



# USWG CLIMATE RESILIENCY STRATEGY

CRWG MEETING – AUGUST 19, 2019



## BACKGROUND – PSC DIRECTIVE

- Design and accelerate adoption of stormwater management practices that are appropriately designed for rainfall volumes and intensities that are expected in the future for counties in the Chesapeake watershed.
- Determine how stormwater BMPs that are redesigned to account for future rainfall volumes and intensity could generate nutrient and sediment reductions that can be counted in the WIP3 milestones up to 2025.
- Examine the top tier ag and urban BMPs that are most vulnerable to future climate risk with an emphasis on structural practices that could be adapted to become more resilient to future climate conditions (especially rainfall intensities and volumes).
- Describe the co-benefits of designing stormwater BMPs to mitigate future climate risk, especially as they relate to the protection of local infrastructure and public health and safety, including green infrastructure, urban floodplain management, riparian buffers, tidal and non-tidal wetlands and other management actions.

## BACKGROUND – 2019 ACTIVITIES

- Stormwater Retreat Session -- [https://chesapeakestormwater.net/wp-content/uploads/dlm\\_uploads/2019/05/Session-N-Presentations\\_compiled.pdf](https://chesapeakestormwater.net/wp-content/uploads/dlm_uploads/2019/05/Session-N-Presentations_compiled.pdf)
- Proposed GIT Funding Projects:
  - Piloting the Development of Probabilistic Intensity Duration Frequency (IDF) Curves for the Chesapeake Bay Watershed (USWG)
  - Targeted Local Outreach for Green Infrastructure in Vulnerable Areas (Habitat GIT + LGAC)
  - BMP stakeholder engagement workshop to explore the feasibility of a BMP indicator (CRWG)

# NEW USWG CLIMATE RESILIENCY STRATEGY

**GOAL:** Deliver engineering tools and management solutions to communities so they can protect their current and future watershed restoration investments from climate change risk.

<b>Management Objective</b>	<b>Design Storm</b>	<b>Purpose(s)</b>	<b>Engineering Models</b>
<i>Recharge</i>	Annual rainfall depth for site HSG	Promote infiltration & groundwater recharge	Equation = runoff coefficients
<i>Water Quality (WQv)</i>	90% frequency hourly rainfall event <sup>2</sup>	BMP sizing to remove pollutants in urban runoff	Simple Method, runoff capture equation or SWMM
<i>Channel Protection</i>	One-year storm event	Prevent downstream bank erosion	NRCS TR-55 and TR-20
<i>Channel Conveyance</i>	2 and/or 10-year storm event	Sizing of swales, channels, storm drain pipes, and detention ponds	NRCS models or SWMM
<i>Road Drainage &amp; Culvert Design</i>	10 and/or 25-year storm event	Protect road infrastructure from erosion	Rational method
<i>Dam &amp; Bridge Safety</i>	100-year storm event or greater <sup>3</sup>	Design of embankments, risers and emergency spillways	
<i>Floodplain Delineation</i>		Lateral and vertical boundaries of existing and ultimate 100-yr floodplain	
<i>Stream and Floodplain Hydraulics</i>		Protect roads, sewer and other public infrastructure. Maintain stability of stream/floodplain restoration projects	
			TR-20, HEC-2, HEC-RAS 2D and 3D models, and others

# STEP I: PARTNER AND STAKEHOLDER ENGAGEMENT

- Interview and survey key stakeholders from the following groups:
  - CBP Managers (USWG, CRWG, WQGIT, etc.)
  - Federal Agencies: (NOAA, EPA, FEMA, NRCS, COE)
  - Bay State Stormwater and Flood Control Agencies
  - Municipal Agencies
  - Researchers

## STEP 2: RESEARCH AND MANAGEMENT SYNTHESIS

- Summarize forecasted changes in rainfall intensity and volume
- Identify existing or ongoing efforts to produce new IDF curves across the Chesapeake Bay region – tie in with GIT funding project (pending funding)
- Assess current stormwater engineering standards and criteria
- Analyze the vulnerability of urban stormwater BMPs to reduced pollutant removal performance

## STEP 3. DEVELOP LONG-TERM WORK PLAN

- Based on key findings from Steps 1 and 2, coordinate with key stakeholders to develop long-term workplan and recommended priority initiatives



## HOW CAN CRWG HELP?

- Interested Stakeholders – or helping us I.D. gaps
- Are there any essential resources we need to have at the outset?
- Who else is doing this kind of work?
- How frequently would you like updates at the WG?



# QUESTIONS?

DAVID WOOD

[WOOD.CSN@OUTLOOK.COM](mailto:WOOD.CSN@OUTLOOK.COM)

