Prioritization Framework

A prioritization framework was developed to support transparent, equitable, and actionable flood resilience planning across the study area. The framework reflects values identified during stakeholder engagement, incorporates regional and local datasets, and aligns with community concerns around equity, visibility, and feasibility of BGI implementation.

DEVELOPING THE FRAMEWORK

The framework builds upon a model developed by the District DOEE in its *Resilience Focus Area Strategy and Appendices* (2023). The original model scores areas based on Vulnerable People, Vulnerable Assets, and Actionability. Several modifications were made to adapt this framework for a cross-jurisdictional context, including expanding the scoring categories and standardizing data inputs to cover both the D.C. and Prince George's County.

The revised framework assigns equal weighting to three primary categories: Social Vulnerability and Equity, Asset Vulnerability, and Actionability, each worth 30 points. A fourth factor, Watershed-Wide Impact, contributes 10 points and reflects a central theme of the study—reducing downstream flooding through coordinated upstream intervention. Scores for each metric were calculated using values normalized by Focus Area acreage to support comparability. Appendix D includes the full scoring results and is accompanied by a user note highlighting how community priorities and project-specific co-benefits can be integrated into future decision-making.

Watershed-Wide Impact

Flooding is often more severe in downstream communities, yet meaningful mitigation frequently depends on implementing solutions upstream. This reality informed the original selection of the three study watersheds and was reinforced throughout SAG meetings and community outreach. To capture this relationship in the scoring model, the project team added a Watershed-Wide Impact factor.

Focus Areas were categorized by position within each watershed and assigned accordingly: 10 points for headwaters, 5 for midstream, and 0 for downstream. While no points were deducted from downstream areas, upstream Focus Areas were intentionally favored to incentivize projects that reduce runoff closer to the source.

Actionability

The Actionability score quantifies the number and concentration of viable BGI opportunities in each Focus Area. Projects were tallied or measured by type—area (acres), length (linear feet), or count—and normalized by Focus Area size. Practices like Pond Retrofits, Multi-Purpose Floodable Public Recreational Spaces, and GSI were scored by area; linear practices like Blue-Green Streets and Stream Daylighting

How the BGI Opportunity Mapping Informs Prioritization

The Actionability score in this framework is grounded in the mapped opportunities identified during the BGI analysis phase. For each Focus Area, the project team measured the number, length, or area of viable opportunities for each BGI practice. These measurements were normalized by acreage and used as proxies for implementation potential and likely volume reduction.

This method ensures that the prioritization framework builds directly on the earlier work of expert-guided BGI siting. It also maintains consistency across jurisdictions and allows for a flexible foundation that can evolve as more detailed design information becomes available.

by length; and discrete interventions such as Storm Drain Outfall retrofits or Bridge and Culvert Modifications by count.

Although direct runoff modeling was not performed, the scoring system was designed to approximate flood storage potential. For example, mapped area of pond retrofits or GSI serves as a practical surrogate for volume, assuming a typical depth. Since the BGI opportunities were identified in hydrologically strategic locations—such as primary drainage corridors—they are also well-positioned to intercept meaningful runoff. These assumptions make Actionability a strong planning-level proxy for volume reduction.

Social Vulnerability and Equity

This scoring category evaluates population and equity indicators to help direct flood resilience investment toward socially vulnerable communities. Metrics include:

- CDC Social Vulnerability Index (SVI) and COG Equity Emphasis Areas (EEAs), weighted by acreage within each Focus Area.
- Count of facilities serving vulnerable populations, including affordable housing, senior living, and childcare centers.
- Total population and population density, based on Census block group data.

These indicators ensure that planning efforts remain inclusive and responsive to those most at risk.

Asset Vulnerability

Asset Vulnerability assesses the physical exposure of buildings, infrastructure, and facilities to flooding. Metrics include:

- Mapped flood hazard areas, using FEMA and Prince George's County floodplains.
- Blue Spot and IFM flood modeling, capturing local surface water accumulation and urban flooding risk.
- Buildings and roadways within flood-prone areas, adjusted by land use and building type.
- Critical and community-serving facilities, including schools, emergency services, and transportation assets, weighted by function.

All values were normalized by Focus Area acreage to enable consistent scoring across the study area.

Community Input

Community feedback informed the development of the prioritization framework, particularly during the series of regional workshops where the project team deployed a "BGI Prioritization Game" to help participants evaluate different practice types and share feedback. While initial participation was limited, the outreach strategy evolved, identifying CBOs as key partners and potential users of the study's outputs and prioritization tools.

