: The reservation of an individual property, section, or areas of a jurisdiction for a specific land use or particular type of residential, commercial, or industrial structure, enterprise, or activity. The areas reserved for specific land uses or building types are known as zones. The zoning of a municipality or Town is addressed in a zoning ordinance that lists the zones and the types of development allowed in each, plus the conditions under which they are allowed. The ordinance includes the zoning maps, which depict each zone within a jurisdiction, and all landowners, and the zoning of land, along with the zoning ordinance and zoning map, and amendments thereto, must be officially enacted by the local governing body.

— **Rezoning:** The change of a property's zoning classification (e.g., rezoning from residential to commercial development, a change in density from low-density single-family development to high-density apartment development. Rezonings may be petitioned by a local government agency or entity, the property owner, or another party and must be enacted by the local governing body, only after they follow certain administrative procedures (e.g., hearings, advance notification). Unless a comprehensive rezoning is planned, parcels

may only be rezoned because a substantial change has occurred in the neighborhood or a mistake was made during the last comprehensive plan cycle.

— **Upzoning:** A rezoning from a less intense use (e.g., agriculture or open space) to a more intense use (e.g., residential or commercial).

— **Downzoning:** A rezoning of land from a more intense use (e.g., commercial or high-density apartment residential) to a less intense use (e.g., open space or low density single-family residential), or a rezoning of land from a more dense classification (e.g., one-acre residential lot zoning) to a less dense classification (e.g., zoning that allows only 20- or 25-acre residential lots).

— **Comprehensive Rezoning:** This rezoning is usually initiated by the local jurisdiction and often follows an update of a comprehensive plan, where the local jurisdiction ensures that zoning is made consistent with the new plan by thoroughly examining its land use and development activities and trends. Once that analysis is complete, the local governing body can rezone one or more properties. Because it has analyzed all land use and development issues, it can rezone without having to prove that a substantial change has occurred in the neighborhood or that a mistake was made during the last comprehensive plan cycle.

APPENDIX I – Design Guidelines

APPENDIX I – Design Guidelines

Design Guidelines for New and Remodeling Construction Within the Commercial and Central Business District



This section provides general guidance for the architectural styles for the Commercial Zone. These structures should comport with the character and integrity of the surrounding area and embody the historical nature of the Commercial Zone. The construction should recall the architecture styles of Federalist, Georgian, Victorian and Greek revival periods of architecture. These guidelines should be read in their entirety for the overall vision of the architecture to be built in the Commercial Zone.

Consideration should be given to the height alignment of existing and future structures, and the building skyline should be within 10 % of the height of the neighboring buildings. The scale should be considered as the structure size relates to surrounding properties, the size of the appurtenances on the structure, and the materials chosen for the structure. This may require relational concept drawing to ascertain if doors, windows and outdoor fixtures aesthetically co-exist with adjoining buildings.

Building frontages currently vary within the zone. If new structures are created, the Town should encourage owners to maximize the frontage usage of the building lots with the use of the structures.

The samples of architecture provided in these guidelines are typical of the front elevation, the width, and the height of the existing structures within the Commercial Zone. The proportion of the front façade should follow the standards recognized in previously referenced architectural types.

The portions within the building façade should be complimentary to the spacing of the door and window openings. This will be dependent upon the style of the structure chosen but should be harmonious with adjacent buildings.



The spacing along the frontage of the building area on the lot should be uniform, with minimal staggering of the building frontages so as to create a contiguous village appearance that is friendly to pedestrian traffic. This will require minimal setback from the front building restriction line.

Side building lots should be situated to promote parking at the rear of the building. Large side lot parking areas break up the visual aesthetic lines of the village appearance.

Front entrances should be situated to promote easy access through the use of doorways and porches.



Materials for the building exterior should be brick, wood siding and rough finished stucco. The colors that are seen on the exterior of the buildings are generally red brick, white siding, beige stucco and painted white brick.



The Town uses various architectural themes on its structures to represent a time period or style in which the building was constructed. Some of these themes are shown below.



