

Chapter 4

Environmental Resources

The sustainability of a community is directly tied to the health of its environmental resources. Safe drinking water, clean air, and fertile, stable soils are basic necessities to human existence; however, their availability in the future is not certain. To ensure that our communities remain dynamic and productive requires a comprehensive understanding of its environmental resources as a basic consideration in its long range planning efforts.

The following chapter is arranged in five sections; the first presents the goals for environmental resource planning in Woodsboro. This is followed by a description of the Sensitive Areas Element requirement from the State Planning Act. The third section describes Woodsboro's physical environment and its implications for future land use. Then the area's diverse ecological environment is presented. Finally, the chapter concludes with a section on land preservation efforts, covering agricultural and related land protection in and around Woodsboro.

Environmental Resource Goals

- Demonstrate conservation and sustainable use of environmental resources.
- Continue to protect ecologically sensitive areas and wellhead protection areas.

Sensitive Areas Protection

The State's Planning Act of 1992 established a requirement for comprehensive plans to include a Sensitive Areas Element. Now referenced in Section 1.00(j) of Article 66B, the sensitive areas element should contain a jurisdiction's goals, policies, and standards for protecting areas from the adverse effects of development. Sensitive areas that should be protected include:

- Streams, wetlands and their buffers
- 100-year floodplains
- Habitats of threatened and endangered species
- Steep slopes
- Agricultural and forest lands intended for resource protection or conservation

Frederick County's Comprehensive Plan (1998) and the Walkersville Region Plan (2006) address the protection of an additional six sensitive areas elements. They include: the Monocacy Scenic River; prime agricultural soils outside of planned community growth boundaries; groundwater resources, particularly with regard to wellhead protection areas; wetlands; limestone conglomerate/carbonate rock areas; and historic and archeological resources. These

designations provide a framework for the long-term planning and protection of environmental and cultural resources throughout the County. The Sensitive Areas Element requirement is met with this chapter.

Physical Environment

An analysis of Woodsboro’s physical geography provides valuable information on the potential of the land for different uses. These characteristics are permanent and generally cannot be altered except with great difficulty and expense. The physical environment to be described in this section includes the following elements: topography and steep slopes; geology and mineral resources; soils; surface water resources; and groundwater.

Topography and Steep Slopes

The Town of Woodsboro is located at the western edge of the Piedmont Plateau Province. The Piedmont, which literally means “to the feet of the mountains”, is the plateau region of the eastern United States situated between the Atlantic Coastal Plain and the eastern mountain ranges.¹ Catocin Mountain, which runs parallel to US Route 15 west of Woodsboro, forms the eastern boundary of the Blue Ridge Province. Generally, the Piedmont “is characterized by relatively low, rolling hills with heights above sea level between 200 feet (50 m) and 800 feet to 1000 feet (250 m to 300 m).”

Woodsboro, situated at the northern tip of the Glade Valley, lies between two ridgelines in a narrow continuation of the valley. Laurel Hill, a north-south ridgeline, defines the eastern boundary and an unnamed western ridge, also with a north-south alignment, forms the western extent of the valley and is the corporate boundary of the Town on the west side. Slopes within the corporate limits are as much as 15-20% along the west ridge, limiting the land capabilities for development or streets.

The topography of an area dictates the appropriate density, direction, and type of future land uses on a site. Steep slopes, in particular, pose a challenge or barrier to commercial and industrial development, which typically requires a level landscape for the construction of large buildings, parking lots and loading areas. On the other hand, a residential project may be able to use slope to its advantage. A smaller building footprint coupled with creative design could result in a project that is aesthetically pleasing and complementary to the environment.

Currently, the Town regulates steep slope activity by requiring that topography be mapped on preliminary plans. The County, which performs limited development review functions and issues building permits for Woodsboro, prohibits structures from being located in areas with slopes of 25% or greater.

