



## WRCC Meeting Summary January 26, 2022

### **Attendees:**

#### Municipalities:

- Steve Miller, Chair
- Jim Wieprecht, Vice Chair
- Joe Cosentini
- Gary Dye
- Jeff Glass
- Kevin Hann
- Mayor Perry Jones
- Rodney Kuhns
- Tammi Ledley
- Kevin Rubenstein
- Derek Shreeves
- Dick Swanson

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer

#### Health Department:

- Rick Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Chizuko Godwin, CC M&B

#### Guest Speakers:

Martin Covington  
Pat Varga

#### Others:

- 

### **1. Opening Statement**

#### **Chair -**

Mr. Steve Miller, Chair, officially called the January 26, 2022, meeting of the Water Resource Coordination Council (WRCC) to order at 2:33 PM in a virtual GoToMeeting.

He thanked Jim Wieprecht for chairing the December meeting in his place. Hopefully the meeting will be able to be in person in February.

#### **Vice Chair -**

None.

### **2. Approval of Meeting Summary – December 15, 2021**

Approval of the December meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Dick Swanson and seconded by Jim Wieprecht to approve the December 15, 2021, meeting summary as written. Motion carried.

### **3. A-StoRM Report Overview & Discussion – Brenda Dinne, Pat Varga, & Martin Covington**

Brenda Dinne, Pat Varga, and Martin Covington gave an overview of the A-StoRM report released by MDE in fall 2021. Ms. Dinne reviewed the legislation that required the report to the General Assembly and gave an overview of the report. She highlighted the key proposed actions and associated timeline.

Mr. Varga provided a more detailed look at each of the proposed actions related to flooding and their potential impacts on Carroll County and the municipalities. He also noted that MDE will pursue developing a definition of a "flooding event." Beyond riverine flooding, he asked the

municipalities to consider the types of areas where “urban” flooding issues normally occur for them. Problem areas will need to be identified.

Mr. Covington covered the proposed actions dealing with stormwater quantity management and their potential implications.

Discussion on issues of concern with the report and proposed actions followed the overview. A number of issues were identified. These will be incorporated in a draft comment letter to MDE. The letter will be reviewed and finalized at the February meeting.

*Reference/Attachment:*

- *PowerPoint: A-StoRM Report: Overview & Implications (attached)*

#### **4. Municipal Stormwater Projects Update – Janet O’Meara**

Janet O’Meara provided an update on the municipal stormwater restoration projects.

*Reference/Attachment:*

- *Handout: Town Project Status, January 26, 2022 (attached)*

#### **5. Other**

- Lawsuit against NPDES MS4 Permits for Baltimore County and City: Brenda Dinne shared that the Chesapeake Bay Foundation and Blue Water Baltimore have filed a petition to establish standing in legal action against the permits for Baltimore County and Baltimore City. When the opening brief is filed, it should indicate the issues being raised. Montgomery and Anne Arundel Counties were not named in the legal action. Those permits should now be effective.
- Proposed 2022 WRE Guidance Update: State law requires comprehensive plans to be updated every 10 years. The Maryland Departments of Planning (MDP) and the Environment (MDE) recently released a web-based [2022 Proposed Water Resources Element \(WRE\) Guidance Update](#). Brenda Dinne will share the proposed guidance with the WRCC members, for review prior to the February meeting. Discussion of comments to share with MDP/MDE is planned.
- Outfall Screening Surveys: Glenn Edwards gave an update of the progress of the outfall screenings and visual surveys.
- 20SW Permits: Glenn Edwards will be in touch with the applicable municipalities regarding any new permit conditions.
- Water Supply Study: Zach Neal expressed interest in partnering with interested municipalities to develop an RFP for a water supply study that might provide alternative approaches to MDE’s “owned & controlled” policy.
- Water Levels: Zach Neal indicated that water levels appear to be locking down for the season and should start to rise.
- LRM Admin Associate: Chris Heyn shared the Kim Dubbert left County employment. Denise Mathias will be taking her place. Her position with the Bureau of Resource Management will need to be filled.
- “Carroll Environment” Facebook Page: Chris Heyn announced that Land & Resource Management (LRM) created a new Facebook page to update citizens on all things environmental in Carroll County. It will help to address the permit public education requirements. Some things the page is intended to accomplish:
  - Give citizens a heads up on LRM-related activities in their neighborhoods,
  - Share progress on construction projects,
  - Convey information about volunteer boards to bolster interest in the board and encourage new members to apply,
  - Reach out to solicit volunteers for projects, such as tree plantings and maintenance, stream clean ups, etc.

Mr. Heyn encouraged everyone to “Like” the Facebook page and to share it with others to increase the number of followers, so it reaches as many Carroll County citizens as possible.

- Project Geodatabase: Claire Hirt noted that Maryland Department of the Environment (MDE) has overhauled the geodatabase, in which data is maintained that needs to be reported for the NPDES MS4 Annual Report. MDE is incorporating the new guidance document and permit conditions. She is reviewing it and will provide comments to MDE.
- New Employee at Hampstead: Tom Devilbiss is now working with Kevin Hann part-time at Hampstead.

## **6. Adjournment**

The meeting adjourned at 3:53 PM. The next monthly meeting is scheduled for Wednesday, February 23, 2022, at 2:30 PM. Yet to be determined if will be virtual or in-person.

**MEETING ADJOURNMENT**: Motion was made by Dick Swanson and seconded by Jim Wieprecht to adjourn the January 26, 2022, meeting. Motion carried.

### **Upcoming Meetings:**

- ☐ *Regular Monthly Meeting – Wednesday, February 23, 2022*

# A-StoRM Report: Overview & Implications

*Advancing Stormwater Resiliency in Maryland (A-StoRM)  
Maryland's Stormwater Management Climate Change Action Plan*

**WRCC Meeting ♦ January 26, 2021**

**Brenda Dinne ♦ Pat Varga ♦ Martin Covington**

# TODAY...

- Legislation + Report Overview (Brenda)
- Flooding (Pat)
  - Current + Proposed Requirements
  - Implications for Carroll County + Municipalities
  - Defining flood event + ID frequently flooded areas
- Stormwater quantity management (Martin)
  - Current + Proposed Requirements
  - Implications for Carroll County + Municipalities

The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance.

# LEGISLATION + REPORT OVERVIEW

# Senate Bill 227 (2021)

*“Water Pollution – SW Management Regulations and Watershed Implementation Plans – Review and Update”*

- MDE to update stormwater regs every five years
- Use most recent precipitation data
- Investigate flooding events since 2000
- Update MD’s stormwater quantity management standards for flood control

# MDE Report to General Assembly

- By Nov 1 2021...
  - Most recent precipitation data
  - Plans to immediately update water quantity control standards for watersheds where flooding events occurred post 2000
- Thereafter... any revisions to related regs, prior to publishing



# Update Regs

- Incorporate most recent precipitation data available
- MDE to consult with stakeholders
  - >6 months prior to adoption
  - List of stakeholders

# Precipitation Data Available

## United States Naval Academy Rainfall Station

Probability of Occurrence in Any Given Year	Atlas 14 Precipitation (inches)	Projected precipitation using RCP 8.5			
		Planning Horizon 2020 to 2070		Planning Horizon 2050 to 2100	
		Projected (inches)	% change from Atlas 14	Projected (inches)	% change from Atlas 14
50%	3.23	3.49	8.0%	3.71	14.9%
10%	5.02	5.37	7.0%	5.72	13.9%
1%	8.66	9.61	11.0%	10.31	19.1%

Source: NOAA Atlas 14 and RAND forecasted precipitation info

# **MDE Proposed Actions & Schedule:**

## **Phase 1: Immediately (now – Jun 2022)**

- a. Define flooding event
- b. Reg changes to incorporate precipitation data
- c. Update MD stormwater design standards to capture more runoff volume
- d. Identify frequently flooded areas post-2000

# MDE Proposed Actions & Schedule:

## Phase 1: Immediately (now – Jun 2022)

*continued*

- e. Draft stormwater regs; require...
  - comprehensive watershed studies
  - watershed-specific flood management plans
- f. Update CFMGP to fund these studies
- g. Create stakeholder advisory group

*CFMGP = Comprehensive Flood Management Grant Program*

**MDE Proposed Actions & Schedule:**  
**Phase 2: Near-Term (before Nov 2022)**

- a. Stakeholder group to provide expert advice on stormwater quantity regs
- b. Update WRE guidance

## **MDE Proposed Actions & Schedule:** **Phase 3: Longer-Term (early 2023)**

- a. Adopt new stormwater regs
- b. Integrate watershed studies and model development into local growth and development planning process
- c. Continue to identify, document, and implement solutions for flood prone area



# **FLOODING**

CURRENT + PROPOSED  
REQUIREMENTS

IMPLICATIONS FOR CARROLL  
COUNTY + MUNICIPALITIES

MDE  
Proposed  
Actions re  
Stormwater  
+  
Implications  
for Carroll  
County

*Phase 1: Now to Jun 2022*

**Proposed**

a. Define flooding event

**Current | Implication**

- No definition
- Need to determine threshold and define
- Codify storm intensities/boundaries



MDE  
Proposed  
Actions re  
Stormwater  
+  
Implications  
for Carroll  
County

*Phase 1: Now to Jun 2022*

**Proposed**

d. Identify frequently flooded areas post-2000

**Current | Implication**

- Riverine & development driven – urban/nuisance flooding

MDE  
Proposed  
Actions re  
Stormwater  
+  
Implications  
for Carroll  
County

*Phase 1: Now to Jun 2022*

**Proposed**

e. Draft watershed-specific flood management plans via stormwater regs

**Current | Implication**

- Hazard Mitigation Plan
- Coordinate on localized analysis and mitigation

MDE  
Proposed  
Actions re  
Stormwater  
+  
Implications  
for Carroll  
County

*Phase 3: Early 2023*  
**Proposed**

c. Continue to identify, document, and implement solutions for flood prone area

**Current | Implication**

- Hazard Mitigation Plan
- Coordinate with municipalities



# **STORMWATER** **QUANTITY** **MANAGEMENT**

CURRENT + PROPOSED  
REQUIREMENTS

IMPLICATIONS FOR CARROLL  
COUNTY + MUNICIPALITIES

# Projected Precipitation for Carroll County

*b. Reg changes to incorporate precipitation data*

	Current		Planning Horizon			
	2000 MD SW Design Manual	NOAA Atlas 14 Carroll County	2020 to 2070		2050 to 2100	
			Projected Inches	% Change to Atlas 14*	Projected Inches	% Change to Atlas 14*
Storm event	Inches	Inches	Projected Inches	% Change to Atlas 14*	Projected Inches	% Change to Atlas 14*
1-year	2.5	2.5	2.7	8.0	2.9	14.9
2-year	3.1	3.1	5.0	7.0	5.35	13.9
10-year	5.0	4.7				
100-year	7.1	8.0	8.9	11.0	9.5	19.1

*\*US Naval Academy RAND Forecast*

MDE  
Proposed  
Actions re  
Stormwater  
±  
Implications  
for Carroll  
County

*Phase 1: Now to Jun 2022*

**Proposed**

b. Reg changes to incorporate precipitation data

**Current | Implication**

- Current: manage to 3.1” or 4.7”
- Likely require 5.0” or ?
- Larger quantity control facilities  
+ more inlets & larger storm  
drain pipes

MDE  
Proposed  
Actions re  
Stormwater  
±  
Implications  
for Carroll  
County

## Phase 1: Now to Jun 2022

### Proposed

c. Update MD stormwater design standards to capture more runoff volume

### Current | Implication

- 2021: *Capture & treat SWM runoff...; upgrade existing SW practices & conveyance*
- SHA: Capture 85%, 2-yr storm
- CC: Capture 150%, 2- & 10-yr storm

MDE  
Proposed  
Actions re  
Stormwater  
+  
Implications  
for Carroll  
County

*Phase 1: Now to Jun 2022*

**Proposed**

e. Draft comprehensive watershed studies via stormwater regs

**Current | Implication**

- Current: None in CC
- New: Quantity control in areas known flooding and/or improve culvert, bridge, storm drain capacity



# OTHER

**OTHER MDE**  
**Proposed**  
**Actions**  
**±**  
**Implications**  
**for Carroll**  
**County**

*Phase 1: Now to Jun 2022*

**Proposed**

g. Create stakeholder advisory group

**Current | Implication**

- New group
- MACo & MML = local representation

OTHER MDE  
Proposed  
Actions  
+  
Implications  
for Carroll  
County

*Phase 2: Before Nov 2022*

**Proposed**

b. Update WRE guidance

**Current | Implication**

- Update every 10 years
- Proposed guidance for review: *WRCC to review in Feb*
- Expect to begin update ~ in next year

## *Phase 3: Early 2023*

### **Proposed**

b. Integrate watershed studies and model development into local growth and development planning process

### **Current | Implication**

- Unknown

# **OTHER MDE** **Proposed** **Actions** **+** **Implications** **for Carroll** **County**

The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance.

**DEFINING**  
**“FLOODING EVENT”**  
**+ IDENTIFYING**  
**FREQUENTLY**  
**FLOODED AREAS IN**  
**MUNICIPALITIES**

## “Flooding Event” Definition

- MDE to define flooding event
- MDE to work w/ locals on more consistent definition

## What are your problem areas:

- Flooded Streets?
- Overwhelmed storm drains?
- Undersized bridges or culverts?

## Next Steps re: Definition

- Input to MDE on definition
- Review MDE proposed definition & ID frequently flooded areas
- Feedback/comment to MDE
- Refine ID'd frequently flooded areas based on final definition





# DISCUSSION & COMMENTS

## So far...

- Clarify watersheds are 8-digit
- Clarify type of flooding? Riverine?  
Urban?
- Additional local/expert rep on Advisory  
Group

## So far...

- Storm drain design
  - State mandate?
  - Larger events such as 25-, 50-, or 100-yr?
  - Design, criteria, methodology?
- Watershed studies & model
  - Which model? Precipitation? Watershed?
  - Additional local plans?

## So far...

- Structural vs ESD (Facilities when  $\geq 2$ -year storm quantity control required to provide all SWM components other than water quality, which must be ESD to MEP)

*Example...*

# Stormwater Management vs. ESD: Structural Example

## *Site characteristics:*

- 10-acre site
- B hydrologic soils
- 50% impervious

# Stormwater Management vs. ESD: Structural Example

*continued*

## *Structural solution:*

- 1 facility – underground infiltration
- Water quality volume = 0.38 AC-Ft
- Channel protection volume = 0.45 AC-Ft
- Total active volume = 0.83 AC-Ft
- To provide WQ, Cp, & Qp – 2.5” over impervious = 0.96 AC-Ft

# Stormwater Management vs. ESD: Structural Example

*continued*

## Design Comparison

### 11 micro bioretentions (ESD to MEP)

- Active storage = 0.52 AC-Ft
- Filtration rate = 0.375"/hr
- Q1 = 0.0 cfs
- Q2 = 1.8 cfs
- Q10 = 32.8 cfs

### 1 underground facility

- Active storage = 0.96 AC-Ft
- Infiltration rate = 0.5"/hr
- Q1 = 0.0 cfs
- Q2 = 0.0 cfs
- Q10 = 7.2 cfs
- Q10 predevelopment = 9.2 cfs

# Stormwater Management vs. ESD:

## Structural Example

*continued*

Result... One structural infiltration facility manages the 10-year storm. 11 ESD facilities do not.

So... MDE proposal would result in 11 larger ESD facilities and 1 structural facility.

Suggest... Allow use of Ch 3 Structural SWM Facilities when  $\geq 2$ -year storm quantity control required to provide all SWM components other than water quality, which must be ESD to MEP



## Additional?

- Will existing structural facilities need to be retrofitted to address these quantity issues?

# TOWN PROJECT STATUS

January 26, 2022

## FUTURE PROJECTS:

**Little Pipe Creek Restoration Opportunities** – The County was awarded a grant from NFWF Small Watershed Grant for planning and technical assistance. Staff met with NFWF, Center for Watershed Protection (CWP), and representatives with Cardno to discuss the need for a Quality Assurance Project Plan (QAPP). We are currently working on putting together the QAPP, while we wait for the grant agreement.

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

## CONCEPT DESIGN:

**Hampstead Valley 1** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. The results of the geotechnical study have been received, and concept development direction is proceeding.

**Hampstead Valley 4** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. CLSI is currently working to address comments.

**New Windsor Wetland (New Windsor)**- The design was awarded to BAI, they are currently performing survey of the site. The County is actively talking with Maryland Midland to determine right-of-way with necessary utility modifications.

**Roberts Field Wet Facility** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) submitted the concept design in early December. Plans have been reviewed and a comment letter has been sent to the engineer.

**Carroll County Health Department (Westminster)** – A new surface sand filter proposed downslope the existing parking lot, and removal of an existing underground facility. BAI submitted a concept design. Plans are currently being reviewed by the City of Westminster, Stormwater Management, and Soil Conservation.

## **FINAL DESIGN:**

**Locust Street (Citizens Energy) (Union Bridge)** –The plan will be presented to the Town Planning Commission for approval on January 20th, County staff members will be present if the Council has any questions. The County is currently working with the design engineer to address minor outstanding comments.

## **CONSTRUCTION:**

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Hauling of excess material offsite continues. The contractor is working on storm drain installation and the installation of the gabion baskets in the emergency spillway.

**East/West Pond (formerly Prospect Road Mt. Airy, Frederick County Side) MDE Bay Restoration FY 20 Grant \$535,096)** – The grading permit for this project was closed out. Some additional survey work is needed, and the County is working with CLSI to finalize the as-built.

## **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**

# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary February 23, 2022

### **Attendees:**

#### Municipalities:

- Steve Miller, Chair
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- Brenda Dinne
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- Zach Neal
- Janet O'Meara
- Ed Singer
- Ryan Kirkpatrick

#### Health Department:

- Rick Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Chizuko Godwin, CC M&B

#### Guest Speakers:

#### Others:

### **1. Opening Statement**

#### **Chair -**

Mr. Steve Miller, Chair, officially called the February 23, 2022, meeting of the Water Resource Coordination Council (WRCC) to order at 2:30 PM, held at Burns Memorial Hall.

Mr. Miller shared that he will be officially retiring in October 2021. The WRCC will need to elect a new chair at that point.

#### **Vice Chair -**

Nothing additional.

### **2. Approval of Meeting Summary – January 26, 2022**

Approval of the January meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Jim Wieprecht and seconded by Kevin Hann to approve the January 26, 2022, meeting summary as written. Motion carried.

### **3. A-StoRM Report Comment Letter – Brenda Dinne**

In November 2021, the Maryland Department of the Environment (MDE) released the *Advancing Stormwater Resiliency in Maryland (A-StoRM): Maryland's Stormwater Management Climate Change Action Plan*. The members reviewed a draft letter to MDE regarding comments on the proposed actions and schedule within the report. No changes were made. Steve Miller, Chair, will sign the final letter, and it will be sent to MDE.

**APPROVAL OF MINUTES:** Motion was made by Jim Wieprecht and seconded by Mayor Jones to approve signing and sending of the letter as written. Motion carried.

*Reference/Attachment:*

- Letter: *WRCC A-StoRM Comment Ltr to MDE (2022-Feb-23)*

**4. Proposed 2022 Water Resources Element (WRE) Guidance – Chris Heyn, Brenda Dinne**

Maryland Department of Planning (MDP) and MDE recently released the web-based Proposed 2022 Water Resources Element (WRE) Guidance, as jurisdictions will be expected to update their WREs. Brenda Dinne briefly reviewed the 2010 WRE WRCC effort and plan content. She highlighted key initiatives and actions that have occurred since the WRE was adopted in 2010 and new content expected to be integrated. Next steps are expected to include preparing a scope and RFP for consultant services. The WRCC will again serve to guide and provide feedback on the plan content and process.

*Reference/Attachment:*

- Handout: *WRCC WRE Guidance Overview (2022-Feb-23)*

**5. Fiscal Recovery Funds (FRF) – County Drinking Water Supply Support – Chris Heyn**

Ms. Dinne shared that a letter went out to the municipalities from Roberta Windham, County Administrator, offering the use of the County's FRF to partner on eligible drinking water supply projects. A form was included for interested municipalities to complete and return to Ms. Windham by March 11, 2022. Steven Miller shared that a municipality may submit more than one project for consideration.

*Reference/Attachment:*

- Letter: *Water Supply Projects - 50% Match Letter (2022-Feb-17)*

**6. Legislative Update – Brenda Dinne**

Ms. Dinne noted several proposed bills that are potentially relevant to the WRCC members and their status.

*Reference/Attachment:*

- Handout: *WRCC Legislative Update 2022 (2022-Feb-22)*

**7. Municipal Stormwater Projects Update – Janet O'Meara**

Janet O'Meara provided an update on the municipal stormwater restoration projects.

*Reference/Attachment:*

- Handout: *WRCC SW Project Status 2022 Feb*

**8. Other**

- **New Stormwater Permit:** MDE indicated that an unofficial draft of the County's and municipalities' fifth-generation stormwater permit would be sent to the County this week. Once received, it will be shared with the municipalities. MDE's 2022 timeline for finalizing the permit is as follows:

- ♦ March 11 – Tentative Determination Public Notice
- ♦ April 12 – Public hearing (at the County Office Building)
- ♦ June 9 – End of 90-day public comment period
- ♦ August – MDE review and responses to comments
- ♦ September – Final Public Notice
- ♦ October – End of judicial review request period

An overview of the permit will be on the March 23 WRCC agenda.

- MDE Triennial Review: Byron Madigan shared that this report was recently released by MDE. MDE reviews each streams designated use to determine if it is still being met and proposes changes accordingly. A draft letter will be prepared from the WRCC to comment on a few streams that could be considered borderline in Carroll County. It will be available for WRCC review at the March meeting.
- New Hampstead Employee: Kevin Hann shared that Tom Devilbiss is now working for the Town two days a week.
- Hampstead Down-Hole Well Camera: Kevin Hann shared that the Town recently purchased this camera and offered to lend it to the other municipalities if needed.

## 9. Adjournment

The meeting adjourned at 3:16 PM. The next monthly meeting is scheduled for Wednesday, March 23, 2022, at 2:30 PM.

**MEETING ADJOURNMENT:** Motion was made by Mayor Perry Jones and seconded by Kevin Hann to adjourn the February 23, 2022, meeting. Motion carried.

### Upcoming Meetings:

- ☐ *Regular Monthly Meeting – Wednesday, March 23, 2022*

# Carroll County Water Resource Coordination Council

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Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

February 23, 2022

Lee Currey, Director  
Water and Science Administration  
Maryland Department of the Environment  
1800 Washington Boulevard  
Baltimore, Maryland 21230

**Re: A-StoRM Report**

Dear Mr. Currey,

The Carroll County Water Resource Coordination Council (WRCC) was formed in 2007 by a non-binding joint resolution between Carroll County, our local municipalities, and the Carroll County Health Department. The Council provides a mechanism for cooperative problem solving of critical water resource management issues and led to the Memorandum of Agreement that made the municipalities party to the County's NPDES permit.

The WRCC has reviewed the document prepared by MDE titled *Advancing Stormwater Resiliency in Maryland (A-StoRM) Maryland's Stormwater Management Climate Change Action Plan*. We applaud MDE for addressing these critical issues and look forward to working cooperatively on sustainable solutions. In review of the document, we do have the following questions and would welcome dialogue or further clarification.

**Coordination with the Water Resources Element (WRE)**

We are currently reviewing the preliminary guidance from MDE and MDP regarding the update to the WRE. The A-StoRM report mentions coordination, before November 2022, with MDE and MDP regarding incorporation of watershed studies into the WRE. Will there be a coordinated effort to put forth guidance and documentation that cooperatively addresses the issues of climate change and flooding that both endeavors seek to address? Where the report refers to watershed studies and watershed management studies, are these interchangeable? And are watershed-specific flood management plans, flood control plans, and flood management plans interchangeable?

We are concerned that the presented time frame of obtaining grant funding and performing studies by November 2022 is not realistic. If this is truly MDE's intent, it would require immediate coordination with local jurisdictions, and we would like to be prepared if this is the case.

## **Capture and Conveyance**

Throughout the document, there is mention of urban and riverine flooding. We would like clarification on the type of flooding that MDE is seeking to address through these efforts. Riverine flooding is primarily addressed through stormwater quantity management, and this has been within MDE's purview for decades. Urban flooding is typically an issue with the capture and conveyance of runoff, often achieved with closed storm drain systems. Engineering criteria for closed storm drain design is typically dictated by local jurisdictions, and there is variability across the state. Design methods include the Johns Hopkins nomographs, the Federal Highway Administrations HEC-22, and perhaps others. There is also variability in selection of the design storms for inlet capacity, pipe capacity, and hydraulic grade line analysis.

Carroll County follows SHA design guidelines, which include the inlet capture requirement of 85% of the 2-year storm, using the rational method to calculate the amount of runoff. Many years ago, we realized that there was a fundamental issue with designing storm drains to this standard when they were meant to convey runoff to structural stormwater practices designed to manage an SCS method derived 10-year storm. We, therefore, changed design requirements in Carroll County that storm drain infrastructure designed to convey runoff to stormwater facilities must be designed with an inlet capture efficiency of 150% of the rational method 10-year storm. This is a rough approximation of the 10-year SCS method design storm and ensures that the water meant to be treated by the facility can reach it.

If MDE is interested in addressing urban flooding, is it the intent that MDE will be dictating capture and conveyance design guidelines?

## **Defining Scale of Flooding Events**

The A-StoRM report describes a cooperative effort between MDE and local jurisdictions to define and identify flooding events. Can you please clarify the scale of what MDE is looking at? With reference to urban flooding, are small urban watersheds to be considered? If riverine flooding is the focus, is that based on defined HUC-8, HUC-12, or smaller watersheds? It would be helpful to understand the scope and scale of what MDE wishes to address so that we can begin considering means and methods for study, analysis, and resolution of these issues.

## **ESD to the MEP**

For a variety of reasons, Carroll County feels that the current ESD to the MEP policy may be counterproductive to addressing climate change flooding impacts. A primary concern is that ESD practices that are meant to address 2.7 inches of rainfall over a 24-hour period using filtering, and other low-flow methods do nothing to attenuate storms where 2.7 inches of rain fall in a much shorter duration. Structural practices, on the other hand, that are designed to capture and attenuate the volume of 2.7 inches of rainfall can typically handle that volume whether it arrives in 24 hours or 1 hour.



It is, therefore, concerning that MDE is considering an increase in ESD to the MEP requirements as this will be detrimental to the long-term sustainability for stormwater management to address climate change and flooding.

We have maintained that the vagueness of the MEP concept leads to difficulties in enforcement and inconsistency in implementation. Rather than increasing current requirements for ESD to the MEP, we recommend that new development be required to treat a minimum of 1" of runoff using ESD practices. An additional 2" of water quality volume should then be treated through a volumetric practice. This could be an ESD practice, such as a micro bioretention practice or a submerged gravel wetland, or a structural practice. This would provide a minimum of 2" and potentially up to 3" of volume for attenuation of the short-duration, high-intensity storms that we are observing and could easily be scaled up to manage even larger storms when appropriate. It would also provide flexibility to developers regarding cost effective practices while maintaining the requirement for some measure of ESD practices.

### Stakeholder Advisory Group

The legislation requires MDE to consult with stakeholders with expertise on stormwater design standards and climate science on the impact of the proposed regulations. In the legislation, the list specifically includes "local government." The report calls for a stakeholder advisory group that includes Maryland Association of Counties (MACo) and Maryland Municipal League (MML) to represent local governments. While this is quite common and often very appropriate, in this case, an actual representative from local government with expertise in stormwater design and engineering should be included as well. The representatives from MACo and MML have policy background but are not technical experts. Given that Carroll County has already implemented many design standards and practices to address quantity management, we volunteer to participate in the advisory group and share insight gained from our experiences.

We look forward to working cooperatively with MDE on these issues and appreciate your consideration of our questions and comments. Please contact Chris Heyn (410-386-2949 or [cheyn@carrollcountymd.gov](mailto:cheyn@carrollcountymd.gov)) or Brenda Dinne (410-386-2140 or [bdinne@carrollcountymd.gov](mailto:bdinne@carrollcountymd.gov)) with Carroll County Department of Land & Resource Management for further dialog.

Sincerely,



Steve Miller  
Chair

- |    |                     |   |
|----|---------------------|---|
| C: | Town of Hampstead   | Town of Union Bridge                      |
|    | Town of Manchester  | City of Westminster                       |
|    | Town of Mount Airy  | Carroll County Land & Resource Management |
|    | Town of New Windsor | Carroll County Health Department          |
|    | Town of Sykesville  | Jennifer Smith, MDE                       |
|    | City of Taneytown   |   |

# Proposed 2022 Water Resources Element (*WRE*) Guidance Update

## Overview

WRCC ♦ February 23, 2022

### Our WRE

*3 Main Sections:*

- ♦ Water
- ♦ Wastewater
- ♦ Nonpoint Source

*Then...*

- ♦ Countywide Strategies (for all)
- ♦ Individual Systems

### 2010 WRE Effort

- ♦ MDP WRE Models & Guidelines
- ♦ WRCC Coordination 2007-2010
- ♦ Consultant:
  - water balance assessment
  - wastewater limitations
  - recommended strategies
- ♦ MDE Capacity Management Plan Guidance
- ♦ MDE Nonpoint Source Spreadsheet
- ♦ Unified plan doc

### Since 2010 WRE Effort...

- ♦ Bay restoration efforts → volunteer to mandatory
- ♦ TMDLs established Dec 2010
- ♦ State WIPs developed → 3 Phases
- ♦ NPDES MS4 requirements different



## Key Changes for 2024 WRE

- ◆ Addressing receiving waters
- ◆ Integrating climate change considerations, particularly flooding

## Nonpoint Source | Receiving Waters

- ◆ Update regulatory framework
- ◆ Update assessments
- ◆ Identify current condition and measures in place; gaps; strategies

## Climate Change: Flooding General Expectations

- ◆ ID recurrent flooding areas + land use plan changes to address
- ◆ Watershed flood management plans
- ◆ Capacity of SW system to convey runoff as growth occurs
- ◆ Strategies for quantity management requirements and to reduce vulnerability to hazards

## Next Steps

- ◆ Consultant Scope
- ◆ Stakeholder advisory committee (MDE)

## Timeline

- ◆ Goal → Adoption in 2024

**Board of County  
Commissioners**

Roberta J. Windham, Esq.  
County Administrator



**Carroll County Government**

225 North Center Street  
Westminster, Maryland 21157  
410-386-2043; 1-888-302-8978  
fax 410-386-2485  
MD Relay 711/800-735-2258

February 17, 2022

TO: Carroll County Towns/Cities Mayors and Administrators

RE: ***Water Supply Projects – 50% Match Through Federal Fiscal Recovery Funds (FRF)***

Dear Mayors and Town Administrators:

I am writing to you to discuss an important potential partnership opportunity between the county and municipalities regarding clean water projects. During Open Session on Thursday, February 10, 2022, the Board of County Commissioners discussed and decided to explore the potential option to use a portion of the county's Fiscal Recovery Funds (FRF) to address eligible drinking water supply projects in the county. The Board is considering water supply projects where municipalities would provide 50 percent matching funds. To that end, I am reaching out to determine if your (or the name) municipality would like to propose a project(s) for consideration.

According to the FRF Final Rule, proposed drinking water projects must meet specific eligibility requirements. Please visit the website <https://www.govinfo.gov/content/pkg/FR-2022-01-27/pdf/2022-00292.pdf> to review the eligibility guidelines. The guidance for water projects starts on page 71 (4408) D. Investments in Water, Sewer, and Broadband Infrastructure, and the guidance concerning Expansion of Drinking Water Service begins on page 79 (4416).

In addition, projects that expand drinking water infrastructure must also demonstrate that it is a cost-effective means to meet the identified need and that the municipality has the capacity to sustain the project over its estimated useful life.

In addition to demonstrating how the project meets the eligibility criteria, the proposal should include details regarding the problem the project intends to address, location, anticipated project costs, who the project will serve, impact to overall capacity, associated timeframes, and any other information that would be helpful in prioritizing projects (should the available FRF monies be insufficient to cover all project requests.) A template is attached to assist you with providing this information.

