

Environmental Stewardship in Carroll County



Carroll County has long been a leader in the State with programs, policies, and regulations that demonstrate our dedication and commitment to environmental stewardship.

Commissioners' Environmental Principles

In October 2011, the Board of County Commissioners adopted the Board's support for clean air, land, and water was detailed in its vision.

a set of environmental principles to emphasize the County's commitment to environmental stewardship. The Board's support for clean air, land, and water was detailed in its vision.

1. *Maintain and improve environmental quality and encourage economic prosperity while preserving the county's rural character.*
2. *Promote land use, planning, and development concepts and practices that support citizens' health, safety, well-being, individual rights, and the economic viability of Carroll County.*
3. *Maintain safe and adequate drinking water and other water supplies including efforts to protect and restore the Chesapeake Bay.*
4. *Strive to protect our natural resources for future generations.*

Carroll County Master Plan Goals

The adopted Carroll County Master Plan seeks a holistic approach to protection of environmental resources by incorporating stewardship into other activities and policies, as demonstrated by incorporation of environmental stewardship into more than half of its goals. For more details, view the Master Plan at CarrollCountyMD.gov/government/directory/planning/comprehensive-county-plans/county-master-plans/.

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Goal 3 ♦ *Protect and enhance the water quality of Carroll County's rivers, streams, reservoirs, and aquifers; comply with applicable state and federal requirements related to water quality and quantity; and maintain and protect adequate water supplies to serve current and planned development.*

Goal 7 ♦ *Preserve at least 100,000 acres of agricultural land to support the production of agricultural products and promotion of related agribusiness.*

Goal 8 ♦ *Preserve 80 percent of undeveloped land in the Priority Preservation Area, as adopted by the Board of County Commissioners.*

Goal 9 ♦ *Provide an affordable, coordinated, and comprehensive system of public and private parks, recreational facilities and programs, and open space that will enhance our communities.*

Goal 11 ♦ *Protect, maintain, and restore, where feasible, the environmental resources and natural ecosystems in the County by promoting land use practices that are in balance with, and minimize the effects on the natural environment, subject to appropriate cost/benefit analysis.*

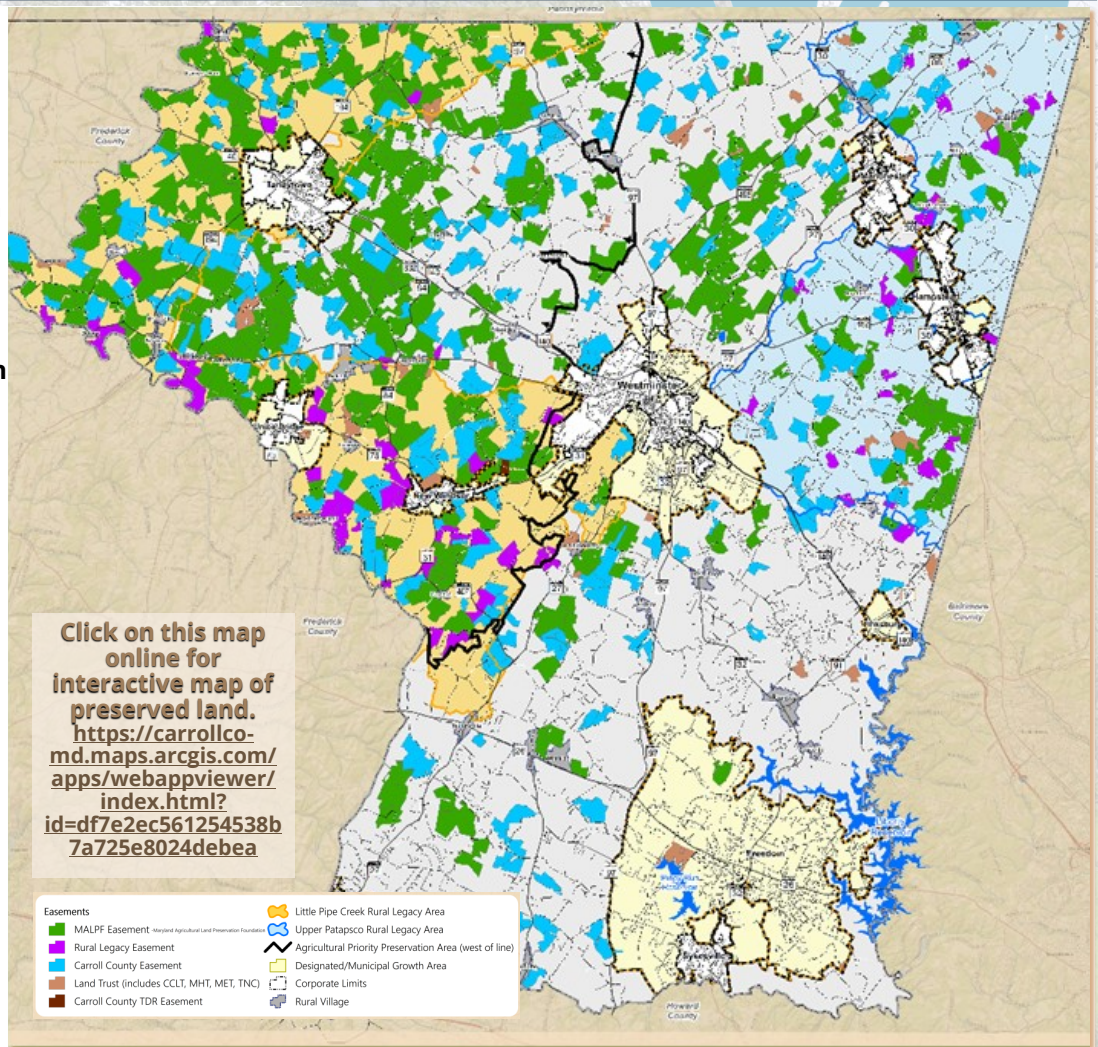
Goal 12 ♦ *Protect certain mineral resources of current and future economic importance from preemptive land uses and to ensure availability for recovery in a manner that minimizes impacts to surrounding areas; and for reclamation purposes, assure recovery to an environmentally sensitive, aesthetically pleasing condition.*

Goal 14 ♦ *Facilitate a development pattern that remains consistent with the fabric of our communities, is in harmony with the surrounding built and natural environments, encourages community interaction and, in rural areas, preserves the County's rural character.*

Goal 15 ♦ *Pursue policies that facilitate development in appropriate areas, including the Designated Growth Areas, thereby protecting and conserving agricultural and environmental resources, preserving open space, and providing public facilities and services efficiently and cost-effectively.*

Land Conservation & Preservation

Carroll County has a rich tradition of agriculture that continues to be strong today and continues to support agriculture as the county's number one industry. The countywide desire to preserve the farming way of life and support agricultural industries has resulted in tremendous rates of participation in one of the most successful agricultural land preservation programs in the country. **Carroll ranks among the top county programs in the United States with the number of acres preserved through conservation easements¹.** The preservation of the agricultural industry in the county is strengthened through conservation of intermingled lands steeped in natural resources. As of June 30, 2023, Carroll County landowners have voluntarily placed easements on over **78,281 acres of land**, limiting their development rights and thus ensuring that the land will be farmed for generations to come. Since FY 1980, over **\$251,217,596 in State and County funds** have been invested in agricultural land preservation in Carroll County. Each acre of land under an easement also helps to preserve the rural character of the county which is so often imperiled by increased development and the diminished ability of farmers to continue farming as a result of development's side effects.



Agricultural Land Preservation Program

Agency: Carroll County Agricultural Land Preservation Program
 Email: CarrollAgPres@CarrollCountyMD.gov Phone: 410-386-2214
 Website: CarrollCountyMD.gov/AgPres/

<p>50% of Carroll County's land mass is in agricultural use</p>	<p>Carroll County ranks 1st in Maryland for number of acres preserved</p>	<p>Agriculture is #1 Carroll's industry</p>	<p>Carroll County aims to preserve 100,000 acres of farmland minimum Carroll reached 75,000 acres permanently preserved in 2020</p>	<p>Every \$1 invested in Ag Pres stimulates \$1.80 - \$2.00 in economic benefit to community</p>
<p>Carroll County ranks 3rd in Maryland for production of sheep, goats, wool, mohair, and milk</p>	<p>Carroll County ranks 1st in Maryland for gross sales of Christmas trees</p>	<p>Carroll County ranks #3 in the state for sales of milk from cows</p>	<p>Carroll County ranks 2nd in the U.S. for number of acres preserved through easement purchase More than 723 farms are preserved in Carroll County</p>	<p>Ag products sold in Carroll County valued at \$110 million annually</p>

One of Carroll's best-known success stories is its Agricultural Land Preservation Program. The community has long recognized the [benefits](#) to be reaped through ensuring the continuance of the strong agro-economy. For many decades, Boards of County Commissioners have consistently supported the County's **goal of preserving 100,000 acres of farmland**, as demonstrated through the continued funding, staff, and other resources needed. The County's diverse programs and approaches to preservation and payment options continue to ensure land is available to support a viable agricultural industry, while also promoting the county's heritage, protecting environmental resources, and maintaining the aesthetic charm and way of life so many enjoy. Preservation programs contributing to Carroll's success include:

- Maryland Agricultural Land Preservation Foundation (MALPF)
- Carroll County Easement Purchase Program
- Water Recharge Credit
- Carroll County Critical Farms Program
- Rural Legacy Program, with two delineated Rural Legacy Areas (Little Pipe Creek and Upper Patapsco)
- Participation of Land Trusts and Conservancies, such as the Carroll County Land Trust, Maryland Environmental Trust, and The Nature Conservancy

Water Recharge Credit

In Carroll County, water recharge credits have become a tool for offsetting water requirements for development and permanently protecting undeveloped land. Maryland Department of Environment (MDE) regulates the appropriation of water to landowners and municipalities based on recharge rates, or amount of rainfall that reenters the aquifer. MDE appropriations are made conservatively through the consideration of drought recharge and periods of low stream flow.

Municipalities across the Piedmont, due to MDE requirements, only have enough recharge to develop at a rate of 1 to 2 units per acre, rather than the 3.5 dwelling units per acre prescribed for Priority Funding Areas. Municipalities can only claim recharge from land they own and control.

