

Cecil County Green Infrastructure Plan Critical Area Planners - Western Shore



November 13, 2019

Proud Partners of the Cecil County Green Infrastructure Plan

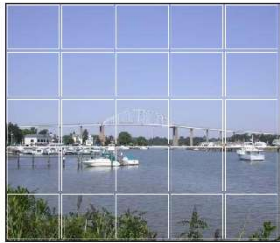
THE
CONSERVATION FUND



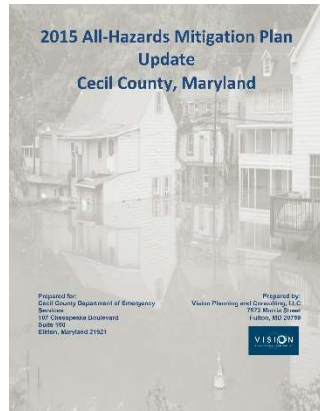
**SUSQUEHANNOCK
WILDLIFE SOCIETY**

Jean K. Akers, AICP, PLA

Why implement a Green Infrastructure Plan?



Cecil County Comprehensive Plan



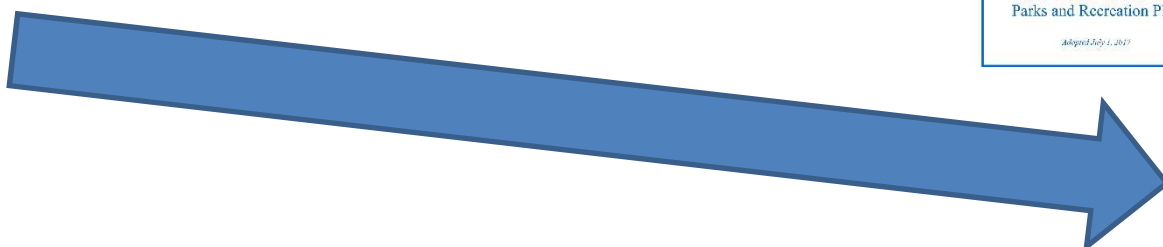
Cecil County Hazard Mitigation Plan



Cecil County Strategic Plan



Cecil County LPPR Plan

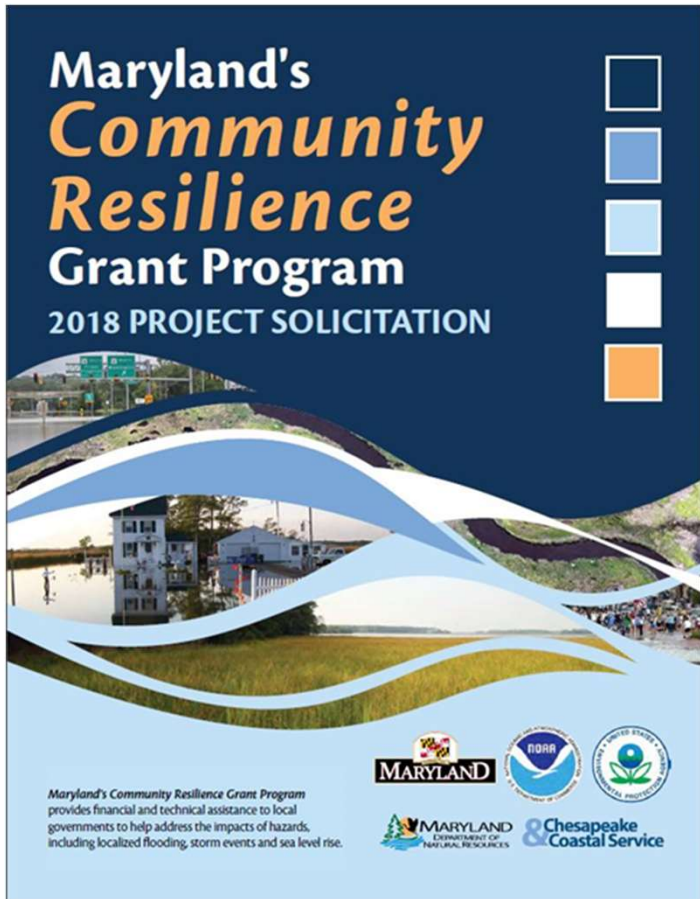


Green Infrastructure Plan

Why implement a Green Infrastructure Plan?