This is a great opportunity for the county and municipalities to work together to advance our clean water initiatives. If you are interested and have an eligible project, please send me a proposal using the attached eligibility template and any supplemental information, by **Friday, March 11, 2022**. I also encourage you to watch the commissioners' discussion, which can be found [here](https://www.youtube.com/watch?v=yTIWFIK1ipQ&t=5546s) (<https://www.youtube.com/watch?v=yTIWFIK1ipQ&t=5546s>). If you have any questions, please don't hesitate to contact me at [rwindham@carrollcountymd.gov](mailto:rwindham@carrollcountymd.gov) or 410-386-2043.

Sincerely,

A handwritten signature in blue ink, appearing to read "Roberta J. Windham".

Roberta J. Windham, Esq.  
County Administrator



# WRCC Legislative Update



## 2022 General Assembly Proposed Environmental Legislation

Status: As of February 22, 2022

Bill + Description	Status + Position
<b>Senate + Crossfiled Bills</b>	
<p><b>SB 171</b>  <b>ENVIRONMENT - PUBLIC PARTICIPATION MODERNIZATION ACT</b>            Authorizing the Department of the Environment to hold certain public meetings and hearings regarding certain licensing, permitting, and regulatory responsibilities using teleconference or Internet-based conferencing technology under certain circumstances; requiring applicants for certain licenses or permits to bear the cost of certain public meetings and hearings held using teleconference or Internet-based conferencing technology; repealing a requirement that notices regarding applications for certain air quality permits be sent by certified mail; requiring an applicant for certain permits to comply with specified provisions of law; requiring that certain hearings regarding sewage sludge permits be held in accordance with provisions of law regarding public participation rather than with the Administrative Procedure Act; and generally relating to public participation in the licensing, permitting, and regulations processes of the Department of the Environment.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/sb/sb0171F.pdf">https://mgaleg.maryland.gov/2022RS/bills/sb/sb0171F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>SB:</b> Passed Senate w amendments; Awaiting first reading in House</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Not Tracking</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>SB 221 / HB 402</b>  <b>DEPARTMENT OF ENVIRONMENT - ENFORCEMENT AUTHORITY</b>            Altering the enforcement authority of the Department of the Environment under various provisions of law, including provisions relating to waterway construction and dam safety, tidal and nontidal wetlands, drinking water, and waterworks, wastewater works, and industrial wastewater works; requiring a person or municipal or private corporation to report certain information to the Department annually; requiring certain penalties collected by the Department to be paid into the Maryland Clean Water Fund; etc.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/sb/sb0221F.pdf">https://mgaleg.maryland.gov/2022RS/bills/sb/sb0221F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>SB:</b> Hearing 2/2</li> <li>◆ <b>HB:</b> Hearing 2/25</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Support w/ Amendments</li> <li>◆ <b>MACO:</b> Support w/ Amendments</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>SB 783 / HB 596</b>  <b>CONSTITUTIONAL AMENDMENT - ENVIRONMENTAL RIGHTS</b>            Proposing an amendment to the Constitution of Maryland to establish that every person has the fundamental and inalienable right to a healthful and sustainable environment; and requiring the State to serve as the trustee of the State's natural resources, including the air, land, water, wildlife, and ecosystems of the State, and to conserve, protect, and enhance the State's natural resources for the benefit of every person, including present and future generations.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb0596F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb0596F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>SB:</b> Hearing 3/9</li> <li>◆ <b>HB:</b> Hearing 2/23</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Oppose</li> <li>◆ <b>MACO:</b> Oppose</li> <li>◆ <b>LRM Position:</b> Oppose</li> </ul>

DEAD 🚫
UNLIKELY TO PASS 🚧
MOVING FORWARD 🏃

Bill + Description	Status + Position
<p><b>SB 818 / HB 1200</b>  <b>ENVIRONMENT – PERMIT APPLICATIONS – ENVIRONMENTAL JUSTICE SCREENING</b>            Requiring a person applying for a certain permit from the Department of the Environment to include in the application the EJ Score from the Maryland EJScreen mapping tool for the address where the applicant is seeking the permit; requiring the Department, on receiving a certain permit application, to conduct an environmental justice analysis of the address where the applicant is seeking a permit using the Maryland EJScreen mapping tool; etc.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/sb/sb0818F.pdf">https://mgaleg.maryland.gov/2022RS/bills/sb/sb0818F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>SB:</b> Hearing 2/24</li> <li>◆ <b>HB:</b> Hearing 3/4</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>SB 854 / HB 1126</b>  <b>GRAYWATER SYSTEMS – PUBLIC AND PRIVATE BUILDINGS – AUTHORIZATION</b>            Authorizing the use of a certain graywater system to serve a public or private building that is located on a former dredge site or is located in a remote area with minimal public access and operates on a seasonal basis; and requiring the owner or operator of a building using a graywater system to safely dispose of graywater in a certain manner.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/sb/sb0854F.pdf">https://mgaleg.maryland.gov/2022RS/bills/sb/sb0854F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>SB:</b> Hearing 2/24</li> <li>◆ <b>HB:</b> Hearing 3/2</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<b>House Bills</b>	
<p><b>HB 621</b>  <b>SEWAGE TREATMENT PLANTS - EFFLUENT DISCHARGES - MONITORING, EVALUATION, AND INSPECTION</b>            Requiring the Department of the Environment to monitor effluent discharged from sewage treatment plants, evaluate whether the effluent and any nutrients in the effluent impacts midge populations in the surrounding land and water areas, and hire an inspector for certain sewage treatment plants; requiring the Department, beginning in 2023, to report to the General Assembly by October 1 each year on the actions it has undertaken pursuant to the Act.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb0621F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb0621F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 2/16</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Not Tracking</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 869 / SB 945</b>  <b>WETLANDS AND WATERWAYS PROGRAM – AUTHORIZATIONS FOR ECOLOGICAL RESTORATION PROJECTS</b>            Requiring the Department of the Environment to establish a certain process for reviewing and evaluating applications for wetlands and waterways authorizations for ecological restoration projects on or before October 1, 2023.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb0869F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb0869F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>SB:</b> Awaiting first reading (Rules)</li> <li>◆ <b>HB:</b> Hearing 2/25</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 936</b>  <b>BLUE RIBBON COMMUNITY SOLAR LAND USE COMMISSION</b>            Establishing the Blue Ribbon Community Solar Land Use Commission to study and make recommendations regarding the land use needs to meet the full generation capacity authorized under the Community Solar Energy Generating Systems Pilot Program; and requiring the Commission to report its findings and recommendations to the Governor and the General Assembly by December 1, 2022.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb0936F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb0936F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>SB:</b> Hearing 3/2</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Support w/ Amendments</li> <li>◆ <b>LRM Position:</b> Oppose</li> </ul>

Bill + Description	Status + Position
<p><b>HB 1263</b>  <b>ENVIRONMENT – OFFICE ON CLIMATE CHANGE – ESTABLISHMENT</b>            Establishing the Office on Climate Change in the Office of the Governor to coordinate with the Commission on Climate Change to ensure certain recommendations are implemented, ensure that each State agency addresses ways the agency can mitigate the causes of climate change and certain impacts of climate change, initiate and oversee certain climate change research and investigations, and work with local governments on the development and implementation of local climate change plans.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb1263F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb1263F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 3/9</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Pending</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 1311</b>  <b>CHESAPEAKE BAY RESTORATION FUND – AUTHORIZED USES (CHESAPEAKE BAY RESTORATION FUND LOCKBOX ACT OF 2022)</b>            Restricting the use of the Chesapeake Bay Restoration Fund to certain purposes directly related to addressing pollution from wastewater treatment facilities, on-site sewage disposal systems, sewer systems, and stormwater management systems; repealing provisions of law requiring certain amounts to be transferred from the Chesapeake Bay Restoration Fund to the Clean Water Commerce Account, the Chesapeake Bay Trust, the Chesapeake and Atlantic Coastal Bays 2010 Trust Fund, and the Department of Agriculture; etc.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb1311F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb1311F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 3/10</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 1328</b>  <b>COUNTIES AND MUNICIPALITIES – WATER TRANSFER FEE – AUTHORIZATION</b>            Authorizing the governing body of a county or municipality to impose a fee on a person who holds a certain permit and transfers surface water or groundwater outside a watershed located wholly or partially within the county or municipality.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb1328F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb1328F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 3/8</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Pending</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 1372</b>  <b>ENVIRONMENT – GREEN INFRASTRUCTURE REBATE PROGRAM – ESTABLISHMENT</b>            Establishing the Green Infrastructure Rebate Program to provide property owners the incentive to invest in stormwater management practices–; requiring the Department of the Environment to administer the Program in collaboration with each county that elects to participate in the Program; authorizing the Department to delegate authority to administer the Program to a participating county; and requiring the Department and participating counties to provide a certain percentage of the cost of a rebate under the Program.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb1372F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb1372F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 3/9</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Pending</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>

# MUNICIPAL STORMWATER PROJECT STATUS

February 23, 2022

## FUTURE PROJECTS:

**Little Pipe Creek Restoration Opportunities** – The County was awarded a grant from NFWF Small Watershed Grant for planning and technical assistance. Staff met with NFWF, Center for Watershed Protection (CWP), and representatives with Cardno to discuss the need for a Quality Assurance Project Plan (QAPP). We are currently working on putting together the QAPP, while we wait for the grant agreement.

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

## CONCEPT DESIGN:

**Hampstead Valley 1** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. Staff met with CLSI and a concept plan is in development.

**Hampstead Valley 4** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. Staff met with CLSI, they are currently working to address comments.

**New Windsor Wetland (New Windsor)**- The design was awarded to BAI. The town and county met with an adjacent business owner to discuss modifications which would be necessary at an existing inlet to divert flows to the proposed stormwater wetland.

**Roberts Field Wet Facility** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) submitted the concept design which was reviewed, and a comment letter has been sent to the engineer.

**Carroll County Health Department (Westminster)** – A new surface sand filter proposed downslope the existing parking lot, and removal of an existing underground facility. BAI submitted a concept design, and staff reviewed the plans. Staff met to discuss alternatives.



## **FINAL DESIGN:**

**Locust Street (Citizens Energy) (Union Bridge)** –The plan was presented to the Town Planning Commission for approval on January 20th, County staff was present to answer questions. A pre-construction meeting was held February 11<sup>th</sup> in Union Bridge. This project is currently out to bid.

## **CONSTRUCTION:**

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Hauling of excess material offsite continues. The contractor continues to work on storm drain installation.

**East/West Pond (formerly Prospect Road Mt. Airy, Frederick County Side) MDE Bay Restoration FY 20 Grant \$535,096)** – The grading permit for this project was closed out. Some additional survey work is needed, and the County is working with CLSI to finalize the as-built.

## **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**

# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary

March 23, 2022

### **Attendees:**

#### Municipalities:

- Steve Miller, Chair
- Jim Wieprecht, Vice Chair
- Joe Cosentini
- John Dick
- Gary Dye
- Jeff Glass
- Kevin Hann
- Mayor Perry Jones
- Rodney Kuhns
- Tammi Ledley
- Kevin Rubenstein
- Derek Shreeves
- Dick Swanson

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer
- Ryan Kirkpatrick

#### Health Department:

- Rick Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Chizuko Godwin, CC M&B

#### Guest Speakers:

#### Others:

### **1. Opening Statement**

#### **Chair -**

Mr. Steve Miller, Chair, officially called the March 23, 2022, meeting of the Water Resource Coordination Council (WRCC) to order at 2:30 PM, held at the County Office Building, Room 105.

#### **Vice Chair -**

Nothing additional to share.

### **2. Approval of Meeting Summary – February 23, 2022**

Approval of the February meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Mayor Jones and seconded by Kevin Hann to approve the February 23, 2022, meeting summary as written. Motion carried.

### **3. NPDES Phase I MS4 Draft Permit Overview & Comments – Chris Heyn**

Chris Heyn reviewed key requirements of the draft permit and key changes from the previous permit. He noted areas of concern, which will serve as basis for comments to be shared at the public hearing. MDE will hold a public hearing on Tuesday, April 12, 2022, at 3:00 PM at the County Office Building, Room 311. All municipalities are welcome to attend and share comments for the record as well. Mr. Heyn will read the letter with staff comments into the record at the hearing.

Subsequent to MDE's hearing, a letter can be prepared from the WRCC, which can capture the same and any additional comments that arise. This letter will be sent prior to MDE's public comment period ending on June 9, 2022.

Topics of key concerns included the need for force majeure language, the need to tie in the MEP Analysis results, geodatabase revisions needed, and new language regarding stormwater conveyance and capacity.

*Reference/Attachment:*

- *NPDES MS4 Draft Permit – LRM Draft Comment Bullets for Discussion (2022-Mar-23)*

#### **4. Legislative Update – Brenda Dinne**

Brenda Dinne updated the members on key bills introduced in the Maryland General Assembly that might be of interest to the municipalities. Since the WRCC won't hold a regular meeting again until May 25, she will email an update after Sine Die (April 11).

*Reference/Attachment:*

- *WRCC Legislative Update 2022 (2022-Mar-23)*

#### **5. A-StoRM Regional Workshop WRCC Representative – Brenda Dinne**

Maryland Department of the Environment (MDE) will be holding a series of regional workshops to get feedback on action items in the A-StoRM report. The central region workshop is scheduled for April 12. The link was previously emailed to the WRCC. MDE specifically requested the WRCC identify a representative that could participate. Ms. Dinne requested interest. An interested municipal member should contact Brenda.

*Reference/Attachment:*

- *n/a*

#### **6. Municipal Stormwater Projects Update – Janet O'Meara**

Janet O'Meara provided an update on the municipal stormwater restoration projects.

*Reference/Attachment:*

- *WRCC SW Project Status 2022 Mar*

#### **7. Other**

- 2022 Stormwater Projects Tour: The stormwater tour this year will feature projects in Taneytown, Westminster, and Eldersburg, many of which were under construction during the last tour and are now complete. The tour will be held on May 6, with a May 13 rain date. Ms. Dinne previously emailed the municipalities the date, tentative itinerary, and request for lunch selections. Vehicles have been reserved for the municipal representatives and staff and will leave from the County Office Building at 9:00 AM.
- WRCC Representative on Water Resources Element (WRE) Staff Team: Ms. Dinne indicated a staff team will be assembled which will provide technical information and guidance for the WRE process. She requested a member of the WRCC to join the team to serve as a technical member for public water and wastewater, as well as represent the municipal perspective. Kevin Hann agreed to serve this role.
- Union Bridge Wetlands Project: Ed Singer shared that the agreement with the Town and the contracts to move forward with the project are in place. Dirt is expected to start moving before the next meeting.
- Compliance Reminders: Glenn Edwards reminded everyone to complete grab samples.
- Permit Coordination with Municipalities: Glenn Edwards and Claire Hirt would like to continue to build and strengthen the relationship between Land & Resource Management (LRM) staff and the municipalities. They would like to meet with each municipality in the next year to discuss any issues they might be having, public outreach and other initiatives that they aren't

aware of and how to coordinate, and any other items with which they may assist. He recently discovered that Mount Airy had more extensive public outreach initiatives than he was aware.

- Hydrologic Update: Zach Neal indicated that the county is still experiencing a water level deficit since the end of last year of 4 to 6 inches and shared information about gauge levels. The warmer weather has resulted higher evapotranspiration rates, which exacerbates the situation. However, he anticipates a wetter summer.
- PFAS Investigation at Public Safety Training Center: Mr. Neal gave a very brief update. He will give a more in-depth presentation at the May WRCC meeting.
- Union Mills Reservoir Property: Chris Heyn shared that the Board of County Commissioners recently questioned the need for this property, as a result of a discussion by Rec & Parks about developing a master plan for that property. Mr. Heyn shared with the Board the importance of maintaining ownership of that property for future public water supply.
- MDE Triennial Review / Use Classifications: At the February meeting, Byron Madigan noted that MDE recently released a triennial report that indicates stream segments that have been reviewed and are proposed for possible reclassification of use. There are several segments in Carroll County. Mr. Heyn shared that Mr. Madigan is drafting a letter of comment and will contact any municipalities that may be impacted by a proposed stream segment use reclassification. MDE will hold a public hearing on March 30 and will close the public comment period shortly thereafter.

## 8. Adjournment

The meeting adjourned at 3:23 PM. The next regular monthly meeting is scheduled for Wednesday, May 25, 2022, at 2:30 PM.

**MEETING ADJOURNMENT**: Motion was made by Dick Swanson and seconded by Kevin Hann to adjourn the March 23, 2022, meeting. Motion carried.

### **Upcoming Meetings:**

- ☐ *Stormwater Projects Tour – Friday, May 6, 2022 (in place of April 27 meeting)*
- ☐ *Regular Monthly Meeting – Wednesday, May 25, 2022*

# TOWN PROJECT STATUS

March 23, 2022

## FUTURE PROJECTS:

**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with NFWF. We are currently working to put together pieces of the QAPP, we anticipate finalizing the contract with CWP in the next month.

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

## CONCEPT DESIGN:

**Hampstead Valley 1** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. Staff met with CLSI and discussed various concept designs. CLSI is currently working on a revised concept plan.

**Hampstead Valley 4** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. Concept plan was submitted for review March 9<sup>th</sup>.

**New Windsor Wetland (New Windsor)**- The design was awarded to BAI. We anticipate a concept plan submittal in the near future.

**Roberts Field Wet Facility** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) submitted a revised concept plan on March 8th. A copy of the plan was submitted to the Town for review.

**Carroll County Health Department (Westminster)** – A new surface sand filter proposed downslope the existing parking lot, and removal of an existing underground facility. BAI submitted a concept design, and staff reviewed the plans. Staff is currently looking at an alternative solution.

## FINAL DESIGN:

**Locust Street (Citizens Energy) (Union Bridge)** –The plan was presented to the Town Planning Commission for approval on January 20th, County staff was present to answer questions. Staff is currently working with the Town and the County Attorney's office to obtain all necessary easements for construction. Kibler Construction was the low bid for construction at \$649,000.

## **CONSTRUCTION:**

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Construction of the pond is complete. BAI has been onsite to complete the as-built survey. Minor curb and sidewalk work is planned for mid- April.

**East/West Pond (formerly Prospect Road Mt. Airy, Frederick County Side) MDE Bay Restoration FY 20 Grant \$535,096)** – The as-built was approved by the County on February 22, 2022. We are waiting for final reimbursement from MDE for this project.

## **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**



# WRCC Legislative Update

## 2022 General Assembly Proposed Environmental Legislation



*Status: As of March 22, 2022*

DEAD 🚫

UNLIKELY TO PASS 🚧

MOVING FORWARD 🟢

Bill + Description	Status + Position
Senate + Crossfiled Bills	



## Bill + Description

## Status + Position

### SB 171

#### ENVIRONMENT - PUBLIC PARTICIPATION MODERNIZATION ACT

Authorizing the Department of the Environment to hold certain public meetings and hearings regarding certain licensing, permitting, and regulatory responsibilities using teleconference or Internet-based conferencing technology under certain circumstances; requiring applicants for certain licenses or permits to bear the cost of certain public meetings and hearings held using teleconference or Internet-based conferencing technology; repealing a requirement that notices regarding applications for certain air quality permits be sent by certified mail; requiring an applicant for certain permits to comply with specified provisions of law; requiring that certain hearings regarding sewage sludge permits be held in accordance with provisions of law regarding public participation rather than with the Administrative Procedure Act; and generally relating to public participation in the licensing, permitting, and regulations processes of the Department of the Environment.

**Bill:** <https://mgaleg.maryland.gov/2022RS/bills/sb/sb0171F.pdf>

#### > **Status:**

♦ **SB:** Passed Senate w amendments; Awaiting first reading in House

#### > **Positions:**

♦ **MML:** Not Tracking

♦ **MACO:** Not Tracking

♦ **LRM Position:** No Action

DEAD 

UNLIKELY TO PASS 

MOVING FORWARD 

## Bill + Description

## Status + Position

### SB 221 / HB 402

#### DEPARTMENT OF ENVIRONMENT – ENFORCEMENT AUTHORITY

Altering the enforcement authority of the Department of the Environment under various provisions of law, including provisions relating to waterway construction and dam safety, tidal and nontidal wetlands, drinking water, and waterworks, wastewater works, and industrial wastewater works; requiring a person or municipal or private corporation to report certain information to the Department annually; requiring certain penalties collected by the Department to be paid into the Maryland Clean Water Fund; etc.

Bill: <https://mgaleg.maryland.gov/2022RS/bills/sb/sb0221F.pdf>

#### > **Status:**

- ◆ **SB:** Hearing 2/2
- ◆ **HB:** Hearing 2/25

#### > **Positions:**

- ◆ **MML:** Support w/ Amendments
- ◆ **MACO:** Support w/ Amendments
- ◆ **LRM Position:** No Action

### SB 783 / HB 596

#### CONSTITUTIONAL AMENDMENT – ENVIRONMENTAL RIGHTS

Proposing an amendment to the Constitution of Maryland to establish that every person has the fundamental and inalienable right to a healthful and sustainable environment; and requiring the State to serve as the trustee of the State's natural resources, including the air, land, water, wildlife, and ecosystems of the State, and to conserve, protect, and enhance the State's natural resources for the benefit of every person, including present and future generations.

Bill: <https://mgaleg.maryland.gov/2022RS/bills/hb/hb0596F.pdf>

#### > **Status:**

- ◆ **SB:** Hearing 3/9
- ◆ **HB:** Hearing 2/23

#### > **Positions:**

- ◆ **MML:** Oppose
- ◆ **MACO:** Oppose
- ◆ **LRM Position:** Oppose

DEAD 🚫

UNLIKELY TO PASS 🚧

MOVING FORWARD 🏃

Bill + Description	Status + Position
<p><b>SB 818 / HB 1200</b>  <b>ENVIRONMENT – PERMIT APPLICATIONS – ENVIRONMENTAL JUSTICE SCREENING</b>            Requiring a person applying for a certain permit from the Department of the Environment to include in the application the EJ Score from the Maryland EJScreen mapping tool for the address where the applicant is seeking the permit; requiring the Department, on receiving a certain permit application, to conduct an environmental justice analysis of the address where the applicant is seeking a permit using the Maryland EJScreen mapping tool; etc.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/sb/sb0818F.pdf">https://mgaleg.maryland.gov/2022RS/bills/sb/sb0818F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>♦ <b>SB:</b> Hearing 2/24</li> <li>♦ <b>HB:</b> Hearing 3/4</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>♦ <b>MML:</b> Unknown</li> <li>♦ <b>MACO:</b> Not Tracking</li> <li>♦ <b>LRM Position:</b> No Action</li> </ul>
<p><b>SB 854 / HB 1126</b>  <b>GRAYWATER SYSTEMS – PUBLIC AND PRIVATE BUILDINGS – AUTHORIZATION</b>            Authorizing the use of a certain graywater system to serve a public or private building that is located on a former dredge site or is located in a remote area with minimal public access and operates on a seasonal basis; and requiring the owner or operator of a building using a graywater system to safely dispose of graywater in a certain manner.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/sb/sb0854F.pdf">https://mgaleg.maryland.gov/2022RS/bills/sb/sb0854F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>♦ <b>SB:</b> Hearing 2/24</li> <li>♦ <b>HB:</b> Hearing 3/2</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>♦ <b>MML:</b> Unknown</li> <li>♦ <b>MACO:</b> Not Tracking</li> <li>♦ <b>LRM Position:</b> No Action</li> </ul>
<p><b>SB 945/HB 869</b>  <b>WETLANDS AND WATERWAYS PROGRAM – AUTHORIZATIONS FOR ECOLOGICAL RESTORATION PROJECTS</b>            Requiring the Department of the Environment to establish a certain process for reviewing and evaluating applications for wetlands and waterways authorizations for ecological restoration projects on or before October 1, 2023.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb0869F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb0869F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>♦ <b>SB:</b> Awaiting first reading</li> <li>♦ <b>HB:</b> Hearing 2/25</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>♦ <b>MML:</b> Unknown</li> <li>♦ <b>MACO:</b> Not Tracking</li> <li>♦ <b>LRM Position:</b> No Action</li> </ul>
<p><b>SB 999/HB 936</b>  <b>BLUE RIBBON COMMUNITY SOLAR LAND USE COMMISSION</b>            Establishing the Blue Ribbon Community Solar Land Use Commission to study and make recommendations regarding the land use needs to meet the full generation capacity authorized under the Community Solar Energy Generating Systems Pilot Program; and requiring the Commission to report its findings and recommendations to the Governor and the General Assembly by December 1, 2022.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb0936F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb0936F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>♦ <b>SB:</b> Awaiting first reading (Rules)</li> <li>♦ <b>HB:</b> Hearing 3/2</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>♦ <b>MML:</b> Support w/ Amendments</li> <li>♦ <b>MACO:</b> Support w/ Amendments</li> <li>♦ <b>LRM Position:</b> Oppose</li> </ul>
<b>House Bills</b>	
<p><b>HB 621</b>  <b>SEWAGE TREATMENT PLANTS - EFFLUENT DISCHARGES - MONITORING, EVALUATION, AND INSPECTION</b>            Requiring the Department of the Environment to monitor effluent discharged from sewage treatment plants, evaluate whether the effluent and any nutrients in the effluent impacts midge populations in the surrounding land and water areas, and hire an inspector for certain sewage treatment plants; requiring the Department, beginning in 2023, to report to the General Assembly by October 1 each year on the actions it has undertaken pursuant to the Act.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb0621F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb0621F.pdf</a></p>	<p>› <b>Status:</b></p> <ul style="list-style-type: none"> <li>♦ <b>HB:</b> Hearing 2/16</li> </ul> <p>› <b>Positions:</b></p> <ul style="list-style-type: none"> <li>♦ <b>MML:</b> Not Tracking</li> <li>♦ <b>MACO:</b> Not Tracking</li> <li>♦ <b>LRM Position:</b> No Action</li> </ul>

Bill + Description	Status + Position
<p><b>HB 1263</b>  <b>ENVIRONMENT – OFFICE ON CLIMATE CHANGE – ESTABLISHMENT</b>            Establishing the Office on Climate Change in the Office of the Governor to coordinate with the Commission on Climate Change to ensure certain recommendations are implemented, ensure that each State agency addresses ways the agency can mitigate the causes of climate change and certain impacts of climate change, initiate and oversee certain climate change research and investigations, and work with local governments on the development and implementation of local climate change plans.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb1263F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb1263F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 3/9</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Pending</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 1311</b>  <b>CHESAPEAKE BAY RESTORATION FUND – AUTHORIZED USES (CHESAPEAKE BAY RESTORATION FUND LOCKBOX ACT OF 2022)</b>            Restricting the use of the Chesapeake Bay Restoration Fund to certain purposes directly related to addressing pollution from wastewater treatment facilities, on-site sewage disposal systems, sewer systems, and stormwater management systems; repealing provisions of law requiring certain amounts to be transferred from the Chesapeake Bay Restoration Fund to the Clean Water Commerce Account, the Chesapeake Bay Trust, the Chesapeake and Atlantic Coastal Bays 2010 Trust Fund, and the Department of Agriculture; etc.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb1311F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb1311F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 3/10</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Not Tracking</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 1328</b>  <b>COUNTIES AND MUNICIPALITIES – WATER TRANSFER FEE – AUTHORIZATION</b>            Authorizing the governing body of a county or municipality to impose a fee on a person who holds a certain permit and transfers surface water or groundwater outside a watershed located wholly or partially within the county or municipality.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb1328F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb1328F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 3/8</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Support w/ Amendments</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 1372</b>  <b>ENVIRONMENT – GREEN INFRASTRUCTURE REBATE PROGRAM – ESTABLISHMENT</b>            Establishing the Green Infrastructure Rebate Program to provide property owners the incentive to invest in stormwater management practices–; requiring the Department of the Environment to administer the Program in collaboration with each county that elects to participate in the Program; authorizing the Department to delegate authority to administer the Program to a participating county; and requiring the Department and participating counties to provide a certain percentage of the cost of a rebate under the Program.  <b>Bill:</b> <a href="https://mgaleg.maryland.gov/2022RS/bills/hb/hb1372F.pdf">https://mgaleg.maryland.gov/2022RS/bills/hb/hb1372F.pdf</a></p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Hearing 3/9</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>
<p><b>HB 1470</b>  <b>STATE FINANCE AND PROCUREMENT - CHESAPEAKE BAY WATERSHED STATES - EXPENSES AND CONTRACTS (QUIT POLLUTING MY BAY ACT OF 2022)</b>            Requiring the Standard State Travel Regulations adopted under certain provisions of law to prohibit the reimbursement for travel expenses related to travel to a certain state for which the U.S. Environmental Protection Agency has identified two or more pollution source sectors at a backstop actions level of oversight; and prohibiting a certain public body from awarding a certain procurement contract for goods or services to a certain business from a certain state under certain circumstances.</p>	<p>&gt; <b>Status:</b></p> <ul style="list-style-type: none"> <li>◆ <b>HB:</b> Awaiting first reading (Rules)</li> </ul> <p>&gt; <b>Positions:</b></p> <ul style="list-style-type: none"> <li>◆ <b>MML:</b> Unknown</li> <li>◆ <b>MACO:</b> Not Tracking</li> <li>◆ <b>LRM Position:</b> No Action</li> </ul>

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UNLIKELY TO PASS 🚫

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# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary May 25, 2022

### **Attendees:**

#### Municipalities:

- Steve Miller, Chair
- Jim Wieprecht, Vice Chair
- Joe Cosentini
- Gary Dye
- Jeff Glass
- Kevin Hann
- Mayor Perry Jones
- Rodney Kuhns
- Tammi Ledley
- Kevin Rubenstein
- Derek Shreeves
- Dick Swanson

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer

#### Health Department:

- Rick Brace
- Nicole Bowman

#### CCG Others:

- Andy Watcher, CC DPW
- Lydia Rogers, CC M&B

#### Guest Speakers:

#### Others:

- Lindsay Keeney, BNL

### **1. Opening Statement**

#### **Chair -**

Mr. Steve Miller, Chair, officially called the May 25, 2022, meeting of the Water Resource Coordination Council (WRCC) to order at 2:30 PM in Room 105, in the County Office Building. Mr. Miller thanked staff for arranging the stormwater tour.

#### **Vice Chair -**

Mr. Wieprecht also thanked staff for arranging the stormwater tour.

### **2. Approval of Meeting Summary – March 23, 2022**

Approval of the May meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Jim Wieprecht and seconded by Mayor Perry Jones to approve the March 23, 2022, meeting summary as written. Motion carried.

### **3. Westminster Water Reuse Pilot Project – Wrap-Up – Jeff Glass**

The Westminster water reuse pilot project is complete, and the equipment has been removed. Jeff Glass shared a public outreach video about the City's potable water reuse initiative produced using a grant. He discussed the process for treating the water and some of the challenges and implications of the water reuse process and treatment. The water is treated beyond the level of treatment of most water treatment plants. After the wastewater is treated, it is/will be discharged to Cranberry Reservoir. It will be treated again at the water treatment plant before entering the public water supply.

The City is in the process now of getting a sewershed study underway, as well as watershed protection best management practices. MDE approvals need to be obtained. Design has started. Completion of the new plant is anticipated for less than 2 years from now. The plant will ultimately be built to treat 2 million gallons per day (gpd) but can construct 500,000 gpd at a time.  
[Reference/Attachment:](#)

- *Indirect Potable Use Has Become a Viable Option*

#### **4. Water Resources Element (WRE 2024) Scope – Brenda Dinne, Chris Heyn**

Ms. Dinne anticipates that the Request for Qualifications (RFQ) will be posted on June 1, 2022. Statements of Qualifications (SOQs) are due by July 5. Of the SOQs received, five will be chosen to present to staff in August, and two of those will be requested to submit a proposal in September. Staff is currently working on the detailed scope for the Request for Proposal (RFP).

As a member of the staff technical team, Kevin Hann suggested that the municipalities begin updating/preparing their water supply and wastewater capacity management plan worksheets now. This will save time later when the consultant requests the data for their analysis.

[Reference/Attachment:](#)

- *n/a*

#### **5. Municipal Stormwater Projects Update – Ed Singer**

Ed Singer provided an update on the municipal stormwater restoration projects.

