Recommendation #7

Increase Deployment of Solar PV in the Residential and Commercial Sectors by Expanding Partnerships, Incentives, and Financing Solutions.

Description:

Prince George's County has several partnerships, incentives, and financing solutions in place that have already contributed to more than 20,000 solar PV installations. However, recent estimates from Project Sunroof estimate that up to 80% of buildings without solar PV in our region are viable for a roof-mounted solar PV installation. Of the 338,766 residential and commercial electric accounts in Prince George's County, only 6% of those accounts currently use solar PV.

Prince George's County will help provide educational resources, explore innovative partnerships, and connect residents with financing opportunities to facilitate an additional 60,000 solar installations by 2030. Bold action to increase residential and commercial solar installations will help Prince George's County remain a solar energy leader with the State of Maryland by continuing to install more solar systems each year and creating the most solar energy capacity.

Co-Benefits

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

Time Frame
1-4 years

Proposed Measurement & Tracking

On an annual basis, track, monitoring, and quantify the following:

- Number of participants(households, organizations, business, etc.) participating in PV programs, loans, and incentives.
- Installed capacity (KW) per each year per the residential and commercial sectors. Understanding that the utility data currently available to the County does not separate residential, commercial, and public sector solar PV capacity.
- Number of consultations with County Energy Coach with outcomes tracked.

Capacity and Funding:

What capacity and funding is necessary to implement this recommendation?

1. Allocate funding to hire additional three full-time staff for OCS, Sustainable Energy Office implement this recommendation.

2. Allocate and dedicate ongoing budget to both provide staff manage an R-PACE program.

3. Allocate additional funding for consultant to conduct a county-wide solar feasibility study.

Implementation Steps:

Step 1: Establish a Solar Task Force. Solar Task Force (agency leads, business leaders, subject matter resident experts) will be responsible for leading the development of new solar PV programs and incentives, communicating the availability of these resources to Prince George's County's residents, commercial building owners, and engaging the community on the benefits of solar PV particularly the financial aspects of solar PV.

- Perform county-wide analysis of available private, commercial, and governmental rooftops, parking areas, and other suitable locations throughout the County for solar panels.
- Identify barriers(financial, existing infrastructure, and code) to installing Solar PV and other renewable energy practices on both commercial and residential buildings.
- Accommodate more roof top solar by engaging with the Public Service Commission(PSC) to identify required approvals for two-way direction grid and streamline investment in necessary upgrades.

Step 2: Expand Education and Outreach related to sustainable energy. Develop a sustainable energy website and outreach program to continue increasing awareness in Prince George's County of the many programs and incentives available to residents, as part of a more extensive, comprehensive Climate Action Plan website (see Recommendation: Lead by Example). During community meetings (during the development of this plan), residents expressed that education and outreach were a vital gap and lacked a trusted source of information. The County will continue to utilize resources, such as EnergySage and Maryland Solar United Neighbors (MD SUN), to support residents in connecting with credible solar installers. In addition, it can help educate and support residents to understand how different options, including direct ownership, leasing, community solar, solar co-ops, etc., work and the trade-offs involved for each option, as well as information about solar financing and case studies demonstrating the financial benefits of solar.

Step 3: Participate in the national SolSmart Program funded by the U.S. Department of Energy and seek platinum designation. This program provides support to local governments to adopt best practices in solar deployment. The program offers free technical assistance to participating communities and can help identify opportunities to improve solar permitting, expand access and engagement, and expand partnerships and innovative programming. Additionally, as part of the SolSmart designation process, the County should adopt [NREL's SolarAPP+](#), supported by DOE. The SolarAPP+ helps communities streamline the solar PV permitting process and reduces soft costs associated with installing solar PV, two primary goals of the SolSmart program.

Step 4: Expand participation in solar financing. While FSC First Green Energy Loan Fund offers loans for green energy, including up to $250,000 for commercial buildings, to date, no business or building owner has utilized this opportunity. Through the solar task force and community engagement, the County should seek to understand residents' and businesses' financing needs and assess the potential to adjust current loan products or expand offerings to meet these needs.

- Through County Code of Ordinance or Resolution, establish a Residential Property Assessed Clean Energy Program(R-PACE) as now legislatively enabled through [Maryland State House Bill 517](#) in 2021.
- Create business recognition program to publicly acknowledge for businesses participating in the First Green Energy Loan Fund and help promote businesses and contractors certified and registered by the County to provide services through R-PACE.

Equity considerations

Equity Concerns:

Low and moderate-income homeowners may not have access to the capital required to purchase solar, and those with poor credit scores may not be able to take advantage of financing or leasing options.

How this recommendation can be implemented to lead to equitable outcomes:

- Provide access to grants to help subsidize costs for improvements in Equity Emphasis areas (Home Owner's Guide to the R-PACE) through the R-PACE program.
- Require specific regulatory oversight through County Energy Coaches to work with homeowners to prevent overleveraging their property's equity to make improvements through R-PACE(R-PACE creates a [Super- Priority Lien](#)).
- Provide energy coaches to work with resident to evaluate contractor proposals and review applications eligibility for free low-income Weatherization Assistance Program and other no- or low-cost programs before leveraging R-PACE.

Helpful Resources:

- **Resource**: [A Maryland Consumer's Guide to Solar](#)
  - o Organization: Clean Energy States Alliance and The Maryland Energy Administration
  - o Description: This guide is intended to help Maryland consumers better understand the benefits of solar PV and their options for procuring and financing private renewable energy projects.
- **Resource**: [SolSmart Program Guide](#)
  - o Organization: Solsmart
  - o Description: A guide to participation in a national solar recognition and technical assistance program funded by the U.S. Department of Energy
- **Resource**: [EnergySage](#)
  - o Organization: EnergySage
  - o Description: This online tool helps potential solar customers easily receive and compare quotes from credible solar installers.
- Resource: [Solar United Neighbors of Maryland](#)
  - o Organization: Solar United Neighbors
  - o Description: Solar United Neighbors (SUN) is a nonprofit helping people go solar through their community-driven bulk discount solar cooperative initiative.
- **Resource**: [EmPower Maryland](#)

- o Organization: Maryland Public Service Commission
- o Description: EmPOWER Maryland programs are administered by utilities. County programs can add or supplement energy savings or GHG reductions from those programs.
- **Resource:** Property Assessed Clean Energy Programs
  - [Property Assessed Clean Energy Programs | Department of Energy](#)

Recommendation #9

Expand County Waste Reduction and Diversion Efforts

Co-Benefits

Description:

The county will expand and enhance exist programs for waste reduction, organics composting, and materials recovery. New legislation will address the growing problem of single-use plastics. Public education and outreach efforts and data sharing will increase public engagement in the circular economy while more robust systems for extended producer responsibility and materials recovery are developed.[2] Residential curbside collection of food scraps will be expanded County-wide by the end of Fiscal Year 2022. In partnership with its' operator of the Prince George's County Organics Composting Facility (OCF), the County is also working to increase the commercial food scrap and food waste tonnages from being diverted from landfills to being composted. Both efforts should increase participation and partnerships, particularly with businesses and institutions that generate significant food waste.

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

Time Frame
0-5 years

Additionally, the County should first update, then adopt, and implement its' Zero Waste and Implementation plan, including establishing a collection and drop-off program and operating a ReUse Center for gently used bulk material. The Reuse Centers will repurpose furniture, appliances, and house de-packaging equipment to enable the OCF to accept packaged expired food. Legislative efforts by the County Council for a county-wide ban of plastic bags and passing appropriate and mandatory business/commercial food waste/scrap diversion to composting, Paint Care, and other Extended Producer Responsibility legislation. The County must prepare to partner with the State and the bottle industry to establish robust and profitable glass recycling opportunities for long-term waste reduction success.

