

ANNE ARUNDEL COUNTY

Green Infrastructure Annual Report

Calendar Year 2022



Prepared April 2023

CONTENTS

3	Introduction
6	Accomplishments
8	Development Summary
10	30% by 2030 Goal

Exhibit 1: Green Infrastructure Changes Map

List of Tables

1. County Land Acquisitions (2020 - 2022)
2. Agricultural and Woodland Preservation Easements (2020-2022)
3. Land Conserved through Development Review Process (2020-2022)
4. Conservation Summary
5. Corrections to Errors in Adopted Network Map

INTRODUCTION

This is the first annual report on progress 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. This report provides information on land conservation for the calendar years 2021 and 2022, since the Master Plan includes data through December 31, 2020.

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
- 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, Magothy River Land Trust, and Crownsville Conservancy
- Volunteer tree planting and non-native, invasive plant removal conducted by County Departments and partner organizations including the Watershed Stewards Academy, Anne Arundel Forestry Board, and Weed Resistance volunteers.
- 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, that have big potential 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: Courtesy of the Chesapeake Bay Program

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, land identified in approved subdivision plats as open space or floodplains, land in the OS zoning district, and private land with conservation easements. Conservation easements include conservation easements 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 from 2020 - 2022 in the Green Infrastructure Network. These properties are also shown on Exhibit 1.

TABLE 1. LAND ACQUISITIONS (2020 - 2022)

PROPERTY NAME	SIZE (ACRES)	WATERSHED
Bragers Road (Addition to Patuxent Ponds)	26.0	Little Patuxent
Wilt Property (Addition to Jug Bay Wetlands Sanctuary)	2.2	Middle Patuxent
Severn Danza Park Addition	30.5	Patapsco Tidal
Tanyard Park	14.7	Patapsco Tidal
Buffer to Millersville Landfill Complex	2.6	Severn River
Page Property, Lot 3 (Addition to Bacon Ridge)	3.3	South River
Page Property, Lot 4 (Addition to Bacon Ridge)	2.8	South River
Bacon Ridge - Forney Property (Addition to Bacon Ridge)	2.9	South River
Crownsville Hospital Memorial Park	458.9	South River
Laurel Floodplain Property	12.1	Upper Patuxent
Parker Property (Addition to Patuxent River Greenway)	29.1	Upper Patuxent
Total	585.1	

CROWNSVILLE HOSPITAL

In 2022, the County completed a historically significant land transfer by taking title to the former Crownsville State Hospital. The approximately 456 acre hospital campus includes extensive forest, streams and wetlands in addition to the historic buildings. With this land transfer, the County has made a commitment to transforming the area into the Crownsville Memorial Park that respects the history of the site, fosters mental and physical well being, and conserves natural resources.



TABLE 2. AGRICULTURAL AND WOODLAND PRESERVATION EASEMENTS (2021-2022)

LOCATION	PROGRAM	SIZE (ACRES)	WATERSHED
Tracy's Landing	MALFP	116	Herring Bay
Lothian	MALFP	71	Middle Patuxent
Davidsonville	MALFP	68	Upper Patuxent
Davidsonville	MALFP	50	Upper Patuxent
	Total	305	

In 2021 and 2022, the County Agricultural and Woodland Preservation program partnered with family farmers to place easements on four properties ensuring that over 300 additional acres of land will remain in agricultural use. As of December 2022, a total of 14,267 acres of agricultural land have been 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 Department of Recreation and Parks (DRP) is in the process of developing management plans to support stewardship of natural resources on lands they own. Examples include the Bacon Ridge Natural Area Forest Management Plan and the Jug Bay Wetlands Sanctuary Management Plan. These management plans are developed with input from partners including the Forestry Division in Inspections and Permits and the Scenic Rivers Land Trust. The management plans complement countywide DRP policies for integrated

pest management, invasive species control, and deer management

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. The Scenic Rivers Land Trust, in partnership with the Department of Recreation and Parks has held multiple volunteer events to control invasive plant species in the Bacon Ridge Natural Area. Watershed Stewards Academy volunteers removed invasives on over 200,000 square feet of land in 2022. With support from County funding, the Watershed Stewards Academy hosts the Replant Arundel program. The program engaged volunteers and private landowners to plant approximately 3,949 trees in 2022.