Dentil details



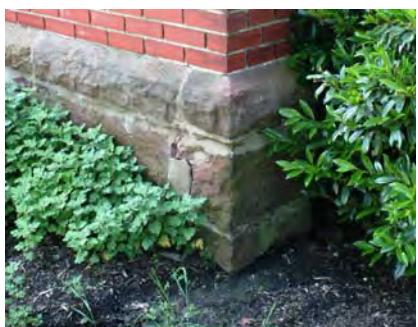
Jack arch framed by brick



Three and five light transoms



Chimney shapes



Stone foundations



Eyebrow, lancet windows and fan lights

Roof styles in the zone are below.



Pitched



Mansard



Hipped



Flat



Per adopted streetscape plans, the sidewalks should be a patterned red brick. The paving will add to the enhancement of the existing zone and place a perspective of place and time. This type of sidewalk paving will also delineate the zone from other sections of the Town.

If the properties are delineated by fencing, an appropriate style of fence should be chosen such as wrought iron or a standard picket fence. The height of the fence should not detract from the front of the building façade.



Planting and landscaping should be used to provide an open visual appearance to the building frontage and consider issues of line of site for pedestrian and vehicular traffic. The current streetscape plan specifies the additional plantings that are to take place in the public right-of-way.

Summary

Understanding the Town's architecture in the Commercial Zone helps the prospective developer understand the vision of the Planning Commission, the ideals of the elected officials, the aspirations of residents with regards to place and time, and future desires of the Town to meet an American Village Concept.



APPENDIX J – Heritage Montgomery Plan

Montgomery County Heritage Area Management Plan



Prepared for the
**Montgomery County Heritage Area
Advisory Committee**

Prepared by
Mary Means & Associates, Inc.
with **Economics Research Associates, Inc.**
and **Mahan Rykiel Associates**

November 2002

Boundaries & Location

Poolesville is at the edge of the 78,000-acre Agricultural Reserve in the western section of the county. Most visitors can access the area by automobile via I-270 and a pleasant country drive along Route 109. Visitors from West Virginia and Virginia's western suburbs may choose to arrive via White's Ferry, the last remaining operational ferry on the Potomac, entering Poolesville from the west on White's Ferry Road/Route 107. No foot or equestrian trails currently lead to Poolesville, but an existing on-road, scenic bike route runs into town from the Agricultural Reserve.