Geology and Mineral Resources

According to the Maryland Geological Survey (2007), the Piedmont is composed of a

¹ <http://www.wikipedia.org>, 2007.

complex geology including hard, crystalline igneous and metamorphic rocks.² The Glade Valley consists predominantly of Frederick limestone (a thin bedded, dark blue limestone with dark, irregular clay partings) and Grove limestone (a thick bedded, fine grained, light to dark gray limestone). Grove Limestone underlies the western side of Woodsboro and Frederick Limestone underlies the east. An intrusive dike, a body of igneous rock crystallized from molten magma, runs in a north-south direction through the center of town. The composition of the north-south ridge just east of Woodsboro is a mixture of Antietam quartzite and shale.³

Mineral extraction is an economic activity dependent on location of the resource. Rock type and structure influences landforms and surface drainage patterns as well as groundwater availability. For these reasons and others, geologic information is fundamental to the selection of the best use that can be made of a land area.

The quality of both the Grove and Frederick limestone is very high. Both are quarried locally. Two companies produce industrial and agricultural lime, crushed stone, and lightweight aggregate in the Woodsboro vicinity.

Soils

The predominant formation in the Woodsboro area, Grove limestone, produces relatively shallow, fertile soils with corresponding bedrock that is extremely stable and solid. Frederick limestone produces deeper soils with less bedrock stability due to a greater possibility of cavities occurring within the bedrock. Historic reports of well driller logs in and near Woodsboro confirmed that soil depth to the Grove limestone bedrock is very shallow. The reports from the original Woodsboro Town Well in 1953 describe a soil depth of four (4) feet.

Generally, development in Woodsboro is non-restricted by soil type. Areas within the Israel Creek floodplain exhibit floodplain or wet soils.

Surface Water Resources

The Monocacy River, located just west of the Town of Woodsboro, is the largest tributary to the Potomac River, which ultimately meets the Chesapeake Bay. The river's headwater streams are Marsh Creek and Rock Creek, which converge at the Mason-Dixon Line. Other surface water resources in Woodsboro are Israel Creek, which runs north/south just east of MD Route 194 through the Woodsboro Community Park. The headwaters of Glade Creek are located west of MD Route 194 in the area of the Glade Valley Golf Club. Both Israel and Glade Creek drain directly in to the Monocacy River.

In the Woodsboro area, river and stream banks are not steep and water is relatively slow flowing over flat land. Surface storm drainage flows south and southwest to the Monocacy. Presently, no surface water is used for public water supply or storage. The potential for public use exists at Israel Creek because of its proximity to Town and its size. A map detailing stream

² <http://www.mgs.md.gov/esic/brochures/mdgeology.html>, 2007.

³ State of Maryland. The Physical Features of Carroll and Frederick Counties. Department of Geology, Mines and Water Resources. 1946.

corridors and floodplains is located in the Ecological Environment section.

Groundwater Resources

Groundwater is found below the surface of the land, moving through rocks and soil toward discharge in a stream, spring or other water body. The quality and quantity of groundwater are of significant concern in areas where surface water is not available for public supply. In these areas, the potential for development may be limited, given the availability of groundwater resources.

The Woodsboro area boasts productive limestone aquifers, classified in the U.S. Geological Society's Hydrologic Unit I. Average well yields in the Frederick and Grove Limestone areas (and other rock formations in Hydrologic Unit I) are expected to be 25 gallons per minute with a 74% chance of obtaining a yield of 10 gallons per minute or more.

