Recommendation #26

Require Community-Wide Climate Resilient Green Infrastructure

Description:

Green infrastructure(GI) stormwater practices combined with intentional onsite nature-based solutions should become the County's required and preferred primary stormwater management practice for all site development. Prince George's County stormwater management code should require subwatershed climate-resilient stormwater management modeling(SWMM or similar). In addition, code applicable to preserving street trees and forests should be revised to strengthen enforcement measures. Finally, new climate-resilience requirements should increase the minimum regulatory riparian buffers for all zones and land uses.

Co-Benefits

- Within County Control
- Alignment with Existing Initiatives
- Technical Feasibility
- Cost-Effectiveness

Time Frame

0-5 years

Proposed Measurement & Tracking:

Annual Tracking and Mapping of the following:

- Impervious surface area (% of total area) reduction, newly mapped with 311 complaints
- Impervious surface area (% of total area) reduction, retrofit
- Stormwater/flooding mitigation reduction: billions of gallons/year mitigated with break out of storage required for climate resilience vs. water quality.
- Green Infrastructure installation mapped by subwatershed and permit number
- Tree Canopy (see Recommendation XX)

Capacity and Funding:

What Capacity and funding is necessary to enact this recommendation?

- Provide dedicated enterprise or bond funding to perpetually maintain, repair, and provide life-cycle replacement costs for all Green Infrastructure facilities located within the County's public domain
- Allocate additional funding to hire professionally licensed County staff for specific review of proposed Green Infrastructure designs, for facilities inspections, and for management of contract maintenance operations for all SWM Green Infrastructure facilities and natural resource areas identified as essential to climate resilience.
- Allocate ongoing funding to revise, update and approve GI standards and stormwater management design manuals to anticipate and respond to evolving climate change impacts.

- Allocate funding to build and monitor innovative practices at County-owned or municipal sites for pilot projects for consideration as accepted practices within the established public domain.
- Create dedicate staff positions to serve as grant specialists and grant managers who pursue and manage climate resiliency funding from federal and state fund sources.

Implementation Steps:

Step 1: Update the Countywide Green Infrastructure Plan to define 'green infrastructure (GI)' as a term that includes explicitly stormwater management systems that harness ecosystem services(green roofs, green streets, rain gardens, trees trenches, permeable pavers, etc.) to work in tandem with existing natural systems.

- Evaluate and provide recommendations of what existing national or international engineering codes, design documents, or standards could be adopted or modified for inclusion in-lieu of creating new guidelines to implement community-wide climate-resilient stormwater management.
- Consider adopting FEMA's 'Building Community Resilience with Nature-Based Solutions: A Guide for Local Communities' Conservation International's Practical Guide to Implementing Green-Gray Infrastructure', ILC's 'Sponge Handbook', or Inter-American Development Bank's 'Increasing Infrastructure Resilience with Nature-based Solutions (NbS)'.

Step 2: Revise Prince George's County Code of Ordinance and applicable Zoning to support nature-based solutions.

Revise definitions of Code of Ordinance: Subtitle 27: Zoning:

- Require definition of Open Space to encourage augmentation of ecosystem services through woodland preservation, conservation landscaping, and native tree planting. Definition should discourage lawn as an open space land cover.
- Require and update all companion planning design guidelines to promote and incentivize conservation landscaping.

Revise Subtitle 32: Grading, Drainage, and Erosion and Sediment Control:

- Require subwatershed level Storm Water Management Model(SWMM) or similar model) to more accurately model runoff quantity and quality.
- Decrease threshold for disturbance requiring Erosion & Sediment Control Plan(ESC). Suggested threshold to trigger ESC Plan would be 2,500 sq. ft. versus of 5,000 sq. ft. of land disturbance activity.
- Only allow land disturbance activities which involve tree removals or natural resource impacts at Final Grading Permit.

Step 2: Issue a Green Municipal Bond(GMB) to initiate projects in tandem with creating a Climate Resilience Fee under Subtitle 10: Finance and Taxation. The GMB and Climate Resiliency Fee will help pay for significant long-term life cycle costs of green infrastructure in the public rights-of-way.

- Require calculation of fees for the Climate Resilience Fees based on a property's cumulative annual runoff volume (both treated and untreated) entering the County's storm drain system and local waterway.[1]

- Require an annual update of all agency's 5 to 10-year CIP horizontal and vertical infrastructure improvements programs to build climate resilient. Update should include the "cost from consequences of doing nothing to adapt" as a budget comparison.