Participants generally expressed stronger support for visible, familiar practices such as Tree Planting and Impervious Surface Reduction. However, public preferences were highly dependent on-site context. Some practice types, like Multi-Purpose Floodable Recreational Spaces, received limited support as abstract concepts but would likely be better received when linked to specific, recognizable locations.

Although the initial scoring framework explored ways to reflect community preference by favoring certain BGI practices, the project team ultimately applied even weighting across all BGI practice types. This decision reflects the limited specificity of input received on where particular practices should be prioritized and avoids introducing bias in the absence of clearer consensus. Even weighting also allows for greater flexibility: future users of the framework can adjust the practice-level weights based on evolving community priorities, site-specific engagement, or jurisdictional goals without needing to rework the underlying structure.

In practice, the Prioritization Framework can support a range of uses beyond initial screening. Agencies applying for grants with equity or climate resilience criteria may use the tool to highlight areas of elevated need, while practitioners with pre-identified sites can compare how well their project aligns with regionally significant indicators. As community partnerships deepen and specific co-benefits emerge—such as improved park access, urban cooling, or school-based stewardship—those priorities can inform both project selection and future refinements to the framework.

Framework Use and Adaptation

The prioritization framework is best understood as a screening tool—designed to help identify where to focus BGI work across the three watersheds. It allows users to compare Focus Areas using consistent, data-supported criteria: flood vulnerability, equity status, and the concentration of viable project opportunities. In that sense, it provides a rational foundation for early decision-making, especially for agencies determining where to begin planning or for applicants seeking to strengthen funding proposals.

While the framework does not explicitly score co-benefits—such as access to green space, heat island mitigation, or recreational improvements—those considerations remain critical to the success of BGI. Many co-benefits are best evaluated at the concept level, when specific practices and locations are known and community engagement has begun. Still, the framework can support funding alignment by identifying Focus Areas that score highly on criteria often tied to grant eligibility, such as equity or flood exposure.

Future users are encouraged to view the framework as a flexible tool. While its core structure is designed for transparency and comparability, it can be adapted to reflect local priorities. For example, users may choose to overlay additional data layers or supplement the framework with community-identified needs. Guidance on how to navigate the spreadsheet and interpret the scores is provided in Appendix D, along with a note on adapting the tool to evolving program goals.

Metropolitan Washington Council of Governments

Regional Blue-Green Infrastructure Community Engagement and Planning STUDY (RBGI CEPP) Prioritization Framework

June 2025

HOW TO INTERACT WITH THE PRIORITIZATION FRAMEWORK TABLE

This tool is designed to help planners and partners compare and prioritize BGI focus areas across watersheds and Focus Areas. The four main scoring categories (Social Vulnerability and Equity, Asset Vulnerability, Actionability, and Watershed-wide Impact) can be weighted based on local goals or funding priorities.
For example, if you are applying for a grant that emphasizes Social Vulnerability and Equity, you can increase the weight for that category in the blue cells (B13 – B16). The tool will automatically adjust the rankings and show which Focus Areas rise to the top under those priorities.
Example: If your grant allocates 40% of scoring to social equity, try setting the "Social Vulnerability and Equity" weight to 40 and adjust the others proportionally.
To ease communication of weighting as a percentage, we recommend that the overall total of the categories should equal 100 (cell B17).

Category Totals	
Social Vulnerability and Equity	**30**
Asset Vulnerability	**30**
Actionability	**30**
Watershed-wide Impact	**10**
Total	100

Note on Framework Use and Community Co-Benefits
This tool is designed to help screen and compare Focus Areas for BGI investment, based on consistent, spatially available dat a. It is not a substitute for concept-level planning or direct community input. As projects advance, users are encouraged to consider additional factors such as community priorities, desired co-benefits (e.g., recreation, cooling, green space access), and alignment with specific funding opportunities. These priorities can guide which practices to pursue and how to phase or adapt projects over time.