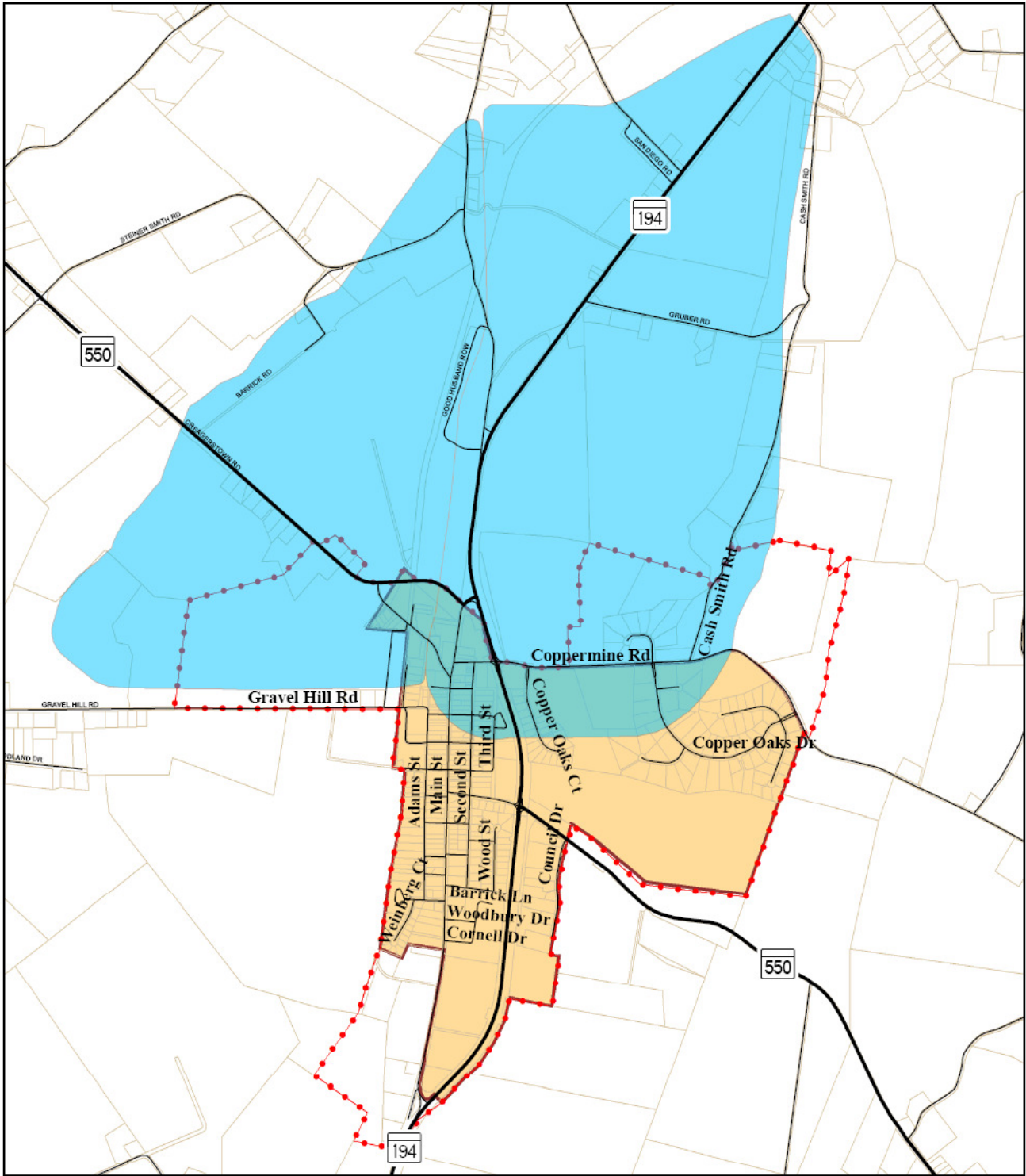
The town relies on wells for its community water system. The town's Well No. 1 obtains water from Grove Limestone, but all remaining wells draw from Frederick limestone. Despite their high productivity, both the Frederick and Grove formations are water table carbonate rock aquifers, which are susceptible to contamination. The Maryland Department of the Environment (MDE) performed a Source Water Assessment (SWA) in 1997 to establish a Wellhead Protection Area around the town's well sites. A Wellhead Protection Area (WPA) is the area around the town's wells in which any contaminant present could ultimately reach the well.

The results of their study produced a WPA and identified potential sources and types of contamination for each well. The assessment focused on potential contamination issues and did not address groundwater recharge. Examples of potential contamination sources were quarries, underground storage tanks, and the Town's Wastewater Treatment Plant. The assessment also listed recommendations to the town to ensure future water quality and quantity. Examples of recommendations include: form a local planning team; public awareness and outreach; develop a local wellhead protection ordinance; monitoring; and purchase/preserve land around the town's wells.

Zone of Dewatering Influence

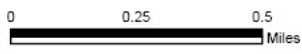
The Maryland Department of the Environment (MDE) established a zone of dewatering influence around the Barrick and LeGore quarries north of the Town of Woodsboro. The extent of the zone of dewatering influence is based on topography, watershed boundaries, geologic factors, including the occurrence of natural fractures, lineaments, igneous dikes, and changes in rock type and variations in the water bearing characteristics of the underlying geology.