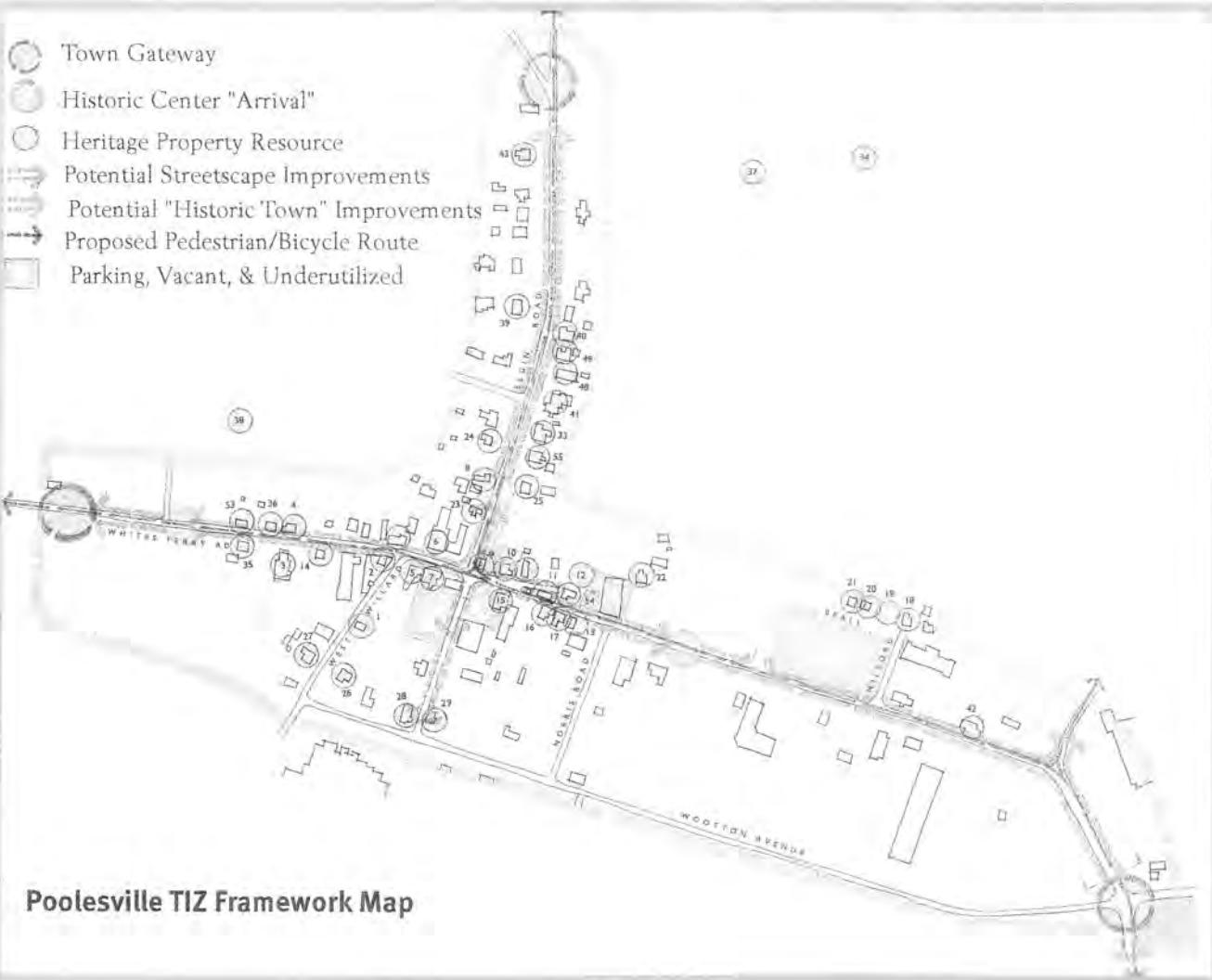
The approximate proposed boundaries for the Poolesville TIZ are shown on the map below.¹⁰

Heritage

English, Dutch, and German families who moved north from the Tidewater region and south from Pennsylvania settled the Poolesville area in the 1740s. At the crossroads where the boundaries of four family plantations met, Poolesville was established in 1793 by John Poole, Jr., who built a store in the southern corner of his father's property. It was a strategic crossroads. One of the roads led from Edward's Ferry – at Goose Creek on the Potomac – to Frederick. The other led from Conran's Ferry – across the Potomac from Leesburg – to Hungerford Tavern (Montgomery Courthouse, Rockville).

The town quickly grew into a rural village with stores, taverns, a tailor shop, a wheelwright, and eventually, churches and a school. Prosperity came to the town with the agricultural revolution that began in the 1820s. Shipping by road cost twenty times per wagonload more than the cost of shipping

- Town Gateway
- Historic Center "Arrival"
- Heritage Property Resource
- Potential Streetscape Improvements
- Potential "Historic Town" Improvements
- Proposed Pedestrian/Bicycle Route
- Parking, Vacant, & Underutilized



by boat. Thus, the arrival of the C&O Canal, begun in 1828 in Georgetown and completed in Cumberland in the 1850s, added to the transportation opportunities for the town; this established Poolesville as the commercial center of the area.

By 1850, the Federal Census of Poolesville listed 51 buildings (the most it was to have until after World War II) and occupations that included blacksmiths, cabinetmakers, tailors, merchants, physicians, bankers, a teacher, and wheelwrights.¹¹ Coal, grain, farm equipment, produce, stone, and sundries traveled back and forth in canal boats until early in the 20th century. Poolesville served as a transportation hub although it was not close to the railroad. After the rail line was built in 1871, the local hotel owner would meet every train in an omnibus to transport the traveling salesmen back to Poolesville and rent them a horse and buggy to make their rounds of surrounding villages.