Proposed Measurement & Tracking

On annual basis, track and quantify the following:

- Number of visitors to convenience drop-off sites and ReUse Center.
- Tons of food scraps diverted.
- Tons of bulk material (furniture) diverted from being landfilled.
- Community awareness & participation (via survey).

- Reduction of small (shopping type) plastic bags being landfilled or received unintentionally at the Materials Recycling Facility via Waste Sort Study.

Capacity and Funding:

What capacity and funding are necessary to implement this recommendation?

1. Allocate and budget ongoing funding for ReUse Center, including building, staffing, and collection program (specialized trucks).
2. Allocate an additional budget for de-packaging equipment for OCF.
3. Increase funding level for outreach and community engagement, including providing reusable bags as promotional items.
4. Allocate and budget ongoing funding to develop and institute a Pay-as You-Throw(PAYT) program to pay for every bag or can of waste to motivate and prevent waste.
5. Support the County Council and County Executive in adopting and implementing the PAYT fee system and Zero Waste program.

Implementation Steps

Step 1. Conduct a feasibility study to assess and provide implementation recommendations for carbon emissions analysis of landfill operations. This should include possible timetable requiring haulers to phase out diesel trucks and use low emission vehicles. In addition, provide analysis and recommendations for eliminating leaks and minimizing the landfill's overall methane footprint. As part of analysis of impacts for new Area C of the landfill, perform assessment to identify more efficient repurposing of excess methane for Renewable Natural Gas(RNG) or biogas[1] as may be generated by future operations in tandem with improving current repurposing operations.

Step 2. Community Survey. Survey the community to understand better current awareness of composting and other waste diversion programs. Gather information on the need and potential for implementing a ReUse Center.

Step 3. Rollout of the countywide curbside composting program. Residential curbside collection of food scraps will be expanded County-wide by end of June in 2022. In partnership with its' operator of the Prince George's County Organics Composting Facility (OCF), the County will increase the commercial food scrap and food waste tonnages from being diverted from landfills to being composted.

Step 4: Enable residents to properly dispose of hazardous wastes encountered during climate resiliency and energy efficiency retrofits. Older buildings and housing stock in the County have asbestos (shingles, siding, flooring, etc.), lead, and other harmful building materials. Residents or contractors will encounter legacy hazardous materials during energy efficacy retrofits, floodproofing, and climate resilience-related improvements. Unfortunately, county residents and businesses currently do not have access to local safe disposal of legacy hazardous waste materials.

Step 5. Expand and promote community-wide recycling and waste diversion programs.

- Adoption by County Council for Zero Waste goal with an implementation plan incorporated into the Ten-Year Solid Waste Management Plan.[2]

- Perform periodic waste characterization studies (every 3 years) to monitor progress of waste diversion efforts. Use local consumption data and an embodied-carbon emissions inventory[3] to educate the public about impacts of various consumer choices on greenhouse gas emissions and the waste stream

- Develop and implement a Pay-as-You-Throw(PAYT) fee program[4] to encourage waste reduction and encourage recycling. This program will track the average annual quantity of trash/ recyclables generated per household and savings. Information from tracking both waste and savings will help educate the public and create community-wide goals and benchmarks.

- Advertise and ensure citizens know to take back plastic bags to the grocery stores for recycling or, better yet, don't utilize plastic bags. Teach and promote the use of reusable, washable bags.

- Intensify education and enforcement of the recycling mandates, including the Expanded Polystyrene Ban and Multifamily and Commercial/ Business Recycling Laws.

- Ban or require a fee for Single-Use Disposable Bags.

- Promote source reduction and reuse programs by providing additional county staff to serve as Waste Stream Diversion Advisors. These advisors will work and educate communities and municipalities on the proper handling and disposal of hazardous materials encountered during renovation projects, repurposing building materials and salvaging household items, recycling, and other waste diversion efforts at a community-wide scale.

Step 6. Build Partnerships. Promote and build both business and institutional waste diversion programs for schools, corporations, and community businesses.

- Pilot reverse vending machines at public gathering places to test behavioral and financial incentives to increase recycling of plastic, decrease litter and trash along roads, streams, and communities.
  - o Form a study group to determine the "how, "who," "source of funding," and all of the resources needed to implement a reverse vending machine.
  - o Identify equipment technicians, locations of machines, and delivery of the collected bottles to the Materials Recycling Facility.
  - o Publicize the pilot program to help support statewide container deposit legislation efforts and plastic bag ban efforts.

- Partner with businesses, restaurants, and County institutions to participate in scaled-up waste diversion efforts and composting food waste through Green Business certification, promoting success stories, and educating on the cost savings of a waste reduction program.

- Provide financing, grants, or subsidies to individuals and businesses to develop the County's businesses for reuse and donation of materials.

- Develop public online clearinghouse for information about reuse programs, repair services, and donation centers in the County, so residents and businesses have easy one-stop access to

opportunities to extend the lives of their materials. Businesses and residents could use the database through the County Click 311 information center or the County's website.

[1] https://washingtongasdcclimatebusinessplan.com/wp-content/uploads/2020/04/200316-WGL-RNG-Report-FINAL.pdf

[2] https://www.princegeorgescountymd.gov/DocumentCenter/View/21910/Zero-Waste-Initiative-Final-April-5-2018a?bidId=

[3] https://www.futureofconstruction.org/solution/embodied-energy-accounting-for-building-products/

[4] https://archive.epa.gov/wastes/conserve/tools/payt/web/html/index-5.html

Equity considerations

Equity Concern:
Increased waste diversion and repurposing operations may negatively impact the community's adjacent new satellite (ReUSE or Convenience Drop-off) locations and communities near the existing landfill.

How can this recommendation be implemented to lead to equitable outcomes?

- Ensure waste management education materials are provided in multiple languages and intentionally engage with the trusted community voices of local community-based organizations to understand needs and solutions.

- Require that the County reduces negative impacts such as noise, smell, increased traffic, and illegal dumping near the facility when locating new convenience drop-off locations or service centers.

Helpful Resources

- **Resource:** Zero Waste Initiatives for Prince George's County, Maryland.
  - Link: https://www.princegeorgescountymd.gov/DocumentCenter/View/21910/Zero-Waste-Initiative-Final-April-5-2018a?bidId=

- **Resource**: Residential Recycling Program
  - Organization: Prince George's County
  - Description: Prince George's County's Residential Recycling program providing information on curbside collection, convenience centers, bulky trash, organics composting facility, brown station road sanitary landfill, and household hazardous waste and electronics recycling acceptance sites.
- **Resource**: Climate Change and Municipal Solid Waste
  - Organization: U.S. Environmental Protection Agency (EPA)
  - Description: Fact sheet explaining the link between climate change and municipal solid waste.

Recommendation #11

Accelerate Implementation of Deep Energy Retrofits and Community-wide Energy Efficiency and Weatherization Efforts

Description

A deep energy retrofit is a holistic approach to updating a building or residential home with energy-efficient mechanisms that lead to 50% or more energy savings than pre-retrofitted conditions. Updates are typically prioritized when there is an end-of-life replacement or code upgrades needed. They can be done all together or individually over time, depending on the owner's financial situation. Examples of updates that would be completed as part of a deep energy retrofit include lighting, HVAC, windows, insulation, electricity, and appliances. Completion of building electrification can also be part of a deep energy retrofit. Prince George's County has already secured funding to complete one deep energy retrofit of a senior center and will upgrade at least 30 more buildings over the next ten years.

Prince George's County should partner with local utilities to create financial and other incentives to accelerate the number of homes and businesses implementing deep energy retrofits. County programs should help community members assess the benefits of implementing deep energy retrofits and incrementally making changes through energy efficiency and weatherization. Leveraging connections within the community and energy coaches, the County can engage and educate community members on the available incentives and resources. In addition, the County must ensure that seniors, low-income, and other vulnerable communities are prioritized when implementing these programs and put measures in place to prevent retrofitted buildings from becoming too expensive for these groups. The County needs to lead by example and conduct deep energy retrofits toward reducing the consumption by county buildings by 50%.

