

ANNE ARUNDEL COUNTY

Green Infrastructure Annual Report

Calendar Year 2023



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ANNE ARUNDEL COUNTY GREEN INFRASTRUCTURE 2023 ANNUAL REPORT

INTRODUCTION

This report highlights progress made in 2023 to conserve and restore green infrastructure in Anne Arundel County. The County Council adopted the Green Infrastructure Master Plan on April 4, 2022. The Plan updates and re-energizes County programs to conserve and restore natural lands and open spaces and to add more green infrastructure, like street trees, community gardens, and pocket parks in more highly developed areas.

To prioritize and make the most of limited funds for conservation, the Green Infrastructure Master Plan identifies a Network of the largest, connected natural lands in the County. The principles of Conservation Biology tell us that protecting large areas and connections between them has the greatest potential benefit for sensitive and threatened plants and wildlife. Conserving large areas also protects the physical character of our neighborhoods and landscapes and supports critical mass needed to sustain the agricultural economy. Protecting connected areas also creates potential for trails and other recreational opportunities.

Areas that currently lack green spaces are also identified in the Plan along with strategies to partner with local communities to invest in improvements.

Conserving green infrastructure is a collective effort. This report presents information from County programs, including:

- Acquisition of natural lands and open spaces by Department of Recreation and Parks (DRP),
- Protection of agricultural lands and working forests through the Agricultural and Woodland Preservation Program,
- Placement of conservation easements on private land by non-profit organizations such as the Scenic Rivers Land Trust(SRLT), Magothy River Land Trust, and Crownsville Conservancy
- Volunteer tree planting and non-native, invasive plant removal led by non-profit organizations like the Watershed Stewards Academy and
- Conservation of land through the development review process including application of the Forest Conservation Ordinance.

There are important conservation efforts beyond the scope of this report as well, especially the voluntary efforts of private landowners, community organizations, and schools to plant native wildflower gardens, install rain gardens, and plant trees. While these efforts may be small individually, they have big cumulative benefits to helping people and nature thrive together in Anne Arundel County.

Setting the Foundation: **What is green infrastructure, and what does the Green Infrastructure Network include?**

"Green infrastructure" is a broad term whose meaning can change at different scales and among different audiences. At the regional scale, "green infrastructure" has been defined as a multifunctional network of natural areas and open spaces. At the local and site-specific scales, it often refers to a stormwater management approach that mimics natural hydrologic processes, such as those provided by rain gardens and green roofs. In urban contexts, green infrastructure has been defined to include small natural features such as street trees, pocket parks, and community gardens.

The Anne Arundel County Green Infrastructure Master Plan (Plan) includes these definitions, but focuses on identifying a connected network of natural, recreational, historic, and cultural areas. The resulting Green Infrastructure Network (Network) incorporates the County's largest forests and most significant natural areas, including streams, and their adjacent wetlands, floodplains, and steep slopes. The Network includes Federal, State, and County parks as well as privately-owned land. Private land in the network may be conserved through conservation easements or reserved for open space in subdivisions. Other private lands in the Network do not have any special protections. Inclusion of property in the Network does not change zoning or development requirements. It does not allow trespassing on private lands.

The County's Office of Planning and Zoning has mapped the Green Infrastructure Network using the features listed in the above paragraph to identify hubs and corridors, as well as additional areas that are significant for making ecological connections. A "hub" is a natural area of at least 250 acres with a higher ratio of interior versus edge habitat. A "corridor" is at least 200 feet wide and serves as a link between hubs. The Network also includes areas of contiguous forest at least 75 acres large that are adjacent to the Network.

The Green Infrastructure Master Plan also recognizes the importance of smaller open spaces and natural areas, especially in more urbanized areas of the County. The Plan includes recommendations for the County to increase tree canopy and access to open spaces in those areas.

REGIONAL SCALE



At the countywide or regional scale, green infrastructure is the multifunctional network of large natural areas and open spaces.

LOCAL SCALE



At a smaller scale, green infrastructure may refer to stormwater management tools such as bioswales and rain gardens. In more urban contexts, green infrastructure includes small natural features such as street trees, pocket parks, and community gardens.

Setting the Foundation: **What does the Green Infrastructure Network not include?**

The Green Infrastructure Network catalogs the County's existing natural resources when they are big enough and connected enough to be included. This approach—focused on identifying hubs and the corridors between them—is grounded in conservation biology and landscape ecology best practices to protect wildlife. The approach also aligns with scientific principles to protect streams. Even when natural lands are conserved through zoning or easements, they may not be included in the Network if they do not meet the size threshold or location criteria.