Carroll County implemented a program to offer water recharge credits, as a provision of the Carroll County Purchase Program easements, by which groundwater recharge on farms is protected in perpetuity and then the water

Carroll County drains to 9 different watersheds:

- Conewago Creek
- Double Pipe Creek
- Liberty Reservoir
- Loch Raven Reservoir
- Lower Monocacy River
- Lower North Branch Patapsco River
- Prettyboy Reservoir
- South Branch Patapsco River
- Upper Monocacy River



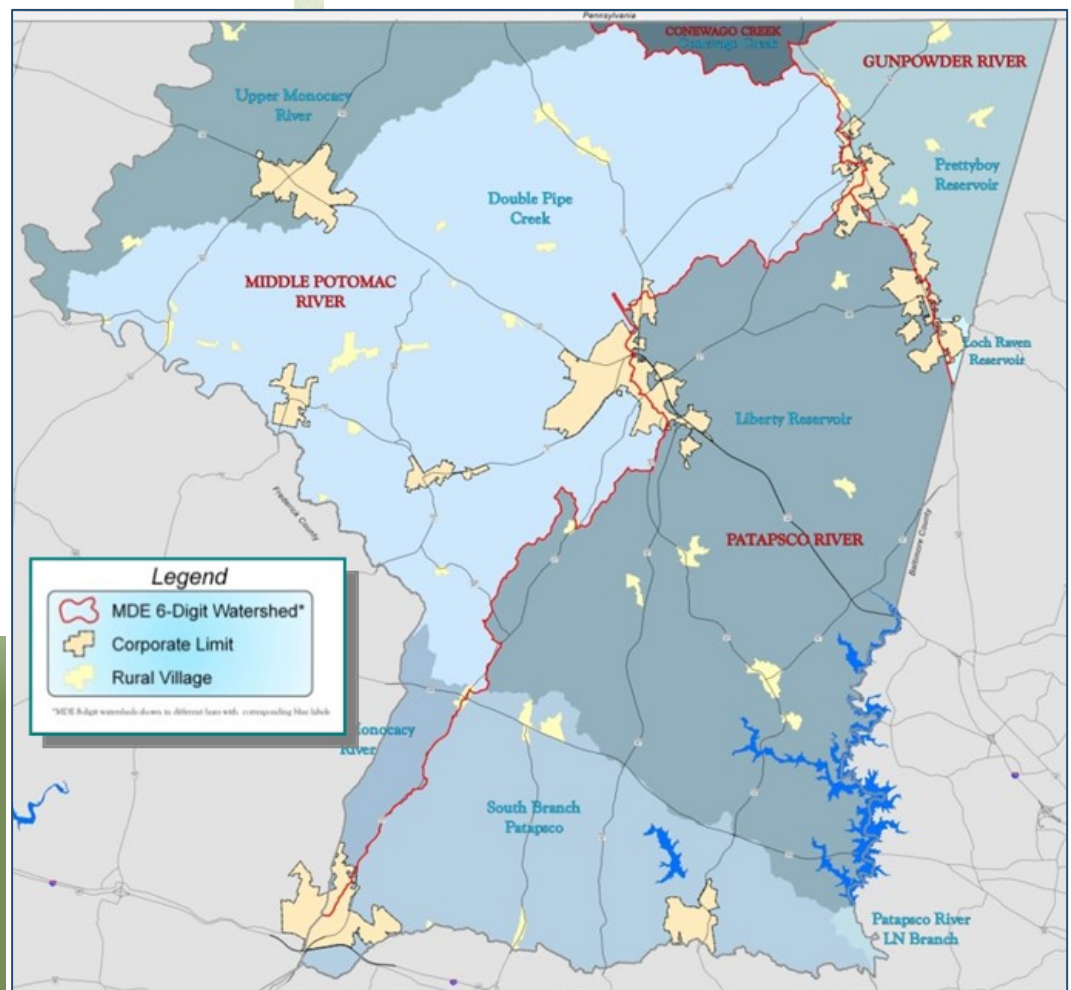
Celebrating 75,000 Acres Preserved & Growing
CelebratingAgPres.CarrollCountyMD.gov

Carroll County achieved a major milestone in 2020 by reaching 75,000 acres preserved in October 2020, 3/4 of the way toward the County's 100,000-acre goal.

appropriation is transferred to municipalities to develop at Smart Growth densities. These credits are included as part of the conservation easement acquired through the Agricultural Land Preservation Program. Farms suitable for water recharge credits are selected strategically for their location, geology, high recharge capacity, and current agricultural operations. As of December 2023, **Carroll has acquired recharge credits on roughly 3,778 acres through 30 conservation easements.**

Rural Legacy Areas (RLAs)

Two locally designated Rural Legacy Areas – Little Pipe Creek and Upper Patapsco – encompass 58,575 and 40,170 acres, respectively, of land eligible for participating in this State program. Greenbelts of forests and farms around rural communities are intended to preserve their cultural heritage; to preserve critical habitat for native plant and wildlife species; to support natural resource economies such as farming, forestry, tourism and outdoor recreation; and to protect riparian forests, wetlands, and greenways to buffer tributaries of the Chesapeake Bay from pollution runoff. The County contributes funds toward the purchase of RLA easements.



Agriculture Programs & Best Management Practices (BMPs)

Soil Conservation Partnership/ Maryland Agricultural Water Quality Cost-Share Program (MACS)

carrollsoil.com/home
https://mda.maryland.gov/resource_conservation/Pages/macs.aspx

Carroll County farmers have a long, proud tradition of voluntary participation and installation of BMPs cost-shared by MACS. Even though Maryland's revised nutrient management regulations now mandate many of these BMPs, participation in the MACS program is voluntary. **Farmers who receive cost-share grants from MACS still invest additional funds themselves** in projects to protect natural resources on their farms, adopt sustainable farm management practices, and comply with Maryland's revised nutrient management regulations.

Nutrient Management Plans

Farmers are required to follow nutrient management plans when fertilizing crops and managing animal waste. These plans specify how much fertilizer, manure, or other nutrient sources may be safely applied to crops to achieve yields and prevent excess nutrients from impacting waterways. These plans generally are required for all agricultural land used to produce plants, food, feed, fiber, animals, or other agricultural products. Maryland's updated regulations now require farmers to establish setback areas next to waterways.¹

Conservation Resource Enhancement Program (CREP)

CREP is a federal-state program that pays landowners to take environmentally sensitive cropland out of production for 10 to 15 years and to install conservation practices that protect water quality and provide wildlife habitat. In Fiscal Years (FY) 2021 and 2022, a total of **20 CREP projects** were completed in Carroll County with \$48,530 and \$1,996, respectively, in cost-share grants to install stream protection measures.^{2,3}

Best Management Practices (BMPs) Installed

The program provided about **\$897,216 in FY 2021** and **\$1,007,562 in FY 2022** in capital funds for Carroll County farmers to invest in installing a total of **131 conservation projects** on their farms to control soil erosion, to reduce nutrient runoff, and to improve water quality. In FY 2019 and 2020, Carroll County farmers **completed the highest number of projects and received the greatest amount of funding of all Maryland counties in FY 2021 and FY 2022.**^{2,3}

Cover Crops

Farmers who plant certain cover crops on harvested crop fields in the fall help to recycle residual plant nutrients, to protect against wind and water erosion, and to improve soil for next year's crop. Cover crops help to prevent nitrogen and

phosphorus from reaching the Bay. In FY 2021 and FY 2022, through participating in MACS alone, Carroll County farms planted cover crops totaling **over 29,294 and 22,640 acres**, respectively.^{2,3}

Natural Resources Conservation Service (NRCS)

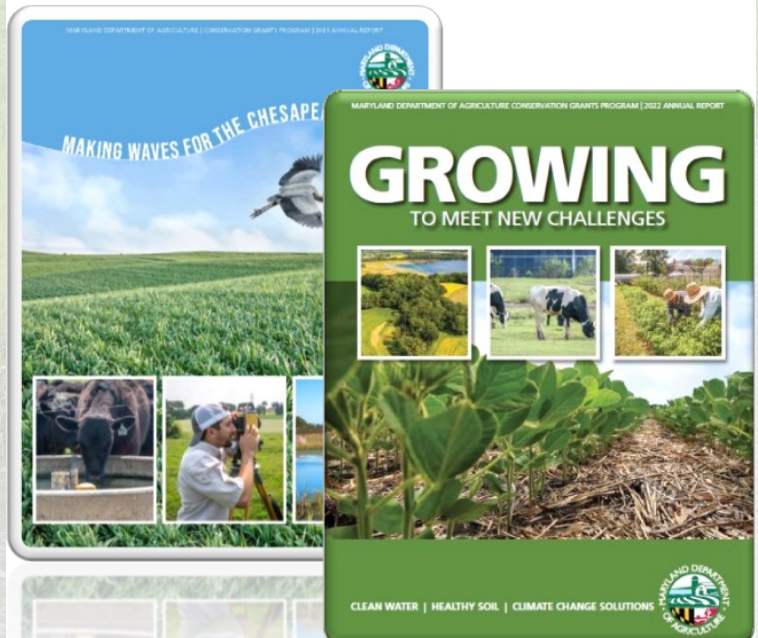
<https://www.nrcs.usda.gov/about/>

Maryland NRCS of the U.S. Department of Agriculture assists private landowners with voluntary efforts to reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters through technical assistance, cost shares, and financial incentives. In 2014, the Farm Bill was enacted. NRCS offers voluntary Farm Bill conservation programs that benefit both agricultural producers and the environment, summarized below from the [USDA NRCS Maryland website](#).

Regional Conservation Partnership Program (RCPP)

<https://www.nrcs.usda.gov/programs-initiatives/rcpp-regional-conservation-partnership-program>

The RCPP encourages partners to join in efforts with producers to increase the restoration and sustainable use of soil, water, wildlife, and related natural resources on regional or watershed scales. Through the program, NRCS and its partners help producers install and maintain conservation activities in selected project areas. Partners leverage RCPP funding in project areas and report on the benefits achieved. (Source: [USDA NRCS website](#))



*In FYs 2021 and 2022,
the Cover Crop
Program in Carroll
County saw another
successful year with
51,934 acres enrolled.*

*All figures in this section are directly from the Maryland
Agricultural Water Quality Cost-Share Program: **2021
Annual Report: Making Waves for the Chesapeake Bay**²
and
2022 Annual Report: Growing to Meet New Challenges.³
Maryland Department of Agriculture.*

Environmental Quality Incentives Program (EQIP)

<https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives>

EQIP helps agricultural producers promote agricultural production and environmental quality as compatible goals. Through EQIP, farmers receive financial and technical assistance to implement structural and management conservation practices that optimize environmental benefits on working agricultural land. Priorities include reducing nonpoint source pollution; conserving ground and surface water resources; reducing emissions and ozone precursors and depleters; reducing soil erosion and sedimentation; promoting at-risk species habitat conservation; energy conservation; and biological carbon storage and sequestration.

Maryland has identified the following additional priorities:

1. Livestock Management
2. Grazing Management
3. Erosion Control
4. Nutrient Management
5. Pest Management
6. Wildlife Habitat Enhancement

Panora Acres in the Gunpowder and Patapsco Watersheds provides an example of how **EQIP** funds are used in **Carroll County**. The Sellers family had 300 head of dairy cattle eroding the streambanks and increasing nutrient concentrations in runoff. Through EQIP, the family installed stream crossings to allow safe passage and avoid erosion and nutrients in the stream. They fenced their cattle out of 2½ miles of the stream and planted buffers to stabilize the banks.

