



Comprehensive Plan 2040
Your County. Your Vision. Your Future.

Chapter 11

Agriculture and Forest Resources Element

AGRICULTURAL AND Forest Resources

Introduction and Purpose

While Washington County has experienced some urbanization over the last century, it remains a largely rural community. Agriculture and forestry land uses make up over 80% of Washington County's total land area. The prime agricultural soils of the Great Hagerstown Valley provide ample opportunity for quality farming while the forested ridges of South Mountain, Elk Ridge, Red Hill, Fairview Mountain, and Sideling Hill provide prime forest resources.

The Agriculture and Forestry Resource Element serves as a guide for future agriculture and forest resource protection and sustainability. It establishes goals and policies that help define, protect, and maintain our resources for future generations. The purpose of this element is to promote and protect the County's rural heritage as a sustainable resource. It is also intended to protect the County's rich cultural and historical heritage.

Agricultural Resources

Agricultural Resource Profile

Early settlers migrating west across the Appalachian Mountain range found fertile soils and open land suitable for crop cultivation and raising of animals in areas of the Great Valley. The majority of agricultural areas where prime soils exist in Washington County are located within that stretch of land from South Mountain to just west of Clear Spring. This section summarizes the existing agricultural resources, agricultural sales, and demographics of farm operators in the County.

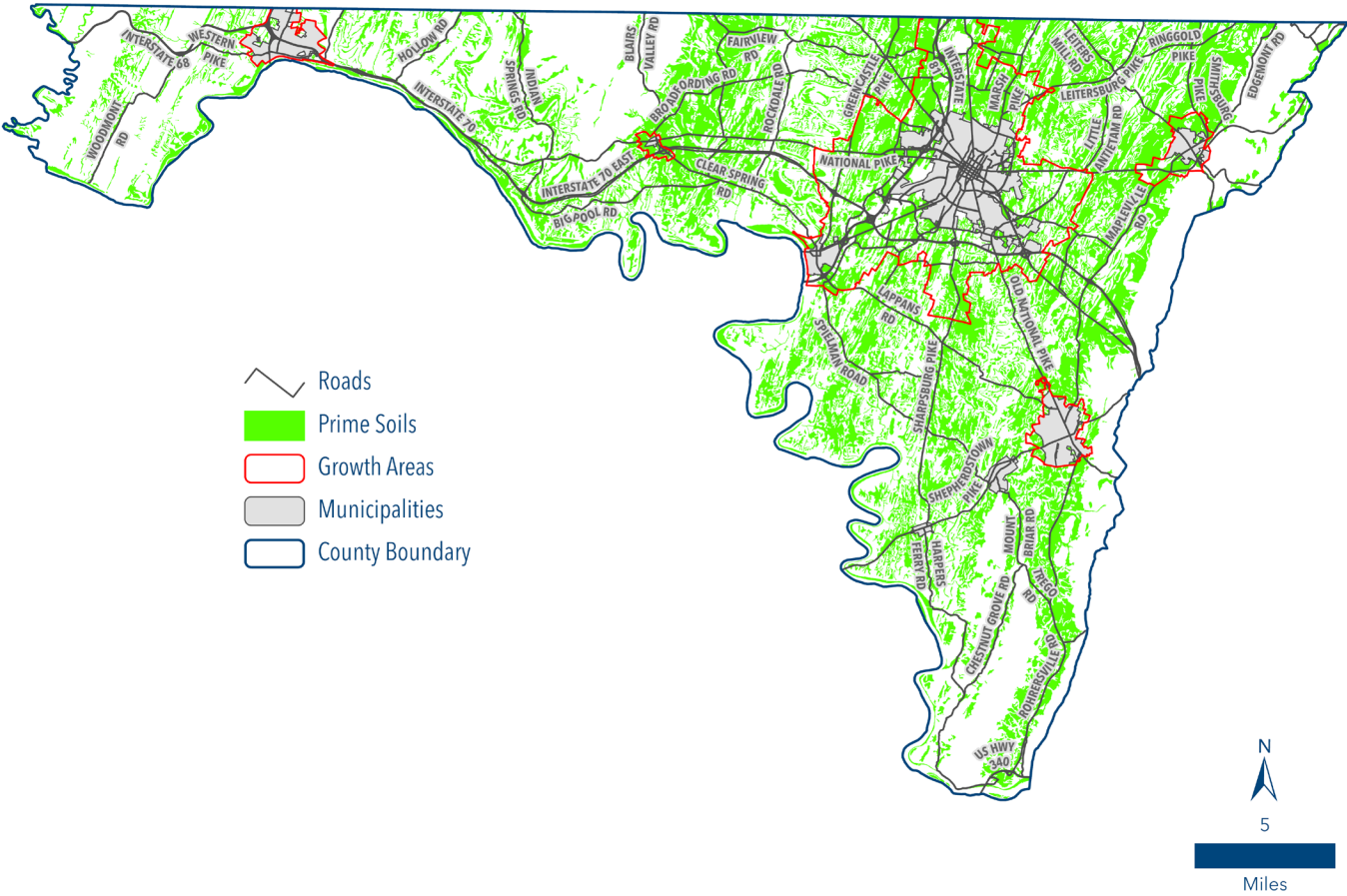


Photo: Creek Bound Farm

Prime Agricultural Soils

According to the US Department of Agriculture (USDA), prime farmland is defined as, "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops". In addition, prime farmland "has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable [pH], acceptable salt content, and few or no rocks."¹ When treated and managed properly, these soils have the capability to produce sustained high yields of crops. In order to classify the various levels of soil quality, USDA Soil Surveys include a Land Capability Classification system to group and prioritize soil classifications according to their limitations for field crops, the risk of damage if they are used for crops, and the way soils responds to management. Prime agricultural soils are considered to include Soil Capability Classes 1 and 2. As expected, the majority of Washington County's agricultural areas correspond with the prime soil classifications.

Map 11-1: Soil Capability Classes 1 & 2



1 United States Department of Agriculture, Natural Resources Conservation Service; Soil Survey of Washington County, Maryland (2003), Page 194

Agricultural Inventory

In 2017, the US Department of Agriculture National Agricultural Statistics Service (NASS) estimated that there were approximately 119,248 acres of active farmland in Washington County. This figure represents a slight decrease in land being used for active agriculture since the previous survey in 2012. While the amount of land in the County that is assessed as agriculture and has an agricultural land use is much greater, the amount of land actively being farmed helps planners evaluate the viability and profitability of the agricultural economy in the County. After several years of sharp decline in the late 1980s to early 1990s, it appears that active farmland areas have stabilized in the County. In correlation, the number of farms in the County are trending upward while the average size of farms has shown some variability over the last decade.

Table 11-1: Acreage, Number and Size of Farms

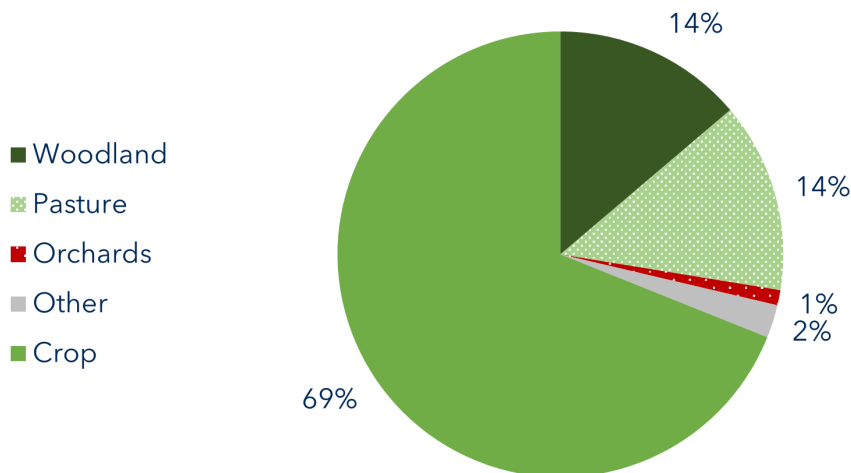
Acreage, Number and Size of Farms in Washington County, MD 1982-2017								
	1982	1987	1992	1997	2002	2007	2012	2017
Land in Farms	145,983	137,529	123,932	126,292	125,159	114,065	129,600	119,248
# of Farms	962	906	809	768	775	844	860	877
Average Size of Farms	152	152	153	164	161	135	151	136

Crops and Livestock

Land use on active farmland in the County consists mostly of cropland (69%). Pasture and woodland each make up 13.8% of land use while the remaining 3.5% consists of orchards and other forms of active farmland. It should be noted that while only 1% of land in the County is used for orchards, this represents almost 30% of the total orchard land in the State of Maryland.

Chart 11-1: Land in Farms by Use Category (2017)

Source: US Dept. of Agriculture, National Agricultural Statistics Service (2017)



The most predominant crops grown in the County are corn, hay, and soybeans. Combined, these three categories make up over 75% of the crops produced in the County. Animal husbandry is another important aspect of the agricultural economy. As has been historically the case, the majority of livestock raised in the County are cattle. It is assumed that based upon agricultural sales figures also compiled in the survey, the County still has similar stock of layer chickens. Compared to animal inventories across the State, Washington County ranks first in the number of cattle, hogs, and pigs; second in goats; and third in sheep and lambs.

Table 11-2: Crops Grown in Washington County

Type of Crop	Acres	Percent of Total
Corn for grain	16,652	19.4%
Corn for silage or greenchop	8,874	10.3%
Wheat for grain	6,816	7.9%
Oats for grain	30	0.0%
Barley for grain	2,309	2.7%
Sorghum for grain	344	0.4%
Soybeans	24,979	29.1%
Forage (hay, grass, greenchop)	24,136	28.1%
Vegetables	505	0.6%
Orchards	1,274	1.5%
Totals	85,919	100.0%

Table 11-3: Livestock Raised in Washington County

Type of Animal	# of Animals	State Rank
Cattle and Calves	44,028	1
Hogs and Pigs	2,191	1
Sheep and Lambs	3,775	3
Goats	1,842	2
Layers (Chickens)	(D)	na
Broilers (Chickens)	1,288	na
Totals	53,124	

(D) Totals withheld to avoid disclosing data for individual farms
 Source: USDA, National Agricultural Statistics Service (2017)

Agricultural Sales

Agriculture remains a strong economic force in Washington County, with over a third of its total land area consisting of farmland. According to the 2017 USDA NASS, the market value of agricultural products has reached nearly \$153 million with more than \$38 million in crop sales and \$115 million in livestock sales. Agricultural sales in the County are spearheaded by the sale of dairy milk, grains and cattle, which make over \$92 million.