[Reference/Attachment:](#)

- *Town Project Status May 25, 2022*

#### **6. Other**

- NPDES Draft Permit: Chris Heyn shared that the public comment period ends June 9. Maryland Department of the Environment (MDE) will review the comments and respond in August. The final public notice is expected in September, with the final permit issued in October.
- NPDES Meetings with Municipalities: Glenn Edwards and Claire Hirt will be contacting each municipality to review what each is already doing and by whom to be sure all activities that can be credited are captured.
- NPDES Annual Report: MDE indicated that the County and municipalities can transition to the new permit requirements for the 2022 Annual Report. Ms. Hirt and Mr. Edwards will work on have the items in place by July 1. This will be discussed with the municipalities during the individual meetings over the summer.
- Industrial Stormwater Permit: The 20-SW permit(s) will be published this month.
- Construction Stormwater Permit: This permit (20-CP) will be finalized in August/September.
- A-StoRM Stakeholder Group: Chris Heyn was invited by MDE to serve on the stakeholder group. There will be three technical groups as well. Staff names will be submitted, if not already, to serve on these groups as well. Regulation changes will be proposed to:
  - Update precipitation data.
  - Increase the environmental site design (ESD) from 2.7 inches to 3.0 inches of rainfall.
  - Require 2- and 10-year management for all new development.
  - Require stormwater runoff from new development to manage future precipitation back to historic precipitation levels. Changes to rainfall would also be considered along with changes to land use.
- Triennial Review (water quality standards): The comment period is closed. Final proposed regulations will be determined in September.
- Water Levels: Per Zach Neal, water levels are about where they should be for this time of year.

- Per- and Polyfluoroalkyl Substances (PFAS) Standards: Kevin Hann shared that it looks like MDE may be requiring stricter PFAS standards than originally anticipated.
- New Health Department Employee: Richard Brace introduced Nicole Bowman.

## **7. Adjournment**

The meeting adjourned at 3:58 PM. The next monthly meeting is scheduled for Wednesday, June 22, 2022, at 2:30 PM.

**MEETING ADJOURNMENT:** Motion was made by Kevin Hann and seconded by Dick Swanson to adjourn the May 25, 2022, meeting. Motion carried.

## **Upcoming Meetings:**

- ☐ *Regular Monthly Meeting – Wednesday, June 22, 2022*



# TOWN PROJECT STATUS

June 22, 2022

## FUTURE PROJECTS:

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

**Meadow Ridge Basin 2 (Westminster)** – Retrofit of existing facility to provide water quality through a surface sand filter. This site is adjacent to the pump station at the edge of the City limits. Design proposals came in higher than anticipated—we will rebid the design under the new term contract.

**Manchester East (Manchester)** – We are looking into opportunities for a new stormwater facility north of Manchester Valley High School, adjacent to the pump station.

## CONCEPT DESIGN:

**Hampstead Valley 1 (Hampstead)** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. CLSI is currently working on a concept plan.

**Hampstead Valley 4 (Hampstead)** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. Concept review comments were returned on April 29, and we are awaiting a resubmittal.

**New Windsor Wetland (New Windsor)**- Survey data on the sewer force main was obtained to design around for the wetland facility. We anticipate a concept plan submittal in the near future.

**Roberts Field Wet Facility (Hampstead)** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) has received

comments on the concept plans, and is currently underway with addressing comments for the next submittal.

**Carroll County Health Department (Westminster)** – We are currently looking at an alternative solution to treat the stormwater from the Health Department and adjacent neighbor storm drains via the Langdon facility.

### **FINAL DESIGN:**

**North Carroll Library (Hampstead)** – Final design for an underground sand filter is under way. Due to summer outdoor programming at the library, we plan to start construction after September 1.

### **CONSTRUCTION:**

**Locust Street (Citizens Energy) (Union Bridge)** – This project was awarded to Kibler Construction, Inc. in the amount of \$649,000.00. The contractor has completed the principal spillway and is currently grading the wetland facility.

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Construction of the pond is complete. The as-built survey revealed a localized area on the embankment that must be raised. CJ Miller plans to add topsoil to meet the stormwater requirements.

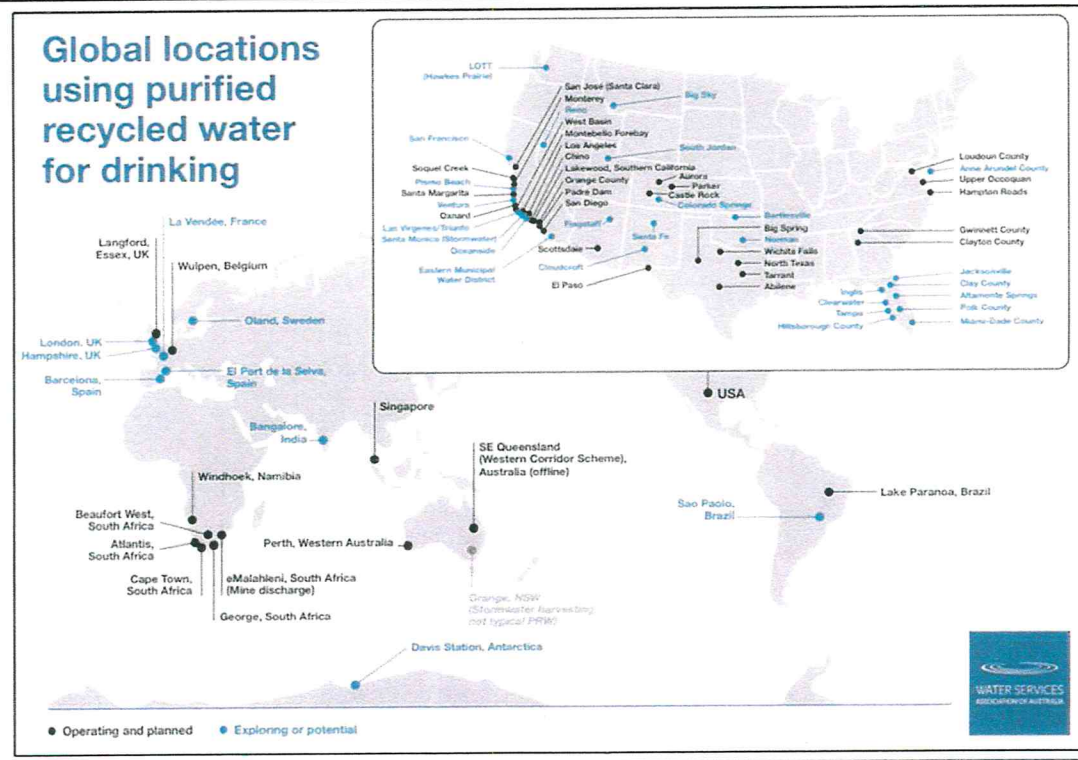
### **PLANNING PROJECTS:**

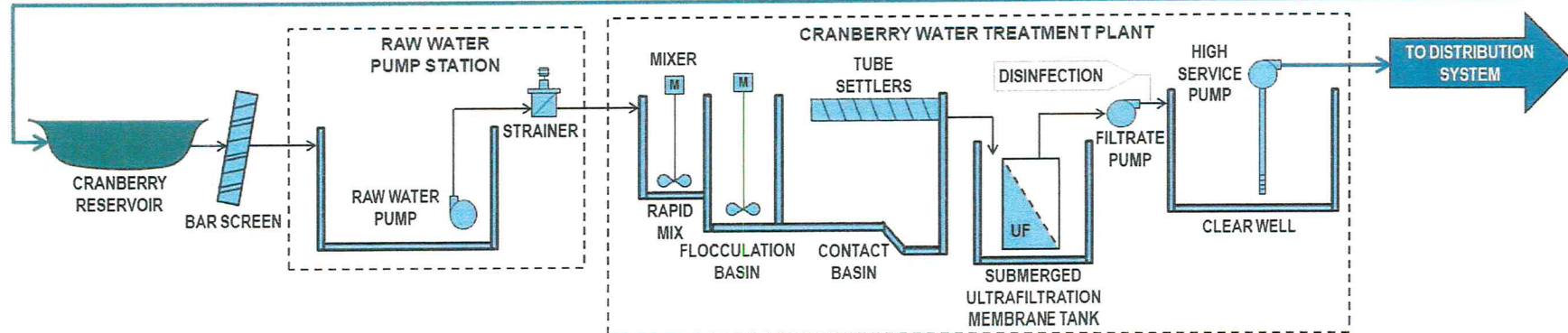
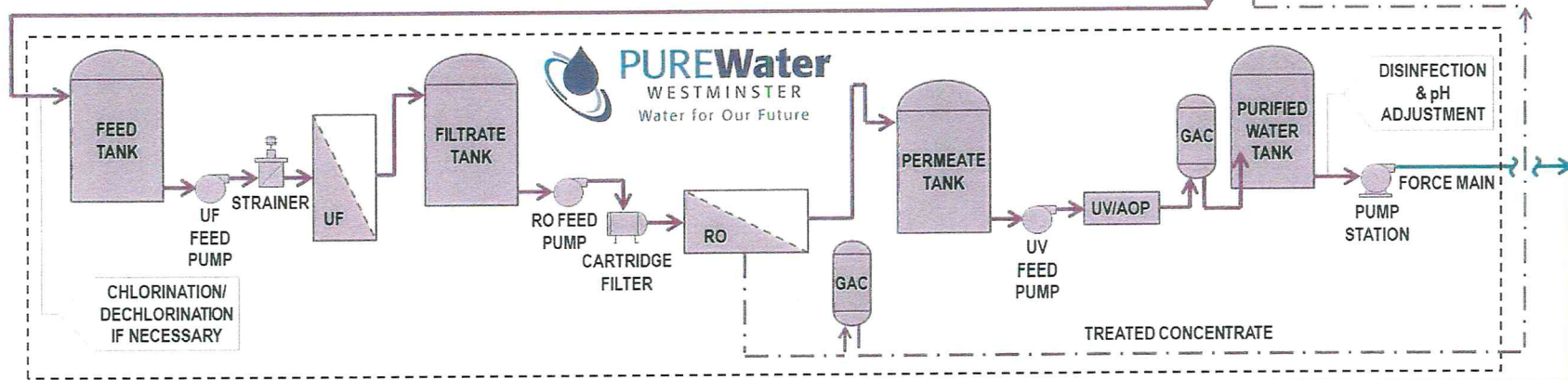
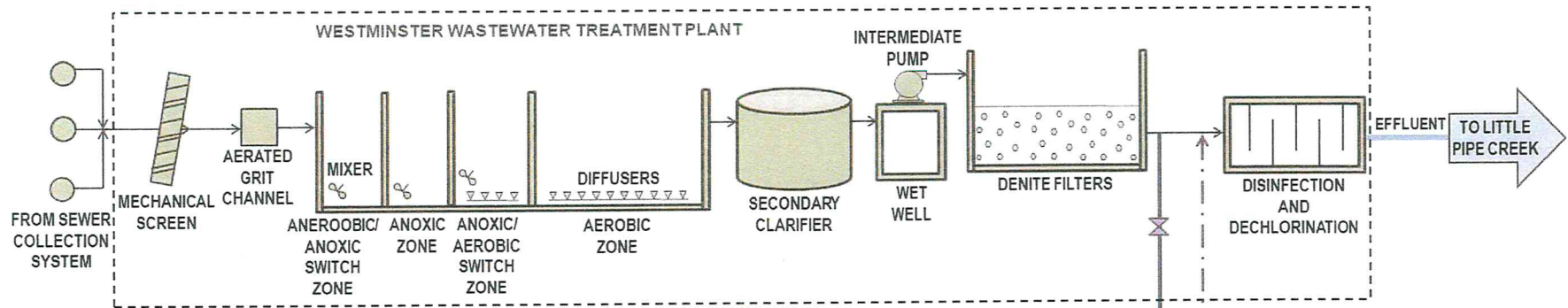
**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with the National Fish and Wildlife Foundation (NFWF). The contract with The Center for Watershed Protection has been signed, they will begin reviewing the Quality Assurance Project Plan (QAPP) put together by the County making any necessary additions before it's sent to Cardno for their review and approval. Once the QAPP is approved we can begin the watershed study.

### **TREE PLANTING PROJECTS:**

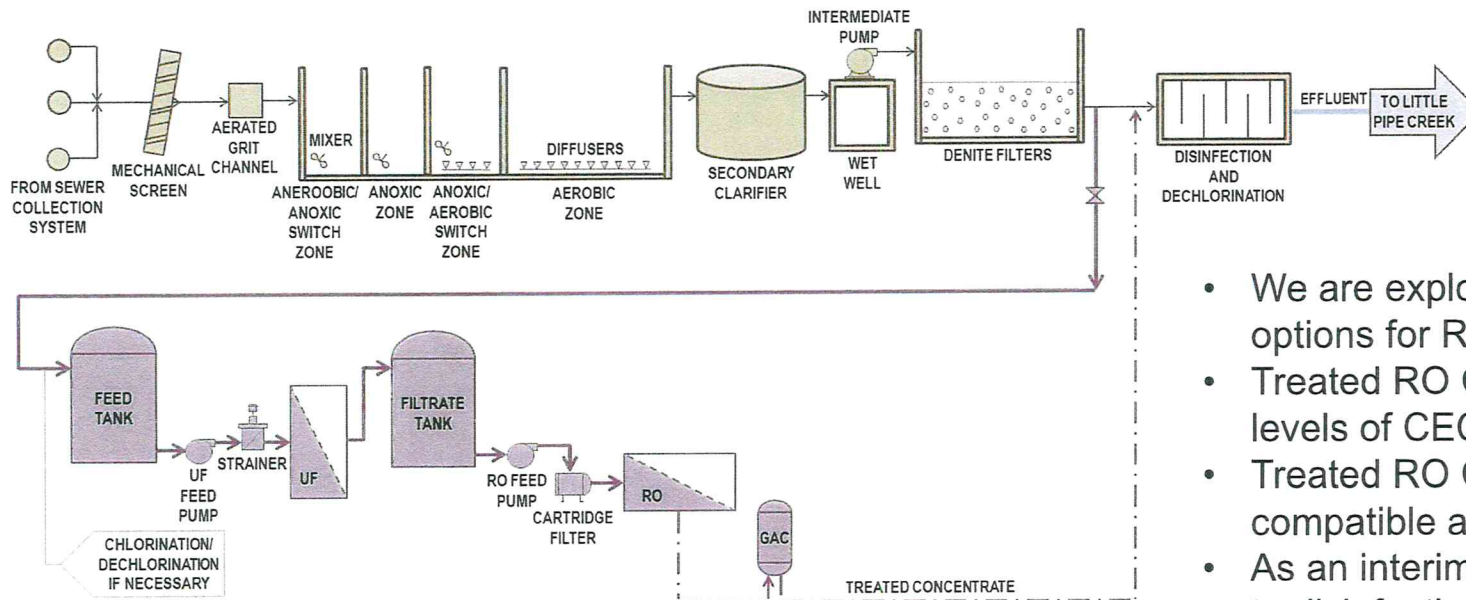
**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**

# Indirect Potable Reuse Has Become a Viable Option





# RO Concentrate Treatment Processes



- We are exploring beneficial reuse options for RO Concentrate after GAC
- Treated RO Concentrate had very low levels of CECs and PFAS
- Treated RO Concentrate is compatible and meets NPDES
- As an interim measure, blending prior to disinfection with the Denite Filter effluent is planned



## WRCC Meeting Summary June 22, 2022

### **Attendees:**

#### Municipalities:

- Steve Miller, Chair
- Jim Wieprecht, Vice Chair
- Joe Cosentini
- Gary Dye
- Jeff Glass
- Kevin Hann
- Mayor Perry Jones
- Rodney Kuhns
- Tammi Ledley
- Derek Shreeves
- Dick Swanson
- Kevin Rubenstein

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer

#### Health Department:

- Rick Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Lydia Rogers, CC M&B

#### Guest Speakers:

- Pat Varga

#### Others:

### **1. Opening Statement**

#### **Chair -**

Mr. Steve Miller, Chair, officially called the June 22, 2022, meeting of the Water Resource Coordination Council (WRCC) to order at 2:30 PM in Room 105, in the County Office Building.

#### **Vice Chair -**

Nothing to add.

### **2. Approval of Meeting Summary – May 25, 2022**

Approval of the May meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Dick Swanson and seconded by Jeff Glass to approve the May 25, 2022, meeting summary as written. Motion carried.

### **3. Hurricane Agnes 50<sup>th</sup> Anniversary Initiative – Pat Varga**

Pat Varga, Floodplain Specialist within the Bureau of Resource Management, presented information about Hurricane Agnes and the initiative to commemorate the 50<sup>th</sup> anniversary of this event, which hit in June 1972.

He provided a background on Hurricane Agnes and its impact in Carroll County. Carroll received 12-14 inches of rainfall. An estimated 10 million tons of sediment were moved as part of the flooding. Approximately 50,000 homes were destroyed or damaged, which 121 fatalities.

A short film is being produced by the County media staff. A website is available which includes 70 pictures submitted from around the county.

Business cards with a QR code for the Hurricane Agnes website that shares impacts in Carroll County. Mr. Varga also reviewed the Silver Jacket Project.

*Reference/Attachment:*

- *Attached: Hurricane Agnes 50 Years Later (PowerPoint); Hurricane Agnes QR Code Card*

#### **4. Water Resources Element (WRE 2024) Update – Chris Heyn**

Chris Heyn reported that the Request for Qualifications was released, and Statements of Qualification (SOQs) are due by July 5. If enough SOQs are received, they will be narrowed down to the top five and select two firms to provide detailed cost estimates and proposals. Final selection is anticipated by the end of the calendar year, with project kickoff in January 2023.

*Reference/Attachment:*

- *n/a*

#### **5. Municipal Stormwater Projects Update – Janet O’Meara**

Janet O’Meara provided an update on the municipal stormwater restoration projects.

*Reference/Attachment:*

- *Attached: Town Project Status, June 22, 2022*

#### **6. Other**

- NPDES Permit Reporting Forms: Claire Hirt shared that NPDES permit digital reporting forms would be sent to the municipalities around mid-July. Any litter cleanup or outreach done by the municipalities should be recorded, so this can be reported for the entire fiscal year 2022-2023 rather than just from the point at which the permit goes into effect. Ms. Hirt and Mr. Edwards will continue scheduling of the one-on-one meetings with the municipalities.
- MdQI Project of The Year Award: Chris Heyn mentioned that the Land & Resource Management Department (LRM) had received the MdQI Project of The Year Award for projects under \$5 million for the Langdon Stormwater Management Facility. Trophy and award are showcased in the COB lobby.
- Environmental Symposium: LRM staff are working on developing an environmental symposium to be held this fall. The intent of the symposium is to develop connections and partnerships with local non-profit groups whose work may complement the MS4 permit work and vice versa, public outreach, as well as to foster additional volunteer opportunities. Staff is currently reaching out to these groups to determine interest. A recycled art competition for high school students is also planned. Anyone with suggestions for groups to contact/include can forward them to Chris Heyn.
- EPA PFAS Levels: The PFAS levels that EPA is discussing are very restrictive. If this level moves forward, it will affect the municipalities and their well water. Chris Heyn hopes to use the WRCC as a means of coordinating with the State on municipal efforts.

#### **7. Adjournment**

The meeting adjourned at 3:30 PM. The next monthly meeting is scheduled for Wednesday, July 27, 2022, at 2:30 PM.

**MEETING ADJOURNMENT:** Motion was made by Kevin Hann and seconded by Dick Swanson to adjourn the June 22, 2022, meeting. Motion carried.

#### **Upcoming Meetings:**

- Regular Monthly Meeting – Wednesday, July 27, 2022*



PATRICK VARGA, CFM  
CARROLL COUNTY, MD

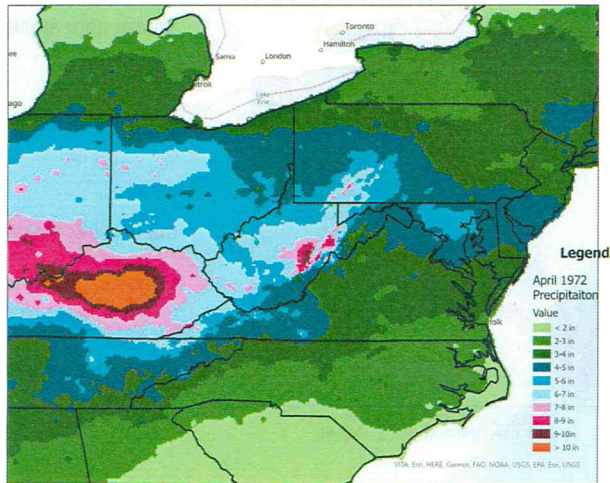
## HURRICANE AGNES 50 YEARS LATER

## Setting the stage

Weather patterns of the weeks leading up to Agnes

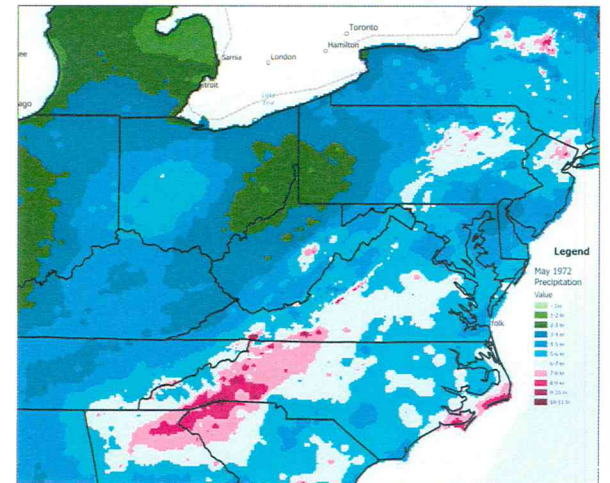
### April 1972

Rainfall generally near normal over much of the region but band of 5+ inches across central portions of Mid-Atlantic



### May 1972

Over 5 inches of rain in much of Virginia and into eastern Pennsylvania  
Some areas over 7+ inches  
Well above average





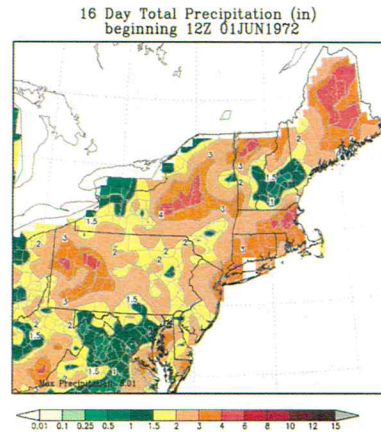
## 1st Half of June

- Continued above average rainfall in parts of region
- Minor flooding in parts of New Jersey
- June 15-17 - frontal system brings more heavy rain across region
  - 2-4 inches from eastern New York into NW Pennsylvania

### Result

Grounds were saturated

Rivers were running at relatively high levels before any rain from Agnes



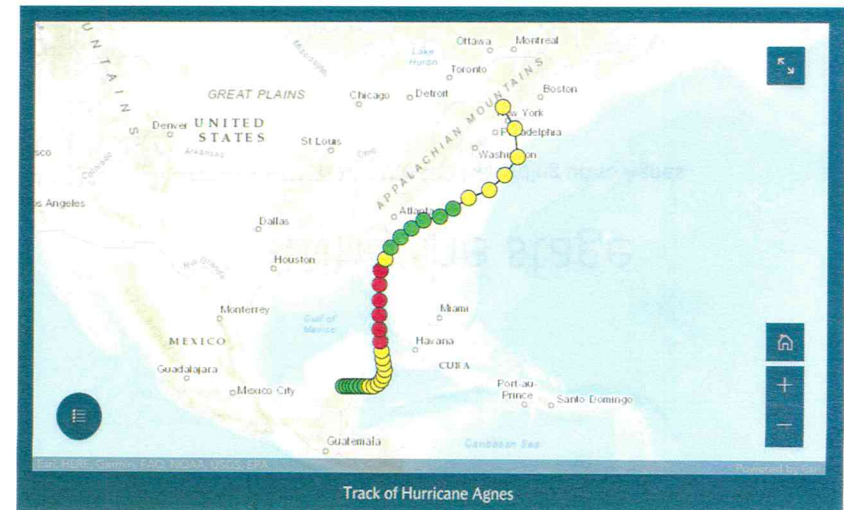
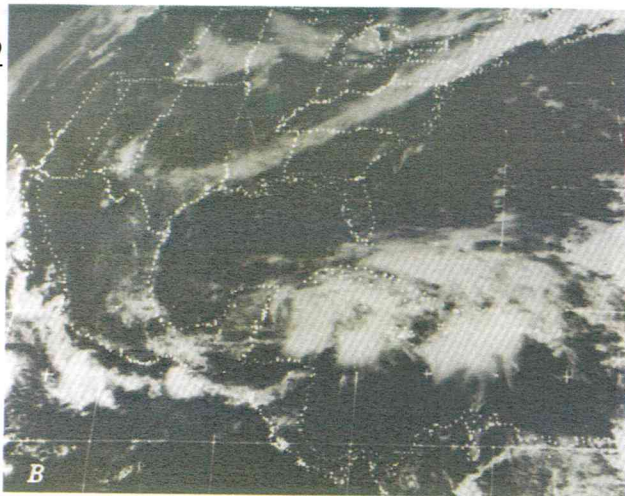
## Agnes Timeline

June 15 - 17, 1972

Tropical Storm Agnes forms off the Yucatan Peninsula

Storm moves north across the Gulf of Mexico

Historical Note - June 17th - burglars arrested at DNC in the Watergate

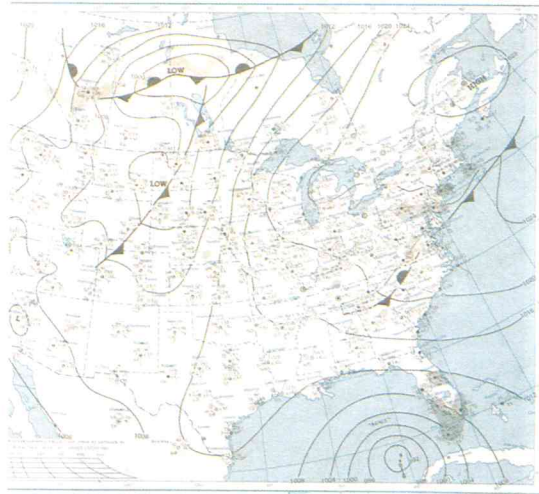
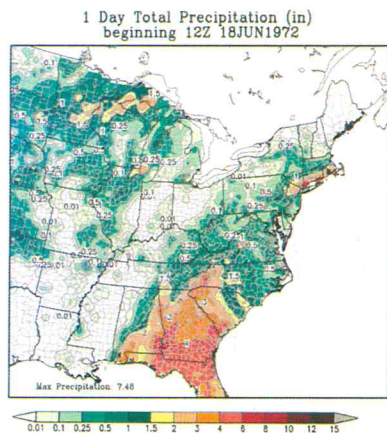
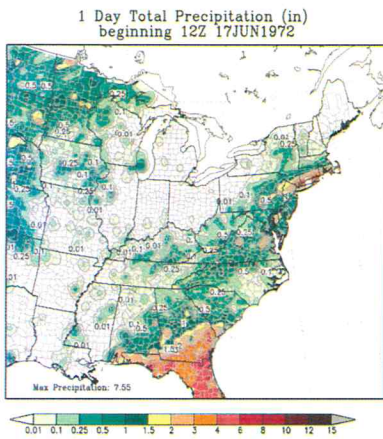


## 24-hour Rainfall

Heavy rain in Florida and southern Georgia

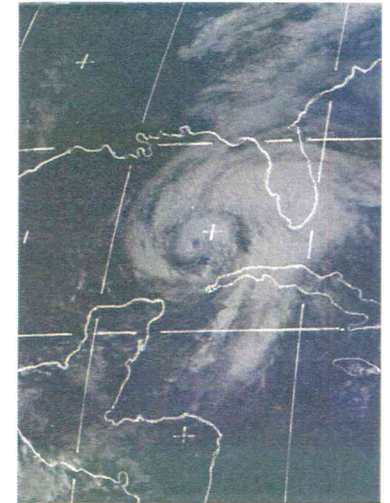
Frontal passage ahead of Agnes brings additional rainfall all along the Atlantic coast

1-3 inches of rain in northeast Pennsylvania



## Sunday, June 18th

- Maximum sustained winds over the Gulf of Mexico reach 85 mph
  - Category 1 Hurricane (74-95 mph)
- NWS Richmond office begins forecasts for locally heavy rain the following couple of days
- 14 tornados reported over parts of Florida



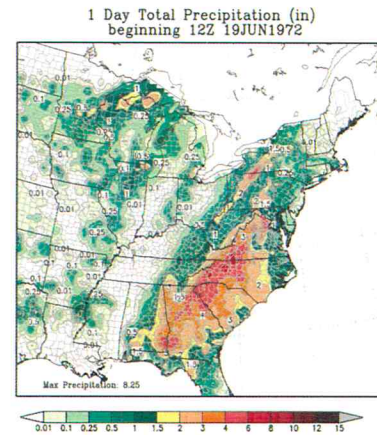
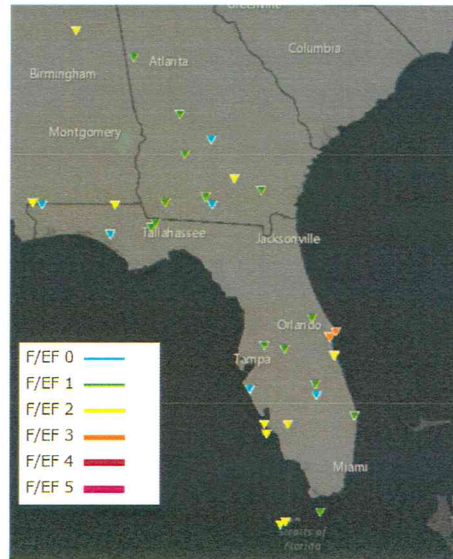
## Monday, June 19th

- 8pm - Landfall near Panama City, Florida
- Storm Surge along Florida Gulf Coast up to 7ft above normal
- More tornados reported in Florida and Georgia
- Heavy rains begin in Virginia
  - Rain was falling over 600 miles ahead of the center of the storm

## June 1972 Tornadoes

Most of these tornadoes were associated with Agnes

There was another outbreak at the end of the month



24 hour rainfall beginning Monday morning

Heaviest rainfall now over the Carolinas  
Widespread area of more than 2 inches

## Tuesday, June 20th (morning)

- Storm center now over Georgia
- Storm has “degraded” to a tropical depression
- NWS Buffalo office begins forecasts for heavy rain
- In the early morning rain begins to fall in the upper portion of the James River basin in Virginia and by noon has progressed into the Potomac River basin above Washington DC



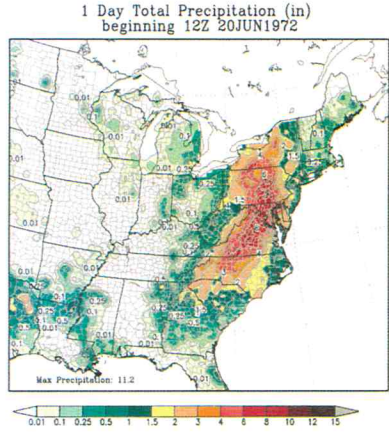
## June 20th (evening)

Storm center now over South Carolina

Flood watches now in effect for much of the Potomac and Susquehanna River basins

Heavy rain begins falling in the Chemung River basin in New York.