HOW TO READ THE PRIORITIZATION FRAMEWORK TABLE

Sections in the Framework table are broken down into individual criteria items within the categories, category subtotals, and subtotal rankings.
Rows 33 - 57 break down the individual criteria items, showing the weighted scores for that topic in gray and the relative metric scores within each focus area of each watershed in the green gradient.
Larger value scores are shown in darker green, with a progressively lighter green as the values decrease per category across all three watersheds.
Rows 57 - 60 show the sums of the total category subtotals (values that are set in the blue section above, cells B15 - B18), as well as the subtotals of the relative metric scores within each focus area of each watershed.
Rows 63 - 67 show the ranking of the totals for the categories and the overall total, separated by watershed and category.
The top-ranked items in green indicate focus areas that score highest in the prioritization per category and separated by watershed.

Prioritization Framework Table

Criteria	Metric Notes	Category	Criteria Weight (max Score)*	Oxon Run 1	2	3	4	5	6	7	8	9	10	11	Arundel 1	2	Watts Branch 1	2	3	4
Social Vulnerability Index	Weighted average/FA Acre	Social Vulnerability and Equity	4.5	3.4	3.3	3.7	3.9	4.1	3.6	4.0	4.2	4.5	4.1	3.3	2.3	3.6	4.0	3.9	4.0	4.1
Equity Emphasis Area	Weighted average/FA Acre		4.5	3.2	2.6	1.8	3.2	4.5	2.3	4.1	3.9	4.1	3.2	1.8	3.1	3.4	1.8	2.4	1.8	3.3
Assets for Socially Vulnerable Population	Count/FA Acre		9	4.9	3.5	1.0	5.9	9.0	3.3	6.7	2.0	2.4	2.9	1.4	8.8	2.2	0.0	5.2	3.2	8.3
Total Population	Weighted average/FA Acre		9	6.0	6.9	8.6	6.4	6.6	7.9	6.9	6.4	8.0	8.9	6.2	5.9	6.7	9.0	8.1	9.0	5.9
Population Density	Weighted average/FA Acre		3	1.4	1.5	0.8	2.2	3.0	1.7	2.5	1.6	1.8	1.3	0.5	2.0	2.1	0.8	1.9	0.8	1.0
Building Footprints within FEMA Flood Hazard Area - 100-year and DPIE	Acres x Factor Total/FA Acres	Asset Vulnerability	6	0.0	0.1	0.1	0.0	1.0	0.1	0.6	0.5	0.0	0.4	0.7	0.0	6.0	0.0	0.0	0.0	0.1
Building Footprints within Bluespots/IFM	Acres x Factor Total/FA Acres		3	1.3	0.7	3.0	1.0	1.2	1.5	0.8	0.7	0.7	0.5	0.2	1.3	1.3	0.5	1.0	0.8	0.8
Impervious Road Surface Area within FEMA Flood Hazard Area - 100-year and DPIE	Acre/FA Acre		6	0.1	0.4	0.1	0.4	0.5	0.1	0.7	0.8	0.0	1.0	0.6	0.0	6.0	0.0	0.0	0.0	0.2
Impervious Road Surface Area within Bluespots/IFM	Acre/FA Acre		3	1.3	0.5	1.1	0.7	1.2	0.3	0.8	0.2	0.7	0.8	1.6	3.0	2.0	0.3	0.5	0.0	1.4
FEMA Flood Hazard Area - 100-year and DPIE	Acre/FA Acre		2	0.2	0.3	0.1	0.5	0.5	0.2	0.4	0.4	0.2	0.1	0.4	0.0	2.0	0.0	0.0	0.1	0.0
Bluespots/IFM	Acre/FA Acre		2	0.7	0.3	0.9	0.4	2.0	0.2	0.8	0.2	0.3	0.3	0.6	1.2	1.4	0.3	0.4	0.4	1.0