Agricultural Management Assistance Program (AMA)

AMA provides cost-share assistance to agricultural producers to voluntarily address issues such as water management, water quality, and erosion control by incorporating conservation into their farming operations. Producers may construct or improve water management structures or irrigation structures; plant trees for windbreaks or to improve water quality; and mitigate risk through production diversification or resource conservation practices, including soil erosion control, integrated pest management, or transition to organic farming. Assistance is also available for constructing seasonal high tunnels and associated practices.

Land Conservation through Parks

Agency: Carroll County Recreation & Parks
Email: CCRec@CarrollCountyMD.gov **Phone:** 410-386-2103
Website: CarrollCountyMD.gov/government/directory/recreation-parks/

Recreation and Parks also provides tours, field trips, and classes, as well as informal education opportunities in outdoor "classrooms." Piney Run and Bear Branch Nature Centers both utilize active "Weed Warrior" programs that help



to remove invasive species in parks.

Through a partnership with the American Chestnut Foundation, Hashawha continues to serve as a home for a chestnut

tree orchard as part of an organized national effort to reintroduce the American Chestnut.

For every 1,000 residents, the County provides 48 acres of County and municipal parks and recreation lands and 36 acres per 1,000 residents of natural resource lands. Carroll County parks, recreation and resource lands serve a growing population with diverse recreation needs.

Recreation and Parks land acquisitions include 2 acres at Hapes Mill Road for a future kayak launch into Big Pipe Creek and 145 acres north of Taneytown for a future park that includes 50 acres of existing forest and protection of 3,400 feet of Piney Creek.

The significant contribution and role that parks play in the conservation of land and natural resources should not be

overlooked. Carroll actively pursues and purchases land for parks and conservation of land and natural resources. These large land areas provide opportunities for eco-tourism, environmental education, water recharge, and passive recreation.



In addition to the conservation of biodiversity and resources, Carroll also has a long history of providing environmental education opportunities to residents. The County's first

nature center, Piney Run, was opened in 1981, and a second nature center, Bear Branch, was opened in 1991. In addition, over 100,000 students have participated in Outdoor School since its inception in 1977 at a County park, a tradition that continues today for all local 6th grade students.



Carroll continues to provide increased opportunities for citizens to experience nature firsthand through outdoor recreation with over 51 miles of hiking and water trails.

Resource Management

Agency: Carroll County Bureau of Resource Management (BRM)
Email: CCWater@CarrollCountyMD.gov **Phone:** 410-386-2712
Website: CarrollCountyMD.gov/resourcemanagement

Natural Resources Easements

Acquired through Land Development

Water Resource Protection

Carroll County places high value on protecting our important water resources. The Water Resource Management Program largely focuses on the protection of streams, ponds, and wetlands through the implementation of buffers and easements. Water Resource Protection Easements provide a buffer to the stream system from adjacent land use and provide many benefits to the stream, watershed, or drainage area in which it resides. Benefits include filtering runoff, stabilization, nutrient uptake, moderating stream temperatures, and providing wildlife corridors.

There are two types of Water Resource Protection Easements – Forested and Non-Forested. Requirements for both types are almost identical except that non-forested easements require a dense and vigorous cover of non-lawn vegetation be maintained, while the forested easements are expected to be in forested condition. Each Deed of Easement defines permitted and restricted activities within the established easement. Restricted activities prohibited by the easements are soil disturbance; storing or dumping of materials; composting or broadcast spreading of yard waste; storing, maintaining, or operating motorized vehicles; housing or otherwise maintaining domestic animals; and burning of vegetation.

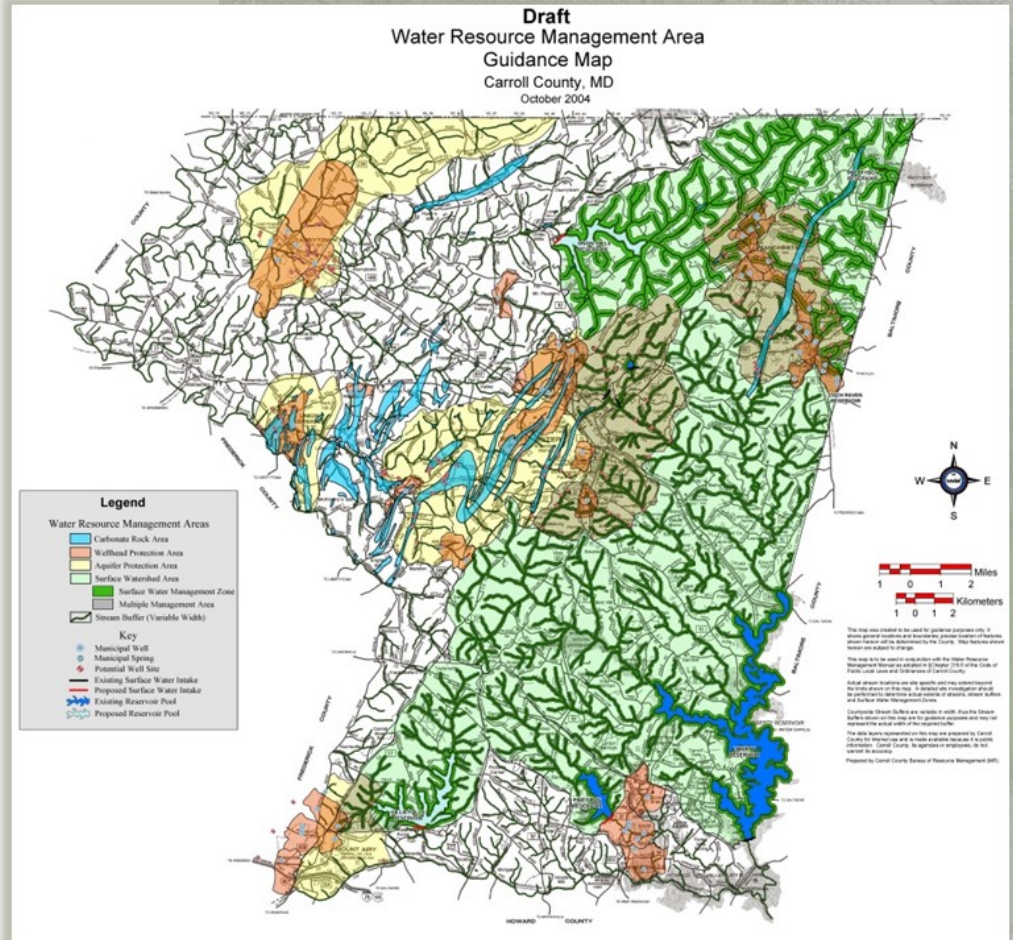
BRM maintains a water resource easement inspection program, similar to the Floodplain and Forest Conservation inspection programs. The inspections are done on a three-year cycle or in response to citizen complaints.

Carroll protects almost 105 miles of buffered streams under easements.

Floodplain Protection

Carroll County recognizes the importance of protecting floodplains and the benefit this provides to both property owners and the environment. Floodplain is preserved through a Floodplain Protection Easement, which helps to protect human life and health, minimize property damage, encourage appropriate construction practices to minimize future damage, and to protect water supply, sanitary sewer disposal and natural drainage.

Easement Type	Acres Preserved	# of Easements
Water Resource Protection	2,138	434
Floodplain Protection	813	235
Forest Conservation	4,673	1,685
Totals	7,624	2,354



Floodplains are an important asset to the community, performing vital natural functions such as:

- Temporary storage of floodwaters
- Moderation of peak flood flows
- Maintenance of water quality
- Prevention of erosion
- Provision of habitat for diverse natural wildlife populations
- Improved aesthetics

Through the development process, property owners provide a Floodplain Protection Easement in perpetuity to preserve the natural vegetation and to prevent alteration of floodplains and the setbacks wherever floodplains are delineated. The floodplain setback is based on the floodplain width, stream buffer, or 100 feet from the top of the streambank on any mapped Federal Emergency Management Administration (FEMA) stream, whichever is largest.

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conservation easements inspection programs. The inspections are done on a three-year cycle or in response to citizen complaints.

Forest Conservation

Forest conservation easements are secured for the long-term protection for all retention, reforestation, afforestation, off-site reserve, and forest bank areas. The easement is conveyed to the County during the development process. Adequate fencing or other protective measures may be included to prevent encroachment into the area.

Carroll County Environmental Codes

Water Resource Management

The purpose the Water Resource Management Code ([Chap. 154](#)) is to protect the quality and quantity of ground and surface water resources in Carroll County. The Code, adopted in 2004, established management standards and design criteria for land use subsequent to review; standards for review of development activities; enforcement procedures for pollution violations; and requirements for the protection of existing and future water resources.

Water Resource Management also addresses wellhead protection areas, aquifer protection areas, surface watershed management areas, carbonate rock areas, streams, ponds, and wetlands. Chapter 154 specifically addresses management standards and design criteria implemented for regulated substance use, sale, maintenance, and storage within Water Resource Management areas; safeguards used to demonstrate that the integrity of water resources will not be altered by proposed activities; and protection of well and potential well sites with a 200-foot buffer requirement.

Floodplain Management

The County joined the Community Rating System (CRS) as a Class 8 in 2006 and based on work completed by staff in 2017, the County has improved to a Class 7, which took effect on May 1, 2018. As such, eligible policyholders within the County will receive a 15% discount on their flood insurance policies. Improving from a Class 8 (\$73 discount per policy) to a Class 7 (\$111 discount per policy) equates to an average additional savings of \$38 per policy, per year. However, the average discount increases from \$211 savings to \$317 savings for policies within the FEMA floodplain. The total premium discount for all flood insurance policies, as a Class 7 Community, exceeds \$20,000. In 2022, staff performed additional work to be upgraded to a CRS Class 6, which will become effective in October of 2023.

The Carroll County Floodplain Management Program ([Chap. 153](#)) requires protection of floodplains by setting minimum technical standards for performing floodplain studies and producing consistent, accurate, current, and verifiable

floodplain mapping. This mapping can be used to evaluate flood hazards, set flood insurance rate zones, and regulate new subdivision and building construction in and around floodplains. The floodplain mapping data long-term will enable prospective and existing property owners, lending institutions, and insurers to consider the

For more information on the Flood Insurance Rate Maps, visit...

<https://carrollco-md.maps.arcgis.com/apps/webappviewer/index.html?id=5d4faa1998ca4a1486401a40f38d6df3>

risk prior to buying, building, financing, or insuring property, homes, or businesses subject to flood hazards.

The current Flood Insurance Rate Maps (FIRMs) issued by FEMA were adopted by Carroll County in October 2015. These FIRMs replaced the maps produced by FEMA in 1981 and use more precise topography and more accurate hydrology. Nearly a decade's worth of data capturing, surveying, analyzing, modeling, and public review went into the creation of these maps to more accurately map the flooding risk in Carroll County.