Some of this initial rainfall was associated with a frontal system that would help focus some of the rainfall from Agnes



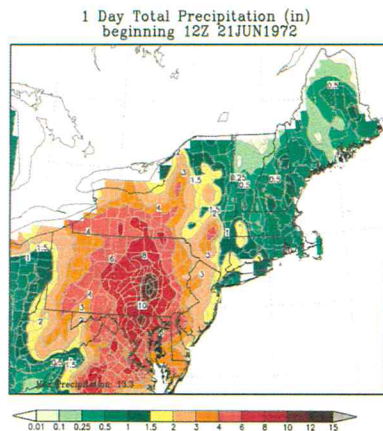
## Wednesday, June 21st

At noon, Agnes was centered over eastern North Carolina with 40mph winds and strengthening back to a Tropical Storm strength as it moves back into the Atlantic this evening

Rainfall begins in Harrisburg in the morning; by evening evacuations are necessary due to locally heavy rains

Flood warnings are in effect over much of the Mid-Atlantic

Richmond forecast to 23 ft - 11ft above flood levels



## Thursday, June 22nd



By Thursday morning, Agnes was now over the Delmarva coast

The James River at Holcomb Rock VA rose 22 ft in 24 hours and would crest before noon

Dulles Airport recorded nearly 12 inches of rain in 24hrs ending at 7am

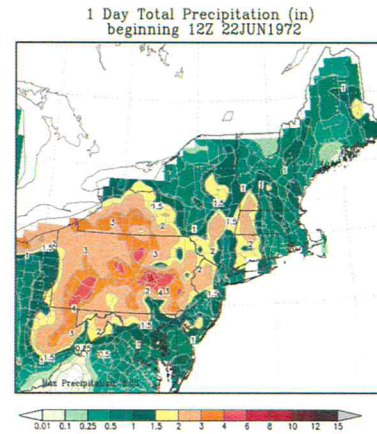
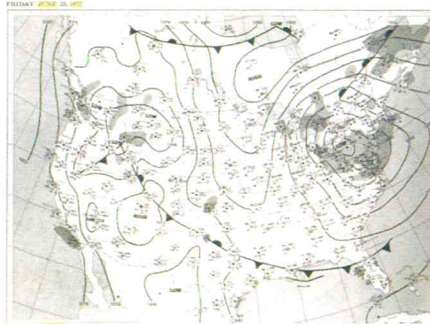
Pottstown PA river gage goes out with river near record flood - river would continue to rise another 9ft

## Thursday evening until early Friday morning

Storm is centered over eastern New York with a secondary low near Scranton, PA

After reaching 17ft flood stage, Harrisburg PA is now forecast to crest at 32ft

Wilkes-Barre PA is forecast to crest at 40ft on the morning of the 24th (flood stage is 22 ft). This forecast leads to the evacuation of 100,000 people in the area.



## Friday, June 23rd

Storm is centered over central Pennsylvania

7:14am - Power goes off at the River Forecast Center in Harrisburg - all subsequent forecasts are prepared manually

Philadelphia river gage crests at 14.7 ft

Flooding in downtown Richmond knocks out most comms circuits as James River crests 8ft above previous record



## June 24th-25th

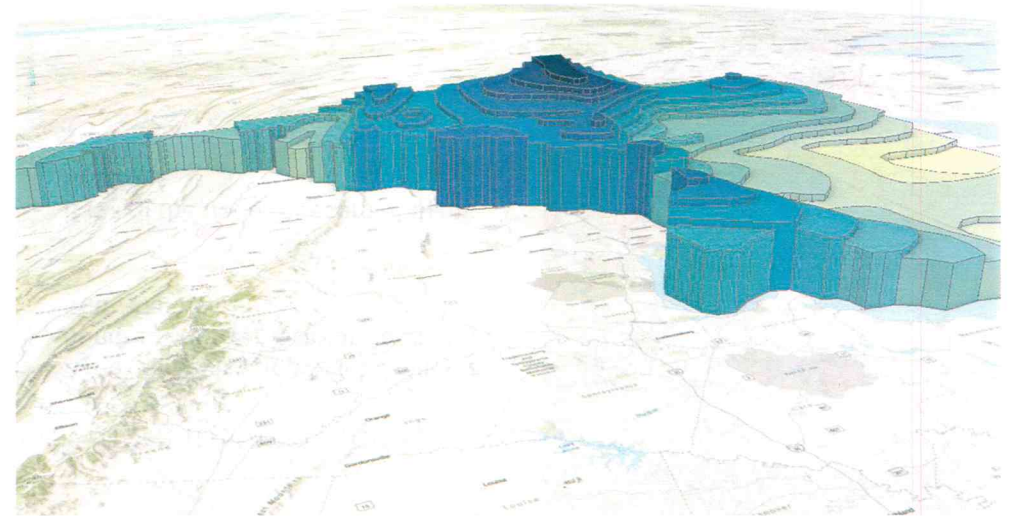
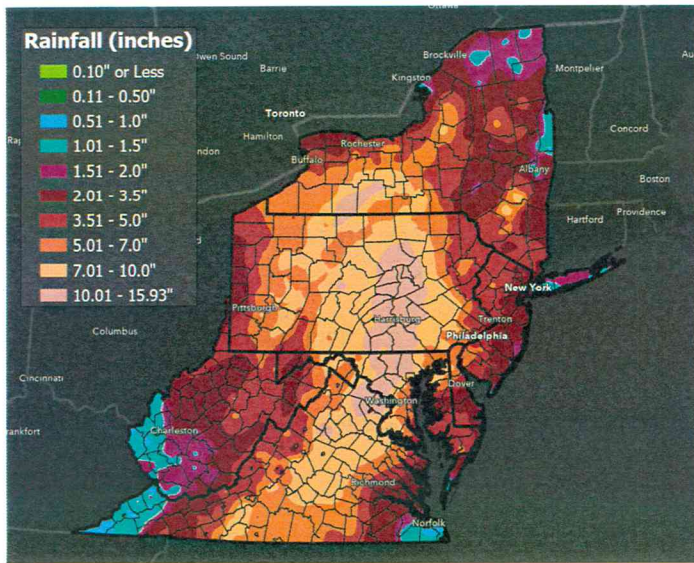
Harrisburg crests at 32.6ft and would remain near crest for 16 hours

Wilkes-Barre crests at 40.6 feet - over 18ft above flood

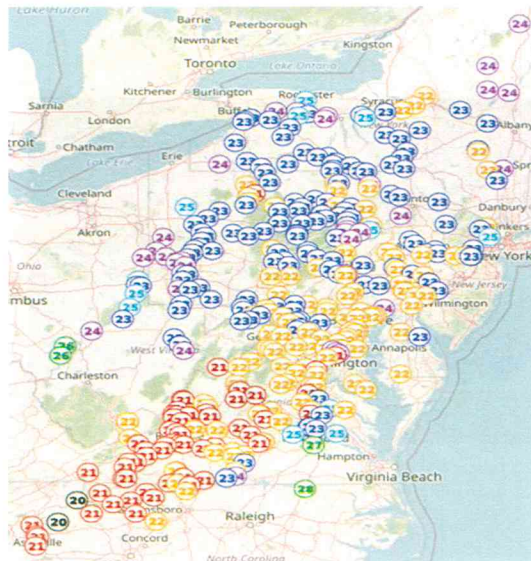
13.5 inches of rain in Williamsport PA over the past 5 days

Mt Morris Dam on the Genesee River in New York had to take emergency actions to prevent failure





Flood Crest Date



## Sedimentation

10 million tons of sediment

- Soil channel erosion
- Road washouts
- Agricultural runoff



## What Caused Agnes to be so Catastrophic

1. Antecedent Conditions
  - a. Wet for 2 months prior to Agnes
2. Unusually large circulation
  - a. 1000 mile diameter
3. Interaction with frontal system
4. Stall over Mid-Atlantic region
5. Urbanization
6. Terrain



## Terrain Enhancement

Allegheny Ridge runs through the Mid-Atlantic  
Helped focus some of the areas of heaviest rainfall



## 1972 Tropical Season

The 1972 tropical season was relatively quiet with only 4 named storms

- Agnes - June - max wind 75mph
- Betty - August - max wind 90mph
- Carrie - Aug/Sept - max wind 60mph
- Dawn - Sept - max wind 70mph

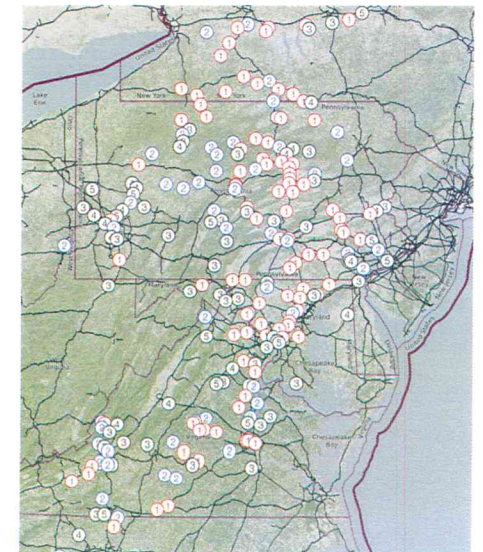
Despite the relatively “quiet” season, 1972 was one of the most impactful tropical seasons ever

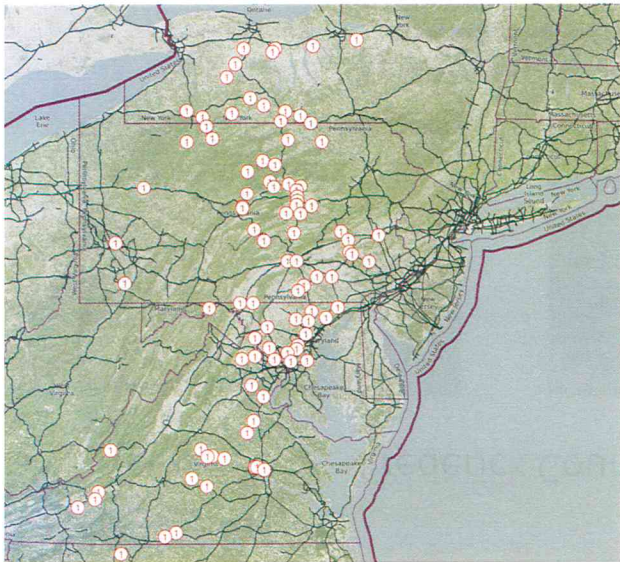
*Remember - it only takes one storm*

## Where It Stands Today

Agnes remains a Top 5 flood event at hundreds of river locations across the Mid-Atlantic

It is still the flood of record at many locations





Record  
Breaking  
Crests

33

## Agnes Damages

	Homes Destroyed or w/ Major Damage	Homes w/ Minor Damage	Farms or Small Businesses Destroyed or w/ Major Damage
Pennsylvania	38,907	29,455	4,687
New York	6,052	27,910	1,980
Virginia	1,977	3,086	243
Florida	1,094	1,355	988
Maryland	1,062	1,664	142
West Virginia	661	1,214	28
Ohio	103	302	0
North Carolina	7	0	0
Georgia	1	0	0
District of Columbia	0	350	0
Delaware & New Jersey	N/A	N/A	N/A
<b>TOTAL</b>	<b>49,864</b>	<b>65,336</b>	<b>8,068</b>

## Agnes Damages

**At the time, Agnes was the costliest tropical cyclone in U.S. history, with \$2.1 billion in damages (\$13.6 billion in 2021 dollars). It held that distinction for 11 years, until Alicia in 1983.**

## Agnes Evacuees

Pennsylvania	222,000
New York	95,000
Virginia	37,310
Maryland	4,000
Ohio	2,500
West Virginia	1,000
Florida	500
North Carolina	200
District of Columbia	0
Delaware	0
New Jersey	0

**Total: 362,510 evacuees across 8 states**





# Agnes Fatalities

Pennsylvania	48
New York	24
Maryland	21
Virginia	14
Florida	9
New Jersey	2
North Carolina	2
Delaware	1
Ohio	0
West Virginia	0
District of Columbia	0

**Total: 121 fatalities**



Photo Credit: William Schintz

# Ellicott City



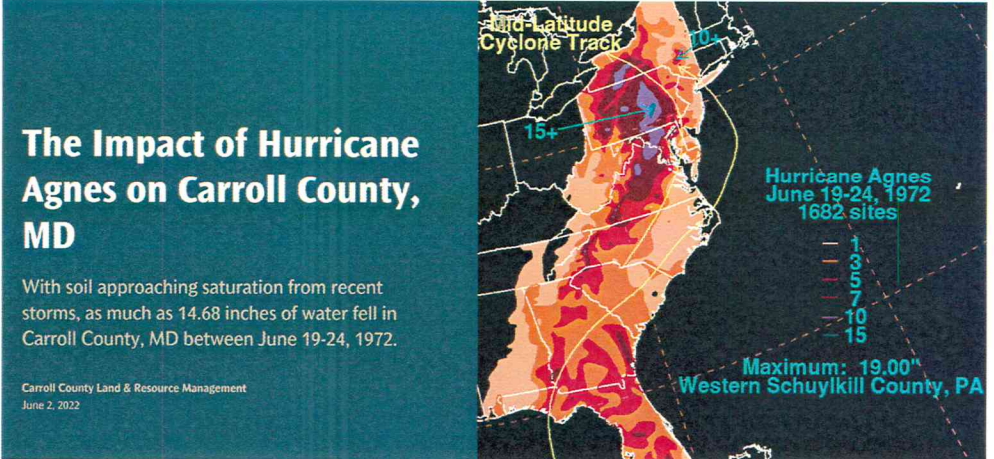
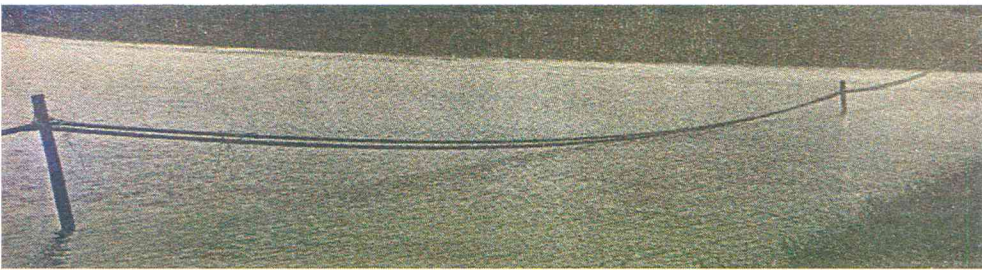
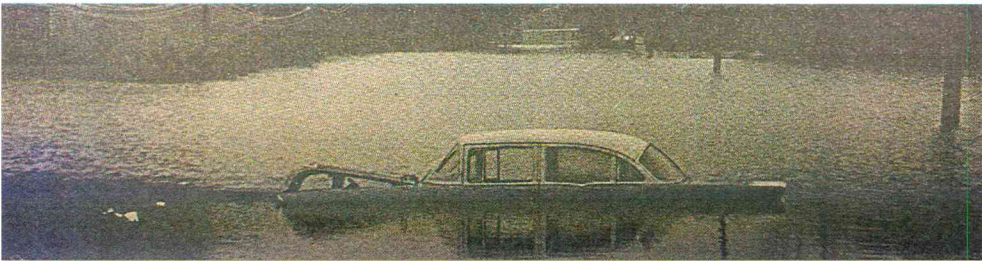
Photo Credit: Robert S. Eby; Keith Weller

# Frederick County



Photo Credit: Carroll County Times, Carroll Record, The Advocate-Times



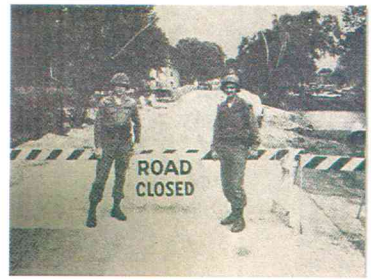


<https://storymaps.arcgis.com/stories/4d4af8eb27604ef8b6bed519c31706de>

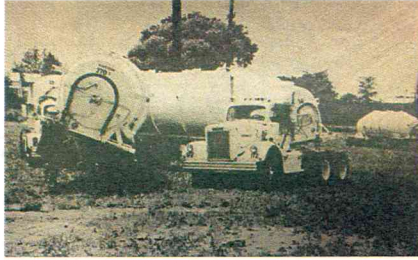
Detour



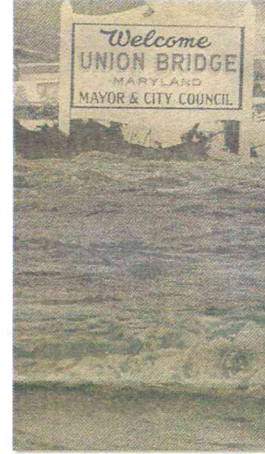
Detour



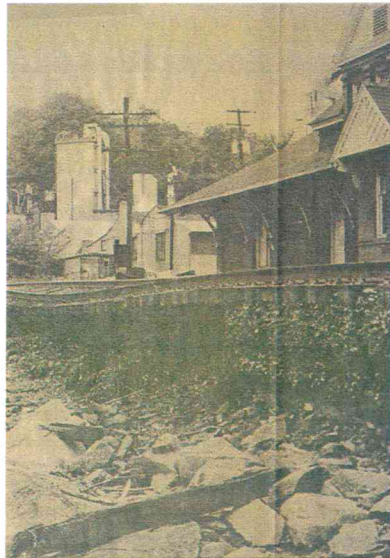
Union Bridge



Union Bridge



Sykesville



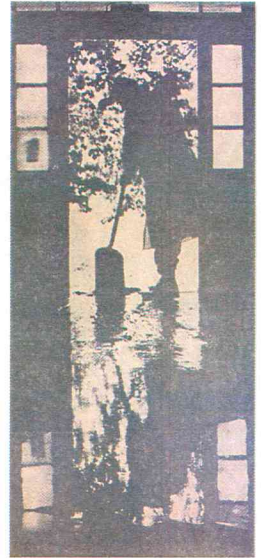
Westminster



Union Mills/Deep Run



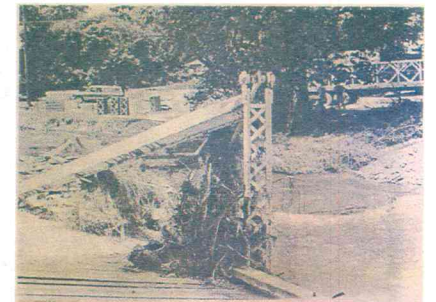
Congoleum



Finksburg



Carrollton



Marriottsville



Piney Run after Eloise



Progress since Agnes

- Stormwater Management requirements
- Floodplain Management requirements
- CRS Participation
- Building code requirements

Silver Jackets Project

- Conducted by NY, PA, MD and VA Silver Jackets Teams
- Led by USACE and NWS
- Utilize the 50<sup>th</sup> Anniversary as an outreach opportunity for flood risk outreach



## Project Partners



## Key Messages

- Hurricane Agnes and the subsequent remnants caused devastating floods, with significant loss of life and flood damages
- Floods similar to Hurricane Agnes can and will happen again and the likelihood of similar events is increasing with climate change
- Mitigation has occurred since Agnes to reduce the flood risk (dam and levee projects, buyouts, flood proofing, community resilience projects)
- New knowledge/technology since Agnes helps reduce the flood risk Everyone should take actions to reduce their flood risk (provide resources/information to learn how)
- Highlight projects that were completed following Agnes



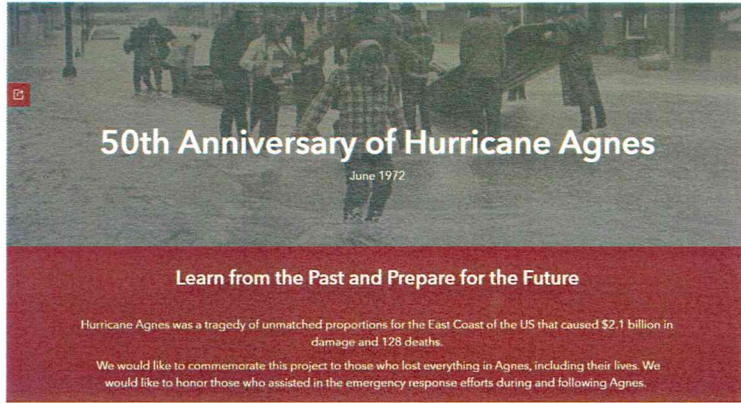
## Subgroup Activities

- Outreach/Events
- Media and Social Media
- Agnes Anniversary Website

## Media & Social Media

- FEMA live webinar Agnes Mitigation
- Agnes Reflection Live Facebook Panel Discussion
- FEMA Podcast Agnes episode





Learn More About Agnes

Explore the ArcGIS StoryMaps created by the Silver Jackets multi-organizational team below.



**Agnes Events**

Today Jun 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
			Jun 1	2	3	4	5am FCRW Paddles- Agnes F
5am FCRW Paddles- Agnes F 2pm Surviving Agnes: The Fi	6	7	8	9	10	11	
12	13	14	15	16	17	18	1pm Agnes 50: Life After the
19	20	21	22	23	24	25	
		11am Agnes at 50: Learn from	Hurricane Agnes Photo Display - Library of Virginia, 800 E Broad St, Richmond, VA 23219, USA		23	24	1pm Carroll County, MD Flood
	26	27	28	29	30	Jul 1	
	Hurricane Agnes Photo Display - Library of Virginia, 800 E Broad St, Richmond, VA 23219, USA		12pm Heritage Village present				
	2pm Tropical Storm Agnes SC	12pm Heritage Village present	12pm Heritage Village present	1pm "A GIVES"			

Events shown in time zone: Eastern Time - New York

Do you have a story to tell?

Send your Agnes stories to [stp.stormreports@noaa.gov](mailto:stp.stormreports@noaa.gov) and be featured in our Agnes Events StoryMap.

📧 Tweet Widget



It's been 50 years since Hurricane Agnes brought historic flooding to many parts of the Middle Atlantic region. We'd love to hear your stories!

To submit a story (and any pictures you have), send an email to [stp.stormreports@noaa.gov](mailto:stp.stormreports@noaa.gov). #PAwx #Agnes50

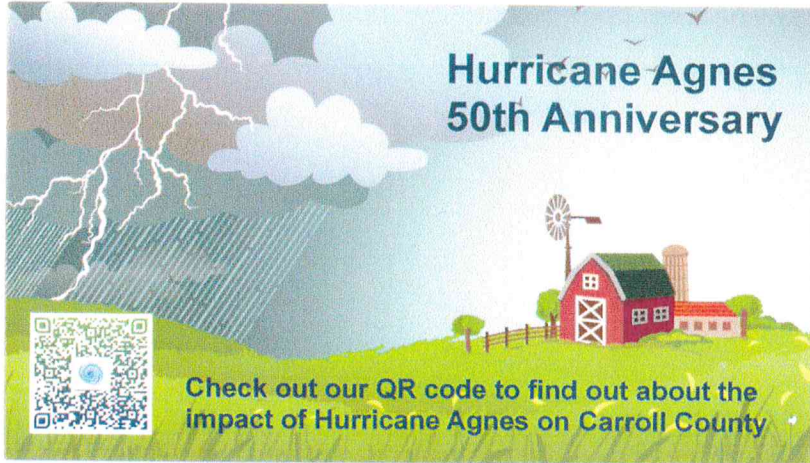


2:07 PM - Apr 4, 2022  
👍 16 🗨️ Reply 🔄 Share  
📄 Read 2 replies


Contact Information

✉️ [stp.stormreports@noaa.gov](mailto:stp.stormreports@noaa.gov)

<https://agnes50-noaa.hub.arcgis.com/>



# Hurricane Agnes 50th Anniversary



Check out our QR code to find out about the impact of Hurricane Agnes on Carroll County



Myers Super Thrift, now The Flood Zone Brewery,  
shown during Hurricane Agnes - June 19-24, 1972

Image courtesy of the Carroll Record



# TOWN PROJECT STATUS

June 22, 2022

## FUTURE PROJECTS:

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

**Meadow Ridge Basin 2 (Westminster)** – Retrofit of existing facility to provide water quality through a surface sand filter. This site is adjacent to the pump station at the edge of the City limits. Design proposals came in higher than anticipated—we will rebid the design under the new term contract.

**Manchester East (Manchester)** – We are looking into opportunities for a new stormwater facility north of Manchester Valley High School, adjacent to the pump station.

## CONCEPT DESIGN:

**Hampstead Valley 1 (Hampstead)** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. CLSI is currently working on a concept plan.

**Hampstead Valley 4 (Hampstead)** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. Concept review comments were returned on April 29, and we are awaiting a resubmittal.

**New Windsor Wetland (New Windsor)**- Survey data on the sewer force main was obtained to design around for the wetland facility. We anticipate a concept plan submittal in the near future.

**Roberts Field Wet Facility (Hampstead)** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) has received

comments on the concept plans, and is currently underway with addressing comments for the next submittal.

**Carroll County Health Department (Westminster)** – We are currently looking at an alternative solution to treat the stormwater from the Health Department and adjacent neighbor storm drains via the Langdon facility.

### **FINAL DESIGN:**

**North Carroll Library (Hampstead)** – Final design for an underground sand filter is under way. Due to summer outdoor programming at the library, we plan to start construction after September 1.

### **CONSTRUCTION:**

**Locust Street (Citizens Energy) (Union Bridge)** – This project was awarded to Kibler Construction, Inc. in the amount of \$649,000.00. The contractor has completed the principal spillway and is currently grading the wetland facility.

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Construction of the pond is complete. The as-built survey revealed a localized area on the embankment that must be raised. CJ Miller plans to add topsoil to meet the stormwater requirements.

### **PLANNING PROJECTS:**

**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with the National Fish and Wildlife Foundation (NFWF). The contract with The Center for Watershed Protection has been signed, they will begin reviewing the Quality Assurance Project Plan (QAPP) put together by the County making any necessary additions before it's sent to Cardno for their review and approval. Once the QAPP is approved we can begin the watershed study.

### **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**

# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary July 27, 2022

### **Attendees:**

#### Municipalities:

- Steve Miller, Chair, Manchester
- Jim Wieprecht, Vice Chair, Taneytown
- Joe Cosentini, Sykesville
- John Dick, Westminster
- Gary Dye, New Windsor
- Jeff Glass, retired
- Kevin Hann, Hampstead
- Mayor Perry Jones, Union Bridget
- Rodney Kuhns, Manchester
- Tammi Ledley, Hampstead
- Kevin Rubenstein, Sykesville
- Derek Shreeves, Sykesville
- Dick Swanson, Mount Airy

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer

#### Health Department:

- Richard Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Lydia Rogers, CC M&B

#### Guest Speakers:

- 

#### Others:

- 

### **1. Opening Statement**

#### **Chair -**

Steve Miller, Chair, officially called the July 27, 2022, meeting of the Water Resource Coordination Council (WRCC) to order at 2:30 PM in Room 105 of the County Office Building.

Mr. Miller indicated this would be his last meeting as Chair. He has enjoyed serving in this role. His last day before retirement is uncertain.

#### **Vice Chair -**

Nothing additional.

Chris Heyn presented Steve Miller and Jeff Glass, as the last remaining original members of the WRCC, with awards of appreciation for their dedicated and valuable service. Mr. Heyn wished them well in their current or impending retirement.

### **2. Approval of Meeting Summary – June 22, 2022**

Approval of the June meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Dick Swanson and seconded by Mayor Perry Jones to approve the June 22, 2022, meeting summary as written. Motion carried.

### 3. Election of New Chair

Steve Miller nominated Kevin Hann to serve as the new Chair, which will be effective for the August meeting. Jim Wieprecht was happy to continue to serve as Vice Chair.

**ELECTION OF NEW CHAIR:** Motion was made by Steve Miller and seconded by Dick Swanson to elect Kevin Hann to serve as the new Chair. Motion carried.

### 4. MS4 Public Outreach Plan – Updated Draft Review – Brenda Dinne

Brenda Dinne reviewed the background of the plan and reminded the group that almost all of the suggested programs and activities in the 2015 plan were achieved. As they were accomplished, the suggested programs and activities were cumulatively noted in the NPDES MS4 annual report.

Ms. Dinne reviewed the proposed objectives and suggested programs and activities. They incorporate new requirements, such as salt management. Some, by nature, are ongoing, but many are new. The members agreed with the proposed revisions to the 2015 plan and did not suggest anything additional.

The completed 2022 working draft will be provided to Maryland Department of the Environment (MDE) with the first annual report of the new permit.

*Reference/Attachment:*

- n/a

### 5. Water Resources Element (WRE 2024) Update – Brenda Dinne

Ms. Dinne shared that the technical team is reviewing and evaluating the Statements of Qualifications received. A review of the draft scope will be included on the August WRCC agenda. The scope will then be finalized and plugged into the final Request for Proposal (RFP). The RFP is scheduled to be released September 1 to these firms.

*Reference/Attachment:*

- n/a

### 6. Municipal Stormwater Projects Update – Janet O’Meara

Janet O’Meara indicated that no new projects are currently out to bid. She anticipates the Board of County Commissioners approving the release of additional projects for bid in September or October. Ms. O’Meara provided an update on the municipal stormwater restoration projects in progress.

*Reference/Attachment:*

- *Town Project Status (attached)*

### 7. Other

- Engineering Term Contracts: Chris Heyn offered that the municipalities could use the County’s list of firms to short-list pre-qualified firms for their own work.
- Director of Public Works (DPW): Mr. Heyn announced that Bryan Bokey will begin as the new director of the County DPW on August 18. Mr. Heyn anticipates introducing Mr. Bokey to the WRCC at a future meeting.
- Environmental Symposium: Mr. Heyn shared the intent is to connect local environmental groups with each other and with Land & Resource Management (LRM) staff to partner on projects and efforts to raise public awareness, as well as increase volunteerism. The Symposium will be held on Saturday, November 12, 2022, from 9:00 AM to 12:00 PM in Room K-100 at Carroll Community College. Approximately a dozen local environmental groups have expressed interest in participating. A recycled art contest for high school students will accompany the event and hopefully attract additional people.

- **A-StoRM:** Mr. Heyn updated the group on the status of MDE's A-StoRM activities.
  - Martin Covington is serving on the Technical Advisory Group (TAG), which is providing guidance to MDE on drafting proposed stormwater regulation changes to increase retention from 2.7 inches to 3.0 inches. Mr. Heyn is serving on the Stakeholder Consultation Group.
  - MDE will be requesting local jurisdictions to ground truth areas of frequent flooding. LRM will reach out to the municipalities to coordinate on this effort once the request is received.
  - MDE is moving in the direction of requiring through legislation the development of watershed management (flooding) plans. MDE has not yet determined what they should include or who should develop them.
- **County Environmental Codes:** The purpose of these revisions to provide clarity and predictability to the development community. The Board will hold a public hearing on the proposed changes to the environmental codes on August 4, 2022. Mr. Heyn is not aware of any significant comments to date.
- **PFAS:** More restrictive standards are coming down the pipe. These new standards may not be as restrictive as currently proposed by EPA, but they will still result in significant costs to the local public water supply systems.
- **NPDES MS4 Annual Report Info:** Claire Hirt noted that the jot form should be sent out in the next week or so.
- **Rainfall and Well Levels:** Zach Neal shared that the southern part of the county is currently experiencing the driest conditions.
- **Frank Schaeffer Memorial Run:** Gary Dye announced the annual event will be held on October 22, 2022, at 9:00 AM at Wakefield Valley Park.
- **Westminster Utility of the Future Today (UoFT) Award:** Jeff Glass shared that Westminster will be receiving a Water Environment Federation award for the City's water reuse project. The award will be presented at the WEFTEC conference in October. The WRCC received a UoFT award in 2018 under the Partnering & Engagement activity area for its coordination and joint leadership on significant water resource issues facing the county as a whole.

## 8. Adjournment

The meeting adjourned at 3:42 PM. The next monthly meeting is scheduled for Wednesday, August 24, 2022, at 2:30 PM in Room 105.

**MEETING ADJOURNMENT:** Motion was made by Mayor Perry Jones and seconded by Dick Swanson to adjourn the July 27, 2022, meeting. Motion carried.

### **Upcoming Meetings:**

- ☐ *Regular Monthly Meeting – Wednesday, August 24, 2022*

# TOWN PROJECT STATUS

July 27, 2022

## FUTURE PROJECTS:

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

**Meadow Ridge Basin 2 (Westminster)** – Retrofit of existing facility to provide water quality through a surface sand filter. This site is adjacent to the pump station at the edge of the City limits. Design proposals came in higher than anticipated—we will rebid the design under the new term contract.

**Manchester East (Manchester)** – We are looking into opportunities for a new stormwater facility north of Manchester Valley High School, adjacent to the pump station.

## CONCEPT DESIGN:

**Hampstead Valley 1 (Hampstead)** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. CLSI is currently working on a concept plan.

**Hampstead Valley 4 (Hampstead)** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. A revised concept plan was submitted on June 21, 2022.

**New Windsor Wetland (New Windsor)**- Survey data on the sewer force main was obtained to design around for the wetland facility. We anticipate a concept plan submittal in the near future.

**Roberts Field Wet Facility (Hampstead)** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) has received comments on the concept plans, and is currently underway with addressing comments for the next submittal.