Neighborhood parks, small woodlots, and other local open spaces are essential for maintaining environmental health and quality of life, even if they are not in the Green Infrastructure Network. Those spaces are addressed through other policies and programs, including subdivision requirements for open space, recreation areas, and forest conservation, and the Land Preservation, Parks, and Recreation Plan developed by the Anne Arundel County Department of Recreation and Parks.



Image of the Cattail Natural Area

ACCOMPLISHMENTS

Land Conservation

One of the foundational strategies of the Green Infrastructure Master Plan is placing more land in conserved status. The term 'conserved' includes land in public ownership, parcels designated in approved subdivision plats as open space or floodplains, land in the OS zoning district, and private land with conservation easements. Conservation easements include restrictive land use covenants held by a land trust or other non-profit organization, agricultural preservation easements, and Forest Conservation Easements

recorded through the development review process. The following tables identify land conserved in 2023 in the Green Infrastructure Network. These properties are also shown on Exhibit 1.

Four properties that expand existing parks and natural areas were acquired by DRP in 2023. The number and size of land acquisitions can vary widely year to year. In 2023, approximately 23.5 acres of land were acquired compared to over 538 acres of land in 2022 (see Table 1).

TABLE 1. COUNTY LAND ACQUISITIONS (2023)

PROPERTY NAME	SIZE (ACRES)	WATERSHED
Delaware Avenue Properties (Addition to Grays Creek Bog Natural Area)	1.1	Magothy River
Deep Cove Rd Property (Addition to Deep Cove Natural Area)	5.5	Herring Bay
Cornish Lane Property (Addition to Lake Shore Athletic Complex)	5.5	Magothy
440 Ritchie Highway (Addition to Cattail Creek Natural Area)	11.4	Magothy
Total	23.5	

In 2023, the Scenic Rivers Land Trust and the Maryland Department of Natural Resources (DNR) completed a conservation easement on 130 acres of forest, farm, and the last remaining sawmill in Anne Arundel County. This property is located in the Green Infrastructure Network in Crownsville and was number eight on the SRLT priority list of the top 100 most important properties for conservation in the County. The Crownsville Conservancy has also continued their efforts to protect platted, undeveloped lots in 2023 (see Table 2).



TABLE 2. LAND TRUST ACQUISITIONS AND CONSERVATION EASEMENTS (2023)

LOCATION	PROGRAM	TOTAL SIZE (ACRES)	WATERSHED
Garman Farm	Scenic Rivers Land Trust	130	Severn River
Herald Harbor	Crownsville Conservancy	0.39	Severn River
Herald Harbor	Crownsville Conservancy	0.46	Severn River
Herald Harbor	Crownsville Conservancy	0.25	Severn River
	Total	131.1	

TABLE 3. AGRICULTURAL AND WOODLAND PRESERVATION EASEMENTS (2023)

LOCATION	PROGRAM	SIZE (ACRES)	WATERSHED
Lothian	MALPF	106	Middle Patuxent

In 2023, the County Agricultural and Woodland Preservation program partnered with family farmers to place an easement on an approximately 106 acre farm in Lothian. The property is not located in the Green Infrastructure Network, but does add to the total of 14,373 acres of agricultural land protected through the County's Agricultural and Woodland Preservation program. Not all of the land conserved through the Agricultural and Woodland Preservation Program meets criteria for inclusion in the Green Infrastructure Network. Agricultural and Woodland Preservation accounts for approximately 23% of conserved land in the Network.

Stewardship and Planning

The DRP is in the process of expanding its natural resource management planning efforts. They have developed and already utilize an integrated pest management plan, a Wildlife Management Plan for Whitetail deer, the Bacon Ridge Natural Area Forest Management Plan and the Jug Bay Wetlands Sanctuary Management Plan. These plans are developed with input from partners including the Inspections and Permits (I&P) Forestry Division and the SRLT, among others. DRP has finalized a system-wide Vegetation Management Plan, and a Non-native Invasive Management plan. These plans complement everyday on the ground operations to protect the County's vital natural resources.

County park rangers patrol parks and natural areas year round, seven days a week. These rangers promote positive usage of public lands, work with volunteer groups to facilitate improvements, and conduct maintenance as needed.

The County is also building partnerships and capacity to engage public volunteers in tree planting and control of invasive species. The I&P Forestry Division in partnership with the Anne Arundel Forestry Board supports the Weed Resistance volunteer program. SRLT in partnership with the DRP, has held multiple volunteer events to control invasive plant species in the Bacon Ridge Natural Area. Watershed Stewards Academy volunteers removed invasives on over 750,000 square feet of land in 2023. With support from County funding, the Watershed Stewards Academy hosts the Replant Arundel program. The program engaged volunteers and private landowners to plant approximately 4,400 trees in 2023.