Because of its proximity to the Potomac River and to the Confederacy in Virginia, the town and surrounding farms saw frequent military activity from 1861 through 1865. More than 12,000 Union troops were stationed there. Although Maryland was in the Union, the troops were treated as an occupation army since the sympathies of Poolesville residents were more southern than northern. Many of the area's men crossed the river to fight for the Confederacy. The town's Methodist congregation broke apart because members' loyalties were divided between north and south. The town and surrounding area were left intact but impoverished by the war. Dairy farming and the railroad brought prosperity in the decades to follow until the Great Depression slowed the town to a sleepy country village.

Town Character

Despite three major fires – in 1923, 1935, and 1953¹² – that destroyed some central buildings and left gaps in the heart of town, Poolesville's village center retains a few 18th century structures and a significant amount of 19th through early 20th century character, reminding visitors of a time when the town was surrounded by many highly productive farms. There is a diversity of architectural styles in town, including Victorian, Federal, log, farmhouse, and even neoclassical. Most residential buildings are situated on spacious, treed lots. Buildings along MD 107/White's Ferry Road are set close to the road with smaller lots.

There are a significant number of historic properties in the Poolesville area. The town has been a National Register Historic District since 1975. It was designated for its architecture and for its role in Montgomery County's commercial, military, and transportation history. National Register listing offers protection only when projects receive federal funds.



*Poolesville contains a significant number of historic properties in and around town, the majority within a ten-minute drive of the village center. Each of these individually designated structures is afforded protection through the county's historic preservation programs. Furthermore, the 1996 *Town of Poolesville Master Plan* includes municipal design guidelines for new structures in the commercial district—plans for new or remodeled structures must address these sufficiently to receive approval by the town's Planning Board. These guidelines do not address site plan or build-to lines, but do offer protection to the historic architectural fabric of Poolesville.*

There are approximately 55 county-designated historic sites in and around town, the majority within a ten-minute drive of the village center. Each of these individually designated structures is afforded protection through the county's historic preservation programs. Furthermore, the 1996 *Town of Poolesville Master Plan* includes municipal design guidelines for new structures in the commercial district—plans for new or remodeled structures must address these sufficiently to receive approval by the town's Planning Board. These guidelines do not address site plan or build-to lines, but do offer protection to the historic architectural fabric of Poolesville.

On the east side of town, suburban-quality growth is increasing, representing a marked change from the traditional character of town and blurring the edges between village and countryside. To the north, west, and south, the Agricultural Reserve carries restrictions on development—one home per 25 acres—ensuring the protection of open space and rural character and creating a distinct transition between the village center and countryside in these directions.

Poolesville is well prepared to begin handling the modest increase in visitors likely to result from the heritage area initiative. There are some visitor

services already operating within town, including restaurants, a service station, a food store, some chain retail, and at least one historic site—the John Poole House, which is open to the public on a regular basis.



Poolesville already has some visitors to its place, including local and out-of-area tourists.

Interpretive Strategies

With thought and imagination, the interpretive framework can convey information about farming history from a larger perspective likely to engage more people. Possible questions to consider in framing interpretive activities include the following:

- What were farms like in this area 100 years ago?
- How had they changed by 1950?
- How has farming changed since 1950? Some of the technologies that prompted agricultural changes had their start in Montgomery County, the home of biotech and other innovations.
- How has our relationship with food production in the metropolitan area changed since 1950? This question offers a springboard into exploration of technology's dramatic effect on how food is raised and brought to market.
- How have changes in farming affected the way we live today? Possible story lines include:
 - Because fewer people make a living from farming, farmland is more and more often utilized for housing and commercial development.
 - Forward-thinking counties like Montgomery adopted land use policies to guide development in ways that conserve agricultural land and green space for public use.

- People are less in contact with the cycles of growing because we have year-round availability of foods grown in other climates.
- There has been an increase in organic and community-supported agriculture as consumers seek authenticity.

As the gateway to the Farming History Cluster, Poolesville offers an excellent opportunity for interpretation as an archetype of the Maryland/Mid-Atlantic agriculture village. Few other examples remain in this region. Engaging interpretive presentations in Poolesville would encourage visitors to park and walk the compact village center, ideally browsing in shops and eating a meal in the process. To facilitate understanding of the town's significance, a heritage trail could be developed, utilizing kiosks, panels, and walking tour brochures.