Table 11-4: Agricultural Sales

Agricultural Products	Sales (thousands)	Rank
Milk from cows	48,089	1
Grains, oil seeds, dry beans and dry peas	24,070	10
Cattle and calves	20,346	1
Fruit, tree nuts and berries	6,703	1
Other crops and hay	3,535	4
Poultry and eggs	5,671	10
Hogs and pigs	679	4
Vegetables, melons, potatoes and sweet potatoes	2,145	11
Nursery, greenhouse floriculture and sod	1,555	16
Other animals and animal products	38,459	1
Horses, ponies, mules, burros and donkeys	(D)	17
Cut Christmas trees, short rotation woody crops	42	10
Sheep, goats, wool, mohair and milk	1,310	1
Aquaculture	(D)	5
Totals	152,604	
(D) Totals withheld to avoid disclosing data for individual farms Source: USDA, National Agricultural Statistic Service (2017)		

With agricultural sales topping \$2.4 billion across the State of Maryland in 2017, Washington County ranked 7th in the State, behind the larger and more rural eastern shore counties of Caroline, Dorchester, Queen Anne's, Somerset, Wicomico, and Worcester. Washington County ranks 1st in the State in sales of milk from cows, cattle, fruits, tree nuts, and berries, sheep, goats, wool mohair and milk, and other animals and animal products. Other animals and animal products generally refer to non-traditional livestock and their products such as alpaca, emu, and others. Additionally, it ranks in the top 5 highest sales in other crops and hay, hogs and pigs, and aquaculture.

Demographics of Agricultural Operators

Understanding the evolution and vitality of agriculture also includes understanding the operators of the farmland. Historically, farming operators in Washington County have been white males. Over the last decade this trend has slowly begun to diversify and include more minority owners. Since 2007, the number of female farm operators have increased by 38% while the number of farms operated by Hispanic farmers has increased by about 67%.



One notable trend happening in agricultural operations is fluctuation in the average age of operators. Up until 2012, the average age of an operator in Washington County was on the rise. The 2017 NASS found that the trend may be reversing with the average age dropping by over 3 years. In the 2017 Census of Agriculture, the USDA began tracking data on “new and beginning producers”. This category includes producers who have been operating for 10 years or less. According to the survey, there were 540 new and beginning producers with operations in Washington County the third highest in the State of Maryland.

Table 11-5: Demographics of Farmers

Demographics of Farmers			
	2007	2012	2017
Principal producers by sex:			
Male	927	939	1000
Female	409	405	564
Total	1336	1344	1564
Average age of principal producer			
	54.3	55.5	52.1
All producers by race (# of farms):			
American Indian or Alaska Native	10	2	18
Asian	6	0	0
Black or African American	2	10	2
Native Hawaiian or Pacific Islander	0	0	0
White	1294	1306	1539
Other	5	8	5
Ethnicity			
Spanish, Hispanic or Latino	15	14	25

Source: USDA, National Agricultural Statistics Service (2007, 2012, 2017)

Land Preservation Efforts

Land preservation efforts in Washington County have a 40-year history starting in 1978 with one program, the Maryland Agricultural Land Preservation Program (MALPP). The land preservation opportunities in Washington County have grown to several programs including: MALPP, Conservation Reserve Enhancement Program (CREP), Maryland Environmental Trust (MET), Transportation Equity Act Funds (TEA), Green Print, Rural Legacy, and most recently Installment Payment Purchases (IPPs). The County has also had some limited success with donated preservation easements. It should be noted that all of these programs are voluntary and entered into at the sole discretion of the private property owner. Another potential funding source that has been explored by the County in the past is a Transfer of Development Rights (TDR) program whereby a privatized system of developer purchased development rights in the Rural Area could be transferred to the Urban Areas. So far, the viability of a TDR program has not been tenable. Residential and land market values and supply have not reached a point that could support the needed financial incentive to make the program practical.

Land Preservation Programs

In identifying lands for land preservation efforts, the County prioritizes targeting contiguous farmland or areas where land has already been set aside for agricultural or conservation purposes. Because land preservation programs are intended to be permanent and perpetual easements, consideration also needs to be given to the proximity of these efforts near existing growth areas. Location of permanent easements too close to existing growth areas can severely limit future expansion of services. When land within designated growth areas becomes saturated, growth will find the next available area to expand.

The act of placing a permanent easement in or near a planned growth area can have long-term unintended consequences that may promote leapfrog and sprawl development. Expansion of growth will continue to occur therefore the location of the easement does not necessarily prevent development but instead causes the development to occur in areas further away from growth centers.

The County participates in various Federal, State and local land preservation programs where these priorities are built into priority ranking formulas and eligibility requirements. As a result of the County's efforts, significant farmland and open space has been set aside for future generations. Descriptions of these programs and efforts are offered below:

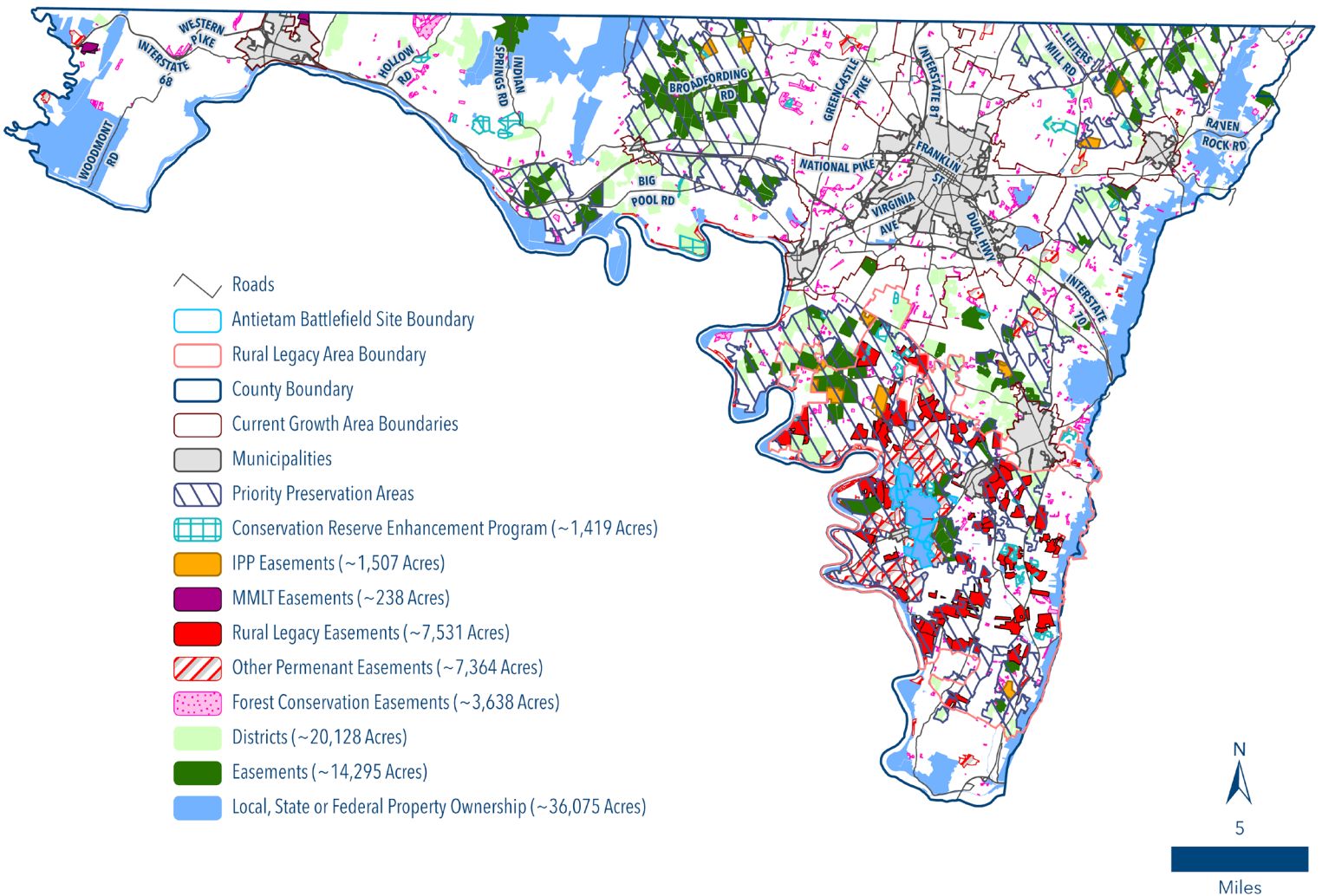
- Maryland Agricultural Land Preservation Program (MALPP)**
 MALPP is the oldest County-administered land preservation easement program and comprises over 14,700 acres in total. The Washington County Agricultural Land Preservation Advisory Board (Ag Board), the Board of County Commissioners, and the Maryland Agricultural Land Preservation Foundation (MALPF) of the Maryland Department of Agriculture (MDA) administer the program through the County's Department of Planning and Zoning. The easements are extremely competitive as there are many applicants to the program. If purchased by the State, the easement will remain effective in perpetuity.

- **Rural Legacy Program (RLP)**
 Enacted by the 1997 Maryland General Assembly, the RLP was created to focus on some of Maryland's best natural, agricultural, historic and cultural areas, as well as representing Maryland's most significant rural landscapes. The program encourages local governments and private land trusts to identify Rural Legacy Areas (geographic areas around historically significant portions of the county) and to competitively apply for funds to complement existing land preservation efforts or to develop new ones. Easements or fee estate purchases are sought from willing landowners to protect areas vulnerable to sprawl development that can weaken an area's natural resources, thereby jeopardizing the economic value of farming, forestry, recreation and tourism.
- **The Rural Conservation Reserve Enhancement Program (CREP)**
 The State of Maryland has initiated this easement program to improve the water quality of the Chesapeake Bay by installing vegetative buffers along streams, waterways, and highly erodible soil. These buffers serve as a natural barrier to prevent nutrients and sediment from entering County and State waterways. To qualify for this program, the landowner must have a current CREP lease on their land. The easement value is determined by the amount of acreage in the program and current buffer width. The CREP program has permanently protected over 1,900 acres.
- **Installment Payment Program (IPP)**
 Due to the competitive nature of land preservation funding across the State of Maryland, the County opted to use local funding to create a land preservation program exclusive to the citizens of Washington County. The IPP was created for the purpose of accelerating land preservation easement purchases for the agricultural landowners and citizens the County. Once a landowner agrees to accept the County's offer to purchase development rights, an Installment Purchase Agreement (IPA) between the County and the individual seller is drafted, signed, and recorded. The IPAs are paid over a period of 10 years, with 10% of the principal being paid at settlement with the interest and 10% of the principal being paid annually for the remaining 9 years. There are currently over 1,500 acres of IPP easements acquired by the County.
- **Next Generation Farmland Acquisition Program (NGFAP)**
 This program was developed by the Maryland Agricultural and Resource-Based Industry Development Corporation (MARBIDCO) for the purpose of marketing farming opportunities to new generations. The key tool for the program is its easement purchase option contract, which provides up to 51% of appraised fair market value to a young or beginning farmer towards the purchase of their first farm. While still a newer program, it has the potential to provide a significant benefit to the growing number of young farmers in Washington County. There are approximately 700 acres of NGFAP easements in the County.
- **Land Trusts and Other Easements**
 Frequently through the years, Staff has worked with various land trusts such as the Maryland Environmental Trust (MET), Save Historic Antietam Foundation (SHAF), the American Battlefield Trust and others to help facilitate the acquisition of easements on land in Washington County. The State also administers their own easement programs such as Program Open Space (POS) Stateside to preserve natural areas for public recreation and watershed and wildlife protection. Several Federal scenic easements exist to protect viewsheds around the C&O Canal as well as Antietam National Battlefield. There are over 7,200 acres of permanent easements preserved through these land trusts and state program.