Environmental restoration projects in the County also involve significant planting of native trees, shrubs, and herbaceous plants. Information on County environmental restoration projects can be found in the [Land of Rivers, annual report](#) of the Bureau of Watershed Protection and Restoration.



Investments In Underserved Communities

Anne Arundel County is building relationships, building capacity, and making investments in green infrastructure in underserved communities. For example, the St. Mark's United Methodist Church (UMC) was experiencing an increase in the amount and frequency of flooding. Old drainage pipes were breaking down and being overwhelmed by stormwater runoff. This area has been identified as a priority for watershed restoration and has inadequate stormwater infrastructure. The church formed partnerships with the Arundel Rivers Federation and the Anne Arundel Watershed Stewards Academy to figure out a solution and obtain grants to implement it. With funding support from Anne Arundel County and others, they 'daylighted' the drainage pipe to restore a flowing creek, created a bioretention area, and installed native plants. These changes reduced flooding, improved water quality, and empowered the congregation to be stewards of their land.

DRP is also incorporating features in park renovation projects that improve access and enhance the health of the environment. In partnership with Anne Arundel County Public Schools, DRP is scheduled to begin construction in 2024 on renovations to Brooklyn Heights Park. In addition to improvements to athletic fields, the project will also include a community vegetable garden, a meditation garden, native tree plantings, and improved stormwater management facilities.

Blue-Green Master Plan

The Greater Baybrook Alliance has prepared a Blue-Green Master Plan for the Brooklyn Park, Brooklyn, and Curtis Bay communities. The Master Plan focuses on rebuilding native ecosystems and enhancing neighborhood green spaces to provide more opportunities for recreational activities and a cleaner environment to live and work. The Master Plan aligns with the policies of the Countywide Green Infrastructure Master Plan. Both plans provide recommendations to plant more trees and create more green spaces in underserved areas. County staff are providing technical support to the Greater Baybrook Alliance, supporting grant applications, and coordinating the Blue-Green Master Plan with planned parks, restoration, and stormwater management projects in Brooklyn Park.

Urban Tree Planting

Momentum is building for efforts to plant trees and restore green spaces in underserved parts of Anne Arundel County. With State of Maryland funding from Tree Solutions Now Act, the Watershed Stewards Academy received a grant to plant 80 trees across low-income neighborhoods in North Anne Arundel County focusing on Latino/a/x communities, and the Greater Baybrook Alliance received a grant to plant 200 trees in Brooklyn, Brooklyn Park, and Curtis Bay (in the City of Baltimore and Anne Arundel County). These trees will be planted in 2024 in partnership with local community members.

Public Outreach

County departments are building partnerships with non-profit organizations to expand public outreach and increase opportunities for people to enjoy and care for our green infrastructure. The DRP and the SRLT have initiated a program for volunteers to help control non-native, invasive plants in the Bacon Ridge Natural Area. Additionally, the Anne Arundel County Forestry Board's Weed Resistance program trains volunteers in invasive species management to be applied to both public and private lands.

The Watershed Stewards Academy in partnership with Defensores de la Cuenca, the Alliance for the Chesapeake Bay, Anne Arundel County Public Libraries, and local community groups is reinventing and expanding efforts to engage with communities of color and low income households. They are building relationships, listening to people's concerns and then collaboratively designing new educational programs, and

installing projects to meet their needs. Their program Mindfulness and Nature program engages families in ways that support community health and wellness, and promote a connection and appreciation of green spaces.

As part of the Region Plan process, the Office of Planning and Zoning has also been engaging the public to understand their priority concerns related to land conservation and development. This has included questionnaires to solicit public comments on draft strategies related to the environment for the Region Plans.



DEVELOPMENT SUMMARY

The Green Infrastructure Master Plan and County Code do not prohibit development in the Green Infrastructure Network. Residential, industrial, and commercial development projects do occur. County Code requirements, including the Forest Conservation Ordinance, limit the environmental impacts of these projects. In fact, approximately 19% of conserved land in the Network received protected status through the development review process in 2023. County Code has requirements for subdivision projects to set aside 30% of the total site for open space. The Forest Conservation Ordinance requires an assessment of existing forest and plans for conservation to be approved prior to any clearing.

The County Code requires that subdivision projects place an easement, or transfer ownership of land in the 100-year floodplain to the County. In 2023, approximately 42.7 acres of land in the Green Infrastructure Network were approved to be cleared as part of development projects, and approximately 123.3 acres of land were conserved through County Code requirements (See Table 4). It is important to note that the Green Infrastructure Plan does not create additional Code requirements for development review. The Code requirements apply to projects across the entire County, not just within the Network.