- Forest Conservation Act
 - Priority forests, 1:1 mitigation
- Nuisance Flooding Plans
 - Sea level rise, critical facilities
- State Wildlife Action Plan
 - Species of Greatest Conservation Need



Supports holistic planning projects that address storm surge, flash floods, & other storm water hazards

Map & Refine GI Network & Plan

Prioritize preservation & restoration efforts using four resilience strategies

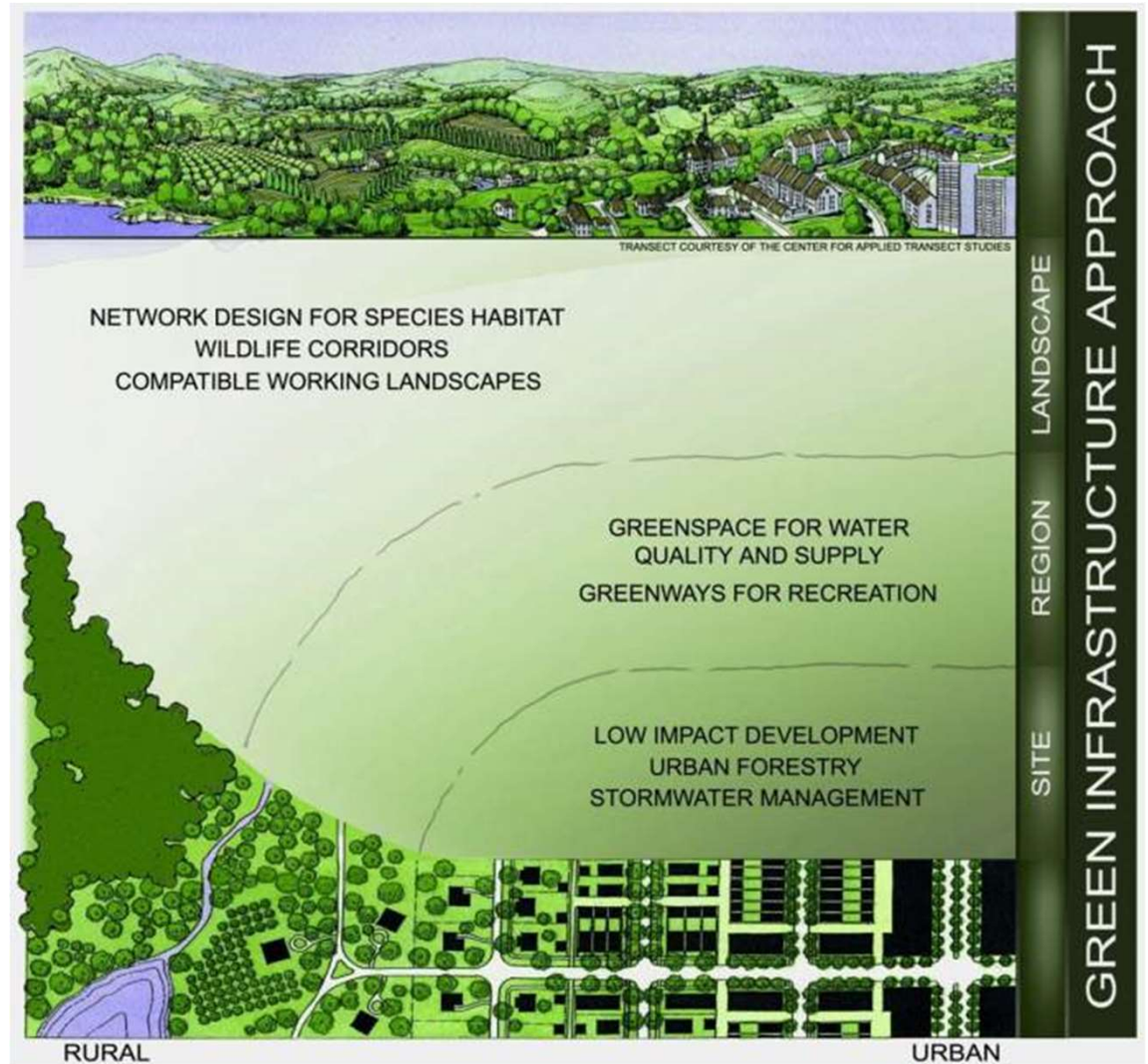


The Green Infrastructure Plan effort is supported in part by the financial assistance of the EPA & MD DNR Chesapeake & Coastal Service

What is Green Infrastructure?