Land Preservation Progress

Through 2020, the County has preserved over 30,000 acres of land through its many land preservation programs. In addition to the County’s land preservation efforts, several other programs have bolstered our protected land efforts. Other protected land areas included State, Federal, and local government owned lands that total nearly 36,000 acres. These lands are mostly attributed to parkland and other resource conservation efforts. Forest conservation easements are also included in the County’s calculations for protected lands. There are currently a little more than 3,600 acres of land under forest conservation easements. Current protected lands are shown on the map below.

Map 11-2 - Protected Lands in Washington County

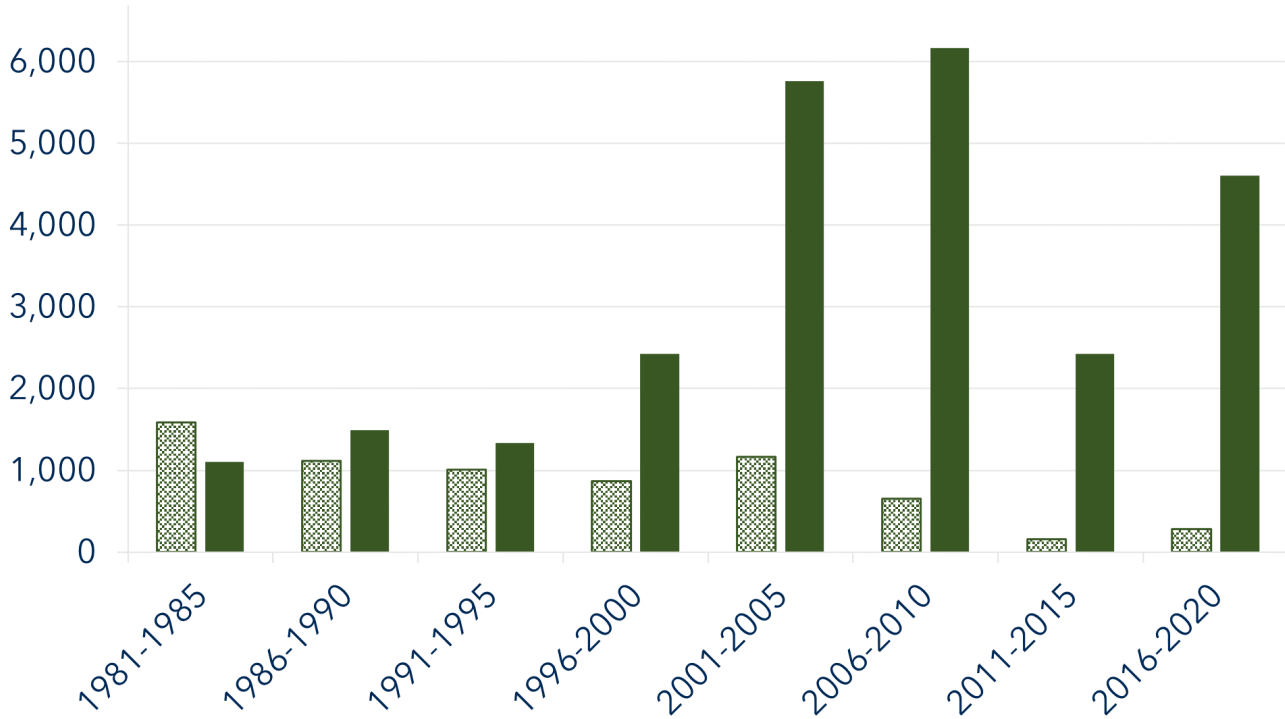


Source: County Department of Planning and Zoning GIS

To evaluate the County’s success in land preservation efforts a comparison metric is used to compare how much agricultural land has been converted vs. preserved over time. Early in the implementation of County land preservation programs, the amount of agricultural land converted to other uses exceeded the amount of land the County was able to preserve through existing programs. This trend quickly reversed itself as the land preservation programs started to take hold in the mid-1980s. Since that time, the County has continued to far outpace land conversion with land preservation efforts.

It is also worth noting that agricultural land conversion rates have steadily decreased since the early 1980s. This can be attributed to the County’s multi-faceted approach of a strong land preservation program and smart growth policies.

Chart 11-2: Agricultural Lands Converted vs. Preserved 1981-2020



Priority Ranking Systems

To efficiently spend land preservation funding, most programs have a priority ranking system that is used to determine which properties have the highest compatibility with the goals and objectives of the easement program. Included in the various priority ranking systems are evaluations of contiguity with other easements, use of best management practices, prime soils, location within the designated Priority Preservation Area, historic resources, environmental resources and several other criteria.

For agricultural land preservation easement programs such as Maryland Agricultural Land Preservation Foundation (MALPF) and IPP, the highest number of points are given to those properties that are already contiguous to other permanent easements, have the best quality soils, and use best management practices for farming operations. Each year, the County is allotted funding from the MALPF and the highest ranked properties are offered easements first.

The Rural Legacy and CREP easement programs are more environmental and culturally focused programs that also include ranking criteria such as amount of forested area, proximity to sensitive areas, inclusion of historic resources, etc. Similar to MALPF, funds are received from the State and the highest ranked properties are offered easements first.

Supporting Agricultural Operations

While challenges exist, local demand for land preservation has not significantly waned. In fact, interest in local land preservation programs has increased over the years creating a greater demand for funding. In order to counter the lack of funding, the County began successfully pursuing several opportunities to leverage easement funding and land preservation to its maximum level.

Funding Support

Currently, the primary funding mechanisms the County uses to support land preservation is with revenues from the real estate transfer tax and the agricultural land transfer tax. When agricultural land is transferred and converted to another use, a tax is collected from that transfer and used to provide the local match needed to support the MALPF easement program. In addition, when any real property in the County transfers from one entity to another, there is a Real Estate Transfer Tax associated with the transfer. As stated in the enabling legislation, the first four-hundred-thousand dollars (\$400,000) collected from this tax goes explicitly toward land preservation efforts in the County. Originally, the funds were used solely to implement the County's Installment Payment Program. Recently, the County opted to reallocate a portion of the transfer tax revenues toward the MALPF program in order to take better advantage of the program's 60/40 match ratio. For every forty dollars (\$40) the County provides toward MALPF easement funding, the State provides sixty dollars (\$60). By increasing local match funding with revenues from transfer tax, it allows the County to leverage additional funding from the State of Maryland and increase overall funding allocations for this program.

Continued implementation of the Installment Payment Program in the County has also provided another opportunity to obtain permanent easements through creative financing. Established as a ten-year program, the County purchases an easement and pays the owner in ten equal installments annually. This provides flexibility to the County and the landowner so that funding does not have to be produced in a lump sum and the property owner will have a steady stream of income for a longer period of time and can incrementally invest in the agricultural operation.

One final method of trying to maximize easement funding is through donated and reduced-value easements. The State of Maryland and local land trusts have had the most success with donated easements in the County. Through Federal, State, and local efforts, there have been over 50 donated easements settled in Washington County. As part of local land preservation efforts, the County has been actively promoting donated and reduced value easements. To date, the County has settled nearly 20 reduced-value easements primarily through the Rural Legacy program.



Agritourism

Since the last Comprehensive Plan was adopted by Washington County in 2002, several new trends have emerged in Washington County agriculture, and American agriculture as a whole. Many of these trends were unforeseen when the County was writing the previous plan, and they must be accounted for when looking toward the future. One such change is related to promoting a more commercial aspect to farming by creating an interactive environment for visitors to come to the farm rather than the farmer taking product off-site for sale and consumption. This has been generically termed "agri-tourism" or "agri-business".



According to the Maryland Rural Enterprise Development Center, "Agritourism refers to enterprises and activities that are conducted on farm sites for the pleasure, education, recreation and enrichment of visitors." Generally, these practices are employed as a way to diversify the main operation of the farm through means such as retail sales, educational opportunities, and recreation. Historically, many Washington County farms have participated in such activities, even prior to the current trend, but recently the County has seen a rise in agritourism.

Value-added product manufacturing on local farms has been one of the leading drivers in new agricultural businesses for the last decade. A value-added product is loosely defined as enhancing or improving the value of an agricultural commodity. Examples of these types of uses include alcohol manufacturing facilities such as wineries, breweries, or distilleries, as well as creameries, and cheese manufacturing. In 2012, the County adopted new Zoning Ordinance regulations to include some of these new land uses. Further amendments in 2019 helped streamline definitions and refine permitted locations for alcohol production facilities as a whole. These amendments have enabled several businesses of these types to become successfully established.

More traditional agricultural operations have also begun to incorporate alternative agricultural uses on farms to produce additional income. Popular uses include U-pick operations, hayrides, corn mazes, and petting zoos with traditional and exotic livestock.

While these new trends are welcomed to provide new commercial and economic opportunities for farmers, they also have highlighted the lack of proper infrastructure to support intense rural business and the challenges related to installing such infrastructure. Proper infrastructure is key to ensure healthy and safe access for the general public.



Photo: Big Cork Winery

Roads as well as water and sewer infrastructure are the most common limitations to rural business enterprises such as these. While small businesses are encouraged, it has become difficult to balance the success with the strain on existing infrastructure. Many small businesses do not have the capital to open a business and make large public infrastructure investments such as widening roads or installing oversized septic systems. The County will need to continue monitoring the expansion of rural businesses and find ways to balance needed infrastructure improvements with the limited amount of investment small businesses are capable of making.

Grown Local and Organic Farming Movements

The “Grown Local” and organic movements have also been trending upward over the past several years. Many Washington County farmers have taken advantage of their close proximity to metropolitan areas to export their locally grown products to the major urban areas of Washington DC and Baltimore. This movement has also increased the number and frequency of local farmers markets. In addition, the growth of the organic foods market has presented local farmers with the ability to diversify their operations by producing products like organic milks and cheeses, meat, fruits and vegetables. These products tend to have a larger profit margin.