Co-Benefits

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

Time Frame
3-8 years

Proposed Measurement & Tracking

On an annual basis, the following should be tracked:

- Number of county buildings retrofitted
- Energy and cost savings achieved in retrofitted buildings
- Number of buildings/homes that participate in retrofit programs
  Number of buildings/homes in energy resilience zones that participate in retrofit, resiliency, and weatherization programs
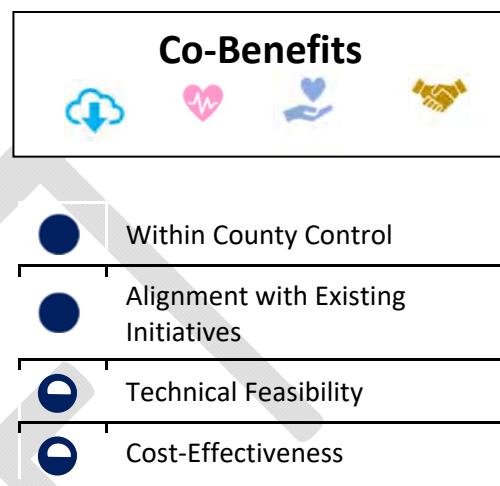
Capacity and Funding:

What Capacity and funding is necessary to enact this recommendation?

- The County will need increased capacity and funding to partner with PEPCO and the Low-Income Energy Efficiency Program (LIEEP).
- Additional dedicated funding for DHCD weatherization program and additional initiatives for deep energy retrofits.

Implementation Steps

Step 1: Assess current policies and programs that incentivize or hinder deep energy retrofits. Work with PEPCO and the Low-Income Energy Efficiency Program (LIEEP) to identify existing programs, technical assistance, incentives, and financing to support deep energy retrofits. Identify gaps and document the need for additional support (to inform step 4).

Consider adopting the following code, permit, and guideline requirements to accelerate community-wide transitions towards more energy-efficient buildings:

- Non-residential buildings will be subject to an energy reporting requirement. These buildings would be required to meet energy and water conservation performance standards.
- Require electrification of heating and hot water equipment during significant renovations of commercial and multifamily housing
- Provide guidance and support for completing deep energy upgrades over time. Consider a different permit process to avoid duplicative permit processes as the upgrades are phased.

Step 2: Support Community Education and Outreach related to deep energy retrofits. Develop and distribute additional educational materials about deep energy retrofits, including information about incentives and financing options.

Step 3: Lead by example. The County should lead by example by undertaking deep energy retrofits of at least X buildings by 2030. Data from energy benchmarking can help support building prioritization. The retrofit projects should be developed as case studies and help educate the community, including owners of commercial buildings.

Step 4: Advocate. Using the success and metrics from these programs, encourage the State of Maryland to set standards and expand financial incentives for deep energy retrofits.

Equity Consideration:

Seniors, low-income, and other vulnerable communities may not be able to afford or have the resources to implement deep energy retrofits and therefore not experience the benefits.

How can the recommendation by implemented to lead to equitable outcomes?

- Incentivize and subsidize the implementation of deep energy retrofits in energy resilience zones and equity areas.

- Ensure landlords engaged in deep energy solutions do not pass disproportionate costs to occupants of low to moderate-income households.

Helpful Resources

- **Resource**:
    - Rocky Mountain Institute; Guide to Managing Deep Energy Retrofits
    - This resource provides a framework with detailed guidance for planning and implementing deep energy retrofits of commercial buildings.
- **Resource**:
    - Rocky Mountain Institute; Design Guide for Commercial Building Deep Energy Retrofits
    - This resource provides technical guidance for deep energy retrofit teams to optimize energy savings in commercial buildings.
- **Resource**:
    - US Department of Energy; 1910 Home Deep Energy Retrofit Case Study
    - This case study highlights the process, costs, energy use savings, and lessons learned for a deep energy retrofit of a home built in 1910.

Recommendation #12

No Net Loss Tree Conservation Regulation and Policy to Maintain and Expand Street Tree Canopy and Forest as a Land Cover.

Description:

To maintain its 52% tree cover through 2030 and increase tree cover to 55% by 2050, the county should establish No Net Loss regulations for tree preservation, replacement, and mitigation. The Woodland and Wildlife Conservation Ordinance should be strengthened by inclusion of specific requirements for addressing climate change impacts through preserving existing woodlands, especially mature forests, and expanding the urban tree canopy. To protect vulnerable neighborhoods from excess heat and flooding, the county should perform a County-wide Tree Shade Study to identify priority areas for stewardship grants. The County should develop tree stewardship programs that enable residents to plant and maintain trees where they are most needed.

Co-Benefits

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

Time Frame
5+ years

Proposed Measurement & Tracking:

On annual basis track and map the following:

- Annual tree canopy coverage changes linked to land use and land disturbance activities (see Recommendation #21: Floodplain Preservation) exemptions, variances, waivers, etc.

- **$GtCO_2$** sequestered through trees saved vs. GCO_2 lost from tree cover, land disturbance analysis to track if County is achieving positive sequestering towards its CAP emission reduction goals. Also, calculate total $GtCO_2$ sequestered in County year to year.

- Number of violations(with permit case number) and exemptions granted from the Tree Conservation Plan (TCP). For violations, identify enforcement actions taken with tracking of any fee-in-lieu and off-site tree planting provided to satisfy violation(s).

- Location and amount of Regulatory Green Infrastructure losses and gains based on subwatershed.

Capacity and Funding:

1. Allocate and dedicate budget to hire additional DoE staffing to provide ongoing GIS mapping, reporting, and analysis.

2. Allocate funding for consultant services and dedicated program funding to engage residents for county-wide Tree Shade Study which will also require additional DoE staff for the Tree Conservation Program.

3. Allocate funding facilitation expert for interagency discussions to achieve consensus, seek approvals, modify policy, design guides, and Code of Ordinance language.

4. Allocate funding to expand DPW&T street tree program to hire full time staff to serve as certified arborist and horticulturists to support ongoing tree planting and maintenance operations in the public ROW.

5. Allocate and sustain funding for an Urban Forestry program to enforce a revised Tree Preservation Ordinance, issue violations, and inspect construction sites for natural resource protection compliance. Urban Forestry Program would be tasked with the following:

   - Monitor, track, and inspect for long term compliance of permitted landscape plans, tree installations, and mitigation projects located on private and commercial properties.

   - Perform county-wide tree inspections and preservation enforcement countywide(includes support within the municipalities).

Implementation Steps:

Step 1: Establish a County No Net Tree Loss policy to maintain 52% overall County tree canopy coverage through 2030. Expand coverage to 55% by 2050. Enforce via permitting requirements and County Council to revise Prince George's County Code of Ordinance to strengthen and require more on-site tree preservation.

Step 2: Revise Subtitles and Divisions of the Prince George's County Code of Ordinance to reduce allowable exemptions and variances granted. Also, a minimum of one-to-one acre tree cover replacement must be required based on the total site area disturbed regardless of Zone. There should be no exceptions to the loss of Regulatory Green Infrastructure Areas to accommodate land development activities with only limited road crossing permitted. Fee-in-Lieu rates must be reassessed(increased as needed) based on on-site tree preservation rates.