TABLE 4. LAND CONSERVED THROUGH DEVELOPMENT REVIEW PROCESS (2023)

PROJECT NAME	PROJECT #	COMMUNITY	WATERSHED	AREA IN NETWORK CLEARED (ACRES)	AREA CONSERVED (ACRES)	NOTES
Copperleaf (formerly Gardetto Ridge)	P2018-0113	Jessup	Patapsco Non-tidal	20.5	36.0	Residential subdivision with 62 homes. Forest Conservation Easements and parcels platted as open space and recreation created that generally align with the Green Infrastructure Network
Parkside Phase 1B (Eagle Park)	P2021-0034	Hanover	Little Patuxent	7.1	4.1	Workforce housing development (120 units). Subdivides a previously platted parcel, so Forest Conservation Easements already in place.
Enclave at Oak Hill	P2018-0111	Severna Park	Magothy	0	1.45	Residential subdivision creating five lots. Area within Green Infrastructure Network conserved in open space parcel with a Floodplain Easement and a Forest Conservation Easement executed. Conserved area slightly expands Green Infrastructure Network
Cook Property (Lot 1) Amended Plat	P2022-0037	Millersville	Severn	0	-0.5	Adjusts property boundaries and abandons part of a Forest Conservation Easement.
Segelhorst Property	P2021-0037	Friendship	Lower Patuxent	3.77	29.5	Minor subdivision to subdivide the property into two lots. Most of the property is placed in Forest Conservation Easement with a Forest Management Plan.
Windermere Estates, Resubdivision of Reserve Parcel 1	P2022-0029	Pasedena	Bodkin Creek	1.2	19.6	Subdivision of a reserved parcel to create one new lot and one bulk parcel. Site is entirely within the Green Infrastructure Network and RCA Critical Area.

PROJECT NAME	PROJECT #	COMMUNITY	WATERSHED	AREA IN NETWORK CLEARED (ACRES)	AREA CONSERVED (ACRES)	NOTES
Estuary at Two Rivers, Phase 2	P2021-0046	Two Rivers	Upper Patuxent	7.8	4.3	Subdivision creating 27 single family lots and public utility easements as part of a larger Planned Unit Development. This phase is partially within the Green Infrastructure Network. A Forest Conservation Easement protects part of the mapped Network.
Tucker Lots 4R, 8R and 9 and Chisholm Lot 15R	P2023-0014	Friendship	Lower Patuxent	0.9	26.9	Subdivision of property created a total of 5 lots. Areas in Network on the site placed in Forest Conservation Easement in subdivision plat.
Timber Trail Ridge	P2021-0001	Arnold	Magothy	1.4	2	Minor subdivision into three lots. Entirely in the Green Infrastructure network. Four separate areas placed into Forest Conservation Easement.
			Total	42.7	123.3	

30% BY 2030 GOAL

The Green Infrastructure Master Plan establishes a goal to conserve an additional 5,000 acres of land in the Network by 2030 (using 2020 as a baseline), representing 30% of the land area of the entire County.

In calendar year 2023, approximately 278 acres of land in the Green Infrastructure Network were conserved through acquisition, conservation easements, and protections put in place through the development review process. Cumulatively, from January 1, 2020 to December 31, 2023, a total of approximately 1,149 acres of land have been conserved in the Network. This includes land conserved in 2023 and land conserved in 2020 and 2021 that was described in the previous Green Infrastructure Annual Report. Additionally, approximately 192 acres of land were identified as conserved through additional research and map corrections.

In total, these changes increase conserved land in the Green Infrastructure network to 78,182 acres, which represents 30% of the land area of the County (excluding the City of Annapolis). While this indicates that the County has met the 30% by 2030 goal, this percentage statistic is expected to change in the coming years. Land conservation programs managed by the County and private groups will continue to preserve land. Development projects will continue to result in some land being cleared and other areas being placed into conservation. The ongoing Comprehensive Zoning process is also shifting how the OS zoning district is mapped. Since land zoned OS are considered 'conserved' for these Green Infrastructure estimates, they will need to be re-evaluated after the zoning maps are updated.

TABLE 5. CONSERVATION SUMMARY

	2020 BASELINE		UPDATE AS OF DECEMBER 31, 2023		
	ACRES	% OF GREENWAYS NETWORK	ACRES	% OF GREENWAYS NETWORK	ACRES
Conserved	76,841	71%	78,182	73%	1,341
Not Conserved	30,695	29%	29,354	27%	-1,341
Total	107,536	100%	107,536	100%	0