Photo: Local Farmers Market produce

Young Farmers

Though the average age of a farmer is approximately 55, Washington County has seen a resurgence of young farmers purchasing and operating farms. Some have inherited family farms, and others have managed to purchase farms on their own. Many of these young farmers come with advanced, formal agricultural degrees and education. As farming technology and practices have advanced over the years, these young farmers have gained a great advantage that comes along with the understanding of newer technological resources. Additionally, the new generation of farms seem more apt to incorporate unconventional uses in their farm operations.



Photo: Star Equestrian Farm

The County continues to support young farmers in various ways. For those young farmers who want to purchase land to establish a farm, the County participates with the State’s Next Generation Farmland Acquisition Program. Locally sponsored events such as the Washington County Agricultural Exposition provide opportunities for young adults to show and sell livestock and other agricultural commodities. In addition, local high schools offer agricultural science curricula for students wanting to pursue careers in the agriculture and agriculture support industries.

Vertical Farming Technology

Large scale vertical farming operations are an advancing technology in agricultural production. Vertical farming is not a new concept, however, advances in technology have made large scale operations more feasible. The basic concept of these operations is to grow crops in shelves or racks that are stacked vertically inside tall buildings. This allows farmers to grow more crops in a smaller footprint, making it especially ideal for urban environments. Vertical farming can also be implemented on traditional farms in order to maintain a crop yield year round.

There has been some interest in companies wanting to locate in Washington County to establish vertical growing operations. Most interest has been directed to urbanized industrial areas in existing buildings that can be retrofitted. This emerging use will need to be further evaluated and addressed in local land use ordinances.

Land Management Polices

In order to conserve and protect our agricultural resources, the County uses several different tools to create a comprehensive land use strategy. Current strategies include a combination of land use policies and regulations in ordinances and functional plans such as the Zoning Ordinance, Subdivision Ordinance, and Land Preservation, Parks and Recreation Plan as well as a robust land preservation program.

Comprehensive Plan and Zoning

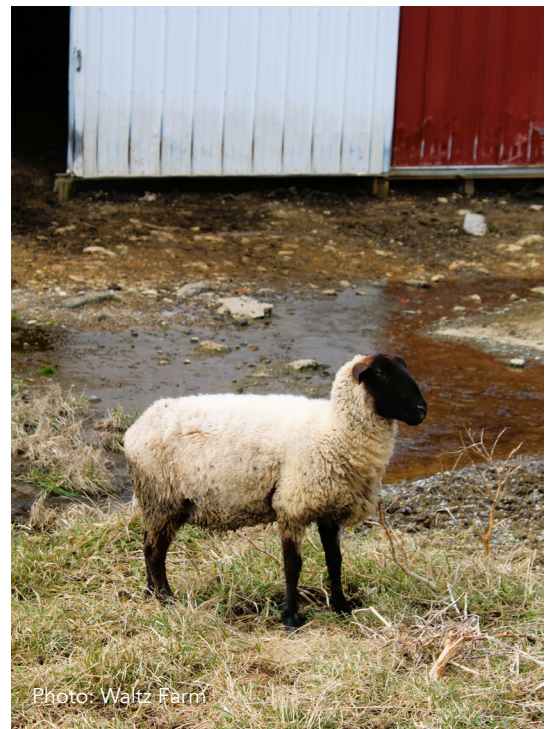
Pre-dating most jurisdictions across the State, Washington County first established a policy of designating areas for growth and development and for land and resource protection in the mid-1970s. Growth areas were then established in the 1981 Comprehensive Plan to support this policy. This was the initial step in establishing a boundary between urban and rural areas in the County. These policies continued to evolve and be refined through State legislative efforts through the 1990s. In 2002, with the adoption of a new Comprehensive Plan, the County took an enormous step forward in using land use management tools to direct growth into areas where existing infrastructure was available and limit the amount of development in rural areas. The 2002 Comprehensive Plan called for reducing the number of lots permitted to be subdivided in rural areas thereby limiting the conversion of farmland. While not eliminating the possibility of some development in rural areas, these policies have significantly reduced development pressures in the rural area.

Environmental Stewardship

The addition of several new water quality regulations passed since the adoption of the last comprehensive plan have produced many changes in the operation of farms. The primary pollutants looked at by the State related to agricultural operations are nitrogen, phosphorous, and sediment. These pollutants can come from many different sources, but this section will focus on the agricultural sector contributors. There are many other pollutants that are tested for and monitored by the State, but these three pollutants have been identified and targeted for specific reductions.

Nitrogen and phosphorous pollution typically come from fertilizer and animal waste sources. On a National level, the EPA has called for fertilizer producers to reduce the rates of these compounds in their products. The State has also implemented numerous programs to help reduce the use of fertilizers and target their usage only when needed and in the appropriate locations (i.e. away from streams and waterways). Animal waste is controlled at a State level through the Maryland Department of Agriculture. New regulations regarding the ban of manure spreading during the winter months have forced many local framers to expand their nutrient management systems.

Sediment pollution is primarily linked to the tillage of soils and the access of animals directly into waterways that damage stream banks. Maryland has encouraged farmers to adopt no-till farming techniques into their operations.



No-till farming is a method used to seed the crop directly into vegetative cover or crop residue with little to no disturbance of the surface soil.

At a local level, there is not much regulatory authority because water quality is a regional issue that does not adhere to subjective jurisdictional boundaries delineated on a map. However, the Washington County Soil Conservation District works diligently with local farmers to implement best management practices whenever possible. These actions are reinforced in County policies related to land preservation efforts, development regulations, and educational outreach activities. They are further supported in the County's land preservation efforts through evaluation of best management practices being a large portion of points given as part of the priority ranking system.

Agricultural Land Preservation District Program (Ag Districts)

The initial purpose of the Ag District program started by the Maryland Department of Agriculture's (MDA) Maryland Agricultural Land Preservation Foundation (MALPF) was to keep productive agricultural land in farming by staving off potential development and conversion of the land. The premise of the program is to essentially buy time for local and/or State jurisdictions to gain the necessary funding to purchase the development rights from participating landowners and alleviate development pressures faced by local farmers attempting to remain viable in the agricultural industry. In 2012, the State opted to end this program but gave local jurisdictions the option to take over the program. Washington County chose to initiate their own program and took over responsibility of existing State Districts at that time.

The Ag District program encourages landowners to voluntarily enter into an agreement with the County to restrict development on their land for a period of five years. In return for the restrictions, the landowner receives a tax credit on all County property taxes associated with agricultural land and buildings, as well as limited reduction on property taxes on dwellings. This program is also a required precursor to become eligible to sell development rights easements through the Maryland Agricultural Land Preservation Program (MALPP).

To be eligible for the Ag District program, properties must have development potential, be located outside of growth areas, have an agricultural land use assessment by the Maryland Department of Assessments and Taxation, be at least 50 acres in size (or as small as 20 acres if contiguous to 50 acres or more of preserved land), and have at least 50% of Class I, II and III soils. At this time, all Ag Districts in the County are administered solely by the County, and each Ag District is governed by a district agreement recorded in land records at the Washington County Courthouse as well as the adopted Ordinance for the Establishment of Agricultural Land Preservation Districts and accompanying regulations.



Washington County currently has over 34,800 acres in the Ag District program and more landowners are joining the program each year. This is a good indicator of land preservation interest but there is concern that the program is beginning to exceed its purpose. The financial cost of maintaining tax credits for properties in the districts and in permanent easements have been increasing. In 2019, the average per acre tax credit was about \$12 per acre costing the County nearly \$418,000 in revenue for the district program alone. Between 1995 and 2015, the County, on average, established approximately 1,000 acres per year in various permanent easement programs. Extrapolating this information, it would take almost 35 years for the County to purchase easements on the existing 34,800 acres of land in the Ag District program, assuming that the property owner is interested in a permanent easement.

At the time this program was established, development conditions were more favorable in the rural areas of the County. Existing zoning regulations at the time allowed for one-acre and three-acre lot subdivisions with no limitation on the maximum number of units per acre. Subdivision was a function of physical constraints more than zoning regulation. Since that time, the County has implemented new zoning districts in the rural areas that restrict the amount of development to a total number of dwelling units per acre standard. The adoption of these new regulations has dramatically reduced development pressure in the rural areas. In addition to County regulation, the State of Maryland also recently adopted legislation restricting the number of new septic systems that can be built in the rural areas. These compounding regulations have greatly reduced the pressures of development in the rural areas to the point where districts may no longer be advantageous to the long-term goal of permanent preservation. Many property owners have applied to the program to reduce their tax burden with no intention of long-term preservation.

Because recent changes in regulations have reduced development pressure and stabilized the land base in rural areas, there may be some merit in evaluating the effectiveness of continuing the Ag District program and the tax credit program in general. To increase the amount of land permanently preserved each year, one alternative that could be evaluated is possibly discontinuing the ag district program and redistribute those funds toward MALPF permanent easements to leverage more money from State programs. Another option may be to continue the Ag District program but discontinue tax credits on those properties that receive a permanent easement. As funding sources continue to dwindle and/or seek more investment from local entities, the tax credit program should be further evaluated to determine if the program is still effective in meeting its purpose.



Priority Preservation Areas (PPAs)

The Agricultural Stewardship Act of 2006 provides the impetus and guidance for counties in the State of Maryland to become more diligent in the effective spending of land preservation funds. It is the intent of the Act that counties establish goals and priorities for the effective and efficient use of land preservation funding.

It has always been the goal of Washington County to support a diversified system of agricultural operations that include, but are not limited to dairy, livestock, crop, orchards, vineyards, and timber. As previously stated, one of the goals developed as part of the Washington County Comprehensive Plan is to, "promote a balanced and diversified economy, including agriculture." One of the County's objectives in obtaining this goal is to maintain at least 50,000 acres of land in the County in agricultural production. This acreage goal was developed in the early 1990's in coordination with the Agricultural Extension Office and the University of Maryland based on an evaluation of critical mass and land needed to support the agriculture industry. Through 2020, Washington County has permanently preserved approximately 38,900 acres of farmland and woodlands through various preservation programs. In addition, approximately 34,800 acres of land are in short-term preservation districts.

A key component in the success of an agricultural preservation program is the efficient spending of funds to maximize the community benefit. Since the inception of agricultural preservation programs in Washington County, a priority rankings system has been used to determine the best use of preservation funds. This ranking system was amended to further incorporate the goals of MALPF by expanding the contiguous definition to include open space lands and by increasing the penalty for exclusionary development. Expanding upon this existing practice, and to remain consistent with State preservation goals, the County's PPAs are being designated to further refine and maximize the focus and impact of preservation funding.

