

# PREPARING COMMUNITIES FOR FLOODING

Upgrading Stormwater Grey and  
Green Infrastructure to Reduce  
Flood Risks

## Facilitators:

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# Benefits of Improved Flood Resiliency and Integrating Nature-based Solutions

- Protect or provide habitat
- Improve water quality
- Slow down stormwater flows

## Environmental Benefit



- Protect public safety
- Reduce exposure to mold
- Reduce stress of a flood
- Reduce heat island effect

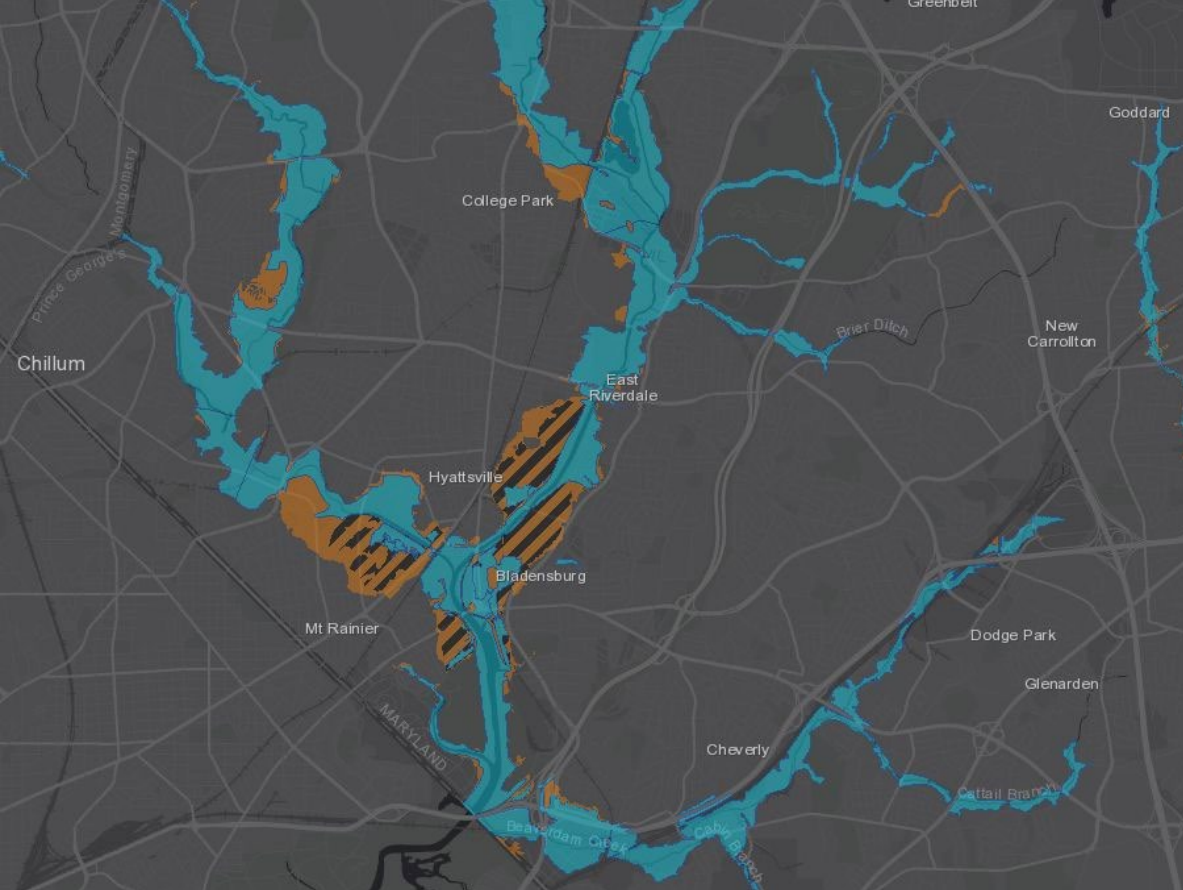
## Human Health Benefit



- Save money on
  - Cleanup
  - Travel and business disruptions
  - Property damage/loss
  - Repairing or rebuilding infrastructure
- Achieve multiple benefits and cost efficiencies from green infrastructure projects
- Reduce cooling costs by increasing shade

