

ANNE ARUNDEL COUNTY

Green Infrastructure Master Plan Appendices



April 4, 2022

Appendix A: Public Involvement Summary

Green Infrastructure Master Plan Public Involvement

Public involvement in development of the Green Infrastructure Master Plan has spanned two periods of recent activity: 2017-2018 and 2021. In between these two time periods, the Office of Planning and Zoning (OPZ) prepared the General Development Plan, Plan2040. Public input collected during that process has also informed development of the Green Infrastructure Master Plan.

In 2017, the OPZ held three public forums and developed an online comment form for residents to communicate their ideas and concerns about the Plan. Participants reviewed a draft version of the Green Infrastructure Network map and provided comments on areas to include or remove. These comments helped refine the County's approach to defining the Green Infrastructure Network.

The Plan2040 planning process (2017-2021) included extensive public involvement including community meetings, surveys, an online open house, and public review of the draft plan document. One of the most prominent themes of public comments in the Plan2040 process was the need to protect the environment, especially conservation of forests and improvement of water quality. Community members also expressed a strong desire for more public parks, trails, and water access.

Green Infrastructure Master Plan public engagement efforts in 2021 built on the foundation of the public involvement in 2017 and Plan2040. Public engagement activities in 2021 included:

- Online surveys: one focused on Green Infrastructure (March to June) and one for the Land Preservation Parks and Recreation Plan (March to May) that included questions related to land conservation
- Series of five virtual public meetings with the Citizens Environmental Commission (CEC) (February to June)
- Virtual public forum (April 29)
- Series of virtual public town halls in each County Council District in coordination with the update of the Land Preservation Parks and Recreation Plan (June to July)
- Two workshops with local, state, and federal land conservation practitioners (March and April).
- Two meetings with representatives of the real estate industry, including representatives from the Maryland Building Industry Association, NAIOP-Maryland, and the Anne Arundel County Association of Realtors (March and May)
- Presentation at public meetings of County boards and commissions including
 - Recreation Advisory Board (March 2)
 - Forestry Board (April 13)

- Agricultural Preservation Advisory Board (May 20)
- Transportation Commission (May 12)
- Bicycle Advisory Commission (June 8)

Notes or recordings from these meetings are available at: www.aacounty.org/greeninfrastructure.

Key Themes from Public Involvement

The largest number of comments were generated through the responses to the online surveys. Nearly 200 people completed the Green Infrastructure online survey that sought to gauge public awareness of and support for green infrastructure conservation. Over 2,500 people responded to the Land Preservation Parks and Recreation survey. Key themes included:

- 92% of respondents to the OPZ Green Infrastructure survey support or strongly support using public funds to protect natural areas and open space (see Figure 1).
- 76% of respondents state that it is important to protect both large natural areas and small open spaces throughout the County (see Figure 2).
- Need for integration of land protection and development planning, with a focus on promoting redevelopment of existing developed areas over clearing of forests and fields.

Figure 1. Responses to question: Would you support using public funds to permanently protect more of the Green Infrastructure Network?

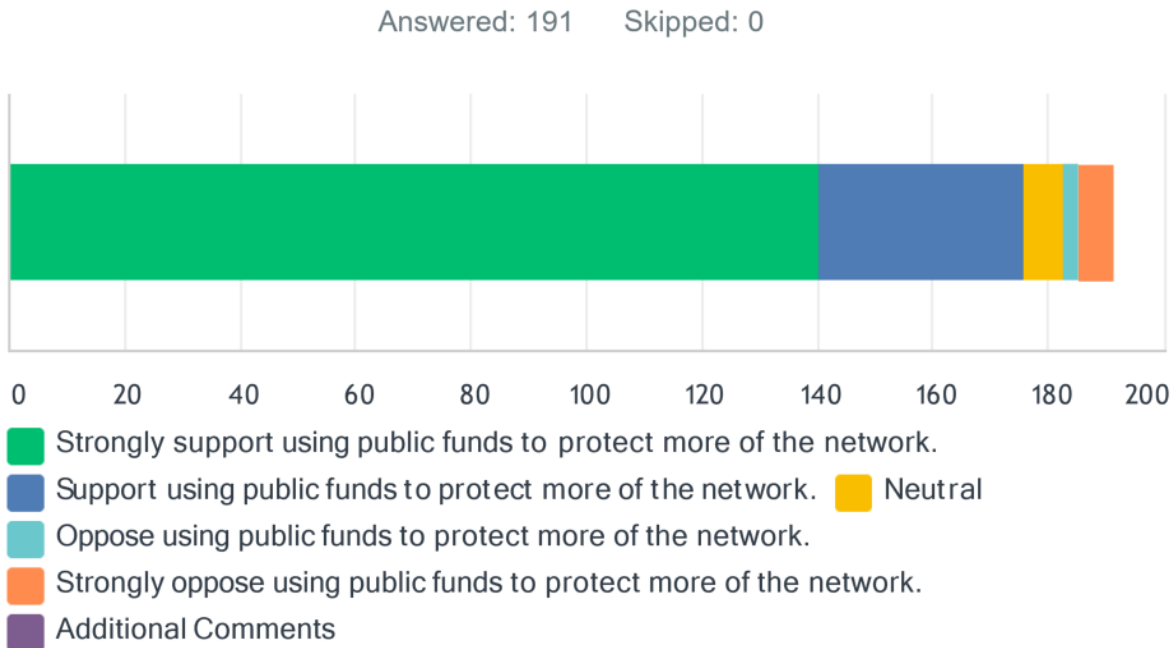
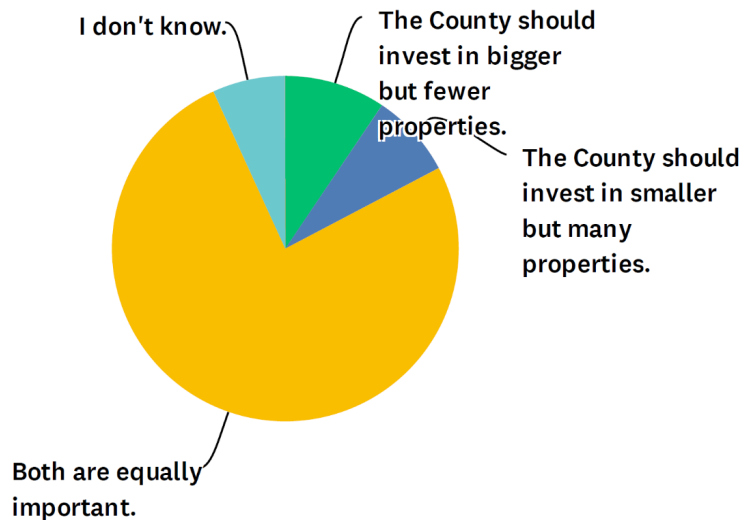


Figure 2: Responses to question: Should the County target its investment in Green Infrastructure to protect larger, but fewer properties? Or should investments be spread evenly throughout the network to preserve both large and small open spaces?

Answered: 191 Skipped: 0



Equity in access to open space and the benefits of green infrastructure was another key theme from public comments. Stakeholders expressed concern about the lack of green infrastructure in more densely populated parts of the County and especially in low income communities. They urged the County to invest in local scale green infrastructure, such as street trees, pocket parks, community gardens, and stormwater management retrofits that mimic natural systems in underserved areas.

Representatives from the development community expressed concerns regarding the impacts of land conservation on development capacity in the County. They recommended that the County analyze potential impacts (which has been included in the Land Use Assessment section of the Green Infrastructure Master Plan Network chapter). They also recommended that the County increase allowed density of development in other areas to ensure that there is sufficient land capacity to support future population and employment growth.

Public Education and Outreach Since Adoption of 2002 Greenways Master Plan

Public outreach was a key strategy in the 2002 Greenways Master Plan. The County has sponsored or participated in numerous public outreach and education activities related to conservation of land in the Greenways. Past and continuing public outreach includes:

- *Patuxent River Policy Plan*: The Patuxent River Policy Plan is a shared commitment of State agencies and seven counties and municipalities in the Patuxent River watershed to protect and enhance this natural resource. The Patuxent River Commission (PRC) relies on the policy plan to monitor the efforts of the local jurisdictions. The 2015 Policy Plan was adopted in May 2014 by the PRC and later in 2014 by the elected bodies of the represented eight local governments. The Anne Arundel County Council approved the 2015 Patuxent River Policy Plan update by Resolution (30-14) in July 2014. The updated plan includes three general policies (Preservation, Advocacy, and eXcitement, or PAX for the Patuxent River watershed) to guide the work of local jurisdictions and the State within the Patuxent River watershed. Anne Arundel County continues to take numerous steps to fulfill its portion of the plan, including working to encourage smart growth and land preservation in the Patuxent watershed, pursuing attainment of its local Patuxent River Total Maximum Daily Loads (TMDLs), pursuing resolution of pollution concerns in the watershed, and enhancing public access to the River.
- *Anne Arundel County Agricultural Preservation Advisory Board*: The Board's duties are to advise the County concerning the establishment of County agricultural districts and purchases of easements by the County; assist the County government in reviewing the status of County agricultural districts and land under easement; advise the County concerning County priorities for agricultural and woodland preservation; promote preservation of agriculture within the County; make budget recommendations; recommend the delineation of areas of productive agricultural land in the County; recommend procedures concerning the determination of values of easements; review and make recommendations to the County concerning proposed regulations for State and County agricultural districts; prepare and review recommendations to the County concerning County policies and programs for agricultural and woodland preservation; and to seek the advice of and cooperate with the Agricultural Extension Service, the Soil Conservation District and the State foresters in carrying out its responsibilities.
- *The Severn River Commission*: A quasi-governmental organization created by Anne Arundel County and comprised of citizens appointed by the local governments, which acts as an advisory body to the State and local governments on environmental matters within the Severn River Watershed.
- *Anne Arundel County's Forestry Program (housed within the Department of Inspections and Permits)*: Administers the reforestation and afforestation requirements of the Critical Area Program, and the Maryland Forest Conservation Act. A component of this program is the coordination of voluntary reforestation projects with landowners and community associations. The Forestry Program also provides technical assistance to property owners and utilities related to tree and forest management.
- *The County's Emergent (Marsh) Grass Revegetation Program*: Provides wetland plants to communities and individuals for shoreline stabilization, beautification, habitat enhancement, and water quality improvement.