Revise Subtitle 25: Trees and Vegetation and related Divisions:

- Eliminate the Tree Canopy Requirements by Zone and require all projects to comply with the Woodland and Wildlife Habitat Conservation Ordinance regardless of zoning.
- Increase minimum thresholds for Conservation, Afforestation, and Tree Canopy Coverage of Woodland and the Wildlife Habitat Conservation Ordinance. Determine on-site tree preservation and tree coverage based on county-wide climate resiliency and carbon sequestration targets(TBD).
- Require that calculation of required tree cover, preservation requirements, and other mitigation measures be based on the Gross Tract Area, not the Net Tract Area.
- Require additional impact mitigation measures or fees to account for ecosystem services lost based on a ratio of size, density, of trees lost vs. size, species of replacement trees.

Revise Subtitle 32(Water Resource Protection and Grading and other related Subtitles):

- Prevent removal of trees and site disturbance activities before issuance of Final Grading Plan. Current code permits tree logging, tree removal, and land disturbance over an entire project site with only a Rough Grading Permit.

Step 3: Revise the Prince George's County(M-NCPPC) [Environmental Technical Manual](last updated 2010) to address climate change impacts and increase required natural buffers(forest, riparian, and wetland).

Step 4: Increase violation and penalty fees to help pay for enforcement. Require the use of fee-in-lieu funds for replacement tree loss, maintenance, and equity considerations within the same sub-watershed as violation.

Step 5: County will be required to create a publicly accessible annual report of tracking and monitoring data on tree canopy cover, associated ecosystem values, and factors contributing to canopy loss. All exceptions, exemptions, variations and zoning amendments by the Planning Board, County Council and DPIE should be included in the annual report. M-NCPPC and DoE must collaborate on tracking metrics and mapping practices.

Step 6: Identify and prioritize areas that need tree canopy and natural resource area expansion. Use the results of thermal mapping (Recommendation #19) and, when it becomes available, the results of the Tree Shade Study will build on DoE tree canopy and vulnerability analyses to identify vulnerable/priority areas.

- Perform additional analysis in tandem with Tree Shade Study to inform and identify the prioritization of underground utilities to establish a healthy urban tree canopy in Equity Emphasis Areas and climate resilient priority areas of the County.
- Prioritize natural resource programmatic and tree conservation programmatic efforts to reach at-risk, historically disadvantaged populations.

Step 7: Expand existing incentives for residents and local businesses to add additional new trees. With initial investment from the Woodland Conservation Fund, the County will create a Prince George's County Climate Resiliency Land Conservation Trust (see Recommendation #21: Floodplain Preservation).

Equity concerns:

According to a new [American Forests Study][1], we need to plant 31.4 million trees per year in cities to advance Tree Equity and slow climate change.

How can this recommendation be implemented to lead to equitable outcomes?

- Focus on new tree planting and existing tree preservation efforts in low to medium household and Equity Emphasis Areas, especially the inner beltway communities. Prioritize programmatic efforts within communities already experiencing flooding or extreme temperatures from lack of tree canopy or significant impervious areas.
- Prioritize infrastructure improvements, such as undergrounding overhead utilities in equity areas, to build energy resiliency and support a long-term healthy street tree canopy towards a more livable community.

[1]https://www.americanforests.org/our-work/urban-forestry/how-many-urban-trees-do-we-need/

Helpful Resources:

- **Resource**:
  - o Groundworks USA; [Climate Safe Neighborhoods](#)
  - o The online resource highlights housing discrimination links to climate change. Provides 9 urban case studies and recommendations for using mapping and data to build resilience to extreme heat and flooding.
- **Resource:**
  - o American Forests; [Tree Equity Score](#) (TES)
  - o The online tool simplifies full Tree Equity on a scale of 0 to 100 for all 150,000 neighborhoods and 486 municipalities in urban America. It helps address climate change through the lens of social equity, attract new resources, and inform technical decisions and progress tracking.
- **Resource**:
  - Casey Trees; [Tree Report Card](#)
  - Online tool to track trees against baseline measurements, including details on the amount, distribution, health, and diversity in age and species of trees in the canopy in parks and built-out environments. Used by Washington, D.C.
- **Resource**:
  - o New York Times; '[How Decades of Racist Housing Policy Left Neighborhoods Sweltering](#)'
  - o Article on redlining policy impacts on urban neighborhoods.
- **Resource: The Economic Values of Nature: An Assessment of the Ecosystem Services of Forest and Tree Canopy-April 2015**
  [Ecosystem-Services.pdf (lowimpactdevelopment.org)](#)

Develop a Community-Wide EV Deployment Strategy

Description

Currently, there are approximately 620,000 vehicles on the road in Prince George's County. To support the goal of 50% emissions reduction by 2030, Prince George's County aims to have at least 15% of those vehicles (approximately 100,000) powered by electricity (this aligns with the State of Maryland goal of having 600,000 Electric Vehicles(EVs) registered statewide by 2030). The County recognizes this ambitious goal and will require other market forces, including state and federal action, to make it a reality.

To support this transformation of the transportation sector, the County will develop a Community-Wide EV Deployment Strategy by 2024. The EV Strategy will identify goals and strategies to support the acceleration of community-wide EV deployment. For example, including requirements for Electric Vehicle Supply Equipment(EVSE) in parking and development regulations, mapping existing incentives, and identify gaps particularly related to multi-family and commercial properties. In addition, GIS analysis to highlight census tracts with the highest need for EVSE and analysis of public charging stations needed over the next 5, 10, and 30 years will be part of the comprehensive EVSE deployment strategy.   This effort will also include developing an education and outreach strategy to support residents as they consider investing in EVs.

Co-Benefits

◐ Within County Control

● Alignment with Existing Initiatives

● Technical Feasibility

◐ Cost-Effectiveness

Time Frame
0-3 years

Proposed Measurement & Tracking

On an annual basis track and map the following:

- Number of EV charging stations installed in Prince George's County .
- Number of registered EVs in Prince George's County.
- Number of participants from Prince George's County accessing state & utility incentives. Include amount provided through other programs in tandem with County incentives.

Capacity and Funding:

What Capacity and funding is necessary to enact this recommendation?

1. Allocate additional funding to support ongoing consulting services for the development of the EV Community-wide Deployment Plan.

2. Allocate and budget for hiring additional full-time OCS staff dedicated to supporting the ongoing implementation of the plan and related activities.

Implementation Steps

Step 1: Scope EV Deployment Strategy. The County will develop a scope of work and timeline and identify the questions addressed in the Community-Wide EV Deployment Strategy.   Consider including the following as part of the scope of work:

- Recommend policies that will enable, promote, or incentivize EV adoption by community members, including individuals, businesses, and organizations located in the County.
- Recommend siting and prototypes for community-wide EV charging infrastructure, which should include summarization of code revisions and other materials needed to support permitting of EVSEs and other deployments
- Provide lessons learned, case studies, programs, policies, etc., from other regions which have already piloted EV programs that are considered successful.
- Recommend EV infrastructure service models and best practices to aid local hire and workforce development.

Step 2: Develop Inclusive EV Deployment Strategy. Working with a consultant, the County will develop a comprehensive, community-wide EV Deployment Strategy. The development of this strategy will include significant community engagement to ensure that strategies are grounded in the needs and concerns of residents. In addition, the strategy's actions will identify specific programs, policies, regulations, and outreach efforts needed to support the deployment of 100,000 EVs in Prince George's County by 2030.

Step 3: Improve Community Education and Outreach. The County can play an essential role in helping residents connect with credible information and make informed decisions about investing in EVs. Based on community input and the Community EV Strategy, the County will develop educational materials and conduct community outreach, including targeted outreach to commercial and multi-family properties owners.

Step 4: Engage transportation network companies in strategy development. Businesses providing transportation services are beginning to convert to electric transportation. These businesses are likely to increase their inventory of EVs as prices for these vehicles decrease and the lower total cost of ownership is realized. Likewise, demand will grow for high-powered EV charging (i.e. direct current fast charge station or DCFC) in high transit areas. Explore opportunities to partner with these entities to deploy DCFC for public use.   Integrate EV deployment plans of these business entities in the County's EV strategy development.