## Economic Benefit





# Snapshot of Efforts in the County

- Floodplain management policies, open space ordinance
- *Hazard Mitigation Plan*
- *PLAN 2035*
- *Green Infrastructure Plan*
- County Council resolution – begin a comprehensive flooding assessment and mapping study (adopted 2021)
- Duckett Dam vulnerability assessment (2020)
- *DoE Capital Improvement Program (Priority Drainage Relief Program)*
- Tree ReLEAF Grant Program, Rain Check Rebate Program, Arbor Day Every Day Program, and Tree Planting Demonstrations

The County participates in FEMA’s Community Rating System, which recognizes a community’s efforts to reduce their flood risks. Policy holders get a 10-25% discount on their federal flood insurance (NFIP) premiums.



# Change is Happening

- Green stormwater projects are popping up everywhere from home gardens to vast parking lots
- Towns are “right-sizing” culverts and upgrading stormwater infrastructure to accommodate heavier rains
- Natural flood storage, like floodplains and wetlands, is becoming more desirable than dams and levees
- Better recognition of the value of trees for slowing water down and providing shade
- Governments boosting support for resiliency, e.g.:
  - FEMA’s new Building Resilient Infrastructure and Communities (BRIC) grant program: \$500 million in 2020, \$1 billion in 2021
  - FEMA creating a new “resilience revolving loan fund” program to help communities invest in disaster prevention





## Preliminary Flood Resilience Action Recommendations (p.1)

- Maximize the County's flood resilience and reduce flood risk by re-evaluating stormwater standards and by implementing both the County's Mid-Term and Long-term Recommendations (DPIE / DPW&T / DOE) and improve access to information on County's flood risk / mitigation programs.
- Preserve the flood retention capacity of existing floodplains. Preserve and increase, if possible, the capacity of natural areas to manage additional flooding per future climate projections.
- Assess climate impacts on all high-hazard dams, including those currently deployed for flood control.





## Preliminary Flood Resilience Action Recommendations (p.2)

- Establish a County no net loss policy. Strengthen Woodland Conservation Act. Create or expand existing incentives for residents and local businesses to plant trees that expand urban tree canopy.
- Integrate green infrastructure (GI) projects into County capital improvement budgets, including the prioritization of creating additional publicly-accessible open, green spaces with potential for carbon sequestration on County properties. Prioritize nature-based solutions for carbon sequestration, flood prevention, and extreme heat mitigation by adopting and enforcing codes to require green infrastructure (GI) practices for new and existing properties.



# What does a successful Prince George's County flood resilience and green infrastructure program look like?

- WHO?
- WHAT?
- WHEN?
- WHERE?
- HOW?



## What could a flood resilience and green infrastructure program in Prince George's County look like?

- *E.g., storm drains and culverts are upgraded, rebates for backflow prevention valves, more natural areas are protected or restored to store floodwater, planting more trees, etc.*
- Zelda Bell-Flooding\_DPIE does it look at the site when permeable is paved over? Installing permeable pavement is not easy task (permitting, etc) - we should make it easier to build with permeable materials. Developer allowed to expand for parking-Remediation should remain.
- Stop destroying natural areas-law makers-need to be educated. Tree Preservation needed. NO NET Loss. The County's Green Infra. Plan is ignored.
- Green Space –school development-Government-Operations change needed. Comprehensive plan for infrastructure. Aging Infrastructure.
- County level solutions-sizing storm drains. Immediate responses for existing flood issues. Technical assistance. Action –grouped area solutions. More funding to take care of issues.
- Preserve existing trees. Stronger mitigation. No clear cutting. Require trees replaced in same location as removed.
- What does it look like-we need to help with existing vulnerable structures. Specific prioritization of improvements in areas of known issues.
  - Areas with existing flood problems need to be addressed as part of the County's climate adaptation efforts.
- People with medical needs or physical/mental disabilities should be a central consideration in emergency prep/response as well as in developing solutions to flooding



## Challenges

- 41K Acres lost. Better Stewards of our planning process. New Rewrite of zoning is an issue.
- Residents near Culverts and channels. Critical to have regular maintenance. More innovation. Bladensburg
- Watershed based approached-for tree plantings. Resources-federal.
- Zoning ordinance needs change. No Waivers
- Zoning/ordinances should support CAP
- Need a culture change within gov't

## Opportunities

- County pays attention to “infrastructure” - use this interest to spur county-level solutions ASAP
- Green infra. already exists so it should be utilized. Keeping trees is easier and cheaper than replanting new trees and yields multiple co-benefits (linkages with addressing heat islands, air quality, etc.).
- We know where flood-prone areas are already, so we should stop allowing development in these areas.
- Good plans already exist for the County, but they are not enforced.