Mining operations are required to repair sinkholes within the zone if MDE determines it resulted from quarry dewatering. They are required to replace a water supply (i.e. private well) that fails due to declining water levels caused by mining operations. If the damage cannot be repaired, the company is responsible for compensating the landowner. Remedies provided by the mining companies apply to improvements made prior to the effective date of issuance of the zone. Woodsboro's zone was issued in the late 1990s.



Zone of Dewatering Influence

- Zone of Dewatering Influence
- Town Boundary
- Growth Boundary



While efforts have been made to ensure the accuracy of this map, Frederick County accepts no responsibility for errors, omissions, or positional inaccuracies in the content of this map. Reliance on this map is at the risk of the user. The parcel information is a third product. They may not be current and may contain positional inaccuracies.

Prepared By: Frederick County Division of Planning
February 2008

Ecological Environment

With information about the proximity and extent of ecological resources, planned development can be directed to more appropriate areas. While the Town of Woodsboro is predominantly a developed landscape, even its built environment has the capacity to provide ecological function and support wildlife and their habitats. The following section describes Woodsboro's ecological resources; in particular, forests and vegetation; stream buffers and corridors; and endangered and threatened species habitat are highlighted. A map of forests and floodplains is included for reference.

Forests and Vegetation

Woodsboro's only significant forest stand is located at the southeast corner of the town parklands off of MD 550. The nearly 90-acre property includes an active recreation area and a segment of Israel Creek. The Copper Oaks neighborhood, situated adjacent to the parklands on the north end, protected a large share of its original forest as a requirement in the development process. Mature trees and vegetation appear throughout the subdivision, supporting sediment and erosion control efforts and providing natural shade and wildlife habitat. Street trees and landscaping dominate the remainder of this agricultural community.

Stream Buffers and Corridors

Israel Creek runs in a north-south direction through the Town of Woodsboro east of MD 194. Within the municipal boundary, the entire length of the stream is identified as parkland. The northern segment runs through a protected area of the Copper Oaks development; the southern end of the stream lies within the Town Park.

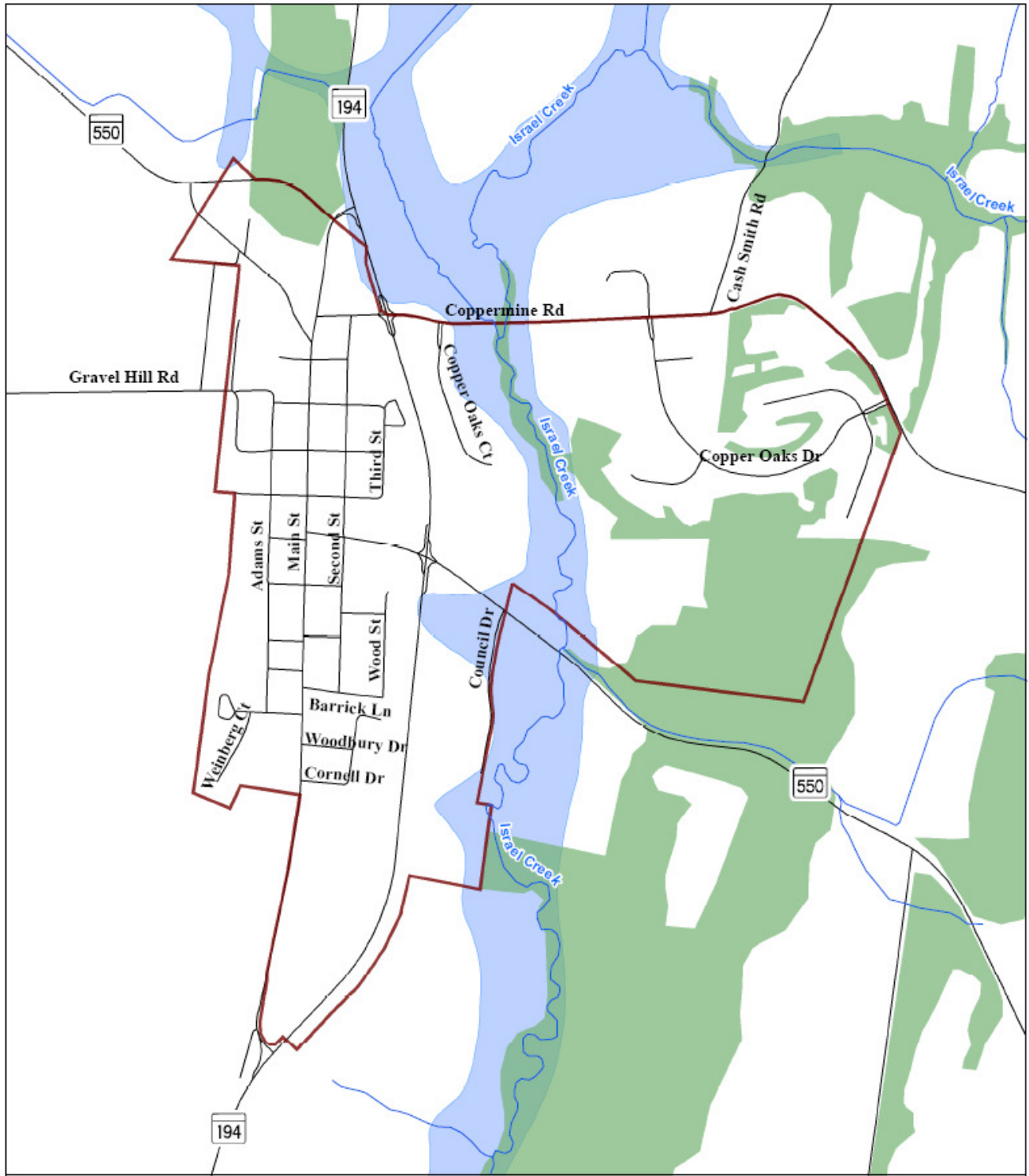
Endangered and Threatened Species Habitat