Forest Conservation

The Carroll County Forest Conservation Code ([Chap. 150](#)) is intended to protect not only forests and trees in developing areas, but also any sensitive areas identified during the local planning or comprehensive land use plan adoption process. It requires that prior to the approval of any subdivision of land or development on areas 40,000 square feet or greater, applicants shall submit a Forest Stand Delineation (FSD) and a Forest Conservation Plan (FCP). These plans must be approved by Carroll County before development can proceed. The Carroll County Forest Conservation Technical Manual gives additional procedural information.⁴ Since 1992, several thousand acres of forest have been retained and planted as mitigation for development in Carroll County.

Carroll County Forest Conservation Mitigation	
Element	Acres
On-site retention	2,668
On-site planting	968
Off-site planting	138
Total bank acres	838

Source: Carroll County Bureau of Resource Management, Feb 2022

Note: Some numbers are less than 2021 as the tracking system changed how data is compiled.

"Carroll County's Forest Conservation Code includes a **pioneering effort**

that established the use of a *forest banking* program. Forest banking is a conservation tool that involves the establishment of new forest on areas that are then placed in easement, which generates mitigation credits that can be exchanged for a payment. The payment typically comes from a developer who must replace forest that has been cleared at another location. Although the code has evolved since its first iteration, the use of forest banking as a mitigation alternative has survived because of its effectiveness... In Carroll County, 838 acres of forest have been created by forest conservation banks since the inception of the Maryland Forest Conservation Act in 1991. Carroll County landowners are engaged in the establishment of viable and marketable forest conservation banks."⁵

Landscaping

- Carroll County recognizes that landscape requirements for new development effectively add intrinsic value to the landscape in many ways, including the following:
- The preservation and enhancement of the aesthetic value of Carroll County's landscape,
- The augmentation of a sense of community in new development by visually tying properties together,
- The creation of a sense of place by using trees and other vegetation to define space and to buffer incompatible uses,
- The moderation of the impact of wind, temperature, rainfall, frost, and other climatic elements,
- The effective conservation of energy use through that moderation, and
- The enhancement of property values by providing amenities to development design.

The County's landscape requirements ([Chap. 157](#)) enhance the aesthetic and environmental setting of new residential, commercial, industrial, and institutional development in Carroll County through the establishment and ongoing maintenance of prescribed landscaping.

Grading & Sediment Control

Establishing minimum standards ([Chap. 152](#)) for the control of soil loss through erosion to minimize sediment transport through runoff is critical to preventing degradation of the integrity and health of Carroll County's stream system. Minimum standards for management practices are applied through the issuance of grading permits for land disturbance that may involve clearing, grubbing, grading, filling, and the movement of soil to alter the topography and for forest harvest activities.

Stormwater Management

The goal of stormwater management ([Chap. 151](#)) is to manage stormwater by using environmental site design (ESD) to the maximum extent practicable (MEP) to maintain after development, as nearly as possible, the predevelopment runoff characteristics, thus reducing stream channel erosion, pollution, siltation, sedimentation, and local flooding, and to use appropriate structural best management practices (BMPs) only when necessary. This will help restore, enhance, and maintain the chemical, physical, and biological integrity of streams, minimize damage to public and private property, to reduce the impacts of land development.

Capital funding of \$300,000 per year is budgeted for stormwater facility renovations, for a total of \$1,800,000 for FY 2023 to FY 2028. The program funding, which began July 1, 2015, is designed to support long-term improvements to existing stormwater management facilities which are beyond routine maintenance but are not undertaken as part of the County's retrofit program. The program evaluates and repairs 5 to 10 facilities per year over a 30-year period. The funding is used for pipe replacement, erosion repairs, filter media replacement, and other items which will extend the useful life of a facility and to maintain compliance.

In an effort to streamline the stormwater review process, submissions for review must meet a minimum criteria checklist before they are accepted for review. This includes a standardized set of drawings, calculations, and soils testing.

Environmental Management of Storm Sewer Systems

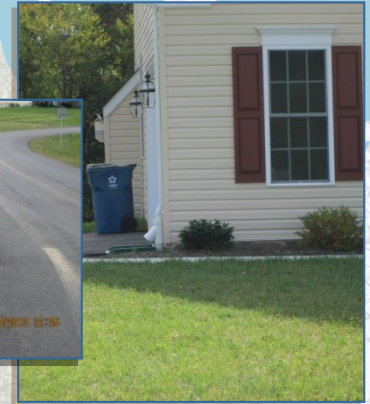
[Chapter 53](#) regulates non-stormwater discharges to the storm drainage system. This chapter establishes methods for controlling the introduction of illicit discharges or pollutants into the county's separate storm sewer system in order to comply with requirements of the NPDES permit process. The objectives include regulation of the contribution of pollutants to the County's storm sewer system by stormwater discharges by any user and prohibition of illicit connections and discharges to the storm sewer system to provide for to the health, safety, and general welfare of the residents and local water quality, as well as the Chesapeake Bay watershed.

Urban Stormwater Mitigation

Since 2008, Carroll County has been actively working on retrofitting existing stormwater management facilities to address our National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Separate Storm Sewer System (MS4) permit requirements. On December 30, 2022, MDE issued the [fifth-generation permit](#) to the County and its 8 municipal co-permittees. Not only is Carroll County moving forward in reaching our impervious restoration goals, the County is accomplishing restoration of its old stormwater

Non-Structural Practices

Residential:
Extended Shoulder



Residential:
Drywell with Debris Filter



Commercial: Parking
Island Filtration /
Infiltration



Facility at
Westminster
High School

Beneficial
Capture,
Treatment,
& Release of
Stormwater
Runoff



management facilities by bringing them up to current standards and redesigning these facilities to allow for easier access and maintenance. The majority of the facilities are designed to treat one inch of water quality, while providing infiltration and channel protection. The main goals are to reduce the amount of water leaving the facility, to decrease the downstream property impacts, and to improve runoff water quality.

Stormwater mitigation and watershed restoration provide a significant water quality and quantity benefit to our local streams and water bodies, including nutrient reduction, sediment and erosion control, and flood control. These activities and practices also contribute to improving the health of the Chesapeake Bay.



Urban Stormwater Retrofit

Collaboration with Municipalities

In FY 2013 and FY 2014, via the Water Resource Coordination Council (WRCC), the County and municipalities collaborated to develop, sign, and implement a Memorandum of Agreement (MOA) to cost-share the capital costs of meeting the municipalities' stormwater mitigation requirements (80% County/20% municipalities). The MOA also specified the County's responsibility for providing administrative and operating support services for the stormwater mitigation program. The WRCC acts as the forum for setting project priorities and were an integral part of the MOA process. The MOA was signed on October 23, 2014. The [MOA was reaffirmed](#) and a perpetual agreement signed on October 7, 2021. This cooperative and progressive co-permittee arrangement and associated MOA are unique to Carroll County in Maryland. The program has been very successful at providing a cost-effective and collaborative approach to meeting permit restoration requirements.

Under the MOA, the Carroll County Commissioners pay 80% of the municipalities' capital costs to meet their restoration requirement.

Expenditures & Budget

Carroll County's annual operating expenditures for this program increased significantly since 2008, from approximately \$334,000 annually, to more than \$3.5 million annually. **From July 2005 to June 30, 2022 the County invested over \$40 million** in capital outlays. This includes more than \$17.7 million in grants received from outside sources from FY 2010 to FY 2022. Additionally, over \$22.2 million have been programmed to watershed restoration efforts in the Community Investment Program, or CIP, for Fiscal Years 2023 through 2028.

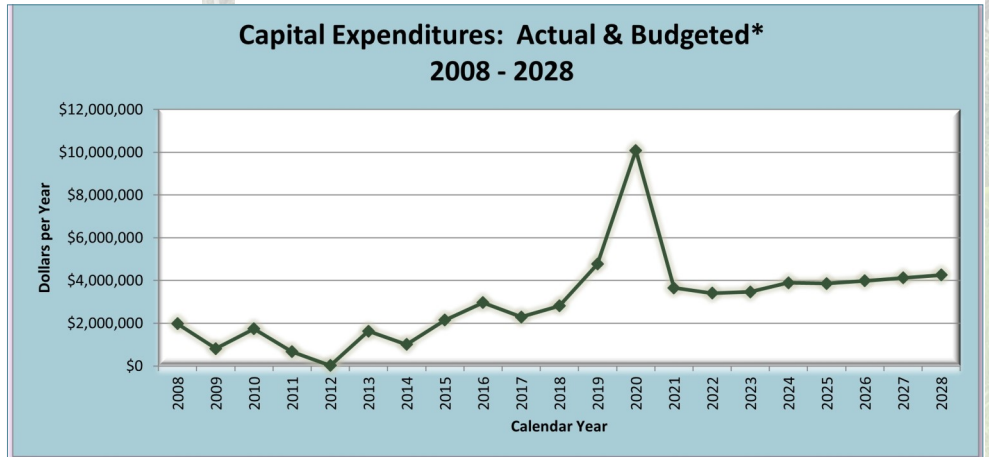
For the 6-year period (2023-2028), Carroll County plans to invest about \$27.7 million in operating expenses and more than \$23.6 million in capital expenditures for a **grand total of about \$51.3 million** – assuming that no grants are received. This equates to an annual expenditure of over \$8.5 million over that time period.

Since 2009, the Bureau of Resource Management has been very successful in acquiring grants for restoration efforts. The Chesapeake Bay Trust (CBT), Maryland Department of Natural Resources (DNR), Maryland Department of the Environment (MDE), National Fish and Wildlife Foundation (NFWF), and Maryland State Highway Administration (SHA) has supported BRM by providing funds in excess of \$17.7 million as of June 30, 2022. These funds have gone towards projects such as stormwater management pond retrofits, installation of new BMPs, tree plantings, and various monitoring studies being performed in Carroll County. For additional information on the grant program, please visit the BRM website at CarrollCountyMD.gov/resourcemanagement.