## Who benefits?

- 

## Who is burdened or left out?

- People who are unable to leave home because they have no transportation, need critical medications-what happens

## How do we ensure equitable outcomes?

- *E.g., Prioritize projects, promotion of opportunities, or technical support in low-income communities*
- Make grant funding available up-front because the reimbursable basis blocks many from accessing the support to install green infra., etc.

# What does success in the County look like in the next 3-5 years?

- Research and Data Needs
- Policy/Ordinance Changes
- Residential Outreach Efforts
- Monitoring and Evaluation

- Need remedies to existing problems! Many well-known recurring issues in some areas (e.g. Eagle Harbor is one site)
- Make sure people with medical needs or disabilities are included in developing solutions as they are more vulnerable to flooding impacts
- Make it easier to do the resilient thing, such as install permeable pavement
- Need to stop destroying existing natural areas -- it is easier to save existing trees than plant new ones. Stop ignoring the Green Infra. Plan. Zoning ordinance rewrite that is about to be passed is a major concern (it *should* support CAP, but this will not).
- Watershed-based strategies are best. Should at least make sure that trees are replaced within same watershed when they are cut.
- Herb Jones: Losing green space and trees for school construction - not how it should work.
- Many residents live in fear. Have experienced multiple flood losses. They must put out sandbags at the first drop of rain. It should not be like this. These folks need immediate responses to these problems.
- People live in the path of culverts that are owned by the County, and experience flooding due to these. Regular maintenance is needed. Can these culverts be upgraded/improved to help resolve these issues?
- Note that the County does pay attention to “infrastructure” -- use this interest to implement county-level solutions to flooding ASAP.
- It would be helpful to provide technical assistance to groups of homeowners/others who are impacted by flooding in a specific location
- Need to expand grant/financial incentive programs, especially by providing funds up-front rather than on a reimbursement basis (prevents many from accessing the support)
- We must keep replacing trees because forests are cut down, but trees don't have to be replaced in the same location, so those green infra. benefits are not retained locally.
- Large amounts of forest loss are regularly approved by the County. This runs counter to County's stated priorities as well as the recommendations being developed in CAP.
- Need to halt development in flood-prone areas. We still allow it. This seems like a basic step to reduce flood impacts going forward.
- Need to be a better steward of our planning in the County; developers still get approved so easily despite the projects often being counter to other priorities.

Apply to be a County Climate Action Resident Expert

- <https://forms.gle/z92cx7LLrYTmNLN17>

Visit the DMV Climate Partners Website

- <https://climatepartners.org>

Learn More About Upcoming Meetings

- [mypgc.us/climateactionplan](http://mypgc.us/climateactionplan)