A strategically planned and managed network of natural lands, working landscapes, and other open spaces that conserves ecosystem values and functions and provides associated benefits to human populations

(Benedict & McMahon, 2006)



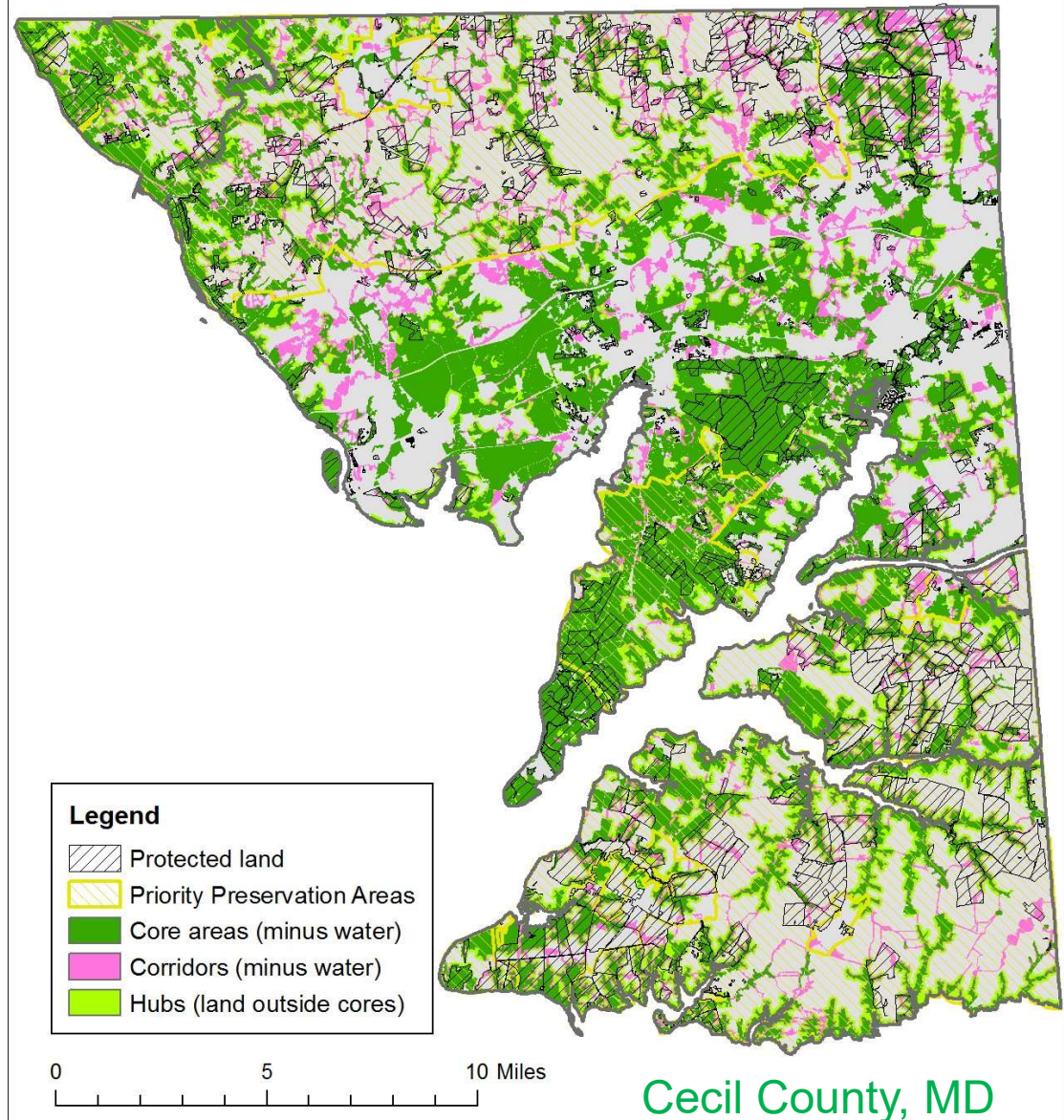
Source: THE CONSERVATION FUND

Where is it?

- 78,933 acres of core areas (36% of land)
- 23,879 acres of corridors (11% of land)

How protected is it?

- 28% of core area land and 34% of corridor land in parks, conservation easements, or other protected land.
- 49% of core areas and 57% of corridors in Priority Preservation Areas.



Priorities for Green Infrastructure?