Stream restoration projects in the County also involve significant planting of native trees, shrubs, and herbaceous plants. Information on County stream 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 Bureau of Watershed Protection and Restoration has installed a multi-faceted stormwater management project that also serves as an educational resource at George Cromwell Elementary School in Glen Burnie. The natural drainage project improves water quality and provides an outdoor classroom give students a hands on opportunity to learn about the water cycle, protecting water quality, and native plants.

The Department of Recreation and Parks (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 renovating Brooklyn Heights Park and the Brooklyn Park Complex. In addition to improvements to athletic fields, the projects will also include a community vegetable garden, a meditation garden, native tree plantings, and improved stormwater management facilities.

Blue-Green Master Plan

The Greater Baybrooke 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 (in the City of Baltimore and Anne Arundel County). These trees will be planted in 2023 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 Scenic Rivers Land Trust have initiated a program for volunteers to help control non-native, invasive plants in the Bacon Ridge Natural Area. DRP staff are working with partners to create a more expansive program to engage volunteers in stewardship projects in more County Parks. These efforts build on the Anne Arundel County Forestry Board's Weed Resistance program that trains volunteers in invasive species management to be applied to both public and private lands.

The Watershed Stewards Academy in partnership with Defenses 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 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.

The County also conducted extensive direct outreach to property owners to promote voluntary land conservation in 2022. The Office of Planning and Zoning sent mailings to nearly 7,000 property owners notifying

them of the adoption of the Green Infrastructure Master Plan and providing information on financial incentives for land conservation and resources for stewardship including tree plantings and stormwater management.

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. County Code has requirements for subdivision projects to set aside 30% of the total site for open space. The Forest Conservation Ordinance requires a assessment of existing forest and plans for conservation to be conserved prior to any clearing. County Code requires that subdivision projects place an easement, or transfer ownership of land in the 100-year floodplain to the County. In 2022, approximately **23.1 acres** of land in the Green Infrastructure Network were cleared as part of development projects, and approximately **97.1 acres** of land were conserved through County Code requirements (See Table 3) . 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 3. LAND CONSERVED THROUGH DEVELOPMENT REVIEW PROCESS (2020-2022)

PROJECT NAME	PROJECT #	COMMUNITY	WATERSHED	Area In Network Cleared (Acres)	Area Conserved (Acres)	NOTES
Lakeside Estate, Lot 2R	P2019-0047	Pasadena	Bodkin Creek	0	0.01	Revision of Forest Conservation Easement Boundary. Increased conserved area by 420 square feet
Starbucks	C2019-0024	Pasadena	Bodkin Creek	0.3	1.3	Forest retained connecting Network, but no conservation easement.
Chesapeake's Brandon Woods III, Lot 4	C2021-0023	Glen Burnie	Patapsco Tidal	1.7	21.6	Revised Forest Conservation Easement boundaries.
Rippling Woods Elementary School Expansion		Glen Burnie	Patapsco Tidal	9.9	39.0	Clearing adjacent to existing school. Forest along streams and connected to Network retained and placed in Forest Conservation Easement.
Safstore	C2019-0022	Glen Burnie	Patapsco Tidal	4.0	0.0	Self storage facility along edge of narrow section of Network.
Key Bridge Liquors	C2016-0033	Glen Burnie	Patapsco Tidal	0.3	0.4	Forest Conservation Easement recorded on property. No clearing in Network.
Element at Mill Creek	C2019-0050	Broadneck	Severn River	1.1	2.8	Forest in Network retained and Forest Conservation Easement established.
Wright Property - Minor Subdivision	P2019-0035	Millersville	Severn River	0	5.1	Subdivision created legal lots around two existing houses and placed forested area into conservation easement. No clearing in the Network.
Cain Property	P2018-0098	Davidsonville	South River	5.7	26.9	Forest Conservation Easement established through subdivision process.
			Total	23.1	97.1	

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 County land area.

From January 1, 2020 to December 31, 2022, an additional 871 acres of land have been conserved in the Network through acquisition, agricultural preservation programs, and protections put in place through the development review process. Note, that the agricultural preservation easement in Tracy's Landing is not included in that total, since the portion of the property located in the Green Infrastructure Network was

considered conserved in the Master Plan based on OS zoning designation.