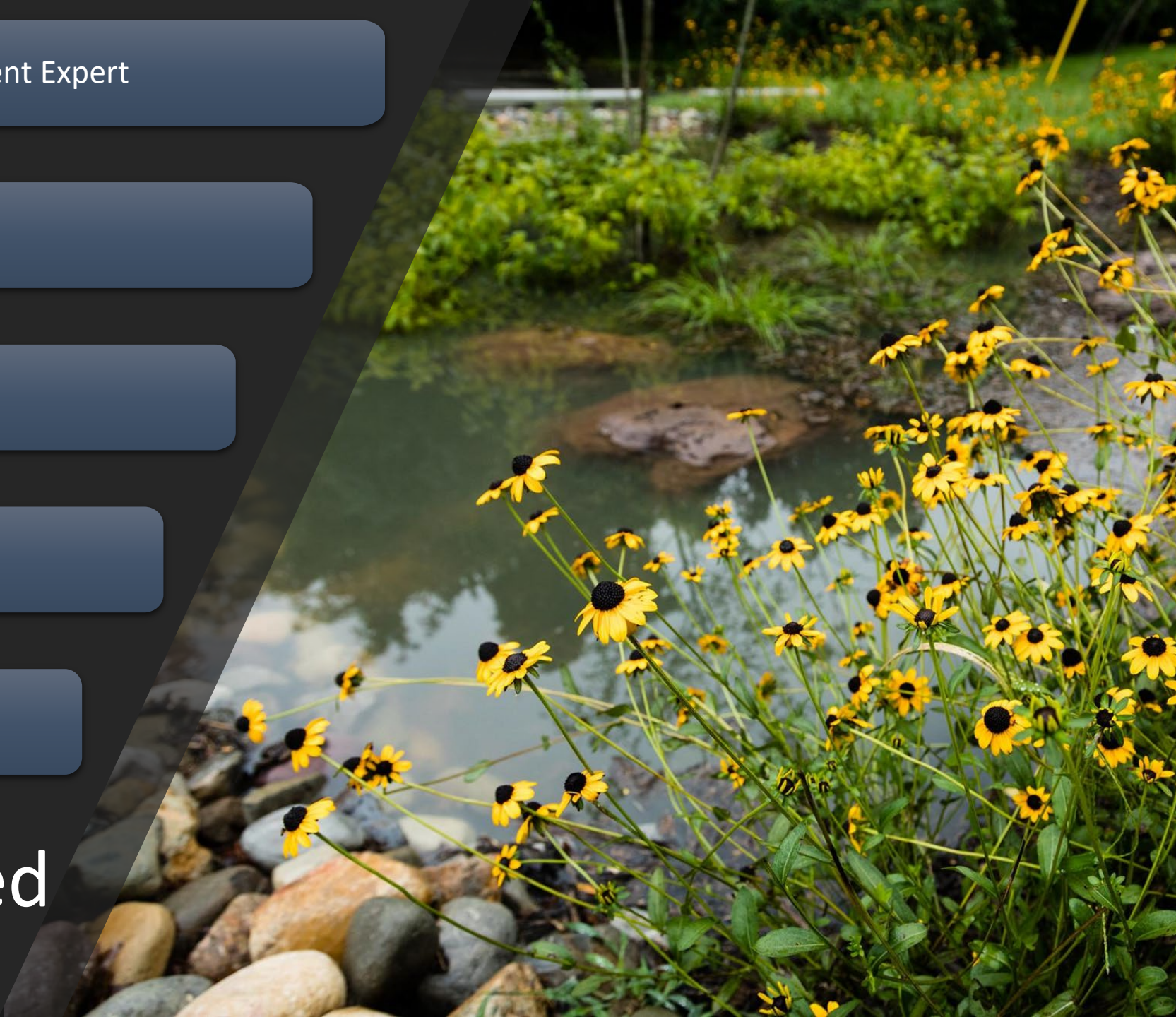
Explore the County CAP Virtual House

- <https://bit.ly/2S7PgEQ>

Provide Comments and Feedback

- <https://bit.ly/3vBKqNJ>


# Stay Engaged



### 3. PREPARING COMMUNITIES FOR FLOODING CHAT TEXT

19:12:06	From Maureen Fine Flooding : First and foremost, we must stop opening up protected land to development---for example, Bureau of Engraving should not be moved to our federally protected lands, with serious negative impacts to 2 streams.
19:12:07	From Laura Allen, Berwyn Heights : I'd love to know when the first meeting occurred. I'm not sure Berwyn Heights was included.
19:13:00	From FLOODING - LINDA : That seems to be a general weakness in the County - getting everyone the news timely, letting people into processes on the beginning side Laura.
19:17:59	From FLOODING - LINDA : Enhancing health promoting environment would keep us all healthier, too, so we need a little less therapy, more wellness.
19:19:17	From Tonya O Charleston to 🗣️ Facilitator: Stephanie Dalke, UMD, EFC(Direct Message) : In Southern PG our roads are low, narrow, sloping and winding with no natural or manmade gutters running along side them. Every heavy rain storm the roads flood. Why can't 1-2 foot trenches be made along side our roads.
19:20:33	From Tonya O Charleston to 🗣️ Facilitator: Stephanie Dalke, UMD, EFC(Direct Message) : The County tree selection in my area is horrible. Why aren't we planting Burch, cat tail, lilies are other plant/tree selections that love water.
19:20:59	From FLOODING - LINDA : We need strategies to GET DEVELOPMENT ON THE TEAM on green infrastructure. Clearcutting and paving isn't 2021.
19:21:58	From Staci Hartwell : Hi Mary, Please contact me: Staci Hartwell, NAACP Prince George's County Branch. I am the Chair for Environmental and Climate Justice. My number is 617 257 8893, SRHConsulting@gmail.com. I look forward to hearing from you.
19:22:00	From Nancy Lively to 🗣️ Facilitator: Stephanie Dalke, UMD, EFC(Direct Message) : I live in Collington Continuing care community off Lottsford road There is a possible building plan that may cut down over 100 trees. WE are very eager that this not happen.
19:22:51	From FLOODING - LINDA : These are government and private citizen efforts. We should track commercial contributions too - especially housing and commercial enterprises construction
19:23:00	From Nancy Lively to 🗣️ Facilitator: Stephanie Dalke, UMD, EFC(Direct Message) : PG county has done a fantastic job of keeping our small 'lake' which is a flood mitigation dam by cleaning out the silt so it still works well. We appreciate this kind of action at Collington CC Community
19:23:07	From Tonya O Charleston to 🗣️ Facilitator: Stephanie Dalke, UMD, EFC(Direct Message) : More Residents would use Rain Barrels if they weren't so expensive.
19:25:44	From Laura Allen, Berwyn Heights : In the interest of time, I'm putting my comments in the chat. I'm the Town Manager of Berwyn Heights. I'm concerned about an exclusively green infrastructure approach when the stormwater system is undersized. Second, a countywide CAP misses the opportunity for communities to develop their own CAPs. Consider creating a template that all municipalities can plug their specific approaches into. This way the county can initiate a coordinated approach while supporting local control and enabling communities to address the issues that mean the most to them. Thank you. lallen@berwynheightsmd.gov
19:26:06	From Steve : You provided a great synopsis of the changing environmental factors- more intense precipitation potentially more frequently. To accommodate this, the County needs to adopt impact fees for new development in order to upgrade existing infrastructure, update design criteria for new development to 100% onsite treatment/retention, and using a more stout target than the 100 year storm. Either come up with a new model that specifically addresses the stronger pulses of precipitation/stormwater that occur during deluges, or move to a 250 or 500 year storm if relying on current modeling. Can also develop an incentive program, wherein developments that go beyond the

	minimum design thresholds and serve as a sink for additional floodwaters, are credited with creating a 'community benefit' that offsets development fees.