Community input was sought for prioritizing actions using four resilience strategies.



Natural Resource Protection



Multi-Benefit Green Stormwater Infrastructure



Critical Infrastructure Protection



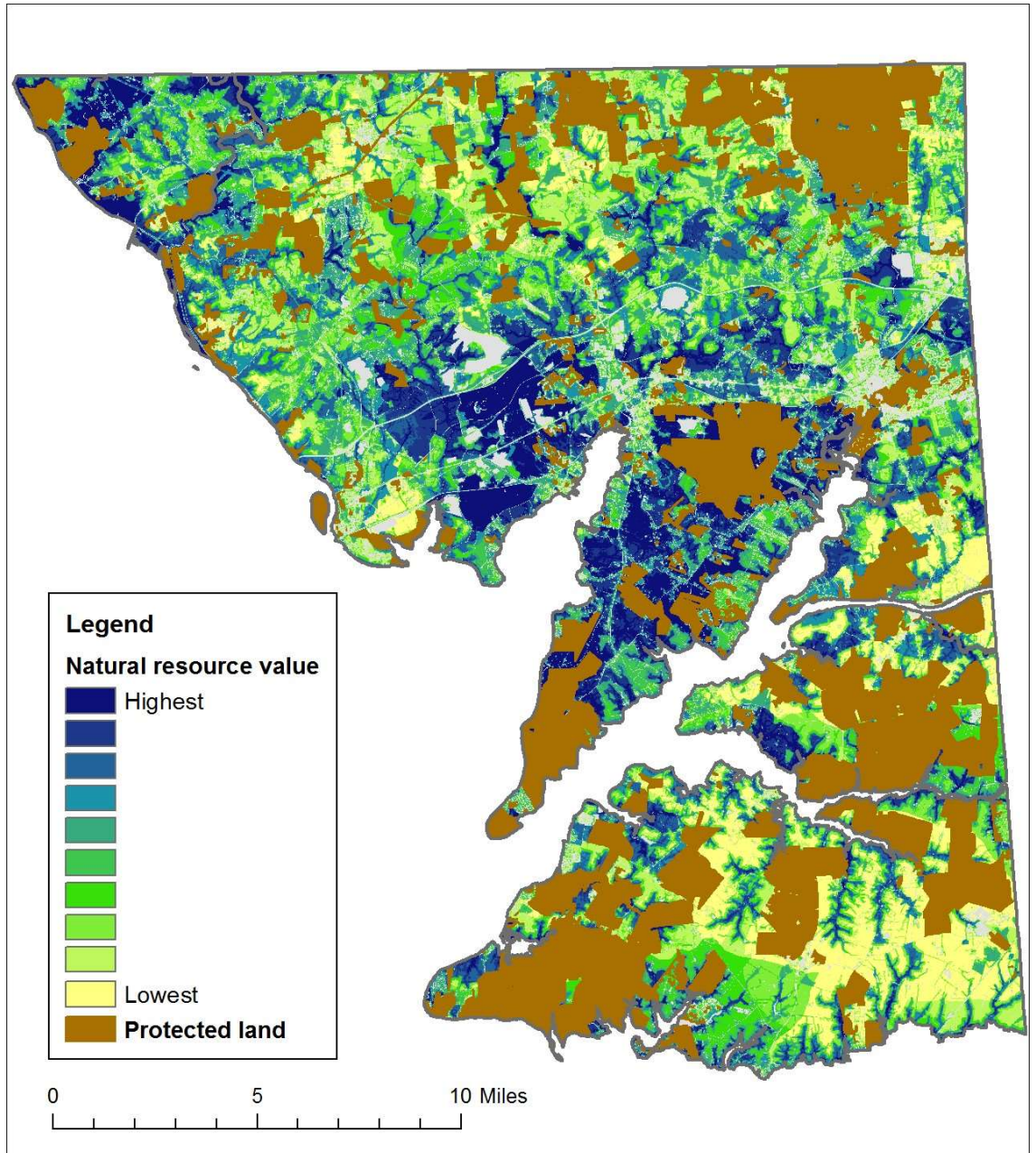
Coastal Defense

Natural Resource Protection



Weighting Factors

- State designated ecological significance
- Forested watersheds (low imp)
- Drinking water surface intake watersheds
- Floodplains, streams, wetlands
- Park proximity