- *Walk for the Woods*: Since 2006, Scenic Rivers Land Trust (SRLT) has organized the “Walk for the Woods” on the old Crownsville Hospital property in the South River Greenway. Bird watchers, avid trail hikers, and families enjoy the day with guided hikes and self-guided discovery walks on the nature trails. In recent years, the County has co-sponsored this event with the SRLT.
- *Invasive Plant Control (Bacon Ridge Natural Area)*: The County, Maryland DNR, U. S. Fish and Wildlife Service, SRLT, South River Federation, Ft. Meade, Maryland Native Plant Society and the Mid-Atlantic Off-Road Enthusiasts coordinated several efforts to remove non-native invasive plants from the South River Greenway. Using organized volunteer groups, these efforts will continue in the future to restore a central part of the green infrastructure forests by removal of the invasive plants; however funding will be integral to their success.
- *Invasive Species Control (Jug Bay Wetlands Sanctuary)*: Sanctuary staff with the support of many volunteers led efforts for the control of invasive species to promote habitat health. Some of these activities include: manual removals, biocontrol using goats, targeted treatments for example for the treatment of emerald ash borer, and volunteer monitoring through programs such as Adopt-a-Plot and trail monitoring to detect the appearance or expansion of new or existing invasive plants.
- *Patuxent Sojourn*: The Annual Patuxent River Sojourn each year explores a section of the river during a multi-day paddling and camping journey. The Patuxent Sojourn aims to elevate awareness of the Patuxent River’s importance to the region and to encourage local residents to play an active role in its restoration and preservation. Anne Arundel, Prince George’s, Calvert, Charles, and Saint Mary’s counties, along with Maryland DNR, Friends of Jug Bay, Patuxent Riverkeeper, Alliance for the Chesapeake Bay, Sierra Club, and other groups coordinate this event.
- *Patuxent Teen Leadership Paddle*: The Teen Paddle is a week-long canoeing expedition geared towards high school students. The program gives teens a chance to practice leadership & teamwork skills as they navigate the river, water quality testing, plant community studies, help with a stewardship project, camping by the riverside and prepare meals together. Paddlers enjoy a unique, on-the-water experience that features educational programming and builds a strong stewardship ethic for the river and its natural resources. Campers will become immersed in Patuxent River issues and explore their role in solving them and they end the week with a presentation to County and State leaders, friends and family. This program is a partnership between the Maryland Chesapeake Bay National Estuarine Research Reserve, Patuxent River Park, and Jug Bay Wetlands Sanctuary.
- *Cartop Boat Launch*: In order to provide citizens greater access to Anne Arundel County waterways, the DRP produced a Car Top Boat Launch Site Guide identifying areas throughout the County for canoe and kayak launchings. Presently, that information is managed via a web page for water access to more easily and accurately maintain pace

with added locations and amenities. The website identifies an interactive County map identifying each site as well as fishing spots and points of interest. To further enhance enjoyment of local waterways, Anne Arundel County partnered with the Maryland-National Capital Park and Planning Commission in Prince George's County to complete the Patuxent Water Trail. The DRP continues to expand opportunities for cartop boat launches.

- *Park Finder*: The DRP has launched an interactive web-based mapping tool to help people find parks, trails, facilities, and amenities.
- *Patuxent River Conference*: Many partners including Jug Bay Wetlands Sanctuary have organized the Patuxent River Conference as a premier forum uniting scientists, resource managers, formal and informal educators, and stakeholders passionate about the health and future of the Patuxent River. The Conference addresses key aspects of Patuxent River science, management, restoration, education, and outreach that are crucial to the continued protection and restoration of the River.
- *Jug Bay Wetlands Sanctuary*: As a certified Maryland Green Center, Jug Bay Wetlands Sanctuary is a model organization for best practices in delivering diverse and meaningful environmental education programs, sustainable living, and community engagement. From hands-on science learning in the classrooms in the field programs to providing numerous training opportunities for teacher professional development that cover topics like climate change, water quality, and land use studies, Jug Bay Wetlands Sanctuary works to enhance visitors' awareness, understanding, and appreciation of local, natural ecosystems.
- *Maryland Bird Conservation Initiative*: Jug Bay Wetlands Sanctuary is a partner of the Maryland Bird Conservation Initiative. As a science-driven, partner-based initiative, the goal is to deliver bird conservation within Maryland and across state borders through: identifying and prioritizing bird conservation needs and opportunities; establishing diverse partnerships dedicated to the conservation of birds and their habitats to facilitate information exchange and shared activities enabling a synergistic approach to tackling the conservation challenges faced by Maryland's avifauna; coordinating state-wide compilation of existing avian monitoring data and determining more effective management action for use in conservation planning; funding implementation of on-the-ground bird conservation projects by identifying opportunities to leverage resources, minimizing duplication, and pursuing additional support and resources toward shared management goals of partner organizations; and increasing the awareness among the public, businesses, and government of the conservation of birds and their habitats.
- *Patuxent Waters Conservation Area Conservation Design Project*: In 2015, the US Fish and Wildlife Service (USFWS) partnered with Maryland Department of Natural Resources (DNR) and several conservation organizations to form the Patuxent Waters Conservation Area (PWCA) partnership and initiated a Conservation Design project. The objective was to assess the potential for expanding the acquisition boundary of the Patuxent Research Refuge in Anne Arundel and Prince George's counties. The project

used a conservation planning tool and method known as Nature’s Network, developed by the University of Massachusetts, along with a variety of datasets provided by State and local partners to identify ecologically significant wildlife habitats within the principal watersheds contributing to the Patuxent River. The Conservation Design study area included over 700,000 acres of land located in several local jurisdictions in Maryland. A final report was released in 2018. Although expansion of the Refuge Acquisition Boundary does not appear to be feasible at this time, the work completed to date will be employed in future conservation planning efforts and initiatives by USFW and the partnership.

The following is a list of ongoing committees and advocacy groups that the County is engaged with and whose missions contribute to implementation of the County’s green infrastructure program.

- *Arundel Rivers Federation*
The Arundel Rivers Federation is dedicated to protecting, preserving, restoring and enhancing the waters of the South River, Rhode River, West River, and Herring Bay.
- *Audubon MD-DC*
The Audubon Society MD-DC Chapter, in cooperation with Bird Life International, operates an Important Bird Area Program in Maryland and the District of Columbia. Important Bird Areas (IBAs) are sites that support significant populations of birds that are considered vulnerable. The overall goal of the IBA Program is to ensure the continued viability of the habitats and their bird populations. The program focuses on three action steps: identification of essential areas for birds; monitoring those sites for changes; and conserving the areas for long-term protection of bird populations. Of the 33 IBA sites identified in Maryland-DC, four sites are located in Anne Arundel County: Jug Bay, Fort Smallwood, the Patuxent Wildlife Refuge, and the South River Greenway. Fort Smallwood in particular is considered to be one of the most important IBA sites in central Maryland. Currently, Audubon MD-DC in collaboration with the Maryland Bird Partnership and Jug Bay are exploring the possibility to expand the Jug Bay IBA to also include upland forests. The County hopes to participate with Audubon MD-DC in future outreach and planning efforts.
- *Bacon Ridge Natural Area Stewardship Committee*
The Bacon Ridge Natural Area Stewardship Committee meets regularly and provides recommendations to the DRP and offers direction for the implementation of the Bacon Ridge Natural Area conservation easement. The conservation easement prescribes guidelines to preserve the scenic, rural and natural character of the property and allow public access and passive recreation.
- *Baltimore Metropolitan Council’s Bicycle Pedestrian Advisory Group*
The DRP and the Office of Transportation participate in the Bicycle and Pedestrian Advisory Group (BPAG), an advisory group to the Baltimore Regional Transportation

Board (BRTB). BPAG works to make a more bike-able and walkable region by developing and implementing the regional bicycle and pedestrian plan; providing technical assistance to the BRTB and to member jurisdictions; collaborating with and sharing information among Federal, State and local agencies; and promoting biking and walking in the region through events like Bike-to-Work Day and Safe Routes to Schools.

- *Bicycle Advisory Commission*

In 2015, Anne Arundel County launched the Anne Arundel County Bicycle Advisory Commission (Commission). The Commission advises the County on implementation of the County's Pedestrian/Bicycle Master Plan, bicycle related policy, and budgetary issues.

- *Chesapeake Bay Foundation*

The Chesapeake Bay Foundation works to protect and restore the Chesapeake Bay. In addition to being advocates, they also have education and restoration programs to actively ensure the Bay's health.

- *Friends of Anne Arundel County Trails*

Friends of Anne Arundel County Trails is a non-profit organization of dedicated volunteers helping to promote, protect and enhance the multimodal trails of Anne Arundel County. The organization encompasses the B&A Trail, the BWI Trail, the Broadneck Trail, the WB&A Trail, the South Shore Trail, and the Marley Neck Trail, as well as new trails being designed or constructed. Friends support the Trails, County Staff and Park Rangers of the DRP and work with many partners, all of whom are dedicated to the trail systems in the County.

- *Friends of Jug Bay*

The Friends of Jug Bay supports the Jug Bay Wetlands Sanctuary in its education, research, and stewardship programs.