There is no endangered or threatened species habitat identified within the Town of Woodsboro.

Environmental Policy and Planning

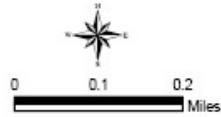
House Bill 786 – Stormwater Management Act of 2007

Conversion of land for the development process alters the hydrologic cycle and impacts watershed health. After trees are cut and land is cleared for the construction process, buildings and infrastructure are developed. Rooftops, sidewalks, roads, driveways, and even grass-covered yards are considered impervious surfaces, when compared to the vegetated, undeveloped landscape that they have replaced. In an urban/suburban environment, when rain falls, it runs off of impervious surfaces, gaining heat and picking up oils, fertilizers, sediments, and other pollutants that are transferred to local waterways through curb and gutter systems, enclosed storm sewers, and lined channels. This polluted discharge affects water quality and the health of aquatic life downstream.



Forests and Floodplains

- | | |
|--|---|
|  Floodplain |  Town Boundary |
|  Forest |  Streams |



While efforts have been made to ensure the accuracy of this map, Frederick County accepts no responsibility for errors, omissions, or positional inaccuracies in the content of this map. Reliance on this map is at the risk of the user.
 Prepared By: Frederick County Division of Planning
 June 2007

Currently, developers are subject to stormwater management laws that require sediment fencing, construction of stormwater management ponds, and other best management practices. In 2007, the Maryland General Assembly passed legislation (House Bill 786), which will ensure developers control runoff from construction sites and use low impact development design to better manage stormwater. Examples of practices include native plant landscaping, minimizing land disturbance, and reducing impervious surfaces.

House Bill 1141 – Water Resources

The new Water Resources Element requirement for comprehensive plans in Maryland mandates that local jurisdictions link their land use plan with plans for provision of drinking water supply and quality, wastewater discharge and treatment capacity, and stormwater management. The Frederick County Division of Planning is in the process of preparing a Water Resources Element for the Countywide Comprehensive Plan. The Town of Woodsboro will work closely with the County to provide current data on growth plans and infrastructure capacity and will adopt an amendment to its 2008 Comprehensive Plan once the Water Resources Element is finalized in 2009.