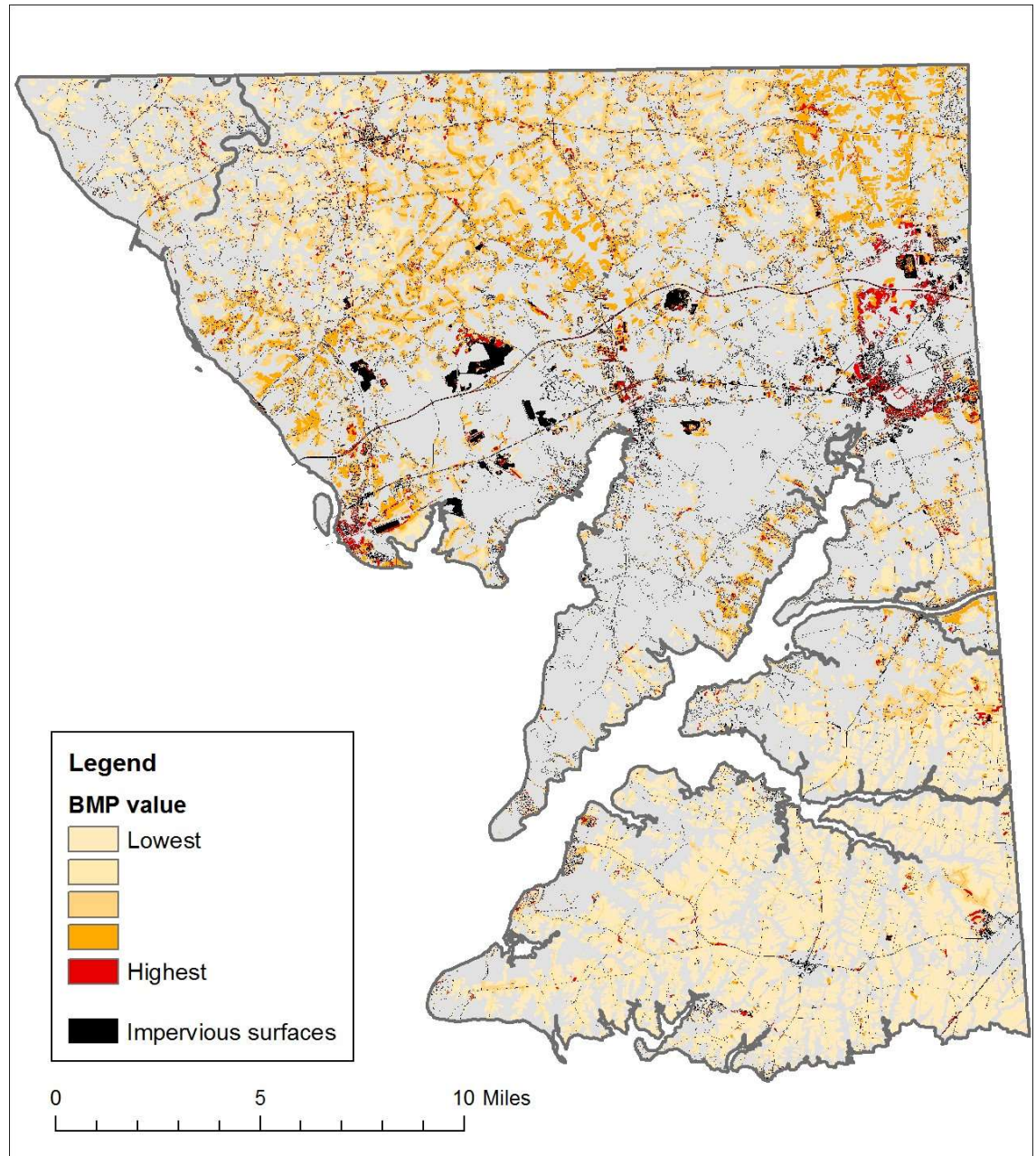


Stormwater Reduction



Weighting Factors

- Public ownership
- Pct impervious surface watersheds
- Constructability (distance to roads, parking, driveways, etc.)