Where might the interpretive experience begin? In the town's center, the 1793 John Poole House/Store is owned and operated by Historic Medley, Inc., and is open Sunday afternoons from April 15 through November 15 and by appointment. Historic Medley is receptive to ideas for interpretation and programming, using the John Poole House and other properties the non-profit organization has bought and rehabilitated. On the ground floor of the John Poole House, the front room could be an appropriate location for an orientation exhibit on the farming history theme, broadened as suggested above. The house itself could be presented as not merely another 18th century house furnished with antiques, but as the home of an important and influential family in the region.

Urban Design & Preservation Strategies

Overall, Poolesville's compact form and geography offer a unique, walkable town area with numerous heritage resources for interpretation and economic benefit. Every effort should be made to reinforce the integrity of remaining historic resources while providing infill development, adaptive reuse, and preservation of public and private properties.¹³

Poolesville's 18th, 19th, and early 20th century village character and scale can be reinforced through rehabilitation of historic and contributing buildings, compatible infill development, and appropriate public spaces and streets. The design guidelines in the 1996 town plan serve as a strong starting point for guidance on new development and could be expanded to include the issues of site plan, build-to lines, and more. The village's traditional character is

formed by one-, two-, and three-story buildings built flush with the sidewalk or near the street. Conversely, the typical pattern of modern commercial development includes setting buildings back from the street and placing parking in front. This erodes and weakens the historic character of older, traditional towns. In Poolesville, the building on the southeast corner of Whites Ferry Road and West Willard Road is an example of this negative effect.

While Poolesville still feels like a traditional village, it is in danger of rapid homogenization unless new development is guided intentionally to reinforce scale and massing. There is a critical need to prevent further loss of historic fabric, for there are already several noticeable gaps and vacant lots. However, there are opportunities to strengthen the traditional village scale and character as these key locations are developed. To be compatible with this goal, new development in the village core needs to be two-story and sit at or near the property line. Parking should be located in the rear or, in some cases, to the side. Where parking has been placed in front, landscape screening can create a sense of enclosure.

Infill Development and Architecture

Poolesville has several vacant or underutilized sites (many used for parking) within the historic center. Carefully planned, compatible infill development there could complement existing land use types, building types, and development scale while strengthening the historic character of the town. Of particular importance are the sites at the intersection of Whites Ferry Road and West Willard Road. Two-story buildings with sympathetic materials, compatible architectural details, and



Historical buildings and new plan guidelines, Poolesville's village character (above) is at risk of erosion.

build-to lines at or near the edge of the lot would reduce the "missing teeth" look of the village core while also reinforcing the historic character of existing buildings.

Pedestrian/Streetscape

Streetscape is a key element to tying together the retail area, town edge, and historic village. There are several points at which the current walkway system is broken. Contiguous sidewalk connections should be made throughout the village center, not only for visitors to the town but also for local residents, who wish to have better access to their neighborhoods. Additionally, walk connections to off-street parking resources are needed; these should be clearly marked, safe, well lit, and readily accessible. The character of these walking areas can vary as there are transitions in and out of town.

Parking

Parking is one of the most influential factors in the development of historic towns. Parking can be carefully done to avoid creating major impacts on the character and visual qualities of the town. Several small, accessible, and carefully sited locations are preferable to large expanses of paved high-capacity lots. Placement of these lots is important; lots placed to the rear or behind buildings complements traditional communities better than lots placed to the front or side.

Placemaking: The Experience

Often, the most influential aspect of successful historic town planning is care and attention to details. Careful design guideline parameters should be placed on parking, development techniques, architecture, streetscape, signage, and lighting in a manner that reinforces the historic village in an authentic fashion:

- Historical elements, features, and open spaces should be preserved, maintained, and even recreated in some cases;
- Careful selection of low maintenance street furniture (lighting, benches, trash receptacles, etc.) reinforces historic character and timeframe; and
- Design parameters for elements such as banners, way finding signage, and business signage creates a "family" of information that is legible and unimposing on existing town character.