Step 3: Adopt and enforce policies to require GI practices for new and existing properties. Incorporating nature-based solutions should be first to choice to help reduce and naturally filter runoff on private and public properties. Insert specific language in guiding County documents related to proposed and existing development that is enforceable.

- Adopt the revised Prince George's County Specifications and Standards for Roadway & Bridges(Revised Draft-2019) to include green infrastructure standards and revised right-of-way widths.

- Create and adopt a Green Street Design Guideline, which provides design criteria and guidelines for implementing green infrastructure within the public right-of-way for retrofitting existing streets and new construction.

- Revise Standard Details for Stormwater Management Construction (last updated in 2001) to include climate-resilient requirements and related standards.

- Review State Code-Land USE 23-103-Dedication of Land for Roads to identify legislative actions required to adopt new right-of-way widths per revised Prince George's County Specifications and Standards for Roadway & Bridges. The review must require assessing and evaluating adverse environmental impacts on natural resources from wider ROW standards.

Step 3: The County's economic development authority must prioritize preserving existing natural resources when evaluating long-term land development potential and impacts. County entities responsible for economic growth and land development must lead by example by publicly providing metrics on an annual basis information to evaluate the following:

- Commitment to innovative practices for onsite stormwater management, such as Net Zero runoff and rainwater harvest for greywater reuse.
- Assessment of the ongoing vulnerability of private assets and business districts to climate change to annual update the County's focus for economic development.
- Support development of climate-resilient designated business districts.
- Incentives presented to voluntarily adopt resiliency measures and/or pursue infill redevelopment versus greenfield development.

Step 5: Update County's stormwater regulations to require climate-resilient design and criteria within the following manual and required permits/plan:

- Prince George's County Stormwater Management Design Manual(DPIE)-September 2014
- MDE's "NPDES General Discharge Permit for Stormwater Discharges Associated with Industrial Activity" permit and county retrofit activities.
- Stormwater Pollution Prevention Plan (SWPPP) - provides industrial facilities with the behavioral and structural guidelines necessary to reduce contaminants from entering the storm drains, conveyances, local streams, and rivers.

[1]https://www.dcwater.com/impervious-area-charge :Fee structure based on the amount of impervious area on a property; owners of large office buildings, shopping centers, and parking lots will be charged more than owners of modest residential dwellings.

Equity considerations:

Equity concerns:

Low to moderate-income communities and urban neighborhoods often have more impervious areas than tree cover. In addition, these communities also typically have inadequate and antiquated storm drain infrastructure to convey runoff from impervious areas. Overhead utility lines and insufficient tree box spaces also contribute to urban neighborhoods devoid of street trees and without shade.

Recommendation Implementation Considerations to Lead to Equitable Outcomes:

- Recognize that GI and nature-based design, construction, installation, and maintenance may present barriers for entry for local builders from historically disadvantaged populations and communities without training in specific technologies.
- Provide GI training for small businesses, CO-OP opportunities for local trade schools and Prince George Community College students to design, install, and maintain new and emergent green infrastructure and nature-based solutions for climate change.

Helpful Resources:

- **Resource:** The Resilience Factor: A Competitive Edge for Climate Read Cities. https://www.c2es.org/site/assets/uploads/2020/10/the-resilience-factor-competitive-edge-for-climate-ready-cities.pdf

- **Resource:** *How to Issue a Green Muni Bond* https://www.climatebonds.net/files/files/Green%20City%20Playbook.pdf
- **Resource**: 'Building Community Resilience with Nature-Based Solutions: A Guide for Local Communities', 2021
    - Organization: FEMA
    - Description: Guide for communities includes definitions, co-benefits and cost savings, planning and policy-making, implementation, and funding information.
- **Resource**: 'Practical Guide to Implementing Green-Gray Infrastructure', 2019
    - Organization: Conservation International
    - Description: Implementation guide includes technical definitions, co-benefits and cost savings, planning and policy-making, implementation, and funding information.
- **Resource:** Green Area Ratio (GAR)
    - Organization: Washington DC Department of Energy & Environment
    - Description: Municipal environmental sustainability zoning regulation which sets standards for landscape and site design to help reduce stormwater runoff, improve air quality, and reduce extreme heat impacts.
- **Resource:** Green Infrastructure Resilience program
    - Organization: Maryland Department of Natural Resources

    - Description: Helps local governments assess their stormwater and riparian flooding hazards and evaluate how green infrastructure practices can improve their resilience.
- **Resource**: Resiliency through Restoration Initiative
    - Organization: Maryland Department of Natural Resources
    - Description: Directly supports on-the-ground implementation of nature-based projects through technical assistance, monitoring, and community outreach and education support.