Critical Infrastructure Protection



Critical Facility Analysis

- Quantified threat level
- Current protection
- Potential GI mitigation strategies

Section Annexed into Hazard Mitigation Plan

North East Town Hall Rain Garden

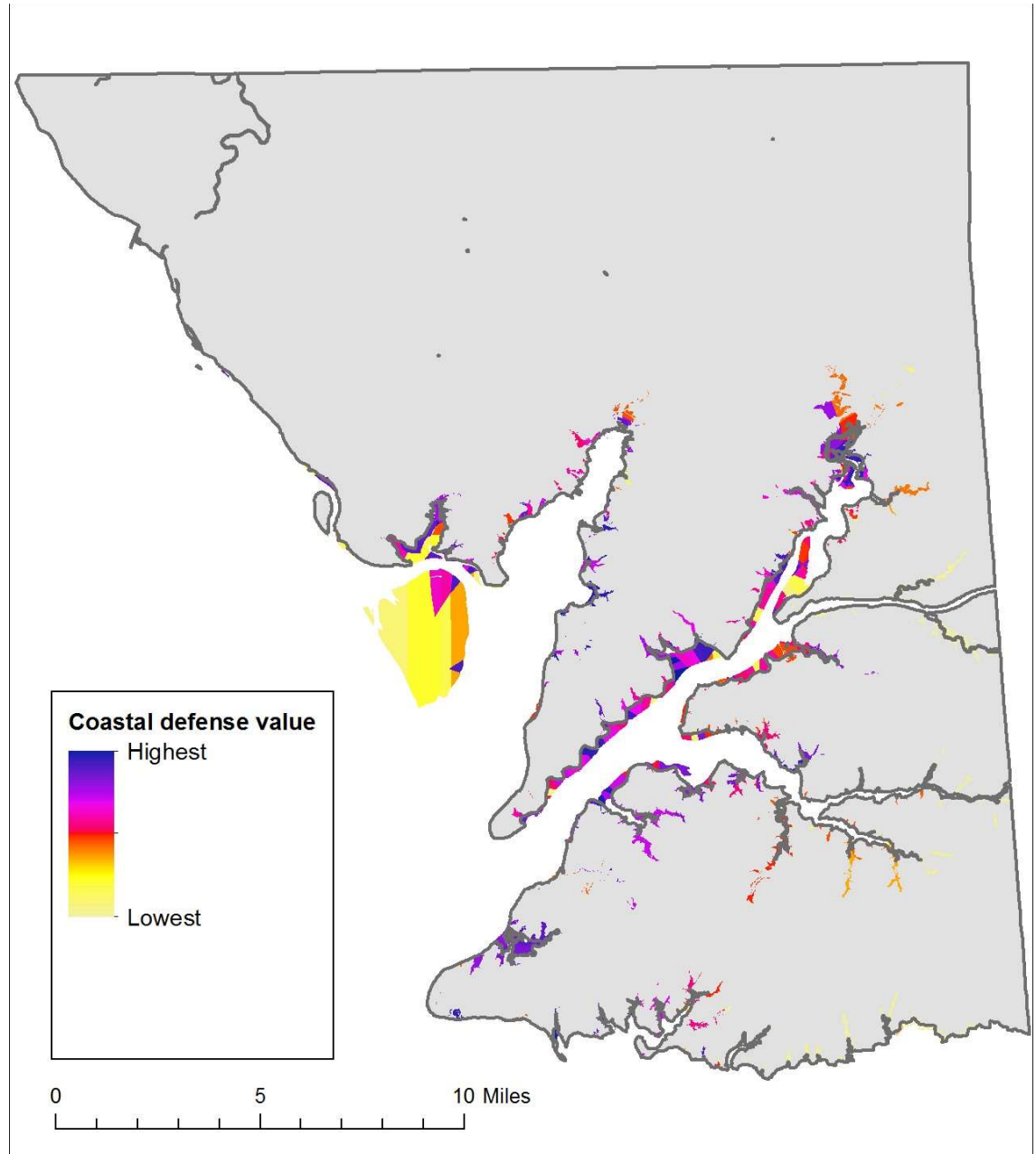


Coastal Defense



Weighting Factors

- Sea level rise scenarios
- Protected land
- MD Coastal Resilience Assessment – Habitat role in hazard reduction



Public Stakeholder Engagement

General Public & Special Interest Groups

- Open house workshops

GI Plan Steering Committee

- Regular meetings

Agricultural Preservation Advisory Board

Cecil County Farm Bureau

Soil Conservation District Board

Economic Development Commission

Natural resource and clean water protection were the top two priorities repeatedly expressed by the stakeholders.



Wildlife Habitat Validation Tests



Elk River Park & Elk Mills Property



Geographically, two sites covered different regions of the county with connectivity through green corridors.

Both sites contained a wide variety of species.