- *Forestry Board*

The Anne Arundel County Forestry Board has been advocating for forest management and forest conservation since 1958. The Board's activities include outreach and advocacy as well as review of Critical Area Timber Harvest Plans. With a grant from the County, the Board established the Anne Arundel Weed Resistance, a weed warrior program that trains volunteers in invasive species management to be applied to both public and private lands. Volunteers are trained in invasive identification, control methods, safety, and organizing invasive removal events. A tool cache is maintained that allows volunteers to borrow the necessary tools needed to conduct a successful and safe event.

- *Magothy River Association*

The Magothy River Association is an all-volunteer non-profit organization dedicated to the preservation and improvement of the water quality, plants, and wildlife of the Magothy River and its watershed. Founded in 1946, the Magothy River Association represents over 300 individual members and 30 community associations within the Magothy River Watershed.

- *Patuxent Riverkeeper*
The Patuxent Riverkeeper is a non-profit organization with the mission to conserve, protect and replenish Maryland’s longest and deepest intrastate waterway. Through strategic advocacy, restoration and education, their goal is long-term sustainability for the ecosystem of the entire Patuxent River basin and the people who rely on its future.
- *Scenic Rivers Land Trust*
The Scenic Rivers Land Trust works with landowners and other partners to preserve natural and scenic areas in Anne Arundel County. This work is accomplished through landowner education and holding and facilitating land protection agreements. The Trust helps landowners place land within conservation easements. They currently hold 61 easements, totaling more than 3,200 acres in Anne Arundel County.
- *Severn River Association*
Established in 1911, the Severn River Association is a membership organization focused on engaging the local community with the Severn River and its tributaries through advocacy, education and restoration.
- *Severn Riverkeeper*
The mission of the Severn Riverkeeper Program is to protect and restore the Severn River for our families and future generations. Their staff and volunteers perform water quality monitoring, conduct habitat restoration projects to reduce runoff, educate the public about problems facing the river, and advocate for the river.

Appendix B: Status of Greenway Plan Recommendations

The recommendations for the 2022 Green Infrastructure Master Plan are informed by the progress made from the recommendations in the 2002 Greenways Master Plan and recommendations made in an implementation report prepared in 2010. The status of these recommendations are identified in Table 1. The table organizes the previous recommendations in four categories to align with the four key strategies of the 2002 Greenways Master Plan:

- Organization and outreach;
- Detailed planning;
- Land Protection and enhancement; and
- Financing.

Table 1: 2002 Greenways Master Plan and 2010 Implementation Report Recommendations

Strategy and Action	Status	Comments
<i>1. Organization and Outreach</i>		
1. Establish a Greenways Program (MP)	Complete	The Office of Planning and Zoning (OPZ) partnered with the Department of Recreation and Parks (DRP) to develop the 2010 Implementation Report and the 2022 Green Infrastructure Master Plan, and will continue to partner on data management, public outreach, planning, and other activities.
2. Public Involvement (MP)	Ongoing	The County has partnered with local, regional, and state organizations to host and sponsor events that raise awareness of the Greenways Network.
3. Greenways Advocacy Committees (MP)	Tabled	Rather than establishing a new Countywide advocacy group, the County has found it beneficial to form partnerships with existing groups and land trusts that have similar missions and conservation programs already in place. This has allowed for more efficient use of limited County staff resources and promotes greater sharing and coordination of information among the various groups active in land conservation in the County.
4. Establish a process for regular coordination with local land trusts and conservation groups for	Ongoing	The DRP works with local land trusts to share information as necessary. Information on properties within the Green Infrastructure Network or otherwise having high ecological value that are available for purchase or easement are shared in an effort to identify available funds.

Strategy and Action	Status	Comments
outreach as well as data sharing. (IR)		
5. Prepare regular Implementation Reports on the Greenways Program. (IR)	Ongoing	The 2010 Implementation Report was completed. Progress on protection of property is also provided in the 2022 Green Infrastructure Master Plan.
6. Create a County web page dedicated to the Greenways Program with regular updates. (IR)	Complete	The County launched a new website in 2016 which includes a dedicated Greenways website with information and links to the 2002 Greenways Master Plan and the 2010 Implementation Report.
7. Prepare an outreach brochure to inform citizens of how they can participate in the Greenways Program. (IR)	Complete	A brochure, emails with information, and postcards were created.
2. Detailed Planning		
1. Develop implementation and management plans. (MP)	Ongoing	<p>A number of implementation and management plans have been completed, including:</p> <ul style="list-style-type: none"> ● Boat launch facility feasibility study ● Jug Bay Management Plan has been completed and a Forest Management Plan is currently underway ● Bacon Ridge Natural Area - Forest Management Plan, cooperative wildlife agreement and hunting agreement have been developed ● Brewers Pond Natural Area management plan has been prepared ● Magothy Greenway - Forest stewardship plan has been developed ● Integrated Pest Management Plan for County Parks has been developed ● Wildlife Management Plan and Program for County Parks has been developed
2. Initiate action on high priority Greenways. (MP)	Ongoing	Acquisitions have been completed at priority areas including the Bacon Ridge Branch (150 acres known as the Forney property was purchased in 2019) and Deale Shadyside segments (12- acre Wellon Property purchased in 2019). Additional acquisitions are sought at other segments.

Strategy and Action	Status	Comments
3. Amend the Master Plan based on new planning and research. (MP)	Complete	The 2022 Green Infrastructure Master Plan is an update to the 2002 Greenways Master Plan.
4. Establish a method for improved tracking and mapping of forest conservation easements. (IR)	Ongoing	The County began developing a digital layer of Forest Conservation Easement properties in 2010, and since then all easement properties are tracked digitally.
5. Complete a database and digital layer of land trust properties and maintain regularly. (IR)	Ongoing	The County works with local trusts to maintain a digital mapping layer of properties owned by land trusts or held in conservation easements.
6. Maintain an ongoing database with the current status of properties in the Greenways Network. (IR)	Ongoing	This 2010 Implementation Report and the 2022 Green Infrastructure Master Plan have updated the database, but ongoing maintenance is still required.
7. Develop a management plan for the Bacon Ridge Natural Area. (IR)	Ongoing	A cooperative wildlife agreement and hunting agreement have been developed. DRP is working with the County Forester to create a forest management plan. DRP is currently working on a Master Plan for the expansion/inclusion of the Forney Property into the Bacon Ridge Natural Area.
8. Develop a management plan for the Rockhold Creek Farm site. (IR)	Ongoing	Funding is still being sought to support preparation of this management plan.
3. Land Protection and Enhancement		
1. Prioritize greenway “target areas” for protection. (MP)	Ongoing	Properties in the South River Greenway, Marley Creek Greenway, and Magothy River Greenway have been protected.
2. Integrate the Greenways Network into County planning programs and procedures. (MP)	Complete	The Greenways Network data layer has been integrated into the County’s mapping application (Geocortex), the GDP and the LPPRP. It is used as an implementation tool during the development review process.

Strategy and Action	Status	Comments
3. Amend County codes and manuals to emphasize Greenways protection. (MP)	Ongoing	Section 17-6-402 of the County Code was revised to expand the non-disturbance buffer for a stream from 50 feet to 100 feet and section 17-3-502 of the County Code was revised to encourage minimization and mitigation of environmental impacts through the use of clustering or other design alternatives. Section 18-11-158 of the County Code has been amended to require that fenced solar facilities over 15 acres in size provide a wildlife corridor conforming to the Greenways Master Plan.
4. Use existing state and local programs to promote land preservation. (MP)	Ongoing	DRP utilizes State of Maryland Program Open Space grants to acquire and develop land for parks, preservation of open space, and trails. DRP has also been successful with similar applications through the Land and Water Conservation Fund and the Transportation Alternatives Program.
5. Encourage landowners to participate through new tax incentives. (MP)	Ongoing	Land trusts have taken the lead on this initiative.
6. Provide user-friendly information for the public. (MP)	Ongoing	The County launched a new webpage in 2016 that makes information more accessible and user-friendly. Trail maps and links to partner organizations are provided.
7. Evaluate possible revisions to the Forest Conservation regulations that would result in enhanced protection of forested areas within the Greenways Network. (IR)	Ongoing	The County Code was revised (Bill 68-19) to strengthen the provisions of forest conservation regulations, including updating the conservation thresholds and increasing protections for contiguous forests of 75 acres or larger. Specific identification of greenways as priority retention areas was proposed in the draft bill, but ultimately removed from the adopted final bill.
4: Financing the Greenways Network		
1. Create a County Greenways Fund. (MP)	Complete	Greenways, Parkland and Open Space (P400200) has been established as a revolving fund in the County's Capital Budget and Program.
2. Create an Advance Land Protection Revolving Fund. (MP)	Complete	Advance Land Acquisition (C106700) has been established as a revolving fund in the County's Capital Budget and Program.

Strategy and Action	Status	Comments
3. Maximize use of related Federal, State, and local funding programs. (MP)	Ongoing	DRP utilizes State of Maryland Program Open Space grants to acquire and develop land for parks, preservation of open space, and trails. DRP has also been successful with similar applications through the Land and Water Conservation Fund and the Transportation Alternatives Program. The County has also used Maryland Bikeways Grants to fund shared use trails.
4. Allocate funds annually to the Greenways, Parkland and Open Space Project in the Capital Budget and Program for acquisition of Greenways properties. (IR)	Ongoing	The County's Capital Budget and Program continues to allocate funds annually for acquisition of greenways.
5. Work with private and non-profit organizations to identify and pursue new funding sources for Greenways preservation. (IR)	Ongoing	In addition to Program Open Space and Forest Conservation funds, the County recently partnered with the Chesapeake Bay Trust and the Scenic Rivers Land Trust to create a grant program that encourages conservation easements to protect forested land. The DRP continues to partner with local land trusts, willing sellers and other interested parties.