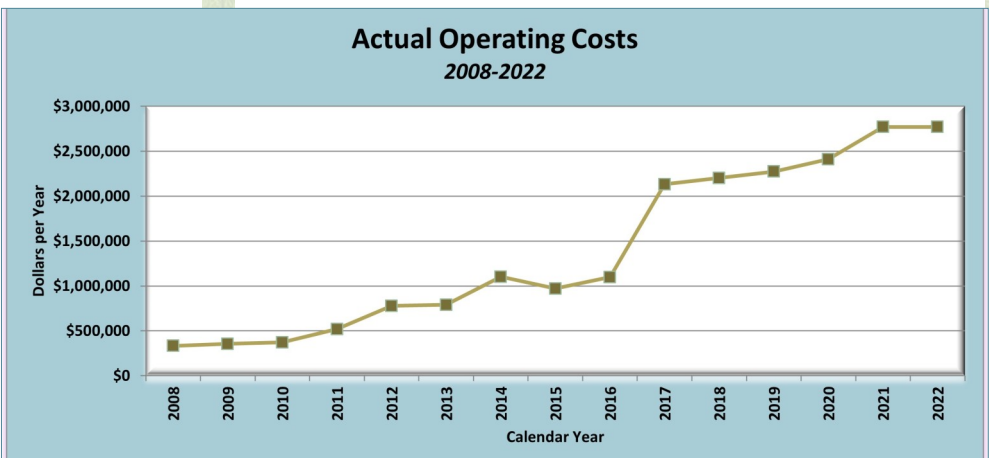
Stormwater Facilities, Renovations

Capital funding of approximately \$300,000 per year is programmed for stormwater facility renovations, for a total of approximately \$1,800,000 for FY 2023 to FY 2028. The program funding, which began July 1, 2015, is designed to support long-term improvements to existing stormwater management facilities which are beyond routine maintenance but are not undertaken as part of the County's Watershed Assessment and Improvement (NPDES), Community Investment Program (CIP). The program evaluates and repairs 4 to 6 facilities per year over a 30-year period. The funding is used for pipe replacement, erosion repairs, filter media replacement, and other items which will extend the useful life of a facility and to maintain compliance.

	Capital	Operating
FY 2023-2028		
Total Budget	\$23,602,865	\$27,718,615
Average Annual Budget	\$3,933,811	\$4,619,769



Source: Carroll County FY 2024 adopted Capital and Operating budgets.
*Capital Programs included: Watershed Assessment and Improvement (NPDES) and Stormwater Facility Renovations



Progress

As of June 30, 2022, the County had restored 2,317.5 impervious acres. This included 688 acres of restoration to comply with the 10 percent required under the prior permit, which did not include the municipal impervious area. During this permitting term, 1,629 acres of impervious area have been restored, which is approximately 101 percent of the required goal of 1,614 acres.

The permit was administratively extended by MDE. From the end of the permit until June 30, 2022, restoration of an additional 882.82 impervious acres was achieved, which will count toward the fifth-generation permit, which was issued December 29, 2022.

Impervious Area	Acres	Percent
Untreated County	8,070	2.8% of County area
Restoration Requirement	1,614	20% of Total Urban Impervious
Progress to Date for This Permit Term	1,629	~101%

Watershed Assessments and Restoration Plans

Stream corridor assessments were completed for each of the 9 watersheds within Carroll County. Through these assessments, the general condition of a stream system was quickly assessed and measures were identified to improve the overall health of the drainage network. Eight types of impairments were assessed, including stream bank erosion, inadequate streamside buffers, trash dumps, pipe outfalls, exposed pipes, channel alteration, in-stream construction, and fish blockages.

Stream buffers are vegetated areas along streams that reduce erosion, sedimentation, and pollution of water.

County staff works closely with property owners to access streams on their properties in these watersheds, with almost 54 percent granting permission to perform the stream walk. As a result, staff accomplished **assessments on roughly 786 of the 1,464 miles (54%) of stream corridor** within these watersheds. Each of the 9 watersheds was assessed over a 6-year period.

In addition to the on-the-ground field assessments, County staff conducted an analysis using Geographic Information Systems (GIS) of each of the 9 watersheds. A characterization plan was developed for each watershed describing its unique background, character, and data collected.

Information provided by the characterization plans and stream corridor assessments were used as a tool to develop watershed restoration plans. The restoration plans are used to identify opportunities for water quality improvements within the watershed, as required by the County's NPDES MS4 permit, and are designed to meet approved total maximum daily loads (TMDLs) for affected watersheds. Each restoration plan focuses on identified impacts discovered during the assessment process and prioritizes projects based on water quality data.

Financial Assurance Plans (FAPs) and Watershed Protection & Restoration Program (WPRP)

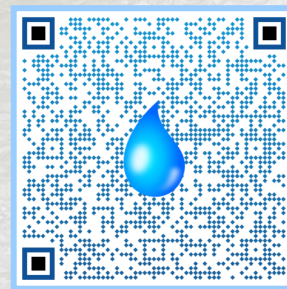
Maryland law requires a Financial Assurance Plan (FAP) to be submitted to the MDE every two years. The FAP indicates how stormwater runoff will be treated and paid for over the next

five years. Each jurisdiction must be able to show the financial ability to pay for restoration practices over the next two years.

The local jurisdiction must hold a public hearing and approve the FAP before submitting it to MDE for evaluation. MDE has 90 days to determine if funding is sufficient. MDE must report to the Governor and General Assembly annually on the status of each jurisdiction's funding. Additional penalties have been established (on top of the penalties that MDE and EPA may already assess for non-compliance with the permit) for jurisdictions not found to have adequate funding. The first report was due by July 1, 2016.

Maryland law also requires each MS4 jurisdiction to submit a Watershed Protection and Restoration Program (WPRP) Annual Report. The report addresses the funds spent from the Watershed Protection and Restoration Fund and for which projects.

The FAPs and the WPRP Annual Reports submitted to MDE are available on the Protecting Carroll County Water (NPDES) website.



Protecting Carroll County Waters

<https://www.carrollcountymd.gov/government/directory/land-resource-management/protecting-carroll-county-waters-npdes/faps-wprp/>

Stream Buffer Initiative (Tree Planting)

The goal of the stream buffer initiative is to re-establish forested corridors along as many streams as possible. This completely voluntary initiative was developed from Carroll County's stream corridor assessments to help landowners obtain trees to address inadequate streamside buffers.

Reestablishing and enhancing streamside buffers help streambank stabilization, protects and enhances water quality through nutrient uptake, traps sediment, and removes pollution. The trees in the buffer support a diversity of species, provide structurally complex habitats, and serve as travel corridors. The trees, when fully established, provide shade to waterways, helping regulate water temperatures.

Landowners whose properties had inadequate buffers were provided education on the importance of stream buffers and offered grant-assisted buffer plantings at no cost to the landowner. Interested property owners chose the streamside areas they wanted to be planted and how much of that area and selected those plantings from a list of native deciduous trees and shrubs. A mixture of overstory and understory tree and shrubs were selected based on environmental conditions such as ground saturation and existing trees on site that suggested optimal survivability.

All plantings include a 3-year maintenance term, which consists of mowing, stake repair, and shelter maintenance. Successful plantings require the survival of 100 trees per acre. Each planting is inspected bi-annually for 4 years to ensure the success of the program, and once every 3 years thereafter.

So far, 251.85 acres of trees have been planted in Carroll County since spring 2013 on both private landowner properties as well as municipality owned land. Plantings by watershed include:

- 61.08 acres in Double Pipe Creek
- 67.40 acres in Liberty
- 5.77 acres in Loch Raven
- 12.22 acres in Lower Monocacy
- 10.99 acres in Prettyboy
- 66.27 acres in South Branch
- 28.12 acres in Upper Monocacy

Ideal planting locations include areas along the stream where the planting would provide a minimum 35-foot buffer and upland locations that would consist of a contiguous planting that is a minimum of ½ acre. Trees are planted in rows using 15-foot spacing to allow for easy access for

mowers and maintenance. The included maintenance provides mowing by the installing contractor 4 times a year for 3 years following implementation.

Public Outreach

In Carroll County, staff is continuously involved in environmental education efforts. Planning & Land Management (PLM) staff regularly volunteer to speak at schools, community organizations, club meetings, and other venues in an effort to ensure that effective and timely environmental information is available to the community.

The County and municipalities provide materials on stormwater pollution prevention and other environmental issues and opportunities at their offices and at various events held throughout the year. In addition, storm drain stenciling is implemented throughout the county and is often coordinated as a volunteer or outreach event.

NPDES MS4 Public Outreach Plan

The intent of this plan is to raise public awareness and encourage residents and businesses to take measures to reduce and prevent stormwater pollution. The plan reviews public outreach opportunities currently available to residents and businesses in Carroll County and the municipalities and suggests opportunities to round out and improve outreach. This is a dynamic, iterative plan, which is revised on a regular basis as projects are completed and other needs arise.

Carroll County & Municipalities NPDES MS4 Public Outreach Plan (POP)

Adaptive Plan for 5th-Generation Permit Issued December 30, 2022



Webpages

Protecting Carroll County Waters (NPDES)

CarrollCountyMD.gov/government/directory/land-resource-management/protecting-carroll-county-waters-npdes/

This is a dedicated webpage that serves as the primary hub for information related to the NPDES MS4 permit. Comprehensive information is available to view or download.

Stormwater Pollution Hotline: This page contains the non-emergency stormwater pollution hotline phone number, as well as the emergency contacts for each public water and sewer system. There is a quick link to this page from the main webpage, and the municipalities provide a link to this page from their municipal websites.

Citizens throughout the county can call the non-emergency Stormwater Pollution Prevention Hotline to report suspected illicit discharges, illegal dumping, and spills.

410-386-2210

NPDES Permit: This page contains the permit that is currently in effect for Carroll County and its municipal co-permittees.
Annual Reports: NPDES MS4 Annual Reports for the past five years are available.

Watershed Restoration Plans: The Bureau of Resource Management (BRM) hosts this page, titled "Watersheds." It includes the characterization plan for each of Carroll's nine watersheds, along with each stream corridor assessment.

Stormwater Projects: An interactive map provides information on planned, active, and completed stormwater projects.
Public Outreach: This page describes actions the average property owner may take to help prevent stormwater runoff pollution. Carroll County public outreach publications may be found here, along with outreach videos and workshop information.

Carroll Clean Water Partnership: Information is provided on this voluntary partnership program that encourages and recognizes local businesses to/that identify and address potential pollutants and good housekeeping measures.
Resource Management Bureau: This site provides information about the County's and municipalities' stormwater program

and County and municipal contacts, including various agricultural and urban best management practices (BMPs). Educational materials for both children and homeowners are available for viewing or download, as is the Bureau's quarterly newsletter, *Down to Earth*. (CarrollCountyMD.gov/resourcemanagement)

FAP | WPRP Annual Reports: Provides copies of the Financial Assurance Plans (FAPs) adopted by the Board of County Commissioners every other year, as well as the annual Watershed Protection and Restoration Program reports.

Links | Resources: Links to additional information on the web regarding various aspects of the permit, stormwater pollution prevention, public outreach, and more are provided.

Social Media

www.facebook.com/carrollenvironment/



The Department of Planning & Land Management launched the Carroll Environment page on Facebook in January 2022. The new page promotes opportunities for Carroll County's

public to learn about and engage in information, projects, and activities that promote environmental stewardship and understanding in Carroll County. Posts highlight ongoing and completed projects, solicit interest in volunteer opportunities, and promote environmental initiatives within the department and beyond.

Newsletters

In addition to use of the County newsletters, municipal newsletters, and other broader topic newsletters, the Resource Management staff issue a quarterly *Down to Earth* newsletter chock full of current information regarding projects, events, and relevant topics.