Equity Considerations

Equity Concerns

Lower-income residents and renters are less likely to afford an EV or have access to charging infrastructure.

How can this recommendation be implemented to lead to equitable outcomes?

- Create an EV or hybrid car voucher/discount program with ZIP or similar short-term car rental or share programs.
- Locate short-term rental cars in equity emphasis areas near County installed EVSE.
- Support community-wide car share program in Equity Areas via grants and partnership to purchase EVs and install EVSEs.
- Create a program to recondition hybrid or EVs which have been retired from the County's EV fleet for reuse in a community-wide car share program.
- Create multilingual advertisements of EV Car share programs and leverage the trusted voices of the community to disseminate information about the programs.

Helpful Resources

- **Resource**: City of Alexandria, VA
    - Link: [Electric Vehicle Charging Infrastructure Readiness Strategy](#)
    - Description: This city strategy provides recommendations for deploying EV charging infrastructure, strengthening local codes to support EV deployment, and enhancing communication and public awareness.
- **Resource**: Forth Mobility, Hacienda CDC
    - Link: https://forthmobility.org/storage/app/media/Documents/2018.07_cev_casestudy_FINAL.pdf
    - Description: A case study of an EV carshare pilot program coordinated by the Latino Community Development Corporation in the Cully neighborhood of Portland, OR, and the Community EV Project
- **Resource**: National Renewable Energy Laboratory
    - Link: [Integrating Electric Vehicle Charging Infrastructure into Commercial Buildings and Mixed-Use Communities: Design, Modeling, and Control Optimization Opportunities: Preprint (nrel.gov)](#)
    - Description: Overview of an EV charging pilot, energy modeling, and how to synergistically integrate EV charging with building loads and distributed generation
- **Resource**: MWCOG
    - Link: https://www.bing.com/search?q=pathway+for+cities+trying+to+increase+ev+charging&cvid=cd74ee2dbbd34d409e0c3bcf1c28cfab&aqs=edge..69i57.10395j0j4&FORM=ANAB01&PC=U531
    - Description: Pathways to EV: Preparing Cities for the Transition to Electric Vehicles. Provides an overview of state policies, city strategies, utilities, organization and planning, and partnerships.
- **Resource:** City of Columbus, OH
    - Link: [mud-case-study-final.pdf (d2rfd3nxvhnf29.cloudfront.net)](#)

- o Description: A case study on the Smart Colombus initiative to expand the EV market by increasing access to residential EVSE at multi-family residential properties.
- **Resource**: City of Sacramento, CA
  - o Link: EVStrategy_171212_FINAL_CityOfSacramento.pdf
  - o Description: Sacramento's EV Strategy. Provides an overview of the carshare program and strategies for identifying priority EV locations and reaching vulnerable populations.

Recommendation #20

Implement Climate-Resilient Stormwater Management and Expand Flood Mitigation Programs

Description

Improving and expanding the County's existing flood mitigation programs must be a top priority. From 2018-2021, there were 4,362 complaints to the County's 311 hotline, which were water-related: Flooded basements, backyards, streets, and even sinkholes[1]. Flooding is front-and-center as one of the primary concerns of County residents. With the number of properties at risk of flooding expected to increase by 4.4% over the next 30 years, the County will experience an estimated $15.8 million of annual flood damage, an 18% increase from today[2]. Revaluation of the County's stormwater standards, guides, and code to include climate resiliency factors will be vital to creating community-wide climate resiliency.

Co-Benefits

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

Time Frame
0-3 years

Proposed Measurement & Tracking

Create publicly available and interactive GIS mapping by subwatershed with the following data located by address or permit and tracked on an annual basis:

- Development projects in planning, under construction, or completed(include permit number).
- Track location and number of 311 drainage and flooding complaints
- Track and locate by subwatershed, impervious surface area reductions and increases greater than 500 sq. ft.
- All flood insurance claims by address.
- Track and locate by subwatershed, all issued waivers, letters of revision, exemptions, variances for Stormwater Management regulations, FEMA floodplains, and County Floodplains. Overlayed with 311 drainage and flood complaints over last 3 years.

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[1] Drainage and Flooding in Prince George's County', Prince George's County Department of Permitting, Inspections and Enforcement (DPIE) / Department of Public Works and Transportation (DPW&T) / Department of the Environment (DOE)

[2] Flood Factor (n.d.). Flood risk is increasing for Prince George's County. https://floodfactor.com/county/prince-george's-county-maryland/24033_fsid#summary

Capacity and Funding:

What Capacity and funding is necessary to enact this recommendation?

1. Support and coordination of the County Executive and County Council Office to revise the County Code of Ordinance.

2. Allocate an ongoing annual budget for dedicated consultant support to aid in modeling efforts and revisions to design manual redesign/revision standards with climate-resilient criteria.

3. Allocate budget for consultant to perform study to inform and recommend climate-resilient code changes.

4. Allocate an ongoing annual budget to revise existing CIP projects under design to include climate-resilient flood and stormwater management practices. Revision should have a specific focus to adapt the following types of projects: Drainage improvements, roadways, bridges, culverts, SWM facilities, stream restoration, and flood mitigation.

5. Create a sustainable funding source for Climate Resilience Rebates to implement Net Zero Runoff practices and climate resilient practices for all residential properties(including multifamily complexes).

6. Professional development for county workers regarding new regulations, design guidelines, and enforcement of code.

Implementation Steps

Step 1: Refine current draft best management practice technical standard updates and pass County Council resolution to update County standards to limit residential flooding from stormwater and address drainage complaints.

- Implement recommendations compiled by DPIE, DoE, and DPW&T(see under Resources) in 2020 as actionable, practical, and wide-ranging mid-term and long-term recommendations to reduce residential and commercial flooding.

- Perform study to inform revisions of code and design guidelines referenced in County Code of Ordinance (Subtitle 32: Water Resources Protection and Grading) for greater climate resilience.: Water Resources Protection and Grading. The study will also explore solutions for high groundwater tables, inland flooding from extreme precipitation, benefits of using a higher range of runoff coefficient factors(for example, lawn), innovative flood and runoff storage solutions for extreme precipitation.

Step 2: Require County stormwater(SWM) standards meet projected climate change impacts by using approved downscaled and up-to-date climate impact information to reevaluate peak rainfall estimates and future design storm profiles. Evaluate SWM standards using this criterion at least every three (3) years. Require all upgrades of County storm drain systems and CIP roadway, bridge, culvert, and stormwater management repair or renovation projects to meet climate-adaptation design criteria.

Step 3: Revise Prince George's County Code of Ordinance to incorporate and require climate resiliency practices:

Revise Subtitle 32: Water Resources Protection and Grading and related Divisions:

- Define Maximum Extent Possible(MEP) based on adaptive subwatershed modeling criteria(EPA's SWMM or other comparable modeling) rather than existing code's allowance for discretionary review recommendations.
- Deter and discourage land disturbance activities or structures within floodplains. Strictly enforce the minimum standard requiring any proposed or existing structures and buildings under permit for renovation, including flood-prone locations (nonriverine flooding), to be raised three feet above the site's 100-year storm elevation to increase the structure's climate resilience.
- Eliminate exemptions from requirements, variances, or waivers that allow altering elevations to build in the floodplain.

Revise Subtitle 4: Building and related Divisions:

- Encourage residential greywater reuse as a Net Zero practice and as an accepted regulatory green infrastructure stormwater management practice.
- Require floodproofing, mechanical and electrical equipment above the base flood elevation, and backup electrical and water feeds.
- Add new drainage design criteria requiring flood and mold protections for building permits and/or licensing of rental housing. Inspection criteria should be updated accordingly.

Equity Considerations

Equity Concerns

Historical development practices placed low-income people and communities of color in flood-prone areas.