Monocacy River Watershed Restoration Action Strategies (WRAS)

With the assistance of a diverse group of partners, the Frederick County Division of Public Works - Watershed Management Section developed a watershed restoration plan for the Monocacy River. Strategies for restoring the health of Israel Creek and Glade Creek are included in these plans.

The WRAS concept is an element of the Clean Water Action Plan, a federal initiative to guide states in renewed efforts to restore and protect their water resources. With support from state agencies, local stakeholders met over a multi-year period to identify the causes of water pollution and resource degradation in the Monocacy River watershed and provide specific action items to address the problems.

This was the first coordinated data collection and interpretation effort for the Monocacy watershed and its sub-watersheds like Israel Creek and Glade Creek. In addition to prompting the publication of much-needed benchmark technical reports, the WRAS initiated the Monocacy-Catoctin Watershed Alliance (Alliance), a citizen based stakeholder group charged with implementing the action items. In the Glade Creek watershed, the Alliance has installed watershed signs that alert travelers as they enter and exit the Glade Creek watershed area. Other projects in the region have included schoolyard habitat restoration projects, stream buffer tree plantings, wetland mapping, rain garden construction, and various clean-up efforts.

The Green Print Program

The Green Print Program was established by the State of Maryland in 2001 to identify and protect green infrastructure hubs and links throughout the state. The state's green infrastructure includes ecologically significant areas such as wetlands, river and stream systems, contiguous forests, and ridgelines. Green Print is intended to build on other existing conservation

programs such as Rural Legacy and agricultural land preservation. Green Print has identified the nearby Monocacy River as a Green Link and an area of contiguous woodlands in the vicinity of LeGore Bridge as a Green Hub. There are no sites identified within the Town of Woodsboro.

Land Preservation

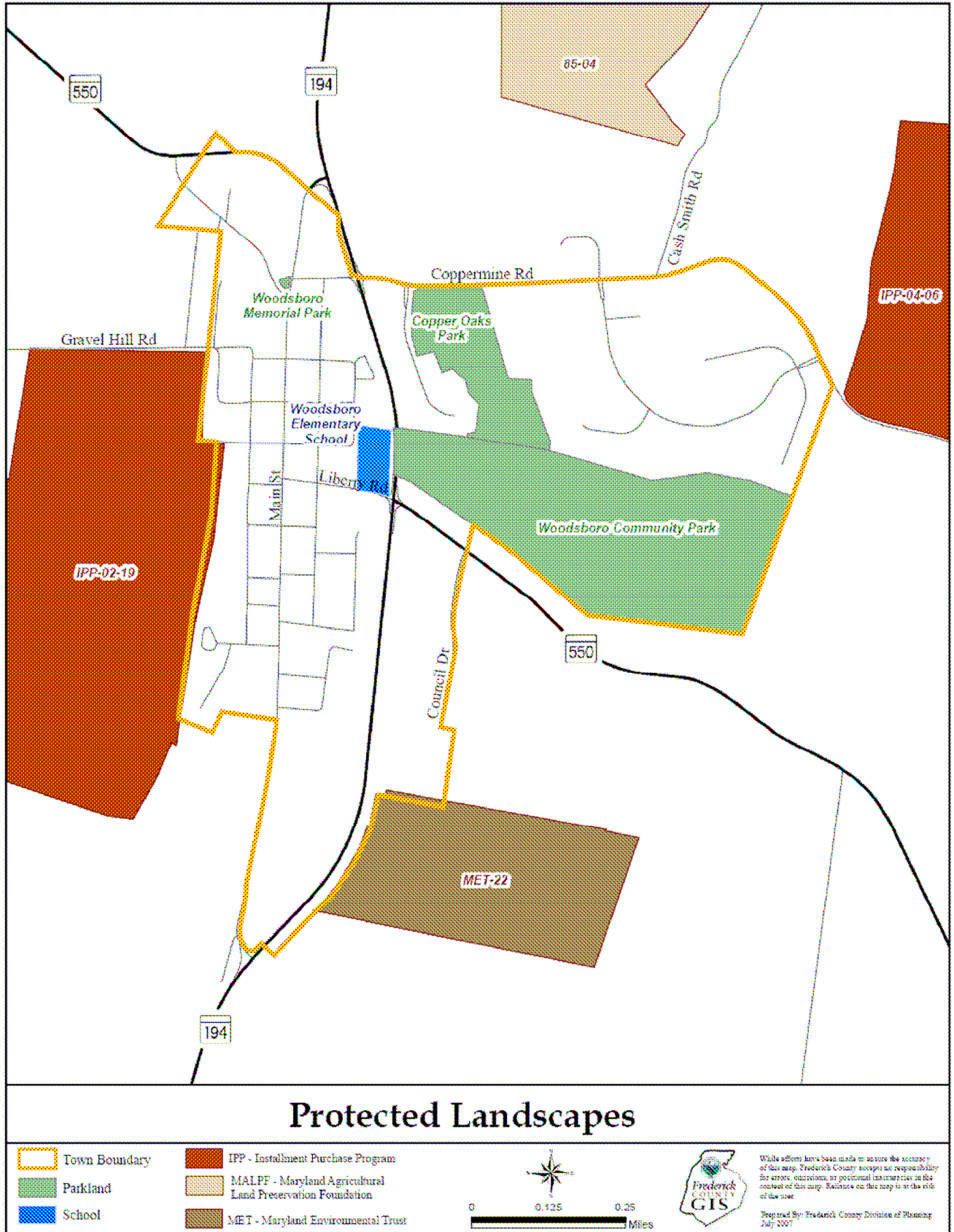
The Town of Woodsboro is bordered by several properties in state and local land preservation programs. These programs aim to permanently protect land from development. Landowners sell the development rights to their landholdings; they often continue to reside on the property either farming the land or continuing another rural land use. A description of the various programs as well as information on Woodsboro area properties in permanent protection follows.