Videos

PLM staff, in conjunction with Carroll's Community Media Center, produced a video about stormwater for homeowners in 2017 (<https://youtu.be/jtjcuGhiiL8>). The video introduced homeowners to stormwater and why it is important. Future videos will show homeowners the various sources of pollutants around their homes and yards and simple practices they can employ to reduce runoff and prevent pollution, as



well as other information about stormwater. Completed videos are aired on local cable television as well as available online and at the County's social media sites.

Environmental Symposium

<https://www.carrollcountymd.gov/government/directory/land-resource-management/environmental-symposium/>

This event showcases Carroll County community groups focused on environmental stewardship. Attendees have an opportunity to find out more about these groups, what they can do to promote and implement practices to sustain the county's natural resources, and opportunities to volunteer. The symposium also features a recycled art contest open to students that live in Carroll County. The first annual symposium was held in November 2022. The second symposium is scheduled for October 28, 2023.



Carroll Clean Water Partnership (CCWP)

www.carrollcountymd.gov/government/directory/land-resource-management/protecting-carroll-county-waters-npdes/carroll-clean-water-partnership/

The CCWP program was initiated in January 2016. The sponsors of the Partnership hope to foster a business-friendly environment for local businesses to identify and address



potential pollutants and good housekeeping measures, and, as a result, gain community recognition for "Partners" for their contribution to achieving clean water. The program aims to assist Partners with voluntary activities related to stormwater pollution prevention. Static cling window decals are provided to Partners. The website provides informational materials, the self-inspection checklist, event information, a list of Partners, and other relevant information.

Schools

County staff partners with the Carroll County Public Schools' elementary science programs each year to educate and engage fourth and fifth grade students on issues related to water quality that coincide with the curriculum. Sessions are provided on topics such as biological/stream health, stormwater, and the importance and benefits of tree planting. In addition, Outdoor School students participate in tree planting events.

Public Workshops

Workshop: Homeowners & Stormwater

CarrollCountyMD.gov/government/boards-commissions/environmental-advisory-council/stormwater/stormwater-workshop-for-homeowners/

The EAC partnered with the WRCC to host free workshops designed to share information with homeowners about how to prevent stormwater pollution and minimize stormwater runoff from their properties. The first workshop was held in March 2017.

In 2019, a municipal workshop was held for residents of the Towns of Hampstead and Manchester. Experts provided helpful materials and answers to individual questions on the topics listed below, as they related to stormwater pollution prevention.



Helping Hands Keep Our Parks Green

CarrollCountyMD.gov/government/directory/recreation-parks/general-information/volunteer-opportunities/helping-hands-keep-our-parks-green/

Carroll County Department of Recreation and Parks has launched a campaign to encourage additional community involvement to help keep county parks clean. The Helping Hands Keep Parks Green initiative (hereafter referred to as Helping Hands) is modeled after similar efforts such as Adopt-A-Road and is designed to promote local ownership and care of parks.



Workshop: Carroll County Businesses for Clean Water

CarrollCountyMD.gov/government/boards-commissions/environmental-advisory-council/stormwater/stormwater-workshop-for-businesses/

The EAC partners with the WRCC to host free workshops designed to help businesses understand stormwater regulations that affect them and good housekeeping practices they can employ. Workshops were held in January 2016 and March 2018.

HELPING HANDS KEEP OUR PARKS GREEN



Septics

Agency: Carroll County Health Department, Bureau of Environmental Health
Email: carrollcounty.environmental@maryland.gov
Phone: 410-876-1884
Website: <https://cchd.maryland.gov/environmental-health/>

Conventional Septic System Replacement with Best Available Technology (BAT)

BAT systems provide greater nitrogen removal than traditional systems. While MDE regulations no longer requires all new septic systems installed to use BAT to reduce the potential new nitrogen loads, there are site-specific reasons that it may be necessary. The Carroll County Health Department works with private property owners to replace failing conventional systems with BAT systems. The Health Department administers monies from the Bay Restoration Fund (BRF) to help pay for eligible systems.

Conversion from Private Septic to Public Sewer System Connection

Carroll County works closely with its eight municipalities on public water and sewer planning. In the process of identifying potential future public sewer service areas, areas on existing private septic systems are often considered for inclusion in the Future Sewer Service Area, particularly if systems are documented to be failing. Conversion from private septic to public sewer for these homes helps to reduce the amount of pollution to



the Bay. When BRF are available to assist with these connections, the Health Department processes the grant application(s). MDE has an alternate BRF program that may be considered for multiple connections at once.

Action	# of Septics
Conventional System Replaced with BAT ⁶ : 2009-2022	278
<i>Source: Carroll County Health Dept, as of December 31, 2022</i>	
Conversion from Conventional System to Public Sewer Service: 2006-2022	26
<i>Source: Carroll County Municipalities, As of February 2023</i>	

Renewable Energy

SolSmart Silver Designation

Carroll County received a Silver designation from the national SolSmart program for making it faster, easier, and more affordable for homes and businesses to go solar. This designation recognizes Carroll County for taking bold steps to encourage solar energy growth and remove obstacles to solar development. For companies looking to expand, a SolSmart Silver designation is a signal that Carroll County is “open for solar business.” More than 200 cities, counties, and small towns have achieved SolSmart designation since the program launched in 2016. Carroll County was the first county in Maryland to receive a SolSmart designation.



As a SolSmart designee, Carroll County is helping solar companies greatly reduce the cost of installations and pass those savings on to consumers. This allows even more local homes and businesses to obtain affordable, clean, and reliable electricity through solar. The actions Carroll County has taken will help encourage solar companies to do business in the area, driving economic development and creating local jobs.

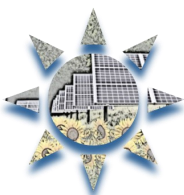
Zoning for Solar Energy

Agency: Carroll County Zoning Administration
Email: CCZoning@CarrollCountyMD.gov **Phone:** 410-386-2980
Website: www.carrollcountymd.gov/government/directory/land-resource-management/zoning-administration/

With the increasing popularity of solar energy as an alternative to traditional energy sources for homes and as a commercial venture, the County Commissioners amended Chapter 158 Zoning of the County Code of Public Local Laws and Ordinances in 2014 to incorporate provisions allowing solar energy conversion facilities. Initial recommendations for code requirements were prepared by the Environmental Advisory Council (EAC). The code addressed both accessory uses in residential, commercial, and industrial zones, as well as requirements for commercial operations.

In 2016, at the Board's request, the EAC recommended revisions to the residential solar surface area requirements of the zoning code. The Board adopted the amendment in October 2016, increasing the allowable surface area on residential properties. To review the zoning requirements related to solar facilities, see codelibrary.amlegal.com/codes/carrollcounty/latest/carrollcounty_md/0-0-0-29186 (§158.153).

To protect Carroll's substantial investment in agricultural land preservation and Carroll's agricultural heritage, commercial solar facilities are not permitted in the Agricultural Zone in Carroll County.



The County encourages accessory use of solar and prioritizes commercial—both community and utility-scale—solar development as follows:

- rooftops,
- canopies in parking lots,

- brownfields,
- industrial zones, and
- appropriate government-owned lands, such as landfills and wastewater treatment plants.

Community Solar Energy Generating Systems (CSEGS)

Agency: Carroll County Zoning Administration
Email: CCZoning@CarrollCountyMD.gov **Phone:** 410-386-2980
Website: www.CarrollCountyMD.gov/communitysolar

A community solar energy generating system, aka CSEGS or community solar facility, is a commercial solar facility that offers a subscription-based service. They are capped at 5 megawatts by Maryland law. The State's community solar program is intended to increase access to solar energy, particularly for residents and small businesses. Carroll County's residents have access to any community solar facility within their utility's service area, which provides an additional option for residences to take advantage of solar energy without having to install panels on their own properties.

The EAC prepared [A Guide to Becoming a Community Solar Subscriber in Carroll County](#) to raise County residents' awareness of community solar opportunities and provide resources to help guide them through the process of becoming a subscriber.

In Carroll County, community solar facilities as commercial solar facilities are permitted in Commercial, Industrial, and the Employment Campus Zones.

Permitting for Solar Facilities

Agency: Carroll County Bureau of Permits & Inspections
Email: mczepp@CarrollCountyMD.gov **Phone:** 410-386-2674
Website: www.carrollcountymd.gov/government/directory/public-works/permits-inspections/

The Carroll County Bureau of Permits & Inspections provides permitting and inspections to ensure that solar panels are safe for use. These include electrical, building, and possibly plumbing permits. The staff works with applicants to facilitate a quick review process, usually within 5-7 business days if the application is complete, accurate, and code compliant. A checklist of required information, as well as fee schedules and contact information, are

A Guide to Becoming a Community Solar Subscriber in Carroll County

Subscribing to a community solar project is an exciting new opportunity to go green and save on energy bills without needing to install solar equipment at your home. Learn more now, so you are ready when subscriptions are available.

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About This Document

Community solar is a new option in Maryland. As such, the approval process is also new, with only a few projects showing the process so far and available for public subscription. The information in this document is not all-inclusive, but provides links and resources to find more information. Once more projects are available, hopefully more information can be provided.

What is Community Solar?

Community solar refers to a community-owned or third-party-owned solar energy generating system from which electricity is shared by more than one household or customer, similar to a co-op. The primary purpose of community solar is to allow members of a community the opportunity to share the benefits of solar power even if they cannot or prefer not to install solar panels on their property. For purposes of this publication, community solar will refer to a third-party-owned solar project to which you may subscribe.

Project participants benefit from the electricity generated by the community solar project when the subscription cost is less than the amount they would ordinarily pay to their utility company for electricity. Community solar allows people to go solar even if they do not own property on which to put their own system. (EnergyPage, Community Solar: What is it? Accessed April 20, 2018, from <https://www.energytoday.com/solar/community-solar/community-solar-what-is-it/>.)

Community solar is not the same as retail electric choice. People who are in wind power contracts, or other deals with competitive electric suppliers, can also sign up for community solar. Each project in Maryland will only be built once it has enough subscribers. WDCnewsMontgomery.org. Community Solar is now available for Marylanders. August 13, 2018. Accessed August 7, 2019, at <https://www.commontaskforce.org/2018/08/13/community-solar/>.)

Why Subscribe to Community Solar?

- Access – For those unable to install solar where they live
- Customer Savings – Saves customers money and helps protect against rising energy prices
- Climate – Reduces harmful carbon pollution from our electric grid
- Economy – Promotes a strong economy and provides additional well-paying, local jobs
- Land Conservation – Provides opportunities to preserve farmland, greenparks, ecosystems, and other natural land by installing on brownfields and rooftops

Permits Issued in Carroll County for Solar Energy Conversion Facilities FY 2015 – FY 2022	
Fiscal Year	# of Permits
2015	383
2016	606
2017	463
2018	312
2019	194
2020	157
2021	159
2022	174

available on the Bureau's [webpage](#). Information regarding permitting of [accessory use of solar in Residential Zones](#) is also available.