19:26:23	From Tonya O Charleston to 🗣️ Facilitator: Stephanie Dalke, UMD, EFC(Direct Message) : Who manages and oversees the Residential development in our county? Why are they allowing developers to tear down ALL natural Barriers(Trees etc.) change the earth landscape and build without consideration of flooding/erosion.
19:26:48	From Lily Fountain : Floods: Please add the preservation of mature trees to the written recommendations. New trees are not effective at stormwater control but great for the far future.
19:26:59	From FLOODING - LINDA : Great input already, in the Chat here!!
19:27:18	From Staci Hartwell : I think you should do a focus group study.
19:27:21	From FLOODING Melissa Daston : IF you put up the white board we can do all this simultaneously
19:28:25	From FLOODING - LINDA : DPIE and District Council should hold hearings ON sites lol
19:28:37	From Miriam Bader, City of College Park : I am the Senior Planner for the City of College Park. The Zoning Ordinance needs to be reviewed through the flood prevention lens, i.e. the definition of lot coverage should differentiate between pervious and impervious surface. For example, if someone uses a permeable surface for a driveway, this should be acknowledged and not treated the same as impervious surface.
19:29:17	From Abigail Reznick : My vision is that all homes have solar panels, rain gardens and rain barrels
19:29:44	From FLOODING - LINDA : I would like more appreciation for green space AND the wildlife and life that inhabit it
19:30:27	From Staci Hartwell : What will SCMagLev do to our green space?!
19:31:27	From FLOODING - LINDA : Federal Mint development, terrible idea for BARC
19:32:02	From 🗣️ Facilitator: Stephanie Dalke, UMD, EFC to 📄 Co-Facilitator: Mary Abe, DoE(Direct Message) : I want to make sure some of the other people with hands raised get a moment
19:32:04	From Abigail Reznick : Stop the Maglev train from being built
19:32:04	From Steve : Remember that some communities are incorporated and have some staff and expertise to deal with proximate concerns. On the other hand, some areas are not, and are then dependent on County services to address local concerns down to the site-level. Erosion of habitat and incursions into areas protected by Chesapeake Critical Area is a case in point. Shunting street runoff into existing creeks and channels, increase volume, velocity and erosion and creating sediment, pollutant and contaminant load in protected waters is still being done. The 'thousand cuts' are in play, and the concessions allowing clearing and filling and paving that are occurring at the site level contribute to infrastructure inadequacy/obsolescence.
19:32:23	From FLOODING Melissa Daston : I have multiple suggestions. 1) Target specific areas currently having flooding and put in a moratorium on development 2) TCP should not allow land swamping 3)No clear cutting development 4) County should be purchasing land to maintain existing forest area as done in New England. 5) Create incentive for solar farms that would allow farmers a way to make money on their land other than selling to developers.
19:32:48	From FLOODING - LINDA : Hear, Hear Henry Cole
19:33:05	From Flooding Karen : Clusters of flooded basements in my neighborhood near the Anacostia...can the county develop best practices to help neighborhood groups solve their shared flood risk problems
19:33:12	From Tonya O Charleston : Who approves the developers in Southern PG. Every Community built the last 15 years mowed down every tree> Loaded on trucks and shipped out somewhere for revenue outside our County. The changes in the natural slope of the land is causing the flooding.
19:33:14	From Steve : There should be an audit of DPIE/Council decisions that extend variances or waivers or extend other concessions, in order to quantify the loss of resources and attributes that are protected on paper.
19:35:09	From Tonya O Charleston : Our roads that branch off 210 are narrow, winding and low with no natural or man made trenches running beside them. Every time there is heavy raining, there is flooding.
19:35:21	From FLOODING - LINDA : Are we too far beyond the small subsistence and truck farm days? Are there any young people today who WANT to raise food? I suspect that there ARE.
19:39:06	From 🗣️ Facilitator: Stephanie Dalke, UMD, EFC : FYI, we have just a couple of minutes left, but there are ways to stay involved and provide input after this meeting!