State and County Land Preservation Programs

Together the State of Maryland and Frederick County governments support a diverse land preservation program. State-sponsored initiatives include the Rural Legacy Program, Maryland Agricultural Land Preservation Program (MALPF) and the Maryland Environmental Trust (MET). Frederick County offers landowners two options, the Installment Purchase Program (IPP) and the Critical Farms Program.

The largest farm in preservation adjacent to Woodsboro is the 219-acre Hildebrand Farm, placed in the County's Installment Purchase Program in 2003. This property comprises most of Woodsboro's western border. North of town are several protected properties contiguous to one another; along Grubber Road and Cash Smith Road are the Encarnacao property (136 acres, MALPF Easement, 1987), Doody property (93 acres, MALPF Easement, 2001), and Angleberger property (68 acres, IPP, 2004). Further south, in 2004 the Drenning's placed 106 acres of farmland along Coppermine Road in the IPP. South of town limits along Route 194 are the 61.39-acre Lewis Farm (MET Easement, 2002) and 129 acre Merkle property (MALPF Easement, 1998). A map of protected properties in and around Woodsboro is included on the following page.

Properties in the Woodsboro area and Walkersville Region generally rank high in the application process for agricultural and land preservation programs. Soil type, development pressure, and the size of the parcel are elements of the ranking. In 2007, three additional properties applied for state and local preservation programs in the Woodsboro area. They include the Poffenberger's on Coppermine Road, the Miller's on Gravel Hill Road, and the Gruber's on Cash Smith Road. These applications are under review; offers will be made to the highest-ranking property owners in the springtime.



Environmental Resources Goals, Objectives and Action Items

Goal 1: To demonstrate conservation and sustainable use of environmental resources.

Objective 1: Expand residential and business oriented curbside recycling program in Woodsboro.

Action Item: Continue outreach to encourage participation in recycling.

Objective 2: Develop an outreach program to residents encouraging water conservation and educating them about the impacts of their consumption.

Goal 2: To continue to protect ecologically sensitive and wellhead protection areas.

Objective 1: Permanently preserve the Town's well fields and recharge areas from contamination and over-withdrawal.

Action Item: Identify the areas needed to serve the 20-year municipal growth area and map them accordingly to overlay with the Town's land use plan.

Objective 2: Investigate other possible water resource options and develop a long-term plan to meet or exceed anticipated future water needs within the Town.

Objective 3: Identify properties eligible for land preservation that would link permanently protected farmland, parkland, and the Israel Creek floodplain in and around the Town of Woodsboro.

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