Corrections to errors found on the Network Map in preparation of this annual report identified an additional 191.5 acres of conserved land (see Table 5.). These areas include properties owned by the County or privately-owned lands protected by forest conservation easements or reserved as open space parcels in subdivision plats. No adjacent, contiguous conserved areas were added to the Network Map.

In total, these changes increase conserved land in the Green Infrastructure network to 77,904 acres, which represents 29.9% of the land area of the County (excluding the City of Annapolis).

TABLE 4. SUMMARY OF CONSERVED LAND IN GREEN INFRASTRUCTURE NETWORK

	2020 BASELINE		UPDATE AS OF DECEMBER 31, 2022		
	ACRES	% OF GREENWAYS NETWORK	ACRES	% OF GREENWAYS NETWORK	ACRES
Conserved	76,841	71%	77,904	72%	1,063
Not Conserved	30,695	29%	29,632	28%	-1,063
Total	107,536	100%	107,536	100%	0



TABLE 5. CORRECTIONS TO ERRORS IN ADOPTED NETWORK MAP

STATUS	PROPERTY NOTES	WATERSHED	AREA CLEARED (ACRES)	AREA CON-SERVED (ACRES)
Conserved	Lake Shore Fire Co 10	Bodkin		1.8
Conserved	Board of Education property adjacent to Southern Middle School	Herring Bay		9.3
Conserved	Part of Broadwater Water Reclamation Facility	Herring Bay		11.8
Conserved	Part of Deep Cove Natural Area	Herring Bay		19
Conserved	Forest Conservation Easement placed on property as part of development review process.	Little Patuxent		1.7
Conserved	Part of County owned Patuxent Water Reclamation Facility	Little Patuxent		9.7
Conserved	Parcel conveyed to Planning and Zoning Officer through development review process.	Lower Patuxent		2
Conserved	County owned parcel, stormwater management	Magothy River		0.8
Conserved	Parcel acquired to support Jumpers Hole Road improvements	Magothy River		1.7
Conserved	Platted open space parcel	Middle Patuxent		2.1
Conserved	County owned floodplain parcel	Patapsco Non-tidal		1.4
Conserved	Board of Education property at Solley Elementary School	Patapsco Tidal		6.7
Conserved	County Owned Property	Patapsco Tidal		11.6
Conserved	County owned sanitation facility	Patapsco Tidal		0.9
Conserved	Part of Cox Creek Water Reclamation Facility property	Patapsco Tidal		4.8
Conserved	Public ownership of parcel was not noted in GI Master Plan	Patapsco Tidal		1.8
Conserved	Part of Ralph Bunche Community Center	Rhode River		2.7
Conserved	County land acquired for South Shore Trail	Severn River		4.8
Conserved	Floodplain dedicated to County during development review.	Severn River		0.2
Conserved	Forest Conservation Easement established through subdivision process.	Severn River		1.0

TABLE 5. CORRECTIONS TO ERRORS IN ADOPTED NETWORK MAP CONTINUED

STATUS	PROPERTY NOTES	WATERSHED	AREA CLEARED (ACRES)	AREA CONSERVED (ACRES)
Conserved	Part of Millersville Landfill complex	Severn River		38.5
Conserved	Well House for Arnold Water Plant	Severn River		1.9
Conserved	Boehm Property. Purchased with Program Open Space funds	South River		2
Conserved	County owned floodplain parcel	South River		2.9
Conserved	County owned platted open space parcel	South River		1.4
Conserved	Floodplain dedicated to County during development review.	South River		2.1
Conserved	Part of Bacon Ridge Natural Area	South River		5.7
Conserved	Platted open space parcel	South River		3.2
Conserved	Stormwater management area	South River		1
Conserved	Forest Conservation Easement not accounted for in Network.	South River		1.2
Conserved	County owned Patuxent River Greenway Parcel	Upper Patuxent		2.7
Conserved	Kings Branch Park	Upper Patuxent		15.6
Conserved	Park of Southern High School property	Upper Patuxent		14.9
Conserved	Part of Davidsonville Park	Upper Patuxent		2.6
Developed	New Galesville Fire Station Company 1	West River	1.5	
		Total	1.5	191.5