19:39:23	From Mayor Alan Thompson : To add on to Ms. Riazi's comment, perhaps instead of the current policy of "replace a tree with a tree" have a policy to "replace removed trees with trees that in total *weigh the same* as the removed trees"
19:39:33	From FLOODING Melissa Daston : FYI in 2019 and 2020 PG Cty approved development of 41,116 acres. That's tremendous loss
19:39:38	From Tonya O Charleston : In Southern PG, stop planting the lowest grade of hardwood maples. They are tearing up sidewalks. Look into Trees/plants that LOVE water in all our low areas to absorb some of the standing flood, mosquito breeding waters. (Birch, Cattail, Lilies etc.)
19:41:00	From Steve : <a href="https://www.cdc.gov/nceh/hsb/disaster/atriskguidance.pdf">https://www.cdc.gov/nceh/hsb/disaster/atriskguidance.pdf</a>
19:41:41	From James Hunter : Are there any studies done by the county to quantify the flood mitigation of green infrastructure practices? Most "green" stormwater practices are meant for water quality and to meet regulatory demands, and not flooding,
19:42:42	From Patrick Wojahn : I'll type my comment in chat - we need to develop a strategy for stormwater remediation in each part of the watershed - each area that leads to an individual stream within the county. Trees that are taken out should be replaced upstream in the same watershed. And we need to bring more resources to bear to make our infrastructure more resilient, improve stormwater retention, build off of the Corvias partnership to increase the number of projects that reduce the quantity of runoff as well as improve the quality
19:42:57	From Linda : Yes. I oppose the New zoning legislation
19:43:01	From Abigail Reznick : I agree that we need to stop development in flood prone areas
19:43:19	From Steve : Planners *should* be able to look at projected changes in storm intensity, existing capacity of systems to handle that, and identify what build-out looks like. Of course legal forces and technology improvements will move that bar. But the baseline should be established.
19:43:23	From Staci Hartwell : We need VERTICAL DEVELOPMENT and NOT S-P-R-A-W-L
19:43:57	From Laura Allen, Berwyn Heights : A requirement that property owners maintain the water on their property can help the development process.
19:45:01	From Nancy Lively to  Facilitator: Stephanie Dalke, UMD, EFC(Direct Message) : No more homes in areas already know for flooding.