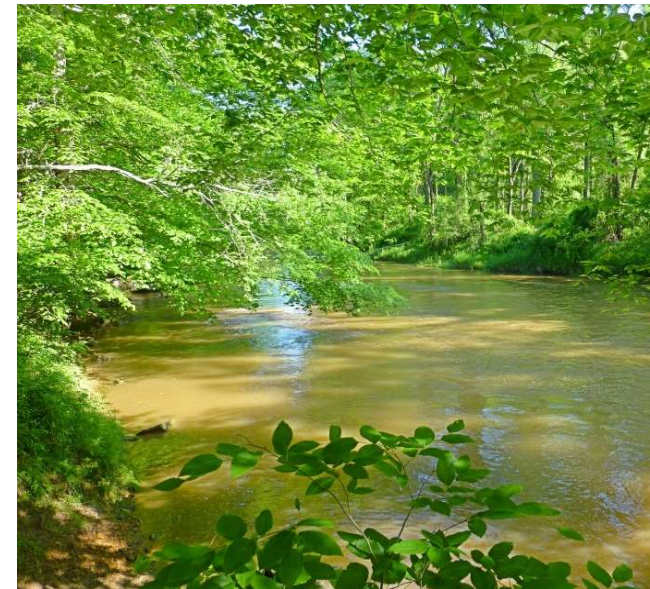
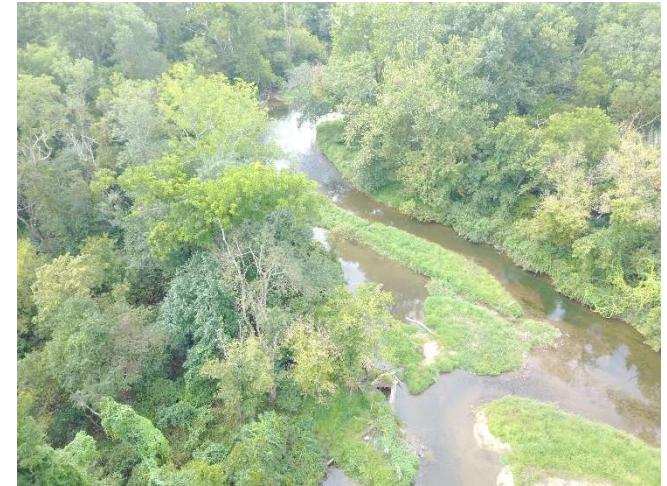
Surveys included recording the health of the forest, plant diversity, presence of invasive plants, mapping out types of habitats for wildlife.

Elk River = fishing line receptacles, Elk Mills = Meadow connecting two forest stands

Implementing the Green Infrastructure Plan

Priority Action - Land Use Policies:

- ***Expand the lateral extent of the regulatory flood zone boundaries to include the 0.2-percent chance(500-yr) floodplain and determine the base flood elevations***
- ***Create a policy for development on County owned land within the GI network to limit forest clearing, provide mitigation, and limit impervious surfaces***



Implementing the Green Infrastructure Plan

Priority Action – Program Development:

- **Improve management of habitat protection areas within utility corridors, road right-of-ways (drainage system maintenance), and County owned land**
- **Set a goal to establish 70% of streams with riparian forest buffers using a combination of incentives and regulations, building on existing programs**



Implementing the Green Infrastructure Plan

Priority Action – Land Preservation:

- ***Identify and acquire vacant lots in flood risk areas for habitat conservation and potential inclusion within public open space systems***
- ***Increase funding and incentives for the Purchase of Development Rights program, to preserve more of the GI network***

Funding challenge

Potential sources

- *Utilities*
- *Local Non-profits*
- *Towns*



Implementing the Green Infrastructure Plan

Priority Action – Restoration:

- *Identify areas of flood concern in close proximity to capital improvements and prioritize mitigation solutions for high-risk assets, incorporating nature based solutions*
- *Identify opportunities to use dredge material for living shoreline projects*



Implementing the Green Infrastructure Plan

Priority Action – Education:

- **Measure cost savings of nature-based restoration projects to citizens via the GI plan webpage, press releases, & other tools**
- **Develop flood risk communication and messages for different audiences, and consider creating a regional program for public information with other community partners, Towns, & Counties**



Regional Program for Public Information = ESCAP

Green Infrastructure Plan

How does it earn CRS points?