PPAs Initially Established

In 2011, the County amended its Comprehensive Plan to include a Priority Preservation Element in accordance with State legislative requirements and accompanying guidance documents. PPAs and a PPA plan element are required for counties whose farmland preservation program is certified by MALPF and MDP, and that certification allows the county to retain 75% rather than 33% of locally generated agricultural land transfer tax.

According to State law, Priority Preservation Areas are required to:

- Contain productive agricultural or forest soils; or be capable of supporting profitable agricultural and forestry enterprises where productive soils are lacking;
- Be governed by local policies that stabilize the agricultural and forest land base so that development does not convert or compromise agricultural or forest resources;
- Be large enough to support the kind of agricultural operations that the County seeks to preserve, as represented in its adopted Comprehensive Plan; and
- Show that a County's acreage goal for land to be preserved through easements and zoning within an area shall be equal to at least 80% of the remaining undeveloped land in the area.

Using the County's GIS database, parcels generally located outside of Urban and Town Growth Area boundaries and Priority Funding Areas that were greater than 20 acres and had an agricultural use assessment were used as potential sites for PPAs. The areas were further refined by focusing on parcels that were located in close proximity to existing permanent easements as well as existing 10-year districts. Then the soils and forest cover were evaluated to ensure that productive areas were being defined. Staff focused the primary areas for establishment of PPA's around existing "blocks" of agricultural easements located generally in the Clear Spring, Smithsburg, and Downsville areas. To the degree possible, PPAs were extended around these existing blocks of easements to include parcels adjacent or in close proximity to existing permanent easements and 10-year districts.

When PPAs were first adopted in 2011, the County had permanently preserved approximately 22,000 acres of land leaving a balance of nearly 30,000 acres to meet our land preservation goals. In accordance with the guidance provided in the Agricultural Stewardship Act of 2006, the additional 30,000 acres of permanently preserved land needed to meet the County's stated goals should equal at least 80% of the total undeveloped area in the defined PPAs. After determining preliminary locations for PPA designation and establishing a minimum preservation target threshold of 30,000 acres, Staff began to build the PPAs with blocks of large undeveloped land around existing agricultural preservation easements and 10-year districts. As areas were added, the proportion of undeveloped land 'viable' for preservation efforts was continually tested against areas that contain existing development or existing permanent easements in order to maintain the 80% undeveloped requirement of the legislation. Ultimately, this process yielded a proposed area of 74,854 total acres, of which 20,690 acres contain permanent preservation easements and 9,461 acres do not meet the minimum MALPF requirements for easement acquisitions. This leaves a balance of 44,703 acres of 'viable' land within the proposed PPAs available for preservation efforts.

Progress Toward Meeting PPA Goals

Since the adoption of the Ordinance in 2011, Washington County has been able to permanently preserve an additional 3,500 acres in the PPAs through land preservation programs. The 3,500 acres increases the amount of preserved land in the PPA to 25,500 acres, or 34% of the total area. When accounting for a goal of 80% of undeveloped land in the PPA to be permanently preserved, the County is more than 49% of the way toward its goal.

Comparatively, since 2011 approximately 88 acres of land in PPAs were converted for development. This acreage represents the amount of viable agricultural acres lost. For this analysis, 'viable agricultural acres' is defined as agricultural land that meets the minimum MALPF requirements for easement acquisitions. This includes land that is located outside of a designated growth area, greater than 20 acres, has an agricultural land use assessment, and contains a minimum of 50% or more of Class I, II, or III soils.

These figures present a positive trend in land preservation efforts within locally designated Priority Preservation Areas. With a conversion ratio of 39 acres preserved per 1 acre developed within the PPA, it is evident that land preservation and land management efforts in the County are achieving the desired outcome of the Agricultural Stewardship Act of 2006.

Right to Farm Ordinance

In 2003, the County passed the Right to Farm Ordinance. The purpose of this Ordinance is to educate the general public about agricultural operations and the potential conflicts that can result from encroaching development. Education efforts include notification to all new property owners of the impacts of farming operations such as odor, dust, spray, etc. at the time of settlement. Purchasers of land are required to sign a document that states they have been made aware of these potential conflicts. The Ordinance also provides a process by which to handle the occasional nuisance complaints that can result from incompatible uses.

Challenges in Meeting PPA and Land Preservation Goals

While the County has had many achievements regarding preserving land within the PPAs, there have also been some challenges. Below are summaries of some of these challenges.

Funding Issues

As has always been the case, the most significant challenge in land preservation efforts has been funding. The primary sources of land preservation funding come from real estate and agricultural land transfer taxes. Since the 2002 Comprehensive Plan was adopted, the County has seen times of economic prosperity, as well as a major recession. In the early 2000s, the economy was flourishing because of a major housing boom. The impact of the boom was a massive increase in land values. This allowed the State budget to swell which, in turn, provided millions of dollars in real estate and agricultural transfer taxes to put toward land preservation efforts across the State.

Unfortunately, as history has taught us with any economic increase there is typically an accompanying decrease. The housing market recession began in late 2006 and lasted for nearly 8 years and still has lingering impacts. Property values decreased, transfer taxes became minimal, and the State budget was diminished. While the associated drop in land values has helped to mitigate this funding decrease by empowering the purchase of more acres per dollar, the resulting lack of easement funding was more significant than the decrease in land values.

More recently there has been a resurgence in commercial and industrial development. Mostly in the form of warehouse and distribution facilities, there has been significant amounts of land conversion to accommodate these facilities that are averaging between 800,000 and 1,000,000 square feet. In turn this has caused a significant increase in agricultural transfer tax that is used for land preservation programs. These significant swings in economic boom and bust highlight the contradiction and fragility of land preservation funding. The double-edged sword of waiting for land to convert so that land can be preserved creates a level of uncertainty and unpredictability that may jeopardize preservation efforts.



De Facto Farmland Preservation Through Agricultural Stewardship

Another fluctuating influence on a land preservation program is the interest of landowners to participate in these programs. In Washington County, there are two primary factors that weigh on a property owners' decision to participate in land preservation programs. The status of the economy is one of these variables. When the housing market is in decline, landowners seem to be more receptive to these programs to help generate revenue for the farm. However, during a housing boom, the market to develop usually outweighs the incentive to preserve land. This will continue to be an issue in the land preservation program as the supply and demand of the housing industry continues to vary.

The other primary variable to participation in land preservation programs are property owners who, because of their religious beliefs, familial obligations, or other reasons, choose to keep their properties in active agriculture without this type of governmental assistance. Inherent in the decision for private property owners to participate in land preservation programs is personal ethic. While this can be an obstacle to expanding land preservation programs in the County because a significant portion of productive farmland in the County is in the ownership of these private citizens, there is also some degree of confidence that the land will remain in agricultural production rather than succumbing to development pressure. So, while land isn't being definitively protected, it likewise is not being developed.

Sustainable Growth and Agricultural Preservation Act of 2012

In 2012, the Maryland General Assembly passed Senate Bill 236, the Sustainable Growth and Agricultural Preservation Act of 2012, commonly known as the Septic Bill. This legislation encourages counties to develop strict land use standards relating to the installation of private on-site sewerage disposal systems (aka septic systems). The legislation essentially directs counties across the State to adhere to a 4-tier mapping system outlined in the State law to regulate the installation of new sewerage facilities.

The State law does not require a county to adopt what is being termed as a tier map. However, counties that choose not to adopt a septic tier map are prohibited from approving new major subdivisions that would use private on-site sewerage disposal systems. Contained within this Plan under the Water Resources Element, the septic tiers map and analysis has been performed and delineated.

While the adoption of a septic tiers map does create some additional availability for development, the overall effect of this law in Washington County is essentially a de facto downzoning that may have some repercussions on land preservation efforts in the County. The reduction in permitted development rights creates two potential challenges. First, the reduced number of development rights can deter farmers from participating in land preservation programs because of potential loss of development rights for immediate family members. Under the MALPF program, a property owner could retain a certain number of rights for family members and still have enough rights remaining based on local zoning regulations that would make selling an easement a reasonable concession to a property owner. With the inception of the Septic Bill, immediate family member lots count toward the overall maximum and therefore has a greater impact on easement value. Some landowners may perceive this as too restrictive or unpredictable for future estate planning.

The other potential impact from this law on land preservation programs is related to land easement values. With development rights further restricted by the requirements of the Septic Bill, the value of the overall easement can be diminished. Fewer development rights permitted means fewer development rights purchased. Another side effect of a limited supply of development rights available in rural areas is that the demand for such lots will likely elevate the value of development lots. At some point the supply vs. demand ratio of rural development lots will elevate the value of lots to the point where development will be more lucrative than easement values for the overall farm. Not enough time has elapsed since the inception of this law to fully understand these types of financial impacts, but the County will need to closely monitor this balance to stay competitive with land preservation.

Alternative Energy and Other Non-Agricultural Uses

Just as farmers are seeking out alternative agricultural uses to supplement income, other non-agricultural uses are also being sought out because they are becoming more accessible and profitable than traditional agricultural land use. Uses such as commercial communication towers (aka cell towers), solar energy generating systems (SEGS), and wind energy generating systems are a new wave of non-agricultural uses that can consume large areas of land currently used as productive agricultural land in the County.

Large solar energy generating systems are of primary concern especially as it relates to consumption of productive cropland. Cell towers and wind turbine facilities can also have a negative effect on agricultural operations by using up productive farmland for their facilities, however, they typically have a lower impact than SEGS. Cell towers and wind turbines have a smaller footprint (typically less than one half acre) per tower or turbine and the necessitated height of these uses allows ample area for farming equipment to still operate on the land and to allow enough light penetration for vegetative growth.

SEGS, however, are not conducive to crop cultivation or harvest. Typically, the solar arrays are less than 10 feet tall and block a significant amount of sunlight from reaching the ground thereby reducing productivity of most crops. The panels are also too low to the ground to allow for easy access for harvest.

While SEGS can have a negative impact by reducing productive cropland in the County, they do appear to be more compatible with pasture operations. Rocky terrain generally associated with the karst topography of the region already limits the ability of some areas of the County to have viable cropland. Most farms already use these rocky areas as pastureland for livestock grazing. This could provide a unique opportunity for Washington County farmers to potentially integrate SEGS into existing farming operations by locating the solar areas within pasture lands, planting feed grasses under the panels, and opening the areas for livestock grazing.

Legislation regarding the location and implementation of renewable energy sources such as wind and solar have recently been debated in the Maryland General Assembly. The debate revolves around governmental jurisdiction as it relates to how these uses are regulated. Recent court cases around the State have deemed the Public Service Commission as the legislative authority over these types of uses. In order to preserve some local input on these issues, legislation has been passed to require the PSC to consult with local jurisdictions on potential applications and must consider testimony given as part of their decision.