Recommendation Implemented Considerations To Lead To Equitable Outcomes.

- Require CIP or other processes to prioritize infrastructure maintenance and upgrades in Equity Focus Areas.
- Provide financial assistance for homeowners and landlords that demonstrate the need for floodproofing and mold abatement from high water tables or chronic drainage issues.
- Develop an educational campaign on the issue of basement flooding and mold in multiple languages.
- Prioritize providing residents of Equity Emphasis Areas priority access to clean-up assistance, dumpsters, and other necessary resources after a major flood or storm event.
- Prioritize and increase purchasing of flood-prone structures to help residents in floodplains relocate.

Helpful Resources

- **Resource: Flood Factor-**Find Your Home's Flood Factor. Uses past floods, current risks, and future projections based on peer-reviewed research from world's leading flood modelers. https://floodfactor.com/

- **Resource:** Residential Drainage: A Homeowner's Guide to Drainage Problems and Solutions
    - **Organization:** Prince George's County Department of the Environment

https://www.princegeorgescountymd.gov/DocumentCenter/View/83/Homeowners-Guide-to-Drainage-Problems-PDF

- **Resource:** [Incorporating Climate Change into Stormwater Design Standards](https://www.princegeorgescountymd.gov/DocumentCenter/View/83/Homeowners-Guide-to-Drainage-Problems-PDF)
  - o Organization: RAND Corporation, Cornell University, Carnegie Mellon University
  - o Description: Presentation on developing Intensity Duration Frequency (IDF) curves for the Chesapeake Bay Watershed based on future projections.

- **Resource:** [Developing a Stormwater Quality Management Standard (QMS) in Light of a Changing Climate](#)
  - o Organization: Engineers Canada
  - o Description: Study on development of risk and quality management standard to assist municipalities and engineers in designing, operating, maintaining and improving stormwater management systems ready for a changing climate. Includes stormwater and flood management guidelines, select municipal stormwater design standards, existing international risk and quality management standards, and best practices to integrate climate change considerations into SW planning and management.

- **Resource:** [Community Solutions for Stormwater Management](#)
  - o Organization: EPA
  - o Description: Long-term planning guide. Includes components of a stormwater plan and progress checklists.

- **Resource:** [Stormwater Stewardship Grant Program](#)
  - o Organization: Prince George's County DOE
  - o Description: Funds on-the-ground restoration activities that improve neighborhoods, improve water quality, and engage Prince George's County residents in the water restoration and protection.

- **Resource:** Drainage and Flooding in Prince George's County', Prince George's County Department of Permitting, Inspections and Enforcement (DPIE) / Department of Public Works and Transportation (DPW&T) / Department of the Environment (DOE)

Reduce Exposure of Vulnerable Populations to Extreme Heat

Description

As we plan for a future with higher temperatures and more heat waves, the County must make necessary changes to the environment to lower temperatures while also employing strategies for prevention and treatment of heat-related illness, especially in high-risk populations.

 To provide resources where they are needed most, the county needs accurate, granular, up-to-date data about where more vulnerable people are exposed to more heat. Thermal mapping, a study of tree-canopy cover, and a targeted Shade Study will provide data for a better understanding of heat distribution throughout the County. These studies will be used for a county-wide Heat Vulnerability Assessment that incorporates environmental factors, demographic data, and social determinants of health to calculate and map heat vulnerability indices for different locations. Populations at increased risk of adverse health outcomes related to heat exposure include people who work and play outdoors, older adults, children, people of color, people in lower-income households, and people experiencing homelessness. Mapping that brings these data together will help county decision makers invest first in programs for neighborhoods with the greatest need.

The Heat Vulnerability Index combined with study maps will inform and prioritize implementation strategies in the most heat vulnerable neighborhoods. As part of this recommendation, the County will also pursue and support a pilot agreement with public utility providers to implement undergrounding overhead utilities within designated priority areas of vulnerable communities.   Undergrounding aerial utilities will ultimately enable long-term tree canopy growth for shade and create a more inviting streetscape at important gatherings and street-side commercial corridors within the community.

Co-Benefits

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

Time Frame
0-4 years

Proposed Measurement & Tracking

On an annual basis track, update, and map the following:

- T*rack cooling strategies* deployed in vulnerable areas.
- Map impervious areas created and removed, and tree cover gained or lost in vulnerable areas.
- Map and quantify aerial utilities undergrounded for entire County.
- Map and quantify installed cool and permeable paving and soil volume enhancements overlaid with trees loss or gained in the ROW for entire County.
- Update locations via GIS mapping of all CIP and municipal sidewalk replacements, tree planting both accomplished and planned over a 1–2-year span.

- Update temperature mapping and Heat Index.

Capacity and Funding:

What Capacity and funding is necessary to enact this recommendation?

1. Allocate additional funding to completing the recommended thermal mapping and land cover studies and partnering with an educational organization or institutional experts with expert knowledge in this area(e.g., NASA Develop, Portland State University, University of Maryland).
2. Allocate and budget for hiring additional full-time county staff to manage and facilitate a community-wide effort to engage in heat strategy workshops and measures.
3. Allocate and provide an additional budget for DPW&T to adapt to new sidewalk repair and replacement requirements.
4. Technical support for municipalities to adopt and implement new cooling strategies and pavement practices.

Implementation Steps

Step 1: Conduct the County's thermal mapping, tree canopy cover with shade study, and aerial utility mapping. With the support of a consulting firm, university researchers, or other partner organizations, the County will conduct this comprehensive mapping using remote sensing technologies and ground-level monitoring to create land surface temperature mapping. The thermal mapping will be overlaid with the following mapping: tree cover, impervious areas, and aerial utility coverage mapping.   The results from analyses will highlight the urban heat island hot spots across the County. In addition, the County will conduct shade study modeling in targeted areas of the County, identified as heat island hot spots and Equity Emphasis Areas.

Step 2: Conduct a Heat Vulnerability Assessment: With the land surface temperature and tree cover maps developed in Step 1, the County will conduct a neighborhood-level Heat Vulnerability Assessment. As part of this step, a Heat Vulnerability Index will be created to identify the County's most heat-exposed areas. Subsequently,   Heat vulnerability maps will help identify high-risk areas and target specific neighborhoods or sites to prioritize and expand heat mitigation and adaptation strategies.

Step 3: Stakeholder Engagement. With the Heat Vulnerability Assessment results, the County will develop and prioritize heat mitigation and adaptation opportunities (e.g., existing policies, programs, plan expansion to incorporate a heat component). The strategies should be developed and vetted through inter-Agency collaboration with community workshops, such as a series of heat strategy workshops or the formation of an extreme heat working group. The goal of this engagement should be to (1) better understand how residents currently struggle with the heat and their go-to coping measures and (2) to gauge interest and receive feedback on the list of prioritized heat mitigation and (3)inform the public about adaptation strategies.

Step 6: Finalize Heat Strategies. Finalize the heat mitigation and adaptation strategies and initiate implementation. Outline the timeline, implementation leaders and partners, performance metrics, and other relevant information for each strategy's action by end of 2022.

Step 7: Specific Code Revisions. Revise Prince George's County Code of Ordinance under Subtitle 4: Building, Subtitle 23-Roads and Sidewalks, and Subtitle 27A-Urban Centers and Corridor Nodes Development and Zoning Code to achieve the following:

- Require Green/Cool/PV Roof and Pavement Code with a specific focus to immediately require all County and local governments street and sidewalk replacement and repaving projects to use green/cool pavements in heat vulnerable areas.

- Require new roof and major roof replacements to be one or all the following: Green roofs, with native plants or vegetables and soil deep enough to support them, (2) house solar photovoltaic (PV) systems tied to the building, or (3) cool/albedo roofs.