Notes:

MP: 2002 Master Plan recommendation

IR: 2010 Implementation Report recommendation

Appendix C: 2009 General Development Plan Status

This table compiles recommendations from the 2009 General Development Plan related to Greenways and provides a brief summary of the status of the recommendation as of April 2021.

Table: 2009 General Development Plan Recommendations

Recommendation	Status
Identify environmentally sensitive areas for acquisition by the County.	Ongoing. The Department of Recreation and Parks (DRP) spent approximately \$29 million since 2010 to acquire approximately 1,800 acres of land in the Green Infrastructure Network. Much of the land preserved was in the Bacon Ridge Natural Area, South River Greenway, Jug Bay Wetlands Sanctuary, Spriggs Farm Park on the Magothy, and Grays Creek Bog Complex. Additionally, funds from the three Agricultural Preservation programs were used to purchase protective easements on over 2,400 acres of agricultural lands from 2010 - 2020.
Identify and preserve greenways and open space through conservation easements.	Ongoing. The Scenic Rivers Land Trust, the Magothy River Land Trust, and the Maryland Environmental Trust have been the lead in working with private property owners to execute conservation easements in Anne Arundel County. They have collectively protected nearly 1,500 acres of land in the Green Infrastructure Network from 2010-2020.
Establish a funding mechanism, such as a dedicated fund, and incentives as part of development agreements.	Ongoing. The County has established a Capital Budget line item for Greenways, Parkland, and Open Space to fund land acquisition. In addition, there are three County capital project funds that can be used for protection of Greenways: Reforestation Land Acquisition, Rural Legacy Capital Project and Agricultural and Woodland Preservation.

Recommendation	Status
<p>Establish an ongoing system for tracking the status of properties in the Greenways Network, and prepare periodic status reports on additional land acquisitions or conservation easements within the Greenways Network.</p>	<p>Ongoing. The County continues to map and inventory all new properties acquired by Land Trusts or as parkland within the Network. The County maps and records forest conservation areas that are approved as part of new subdivisions. The County is also digitizing maps of historical forest conservation easements. Periodic reports will be developed and posted to the County website similar to the October 2010 Greenways Master Plan Implementation Report.</p>
<p>Prioritize properties for the purpose of targeting funds for greenways acquisitions, building on the priorities established in the 2002 Greenways Master Plan and the 2006 Land Preservation, Parks, and Recreation Plan.</p>	<p>Ongoing. In addition to the analysis in the Green Infrastructure Master Plan, the Bureau of Watershed Protection and Restoration has prioritized subwatersheds and properties for conservation as part of watershed assessments.</p>
<p>Prioritize the use of funds for acquisition of conservation land to give highest priority to properties within the Greenways Network. Encourage the placement of greenways into permanent conservation easements.</p>	<p>Ongoing. DRP has acquired approximately 2,441 acres in the South River Watershed, which ranked the highest ecologically threatened watershed. The Scenic Rivers Land Trust assisted DRP with property evaluation. DRP also worked with the Magothy River Association and the Magothy River Land Trust to protect the North and South Grays Creek Bogs. As other properties become available they are also evaluated for their ecological as well as recreational significance and cost/benefit.</p>
<p>Establish a proactive outreach program to “market” the Greenways Master Plan. Work with local land trusts, Riverkeepers, and other environmental groups to promote the benefits of conservation easements and other preservation tools.</p>	<p>Ongoing. The Scenic Rivers Land Trust, the Magothy River Land Trust, the Crownsville Conservancy and other environmental non-profit organizations continue to evaluate and pursue properties for donated easements or fee simple purchase. Property owners preferring fee simple transfers are referred to DRP for evaluation. Public events are conducted by the land trusts to promote land preservation. In addition, the County website includes periodic implementation reports and allows for public comment.</p>

Recommendation	Status
<p>For private properties located in the Greenways Network that choose to develop, encourage cluster development and placement of the remaining open space under conservation easements. Assess potential revisions to the Subdivision code to require clustering on these properties.</p>	<p>Ongoing. Environmental Site Design techniques and practices, including clustering development, are required to the Maximum Extent Practicable (MEP) per the County Stormwater Management Practices and Procedures Manual.</p>
<p>Use forest mitigation banks to promote reforestation, greenways protection, and good forest management practices.</p>	<p>Ongoing. There are several private forest mitigation banks in the County that can be used by developers to meet off-site reforestation requirements and protect existing forested land.</p>
<p>Modify the forest conservation regulations as needed to improve the effectiveness of mitigation, in order to better achieve preservation of continuous and connected hubs and corridors of forested areas. Potential revisions to evaluate include a requirement that, in those subwatersheds ranked highest priority for preservation, forest mitigation must occur in the same subwatershed.</p>	<p>Ongoing. Forest conservation regulations in the County Code (§ 17-6-301-17-6-309) were revised through Bill 68-19 to strengthen the provisions of forest conservation regulations, including updating the conservation thresholds and increasing protections for contiguous forests of 75 acres or larger. Regarding location of mitigation, the revised Code states “if practical, afforestation or reforestation shall occur in the watershed in which the development is located” (§ 17-6-304(b)).</p>
<p>Create a database of property protected under Forest Conservation easements, and evaluate alternatives for a more comprehensive approach to forest conservation.</p>	<p>Ongoing. The County began developing a digital layer of Forest Conservation Easement properties in 2010, and since then, all easement properties are tracked digitally. The County is also digitizing maps of historical forest conservation easements. An Annual Report summarizing Forest Conservation data is prepared by the Department of Inspections and Permits for the MD DNR. The Green Infrastructure Master Plan will also help to identify priority forested areas that should be preserved using available mechanisms.</p>

Recommendation	Status
<p>When reviewing proposed development in areas designated for mixed use or transit-oriented development, in town centers and in other designated growth areas, ensure that adequate protection is provided for the County’s green infrastructure, non-tidal wetlands, wildlife refuges and forested areas in order to retain a high quality of life, preserve water quality, and maintain such areas as desirable places to live.</p>	<p>Ongoing. Environmental Site Design is encouraged in all developments to the Maximum Extent Practicable.</p>

Appendix D: Small Area Plan Recommendations

This table compiles recommendations from the Small Area Plans related to Greenways and provides a brief summary of the status of the recommendation as of April 2021.

Table 1: Small Area Plan Recommendations

Small Area Plan (SAP)	SAP Greenway Recommendation Summaries	Status
Annapolis Neck	Pursue additional funding for the purchase of land for the Annapolis Neck Greenway, Natural Area Network, and the Pedestrian and Bicycle Plan if easements and other strategies prove inadequate. Identify sites for investigation, such as the vacant land adjacent to Quiet Waters Park, Homeport Farm, Bestgate Road area, along Weems Creek, and Priest Point.	Ongoing. There have not been any successful County acquisitions within this greenway. The County and the City of Annapolis continue to collaborate on land purchases within the Annapolis Neck Greenway when there are willing sellers and available funds. In 2017, the City acquired 3.25 acres of sensitive forest land adjacent to Quiet Waters Park using their 7% share of Program Open Space funds. In addition, local developers have set aside open space and forest conservation areas as part of the City of Annapolis land development requirements.
	Target forest mitigation efforts to areas designated for the greenway where possible.	Ongoing. This effort will require collaboration between the City of Annapolis and the County. There are several private forest mitigation banks in the County that can be used by developers to meet off-site reforestation requirements and protect existing forested land. An Annual Report summarizing Forest Conservation data is prepared by the Department of Inspections and Permits for the MD DNR. The Green Infrastructure Master Plan will also help to identify priority forested areas that should be preserved using available mechanisms. When a site does not align with recreation needs, but may be suitable for forest

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		conservation or reforestation, the DRP refers the opportunity to Inspections and Permits Forestry Division.
	Masque Farm / Crystal Springs, Spa Road: Seek conservation easement or designation as possible TDR sending area. If not possible, County to consider woodland preservation district or acquisition of heavily wooded land to North currently zoned R-10. May be future need for multi-use trail or greenway easement through property.	Incomplete. This property was annexed by the City of Annapolis.
	Chrisland Property, Bywater Road: Provide active recreational facilities (ballfields) for area. Preserve forested area adjacent to Church Creek located in RCA portion of Critical Area and create forested wildlife corridor across property linking the area to adjacent properties. Obtain greenway easement through property.	Incomplete. This property was annexed by the City of Annapolis.
	Identify suitable routes for natural surface hiking-only trails and suitable trailhead locations that connect to hiker-biker paths. Possible sites are listed as follows: Northern Neck Trail/Luce Creek/Howard Creek/Saltworks Creek from DuBois Road to Generals Highway. Easements required from Annapolis Friends Church, Belle Grove Corporation, developers of Severn Manor, owners of the Carr property, developers of Saltworks on the Severn and Stewart properties,	Incomplete. Existing development may leave a bike route as the best possibility for this extensive corridor. An on-road portion of the Northern Neck/Colonial Annapolis Route is complete between Tidewater Colony Drive and Compton Drive. The trail is proposed to continue along Bestgate Road to Harbor Gates Drive and head south along Admiral Drive and then west to Jennifer Road where it will connect with the South Shore Trail and ultimately Generals Highway. There are currently no plans to connect the Harry S. Truman Park-and-Ride lot to the Annapolis Waterworks Park.