In Washington County amendments have been made to the Zoning Ordinance to provide opportunities for renewable energy uses to be located within appropriate areas. Currently, solar arrays are permitted in Industrial Districts and a special exception use in rural area districts. While permitted as a special exception use in rural areas, these uses have also been prohibited from designated preservation areas such as Priority Preservation Areas and Rural Legacy Areas. The only exception of this prohibition would be the establishment of solar facilities in PPA's on land that is currently zoned Industrial Mineral.

Great effort was made to analyze which areas of the County should be delineated as a high priority for land preservation because of agricultural productivity. Because the State and County have put forth millions of dollars and other resources into land preservation to reduce large scale residential development in these areas, it was a logical progression to prohibit uses that would inhibit or prevent agricultural production. By being selective and prioritizing agricultural resources this also provides flexibility to landowners outside of these areas who may not have access to funding opportunities for preservation, to gain another source of income. Additional protections against intrusion of these facilities into prime farmlands include a requirement for solar facilities to be located on lands not designated as prime soils to the greatest extent possible.

Hybrid Commercial/Agricultural Uses

Another new niche industry creating challenges to land preservation efforts are rural based event centers. These typically take the shape of converted barns or temporary tents on farms and large lots to accommodate events such as weddings, festivals, and large-scale recreational activities. These activities are blurring the lines between a commercial element that is directly related to agricultural activities that occur on the farm and those that simply take advantage of the view.

The installation of uses that manufacture value added products or sell items produced on the farm such as wineries, creameries, or farm stands have a direct link to the agricultural production of the land. Event centers do not have the same inherent link. While they do show off the beauty and scenic value of the land, it does not directly support agricultural production. The loss of this direct link to agricultural production is of specific concern to land preservation efforts. It begs the question, are we protecting the land for scenic value or to promote a viable agricultural industry?

Washington County is not the only jurisdiction to grapple with this issue. Other rural counties as well as the State have been weighing the same balance between maintaining a viable agricultural base while also reaping the benefits of these types of agricultural tourism uses. Recently, MALPF included event centers as a permitted commercial use on permanently preserved easements. This decision has led to some controversy at a local level. While MALPF allows such uses, the Washington County Agricultural Advisory Committee does not support this conclusion. The belief is that public tax dollars were used to protect the agricultural operations and viability of the land not for commercial profitability. As this issue continues to evolve, the County will need to further evaluate its effects on local land preservation efforts.

Land Preservation Goals/Critical Mass

At the inception of the County Land Preservation program, a collaborative effort between the County, the University of Maryland and the Agricultural Extension Service was initialized to help the County produce a minimum acreage goal for land preservation efforts. It was determined at that time that 50,000 acres of active agricultural land was the threshold for critical land mass needed to keep agricultural operations viable. This goal was developed in coordination with Staff from local planning agencies, State planning agencies, and the Soil Conservation District. The calculations and assumptions made were analyzed in a manner to determine the minimum acreage of active agriculture needed to produce sustainable levels of agricultural products and to support the County's many agricultural services.

Now that the County has preserved a little over 60% of our initial goal of 50,000 acres of active agricultural land, it seems appropriate to re-evaluate the County's goals for easement acquisition and determine what future efforts could take place to continue supporting agriculture as a viable economic sector. While the methodology used to determine the initial preservation goal is unknown, new research was completed in 2002 through a grant by the Maryland Center for Agro-Ecology Inc. to study and evaluate the critical mass theory. In the self-explanatory title "Is There a Critical Mass of Agricultural Land Needed to Sustain an Agricultural Economy?: Evidence from Six Mid-Atlantic States", Janet Carpenter and Lori Lynch from the University of Maryland postulate the relevance of the critical mass theory.

Synthesized to its finest point the question posed is, at what point does loss of farmland create a collapse in the overall agricultural economic sector? The answer is, it depends. What is clear from the study is that critical mass is not just a number. It is a mixture of variables and policies such as available prime farmland, consumer preferences, land use polices, and environment that interact with one another and forces farmers to adapt to changes through time. The study included 110 counties in six States and examined the rate of farmland lost over a nearly 50-year period between 1949 and 1997. Their findings were that the critical mass threshold in terms of harvested acres per County was 189,420 acres. They also found that counties that had a total of 150,000 acres or less of farmland were also susceptible to higher rates of farmland loss. However, that trend was not consistent over the entire 50-year period. They also found that between 1978 and 1997, the level of harvested cropland acres no longer had an impact on the rate of farmland loss. They theorize this pattern of farmland loss changed for two reasons, implementation of preferential taxation programs for agriculture and changes in technology, policies and trade patterns.



Farms do not stand alone. Each is an anchor of stability for other nearby farms. Each is a thread in a web of neighboring farms, farm businesses, and other human endeavors that support and rely upon each other. When one thread is lost, the negative consequences ripple through the community. When many threads are lost, there comes a point when the web fails—when farms and farm businesses no longer have the mutual support needed to keep the local farm economy viable.

Source: <https://conservationtools.org/guides/147-why-preserve-farmland>

Land Preservation Goals/Critical Mass (cont.)

Just as with many other sectors of business, the agricultural economy is evolving, adapting, and changing from traditional business models. Changes in technology, transportation, land management policies, genetics, and even public perception have forced agricultural operations across the country to move away from traditional forms of agricultural operations. In their study about critical mass, Carpenter and Lynch wrote, "Changes in the last 25 years have apparently altered the impact of this critical mass variable. Thus while the initial results indicated that once a county dropped below the critical mass threshold that agriculture was doomed, we find that the rate of farmland loss has actually slowed. We hypothesize that farmers have shifted to alternative crops, have found alternative marketing mechanisms (such as direct marketing rather than depending on processing plants), or have begun using alternative purchasing channels such as the Internet or using delivery services to obtain their input needs."¹

Assuming a similar average of easement acquisition over the next twenty years (2020-2040) that has occurred in the last twenty years (2000-2020), it is projected that we could potentially preserve about 20,000 acres of additional active agricultural farmland. Added to our existing 38,000 acres +/- of existing preserved land puts the County just over our current 50,000-acre goal. So, the question now becomes, is this enough to support long term sustainability in the agricultural sector.

As stated in the previous section, the amount of active farmland being reported in the County seems to have plateaued over the last 25 years at an average of 120,000 acres. This stabilization, after decades of decline, appears to be a positive indicator that the agricultural industry has found some economic balance. Assuming this average remains steady for the next 20 years and that we achieve our goal of 50,000 acres of preserved land, that would equate to a little over 40% of the total active farmland in the County being permanently preserved. While this would be a remarkable milestone to achieve, it also leaves a large portion of active farmland unprotected. It seems evident that this issue will need further in-depth study.



Photo Ernst Farm

¹ Is There a Critical Mass of Agricultural Land Needed to Sustain an Agricultural Economy? Evidence from Six Mid-Atlantic States; Janet Carpenter and Lori Lynch; Agricultural and Resource Economics; University of Maryland; November 2002.
Washington County, Maryland Comprehensive Plan 2040

Forestry Resources

In addition to traditional agricultural commodities, Washington County is host to a significant amount of forest resources. According to a detailed land use-land cover analysis completed by County GIS Staff in 2011, there are approximately 131,600 acres of forest land in Washington County. This is the largest land use in the County and includes deciduous, coniferous, and mixed forest areas.

Forestland serves multiple purposes in the County: it is a viable economic resource with millions of board-feet of timber being harvested yearly; it is a valuable recreational resource as many parks and trails in the County utilize woodland as cover; and it is an environmental resource, providing habitat for wildlife, carbon sequestration that traps carbon dioxide to reduce buildup in the atmosphere, and positively contributing to the health and quality of the County's waterways.

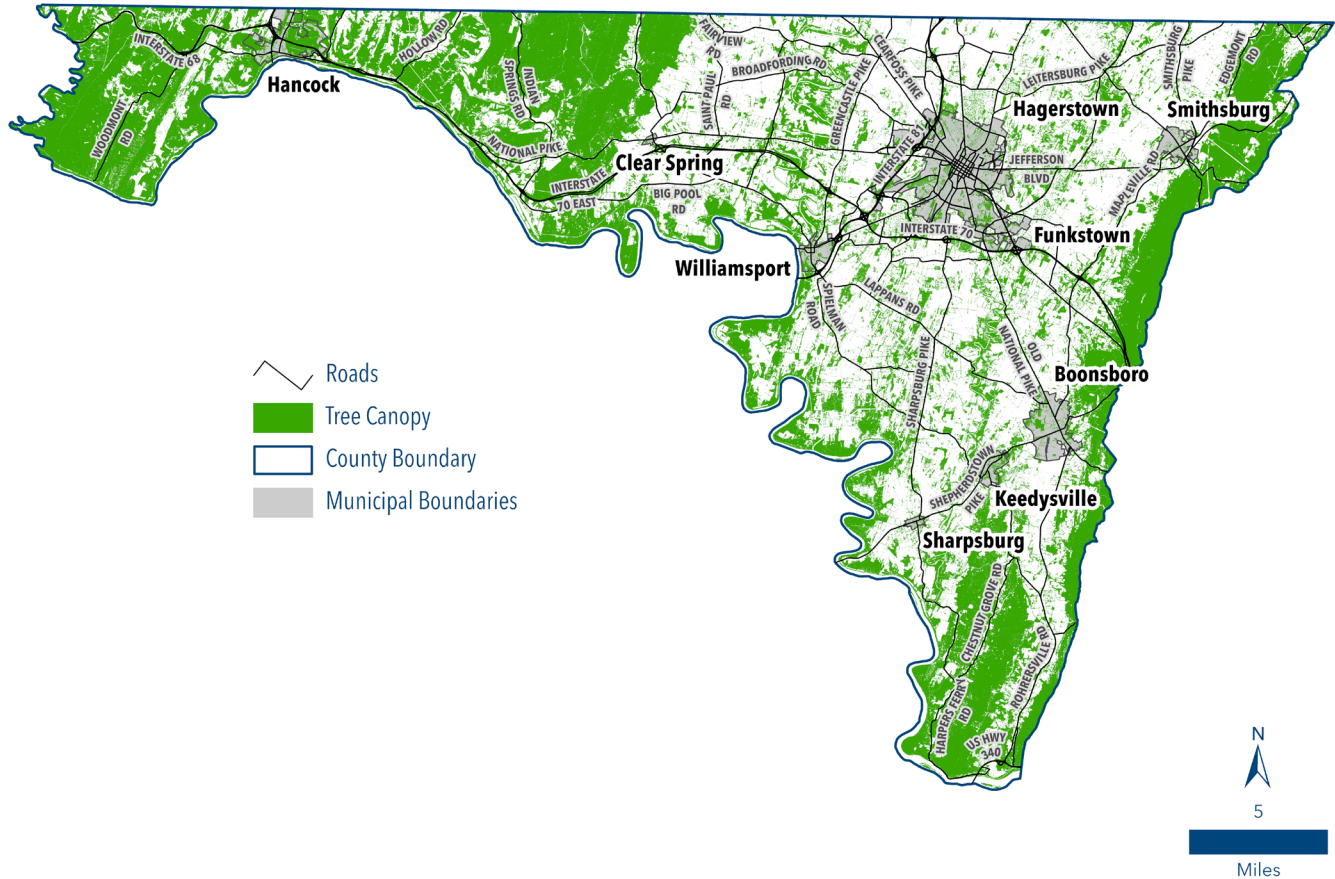


Forest Inventory

Forest Location and Composition

At one time, most of Washington County was covered with hardwood forests. The limestone bedrock areas of the valley had significant forests that included Oak, Hickory, Beech, Ash, and Basswood. Today, the major forested areas are located in the mountainous areas of the County including the Blue Ridge (South Mountain) area to the east, the Elk Ridge and Red Hill areas in the south, and the Ridge and Valley system (Fairview Mountain and Sideling Hill) in the west. There are additional forested areas located in the Hagerstown Valley, primarily where the land is too rocky or steep for development or farming. Bottomland forests are found along the fertile floodplains of streams such as Conococheague and Antietam Creeks, and along the Potomac River (see map on following page).