County Solar Projects

Agency: Carroll County Department of Public Works
Email: jgreen@CarrollCountyMD.gov **Phone:** 410-386-2248
Website: CarrollCountyMD.gov/government/directory/public-works

Carroll County Government has actively worked to reduce energy usage at its facilities. Equipment is regularly replaced with energy efficient models and parts as opportunities arise. The County has a contract with Johnson Controls to regularly evaluate energy usage and make recommendations for energy and cost-saving measures. The contract guarantees a certain level of savings for the County through implementation of the recommendations. The County has also pursued grants to fund the cost of replacement of lights with more energy efficient lighting.

A significant source of energy savings will be realized through the installation of solar arrays on three different County properties – Carroll Community College, Hoods Mill Landfill, and Hampstead Wastewater Treatment Plant. These three facilities were completed and online in 2018. Department of Public Works staff anticipates up to 25 percent reduction in the County's energy bill for County facilities through these projects. A low fixed rate of \$.077 per kilowatt hour is guaranteed by the contract through 2037 for the 13.4 megawatt hours to be supplied by the solar panels. *The County is actively investigating other sites to expand its solar array energy program.*



Carroll Community College

Zoning for Wind Energy

Agency: Carroll County Zoning Administration
Email: CCZoning@CarrollCountyMD.gov **Phone:** 410-386-2980
Website: www.carrollcountymd.gov/government/directory/land-resource-management/zoning-administration/

The County Zoning Code [§158.151 Small Wind Energy Systems](#) permits small wind energy systems in all zoning districts as an accessory use. This Code section outlines the related requirements.

Permitting for Wind Turbines

Agency: Carroll County Bureau of Permits & Inspections
Email: mczepp@CarrollCountyMD.gov
Phone: 410-386-2674
Website: www.carrollcountymd.gov/government/directory/public-works/permits-inspections/residential-projects/wind-energy-systems/#:~:text=Permits%20Required,issued%20before%20the%20building%20permit.

The Carroll County Bureau of Permits & Inspections provides permitting and inspections to ensure that wind turbines are safe for use. These include electrical, building, and possibly plumbing permits. The Bureau's [Wind Energy Systems webpage](#) includes links to applicable permits.

Public Outreach

Agency: Carroll County Environmental Advisory Council (EAC)
Email: EAC@CarrollCountyMD.gov **Phone:** 410-386-2949
Website: CarrollCountyMD.gov/EAC

The EAC has developed several other public outreach publications related to solar energy in Carroll County.

An Overview of Renewable Energy Choice Options for Consumers

This document provides a basic overview of types of alternative (green or renewable) energy supplies available to Carroll County residents. It outlines the primary alternatives to purchasing energy from the default option selected by your utility. It introduces the key terms and considerations with which a prospective customer should be informed. It is intended as a companion document to the Environmental Advisory Council's (EAC) energy-related guides, helping to understand the relationship between those options and other choices. Any reference to a specific company in this document does not represent an endorsement by Carroll County or the EAC.

The electric distribution utilities currently serving Carroll County are Baltimore Gas & Electric (BGE) and Potomac Edison (PE). Prior to Maryland's deregulation of the energy market in 1999, the electric distribution utility provided all aspects of your electric service. This included generating the electricity (supply) and delivering it to your home or business (distribution). Now, consumers can choose a third-party company to fulfill their electricity generation (supply) needs as an alternative to their utility. Distribution of the energy supply still rests with BGE and PE.

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A Guide to Residential Solar Installation in Carroll County

Carroll's residents with basic information to navigate the process in Carroll County of installing accessory solar facilities in residential districts. The booklet, which is available on the EAC's webpage, provides information regarding the process, certified installers, frequently asked questions, questions to ask the solar company/installer, financing, and more.

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Property-Assessed Clean Energy Financing Program (PACE)

Agency: Carroll County Department of Economic Development
Email: psunderland@carrollbiz.org **Phone:** 410-386-2070
Website: carrollbiz.org/financing-incentives/

In effort to encourage the finance of energy efficient and renewable energy projects and upgrades, Carroll County participates in the Property-Assessed Clean Energy financing program (PACE). This program is available to commercial and industrial properties.



The program aims to encourage energy-saving investments. With approval from the mortgage holder, a property owner will repay the loan through a surcharge on the property tax bill. The surcharge becomes the first lien on the property until it is paid in full, regardless of ownership.

Solid Waste & Recycling

Agency: Carroll County Bureau of Solid Waste
Email: SolidWasteRecycling@CarrollCountyMD.gov **Phone:** 410-386-2980
Website: www.recyclecarroll.org

Carroll County actively seeks to divert waste from the landfill. Recycling participation is on the rise in Carroll County. Options for both curbside and drop off opportunities have increased, as has the type of materials that can be recycled.



Curbside, single-stream recycling was implemented in 2007 (and expanded in 2008), making it easy and convenient for residents to participate. Most standard household recycling can simply be placed at the curb.

Carroll's Resource Recovery Facility is conveniently located in the center of the county and accepts many items that are not eligible for curbside pickup, such as electronics, automobile batteries, antifreeze/waste oil, cooking oil, and textiles. Carroll County has taken advantage of grant opportunities to purchase and distribute large recycling containers that added to the ease of handling curbside recycling.

Carroll County also encourages property owners to divert yard waste from the landfill. Citizens can dispose of grass, leaves, and branches in the mulching area of the Resource Recovery Facility. The County contracts with [WeCare Denali](#) to process yard waste. Citizens are encouraged to consider backyard composting. The County provides an opportunity to purchase compost bins and rain barrels at a discounted rate.

The Recycling program offers a semi-annual household hazardous waste collection to ensure household chemicals are not improperly discarded. The Recycling office diligently works to inform citizens and instill the "Reduce, Reuse, Recycle!" theme.

Through all recycling efforts, the County has achieved a 47.29 percent recycling and waste diversion rate that in 2021 includes a 5 percent source reduction credit (based on MDE's website, "Maryland State, County, and City Recycling," <https://mde.maryland.gov/programs/land/RecyclingandOperationsprogram/Documents/County%20Commodity%20CY21.pdf>). The State-mandated recycling rate for Carroll County is 35 percent.

To proactively address changing and future solid waste needs, a Solid Waste Work Group evaluated options and prepared a report with recommendations.

Accepted through Single-Stream, Curbside Recycling

(must be loose, not in plastic bags)

- ♦ Glass jars & bottles
- ♦ Aluminum, tin and steel cans, containers, and foil
- ♦ Cereal boxes and other paperboard boxes
- ♦ Cardboard
- ♦ Aseptic/gable-top milk and juice cartons
- ♦ Books (paperback)
- ♦ Plastic bottles
- ♦ Magazines and catalogs
- ♦ Newspaper, office paper, and junk mail
- ♦ Plastics containers #1-#7 (except #6)
- ♦ Paper bags
- ♦ Cardstock, color paper
- ♦ Aerosol cans (empty)

Accepted at Resource Recovery Facility

(either on a regular basis or part of special event)

- ♦ Rigid plastics
- ♦ Residential Electronics
- ♦ Household Hazardous Waste
- ♦ Textiles
- ♦ Backyard Trimmings
- ♦ Vinyl Siding
- ♦ Car batteries, antifreeze, and waste oil

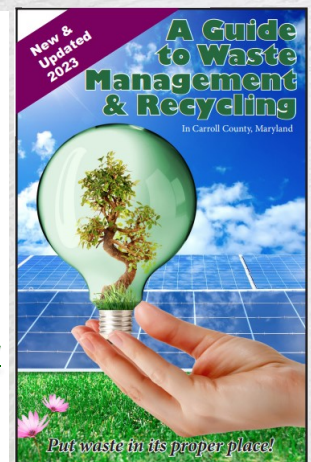
Plastic bags are NOT accepted in single-stream recycling or the Resource Recovery Park. They are collected at participating grocery stores.



The Carroll County Recycling Office annually offers a sale featuring discounted rain barrels and compost bins. Rain barrel and compost bin use provides methods for homeowners to care for their lawns and gardens that are efficient, cost-effective, and beneficial for the environment and simple for the homeowner. Rain barrels divert water from storm drains, decreasing the impact of runoff to streams and minimizing sewer overflows during heavy rainfalls. Composting diverts organic material from the trash can to the compost bin, reduces the need for chemical fertilizers, and diverts kitchen waste that would otherwise go to the landfill.

The Recycling Office developed a guide providing information about services available to Carroll County residents for the disposal of refuse, recycling, reducing waste, as well as directions for making and managing a compost pile. This guide is updated annually and is available on the [Recycling Office website](#).

<https://www.carrollcountymd.gov/government/directory/public-works/office-of-recycling/recycling/waste-management-and-recycling-guide/>



Water Resource Coordination Council (WRCC)



Agency: Carroll County Planning & Land Management
Email: bdinne@CarrollCountyMD.gov
Phone: 410-386-2070
Website: www.carrollcountymd.gov/government/boards-commissions/water-resource-coordination-council/

The Water Resource Coordination Council (WRCC) was formed in March 2007 by a non-binding joint resolution (#697-07) between the County, municipalities, and Carroll County Health Department. The Council provides a mechanism for cooperative problem solving of critical water resource management issues facing the County and municipalities. The Council fosters discussion between jurisdictions in order to develop regional (watershed) or countywide approaches to policies, procedures, and solutions regarding water resource development and protection. The WRCC offers a forum for the dissemination of ideas, solutions, and cost-saving approaches to water resource development and protection in Carroll County.

Among other things, the WRCC worked collaboratively to develop a **Water Resources Element** (WRE). The WRE identifies drinking water and other water resources needed for existing and future growth. It also identifies suitable receiving waters (where stormwater and treated wastewater can be discharged) and land areas for stormwater management and wastewater treatment. In Carroll County, the WRE addressed the County and all eight municipalities in one document and was jointly adopted.

The WRCC also served as the local Watershed Implementation Plan team, addressing issues related to the local implementation of the Chesapeake Bay Total Maximum Daily Loads (TMDLs), during the State's development of its Phase I, II, and III Watershed Implementation Plans.

The members have worked together to address cost-sharing of stormwater projects and provide shared staff to address NPDES MS4 compliance work. On October 23, 2014, the Board of County Commissioners and the Mayors of all eight municipalities signed a **Memorandum of Agreement (MOA)**. With the MOA, the Board committed to funding 80

percent of the municipalities' capital costs for stormwater mitigation projects. In December 2014, MDE issued the County's fourth generation NPDES Phase I MS4 permit, in which the municipalities were named as co-permittees. The MOA outlines the distribution of permit responsibilities. The MOA was reviewed, reaffirmed, and resigned on October 7, 2021, as a perpetual agreement.