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	<p>and Renart Court Condominiums. Broad Creek from the Harry S. Truman Park and Ride lot to Annapolis Waterworks Park, easements needed from Heritage Harbor and City of Annapolis. Trails in these corridors would link neighborhoods to the South Shore Trail, the American Discovery Trail, the East Coast Greenway, and the Waterworks Park trails. Link might also be feasible with other trails extending into Crownsville.</p>	
	<p>Map water trails for use by canoeists, kayakers, and rowboats linking water access points, parks, and greenways. Evaluate water trails on area creeks as well as the South and Severn Rivers, with possible links to parks and other water sites in Broadneck and Edgewater/Mayo. Identify possible sites for water-accessible campsites. Evaluate the following sites as possible water access locations which might allow limited access for boat portage to launching points: a) Homeport Farm Park, b) Quiet Waters Park, c) Truxton Park, d) Homeowners Waterfront (with permission), e) Marinas (with permission)</p>	<p>Ongoing. The County benefits from local water trail projects, including but not limited to, the Magothy Water Trail and the Four Rivers Heritage Water Trail, but there is no central location for this information available to the public on the County’s website. The County hosts a web page with maps and information on public water access locations. The website identifies an interactive County map identifying each site as well as fishing spots and points of interest. The DRP continues to expand opportunities for cartop boat launches. The County Park Finder application also provides a web-based interactive map to help the public find water access facilities.</p>
	<p>Identify park, greenway, and school connecting pathways from Bay Ridge to Annapolis Waterworks Park and to Weems Creek. Possible connectors are listed below:</p>	<p>Incomplete. Existing development may leave a bike route as the best possibility for this extensive corridor.</p>

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	<p>a) Open space in Bay Ridge to Peninsula Park (Farragut Road and Bay Ridge shoulder path),</p> <p>b) Peninsula Park to Annapolis Road open space (Bay Ridge shoulder path and Carrollton Road),</p> <p>c) Peninsula Park to Thomas Point Park (Arundel on the Bay shoulder path and Thomas Point Road),</p> <p>d) Peninsula Park to Quiet Waters Park (Old Annapolis Road and connector path at Annapolis Neck-Eastport Library),</p> <p>e) Quiet Waters Park to Annapolis Middle School (Old Annapolis Road to its end, then two way pedestrian bike path to school),</p> <p>f) Annapolis Middle School to proposed park in vicinity of Bywater Road (two way pedestrian-bike path along Forest Drive to Newtowne Lane, then via local roads to park),</p> <p>g) Proposed park in vicinity of Bywater Road to Broadneck Park (pedestrian-bike path Bywater area to MD 2, MD 2 to Admiral Cochrane Drive, and then along Harry S. Truman to Harry S. Truman Park and Ride Lot),</p> <p>h) Broad Creek Park to Annapolis Waterworks Park (Harry S. Truman paths, South Haven paths, Defense Highway paths, and Housley Road paths),</p> <p>i) Annapolis Waterworks Park to Saltwork Creek greenway (Housley Road path to Bestgate Road</p>	<p>a) Implemented. A bike lane was created on Bay Ridge Road between Farragut Road and Peninsula Park.</p> <p>b) Partially implemented. A sidewalk on both sides of Bay Ridge Road connect Peninsula Park to Carrollton Road.</p> <p>c) Partially implemented. There are segments of sidewalks along Arundel on the Bay Road and Thomas Point Road.</p> <p>d) Partially implemented. An informal path exists.</p> <p>e) Not implemented. A sidewalk connects Hunt Meadow Drive to the Annapolis Middle School.</p> <p>f) Partially implemented. Sidewalks connect Annapolis Middle School to Newtowne Drive along Forest Drive. There are no off-road trails.</p> <p>g) Not implemented. Some sidewalks make connections, but there are no off-road trails.</p> <p>h) Not implemented. There are no direct connections between Broad Creek Park and Waterworks Park.</p> <p>i) Partially implemented. There are sidewalks in some portions of this segment.</p> <p>j) Not implemented. There are no sidewalks along this segment.</p>

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	path to South Shore Trail to Northern Neck Trail), j) Priest Point (Bestgate Road paths, Ridgely Avenue paths, Riverview Avenue).	
Broadneck	Promote natural greenways, including the reforestation of areas along streams and areas which link existing forested areas and other natural areas of significance.	Ongoing. In 2010, § 17-6-402 was amended to expand the non-disturbance buffer from a stream bed from 50 feet to 100 feet. The Bureau of Watershed Protection and Restoration has conducted several stream restoration projects within the Green Infrastructure Network on the Broadneck Peninsula including Mill Creek and Whitehall Creek.
Brooklyn Park	Establish an ecological Greenways Network in the area to protect important natural resource areas.	Ongoing. The 2002 Greenways Master Plan and the 2022 Green Infrastructure Master Plan delineate greenways along the Cabin Branch Creek and the Patapsco River.
	Use available mechanisms to preserve a minimum 200-foot corridor along the Cabin Branch Creek greenway segment, as recommended in the County's Greenways Master Plan.	Ongoing. Through the development review process and land acquisition for public parks, progress is being made to preserve the Cabin Branch Creek corridor.
BWI/ Linthicum	Hanover should be included in the County's master plans for greenways, parks, and bikeways and trails.	Completed. Hanover is included in County master plans.
	A system of hiker-biker trails, open spaces, parks or greenways should be master planned for the Hanover area which incorporates the Stoney Run and Piney Run stream valleys and connects to the Patapsco Valley State Park.	Ongoing. The County has conducted a study and identified a corridor to connect the BWI Trail to other jurisdictions with a link through the Patapsco Valley State Park.

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	<p>Establish an interconnected trail system between the existing BWI Trail and the Patapsco Valley State Park.</p> <p>Work with the State to provide better access to Patapsco Valley State Park.</p>	
	<p>Develop a greenways master plan and a bikeways and trails master plan for the BWI/Linthicum Planning Area as part of a County-wide plan. These plans should outline general locations for greenways and trails and should be coordinated with planned circulation routes in adjacent planning areas.</p>	<p>Ongoing. The 2002 Greenways Master Plan and the 2022 Green Infrastructure Master Plan delineate greenways along the Patapsco River Valley and Stoney Creek and Cabin Branch Creek stream valleys. The 2013 Pedestrian and Bicycle Master Plan identifies several bicycle and pedestrian projects within the BWI/Linthicum Small Planning Area. The Pedestrian and Bicycle Master Plan is currently being updated.</p>
	<p>Develop incentives to encourage property owners to donate rights-of-way and/or easements for the establishment of greenways and trail systems.</p> <p>Seek funding sources at the local, State and Federal level for acquisition of parkland, greenways, and the construction of trails. Investigate the possibility of forming a Patapsco River Land Trust or other conservation organization to work toward acquisition and preservation of the Patapsco River valley.</p>	<p>Ongoing. The Scenic Rivers Land Trust continues to evaluate and pursue properties for donated easements or fee simple purchase. Property owners preferring fee simple transfers are referred to the DRP for evaluation. The DRP also has a revolving fund known as Greenways, Parkland, and Open Space to assist with fee simple purchase. Public forums are conducted by the Land Trusts to promote land preservation.</p>
	<p>Support the planned Patapsco Valley State Park trail system.</p>	<p>Ongoing. The County has participated with the State and other counties in the planning process for the Patapsco Regional Greenway which includes a segment through the State park.</p>

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		The regional greenway includes linkages to the BWI Trail, both in the west (to Howard County) and east (to the City of Baltimore).
	Establish a committee with representatives from Anne Arundel County, Baltimore City, Baltimore County, Howard County, and Carroll County, with the purpose of assisting the State in developing and implementing the Patapsco Valley Greenway Plan.	Completed. In 2015, the County created a Bicycle Advisory Committee, and in 2017, its first bicycle/pedestrian planner position. The bicycle/pedestrian planner and a representative from the DRP attend regular meetings of the Bicycle and Pedestrian Advisory Group (BPAG) for the Baltimore Metropolitan Council (BMC). Also in 2017, BMC finalized a study for a shared use path connecting these jurisdictions to the park and one another.
	The County or State should be encouraged to explore the feasibility of acquiring the Andover Estates parcel for the creation or extension of a trail park, use as open space or as part of a greenway system.	Completed. While the Andover Estates parcel has been developed into a residential subdivision, the greenway has been protected via a forest conservation easement and floodplain dedication.
	Establish greenways connecting parks and recreational areas.	Completed. The 2022 Green Infrastructure Master Plan identifies connections, where feasible.
Crofton	The County shall endorse the general concept of a Patuxent River Greenway and should establish through legislative action an overlay zone or zoning district, which would be designed in such a manner as to accomplish the objectives of the Greenway and implement the recommendations of the Patuxent River Policy Plan.	Completed/Ongoing. The County supports the concept of a Patuxent River Greenway. An overlay zone or zoning district has not been created, but the County also continues to take numerous steps to fulfill its portion of the Green Infrastructure Master Plan and the Patuxent River Policy Plan, including, working to encourage smart growth and land preservation in the Patuxent watershed, pursuing attainment of its local Patuxent River watershed Total Maximum Daily Loads (TMDLs),

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	Protect the Patuxent River for use by present and future generations through the completion of the Patuxent River Greenway.	pursuing resolution of pollution concerns in the watershed, and enhancing public access to the River.
	The County Council should establish a Patuxent River Greenway Committee that would be responsible for developing a comprehensive program building on the base recommendations of the Patuxent River Policy Plan and tailoring a program to the specific needs of Anne Arundel County.	Incomplete. The County has not established a Patuxent River Greenway Committee.
	The County, working with non-profit partners, should seek to permanently protect properties along the Greenway corridor to preserve them from future development or inappropriate use. This should include pursuing the donation and purchase of conservation easements, and where appropriate land in fee, and providing landowner incentives for using best management practices, providing public access, providing land for forest and wetland mitigation, and other related practices. These incentives should take the form of property tax abatements, grants, liability insurance (for lands open to public use --as is done by the State for certain forestry educational activities), cleanup and maintenance assistance in areas open to the public, etc.	Ongoing. The Scenic Rivers Land Trust continues to evaluate and pursue properties for donated easements or fee simple purchase. Property owners preferring fee simple transfers are referred to the DRP for evaluation. The DRP also has a revolving fund known as Greenways, Parkland, and Open Space to assist with fee simple purchase. Public forums are conducted by the Land Trusts to promote land preservation.