Development Strategies

Poolesville is a growing area, having added 1,200 residents in 400 households between 1990 and 2000. Given the area's strong residential real estate prices, new households seem to be upscale. Despite these factors, Poolesville has not emerged as much of a retail center, and there is no major retail center nearby. Presently, the town contains a modest IGA grocery store and a lower-end beer and wine shop; the nearest full-service supermarket is about five miles away in Germantown, and the nearest upscale wine shop is eight miles away in Gaithersburg.

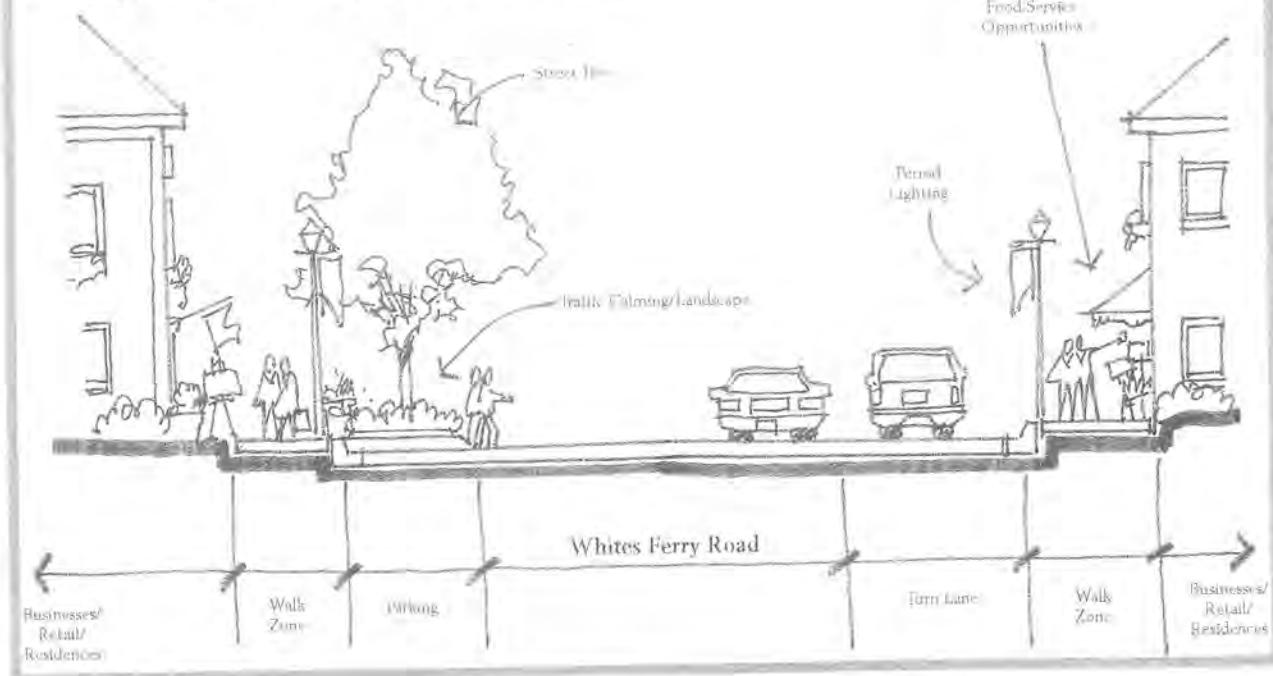
Demonstrated growth, rising income levels, and a lack of existing retail goods and services indicate a need for additional shopping opportunities in Poolesville. Demographics suggest a potential market for quality dining, a small gourmet food/wine shop, home furnishings/accessories, and galleries – all of which would be attractive to travelers as well as local residents. Further opportunities are likely to come about for uses that serve visitors. Other potential uses appropriate to the village center include senior/retirement housing, lodging (see below), and office space for professional services, such as law, accounting, dentistry, etc.¹⁴

One promising development concept is a small,

high-end inn of approximately eight to ten rooms with an upmarket restaurant. The Inn at Little Washington is an example of this type of development. There does not seem to be an appropriate available historic building for this use in the town's core area, so compatible new infill is recommended. One strong site possibility is the land presently occupied by the vacant convenience store next to the John Poole House, offering a view of green space and the John Poole complex. A substantial client base for this type of project could be generated by such activities as Potomac Polo Club's approximately 30 polo matches near town each June through October. Attendees at these matches are generally traveling from some distance and require overnight accommodations, which are scarce in this area.