- Require all new sidewalks or sidewalk repair projects with a width of 5'or greater to create soil volume, tree-friendly permeable paving materials with low reflectance, and cooling properties.

- Reduce maximum allowable street tree spacing from 50' spacing to 30' maximum spacing.

- Prohibit placement of trees intended to serve as street trees or provide long-term screening or buffer within a stormwater management facility. SWM facilities that promote long-term tree growth as part of providing stormwater management, such as Tree Trenches and similar tree-centric facilities, would not be included with this restriction. Of note, Filterra and similar facilities do not qualify for the exclusion.

Equity Considerations:

Equity Concern:

Past discriminatory and racist housing practices, for example redlining, has left many older neighborhoods devoid of shade.[1]

How can this recommendation be implemented to lead to equitable outcomes?

- Engage and promote landlords, tenants, and residential property owners to install energy-efficient replacement air conditioners and heating systems through community-wide grant programs with supplement Federal and state rebates for energy-efficient upgrades.

- Provide incentives or subsidies for residents of low and moderate-income housing and rental properties to reduce energy and water use, reduce waste heat, and minimize urban heat gain.

- Require utility companies to prioritize undergrounding aerial utility lines for a healthy urban tree canopy and more climate-resilient power supply.

Helpful Resources

- **Resource**:
  - *Urban Cooling Toolbox, C40*
  - Guidance on urban cooling solutions, including description of the strategy, things to keep in mind, achievable co-benefits, and city examples.
- **Resource**:

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[1] https://www.nytimes.com/interactive/2020/08/24/climate/racism-redlining-cities-global-warming.html

- o *Beat the Heat Toolkit, City of Philadelphia*
- **Resource**:
  - o *Reducing Urban Heat Islands: Compendium of Strategies, EPA*
  - o Provides an overview of heat islands (how they form, their impacts, etc.) and describes various strategies for state and local governments to mitigate heat, outlining how they work, benefits and costs, initiatives, and available resources.
- **Resource**:
  - o *Georgetown Climate Center Heat Island Toolkit, Georgetown Climate Center*
  - o Provides guidance to aid local governments in determining the right heat mitigation strategy and policy tools (e.g. mandates, incentives, public education programs, etc.) available.
- **Resource**
  - o *Georgetown Climate Center Green Infrastructure Toolkit, Georgetown Climate Center*
  - o Provides guidance to local governments in planning, implementing, and funding green infrastructure. The toolkit also includes best practices and lessons learned for integrating green infrastructure into existing processes and communication strategies.

Establish Energy Resilient Communities to Serve the Needs of Vulnerable

Description:

Providing basic services must be a critical component of our county's resilience strategy during and after severe climate change-induced storms or related power outage events. Climate resilience hubs will serve as essential lifelines to enable cost-free access to charge a phone, web-based communications, refrigerate medication, and connect with the larger community. These hubs will also provide a central location for residents impacted to gain immediate access to existing County and State government resources to aid in the overall community's recovery. Resilience hubs are not in place of emergency shelters but rather another tool in addition to standard emergency operations facilities to help meet the needs of vulnerable communities. The recommendation's goal will be to implement at least ten resilience hubs in climate-impacted vulnerable communities by 2030.

Co-Benefits

Within County Control

Alignment with Existing Initiatives

Technical Feasibility

Cost-Effectiveness

Proposed Measurement & Tracking:

- # Resilience Hubs Serving Energy Resilience Zones or Extreme Heat "Hotspots"

- # Residents Served by Resilience Hubs
  (including specific workshops or events as well as use during specific incidents)

- Demographic information (age, race, income, address/housing status, etc.) for users of Resilience Hubs

- Amount of Renewable energy generated and energy storage capacity.

- Date and reason Resiliency Hubs utilized.

Time Frame

3-10 years

Capacity and Funding:

What Capacity and funding is necessary to enact this recommendation?

1. Dedicate annual budget and allocate funding for additional county staff to support the ongoing development of Resilience Hubs. Note, implementation costs of resilience hubs

will vary based on the proposed site and the size of the population a Hub may be intended to serve.

2. Dedicate an annual budget for financial incentives and ongoing support for community organizations to serve as Resilience Hubs.

3. Allocate funding for a renewable energy potential analysis to inform the resilience hub strategy.

4. Broaden existing Emergency Management outreach and education efforts to alert communities to Resilience Hub locations and the differences in the support offered Resilience Hubs vs. Emergency Shelters.

Implementation Steps:

Step 1: Identify High Priority Locations for Resilience Hubs. Using existing maps, energy resilience zones, equity emphasis areas, thermal mapping, and other relevant map layers, the County will prioritize ten locations for resilience hubs.

Step 2: Identify Partner Organizations. Identify likely partners based on the priority areas as identified under Step 1. Issue Request for Proposal(RFP) for targeted community partners or create a rolling application process. Identifying multiple potential locations for each priority zone may be necessary.

Step 3: Engage Community to Design Resilience Hubs.

- Tailor programs and services offered by each designated Resiliency Hub to meet the community's needs.

- Ensure a community-specific approach by first engaging with residents through workshops, surveys, and other means. This engagement will better identify required support based on the specific Hub location. Partnering with trust organizations deeply rooted in the communities they serve and consider the use of existing community centers, churches, etc., are key strategies to increase the likelihood of success

- Streamline county's permitting and code compliance all resiliency hub-related improvements to encourage partnership participation.

- Incubate resiliency innovation and entrepreneurship through public-private partnerships by incorporating resilience hub locations into the County's Economic Development Plans.

- Reward participating businesses or entities through public recognition and fee and tax reduction incentives.

Step 4: Develop Funding Strategy. Co-develop funding strategies with the resilience hub partners. Different partners may have access to additional funding sources, and a co-proposal may appeal to many funders. Funding strategy should include the Maryland Energy Administration(MEA) Resiliency Hub Grant Program and grant funders that have a traditional interest in supporting vulnerable communities, disaster preparedness, environment, and energy(FEMA, HUD, for example). Creating financial incentives for a public-private partnership to retrofit facilities more quickly as resilience hubs should also be a consideration.

Equity considerations:

Equity concerns:

Potential partnering organizations within vulnerable communities may be cash-strapped or prioritize investing available resources on the community's existing issues versus investment in preparing for future climate change impacts.

How can the recommendation be implemented to lead to equitable outcomes?

- Engage directly with the community to inform the location, design, and services of resilience hubs.
- Host multi-lingual workshops based on specific community demographics versus overall County demographics.
- Locate Resilience hubs as part of every economic redevelopment plan for equity areas.
- Provide timely support for businesses within vulnerable communities to remain open for services and solvent after a severe climate change-induced storm or related power outage events.

Helpful Resources:

- **Resource**: [Resilience Hubs Website](#)
  - o Organization: Urban Sustainability Directors Network
  - o Description: A clearinghouse for information on Resilience Hubs, including case studies and resources.
- **Resource**: [MEA FY22 Resiliency Hub Grant Program](#)
  - o Organization: Maryland Energy Administration (MEA)
  - o Description: Information including grant requirements and proposal deadlines for the Resiliency Hub Grant Program.
- **Resource**: [Baltimore City Community Resiliency Hub Program](#)
  - o Organization: City of Baltimore
  - o Description: This website summarizes the Baltimore Resiliency Hub Program, including a map of the ten resiliency hub partner locations.
- Resource: [Resilience Hub Business Plan](#)
  - o Organization: Cambridge Community Center
  - o Description: A business plan for the implementation of a Resilience Hub in Cambridge, Massachusetts including detailed implementation steps, timeline, roles and responsibilities, and costs.

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:

- o 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.

- o Require and update all companion planning design guidelines to promote and incentivize conservation landscaping.

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

- o Require subwatershed level Storm Water Management Model(SWMM) or similar model) to more accurately model runoff quantity and quality.

- o 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.

- o 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.