In October 2018, the WRCC received international recognition as a Utility of the Future Today under the Partnering & Engagement activity area for coordination and joint leadership on significant water resource issues facing the county as a

whole. The WRCC was one of 32 water utilities recognized for transformational work in community engagement, watershed stewardship, and recovery of resources such as water, energy, and nutrients. The **Utility of the Future Today** program was launched in 2016 by the National Association of Clean Water Agencies (NACWA), the Water Research Foundation (WRF), and the WaterReuse Association, with input from the U.S. Environmental Protection Agency (EPA). The recognition celebrates the achievements of water utilities that transform from the traditional wastewater treatment system to a resource recovery center and leader in the overall sustainability and resilience of the communities they serve.



In December 2021, Maryland Department of the Environment (MDE) released a report/plan titled **Advancing Stormwater Resiliency in Maryland**, aka "A-StoRM." As a result, MDE initiated efforts to begin addressing areas of frequent flooding and quantity of stormwater flow. The County and municipalities are working together to identify these areas and build data. Due to the

County's progressive environmental codes and protections, the County was chosen by MDE to collaborate on developing a pilot study for a watershed or area. This project is intended to help determine the data needed to develop a flood management plan for this and other watersheds in the state. A flood management plan would also set the County up to receive a high priority for State and federal funding to address flooding and stormwater conveyance and quantity issues.



Environmental Advisory Council (EAC)



Agency: Carroll County Environmental Advisory Council
Email: EAC@CarrollCountyMD.gov **Phone:** 410-386-2140
Website: www.CarrollCountyMD.gov/EAC

Originally formed as the Environmental Affairs Advisory Board in the early 90s, the Board of County Commissioners created the Environmental Advisory Council (EAC) through County Code (Chapter 31) in 2004. The EAC is dedicated to exploration and promotion of the County's environmental management responsibilities, to providing the Commissioners with educated advice that is in the best interest of the County and the County's residents, and to promote environmental educational.

The nine-member EAC functions at the direction of the Carroll County Board of Commissioners and, as such, works cooperatively with County environmental staff to research environmental policy issues; to advise the Board of County Commissioners; to foster environmental education; and generally to act in the best interest of County residents by promoting effective environmental protection and management principles.

Other additional recent work by the EAC includes, among other things:

- ◆ Various reports to the Board providing possible options for Carroll County to:
 - reduce expanded polystyrene (EPS) use,
 - reduce single-use plastic bag (SUPB) use,
 - promote the use of community solar,
 - reduce single-use plastic bag (SUPB) use, and
 - reduce litter;
- ◆ *Overview of Renewable Energy Choice Options for Consumers;*
- ◆ *Guide to Residential Solar Installation in Carroll County;*
- ◆ *Guide to Becoming a Community Solar Subscriber in Carroll County;*
- ◆ *Community Solar Zoning Text Amendment;*
- ◆ *Expanded Polystyrene (EPS) and Your Business;*
- ◆ *Tree Planting Resource Guide;*
- ◆ *LitterLess Guide;*
- ◆ *Homeowner's Guide to Salt Management;*
- ◆ Business/public workshops regarding stormwater;

- ◆ *Environmental Stewardship in Carroll County (updated biennially); and*
- ◆ *Preventing, Managing, & Eradicating Invasive Plants and Noxious Weeds for Homeowners in Carroll County (to be completed by end 2023).*

Environmental Action Awards

CarrollCountyMD.gov/government/boards-commissions/environmental-advisory-council/environmental-action-awards/

Every other year, EAC recognizes individuals or groups for their actions demonstrating environmental stewardship. The goal of the Environmental Action Awards program is to foster community environmental stewardship through leadership and action by encouraging and recognizing community members and groups who voluntarily initiate projects, actions, and leadership to improve the



environment and/or facilitate sustainability of natural resources. Awards are presented to individuals and groups chosen from nominees submitted for consideration by their peers, although self-nominations are accepted. Awards are granted for endeavors and projects that result in a positive benefit to the environment and have the potential for long-term community

environmental benefit in each of three categories: Educational Outreach, Positive Practices, and Student Engagement. Winners are recognized in a joint ceremony with the Board of County Commissioners, which is held in conjunction with another event, such as the Environmental Symposium. The webpage contains descriptions of prior winners, nomination forms, and more.



Environmental Action Awards

Ad Hoc Committee

Starting in 2020, the Board designated the EAC to provide members to serve as an ad hoc committee to address appeals filed to an applicable environmental code. When appeals are filed, a temporary committee of the sitting EAC members will be formed to hear the appeal and make a decision on the request. The process is facilitated by the County Attorney's Office.



Website

The public may access the publications developed by the EAC on the EAC's website at www.CarrollCountyMD.gov/EAC.



Monocacy River Board (MRB)

Agency: Carroll County Monocacy River Board
Email: CCWater@CarrollCountyMD.gov **Phone:** 410-386-2712
Website: CarrollCountyMD.gov/government/boards-commissions/carroll-county-monocacy-river-board/

In 1974 the Monocacy River was designated as a state scenic river, and in 1982 the National Park Service determined that the Monocacy River was among 5 percent of rivers across the nation eligible for designation as a National Scenic River.

The Carroll County Monocacy River Board serve as advocates for the Monocacy River, its watershed



and the varied resources contained within. The Board is charged with promoting best management practices, advocating for sustainable land uses, and to encourage the restoration and enhancement of the natural resources within the Monocacy River Watershed.

This mission will be accomplished through public education, voluntary participation, and encouraging multi-jurisdictional partnerships that will maintain and improve the river's water quality and ecological health while respecting the property rights of landowners within the watershed.

Awards & Recognition

The Department of Planning & Land Management received several awards for its exemplary, progressive work.

🏆 Langdon Stormwater Management Facility, 2021 Medium Project of the Year Award, County Engineers Association of Maryland (CEAM):

Langdon Stormwater Management Facility received the Project of the Year Award for 2021 in the Medium Project Category. Langdon is a new regional wet facility constructed to address water quality, channel protection, and flood protection for a drainage area that includes over 92 acres of impervious surface. The County used Maryland Midland Railway, Inc. (MMD) to haul the equivalent of 100 dump truck loads of material from the site daily instead of dump trucks traversing a one-lane, two-way alley.



🏆 Langdon Stormwater Management Facility, 2022 Overall Project of the Year Award, Maryland's Charter on the Quality of Transportation (MdQI):

Langdon also won this category for projects under \$5 million.

🏆 Langdon Stormwater Management Facility, 2022 Excellence for Modal Award, Maryland's Charter on the Quality of Transportation (MdQI):

CEAM asked Carroll County Department of Planning & Land Management to complete an application for the 2022 Maryland's Charter on the Quality of Transportation (MdQI) Awards of Excellence for Modal Award under \$5 million. This award recognizes exceptional projects that represent innovation, environmental design, planning, and partnering.

🏆 Patrick Varga, Larry R. Johnson Local Floodplain Manager the Year Award, Association of State Floodplain Managers (ASFMP):

In May 2023, Patrick Varga, CFM, Environmental Review Supervisor and Floodplain Manager, was awarded the Association of State Floodplain Managers (ASFPM) Larry R. Johnston Local Floodplain Manager of the Year Award! This national award honors outstanding individual efforts and contributions at the local level, recognizing an individual responsible for developing a distinguished local program/activity. Mr. Varga, a 16-year County employee, has served as the County's Floodplain Manager since 2015. His job

responsibilities include reviewing all subdivisions, site plans, and building permits for compliance with Ch. 38 Floodplain Construction and Ch. 153 Floodplain Management of the County Code. He enhanced the County's National Flood Insurance Program's Community Rating System (CRS) to a level 6, resulting in significantly reduced flood insurance costs for Carroll's citizens. Pat created a County webpage to publicize the celebration of the 50-year anniversary of Hurricane Agnes, which significantly impacted the county in 1972, including detailed maps, historic photographs, and videos from eyewitnesses. This prompted the Army Corps of Engineers "Silver Jackets" to request his assistance in creating their own website. Mr. Varga is Vice President of the ASFPM Maryland Chapter.



🏆 Martin Covington, County Engineer of the Year, CEAM:

In September 2022, in recognition of exemplary service to the citizens of Carroll County, the State of Maryland, and CEAM, Martin B. Covington, III, P.E. (pictured left) was awarded the County Engineer of the Year Award by the County Engineers Association of Maryland (CEAM). As the County's Stormwater Program Engineer since 1996, he has been the guiding influence on stormwater management in the county and has provided technical assistance toward policy development with MDE. Martin manages the review of stormwater management plans and computations for proposed construction projects to protect the waters of the state from environmental degradation, in accordance with Federal, State, and local laws as well as best engineering practices, and is the delegated review authority by MDE for structural integrity of small dams. During his career, Martin has been instrumental in developing innovative practices to address stormwater requirements, including the design of surface sand filters. His research resulted in an award-winning design that provides water quality, groundwater recharge, and extended detention in "dry" facilities. These facilities dramatically change the receiving stream hydrology allowing streambank regeneration to occur without human intervention, essentially providing natural stream restoration.



Local Partnerships

Local Environmental Group Collaboration

One of the desired outcomes from the [Environmental Symposium](#) was the ability of local environmental groups to network and find ways to support each other. Following the first annual Environmental Symposium in November 2022, Carroll's local environmental groups took the initiative to investigate ways in which the groups might collaborate to share resources and volunteers and coordinate



timing of volunteers. Staff from the Carroll County Planning & Land Management Department and the Carroll County Environmental Advisory Council participate. These groups include, but are not limited to, Charlotte's Quest, Friends of Liberty Reservoir, Friends of Hashawha/Bear Branch, Trout Unlimited Patapsco Valley Chapter, Gunpowder Conservancy, and more.

Local Colleges

The Bureau of Resource Management partners with McDaniel College and Carroll Community College to promote environmental learning and careers. Bureau staff collaborate with the colleges' professors to provide opportunities for students to visit and experience water quality projects, internships, offer speaking engagements, and cooperate on research and studies.

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- 3 Maryland Department of Agriculture. Maryland Agricultural Water Quality Cost-Share Program. 2022 Annual Report: Growing to Meet New Challenges.
https://mda.maryland.gov/resource_conservation/counties/MDA_ConGrants_2022fFinal_WEB.pdf
- 4 Carroll County, Maryland, Forest Conservation Technical Manual. May 2011.
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- 5 Slater, James E. Jr., and Glenn D. Edwards. 2010. "Chapter 4 Incentive Driven Conservation," *A Sustainable Chesapeake: Better Models for Conservation*. The Conservation Fund.
<https://www.conservationfund.org/our-work/cities-program/resources/a-sustainable-chesapeake>
- 6 Carroll County Health Department, Environmental Health. 2022.
<https://cchd.maryland.gov/environmental-health-septic-system-manual/>

Did you know the following information about Carroll County?

- ♦ Population = ~172,891 (US Census, 2020)
- ♦ Total Acres = 289,920
- ♦ Total Square Miles = 453
- ♦ 8 Incorporated Municipalities



For More Information...

Contact Brenda Dinne, Secretary/EAC Staff Liaison, at one of the following:



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OR
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410-386-2140
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