512c = Natural Floodplain Functions Plan

The plan must:

- *Identify natural floodplain functions*
- *Be adopted & updated at least every 10 years*
- *Include an inventory of species and habitats within the floodplain*
- *Include action items that describe who is responsible to implement action, how it will be funded, and when it will be done*

Some Natural Functions of Floodplains

WATER RESOURCES

Natural Flood and Erosion Control

- Provide flood storage and conveyance
- Reduce flood velocities
- Reduce peak flows
- Reduce sedimentation

Water Quality Maintenance

- Filter nutrients and impurities from runoff
- Process organic wastes
- Moderate temperature fluctuations

Groundwater Recharge

- Promote infiltration and aquifer recharge
- Reduce frequency and duration of low surface flows

BIOLOGICAL RESOURCES

Biological Productivity

- Rich alluvial soils promote vegetative growth
- Maintain biodiversity
- Maintain integrity of ecosystems

Fish and Wildlife Habitats

- Provide breeding and feeding grounds
- Create and enhance waterfowl habitat
- Protect habitats for rare and endangered species

- A Unified National Program for Floodplain Management
FEMA-248 (1994)

Green Infrastructure Plan

How does it earn CRS points?

422c = Natural functions open space

- *Preserved floodplain acres in undeveloped or restored to natural state*
- *Designated in a Green Infrastructure Plan*
- *Designated as critical habitat for threatened or endangered species (DNR = Species of Greatest Conservation Need)*
- *Designated in an open space corridor*

322g = Map Information Service

- *Areas that should be protected because of their natural floodplain functions*

Implementing the Green Infrastructure Plan

Using CA fee-in-lieu funds

Project	Total LOD	On-site mitigation	Buffer LOD	Forest Clearing LOD	FIDS LOD	Buffer Acct# 229264	Forest Acct# 229265	FIDS Acct# 229263
Harborview WWTP	0.19 ac & 1.15 ac FIL	0.19 ac	NTW buffer = 0.746 ac or 32,496 sf X 0.45c	0.40 ac or 17,424 sf X \$0.45		\$14,623	\$7,841	
Eastern Shore Natural Gas Pipeline			0.11 acres (3:1) = 0.33 acres or 14,375 sf X \$1.50	0.12 acres (1:1) or 5,227 sf X \$0.45		\$21,562.50	\$2,353.15	
Guiberson Subdivision	1.89 ac or 82,328 sf		2,178 sf (2:1) or 4,356 sf X \$1.50		1.89 acres or 82,328 sf, (1:1, habitat creation) X \$0.30, 6.78 or 295,337 sf, acres existing habitat conservation	\$6,534		\$11,174.00

Need to track the impacts = location/watershed, size, type, amount

Implementing the Green Infrastructure Plan

Using CA fee-in-lieu funds

Spending



TREE PLANTING PLAN

For

NorthBay Education, Inc.

Cecil County Department of Land Use & Development Services
c/o Bryan Lightner
Resource Plans Reviewer
200 Chesapeake Blvd.
Elkton, MD 21921
410-995-8354

Location:
Property is located at 9 Horseshoe Point Lane
off Turkey Point Road.

Tax Map: 45; Parcel: 3

Watershed: North East River
in
Cecil County

Developed Woodland Planting: 0.5 acres

Prepared by:

Bryan Lightner, Resource Plans Reviewer
Cecil County Government

March 14, 2019

Implementing the Green Infrastructure Plan

Using CA fee-in-lieu funds

Spending

- *Site Identification*
- *Site Preparation*
- *Species selection*
- *Maintenance*
 - *Watering*
 - *Mulching*
 - *Survival monitoring*
- *Contract award*
- *Access*
- *Coordination*
- *Deadlines*



Implementing the Green Infrastructure Plan

Using CA fee-in-lieu funds

Partnerships.....

- *Reduce administrative costs*
- *Identify more/better sites*
- *Enhance educational outreach*
- *Leverage additional funding*



Implementing the Green Infrastructure Plan

Using CA fee-in-lieu funds

MOU's.....

- *Scope of Work*
- *Method of payment*
- *Term of agreement*
- *Services*
- *Develop RFP*
- *Targeted outreach*
- ❖ *Community partners like land trusts, watershed associations, HOA's*
- *Application review*
- *Contract award*
- *Project management*
- *Reporting*



Questions/Comments?

Contact: Bryan Lightner
Telephone: 410-996-8354
Email: blightner@ccgov.org