Map 11-3: Forest Inventory



According to U.S. Forest Service and Maryland Forest Service data, most of the forested area in the county consists of Oak-Hickory type (79%). Remaining forested areas are classified as Oak/Pine (6%), White/Red/Jack Pine (8%), and other northern hardwoods (6%). While the composition of forest areas in Washington County has stayed rather consistent, several pests and diseases have impacted specific species groups over time. Examples of pests that have impacted forest resources in Washington County include gypsy moth, emerald ash borer, and the hemlock woolly adelgid.

Functional Importance of Forests

While trees and forested areas are typically viewed in terms of their aesthetic value, the environmental values are often overlooked or taken for granted. Forested areas are critical in providing clean air and water that are essential to all life. They also provide protection and relief from the sun during summer months. These functions are served by different types of forested areas as outlined below.

Riparian Forests

Riparian forests are identified as those forested areas located adjacent to water features such as streams, rivers, lakes, wetlands, etc. These areas are prone to frequent flooding and inundation so only specific types of trees will typically grow in these areas. Their proximity to flowing water systems such as rivers and streams give stability to banks and help reduce erosion and sedimentation. These areas also act as transitional zones for aquatic and terrestrial habitats and provide shade to help reduce water temperatures.

Riparian forest buffers also play a critical role in the regional maintenance of water quality as outlined in the County Watershed Implementation Plan (WIP). Use of various funding mechanisms from Federal, State, and local resources have bolstered Washington County’s Clean County initiative which includes tree planting and stream restoration projects. More detailed information regarding the benefits of riparian stream buffers is contained within the Sensitive Areas Element.



Riparian Buffer Photo: DNR

Urban Forests

While the term “urban forest” may seem counterintuitive, forests within urbanized areas play an equally important role in overall environmental health. Urban forests can take many forms including park areas, street trees, landscaped boulevards, greenways, etc. Because nearly 80% of Americans live in urbanized areas the function of urban forests plays a critical role in the health of our citizens.



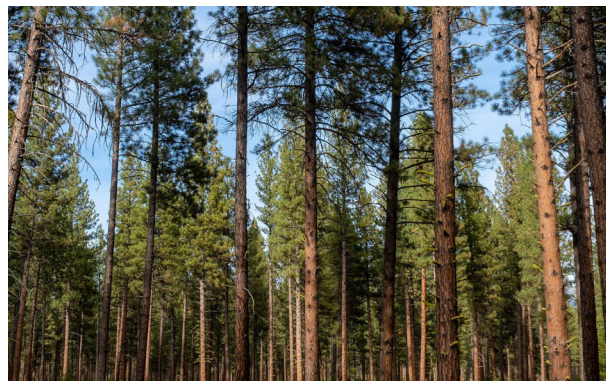
Urban Forestry in Boonsboro, MD

These areas serve to provide stormwater management controls, air and water filtration, and provide shade and reduce urban heat islands that can also result in energy conservation. They provide habitat for many animals including rabbits, squirrels, and inland bird species. They also provide areas to recreate and congregate.

The County has recently begun to incorporate the principles of urban forests into forest conservation mitigation efforts by including street trees as a permissible method of mitigation. Further efforts should be made to incorporate opportunities for the establishment of urban forests as part of our forest management plans.

Timberlands

Timberlands are a description of forested areas that are suitable for commercial harvest. They are defined as areas capable of producing wood at more than 20 cubic feet (ft³) per acre. Products from timberland can vary depending upon the type of trees being harvested. Generally, harvested timber is categorized into two categories; hardwoods (trees that have broad leaves and mostly deciduous) and softwoods (trees that have needles and are evergreen).



Timberlands Example

Washington County contains mostly hardwood forests that support production of construction lumber, pole timbers, furniture, and flooring. According to the Maryland Forest Service, an estimated 574,216 cubic feet of hardwoods were harvested in Washington County in 2016

Threats To Healthy Forests

Urbanization and Fragmentation

A forest is a complex web of relationships between plants, animals, fungi and other organisms. When intact and healthy, they purify our air and water, provide important economic products, and provide space for recreational activities. Therefore, as the County continues to urbanize, it is important to recognize not just the loss of forest resources but the effects of fragmentation. Fragmentation of existing forest; i.e., the decreasing size of forest lots and their isolation from larger tracts of forest land, make it difficult to maintain healthy forest populations. Isolated islands of forest cover have higher mortality rates, fewer environmental benefits, and little economic value. Increasing tree canopy in more densely developed areas helps to mitigate pollution from stormwater runoff, improve air quality, reduce the urban heat island effect, and reduce thermal pollution to streams and rivers. Additional research into fragmentation of forested areas should be completed and strategies adapted into existing forest conservation best management practices.

Pests, Disease and Invasive Species Management

Threats from pests, disease and invasive insect and flora species on forest resources is a constant threat that has no regard for jurisdictional boundaries. To help manage these threats, the Maryland Department of Agriculture, Department of Natural Resources, and US Forest Service partner in the Cooperative Forest Health Program. Together these agencies work to monitor, study, and evaluate potential threats and spread of pests and diseases.

There are several invasive insect pests that are having harmful effects on the health of forest resources in the County including the gypsy moth, emerald ash borer, spotted lantern fly, hemlock wooly adelgid, and walnut twig beetle. These insects have varying methods of injury such as defoliation, bark boring, or root damage.

Invasive plant species can also have devastating effects on native forest resources. Invasive species are those characterized as being able to spread quickly and displace native plant resources and include common plants such as honeysuckle, thistle, dandelion, ivy, morning glory and bamboo. There can also be a noxious component to such invasive plants that can be harmful to not just forest resources but also humans and animals. Examples include poison ivy and poison oak that lead to allergic reactions in some humans resulting in blistering, itchy rashes and Johnson Grass which can be lethal for cattle.

The County's Forest Conservation Ordinance provides guidance and direction to properly maintain forest resources including the management of pest, disease and invasive species encroachment. The County should continue to monitor long term forest protection easements to help ensure proper maintenance of these resources.



Spotted Lanternfly Photo: MD Dept of Agriculture

Animal Grazing

Animal grazing in forested areas is a common strategy used by livestock owners to expand their pasture needs and provide some protection of the animals from the elements. It has been a long-standing policy to deter livestock owners from allowing forest grazing activities. Grazing activity has led to detrimental effects on forested areas such as soil compaction, erosion, damage to saplings and understory, and in some cases stream degradation.

To make forest grazing a manageable activity there is a lot of investment required both in time and money. Landowners would need to carefully manage the rotation of livestock to prevent overgrazing through strategies such as:

- Establishing watering systems and mineral resource areas to help direct the movement of herds;
- Incorporate rest periods into the grazing management plan so that livestock do not overgraze and allow enough seedling stock for the forest areas to recuperate;
- Install fencing to protect sensitive areas such as stream buffers;
- Avoid grazing during spring and fall cycles to allow forage maturity and recuperation; and
- Monitor and potentially thin forested areas to allow the proper amount of sunlight to reach the forest floor so that foraging plants may grow.

Animal grazing in Washington County is typically not recommended as a sustainable agricultural activity. The forest types and sizes in our area are not typically conducive to the management techniques needed to balance forest grazing activities. As stated in previous sections, the primary forest type in the County is Oak/Hickory stands. These species of trees typically have broad canopies that do not allow for a substantial amount of undergrowth that would characteristically be needed for large herds of livestock. In addition, the primary locations of larger stands of forested areas are in the mountainous areas of the County to the east and west, and along flowing waterways. Neither of these areas are conducive to grazing for large herds of livestock.



Cows from Deliteful Dairy

Land Management and Resource Stewardship Policies

Long term analysis of forest land in the State of Maryland has shown a steady decline in the total forested area of the State. Since the early 1960s, it is estimated that over 450,000 acres of forest have been lost across the State. Comparatively, the western region of the State (consisting of Allegany, Garrett, Washington and Frederick Counties), has been consistent in management of forested areas and have a net gain in forest cover both short and long term. In order to stop and eventually reverse the trend of forest loss across the State, two key pieces of legislation have been passed by the Maryland General Assembly over the last two decades to address this issue. First was the Maryland Forest Conservation Act passed in 1991. The purpose of the law was 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”¹. The Act required that all counties in the State with less than 200,000 acres of forest cover adopt an ordinance to address the issue of forest conservation through identification and protection of existing forest, and establishment of new forest.

The second key piece of legislation passed was the Maryland Forest Preservation Act of 2013. This legislation builds upon the existing rules established in the Forest Conservation Act. The primary inclusion to the existing Act was to mandate that there be no net loss in the existing 40% of forest canopy across the State. To further incentivize the program, the new regulations also included an expansion of tax credits to Marylanders who help increase tree canopy on their own properties.

Washington County Forest Conservation Program

In February of 1993, in accordance with newly adopted State legislation, the Forest Conservation Ordinance (FCO) for Washington County was adopted. Under this Ordinance, any person seeking subdivision of land or applying for a grading or sediment erosion control permit on areas 40,000 square feet or greater are required to comply with the Ordinance. There are some specific exemptions included in the law such as real estate transfers with no change in land use, family member lots, selective timber harvests, etc.

The implementation of the Forest Conservation Program has had a positive impact on forest resources in the County. According to the Maryland Department of Natural Resources and the Maryland Forest Service, Washington County has increased forest land by nearly 5,000 acres in the seven years between 2008 and 2015. To help build on the effectiveness of this notable achievement, further attention needs to be given to the location and functional importance of forested areas in the County.