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	Educate the community on the importance of greenways as areas of open space, wildlife corridors, and transportation connectors.	Completed. A website, brochure, emails with information, and postcards were created to help educate the community about the importance of the Green Infrastructure Network.
	Develop a pedestrian/bicycle path and linear greenway park along MD 424 from MD 3 to Bell Branch Park, connecting destinations along the route.	In progress. MDOT SHA is constructing additional sidewalks along MD 424 between MD 3 and MD 450. Connection to Bell Branch Park still needs to be made.
Crownsville	Implement a system of "greenways" that will encourage the preservation of contiguous forested areas through inventory study and mapping. Also implement via subdivision review activities, fee simple acquisition or easement acquisition.	Ongoing. A portion of the Green Infrastructure Network is within the Crownsville Small Planning Area. Areas have been protected through subdivision review, fee simple, or easement acquisition.
	It is recommended that the County develop a greenways master plan for the Crownsville area that includes the identification of existing natural areas and a plan for connecting them to create a greenway, creation of additional greenways, designation of equestrian trails (separate from trails used by bikers and skate boarders, uses which are incompatible with the presence of horses), designation of hiker-biker trails, and designation of supplemental bike routes.	Ongoing. The 2022 Green Infrastructure Master Plan includes the Crownsville Small Planning Area. The South Shore trail which goes through Crownsville is being developed in phases. Additionally, over 12 miles of hiking and mountain biking trails have been created in the Bacon Ridge Natural Area. The County is beginning the process to update the Pedestrian and Bicycle Master Plan.
	Greenways at the following locations: a) Along the North River, b) Along Bacon Ridge Branch, c) Along MD 450 from Crownsville Road westward to Staples Corner,	Completed. The Green Infrastructure Network encompasses most of the areas described and are presently referred to in this updated Green Infrastructure Master Plan by the watershed they are located: a) South River,

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	<p>d) East of I-97 north from MD 450 from Crownsville Road and crossing General’s Highway east of Crownsville to follow Deep Ditch Branch to Maynadier Creek at the Severn River, e) Green Cathedral and Brewer Pond, and f) Severn River Run Natural Area, Arlington Echo, Whitney’s Landing Farm, Arden Park, and Arden Bog area.</p>	<p>b) South River, c) South River, d) South River, Severn River, e) Severn River, and f) Severn River.</p>
	<p>A major goal of the Greenways Master Plan should be the acquisition of the undeveloped portions of Crownsville State Hospital which would supplement and potentially connect two of these (2 and 4 above) greenways. The acquisition and development by the County of park land for passive or active recreation should further the State and County goal of creating or expanding greenways within the County.</p>	<p>Completed. The County owns and manages 500 acres of the mostly forested area of the Crownsville site, with additional protection via conservation easement. Additional acquisitions contiguous to this bring the area known as Bacon Ridge Natural Area in the South River Greenway to a total of 1,124 acres.</p>
	<p>The South Shore Hiker/Biker Trail should be expedited in the Parks and Recreation Master Plan, and land acquisition, design and construction should proceed as quickly as possible. Adequate parking for users of the trail should be provided at convenient locations. The study and design should include connector paths to facilitate safe and convenient access from nearby communities.</p>	<p>Ongoing. Phase I is open and operational, Phases II and IV are in design, and the feasibility study for Phases III and a bridge over Route 3 to connect Phase I and Phase II are complete.</p>

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Deale-Shady Side	<p>Create a “Greenway” through the Deale/Shady Side Area to preserve riparian buffer, assist in floodwater retention, and provide wildlife corridors.</p> <p>Designate and preserve wildlife corridors or "greenways" through which wildlife can freely move into less densely populated areas.</p>	Completed. The Green Infrastructure Network is within the West River and Herring Bay watersheds of the Deale-Shady Side Small Planning Area.
Edgewater/ Mayo	No specific references to greenways.	The Green Infrastructure Network is within the South River and Rhode River watersheds of the Edgewater/Mayo Small Planning Area.
Glen Burnie	Establish an ecological Greenways Network in the area to protect important natural resource areas.	Ongoing. The 2002 Greenways Master Plan and the 2022 Green Infrastructure Master Plan include greenways along the Marley Creek, Sawmill Creek, and Cabin Branch Creek stream valleys.
	Identify specific parcels of land in the Countywide Greenways Master Plan that are not protected and use available mechanisms to preserve these areas.	Ongoing. Although funds are limited, the DRP evaluates property presented to them for sale for its potential to meet the recreational needs identified in the LPPRP. Potential acquisition or preservation opportunities are compared against the Greenways Network. When a site does not align with recreation needs but may be suitable for forest conservation or reforestation, the DRP refers the opportunity to Inspections and Permits Forestry Division. No acquisitions in this area of the Greenways Network have been made to date.
	Identify scenic natural areas along Furnace Creek, Back Creek, and Marley Creek and seek opportunities to preserve them and to provide	Ongoing. The Bureau of Watershed Protection and Restoration have completed stream restoration projects in all three of these segments. No trails or passive public use projects have been identified to date.

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	nature trails and/or observation sites for passive public use.	
	Identify potential reforestation sites, especially in riparian buffers along Marley, Furnace, and Sawmill Creeks, and target reforestation funds to those areas.	Ongoing. There has been no reforestation/buffer planting in the Marley, Furnace or Sawmill Creek watersheds to date. The Reforestation Program Land Acquisition capital project is available for willing sellers that meet the requirements of the Chesapeake Bay Program and the Forest, Woodland and Tree Preservation Ordinance.
Jessup / Maryland City	Designate habitat buffers along the Little Patuxent River, Oxbow Lake, and Dorsey Run. Continue the connection through the Max Blobs Park property to the forest in the NSA/Fort Meade area.	Ongoing. Over 300 acres have been protected as part of the Oxbow Natural Area which surrounds the lake and includes portions of the south side of the Little Patuxent River.
	Complete the Patuxent Regional Greenway from the Howard County line to the Calvert County line.	Completed. The Green Infrastructure Network runs along the Patuxent River and connects Howard County to Calvert County.
	The County Council should endorse the general concept of a Patuxent River Greenway and should establish through legislative action an overlay zone or zoning district, which would be designed in such a manner as to accomplish the objectives of the Greenway and implement the recommendations of the Patuxent River Policy Plan.	Ongoing. The Patuxent River Greenway has been identified through the Green Infrastructure Master Plan. Protection of this Greenway is ongoing. The County supports the concept of a Patuxent River Greenway. An overlay zone or zoning district has not been created, but the County also continues to take numerous steps to fulfill its portion of the Green Infrastructure Master Plan and the Patuxent River Policy Plan, including, working to encourage smart growth and land preservation in the Patuxent watershed, pursuing attainment of its local Patuxent River watershed Total Maximum Daily Loads (TMDLs), pursuing resolution of pollution concerns in the watershed, and enhancing public access to the River.

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	<p>The County should work toward developing a comprehensive program for a Patuxent River Greenway, building on the base recommendations of the Patuxent River Policy Plan and tailoring a program to the specific needs of Anne Arundel County.</p>	<p>Completed. The 2022 Green Infrastructure Master Plan identifies strategies and actions to protect the County’s Green Infrastructure Network.</p>
	<p>Protect the Patuxent River for use by present and future generations through the completion of the Patuxent River Greenway. The Patuxent River Greenway is partially complete and will eventually include connected land in portions of seven Maryland counties. The greenway will connect a variety of environmentally sensitive areas including: Patuxent River State Park, Oxbow Natural Area, and Jug Bay Wetlands Sanctuary, which is part of the National Estuarine Research Reserve system.</p>	<p>Ongoing. The Patuxent River Greenway has been identified through the Green Infrastructure Master Plan. Protection of this Greenway is ongoing. The DRP has successfully added no fewer than eight acquisitions of parkland or natural areas in the South County segment of the Patuxent River Greenway with most of them managed by the Jug Bay Wetlands Sanctuary. Over 300 acres have been protected as part of the Oxbow Natural Area which surrounds the lake and includes portions of the south side of the Little Patuxent River. The County also continues to take numerous steps to fulfill its portion of the Green Infrastructure Master Plan and the Patuxent River Policy Plan, including, working to encourage smart growth and land preservation in the Patuxent watershed, pursuing attainment of its local Patuxent River watershed Total Maximum Daily Loads (TMDLs), pursuing resolution of pollution concerns in the watershed, and enhancing public access to the River.</p>
	<p>The County, working with non-profit partners, should seek to permanently protect properties along the Greenway corridor from future development or inappropriate use. This should include pursuing the donation and purchase of</p>	<p>Ongoing. The Scenic Rivers Land Trust continues to evaluate and pursue properties for donated easements or fee simple purchase. Property owners preferring fee simple transfers are referred to the DRP for evaluation. DRP also has a revolving fund known as Greenways, Parkland, and Open Space to assist</p>