**Carroll County Health Department (Westminster)** – We are currently looking at an alternative solution to treat the stormwater from the Health Department and adjacent neighbor storm drains via the Langdon facility. Survey work has been completed to locate the existing sanitary line.

### **FINAL DESIGN:**

**North Carroll Library (Hampstead)** – Final design for an underground sand filter is under way. Due to summer outdoor programming at the library, we plan to start construction after September 1.

### **CONSTRUCTION:**

**Locust Street (Citizens Energy) (Union Bridge)** –The contractor continues to work on excavation of the wetland pool areas. Several sink holes have been encountered and repaired as part of the construction process. Bedrock was encountered and hammering has started, once complete the liner installation can begin.

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Construction of the pond is complete. We are currently awaiting as-built survey to verify the embankment height.

### **PLANNING PROJECTS:**

**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with the National Fish and Wildlife Foundation (NFWF). The contract with The Center for Watershed Protection has been signed. The Center for Watershed Protection has completed their and edits of the Quality Assurance Project Plan (QAPP) put together by the County. We anticipate submitting the QAPP to NFWF this week. Once the QAPP is approved we can begin the watershed study.

### **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**

# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary

August 24, 2022

### **Attendees:**

#### Municipalities:

- Kevin Hann, Chair, Hampstead
- Jim Wieprecht, Vice Chair, Taneytown
- John Dick, Westminster
- Gary Dye, New Windsor
- Mayor Perry Jones, Union Bridget
- Rodney Kuhns, Manchester
- Steve Miller, Manchester
- Kevin Rubenstein, Sykesville
- Dick Swanson, Mount Airy

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer
- Pat Varga

#### Health Department:

- Richard Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Lydia Rogers, CC M&B

#### Guest Speakers:

- Rebecca Winer-Skonovd, Biohabitats
- Meghan Gloyd, Biohabitats

### **1. Opening Statement**

#### **Chair -**

Kevin Hann, Chair, officially called the August 24, 2022, meeting of the Water Resource Coordination Council (WRCC) to order at 2:31 PM in Room 105 of the County Office Building.

Mr. Hann thanked the members for their show of support in voting to approve his nomination as Chair. He feels that each municipality should share in the leadership of the group. Therefore, he expects to step down in one year and have another municipality that hasn't done so yet take over as Chair.

Ms. Dinne and Ms. Mathias will arrange for all those WRCC members who regularly attend to have a WRCC ID badge.

#### **Vice Chair -**

Nothing additional.

### **2. Approval of Meeting Summary – June 22, 2022**

Approval of the June meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Jim Wieprecht and seconded by Gary Dye to approve the July 27, 2022, meeting summary as written. Motion carried.

### **3. Approaches to Nuisance Flooding – Rebecca Winer-Skonovd and Meghan Gloyd, Biohabitats**



Biohabitats is a firm based in Baltimore whose work focuses on restoring ecosystems, conserving habitat, and regenerating the natural systems.

Ms. Winer-Skonovd shared information on two different projects to identify areas of nuisance flooding and develop criteria and a system for prioritization of projects. One project was performed for the Charles County Resilience Authority. The other was conducted for a neighborhood in Annapolis called Truxtun Heights.

Ms. Gloyd share information on watershed studies in the Plumtree and Tiber Branches of the Little Patuxent River. She described the approach to assessing these watersheds and identifying priorities for improvements.

*Reference/Attachment:*

- *PowerPoint: Approaches to Address Increased Nuisance Flooding Events (attached)*

#### **4. Water Resources Element (WRE 2024) Update – Brenda Dinne**

The Request for Proposal (RFP) will be released by the Procurement office on September 1 to the two firms that submitted Statements of Qualification. The proposals will be due back by September 29. The Technical Team will review the proposals, evaluate and rank them, and the highest-ranking firm will be chosen. Staff will seek approval to award the contract from the Board of County Commissioners in late October or early November.

Chris Heyn gave a brief overview of the purpose of each of the tasks in the scope. There were no comments on the draft scope.

*Reference/Attachment:*

- *n/a*

#### **5. Municipal Stormwater Projects Update – Janet O’Meara**

Ms. O’Meara provided an update on the municipal stormwater restoration projects in progress.

*Reference/Attachment:*

- *Town Project Status (attached)*

#### **6. Other**

- Frank Schaeffer 5K Run: Gary Dye will be sending letters to the towns shortly to request support for the memorial run.
- Tree Planting and Mowing: Byron Madigan will be inspecting approximately 30 plantings this fall that are at the end of their planting maintenance period. He will notify the municipalities of which ones will no longer require mowing.
- County Environmental Codes: Pat Varga shared that the changes to the codes are anticipated to be adopted on August 25. The primary changes are to increase fairness for homeowners.
- MS4 Reporting: Claire Hirt and/or Glenn Edwards have met with most municipalities regarding the implementation guide. New tracking documents will be provided to the municipalities and relevant County agencies in the near future for public outreach and litter clean up.
- Maine Prohibits Spreading Biosolids: Rodney Kuhns reported that Maine recently passed legislation prohibiting the spreading of biosolids due to PFAS compounds that can be found in biosolids.
- Precipitation Status: Zach Neal indicated that there is currently no countywide drought status. However, individual wells may trigger drought status. NOAA projects are showing a dry fall/winter.
- McDaniel Students: Ed Singer shared that the Bureau of Resource Management (BRM) is working with the Environmental Program at McDaniel to engage students. On September 16,

they will be talking to students about Willow Pond. City of Westminster DPW staff is welcome to join. BRM staff will be looking for additional locations; suggestions are welcomed.

- A-StoRM: Chris Heyn gave a heads up that Maryland Department of the Environment (MDE) will be requesting local jurisdictions to ground truth NOAA flood data for local areas. LRM staff will reach out to the municipalities at that time to work together.
- PFAS and EPA: Kevin Hann updated the group on activities undertaken by the Town of Hampstead to address EPA's movement toward more restrictive requirements for PFAS in public drinking water systems. EPA is reaching out to get everyone hooked up to UCMR-5 sampling. EPA is currently paying for this sampling.
- Lead and Copper Rule: Kevin Hann also shared that MDE has a new lead and copper rule, for which all need to comply by October 16, 2024.

## 7. Adjournment

The meeting adjourned at 3:42 PM. The next monthly meeting is scheduled for Wednesday, September 28, 2022, at 2:30 PM in Room 105.

**MEETING ADJOURNMENT:** Motion was made by Dick Swanson and seconded by Gary Dye to adjourn the August 24, 2022, meeting. Motion carried.

### Upcoming Meetings:

- ☐ *Regular Monthly Meeting – Wednesday, September 28, 2022*

# Approaches to Address Increased Nuisance Flooding Events



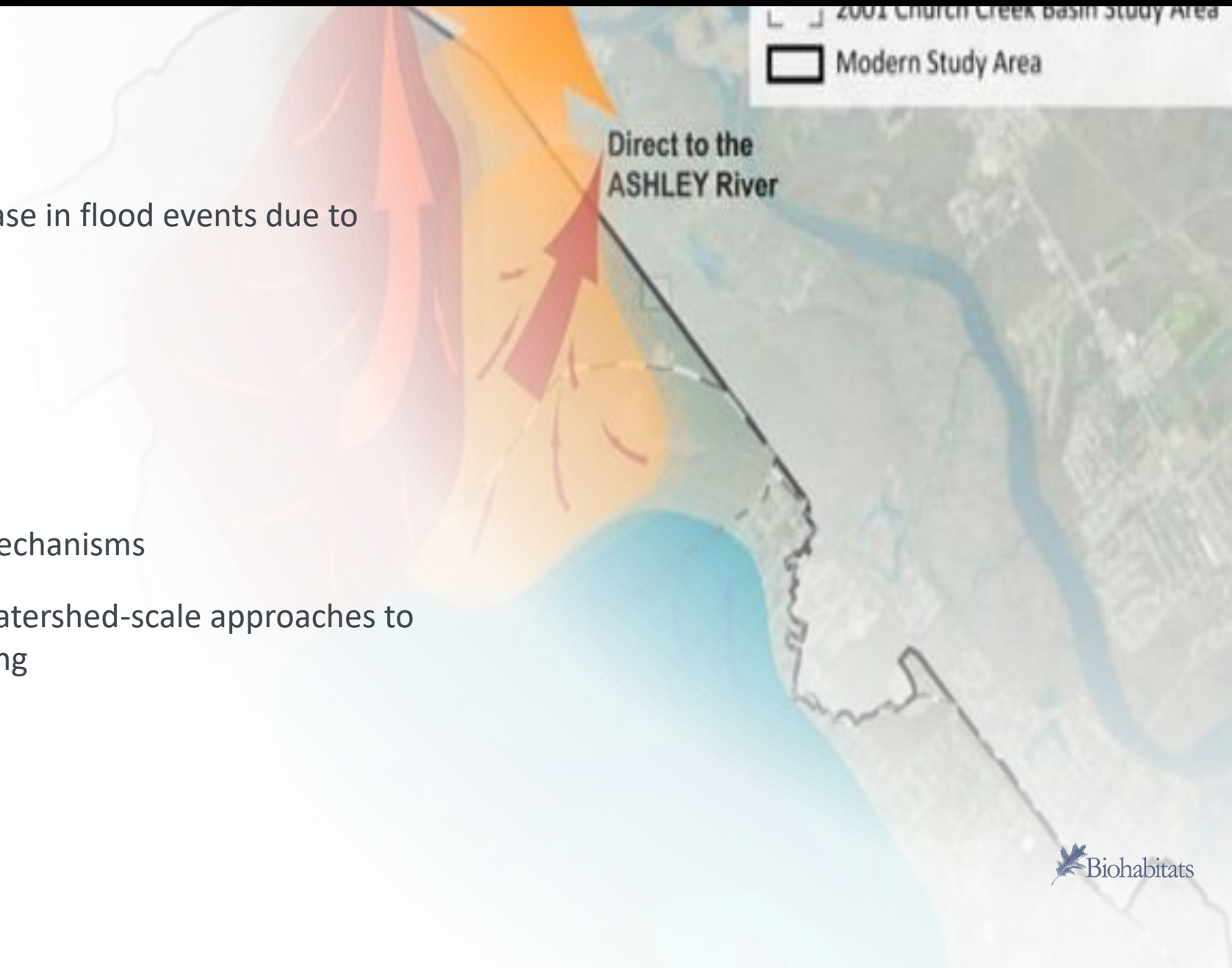
# Introduction

Municipalities are seeing an increase in flood events due to climate change

- Extreme flood events
- Sunny day
- Nuisance

Addressing through a variety of mechanisms

Benefits and methodologies for watershed-scale approaches to address increased nuisance flooding



# Charles County Resiliency Authority

## Private Stormwater Improvement Prioritization

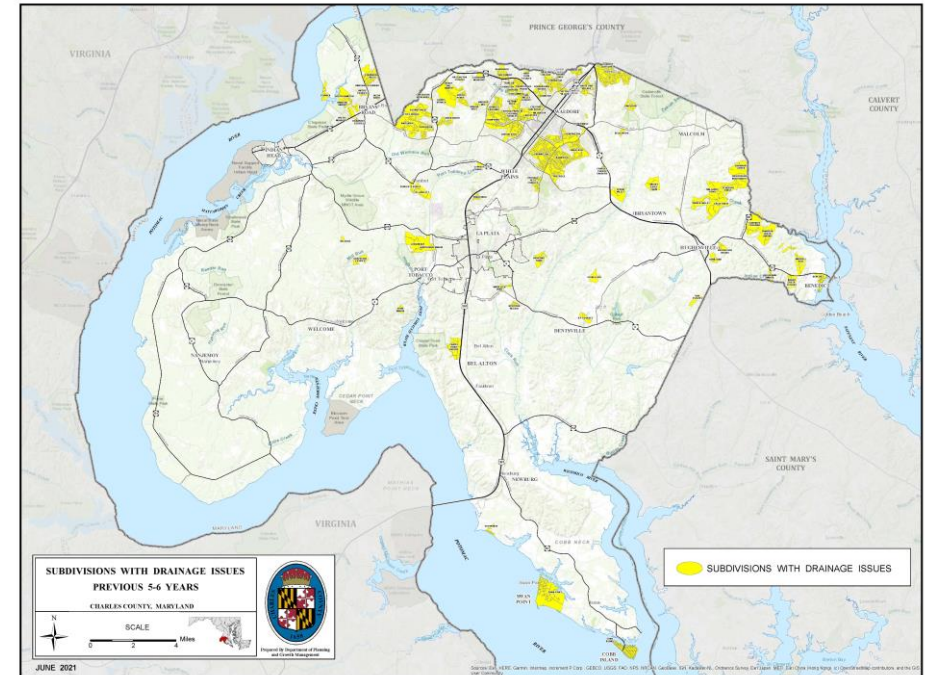
Purpose is to create a prioritized list of neighborhoods to help resolve private nuisance flooding complaints

Common neighborhood traits:

- Pre-date the stormwater ordinance

- Consistent complaints of flooding

- No County-owned easements or maintenance agreements



# Charles County Resiliency Authority Private Stormwater Improvement Prioritization

## Exploratory Phase

Storm Drain System Characterization

Field Reconnaissance

## Predictive Phase

Suitability Model

Neighborhood Ranking System

## Prescriptive Phase

Neighborhood Prioritization Dashboard

# Charles County Resiliency Authority

## Private Stormwater Improvement Prioritization

Exploratory Phase: Storm Drain System Characterization

Criteria includes:

- Age of storm drain system

- Design – closed/open

- Capability to handle current and future frequency and volume

Categorize systems as:

- Failed

- Predicted to fail within 5 years

- Predicted to fail in 5 – 10 years, etc.

# Charles County Resiliency Authority

## Private Stormwater Improvement Prioritization

Criteria	Data
Urgency of Need/Public Safety/Imminent structural damage	Storm Drain System Categorization (failed, predicted to fail, etc.) <ul style="list-style-type: none"> <li>• Age of storm drain system</li> <li>• Design – closed/open</li> <li>• Capacity to handle current freq and volume</li> <li>• Proximity to vital infrastructure</li> <li>• Physical condition</li> </ul>
Equity	Social Vulnerability Index
Availability of Funding	<ul style="list-style-type: none"> <li>• CIP funding</li> <li>• HOA presence</li> <li>• Partnership opportunities</li> <li>• Order of magnitude cost of solution</li> </ul>
Dual Benefits	<ul style="list-style-type: none"> <li>• Untreated IA within MS4</li> <li>• Infrastructure protection (utility, houses, roads)</li> </ul>
Ability to Address Flooding Issue	<ul style="list-style-type: none"> <li>• Available space in ROW</li> <li>• Catchment Slope</li> <li>• Soils</li> </ul>



# City of Annapolis Truxtun Heights Drainage Study

No stormwater management or grey infrastructure (i.e., curb and gutter)

Residents expressed concerns regarding property flooding and erosion

Subconsultant to AMT

Approach included:

- Conducting pedestrian reconnaissance of the neighborhood

- Identifying problematic drainage areas and GSI installation opportunities

- Discussing drainage problems with individual property owners

# Plumtree and Tiber Branch Watershed Studies

Initiated by the Howard County DPW in response to:

Historic flooding from recent high-intensity, short-duration rainfall events

On-going nuisance flooding in the Plumtree and Tiber River watersheds

County Council bill requirement to look at retrofitting public and private property developed with no or superseded stormwater management requirements

## Plumtree and Tiber Branch Watershed Studies

Metric	Tiber Branch Watershed	Plumtree Branch Watershed
Drainage Area	2,368 acres	2,002 acres
Current Impervious Cover	35.3% imperviousness	22% imperviousness
Stream Length	Approx. 12.0 miles	Approx. 9.9 miles
Land Use	Residential (40%) Non-Residential (32%) Open Space (18%) Undeveloped (10%)	Residential (59%) Non-Residential (23%) Open Space (8%) Undeveloped (10%)

# Plumtree and Tiber Branch Watershed Studies

Approach included:

Evaluating the existing hydrology within each watershed

Updating assessment information for existing storm drain infrastructure

Investigating citizen drainage complaints

Identifying and prioritizing opportunities to address localized flooding and storm drain improvements

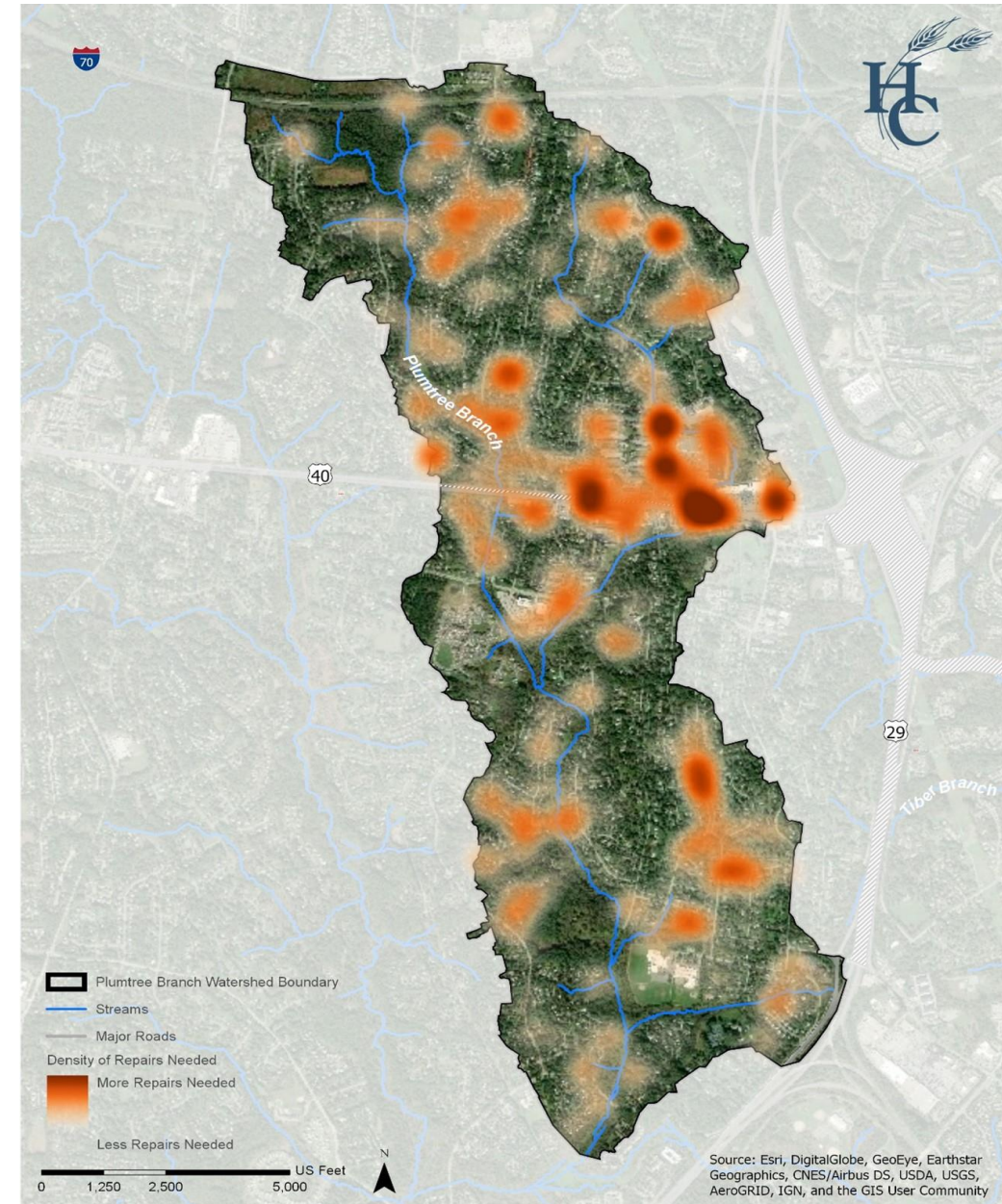
# Plumtree and Tiber Branch Watershed Studies

Verified 4,200 existing storm drain infrastructure components

Reviewed 180 resident drainage survey responses and complaints

Assessed 174 major storm drain network capacity, network layout, and condition

Identified 156 opportunities distributed throughout both watersheds

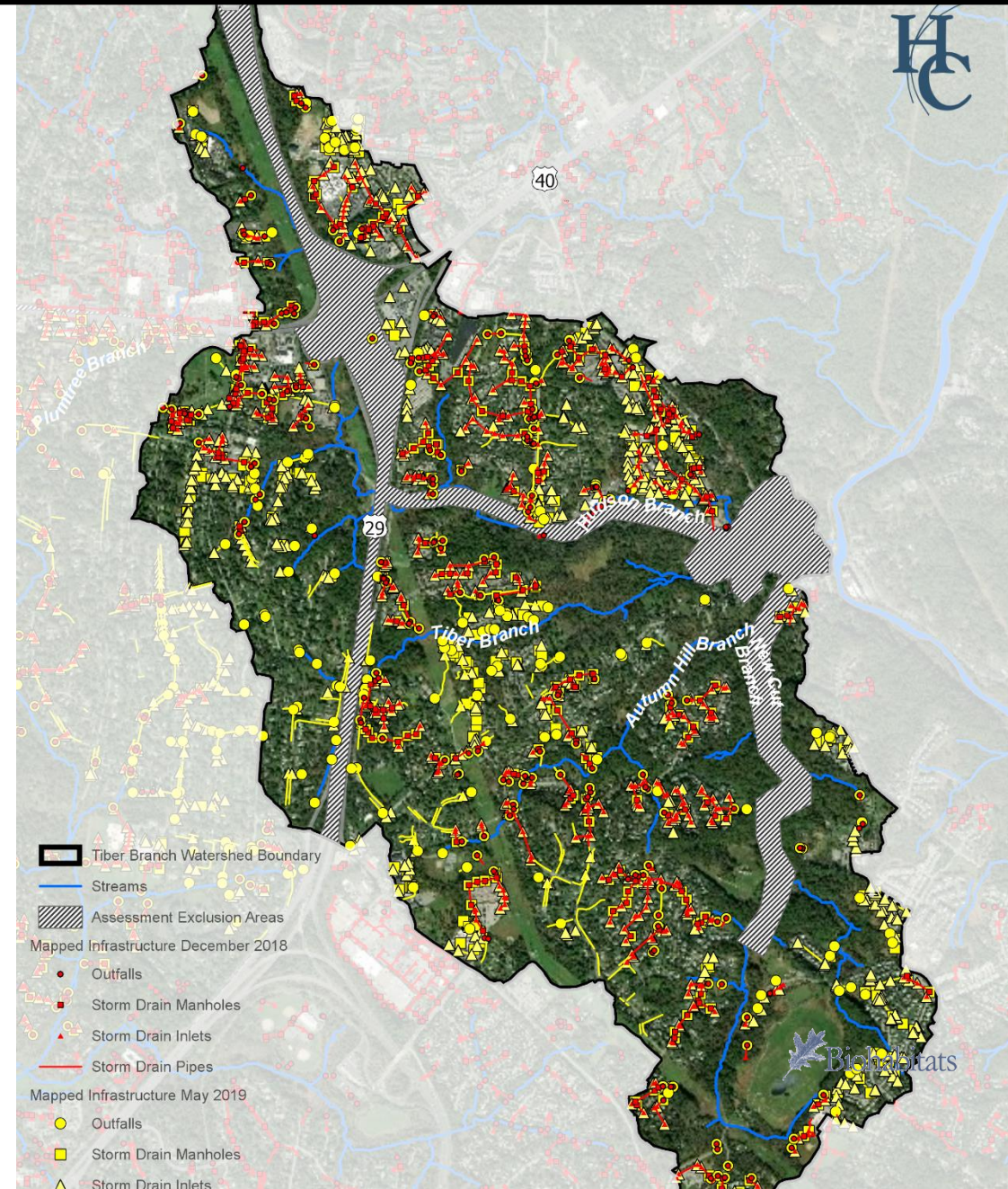


## Updating the County's Database

Approximately half of the County's infrastructure was mapped in GIS prior to the assessment

In general, entire neighborhoods were usually entirely mapped or unmapped- but not always

No other clear patterns related to which areas were most likely to be mapped/unmapped



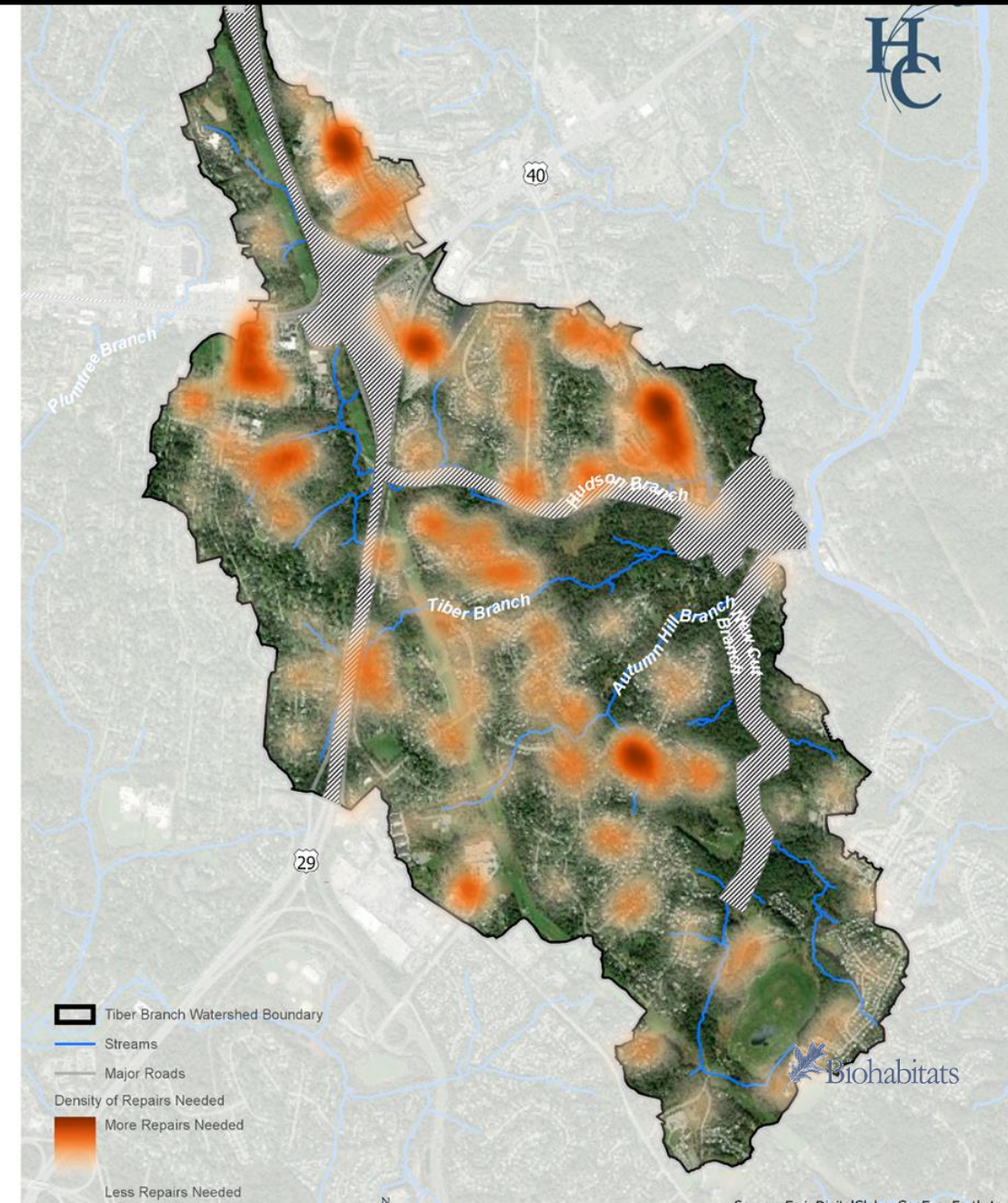
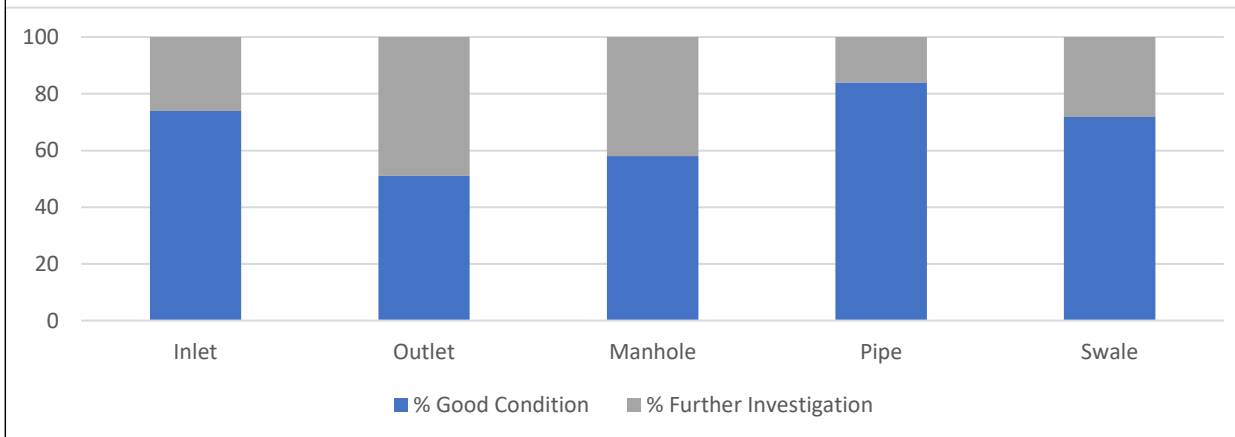
# Assessing Storm System Conditions

Assets were identified as either:

Good condition

In need of inspection, cleaning, repair, or replacement

No established geographic patterns



# Desktop Analysis of Storm Drain Networks

Velocity-based approach on storm drain networks with  $\geq 3$  inlets

Minimum of 3 ft/s for self-cleaning system

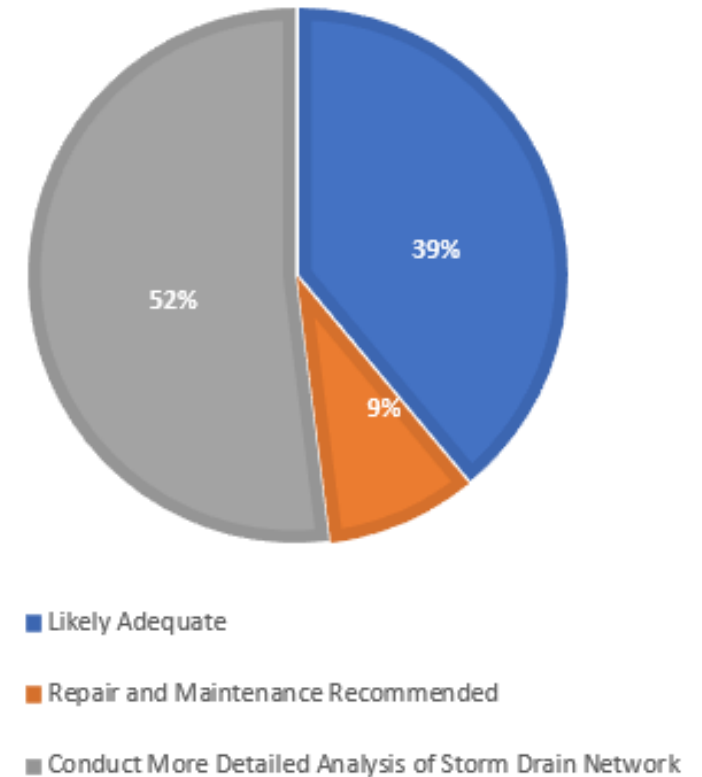
Maximum of 10 ft/s based on professional judgement and field observations

10-year discharge (industry standard) calculated using rational method based on land use, drainage area, and rainfall intensity

Continuity equation used to create maximum and minimum pipe diameters for each storm network

Observed pipes with diameters outside of the established range for the network were marked for further analysis