Due to its prominent location, future development on the large L-shaped parcel (now used for parking) surrounding the Odd Fellows Hall will be critical. A new building can either enhance the village character or permanently erode what remains of its historical scale. The market suggests potential for a mixed-use development or a small office building. Contemporary development practices would likely lead to a new single-story building sited on the rear half of the lot with parking in front. The wide expanse of pavement and cars would further erode

Poolesville TIZ Conceptual Streetscape Improvements



the sense of containment one experiences when buildings are located flush with the sidewalk, as is the case at Bassett's. A more context-sensitive approach on this critical parcel would be a two-story building, placed flush with the sidewalk and aligned with the Jamison realty office building. Ample parking could be placed in the rear with accessibility via a side drive. A new single-story building would present fewer ADA issues, but the additional cost of a two-story building could be offset by additional income from residential or commercial rents. Furthermore, attractive tax incentives are available in TIZs for non-historic buildings whose design and use contribute to the heritage area.

One benefit of the Maryland Heritage Area Program is a tax credit expansion, allowing properties within the TIZs that are eligible for National Register of Historic Places (NRHP) listing to receive the Heritage Preservation Tax Credit Program, administered by the Maryland Historical Trust. This program provides Maryland income tax credits equal to 20% of the qualified capital costs expended in the rehabilitation of a "certified heritage structure." The credit can be used on owner-occupied residential property or income producing property, but the rehabilitation must conform with the Secretary of the Interior's *Standards for Rehabilitation* and must be certified by the Maryland Historical Trust.

Normally, determining which properties are NRHP eligible would mean that survey of the TIZ, meant

to locate and approve NRHP eligible properties, would be warranted. However, the primary TIZ area in Poolesville is almost entirely within an already-designated National Register Historic District. Tax incentives have been available there for some time but could perhaps be publicized better and more strategically. The MCHA could promote the benefits of rehabilitating a historic building for commercial use as a way to accomplish sensitive development in the village core, and the benefits of restoration for private use may encourage residents to contribute to the historic character of their town.

A preliminary (incomplete) list of potentially NRHP eligible properties in or near Poolesville would include properties listed in the Maryland Commission on African American History and Culture *Inventory of African American Historical and Cultural Resources* (available at http://www.sailor.lib.md.us/docs/af_am/montgoco.html) that are not included in the NRHP or locally designated.¹⁵

Furthermore, rehabilitation of non-historic structures within or (in some cases) outside the TIZs may be eligible for the tax credits. Such a project must meet a set of criteria proving its benefit to the heritage area.¹⁶