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	<p>conservation easements, and where appropriate land in fee simple, and providing landowner incentives for using best management practices, providing public access, providing land for forest and wetland mitigation, and other related practices. These incentives should take the form of property tax abatements, grants, liability insurance (for lands open to public use --as is done by the State for certain forestry educational activities), cleanup and maintenance assistance in areas open to the public, etc.</p>	<p>with fee simple purchase. Public forums are conducted by the Land Trusts to promote land preservation.</p>
	<p>Educate the community on the importance of greenways as areas of open space, wildlife corridors, and transportation connectors.</p>	<p>Completed. A website, brochure, emails with information, and postcards were created to help educate the community about the importance of the Green Infrastructure Network.</p>
	<p>Potential hiker/biker locations in existing greenway: Open space along the Little Patuxent River north and east of Russett, and from the National Business Park up to MD 175.</p>	<p>Completed. On National Business Parkway, an eight-foot wide paved trail picks up from the sidewalk, about a quarter of a mile north of Sentinel Way, and runs to MD 175. The State Highway Administration has included a shared-used path on the south side of MD 175 in their design for improvements. Forest conservation easements have also been acquired in this section of the greenway.</p>
<p>Lake Shore</p>	<p>Addition of Illness Bog with a 100-foot buffer, plus a new connection across Fort Smallwood Road west to the Honolulu Hub.</p>	<p>Incomplete. A connection was unable to be made due to existing development.</p>
	<p>Inclusion of Cockey Creek Bog and its 100-foot buffer in its entirety and the headwater floodplain of the west fork of Cockey Creek through the</p>	<p>Completed. This area has been included in the 2022 Green Infrastructure Network.</p>

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	Chelsea Beach area north to the Lake Shore Athletic Complex.	
	Addition of Looper Park, the small recreation portion of the Looper Hub.	Completed. This area has been included in the 2022 Green Infrastructure Network.
	Removal of the Compass Pointe golf course. This area would remain as a recreation area, but not as a greenway.	Not Completed. The 2022 Green Infrastructure Master Plan keeps the golf course in the Green Infrastructure Network since it does serve a recreational purpose and has an environmental benefit.
	Make minor corrections and technical adjustments such as expanding greenways to include areas protected under bog protection legislation.	Completed. The 2022 Green Infrastructure Master Plan incorporates bog wetlands and most of the Green Infrastructure Network includes a 300-foot buffer.
	Form an organization or group to champion greenways in Lake Shore.	Completed. The County has partnered with existing organizations such as the Magothy River Land Trust and Magothy River Association to protect resource areas like the bogs and make areas like Beachwood Park more accessible for passive recreation, both being in greenways.
	Work to protect unprotected connections and segments of the greenways network. Since Lake Shore has adequate recreation land, future land preservation efforts should focus on protecting currently unprotected sections of the proposed greenways network.	Ongoing. The DRP negotiated a partial transfer of land from the Curtis Bay Athletic Club to connect Fort Smallwood and Harry and Jeanette Weinberg Parks. A trail connection is planned as well. The County continues to pursue conservation of unprotected sections of the Greenway Network.
	Monitor threats to the greenways network.	Ongoing. Within the subdivision, site plan review, and zoning review processes, the DRP provides comments in an effort to protect a minimum 200-foot corridor.

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	Plan for Long Term Management of the Greenways Network.	Ongoing. The 2022 Green Infrastructure Master Plan and the 2010 Implementation report provide statistics on acreage protected since the 2002 Plan; areas or actions where future efforts toward Green Infrastructure preservation and management should be directed or changed.
Odenton	The County should endorse the general concept of a Patuxent River Greenway and should establish, through legislative action, an overlay zone or zoning district, which would be designed in such a manner as to accomplish the objectives of the Greenway and implement the recommendations of the Patuxent River Policy Plan. This includes the original Primary Management Area boundaries of one-quarter mile along each side of the main stem as delineated in the Patuxent River Policy Plan and one-eighth mile on each side of the designated tributary streams.	Completed. The County supports the concept of a Patuxent River Greenway. An overlay zone or zoning district has not been created, but the County also continues to take numerous steps to fulfill its portion of the Green Infrastructure Master Plan and the Patuxent River Policy Plan, including, working to encourage smart growth and land preservation in the Patuxent watershed, pursuing attainment of its local Patuxent River watershed Total Maximum Daily Loads (TMDLs), pursuing resolution of pollution concerns in the watershed, and enhancing public access to the River.
	The County should work toward developing a comprehensive program for a Patuxent River Greenway, building on the base recommendations of the Patuxent River Policy Plan and tailoring a program to the specific needs of Anne Arundel County.	Completed. The 2022 Green Infrastructure Master Plan identifies strategies and actions to protect the County's Green Infrastructure Network.
	The County, working with non-profit partners, should seek to permanently protect properties along the Greenway corridor to preserve them from future development or inappropriate use. This	Ongoing. The Scenic Rivers Land Trust continues to evaluate and pursue properties for donated easements or fee simple purchase. Property owners preferring fee simple transfers are referred to the DRP for evaluation. DRP also has a revolving

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	<p>should include pursuing the donation and purchase of conservation easements, and where appropriate land in fee, and providing landowner incentives for using best management practices, providing public access, providing land for forest and wetland mitigation, and other related practices. These incentives should take the form of property tax abatements, grants, liability insurance (for lands open to public use such as is done by the State for certain forestry educational activities), cleanup and maintenance assistance in areas open to the public, etc.</p>	<p>fund known as Greenways, Parkland, and Open Space to assist with fee simple purchase. Public forums are conducted by the Land Trusts to promote land preservation.</p>
	<p>Educate the community on the importance of greenways as areas of open space, wildlife corridors, and transportation connectors.</p>	<p>Ongoing. A website, brochure, emails with information, and postcards were created to help educate the community about the importance of the Green Infrastructure Network.</p>
<p>Pasadena/ Marley Neck</p>	<p>Identify areas that should be purchased by the County or retained through the development process as open space for active and passive recreation, and public access to the water.</p>	<p>Ongoing. The DRP has investigated additional parkland opportunities in this area with limited success. Acreage contiguous to the undeveloped Stoney Creek Park has been secured in an effort to provide additional active recreation opportunities. Also, working with the OPZ, a roadside trail was secured and is being implemented through the development process. This trail is known as the Marley Neck Trail. There is an existing section at Creekside Village. A boat ramp at Solley Cove Park is expected to be completed Spring 2021.</p>
	<p>Review the Greenways Master Plan and make recommendations that better tailors the plan to the Pasadena/Marley Neck Small Area.</p>	<p>Ongoing. The Marley Neck Trail and future active recreation will support the needs of this changing area.</p>

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	<p>Amend the Greenways Master Plan to include the following language: It is not the intent of the Greenways Master Plan to reduce the total number of lots or commercial square footage normally allowed, but to better analyze the building envelope and provide for an arrangement of units/buildings that preserve the fragile portions of the property and make greenway connections wherever possible.</p>	<p>Completed. The purpose of the County's 2002 Greenways Master Plan and subsequent 2022 Green Infrastructure Master Plan are to provide an identification, decision-making, implementation and management tool. It is not a regulatory tool. These master plans do not use this specific language, but do include a description of how the County evaluates development in the Greenways Network. During the County's development review process, there will continue to be an iterative process where staff works with the applicant to orient development outside of the Greenways Network or in cases where that is not feasible, position development to have a low impact on the Greenways Network.</p>
	<p>Reference the areas identified on the Countywide Greenways map in the Pasadena/Marley Neck SAP as potential greenways, and are not subject to a County-mandated reduction in density or commercial square footage for the purpose of implementing a greenway corridor or hub.</p>	<p>Completed. The Greenways map is included in the SAP as Map 8 on page 65. The purpose of the County's 2002 Greenways Master Plan and subsequently, the 2022 Green Infrastructure Master Plan are to provide an identification, decision-making, implementation and management tool. It is not a regulatory tool.</p>
	<p>Any Greenway, which is obtained or reserved, will be at the joint agreement of the landowner/developer and the County during the development review and approval process.</p>	<p>Completed. The DRP prepares recommendations or requests during the development review process. These often align with forest conservation or floodplain areas. Conservation easements placed on a property during the development review process are done so in agreement with the landowner/developer and the County.</p>
	<p>Make recommended revisions to Greenways map that are found in this Plan, in two areas in Pasadena Marley Neck Small Area where development</p>	<p>Completed. The Greenways map is included in the SAP as Map 8 on page 65. The 2022 Green Infrastructure Master Plan has</p>

Small Area Plan (SAP)	SAP Greenway Recommendation Summaries	Status
	already exists and which crosses a road in an inappropriate location, and the addition of other areas that should be considered for greenways that was not originally included on the Greenways map.	updated the 2002 Greenways Network based on development and a revised set of criteria.
	Implement the Greenways Master Plan through a mutually agreeable process as development occurs.	Ongoing. Within the subdivision, site plan review, and zoning review processes the DRP and the OPZ provide comments in an effort to protect at least a 200-foot corridor when a greenway may be compromised by development.
	Incorporate into the Greenways Master Plan, to the extent possible, the development of hiking, biking and equestrian trails.	Ongoing. The DRP continues to seek additional opportunities for hiking, biking and equestrian use in its parks and natural areas. Lake Shore and Looper’s Park were improved with hiking and equestrian trails.
Severn	Support the County's development of a Greenways Master Plan for the County, identifying areas already being protected and targeting areas for future preservation.	Completed. The 2022 Green Infrastructure Master Plan identifies areas currently protected and strategies and actions to protect the County’s Green Infrastructure Network.
	Consider adding areas adjacent to existing open space, parkland and floodplains to the greenway.	Completed. The 2022 Green Infrastructure Network included analyzing adjacent land within the defined 2002 Greenways network and adding where appropriate Federal, State and County parks, public and private lands acquired for preservation; agricultural, forest conservation, floodplain, wetland and open space easements; trails; historic and cultural resources; land zoned Open Space; and undeveloped lands that meet the minimum criteria for size, protection status, and land use characteristics.
Severna Park	Promote establishment and protection of natural greenways, including reforestation of areas along	Ongoing. Although funds are limited, the DRP evaluates property for sale for its potential to meet the recreational needs