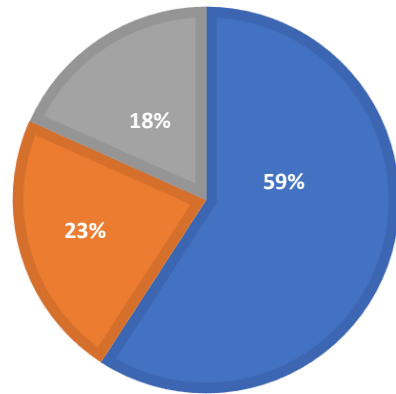
Constrictions in networks also tabbed for further analysis



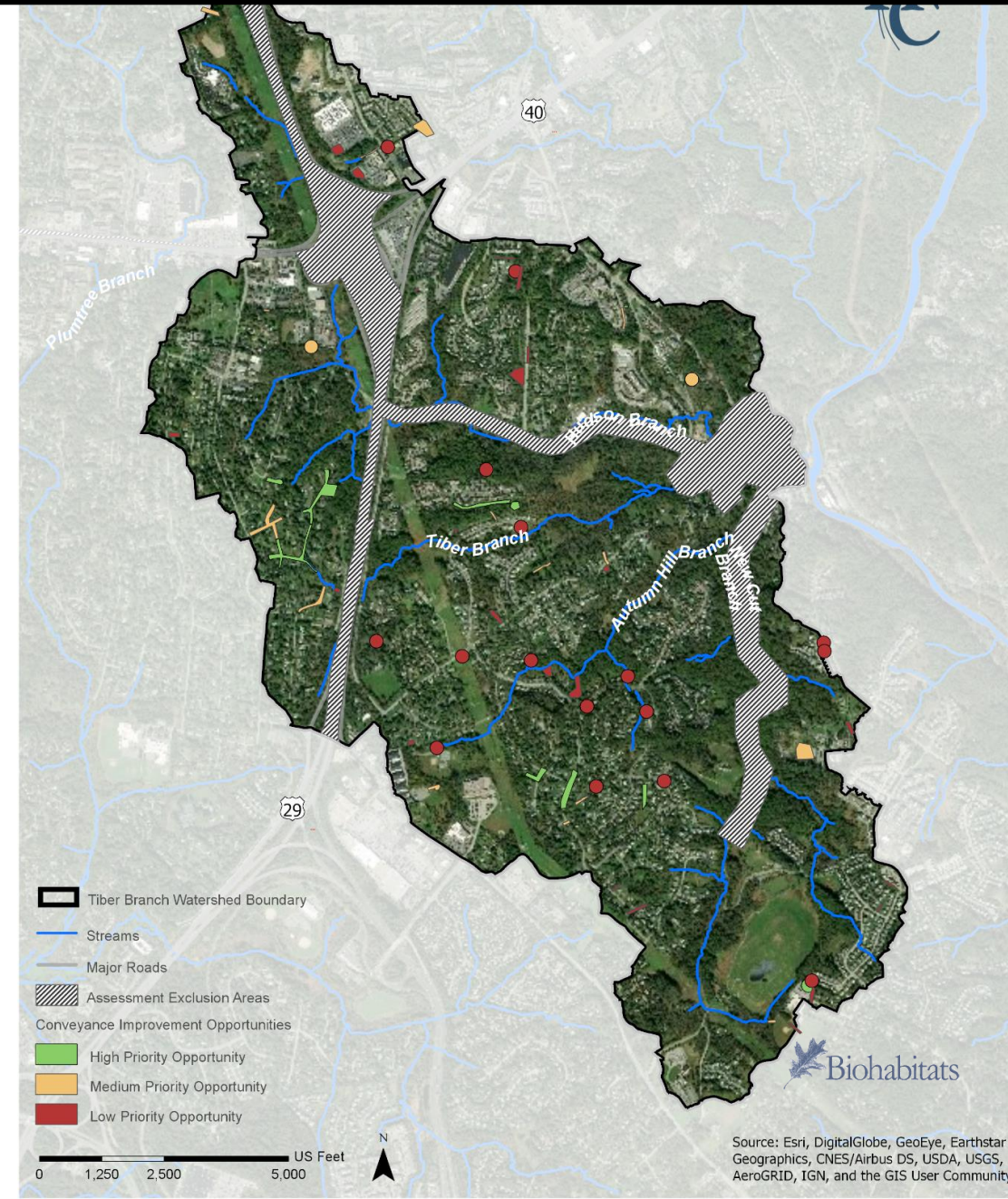


## Identifying Opportunities

88 opportunities identified- largely partially on private property



- Improve Existing Conveyance Systems
- Install New Conveyance Systems
- Implement/Maintain Detention Practice



## Prioritizing Opportunities

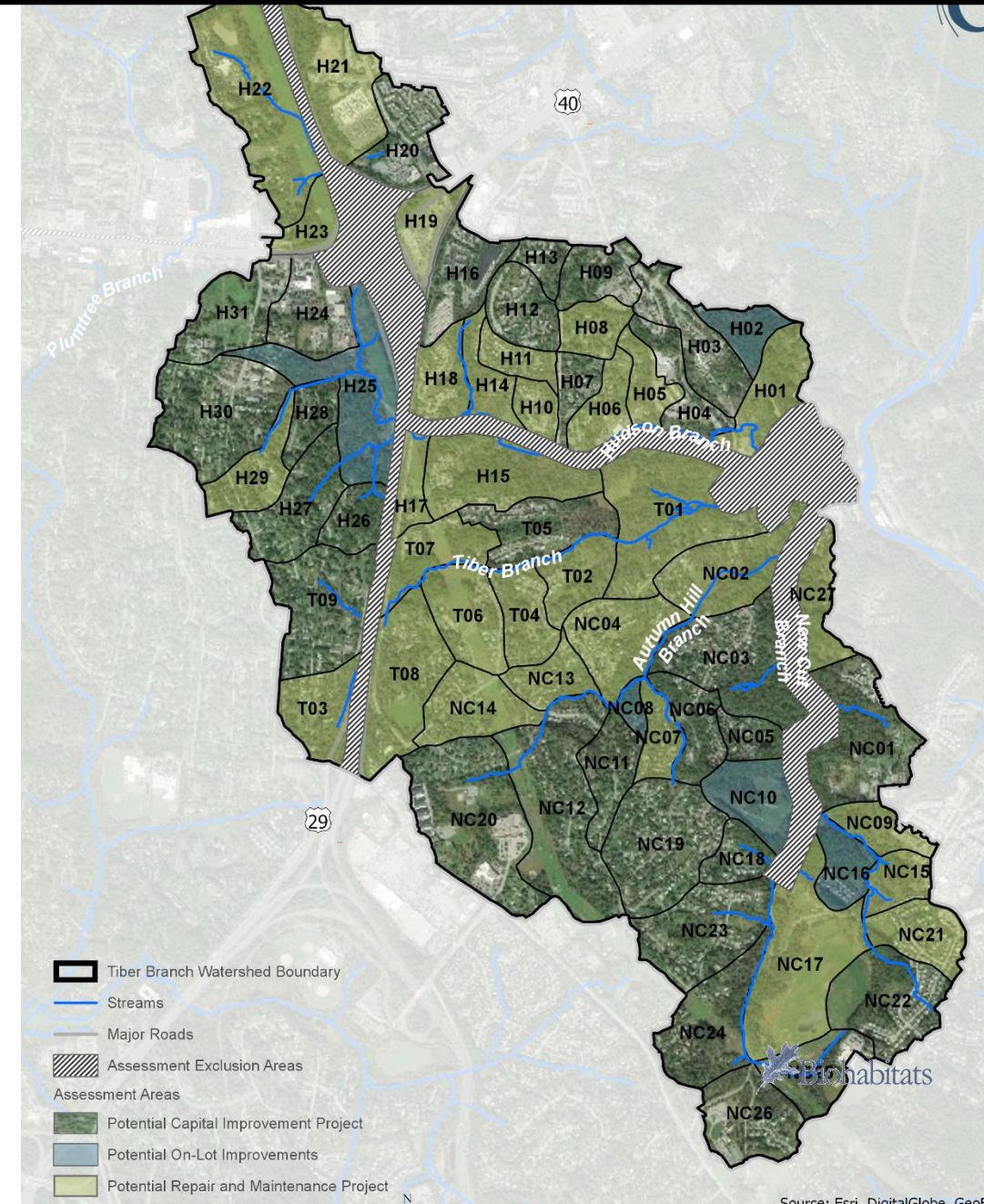
Priority Rating	Example
High	<ul style="list-style-type: none"> <li>• Solution for a large, system-wide lack of infrastructure that impacts multiple properties and where a clear conveyance path is noticeable in the field</li> <li>• Addition of inlets or curbs in the public right-of-way would mitigate ponding and erosion</li> <li>• Conveyance solutions that would positively impact additional areas downstream</li> <li>• Improves conveyance conditions for smaller, more frequent storm events</li> </ul>
Medium	<ul style="list-style-type: none"> <li>• Outfall from a stormwater pond with no clear conveyance path that poses issues with downstream properties and infrastructure</li> <li>• Relatively simple drainage solution that mitigates issues for multiple properties</li> <li>• Area of concern not directly impacting properties; solution to the drainage concern needs further investigation</li> <li>• Drainage solution on private property or properties</li> </ul>
Low	<ul style="list-style-type: none"> <li>• Outfall from a stormwater pond with no clear conveyance path yet no downstream issues</li> <li>• Solutions related to maintenance of existing facilities</li> <li>• Solution is small and located on a single, private property</li> <li>• Relatively simple drainage solution that does not appear to mitigate a current concern</li> </ul>

# Assessment Area Approach

67 assessment areas delineated based on drainage areas

Assessment area categories:

- **Potential Capital Projects:** have significant drainage issues or extensive repair needs and opportunities to mitigate these drainage issues were identified
- **Repair and Maintenance Projects:** have one or more components of storm drain infrastructure marked with a condition of Repair and Maintenance Recommended
- **Potential On-Lot Improvements:** have drainage concerns that are limited to property-to-property stormwater runoff



# Assessment Area Results- Fact Sheets

TIBER BRANCH WATERSHED STORMWATER RETROFIT STUDY

## TIBER BRANCH WATERSHED ASSESSMENT AREA P19



Assessment Area Category: P19  
 Approximate Assessment Area: 51.7 acres  
 Approximate Imperviousness: 20%  
 POTENTIAL CAPITAL IMPROVEMENT PROJECTS

TIBER BRANCH WATERSHED STORMWATER RETROFIT STUDY

### ASSESSMENT AREA DESCRIPTION

The P19 assessment area is an approximately 51.7-acre area in Howard County's Plumtree Branch watershed. The assessment area largely consists of low-density residential houses. The area captures runoff from Hawthorne Road, Crestleigh Road, and portions of Saint John's Lane, Crescent Road, and Woodley Road. This area's outfall is the swale located in the right-of-way of MacAlpine Road. Almost all sections of roadway within P19 are open section. There is one major conveyance system serving the assessment area consisting of swales and a storm drain system.

Several survey responses and field interactions suggest that conveyance systems may not be functioning or existing and flooding is widespread every time it rains. All opportunities identified in this area propose to create more efficiently functioning conveyance systems through improvement of existing infrastructure or installation of new infrastructure. Any capital improvement project undertaken within this assessment area would be contingent upon functionality of the MacAlpine Road swale.

### INFRASTRUCTURE FINDINGS

The condition of storm drain infrastructure components was assessed in early 2019. *Good Condition* indicates infrastructure is functioning as intended. *Further Investigation Recommended* indicates infrastructure needs to be cleaned, is in disrepair, requires further inspection or is inaccessible.

Condition/Repair	Inlets (#)	Outfalls (#)	Manholes (#)	Pipes (#)
Good Condition	28	2	1	33
Further Investigation Recommended	12	5	0	9
<b>Total</b>	<b>40</b>	<b>7</b>	<b>1</b>	<b>42</b>

### STORM DRAIN ANALYSIS FINDINGS

A qualitative, desktop analysis of major storm drain network(s) within the assessment area evaluated storm drain size and identified potential constriction points and system deficiencies. A major storm drain network is defined as having three or more contributing inlets – some assessment areas have multiple networks. The diameter of the existing downstream storm drain was compared to a diameter range identified using commonly accepted storm drain sizing approaches. Pipes smaller than this range are noted as *Outside of Range*. A review of storm drain mapping flagged potential constrictions (e.g., the downstream storm drain has a smaller diameter than contributing storm drains). System deficiencies were noted during field assessments in early 2019 (e.g., sedimentation, repair needed, etc.).

#### Assessment Point ID: Outfall 7414

Approximate Drainage Area:	51.7 acres
Storm Drain Sizing:	Outside of Range
Potential Constrictions:	Yes
Observed System Deficiencies:	Yes
Conclusion:	Conduct More Detailed Analysis of Storm Drain Network

TIBER BRANCH WATERSHED STORMWATER RETROFIT STUDY

### OPPORTUNITIES

Opportunities identified in early 2019 focus on improving drainage and addressing expressed concerns.

Type	ID No.	Description & Discussion
Improve Existing Conveyance System	P19-01	Existing storm drain system is likely not functioning as intended. Repair may be required to improve conveyance. Field interaction and survey response suggest that flooding of area is frequent. Analyze system and, if necessary, improve system with modified infrastructure.
Improve Existing Conveyance System	P19-02	There is no clear conveyance from the storm drain outfall to the downstream storm drain system. Field observations and survey responses suggest frequent and significant flooding. Improve conveyance between storm drain outfall and storm drain system to minimize flooding of private property.
Install New Conveyance System	P19-03	Add conveyance system to area with no existing conveyance.
Improve Existing Conveyance System	P19-04	Existing conveyance system is likely not functioning as intended. Field interactions suggest flooding is an issue. Analyze system and, if necessary, improve system with modified infrastructure and improved conveyance downstream of outfall.
Conduct More Detailed Analysis of Storm Drain Network	N/A	The major storm drain network(s) within the assessment area is likely not functioning as intended. More detailed analysis is recommended to determine if improving the network with modified infrastructure is necessary.

### PHOTOS



Figure 1: Opportunity to improve existing conveyance system.

Figure 2: Sinkhole forming over pipe along Crestleigh Drive.

## Key Take Aways

Level of unmapped infrastructure (or modified)

Infrastructure on private property (as opposed to within a ROW) impacts local drainage patterns and flooding

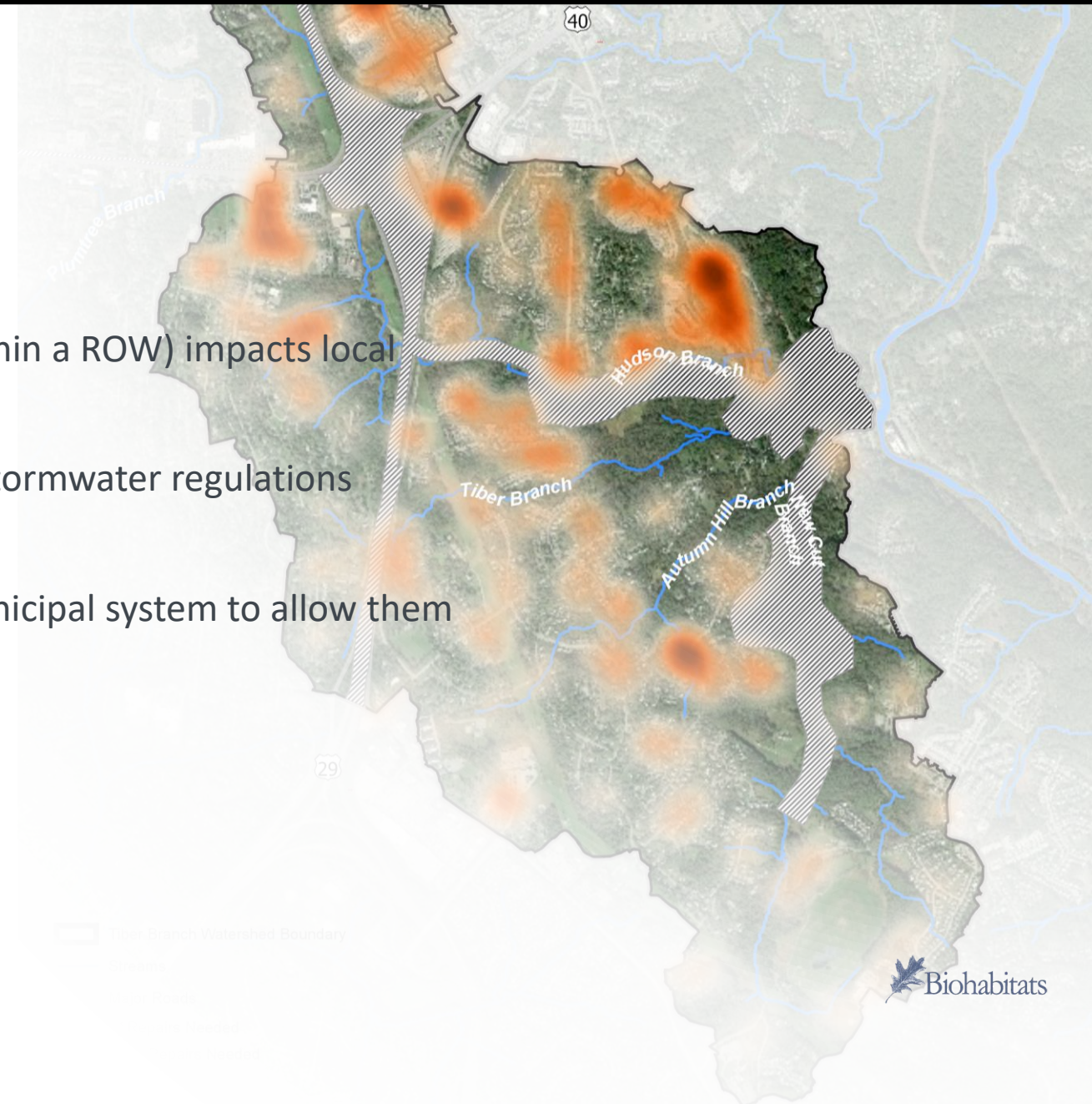
More than 50% of the developed acreage predated stormwater regulations initially installed in 1985.

Identify mechanism to bring these systems into a municipal system to allow them to be maintained or upgraded

- Plan for upgrading/replacing networks

- Corroded CMP pipe = sinkholes

- Strategy for acquiring drainage easements



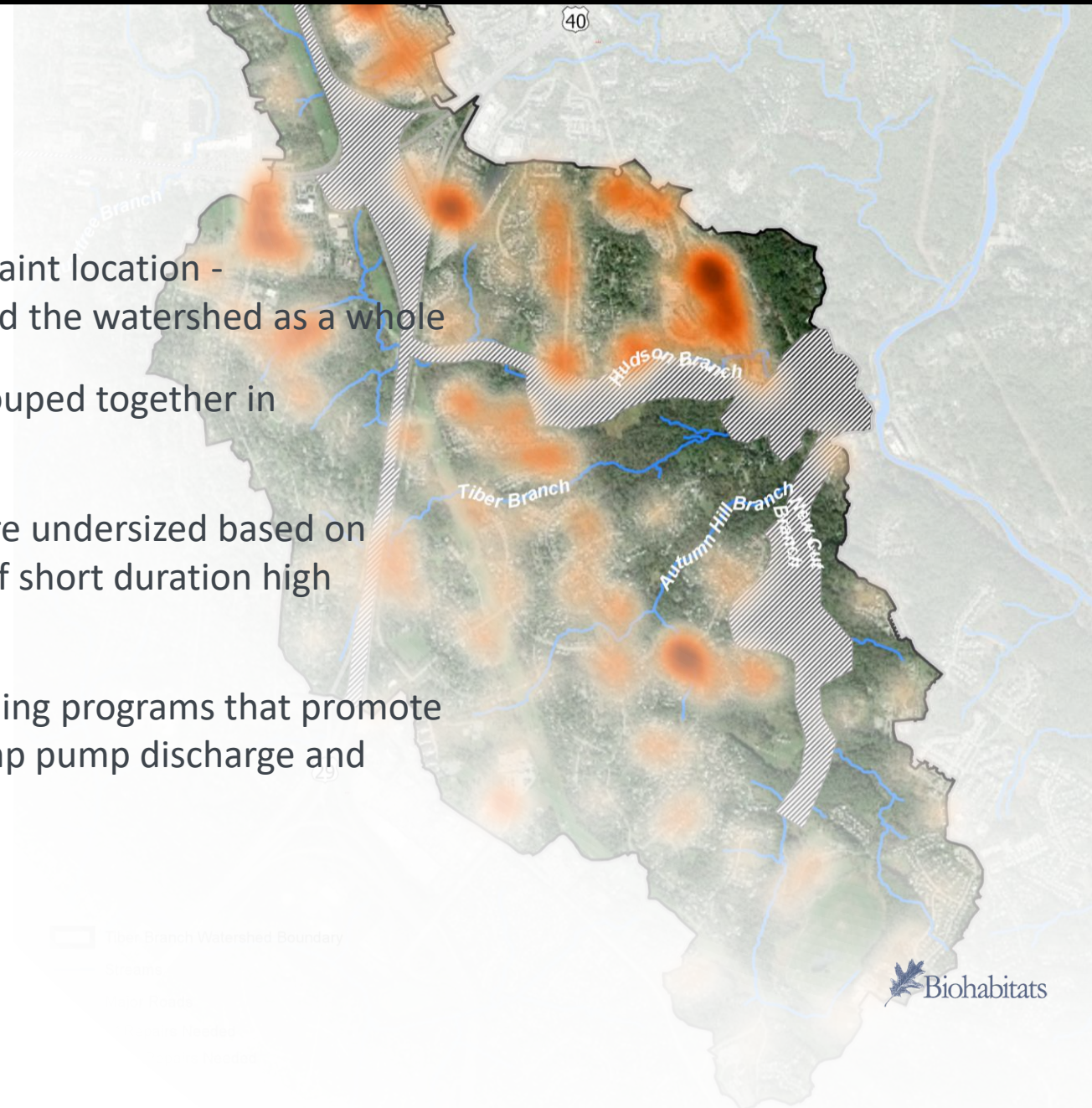
## Key Take Aways

Look at systems holistically rather than just the complaint location - understanding downstream and upstream impacts and the watershed as a whole

Even identified assessment areas can be grouped together in identifying capital projects and solutions

Need for climate resiliency planning- many systems are undersized based on today's standards and with the increased frequency of short duration high intensity events... flooding frequency will increase

Public outreach can be an important tool for establishing programs that promote rain gardens, and provide guidance for things like sump pump discharge and maintenance of driveway culverts



## Benefits to a Watershed Approach

Allows for holistic strategies that avoid piece-meal solutions

Avoids proposed solutions exacerbating conditions further downstream within drainage systems

Municipalities can group projects together within high-priority drainage areas

## Continuing to Refine Watershed Approach

- FEMA Community Rating System
  - 2 and 25 year
- Project Rainfall Amounts
- H&H
- Ongoing MDE A-StoRM Efforts



Questions?

Rebecca Winer-Skonovd

[rwinerskonovd@biohabitats.com](mailto:rwinerskonovd@biohabitats.com)

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# TOWN PROJECT STATUS

August 24, 2022

## FUTURE PROJECTS:

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

**Meadow Ridge Basin 2 (Westminster)** – Retrofit of existing facility to provide water quality through a surface sand filter. This site is adjacent to the pump station at the edge of the City limits. Design proposals came in higher than anticipated—we will rebid the design under the new term contract.

**Manchester East (Manchester)** – We are looking into opportunities for a new stormwater facility north of Manchester Valley High School, adjacent to the pump station.

## CONCEPT DESIGN:

**Hampstead Valley 1 (Hampstead)** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleystown Road near a production well. CLSI is currently working on a concept plan.

**Hampstead Valley 4 (Hampstead)** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. A review was completed by SWM and the project received concept approval.

**New Windsor Wetland (New Windsor)**- Survey data on the sewer force main was obtained to design around for the wetland facility. A concept plan was submitted for review in July.

**Roberts Field Wet Facility (Hampstead)** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) has received comments on the concept plans, and is currently underway with addressing comments for the next submittal.

**Carroll County Health Department (Westminster)** – We are currently looking at an alternative solution to treat the stormwater from the Health Department and adjacent neighbor storm drains via the Langdon facility. Survey work has been completed to locate the existing sanitary line.

### **FINAL DESIGN:**

**North Carroll Library (Hampstead)** – Final design for an underground sand filter is under way. Plans were reviewed by stormwater management; we are currently waiting on comments from Soil Conservation. We hope to have this project bid early September for a fall construction.

### **CONSTRUCTION:**

**Locust Street (Citizens Energy) (Union Bridge)** –The contractor has installed the liner and grading over it is completed. Storm drain installation is beginning, coordination with the Utilities is ongoing as excavation will be in the proximity to several existing poles.

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Construction of the pond is complete, and the as-built has been submitted electronically for review. We anticipate the grading permit to be closed out in September.

### **PLANNING PROJECTS:**

**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with the National Fish and Wildlife Foundation (NFWF). The contract with The Center for Watershed Protection has been signed. The Center for Watershed Protection has completed their and edits of the Quality Assurance Project Plan (QAPP) put together by the County. We anticipate submitting the QAPP to NFWF this week. Once the QAPP is approved we can begin the watershed study.

### **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**

# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary September 28, 2022

### **Attendees:**

#### Municipalities:

- Kevin Hann, Chair
- Jim Wieprecht, Vice Chair
- John Dick
- Gary Dye
- Mayor Perry Jones
- Rodney Kuhns
- Steve Miller
- Kevin Rubenstein
- Dick Swanson

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer
- Pat Varga

#### Health Department:

- Richard Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Lydia Rogers, CC M&B

#### Guest Speakers:

- 

#### Others:

- 

### **1. Opening Statement**

#### **Chair – Kevin Hann**

Mr. Kevin Hann, Chair, officially called the September 28, 2022, meeting of the Water Resource Coordination Council (WRCC) to order at 2:38 PM in Room 105 of the County Office Building.

Mr. Hann reminded everyone to let their staff know who should be attending the annual NPDES manager training to be held on October 14.

#### **Vice Chair – Jim Wieprecht**

Nothing additional.

### **2. Approval of Meeting Summary – August 24, 2022**

Approval of the August meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Dick Swanson and seconded by Steve Miller to approve the August 24, 2022, meeting summary as written. Motion carried.

### **3. LRM Chloride Program – Zach Neal**

Zach Neal, Hydrogeologist with Carroll County Land & Resource Management (LRM), gave an overview of LRM's chloride investigation procedure. He began with information about chloride sources in Carroll County, of which there are no natural sources. He discussed the long-term Brown Hill Road Study in Bow, New Hampshire, and the contribution of water softeners to the salt concentration. He also discussed Sam Panno's work with conservative halide analysis. He

finished with information about the procedure in Carroll County for investigating the source of chloride in a homeowner's well to determine if County activity is the source.

*Reference/Attachment:*

- PowerPoint: *Carroll County Chloride Investigative Procedure*

#### **4. Water Resources Element (WRE 2024) Update / Discussion – Brenda Dinne**

Ms. Dinne shared that the deadline to submit proposals for this study is September 29, 2022. The evaluation committee will review, rate, and make a selection, which will have to be approved by the Board of County Commissioners. A signed contract is anticipated for December 2022.

Ms. Dinne also shared that she is working on putting together the capacity management plan (CMP) worksheets to be filled in for each public water supply and wastewater system. These sheets will be the same as the sheets used for the 2010 WRE but will be updated if needed to reflect any newer guidance. When the sheets are ready to be filled in, she will send the appropriate sheets to each municipality and Carroll County Bureau of Utilities to complete. She requested that the sheets be completed and returned to her before Thanksgiving. She is working on having all data and information needed by the consultant gathered and ready by November 30. The CMP worksheets will be used to update the water supply and wastewater demand and capacity analysis in the 2009 Malcolm Pirnie studies.

*Reference/Attachment:*

- *n/a*

#### **5. Municipal Stormwater Projects Update – Janet O'Meara**

Janet O'Meara provided an update on the municipal stormwater restoration projects.

*Reference/Attachment:*

- Handout: *Town Project Status*

#### **6. Other**

- Annual Outfall Inspections: Glenn Edwards reported that staff is getting ready for the 2023 outfall inspection season.
- NPDES Annual Report: Drafting of the report is well underway. Mr. Edwards and Ms. Hirt may follow up with if they have questions about responses to the annual questionnaire.
- Stream Clean-Up in New Windsor: LRM staff is organizing a stream clean-up in New Windsor on Saturday, November 5, from 9 AM to 12 PM. Chris Heyn indicated staff will be looking for volunteers. More information will be circulated as details are available.
- Environmental Symposium: Mr. Heyn announced that the first annual Environmental Symposium will be held on Saturday, November 12, 2022, from 9 AM to 12 PM in Room K-100 at Carroll Community College. Part of the purpose is to bring environmental groups together to promote opportunities for cooperative work with each other and with LRM. The Symposium is open to the public and will allow the public to identify volunteer opportunities. Entries for a recycled art contest for high school students will be displayed, and attendees will vote for the winner. Winners will receive prizes.
- Tree Maintenance in Taneytown: LRM staff is planning a tree maintenance event in Taneytown on Saturday, November 19, 2022, from 9 AM to 12 PM. Volunteers will meet at Memorial Park to be shuttled to the site. While this event is not open to the public, as boy scout troops will serve as the volunteers for this event, the WRCC, Environmental Advisory Council, and Monocacy River Board members are welcome to attend and participate.
- Annual NPDES Supervisor Training: The annual training will be held on October 14.
- Water Levels: Zach Neal reported that the rain predicted from Hurricane Ian will help with water recharge.

## **7. Adjournment**

The meeting adjourned at 3.27 PM. The next monthly meeting is scheduled for Wednesday, October 26, 2022, at 2:30 PM.

**MEETING ADJOURNMENT:** Motion was made by Dick Swanson and seconded by Steven Miller to adjourn the September 28, 2022, meeting. Motion carried.

### **Upcoming Meetings:**

☐ *Regular Monthly Meeting – Wednesday, October 26, 2022*

# TOWN PROJECT STATUS

September 19, 2022

## FUTURE PROJECTS:

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

**Meadow Ridge Basin 2 (Westminster)** – Retrofit of existing facility to provide water quality through a surface sand filter. This site is adjacent to the pump station at the edge of the City limits. Design proposals came in higher than anticipated—we will rebid the design under the new term contract.

**Manchester East (Manchester)** – We are looking into opportunities for a new stormwater facility north of Manchester Valley High School, adjacent to the pump station.

## CONCEPT DESIGN:

**Hampstead Valley 1 (Hampstead)** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. CLSI is currently working on a concept plan of a triple facility design.

**Hampstead Valley 4 (Hampstead)** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. A review was completed by SWM and the project received concept approval. CLSI is working on the Preliminary design plans and integrating the stream design.

**New Windsor Wetland (New Windsor)**- Survey data on the sewer force main was obtained to design around for the wetland facility. The concept plan is being reviewed and accommodations for the underlying karst geology is being evaluated.

**Roberts Field Wet Facility (Hampstead)** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) has received comments on the concept plans, and is currently underway with addressing comments for the next submittal.

**Carroll County Health Department (Westminster)** – We are currently looking at an alternative solution to treat the stormwater from the Health Department and adjacent neighbor storm drains via the Langdon facility. Survey work has been completed to locate the existing sanitary line. We are initiating the design with CLSI.

### **FINAL DESIGN:**

**North Carroll Library (Hampstead)** – Final design for an underground sand filter is under way. Plans were reviewed by stormwater management; we are currently waiting on comments from Soil Conservation. We hope to have this project bid early October for a fall construction.

### **CONSTRUCTION:**

**Locust Street (Citizens Energy) (Union Bridge)** – The stormwater management facility is mostly complete. Storm drain installation and construction of the associated concrete diversion structures along W Locust Street and George Street is currently underway.

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Construction of the pond is complete, and the as-built was approved. We anticipate the grading permit to be closed out soon.

### **PLANNING PROJECTS:**

**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with the National Fish and Wildlife Foundation (NFWF). The Quality Assurance Project Plan (QAPP) developed by Carroll County and CWP was submitted for review. Comments were received, Byron and Kelly are currently making the necessary edits and will coordinate with CWP before returning the document to NFWF for further review.