Critical & Community Assets	Count x Factor Total/FA Acres		8	3.3	1.4	1.0	1.0	8.0	1.5	1.5	1.7	0.7	1.3	0.0	3.8	2.4	0.0	2.7	0.0	2.7
Bridge and Culvert Modifications (BCM)	Count/FA Acre	Actionability	2.7	1.0	0.9	1.3	0.5	0.6	0.5	0.7	2.7	0.0	0.9	0.0	0.0	1.8	0.0	1.4	0.8	1.7
Green Stormwater Infrastructure (GSI) (Point Count)	Count/FA Acre		2.7	1.0	0.5	1.1	0.8	0.3	2.6	2.6	1.2	2.3	0.7	0.0	0.4	0.3	2.7	0.5	1.3	1.0
Green Stormwater Infrastructure (GSI) (Polygon Acre)	Acre/FA Acre		2.7	1.7	1.4	1.4	1.0	1.0	0.9	1.4	1.7	2.0	2.0	0.6	1.6	2.7	0.9	1.0	0.7	1.7
Storm Drain Outfall Retrofits (OUT)	Count/FA Acre		2.7	1.7	1.1	0.5	0.9	0.4	0.8	0.9	0.6	2.1	0.5	0.6	0.0	0.7	2.7	1.4	1.3	1.0
Blue Green Street (BGS)	Linear Feet/ FA Acre		2.7	0.2	1.0	0.0	0.6	1.6	0.5	1.0	0.0	0.0	0.6	0.0	2.7	1.0	0.0	1.6	0.0	1.5
Stream Daylighting (DAY)	Linear Feet/ FA Acre		2.7	0.0	0.9	0.0	1.6	1.0	1.3	0.8	0.4	1.8	0.7	2.7	0.0	0.0	0.0	1.0	0.0	1.2
Stream, Wetland, and Floodplain Restoration (STR)	Linear Feet/ FA Acre		2.7	1.1	0.6	1.4	0.9	0.9	0.9	0.8	1.5	1.3	0.9	0.7	0.0	0.0	2.7	1.0	1.9	0.5
Multi-Purpose Floodable Recreational Spaces (FRS)	Acre/FA Acre		2.7	1.0	0.3	1.8	1.1	2.7	0.8	0.0	0.8	1.0	2.0	0.9	1.1	1.0	2.6	1.3	0.0	1.4
Impervious Reduction (IMP)	Acre/FA Acre		2.7	2.6	0.5	2.7	1.0	1.2	2.4	0.3	0.0	0.5	1.4	0.0	0.4	0.4	0.0	0.4	0.0	0.6
Pond Retrofits (PND)	Acre/FA Acre		2.7	1.5	0.2	1.3	0.5	0.1	0.1	0.7	0.2	0.5	0.3	1.8	0.0	0.0	2.7	0.2	1.9	0.8
Tree Planting (TRP)	Acre/FA Acre		2.7	1.1	0.8	2.1	1.1	2.7	0.8	0.5	1.3	0.9	1.0	0.7	1.2	0.2	0.1	2.2	0.2	1.3
Watershed-wide Impact		Watershed-wide Impact	10	10.0	5.0	10.0	5.0	0.0	10.0	0.0	5.0	10.0	10.0	0.0	10.0	0.0	10.0	10.0	10.0	10.0
	SUBTOTAL	Social Vulnerability and Equity	**30**	19.0	17.8	15.9	21.5	27.1	18.8	24.2	18.0	20.8	20.4	13.2	22.1	18.1	15.7	21.5	18.9	22.7
	SUBTOTAL	Asset Vulnerability	**30**	6.8	3.7	6.3	4.1	14.5	3.9	5.7	4.4	2.6	4.3	4.0	9.3	21.2	1.0	4.5	1.3	6.2
	SUBTOTAL	Actionability	**30**	12.8	8.2	13.7	10.1	12.6	11.5	9.6	10.5	12.4	10.9	7.9	7.4	8.2	14.5	12.1	8.0	12.6
	SUBTOTAL	Watershed-wide Impact	**10**	10.0	5.0	10.0	5.0	0.0	10.0	0.0	5.0	10.0	10.0	0.0	10.0	0.0	10.0	10.0	10.0	10.0
		Total Score	100	48.6	34.8	45.8	40.8	54.2	44.3	39.6	38.0	45.9	45.7	25.1	48.8	47.4	41.2	48.1	38.3	51.5
	SUBTOTAL RANKING	Social Vulnerability and Equity		6	9	10	3	1	7	2	8	4	5	11	1	2	4	2	3	1
	SUBTOTAL RANKING	Asset Vulnerability		2	10	3	7	1	9	4	5	11	6	8	2	1	4	2	3	1
	SUBTOTAL RANKING	Actionability		2	10	1	8	3	5	9	7	4	6	11	2	1	1	3	4	2
	SUBTOTAL RANKING	Watershed-wide Impact		1	6	1	6	9	1	9	6	1	1	9	1	2	1	1	1	1
		OVERALL RANKING		2	10	4	7	1	6	8	9	3	5	11	1	2	3	2	4	1
				x											x				x	

x - denotes selected for demonstration concept
* - criteria weight can be adjusted (within the "Static" tab)