Small Area Plan (SAP)	SAP Greenway Recommendation Summaries	Status
	<p>streams and areas that link existing forested areas and other natural areas of significance.</p> <p>Support the development of a County-wide Greenways Master Plan, identifying areas already protected and targeting areas for future preservation.</p>	<p>identified in the LPPRP. Potential acquisition or preservation opportunities are compared against the Greenways Network. When a site does not align with recreation needs but may be suitable for forest conservation or reforestation, the DRP refers the opportunity to Inspections and Permits Forestry Division.</p> <p>Completed. The 2022 Green Infrastructure Master Plan identifies strategies and actions to protect the County’s Green Infrastructure Network.</p>
South County	<p>The County shall endorse the general concept of a Patuxent River Greenway and should establish through legislative action an overlay zone or zoning district, which would be designed in such a manner as to accomplish the objectives of the Greenway and implement the recommendations of the Patuxent River Policy Plan.</p> <p>Protect the Patuxent River for use by present and future generations through the completion of the Patuxent River Greenway.</p> <p>Designate those parcels held by mining companies, and those deemed sufficiently valuable for current or future extraction activity as part of the proposed Patuxent River Greenway Overlay District.</p>	<p>Completed. The Patuxent River Greenway has been identified through the Green Infrastructure Master Plan. Protection of this Greenway is ongoing. The DRP has successfully added no fewer than eight acquisitions of parkland or natural area in the South County segment of the Patuxent River Greenway with most of them managed by the Jug Bay Wetlands Sanctuary.</p> <p>Partially implemented. The County supports the concept of a Patuxent River Greenway. An overlay zone or zoning district has not been created, but the County also continues to take numerous steps to fulfill its portion of the Green Infrastructure Master Plan and the Patuxent River Policy Plan, including, working to encourage smart growth and land preservation in the Patuxent watershed, pursuing attainment of its local Patuxent River watershed Total Maximum Daily Loads (TMDLs), pursuing resolution of pollution concerns in the watershed, and enhancing public access to the River at parks like Davidsonville Park and Sands Road Park.</p>

Small Area Plan (SAP)	SAP Greenway Recommendation Summaries	Status
	<p>The County should establish a Patuxent River Greenway Committee that would be responsible for developing a comprehensive program building on the base recommendations of the Patuxent River Policy Plan and tailoring a program to the specific needs of Anne Arundel County.</p>	<p>Incomplete. The County has not established a Patuxent River Greenway Committee.</p>
	<p>The County, working with non-profit partners, should seek to permanently protect properties along the Greenway corridor to preserve them from future development or inappropriate use. This should include pursuing the donation and purchase of conservation easements, and where appropriate land in fee, and providing landowner incentives for using best management practices, providing public access, providing land for forest and wetland mitigation, and other related practices. These incentives should take the form of property tax abatements, grants, liability insurance (for lands open to public use - as is done by the State for certain forestry educational activities), cleanup and maintenance assistance in areas open to the public.</p>	<p>Ongoing. The Scenic Rivers Land Trust, the Magothy River Land Trust, and the Severn River Commission continue to evaluate and pursue properties for donated easements or fee simple purchase. Property owners preferring fee simple transfers are referred to the DRP for evaluation. The DRP also has a revolving fund known as Greenways, Parkland, and Open Space to assist with fee simple purchase. Public forums are conducted by the Land Trusts to promote land preservation.</p>
	<p>Educate the community on the importance of greenways as areas of open space, wildlife corridors, and transportation connectors.</p>	<p>Ongoing. A website, brochure, emails with information, and postcards were created to help educate the community about the importance of the Green Infrastructure Network.</p>

Appendix E: Key to Convert 2022 Green Infrastructure Watershed Name to 2002 Greenway Segment Name

Table 1: 2022 Green Infrastructure Network vs. 2002 Greenways Segment Designations

Watershed	2002 Greenways Network Segment Designations
Bodkin Creek	Magothy – Main Creek; Lake Shore – Bodkin Park; Downs Park
Herring Bay	Deale – Shadyside; Rock Branch – Tracy’s Creek; Trotts Branch – Herring Bay
Little Patuxent	Dairy Farm; Little Patuxent – Crofton; Patuxent; Patuxent Wildlife Refuge; Piney Run; Severn Run 2
Lower Patuxent	Trotts Branch – Herring Bay
Magothy River	Arnold; Downs Park; Lake Shore – Bodkin Park; Magothy – Main Creek; Magothy River – Kinder Park; Magothy River – Stoney Creek; Marley Creek Corridor; Sandy Point
Middle Patuxent	Deale Shadyside; Harwood; Lyons Creek; Patuxent Jug Bay; Patuxent, North of Bayard MD 422; Rock Branch – Tracy’s Creek; Trotts Branch – Herring Bay Wilson Owens
Patapsco Non-Tidal	Cabin Branch Creek; Patapsco Valley 1; Patapsco Valley 2; Patuxent; Piney Run; Piney Run to Stoney Run; Sawmill Creek; Stoney Run
Patapsco Tidal	Cabin Branch Creek; Fort Smallwood; Magothy – Main Creek; Magothy River – Stoney Creek; Marley Creek; Marley Creek Corridor; Sawmill Creek
Rhode River	Glebe Branch – Muddy Creek; Harwood; Stocketts Run - Smithsonian
Severn River	Annapolis Greenway; Arnold; Bacon Ridge Branch; Broad Creek; Dairy Farm; Magothy River – Kinder Park; Sandy Point; Severn River Epping Forest; Severn Run; Severn Run 2
South River	Annapolis Greenway; Bacon Ridge Branch; Bell Branch – Tarnans Branch; Broad Creek; Dairy Farm; Davidsonville Branch; Glebe Branch – Muddy Creek; Kings Branch – Flat Creek; North River; Severn River Epping Forest
Upper Patuxent	Bell Branch – Tarnans Branch; Davidsonville Branch; Kings Branch – Flat Creek; Little Patuxent – Crofton; Patuxent; Patuxent Rt. 50; Patuxent Wildlife Refuge; Patuxent, North of Bayard MD 422; Stocketts Run - Smithsonian
West River	Deale Shadyside; Harwood; Rock Branch – Tracy’s Creek; Stocketts Run - Smithsonian

Appendix F: Ecosystem Service Valuation

Conserved lands— public parks, and private conserved lands including farmland, forests, and floodplains – provide substantial economic, environmental, and public health benefits to surrounding communities. It is difficult to quantify the economic value of many of these benefits. The draft Green Infrastructure Plan provides references a number of studies that have quantified benefits of land conservation related to public health, outdoor recreation, and tourism. The draft Green Infrastructure Plan also references a study by the Maryland Department of Natural Resources (DNR) that estimated the value of ecosystem services¹.

Ecosystem services can is generally defined as the benefits that people receive from the environment. Ecosystem services are commonly divided into four major categories:

- Provisioning services (e.g. timber, firewood, food),
- Regulating services (e.g. water purification, wildlife habitat),
- Supporting services (e.g. nutrient cycling, soil formation) and
- Cultural services (e.g. recreation, spiritual benefits).

The economic market generates prices for provisioning services and cultural services like recreation. The value of regulating and supporting services, such as stormwater management and nutrient uptake, are not actively traded in large markets and are more difficult to quantify. The DNR study estimated monetary values for seven ecosystem services that fit in the categories of regulating and supporting services:

- Carbon sequestration,
- Wildlife habitat and biodiversity,
- Storm water mitigation,
- Groundwater recharge,
- Surface water protection,
- Nutrient uptake and
- Agricultural benefits

The DNR study estimated the monetary value of these ecosystem services based on research on examples where markets have set prices for different benefits from natural systems. The values contained in the study are intended for evaluating tradeoffs and informing decision making, but do not indicate market value or compensatory value. While in some cases the study considers market values as part of the value equation, the assessment broadly quantifies the many ways people value the natural environment, yielding a “social” or “public” value of ecosystem services in Maryland.

¹ Maryland Department of Natural Resources. 2017. Accounting for Maryland’s Ecosystem Services: Integrating the value of nature into decision making.

The DNR model for ecosystem services estimates both the quantity of ecological function of land and an economic value for that function. The ecological functions of land were modeled based on scientific research (for example gallons of stormwater treated in a wetland or tons of carbon sequestered in a forest). The economic value was based on research on actual prices paid for ecosystem services. This includes regulatory markets such as water quality credit trading in Maryland, carbon credit markets, and tax incentives for conservation. For each ecosystem service, price information was collected and an average value was calculated. The quantity of ecological function was then multiplied by the economic price to develop a price per unit of land. The price per unit of land for each ecosystem service was summed to estimate a value for all of the ecosystem services provided by that area.

The following approximate values for ecosystem services were developed by applying data from the DNR Study to the geography of the draft Green Infrastructure Network (also see Figure 1).

Table 1. Ecosystem service values for draft Green Infrastructure Network

Ecosystem Service	Total Economic Value Per Year (Green Infrastructure Network)
Carbon Sequestration	\$12,650,000
Wildlife Habitat and Biodiversity	\$109,720,000
Air Pollutant Removal	\$10,550,000
Flood Prevention and Stormwater Mitigation	\$145,970,000
Groundwater Recharge	\$58,700,000
Nitrogen Removal	\$11,610,000
Sum of Values	\$349,200,000

Payments for Ecosystem Services

Many models of payment for ecosystem services have developed through private markets and government regulations. In Maryland, a water quality credit trading program has been established under rules published by the Maryland Department of Environment. This program allows organizations to comply with stormwater discharge permit requirements using credits generated by third parties that are certified for removing certain pollutants. This allows low cost measures to be implemented and funded by organizations the face high costs of compliance. Carbon credit trading programs have also been established in multiple areas, including the Regional Greenhouse Gas Initiative that Maryland and ten other states participate in. Wetland mitigation banks and forest conservation banks represent another form of market trading based on the value of ecosystem services. Conservation easement programs, such as the Anne Arundel County agricultural and woodland preservation program offer another example of compensating landowners for the public value of land conservation.