When mitigation is needed, the FCO establishes a preferred sequence of mitigation techniques that developers and consultants are directed to use when planning for new development. The highest priority of mitigation is to limit the amount of tree disturbance on the site and retain any existing resources. If there are no forest resources on site, the highest priority of mitigation would be to plant forest. On-site mitigation helps offset the environmental impacts of development such as water quality and urban heat island effects.

¹ “Forest Conservation Act.”, Maryland Department of Natural Resources <https://dnr.maryland.gov/forests/Pages/programapps/newF-CA.aspx>

If on-site remediation is not possible, the next highest priority is to either retain or plant forest on an offsite location in the same watershed. Keeping remediation in the same watershed can still help mitigate for some of the impacts of development with regard to water quality specifically. Offsite mitigation is typically mitigated between the developer and another property owner seeking to preserve their forest resource. The County has also recently implemented a forest banking program to help streamline these efforts between property owners. Further discussion of the banking program is outlined later in this section. The least preferred method of mitigation on the list of techniques is a payment-in-lieu (PIL) of planting option. To use this method of mitigation, the land developer must prove that all other methods listed in the preferred sequence of techniques have been exhausted. Further discussion of this mitigation method is outlined below.

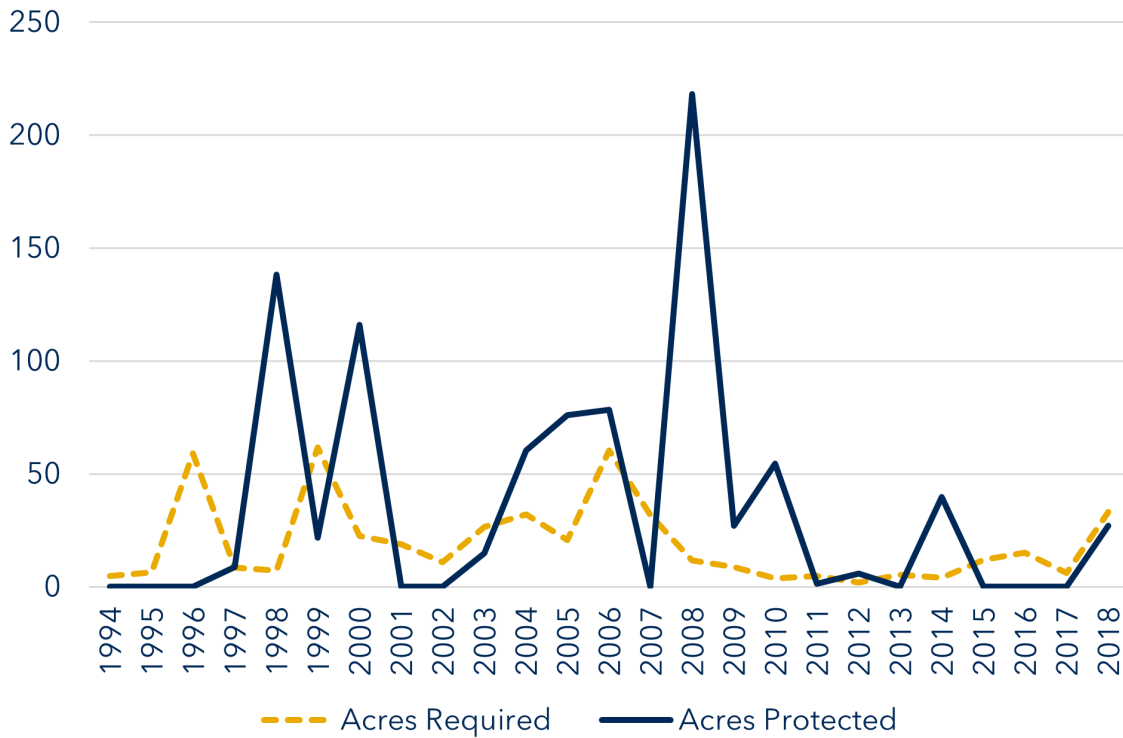
Forest retention and planting on-site are the most common methods of mitigation used in the County particularly for residential development. Commercial and industrial development also have a history of using these methods but have come to favor the payment-in-lieu of on-site mitigation. To help improve the effectiveness of the program and better guide the County in implementing the Forest Conservation Program, there is interest in completing a tree canopy analysis to establish a baseline of forest inventory and its location. Some work has been done in the past using aerial photography and detailed land use analyses, but a more focused analysis would be beneficial. Once the inventory is complete, the County can delineate priority areas for forest cover in sensitive areas such as streams, floodplains, and steep slopes. Further incentives and regulatory streamlining could also be investigated to better target areas for priority resource location.

Payment-in-lieu Program

The County, in cooperation with the Washington County Soil Conservation District, has successfully developed a program where fees collected in lieu of on-site mitigation are used for easement purchases throughout the County with emphasis in acquisition of locations in environmentally sensitive areas. The collected funds provide the opportunity and flexibility for the County to help implement the objectives of the Forest Conservation Ordinance. To ensure proper use of the funding, the WCSCD and County Planning Department developed a priority ranking process. Included in the ranking are priorities for locating PIL funded easements in areas with existing sensitive area such as floodplains and stream buffers, areas that will create a greater contiguous forested area and reduce fragmentation, and that have good forest management techniques such as control over invasive species. In particular, this program has targeted properties in close proximity to Antietam and Conococheague Creeks to achieve dual water quality and forest protection objectives. The PIL program works in conjunction with multiple other County regulations and land preservation programs that collectively support a multi-pronged effort toward sensitive area protection.

Since 1994, the County has collected over \$2.4 million in forest conservation funds to mitigate for nearly 480 acres of forest needed to comply with the Forest Conservation Act. In August 2017, the State of Maryland passed new legislation tripling the mitigation fee from \$0.10 per square foot of mitigation needed to \$0.30 per square foot for mitigation in Priority Funding Areas (PFAs) and \$0.36 per square foot for mitigation outside of PFAs. As the economy continues to rebound, the County would expect slightly higher fund balances as a result. To date, the WCSCD has spent over \$1.9 million in funds on 21 projects that have resulted in 315.6 acres of new forest plantings and conservation of 572.95 acres of existing forest for a total of 888.55 acres being permanently protected by easements. These results far exceed the nearly 480 acres required to be mitigated by the funding collected in the Forest Conservation Fund by Washington County.

Chart 11-3: Forest Acres Preserved vs Acres Required (1994-2018)



Banking Program

A newer mitigation method added to the County Forest Conservation Ordinance in 2015 is the forest banking program. The purpose of the banking program is to establish long term forested easements in priority areas that can be intermittently used by multiple development projects. One of the primary objectives of the program is to work in harmony with other programs with similar goals such as land preservation and targeted sensitive areas. Using the banking program will help build larger blocks of protected lands for both agricultural and environmental benefits.

The program works similarly to, but not exactly like, a purchase of development rights program seen in land preservation programs. In a PDR program, the property owner agrees to extinguish development rights on their land in return for payment from the County for those rights. In the forest banking program, the property owner also establishes a long-term protective easement on their property that limits development and associated activities within the easement. However, instead of the County paying the property owner for the easement, developers in need of forested area to mitigate for projects elsewhere in the County pay the property owner to use the forest easement for their mitigation.

Recent changes in legislation have restricted the use of forest banking projects to only be associated with afforestation projects. Previously, banks were permitted to be established on existing forest resources, however, current regulations now only permit establishment of banks on newly planted forest resources. To date, this program has not gained much traction, but promotion of this program is continuing to increase.



AGRICULTURAL RESOURCE RECOMMENDATIONS

- ★ Continue to work toward the established County goal of preserving at least 50,000 acres of active agricultural land by:
 - Further emphasizing preservation of large continuous blocks of permanent farmland containing 1,000 or more acres by including this variable in the priority ranking system;
 - Encourage diversification of farm products including value-added products;
 - Encourage and support young and/or new farm operators through easement/loan programs such as the Next Generation Farmers program.
- ★ Continue to monitor the overall status of active agricultural land for stability and to determine if additional acreage goals are needed to help maintain critical mass.
- ★ Continue efforts to seek out permanent funding sources that sustain agricultural easement and development rights acquisition.
- ★ Implement strategies to deter uses that remove large blocks of prime agricultural land out of active production (i.e. solar energy generating facilities)
- ★ Monitor, evaluate, and where necessary amend regulatory ordinances such as the Zoning Ordinance to include emerging agri-business and agri-tourism opportunities.
- ★ Work with the local Soil Conservation District to promote and implement best management practices in farming operations.
- ★ Continue to monitor and, where applicable, adjust targeted preservation areas such as Priority Preservation Areas and Rural Legacy areas to best achieve long term preservation goals.
- ★ Consider permitting overlapping land preservation easements where easements protect different natural resources.
- ★ Investigate investment in infrastructure such as bridge/culvert widening or pull off areas to help accommodate the requirements of larger farm equipment.



FOREST RESOURCE RECOMMENDATIONS

- ★ Work with MD DNR to complete a tree canopy survey for Washington County. This will establish a baseline of existing resources that can be used to formulate additional goals, such as targeted canopy cover.
- ★ Delineate high-priority areas for tree plantings such as stream buffers, trout streams and floodplains to enhance water quality.
- ★ Use State Green Infrastructure Assessment, BioNet and other programs to provide additional guidance in prioritizing forest resource conservation and implementation.
- ★ Prioritize the use of payment- in- lieu of mitigation funds to retain and expand riparian forest and large contiguous forested areas.
- ★ Integrate tree plantings in landscaping design standards to help reduce urban heat islands, reduce runoff and promote on-site water quality treatment.
- ★ Promote local, State, and non-profit efforts to encourage private property owners to plant trees through programs such as Gift of Trees, MDers Plant Trees, Chesapeake Bay Trust grant program, and Maryland Urban and Community Forestry Committee (MUCFC) grant program.
- ★ Develop a priority ranking system for the preservation of sensitive environmental, cultural and scenic resources to be targeted for preservation efforts through forest banking, the use of PIL funds and other land preservation programs.
- ★ Target reforestation of undevelopable public and private land to assist TMDL, Canopy cover, SWM goals:
 - Public lands (schools, parks, institutional)
 - Roads (ROW, medians, planter strips, parking lots, traffic circles, cul-de-sacs)
 - Private (floodplain, stream buffers, abandoned lots, industrial or reclamation lands)
- ★ Evaluate the potential benefits of permitting overlapping land preservation easements where different resources are protected (i.e.-CREP contract to forest conservation), particularly those that don't require the expenditure of state or local funds
- ★ Strive during the development review process to create workable forest conservation plans that are sustainably designed to provide for community quality of life and do not constrain business expansion potential.
- ★ Promote the multiple landowner benefits that can be realized from forest easements when enrolling in State programs for forest management (i.e.- an approved forest stewardship plan enables timber harvesting in a forest easement).