### **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**



# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary

October 26, 2022

### Attendees:

#### Municipalities:

- Kevin Hann, Chair
- Jim Wieprecht, Vice Chair
- John Dick
- Gary Dye
- Mayor Perry Jones
- Rodney Kuhns
- Steve Miller
- Kevin Rubenstein
- Dick Swanson
- Kevin Smeak

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer
- Pat Varga

#### Health Department:

- Richard Brace
- Amie Huffman

#### CCG Others:

- Andy Watcher, CC DPW
- Lydia Rogers, CC M&B

#### Guest Speakers:

#### Others:

### 1. Opening Statement

#### Chair – Kevin Hann

Mr. Chris Heyn, Director of Carroll County Land & Resource Management, opened the meeting at 2:31 PM in the Chair's and Vice Chair's place, both of which had another work commitment.

#### Vice Chair – Jim Wieprecht

N/A

### 2. Approval of Meeting Summary – September 28, 2022

Approval of the August meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Steve Miller and seconded by Dick Swanson to approve the September 28, 2022, meeting summary as written. Motion carried.

### 3. Exploring Online GIS Opportunities – Claire Hirt

After recently meeting with each of the municipalities, Ms. Hirt discussed potential opportunities for using ArcGIS online to streamline the process of sharing data for NPDES annual reporting and other potential applications and increasing efficiency. The intent of the information she shared was to start a conversation about GIS applications and data each municipality currently has available, possible interface with ArcGIS online, and where there may be opportunities to explore a "GIS organization" for data collection, recording, tracking, reporting, and sharing. Areas touched on included education and outreach, sanitary sewer repairs, and the

utilities viewer. Municipal staff in the field may be able to enter data in GIS directly on their devices. Ms. Hirt is happy to answer questions and to further explore pursue this opportunity.

*Reference/Attachment:*

- N/A

#### **4. Development Review Fees – Pat Varga**

Mr. Varga shared that fees were recently adopted for certain floodplain and forest conservation reviews during the development process. Fees were not previously charged for review of development plan in the municipalities. The new fees will be the same as for review of plans in unincorporated areas of the county. The revised fee sheet is available on the Bureau of Development Review's webpage.

Mr. Heyn added that the revised fees do not need to be adopted by the municipalities and are effective immediately for new projects submitted.

*Reference/Attachment:*

- N/A

#### **5. Water Resources Element (WRE 2024) Update / Discussion – Brenda Dinne**

Ms. Dinne reported that the technical team selected a consultant, and the next step will be concurrency by the Board of County Commissioners to award the contract.

Capacity Management Plan workbooks were emailed to each municipality and Andy Watcher on October 11. Each workbook (except Hampstead) included the Water Supply Capacity Management Plan (WSCMP) workbook downloaded from MDE's website plus a worksheet with the one-page Wastewater Capacity Management Plan and, for reference purposes, the WSCMP from 2008. Ms. Dinne asked that completed workbooks be emailed back to her by November 28 to be available for the consultant as soon as the contract is signed.

*Reference/Attachment:*

- N/A

#### **6. Municipal Stormwater Projects Update – Janet O'Meara**

Ed Singer provided an update on the municipal stormwater restoration projects.

*Reference/Attachment:*

- Handout: *Town Project Status*

#### **7. Other**

- Annual NPDES Training: Chris Heyn thanked the municipalities for sending staff to the annual training.
- Environmental Symposium: The first annual symposium will be held on Saturday, November 12, 2022, at Carroll Community College from 9 AM to 12 PM. Everyone is invited and encouraged to participate.
- MDE Public Meeting re Sludge Application: MDE will hold a public information meeting on October 27, 2022, regarding an application(s) to land apply sewage sludge. Mr. Heyn requested the meeting, as sewage sludge is known to contain PFAS.
- Lead Service Water Lateral: EPA held a webinar on this topic on October 26, 2022. This could have a significant impact on the municipalities.
- NPDES Annual Report: Claire Hirt and Glenn Edwards continue to work on the annual report.
- State-Required Financial Assurance Plan (FAP): The FAP is on the Board's agenda for October 27 to start the process to adopt the FAP and submit it to MDE for certification.

## **8. Adjournment**

The meeting adjourned at 3:31 PM. The next monthly meeting is scheduled for Wednesday, November 16, 2022, at 2:30 PM. This is a week earlier than usual due to Thanksgiving.

**MEETING ADJOURNMENT:** Motion was made by Dick Swanson and seconded by Steven Miller to adjourn the October 26, 2022, meeting. Motion carried.

### **Upcoming Meetings:**

☐ *Regular Monthly Meeting – Wednesday, November 16, 2022*

# TOWN PROJECT STATUS

October 26, 2022

## FUTURE PROJECTS:

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

**Meadow Ridge Basin 2 (Westminster)** – Retrofit of existing facility to provide water quality through a surface sand filter. This site is adjacent to the pump station at the edge of the City limits. Design proposals came in higher than anticipated—we will rebid the design under the new term contract.

**Manchester East (Manchester)** – We are looking into opportunities for a new stormwater facility north of Manchester Valley High School, adjacent to the pump station.

## CONCEPT DESIGN:

**Hampstead Valley 1 (Hampstead)** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. CLSI is currently working on a concept plan of a triple facility design.

**Hampstead Valley 4 (Hampstead)** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. A review was completed by SWM and the project received concept approval. CLSI is working on the Preliminary design plans and integrating the stream design.

**New Windsor Wetland (New Windsor)**- Survey data on the sewer force main was obtained to design around for the wetland facility. The concept plan was reviewed and comments returned to the design engineer. Accommodations for the underlying karst geology are being evaluated.

**Roberts Field Wet Facility (Hampstead)** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) has received

comments on the concept plans, and is currently underway with addressing comments for the next submittal.

**Carroll County Health Department (Westminster)** – We are currently looking at an alternative solution to treat the stormwater from the Health Department and adjacent neighbor storm drains via the Langdon facility. Survey work has been completed to locate the existing sanitary line. We are initiating the design with CLSI.

### **FINAL DESIGN:**

**North Carroll Library (Hampstead)** – Final design for an underground sand filter is under way. Plans were reviewed by stormwater management; we are currently waiting on incorporating BG&E lines to the plans. We plan to have this project bid for a fall construction.

### **CONSTRUCTION:**

**Locust Street (Citizens Energy) (Union Bridge)** – The stormwater management facility is mostly complete. Storm drain installation along W Locust Street and George Street is currently underway. Some regrading of the existing swales has been added to the scope that will alleviate some localized flooding by conveyance to the facility.

**Trevanion Terrace (MDE Bay Restoration FY 20 Grant \$632,010) (Taneytown)** – Construction of the pond is complete, and the as-built was approved. We anticipate the grading permit to be closed out soon.

### **PLANNING PROJECTS:**

**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with the National Fish and Wildlife Foundation (NFWF). The Quality Assurance Project Plan (QAPP) developed by Carroll County and CWP was submitted for review. Comments were received and addressed. The document has been returned to NFWF for further review.

### **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**

# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary November 16, 2022

### **Attendees:**

#### Municipalities:

- Kevin Hann, Chair
- Jim Wieprecht, Vice Chair
- John Dick
- Gary Dye
- Mayor Perry Jones
- Rodney Kuhns
- Steve Miller
- Kevin Rubenstein
- Dick Swanson

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer
- Pat Varga

#### Health Department:

- Richard Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Lydia Rogers, CC M&B

#### Guest Speakers:

- Eileen Singleton, Baltimore Metropolitan Council

#### Others:

- 

### **1. Opening Statement**

#### **Chair – Kevin Hann**

Mr. Kevin Hann, Chair, opened the meeting at 2:32 PM. He shared the following:

- MDE held a webinar on October 26. All public and private lead service lines will need to be documented by October 2024.
- The Environmental Symposium experienced a good turnout. Based on the number of votes for the art contest entries, at least 153 people participated.
- Thanksgiving is a time to reflect on our blessings.

#### **Vice Chair – Jim Wieprecht**

Nothing additional.

### **2. Approval of Meeting Summary – October 26, 2022**

Approval of the October meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Dick Swanson and seconded by Rodney Kuhns to approve the October 26, 2022, meeting summary as written. Motion carried.

### **3. BMC Climate Change Resource Guide – Eileen Singleton, Baltimore Metropolitan Council**

Eileen Singleton provided an overview of the Climate Change Resource Guide, titled *Planning, Designing, Operating, and Maintaining Local Infrastructure in a Changing Climate*. Although the guide focuses on Departments of Transportation and Departments of Public Works, it covers six areas – transportation, stormwater, water, wastewater, facilities, and solid waste. The emphasis of the

guide is on adaptation rather than mitigation, and it doesn't go into the causes of climate change. The document is meant to be a starting point, a one-stop shop on climate change. While the data is regional, the variation between coastal communities and Carroll County is not significant.

The document includes big picture ideas regarding changes over time resulting from climate change. It includes a toolkit at the end of each chapter and links to information about performing a vulnerability assessment. It provides adaptation solutions and strategies that address more than one service area.

A follow-up project is underway with more specifics regarding transportation, stormwater, and water. They would like to include recommendations to institutionalize ongoing interjurisdictional coordination. Ms. Singleton offered to come back to present when this project is complete.

*Reference/Attachment:*

- PowerPoint: *Overview of Climate Change Resource Guide (attached)*
- Weblink: [Climate Change Resource Guide](#)

#### **4. Water Resources Element (WRE 2024) Update / Discussion – Brenda Dinne**

The municipalities and Carroll County Utilities are working on completing capacity management plan workbooks to return to Ms. Dinne by November 28 to provide to the consultant. A link to the 2013 MDE Guidance on water supply capacity management plans was provided with the original email and may be helpful to answer some questions about the worksheets.

On November 10, the Board of County Commissioners concurred with the consultant selection. The Procurement Office will be working on getting the contract signed.

*Reference/Attachment:*

- N/A

#### **5. Municipal Stormwater Projects Update – Janet O'Meara**

Janet O'Meara provided an update on the municipal stormwater restoration projects.

Byron Madigan and Rob Flora-Nakoski recently deployed the new outfall monitoring station in Hampstead.

*Reference/Attachment:*

- Handout: *Town Project Status*

#### **6. Other**

- NPDES Annual Report: Ms. Hirt anticipates the first internal draft will circulate next week, followed by sending a draft to the WRCC members to review as soon thereafter as it is assembled. Mr. Hann felt the new tracking and reporting forms are very helpful.
- Design Consultant/Contractor: Mr. Heyn offered that, if a municipality needs a design consultant/contractor, the County and municipality may be able to leverage the process the County already went through to save time and or money.
- Biosolids/Sludge Applications: Since sludge is a known source of PFAS, Mr. Heyn requested MDE hold a public information meeting for three applications located in Carroll County that are in wellhead buffers. A virtual meeting was held, but Mr. Heyn requested an in-person meeting be held. Two of the three applications were withdrawn. The applicant anticipates the leachate will go to the landfill instead. MDE is holding off until additional internal discussions are held regarding PFAS.
- A-StoRM: Mr. Heyn shared that MDE is looking to increase ESD volume (treated on-site) from 2.7 inches to 3.0 inches. A big concern with this change is that the 75 percent storage requirement would also increase to 100 percent, which is equal to about a 50 percent increase

in stormwater volume to store. Another concern is changes to conveyance requirements to address pluvial flooding (local storm drains, etc.).

- Well Levels: Zach Neal felt that the upcoming rain forecasted should help well levels.

## **7. Adjournment**

The meeting adjourned at 3:25 PM. The next monthly meeting is scheduled for Wednesday, November 16, 2022, at 2:30 PM.

**MEETING ADJOURNMENT**: Motion was made by Dick Swanson and seconded by Chris Heyn to adjourn the November 16, 2022, meeting. Motion carried.

## **Upcoming Meetings:**

- ☐ *Regular Monthly Meeting – Wednesday, December 21, 2022*



# TOWN PROJECT STATUS

November 16, 2022

## FUTURE PROJECTS:

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

**Meadow Ridge Basin 2 (Westminster)** – Retrofit of existing facility to provide water quality through a surface sand filter. This site is adjacent to the pump station at the edge of the City limits. Design proposals came in higher than anticipated—we will rebid the design under the new term contract.

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**New Windsor Wetland (New Windsor)**- Survey data on the sewer force main was obtained to design around for the wetland facility. A resubmittal of the concept plans and report are anticipated at the end of the month. Accommodations for the underlying karst geology are being evaluated.

**Roberts Field Wet Facility (Hampstead)** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) has received

comments on the concept plans, and is currently underway with addressing comments for the next submittal.

**Carroll County Health Department (Westminster)** – We are currently looking at an alternative solution to treat the stormwater from the Health Department and adjacent neighbor storm drains via the Langdon facility. Survey work has been completed to locate the existing sanitary line. CLSI is beginning the concept for the storm drain design.

### **FINAL DESIGN:**

**North Carroll Library (Hampstead)** – Final design for an underground sand filter is under way. Plans were reviewed by stormwater management; we are currently waiting on incorporating BG&E lines to the plans. We plan to have this project bid for a fall construction.

### **CONSTRUCTION:**

**Locust Street (Citizens Energy) (Union Bridge)** – The stormwater management facility and storm drains are mostly complete. Paving of George Street is anticipated to begin shortly.

### **PLANNING PROJECTS:**

**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with the National Fish and Wildlife Foundation (NFWF). The Quality Assurance Project Plan (QAPP) developed by Carroll County and CWP was submitted for review. Comments were received and addressed. The document has been returned to NFWF for further review.

### **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**



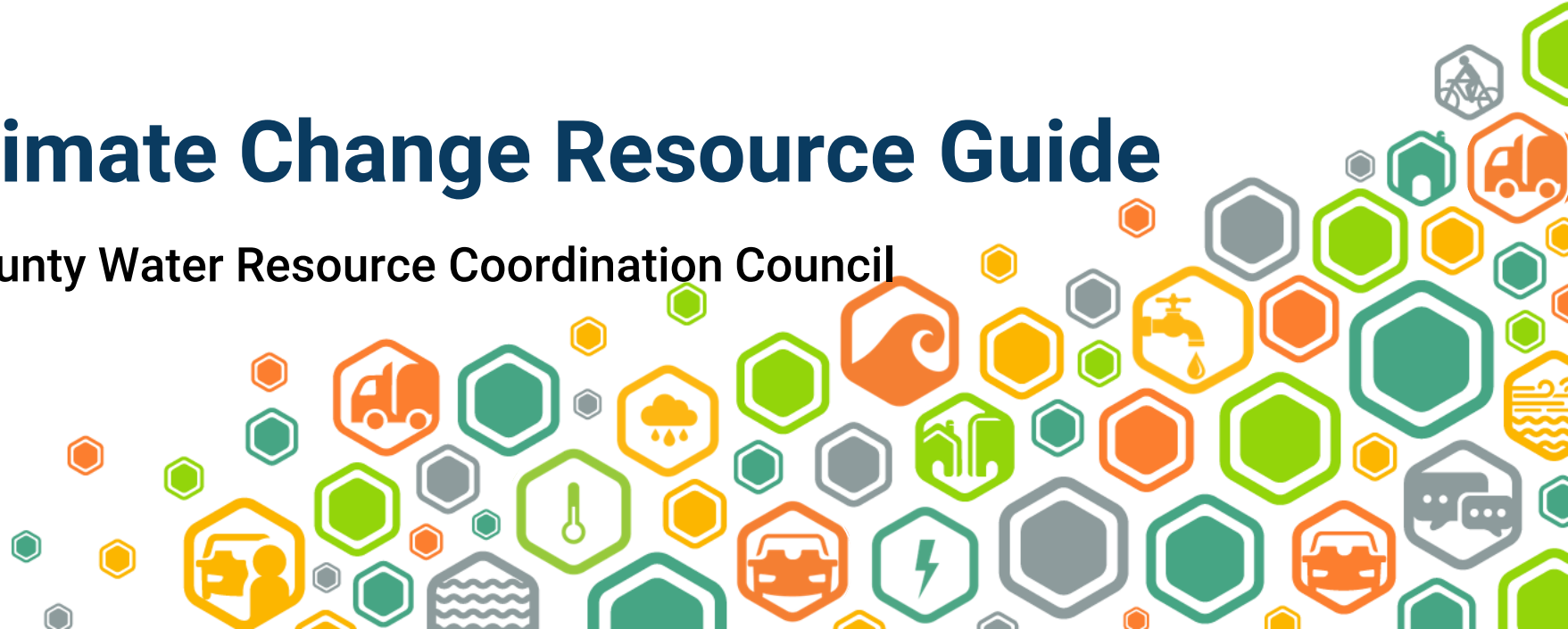
**BALTIMORE  
METROPOLITAN  
COUNCIL**



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# Overview of Climate Change Resource Guide

Presentation to Carroll County Water Resource Coordination Council  
November 16, 2022



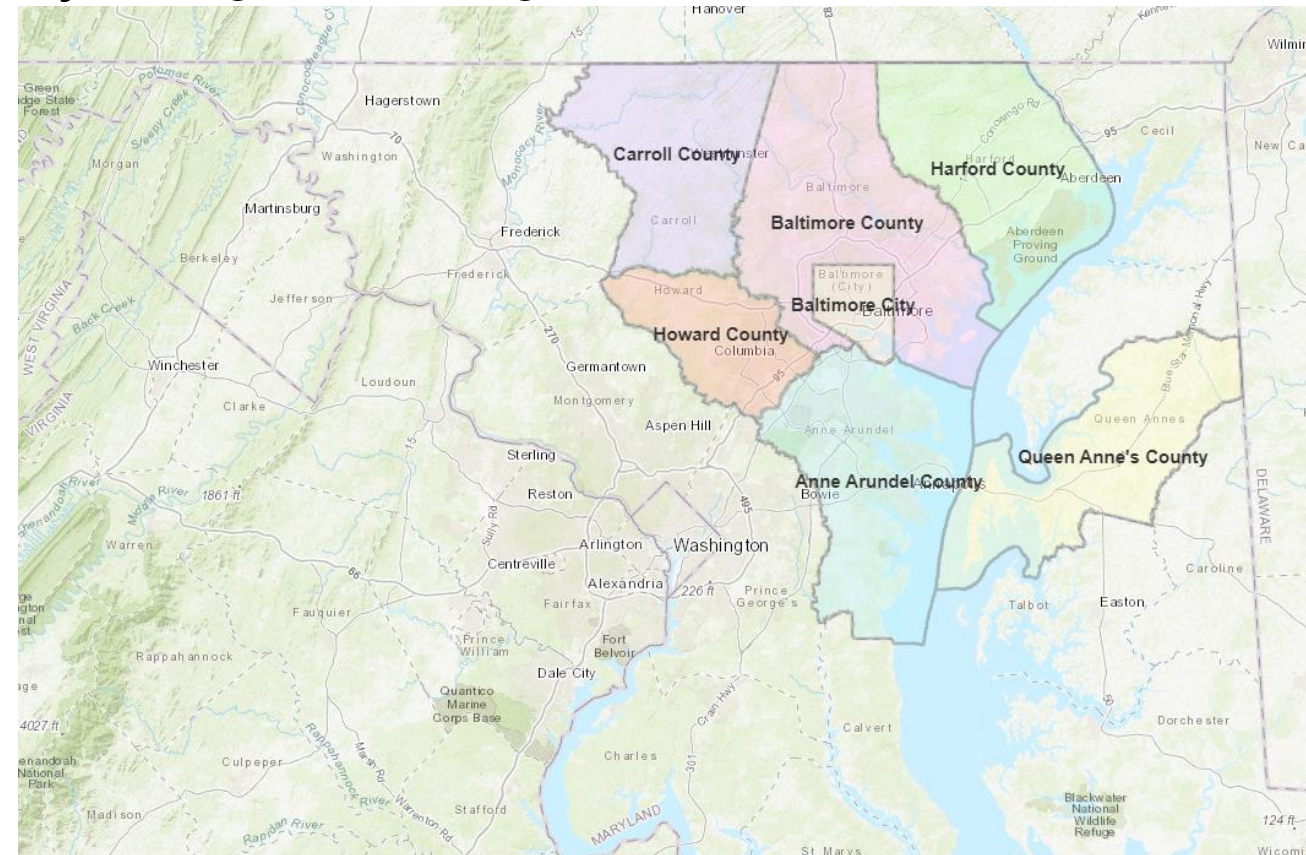
# Presentation Overview

- Overview of BMC
- Overview of the Climate Change Resource Guide
- Next steps to operationalize the Guide

# Overview of BMC

# Overview of Baltimore Metropolitan Council

- Private nonprofit organization committed to **identifying regional interests and developing collaborative strategies** through plans and programs, which will **improve the quality of life and economic vitality** throughout the region.
- **Board of Directors:**
  - Mayor of Baltimore City
  - Executives of Anne Arundel, Baltimore, Harford and Howard counties, a Carroll County Commissioner, a Queen Anne's County Commissioner
  - Delegate and Senator from the State of Maryland, and a gubernatorial appointee



# Overview of Baltimore Metropolitan Council

- **Work of BMC staff includes:**
  - Transportation Planning
  - Economic and Demographic Research
  - Computer Mapping and Geographic Analysis
  - Air and Water Quality Programs
  - Cooperative Purchasing
  - Workforce Development
  - Housing
  - Rideshare Coordination
  - Emergency Preparedness

[www.baltometro.org](http://www.baltometro.org)



# Overview of Baltimore Metropolitan Council

- **BMC staff provides technical support to the Baltimore Regional Transportation Board (BRTB).**
- **BRTB is the designated Metropolitan Planning Organization (MPO) for the Baltimore region.**
- **BRTB members include representatives from:**
  - Baltimore City, City of Annapolis, Anne Arundel County, Baltimore County, Carroll County, Harford County, Howard County, and Queen Anne's County
  - Maryland Department of Transportation, Maryland Department of the Environment, Maryland Department of Planning, MDOT Maryland Transit Administration, and Annapolis Transit.



# Overview of Baltimore Metropolitan Council

- Regional transportation planning committees:
  - Baltimore Region GIS Committee
  - Baltimore Regional Safety Subcommittee
  - Baltimore Regional Transportation Board
  - Bicycle and Pedestrian Advisory Group
  - Congestion Management Process Committee
  - Cooperative Forecasting Group
  - Freight Movement Task Force
  - Interagency Consultation Group
  - Public Advisory Committee
  - Technical Committee
  - Traffic Incident Management Committee
  - Traffic Signal Subcommittee
  - **Transportation & Public Works Committee**
- Other BMC committees:
  - Baltimore Regional Cooperative Purchasing Committee
  - BMC Board of Directors
  - Energy Board
  - Executive Committee
  - Housing Affordability Preservation Task Force
  - Housing Committee
  - Regional Fair Housing Group
  - Reservoir Technical Group
  - Watershed Protection Committee
  - Food and Water Security







# Overview of the Climate Change Resource Guide

# Project Administration

Project Steering Committee		
LOCAL	Annapolis	Dept. of Transportation
	Anne Arundel Co	Dept. of Public Works
	Baltimore City	Dept. of Planning, Office of Sustainability
		Dept. of Public Works
	Baltimore Co	Dept. of Public Works & Transportation
	Carroll Co	Dept. of Public Works
	Harford Co	Dept. of Public Works
	Howard Co	Dept. of Public Works
	Queen Anne's Co	Dept. of Public Works
STATE	MDOT	Office of Climate Change, Resilience, & Adaptation
		Office of Emergency Management, Homeland Security, & Rail Safety
	MTA	MDOT Maryland Transit Administration
	SHA	MDOT State Highway Administration, OHD
		MDOT State Highway Administration, OOM
		MDOT State Highway Administration, OPPE
		MDOT State Highway Administration, OTMO
FEDERAL	FHWA	Federal Highway Administration
CONSULTANT	ICF	
	CHPlanning/Nspiregreen	

# Introduction - Climate Change Resource Guide

- Climate Change Resource Guide and Toolkit support efforts of local DPWs and DOTs to prepare for climate change
  - Climate Change Resource Guide
    - Includes toolkit questions
  - Toolkit:
    - Writable PDF
- Covers 6 infrastructure service areas

	TRANSPORTATION
	STORMWATER
	WATER
	WASTEWATER
	FACILITIES
	SOLID WASTE



## KEY TERMS

There are two ways to take action on climate change:

- **Adaptation:** Measures to proactively adjust to a changing environment.  
Examples include ensuring sufficient building cooling systems given rising temperatures or siting assets outside future flood zones.
- **Mitigation:** Measures to reduce greenhouse gas emissions to slow or stop the impacts of climate change.  
Examples include transition to clean energy sources or electrification of building heating systems.

**This Resource Guide and Toolkit focus on adaptation.**

# Resource Guide Overview

- Ch 1: Introduction and Toolkit
- Ch 2: The Changing Climate
- Ch 3: Climate Change Impacts
- Ch 4: Policies
- Ch 5: Adaptation Options
- Ch 6: Funding and Financing
- Appendix A: Jurisdictional Climate Data
- Appendix B: Climate Science Data and Methods
- Appendix C: Toolkit Example



## Planning, Designing, Operating, and Maintaining Local Infrastructure in a Changing Climate







A Resource Guide for Departments of Public Works and Departments of Transportation in the Baltimore Region








City of Baltimore | City of Annapolis | Anne Arundel County | Baltimore County  
Carroll County | Harford County | Howard County | Queen Anne's County

# Toolkit Overview

- The Toolkit, within the Resource Guide, is a worksheet that makes the content from each chapter actionable for users, by including questions to consider
- Completed Toolkit example is included in Appendix C

Toolkit Questions	Enter Your Responses
<b>Climate science: <a href="#">Chapter 2</a> and <a href="#">Appendix A</a></b>	
<p>1. What climate hazards are relevant to your work or project? Use the information about current and future climate change in Chapter 2 (regional summary) and Appendix A (jurisdictional data) to determine relevant climate hazards.</p> <p> For each climate hazard, certain variables may be highly relevant to your service area or project (e.g., number of days above 90°F for worker safety; heating/cooling degree days for facilities; freeze/thaw days for transportation). Review the list of climate variables in Appendix A to identify variables particularly relevant to your work.</p>	<p><b>Climate hazards</b></p> <p><input type="checkbox"/>  Temperature</p> <p><input type="checkbox"/>  Precipitation</p> <p><input type="checkbox"/>  Sea level rise and storm surge</p> <p><input type="checkbox"/>  Other extreme weather</p> <p><b>Climate variables</b></p>
<p>2. For each of the climate hazards: What are the historical climate conditions? How are the climate conditions changing in your jurisdiction? Use the information about current and future climate change in Chapter 2 (regional summary) and Appendix A (jurisdictional data) to evaluate how the climate hazards are changing.</p> <p> Consider your planning timeframe or asset's useful life when reviewing the projected climate conditions. For example, decisions about maintenance or replacement of facility mechanical components should consider medium-term projections (centered around 2050), while decisions about construction of new long-lived infrastructure should consider long-term projections (end of century and beyond).</p>	<p><b>Historical climate conditions</b>      <b>Projected climate conditions</b></p>

Toolkit Questions	Enter Your Responses
<b>Climate impacts: <a href="#">Chapter 3</a></b>	
<p>3. Given changing climate conditions, what are anticipated impacts to your service area or project? Consider impacts that your service area or project has recently <u>experienced, and</u> use the climate projections from Question 2 along with the information and examples from Chapter 3 to determine projected climate impacts.</p> <p> Which anticipated impacts are priorities to address? Consider prioritizing impacts based on potential damage, disruption of public services, and cost of repair.</p> <p>4. Have climate impacts to your service area or project disproportionately affected vulnerable populations? Review the a) <a href="#">BMC Vulnerable Populations Index</a>, b) <a href="#">Maryland Commission on Climate Change Adaptation and Resiliency Work Group's Justice, Equity, Diversity, and Inclusion Strategic Framework</a>, and c) information on climate impacts from Chapter 3 to consider the uneven impacts to vulnerable populations who may face elevated climate risks.</p> <p> Are there areas where infrastructure investments could both reduce climate impacts and enhance social equity?</p>	<p><b>Projected climate impacts</b></p>
<b>Policies: <a href="#">Chapter 4</a></b>	
<p>5. Are there state and local policies on climate impacts that affect your work or project? Use the information from Chapter 4 to determine relevant climate policies.</p> <p> Are there policies that would help facilitate climate adaptation measures if approached from a climate perspective? For example, environmental justice policies may help show progress or build support when addressing climate. On the flipside, are there policy or planning barriers that limit your ability to address climate impacts?</p>	
<b>Adaptation options: <a href="#">Chapter 5</a></b>	
<p>6. Given the projected climate impacts, what are potential adaptation strategies within your service area or for your project, across relevant functions (e.g., design, maintenance)? Use the information and examples from Chapter 5 to begin to identify potential adaptation strategies.</p> <p> What adaptation options are no-regrets (i.e., generate benefits regardless of future climate) and/or could be implemented in the near-term? What adaptation options are no or low cost?</p>	
<b>Funding and financing: <a href="#">Chapter 6</a></b>	
<p>7. What funding and financing sources are available to help implement the adaptation options? Use the information and examples from Chapter 6 to begin to identify potential funding and financing strategies for adaptation.</p>	
<b>Next steps</b>	
<p>8. What are your next steps to address these climate impacts and plan for these adaptation options?</p> <p> For the selected adaptation strategies, would there be implications to other service areas? Are there other agencies or departments (<a href="#">inside or outside your jurisdiction</a>) your DPW or DOT should coordinate with?</p>	

# Ch 2: The Changing Climate in the Baltimore Region

- Provides a common reference for historical climate trends and climate projections



Changes in Temperature



Changes in Precipitation



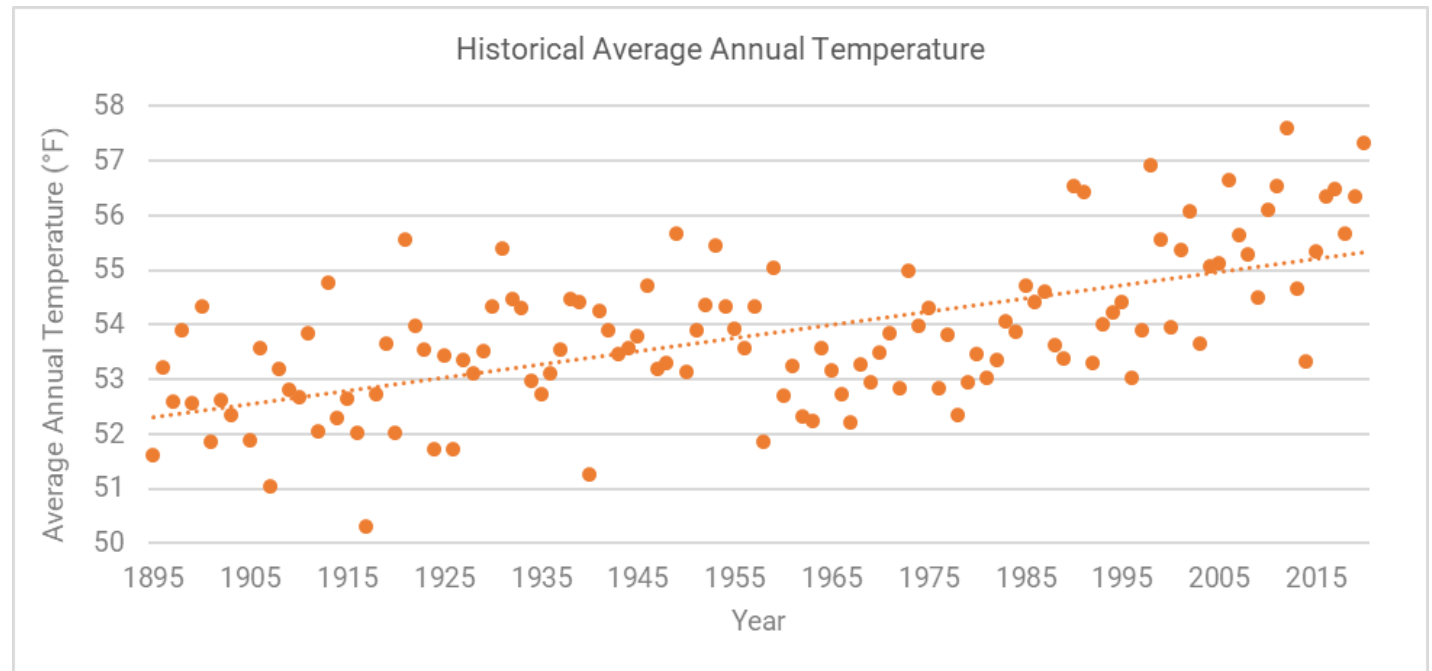
Sea Level Rise and Coastal Storm Surge



Other Projected Changes in Extreme Weather

# Ch 2: The Changing Climate in the Baltimore Region

- Climate has been changing in the Baltimore region over the past century
  - **Upward trend** in annual **temperature** (+0.2°F per decade)
  - Slight **increase** in annual **precipitation**, particularly falling in intense storms
  - **Sea level rise** in the Chesapeake Bay and tributaries (+1.22 ft since 1928) and **increase** in **nuisance flooding**