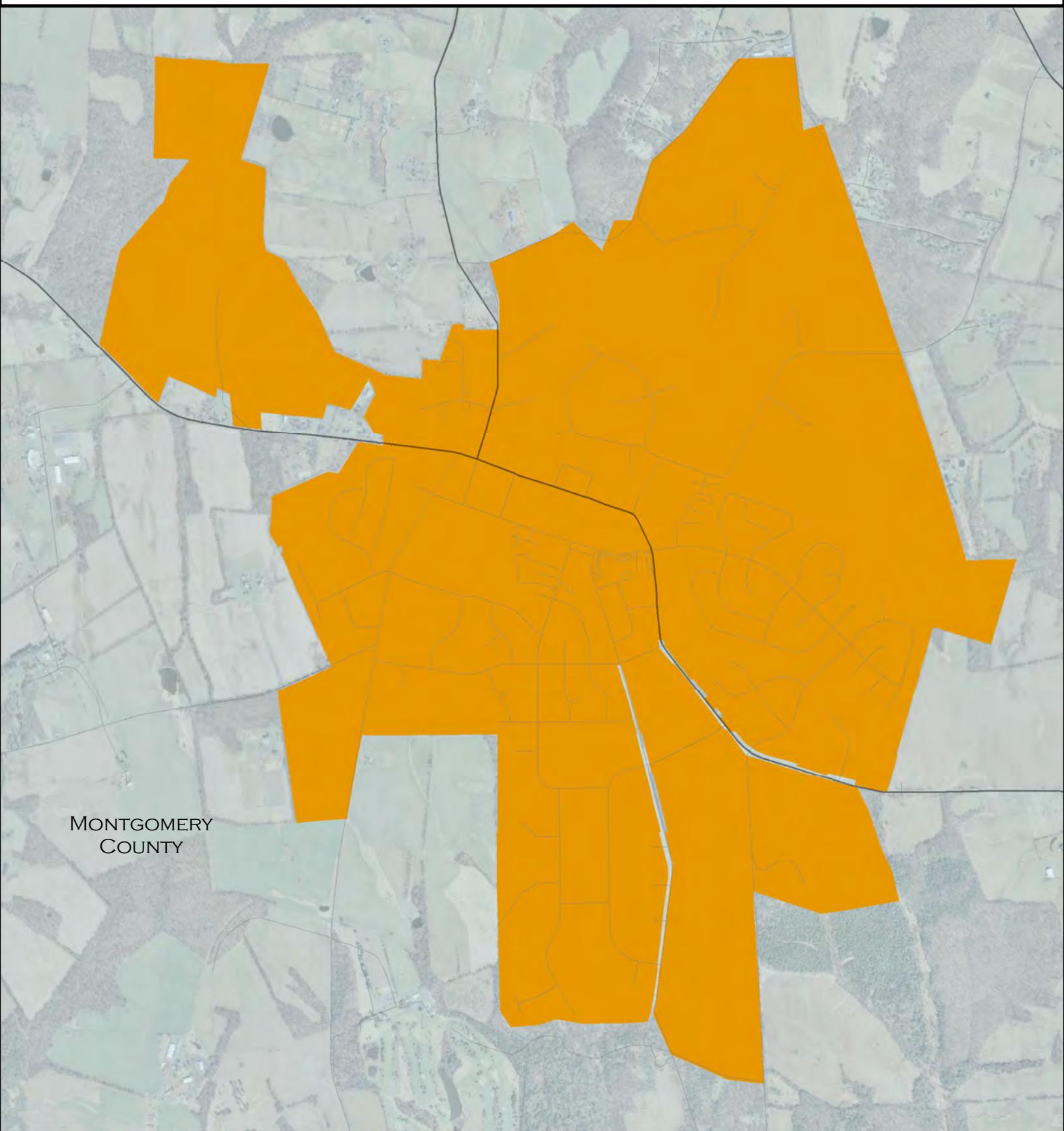


Development on the site adjacent to the Odd Fellows Hall (left, above; view on the right) will have a major influence on the character of the town's main corner. In particular, it will be important to keep parking in the rear of new developments from crowding the historic building.



APPENDIX K – Growth Tier Map

Poolesville Adopted Growth Tiers



Poolesville Adopted Growth Tiers

Tier 1

0 0.25 0.5 Miles

N

Poolesville Adopted Map 2/20/2013
Map Produced by MDP for illustrative purposes only.
GIS Shapefile Data Provided to MDP
by the Municipality of Poolesville.



The Town of Poolesville

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February 20, 2013

Mr. Richard Josephson, Director
Planning Services
Maryland Department of Planning
301 W. Preston Street, Suite 1101
Baltimore, MD 21201-2365

Re: Town of Poolesville Adopted Sewer Tier Map

Dear Mr. Josephson:

The Town of Poolesville is submitting the attached sewer tier map in compliance with the Sustainable Growth and Agricultural Preservation Act of 2012 (Senate Bill 236).

The sewer tier map was administratively adopted following input from the Poolesville Planning Commission, Poolesville Town Commissioners, Montgomery County Planning Office and Maryland Department of Planning. It is consistent with the 2010 Poolesville and Montgomery County Master Water Sewer Plan.

Please call me at 301-428-8927 if you have any questions.

Sincerely,



Wade Yost, Town Manager

RECEIVED

MAR 1 2013

PLANNING SERVICES