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
  - o Organization: FEMA
  - o 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
  - o Organization: Conservation International
  - o Description: Implementation guide includes technical definitions, co-benefits and cost savings, planning and policy-making, implementation, and funding information.
- **Resource:** Green Area Ratio (GAR)
  - o Organization: Washington DC Department of Energy & Environment
  - o 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
  - o Organization: Maryland Department of Natural Resources

- o 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](#)
  - o Organization: Maryland Department of Natural Resources
  - o Description: Directly supports on-the-ground implementation of nature-based projects through technical assistance, monitoring, and community outreach and education support.
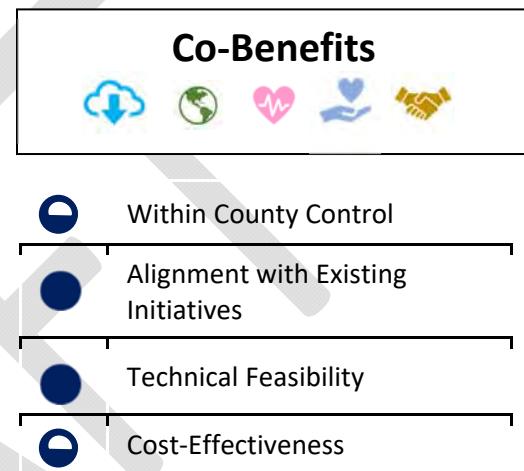
Recommendation #27

Promote a Healthy Food System Supported by Low-Carbon, Regenerative Agricultural Practices

Description:

Create and support a county-wide healthy food management program by implementing a sustainable and systemic approach to the entire life cycle of food within the County. Preservation of agricultural land in our rural and urban communities is a central tenet of this recommendation[1]. As our climate changes, the "breadbaskets" of the West may soon become unable to produce enough food beyond their communities. Therefore, our County must be forward-thinking and adopt zoning law and revise our codes to promote, enable, and incentivize permanently zoned agricultural land to preserve our County's ability to produce food locally. Dedicated lands for urban farming could also turn our County's food deserts into vibrant urban communities with direct access to their own locally sourced fresh food. Production of local food, in turn, drives local job creation and helps curb diets toward lower carbon healthy foods[2]. From farm to the table, urban farms can create and sustain community-based businesses and jobs.

Co-Benefits

Within County Control

Alignment with Existing Initiatives

Technical Feasibility

Cost-Effectiveness

Time Frame
0-3 years

Supporting a local and sustainable food system also has many intersections with climate planning. Reducing the distance that food travels from farm to plate helps to reduce transportation emissions. Reducing wasted food with organic diversion for localized composting for community and urban gardens will reduce greenhouse gases. Rural and urban farm regenerative agriculture practices will improve soil health, increase carbon sequestration, and increase water retention.

Proposed Measurement & Tracking

- Acres in agricultural and horticultural (native plant)production
- Tons of local fresh produce
- Number and location of Farmer's Markets
- Orchards in the County
- Secondary productions-wine, micro-breweries

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[1] https://healthyfoodpolicyproject.org/crosswalk

[2] https://buildingdetroit.org/land-reuse-programs/

- # Agricultural jobs
- # Farms (rural and urban)
- Estimated carbon sequestration

Capacity and Funding:

What Capacity and funding is necessary to enact this recommendation?

1. Increase funding to expand the County's University of Maryland Extension Services by hiring additional agents and supplemental programmatic support.

2. Increase funding to the Historic Agricultural Resources Preservation Program(HARPP).

3. Create Prince George's County Land Trust for natural resource preservation and create dedicated spaces for local food production.

Implementation Steps

Step 1: Integrate Climate Resilience into Local Food System Efforts. Develop partnerships to ensure that climate resilience, including related carbon sequestration goals and land use planning, are integrated into existing food system planning and support efforts. As part of this effort, DoE will help SCD articulate the carbon sequestration benefits of local agriculture and help track that metric. The County will also identify funding opportunities for projects and programs that align food system planning with climate action goals.

Step 2: Expand Community Education on Food and Climate. Through its partnerships, the County will support expanded community education and engagement on the following:

- Educate and engage the agricultural community and consumers to understand what actions they can take to reduce the carbon intensity of their food choices and farming practices.
- Increase public awareness of agricultural technical and financial assistance programs.
- Integrate climate resiliency education with the following county-sponsored education and training resources for local food production and farming:
  o Prince George's County Community College Agricultural/Urban Farming curriculum.
  o PGCPS Career and Technical Education program under Environmental, Agricultural, and Natural Resources.
  o Maryland Extension Service-Master Gardener's Program.

Step 3: Increase Demand for Local Food and Native Plant Production. Leverage the County's purchasing power to support local food production and agriculture through procurement policies:

- Support local native plant production through start-up grants for local non-profits and small farms to initiate contract growing of native plants for County Capital Improvement Programs'(CIP) stormwater management, street trees, and restoration projects.
  o Highlight local farm-to-table producers at County-sponsored events that serve foods or beverages.
    o Create dedicated grant and rebate programs to support community gardens, planting fruiting trees, and edible landscapes.
    o Create the Prince George's County Land Trust to transfer, purchase, or lease land from the County, government surplus land, or other private landowners for agricultural use.

- Encourage the adaptation of vacant and unwooded lots for agricultural production by allowing Land Trust first to choose all available government surplus land transfers.
    - Develop policy and programs that allow the repurposing of vacant or paved County lots for agricultural production.
    - Provide guidance on the soil remediation of potential contamination to protect public health and financial assistance removing impervious surfaces.

Step 4: Revise Prince George's County Code of Ordinance and applicable Zoning to support urban farming and community gardens to achieve the following:

- Specify which zones allow urban agriculture by including agriculture allowances in all land use tables, ensuring legal protection as farmland and ease of understanding where agriculture activities are permitted.
- Promote rainwater harvesting for onsite greywater reuse to irrigate and reduce onsite runoff.
- Enable onsite sale of farm produce without triggering commercial parking and additional facility requirements. Zoning and code revisions should also provide limited flex zoning for urban and rural farming(restaurant, produce street).
- Enable utilization of utility easements for dedicated community gardens.

Equity Considerations

Equity Concerns:

Healthy food access and opportunities to farm or garden are not equitably distributed in urban areas.

Recommendation Implementation Considerations To Lead To Equitable Outcomes

- Allow non-commercial agricultural production.   Commercial agricultural production is intended for sale, but not all urban growers want to sell their products.   Allowing residents to access land for non-commercial food production can increase their ability to grow food for themselves, their families, and share with the community.
- Revise County's tree rebate program to create a tract promoting edible landscapes and planting fruit trees in tandem with pollinator gardens.
- Provide grants to enable "corner stores" with refrigerators, increase shelf space, and train owners to handle fresh produce to ensure that items ripen slowly and have a longer shelf life.

Helpful Resources

- **Resource:** Healthy Food Policy Project
  https://healthyfoodpolicyproject.org/key-issues/zoning-for-urban-agriculture
- **Resource:** HARPP
  https://www.pgscd.org/agricultural-land-preservation/harpp/
- **Resource:** Conservation Agriculture
    - Org: FAO
    - Description: Website with fact sheets, resources, new and case studies related to conservation agriculture.
- **Resource:** Food, Agriculture, and Land Use Solutions

- o Organization: Project Drawdown
- o Description: Solutions to reduce GHG emissions and/or sequester carbon dioxide with benefit-cost data. Includes [conservation agriculture](), [farm irrigation efficiency](), [nutrient management](), [plant-rich diets](), [reduced food waste](), [regenerative annual cropping](). Each solution includes a Technical Assessment References resource.
- **Resource**: [Cool Farm Tool]()
  - o Org: Cool Farm Alliance
  - o Description: Online GHG, water, and biodiversity calculator for farmers.