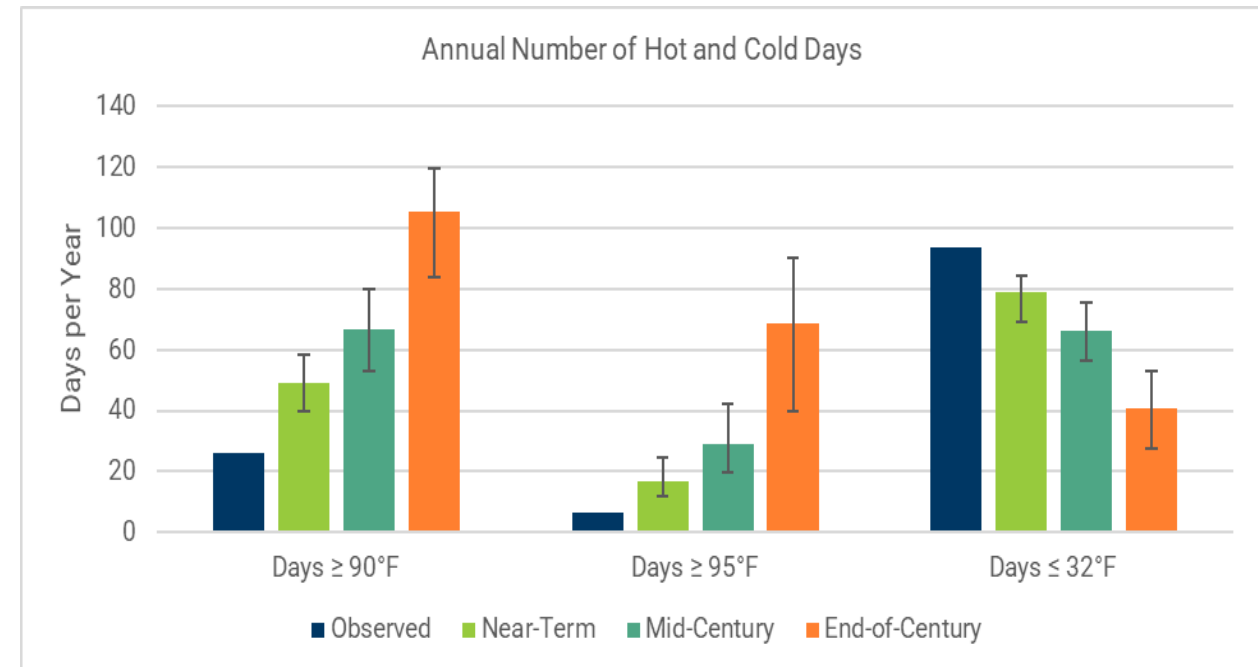
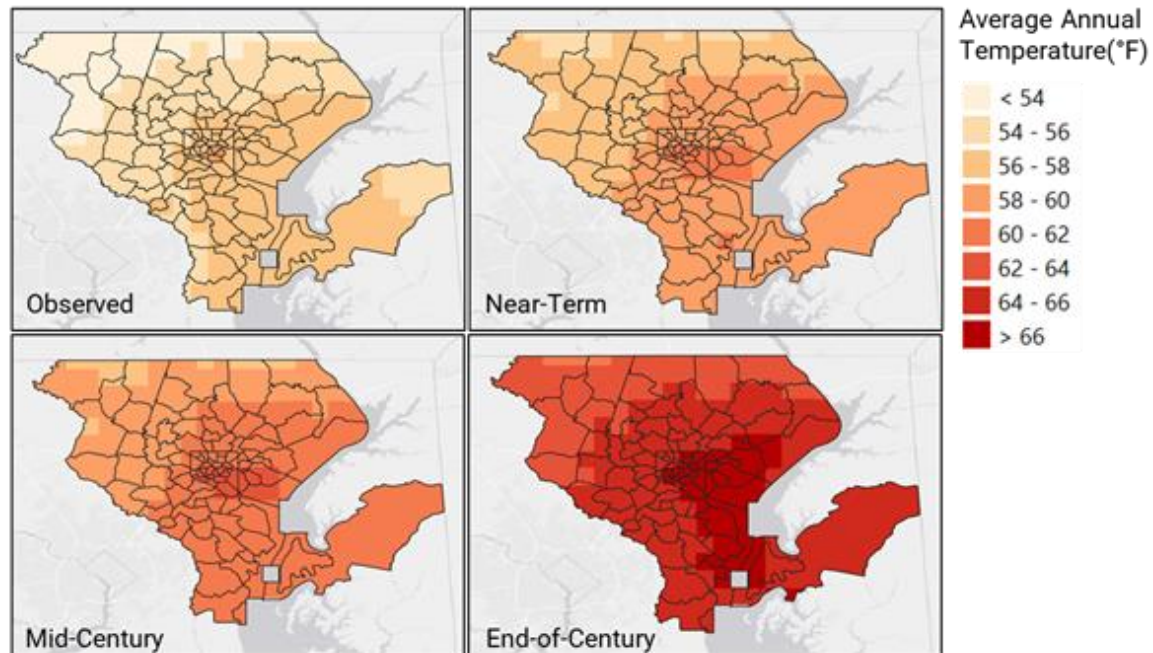
# Ch 2: The Changing Climate in the Baltimore Region

- **Climate in Maryland will continue to change**
  - The Baltimore region is expected to experience **changes with temperatures, rainfall patterns, sea levels, and extreme weather events**, mostly due to an increase in greenhouse gases
- **Resource Guide provides regional & jurisdictional climate projections**
  - Across three time horizons: **near-term (2030s), medium-term (2050s), and long-term (2090s)**
  - Uses scenario that projects high greenhouse gas emissions with little reduction (RCP 8.5)
    - scenario is recommended by FHWA
  - Climate **variables** that may be **useful for infrastructure planning and design**. For example:
    - Number of days above 90°F for worker safety
    - Heating/cooling degree days for facilities
    - Daily freeze/thaw cycle for transportation

# Ch 2: The Changing Climate in the Baltimore Region: Temperature



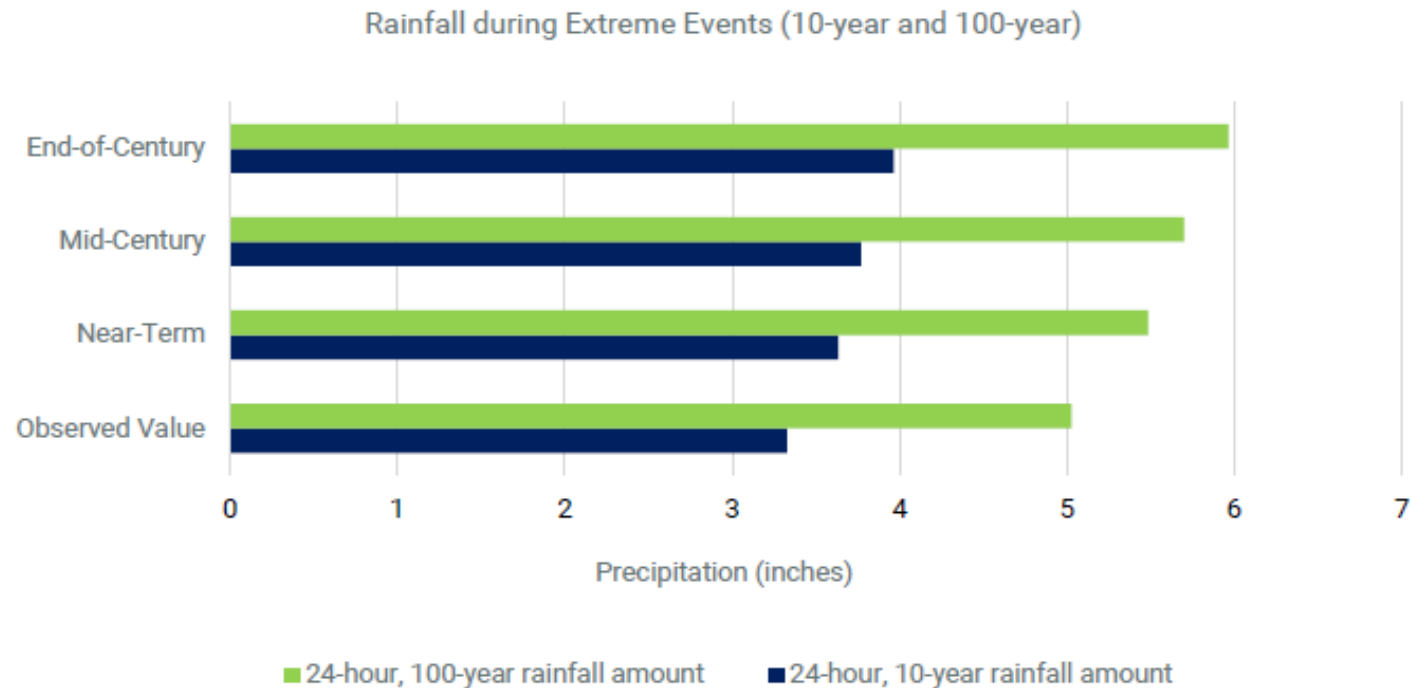
- **Temperatures will dramatically increase**
  - **Increase in average temperatures**
    - Historical annual average temperature of 56°F is projected to reach 65°F by 2090s
  - **Increase in number of extreme heat days (above 90°F, 95°F) and number of heatwaves**



# Ch 2: The Changing Climate in the Baltimore Region: Precipitation



- Precipitation will fall in heavier events
  - Increase in rainfall during extreme events
    - Increase in the amount of precipitation in 24-hour, 10-year and 100-year rainfall events
  - Average annual precipitation is not projected to increase notably



\* All projections are shown for RCP 8.5.

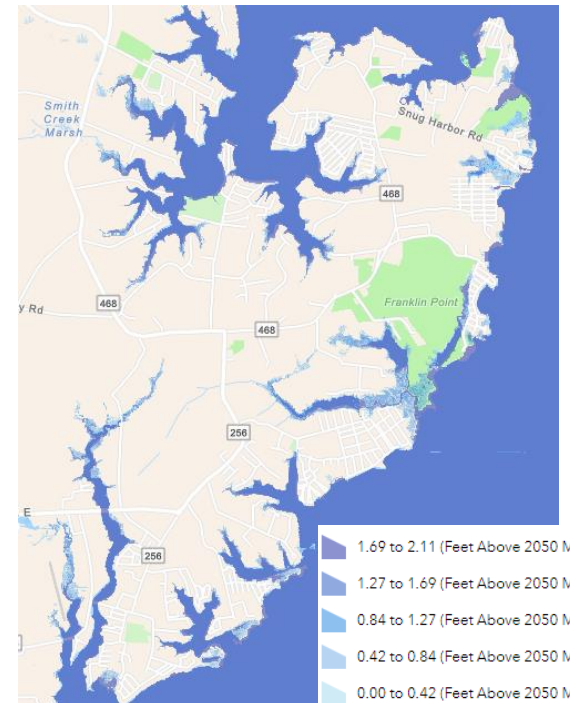
# Ch 2: The Changing Climate in the Baltimore Region: Sea Level Rise and Coastal Storm Surge



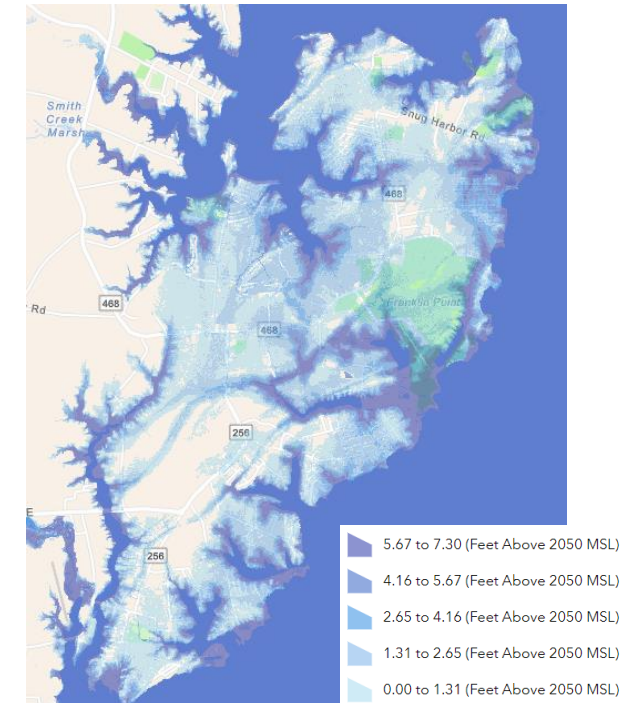
- The Baltimore region shoreline will experience increases in coastal flooding from sea level rise and storm surge
  - **Sea level** is projected to **rise over 1ft** by 2050 and **over 2ft** by 2100
  - **Storm surges** will become more severe, due to sea level rise and more intense storms

Source: MDOT SHA Climate Change Vulnerability Viewer  
(<https://www.arcgis.com/apps/webappviewer/index.html?id=86b5933d2d3e45ee8b9d8a5f03a7030c>)

Sea level rise inundation depths by 2050 in Anne Arundel



Flood depths during a 1% annual chance flood by 2050 in Anne Arundel









# Ch 2: The Changing Climate in the Baltimore Region: Extreme weather



- **Extreme weather events will increase in both frequency and intensity**
  - **Increase** in the **strength** and **volume** of **thunderstorms and derechos**, due to warming atmospheric temperatures
  - **Increase** in the number of **hurricanes** identified as Category 3 or stronger through 2050
- **Extreme cold snaps due to weakened “polar vortex” events**
  - This could lead to **more frequent cold** weather outbreaks in the northern and northeastern US
- **Although currently no quantitative estimates for these changes in extremes, a shift towards more extreme weather should be expected**

# Toolkit Questions: The Changing Climate

Toolkit Questions	Enter Your Responses
Climate science: <a href="#">Chapter 2</a> and <a href="#">Appendix A</a>	
<p>1. What climate hazards are relevant to your work or project? Use the information about current and future climate change in Chapter 2 (regional summary) and Appendix A (jurisdictional data) to determine relevant climate hazards.</p> <p> For each climate hazard, certain variables may be highly relevant to your service area or project (e.g., number of days above 90°F for worker safety; heating/cooling degree days for facilities; freeze/thaw days for transportation). Review the list of climate variables in Appendix A to identify variables particularly relevant to your work.</p>	<p><b>Climate hazards</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/>  Temperature</li> <li><input type="checkbox"/>  Precipitation</li> <li><input type="checkbox"/>  Sea level rise and storm surge</li> <li><input type="checkbox"/>  Other extreme weather</li> </ul> <p><b>Climate variables</b></p>

Toolkit Questions	Enter Your Responses	
<p>2. For each of the climate hazards: What are the historical climate conditions? How are the climate conditions changing in your jurisdiction? Use the information about current and future climate change in Chapter 2 (regional summary) and Appendix A (jurisdictional data) to evaluate how the climate hazards are changing.</p> <p> Consider your planning timeframe or asset's useful life when reviewing the projected climate conditions. For example, decisions about maintenance or replacement of facility mechanical components should consider medium-term projections (centered around 2050), while decisions about construction of new long-lived infrastructure should consider long-term projections (end of century and beyond).</p>	<p><b>Historical climate conditions</b></p>	<p><b>Projected climate conditions</b></p>



# Ch 3: Climate Change Impacts to Local Public Works and Transportation Departments



- Summary of climate impacts experienced by local DPWs/DOTs

 HEAVY PRECIPITATION AND INLAND FLOODING	 COASTAL FLOODING
 EXTREME HEAT	 OTHER EXTREME WEATHER

 TRANSPORTATION	 WASTEWATER
 STORMWATER	 FACILITIES
 WATER	 SOLID WASTE

# Ch 3: Climate Change Impacts

- **Jurisdictions are already seeing impacts from hazards across infrastructure service areas**
  - Impacts include **infrastructure damage, increased maintenance and costs, and operational impacts**
  - Impacts can be felt **disproportionately** by **vulnerable populations**, including people of color, those who are low-income or have disabilities, children, and the elderly
  - Across the region, **heavy rain** has been perceived are the **most impactful hazard**

Climate Impacts				
Service Area	Heavy Precipitation and Inland Flooding	Sea Level Rise and Coastal Flooding	Extreme Heat	Other Extreme Weather
<b>Transportation</b> 	<p>Erosion, washouts, and heavy precipitation affect the integrity of pavement by reducing strength of pavement, leading to further deterioration.</p> <p>Inundation and erosion affect the structural integrity of bridges and rail infrastructure.</p> <p>Flooded roadways can cause detours or delays. Heavy precipitation and flooding can result in transit/rail service delays.</p>	<p>Coastal roads already experiencing nuisance flooding will flood more frequently and potentially permanently.</p> <p>Low-lying coastal roads that are further inland may flood.</p> <p>Flooded roadways can cause detours or delays.</p> <p>Sea level rise with storm surge will decrease clearance levels and damage bridges.</p> <p>Flooding and erosion along coastal routes will affect the ability to safely continue transit service.</p> <p>Waterfront facilities supporting ports and other transportation services may be impacted by sea level rise, flooding, and strong storms.</p>	<p>Extreme heat can cause buckling or softening of surface pavement materials.</p> <p>Road crews are impacted by extreme temperatures, thus affecting worker safety.</p> <p>Public health impacts can result as transit riders wait for the bus/train during extreme heat days.</p> <p>Extreme heat can cause buckling and damage to rail lines and runways, and can stress bridge integrity.</p>	<p>Downed trees or power lines from storms can cause roadway closures.</p> <p>Extreme weather compounds damage to aging transportation infrastructure.</p> <p>Wide temperature swings can damage roadways and transportation infrastructure when ice expands in cracks during freeze/thaw days.</p> <p>High winds can result in bridge closures.</p>
<b>Stormwater</b> 	<p>More frequent and intense storms can increase flooding, stormwater runoff, and erosion.</p> <p>Heavy rainfall can overwhelm stormwater capacity.</p>	<p>Gravity-fed systems may no longer function as designed if outfalls are submerged.</p> <p>Coastal flooding at outfalls could drive backflow into the system.</p> <p>Groundwater levels may increase, reducing the soil's ability to absorb stormwater and increasing runoff.</p>	<p>Limited documented impacts exist for this service area.</p>	<p>Storms could introduce debris that can clog storm drains, pipes, and outfalls.</p>



# Ch 3: Climate Change Impacts



## Transportation Impacts

The transportation service area within this Resource Guide includes infrastructure managed by local DOTs.<sup>15</sup> Transportation assets include roadways, highways, buses, trains, and a supporting network of infrastructure.



## Heavy Precipitation, Inland Flooding, and Coastal Flooding

- All types of flooding (caused by heavy rains, coastal storms, high tides) affect transportation infrastructure, operations, and travel efficiencies.
  - Temporary inundation of roadways, highways, bridges, and tunnels have been observed to occur more frequently over recent years, causing damage and travel delays.
    - » In-kind replacements—especially with bridges—are often washed out just as quickly as the initial asset.
  - Roadway washouts from heavy rains are becoming more frequent. In some jurisdictions, soil remediation work is necessary to ensure health and safety on aging roads, bridges, and culverts.
  - Slow-downs and detours cost travelers time and money when flooding results in delays and/or when damage to roadways prevents access to the most efficient travel route, which especially affects transit service delays.



[A flash flood](#) in northern Harford County caused major damage to approximately 20 roads and culverts, as streams rose 11 feet above normal water levels on August 31, 2018.

## Ch 3: Climate Change Impacts

- **Climate change will also impact the availability of financing sources for local governments**
  - Credit rating agencies are now considering potential impacts of the changing climate (which could affect local governments' ability to repay)
- **Climate adaptation can help:**
  - Ensure credit ratings are not downgraded
  - Maintain/improve a bond rating
  - Save \$ for taxpayers
  - Increase financing source availability for local infrastructure projects

# Toolkit Questions: Climate Change Impacts

Climate impacts: [Chapter 3](#)

3. Given changing climate conditions, what are anticipated impacts to your service area or project? Consider impacts that your service area or project has recently experienced, and use the climate projections from Question 2 along with the information and examples from Chapter 3 to determine projected climate impacts.



Which anticipated impacts are priorities to address? Consider prioritizing impacts based on potential damage, disruption of public services, and cost of repair.

4. Have climate impacts to your service area or project disproportionately affected vulnerable populations? Review the a) [BMC Vulnerable Populations Index](#), b) [Maryland Commission on Climate Change Adaptation and Resiliency Work Group's Justice, Equity, Diversity, and Inclusion Strategic Framework](#), and c) information on climate impacts from Chapter 3 to consider the uneven impacts to vulnerable populations who may face elevated climate risks.



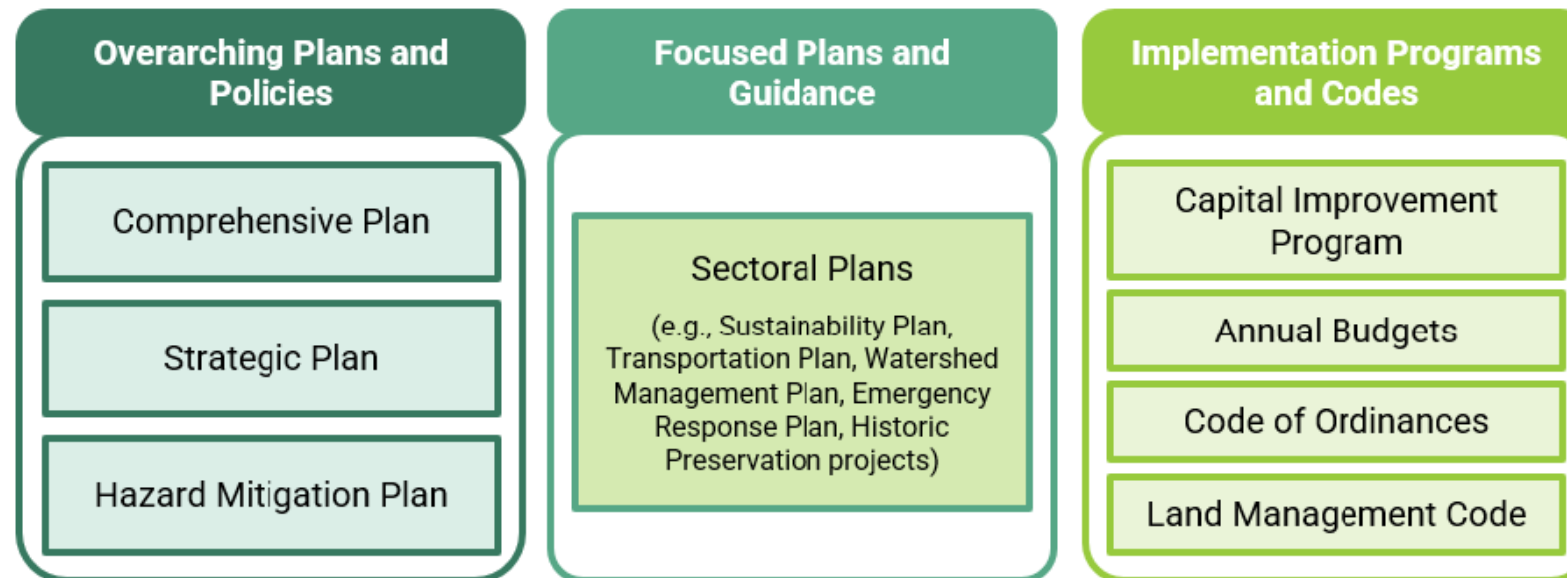
Are there areas where infrastructure investments could both reduce climate impacts and enhance social equity?

Projected climate impacts

# Ch 4: Relevant Policies

- Provides context for relevant **state and local policies** affecting the work of local DPWs/DOTs

Figure 18. Examples of local policies, plans, and programs that could be affected by climate change.



# Ch 4: Relevant Policies

## State-level policies







- Existing environmental regulations administered by the state should be adhered to, though note they are based on historical climate data
  - Such as: Maryland Department of the Environment’s (1) dam safety regulations and (2) stormwater management regulations

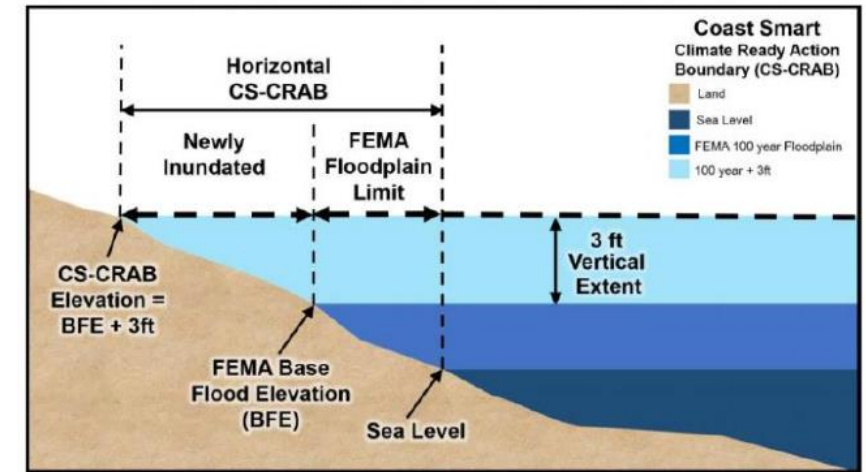


- Local governments are authorized to establish a Resilience Authority to fund large-scale infrastructure projects
  - (Senate Bill 457, 2020)
  - E.g., Anne Arundel County and the City of Annapolis partnered to establish a Resilience Authority

# Ch 4: Relevant Policies

## State-level policies, for coastal jurisdictions

-  – The State updates sea level rise projections every 5 years
  - o (House Bill 0514/Senate Bill 0258, 2015)
  - o Most recent report, *Sea-level rise: Projections for Maryland 2018*, available to support jurisdictions
-  – Coast Smart Construction Program, providing guidance on siting and design of capital projects based on sea level rise and coastal flooding
  - o (House Bill 615, 2014; House Bill 1350/Senate Bill 1006, 2018; House Bill 1427, 2019)
  - o Defines a new coastal flooding planning areas, called the Coast Smart Climate Ready Action Boundary (CS-CRAB)
-  – Develop a local nuisance flood plan and update every 5 years
  - o (House Bill 1350/Senate Bill 1006, 2018; House Bill 1427, 2019)
-  – Require the use of living shorelines in tidal wetlands to address shore erosion impacts from sea level rise
  - o (House Bill 973)



# Ch 4: Relevant Policies

## Local-level policies

- Jurisdictions in Baltimore region have already been taking action to address climate impacts, such as by developing climate adaptation plans
- Though climate adaptation has not been represented in local policies in a codified way
  - Local codes and standards should be updated to ensure that infrastructure is able to withstand these changing conditions; could use information from climate projections
  - These updates may apply to include local codes and standards such as:
    - Local design standards and specifications
    - Local development or floodplain regulations
    - Worker safety protocols

# Toolkit Questions: Policies

## Policies: [Chapter 4](#)

5. Are there state and local policies on climate impacts that affect your work or project? Use the information from Chapter 4 to determine relevant climate policies.



Are there policies that would help facilitate climate adaptation measures if approached from a climate perspective? For example, environmental justice policies may help show progress or build support when addressing climate. On the flipside, are there policy or planning barriers that limit your ability to address climate impacts?



# Ch 5: Climate Adaptation Options for Local Public Works and Transportation Departments

- Menu of climate adaptation options

- by hazard



Multi-Hazard



Changes in Temperature



Changes in Precipitation, Sea Level Rise, Coastal Storm Surge, and Flooding

and

- across service areas



TRANSPORTATION



WATER



FACILITIES



STORMWATER



WASTEWATER



SOLID WASTE

# Ch 5: Climate Adaptation Options

- A multi-faceted approach to adaptation spans functions:
  - Planning
  - Design/Construction
  - Maintenance/Operations/Worker Safety

## Changes in Temperature Strategies

Adaptation Strategy	Service Areas	Function	Examples
Adjust and expand worker safety plans		<ul style="list-style-type: none"> <li>Planning</li> <li>Design/Construction</li> <li>✓ Maintenance/Operations/Worker Safety</li> </ul>	In Austin, TX, the <a href="#">Climate Resilience Action Plan</a> suggested expanding staff safety plans to adjust work schedules and safety policies for fieldworkers during extreme heat days, poor air-quality days, and other climate-related health risk days.
Plant more trees and vegetation to provide shading and lower ambient temperatures		<ul style="list-style-type: none"> <li>✓ Planning</li> <li>✓ Design/Construction</li> <li>Maintenance/Operations/Worker Safety</li> </ul>	<p><b>Baltimore County's Climate Action Plan</b> calls to increase the urban tree canopy, targeting areas with urban heat island impacts.</p> <p>Philadelphia, PA, is developing an <a href="#">Urban Forest Strategic Plan</a>, prioritizing equity and environmental justice in service delivery, so that that the most vulnerable and underserved communities can benefit from healthy tree canopy.</p>
Incorporate shading into street and building code standards		<ul style="list-style-type: none"> <li>✓ Planning</li> <li>✓ Design/Construction</li> <li>Maintenance/Operations/Worker Safety</li> </ul>	Phoenix, AZ, incorporated shade standards, such as requiring a minimum of 75% of public sidewalks be shaded, into the <a href="#">municipal code</a>
Incorporate bus shelters, shading, and seating for transit riders and workers		<ul style="list-style-type: none"> <li>✓ Planning</li> <li>✓ Design/Construction</li> <li>✓ Maintenance/Operations/Worker Safety</li> </ul>	<p>Tacoma Park, MD, committed by resolution to develop a bus shelter prioritization plan and identified the need to make improvements to bus stops as a means of enhancing alternative transportation options.</p> <p>In Los Angeles, CA, <a href="#">StreetsLA</a> is expanding street furniture and administering a program to install new bus shelters to thousands of bus stops in the region to protect riders from heat and maintain ridership.</p>
Use cooler pavement mixes (e.g., light-colored aggregate) to reduce surface temperatures		<ul style="list-style-type: none"> <li>Planning</li> <li>✓ Design/Construction</li> <li>Maintenance/Operations/Worker Safety</li> </ul>	<p>Chicago, IL's <a href="#">Green Alley</a> program is repaving alleys in the city with permeable, high-albedo pavement, a lighter-colored surface that reflects sunlight instead of absorbing it.</p> <p>Chula Vista, CA's <a href="#">Climate Action Plan adaptation strategies</a> include installation of cooler paving products, intended to incorporate reflective paving into all municipal projects (parking lots and streets).</p>

# Ch 5: Climate Adaptation Options

- Adaptation Case Studies

## Case Study: Preparing Facilities for Climate Change

Ensure that facilities are prepared to withstand the impacts of climate change via design, construction, and maintenance, as well as emergency protocols and preparedness.



## Crosscutting Strategy: Resilience in Capital Improvement Programs

Ensure that municipal capital investments can continue to deliver infrastructure services in the face of climate change by identifying resilience design modifications for proposed capital projects.



## Case Study: Protecting Wastewater Facilities from Flooding

Ensure that wastewater facilities can continue maintaining clean waterways in the face of flooding and sea level rise.



## Crosscutting Strategy: Climate Resilience Design Guidelines

Climate resilience design guidelines ensure that new infrastructure is designed and existing infrastructure is retrofitted, using data on future climate conditions.



## Case Study: Installing Green Infrastructure When Upgrading Road and Stormwater Infrastructure

Reduce stormwater runoff and temperatures while gaining other community co-benefits



# Toolkit Questions: Climate Adaptation Options

## Adaptation options: [Chapter 5](#)

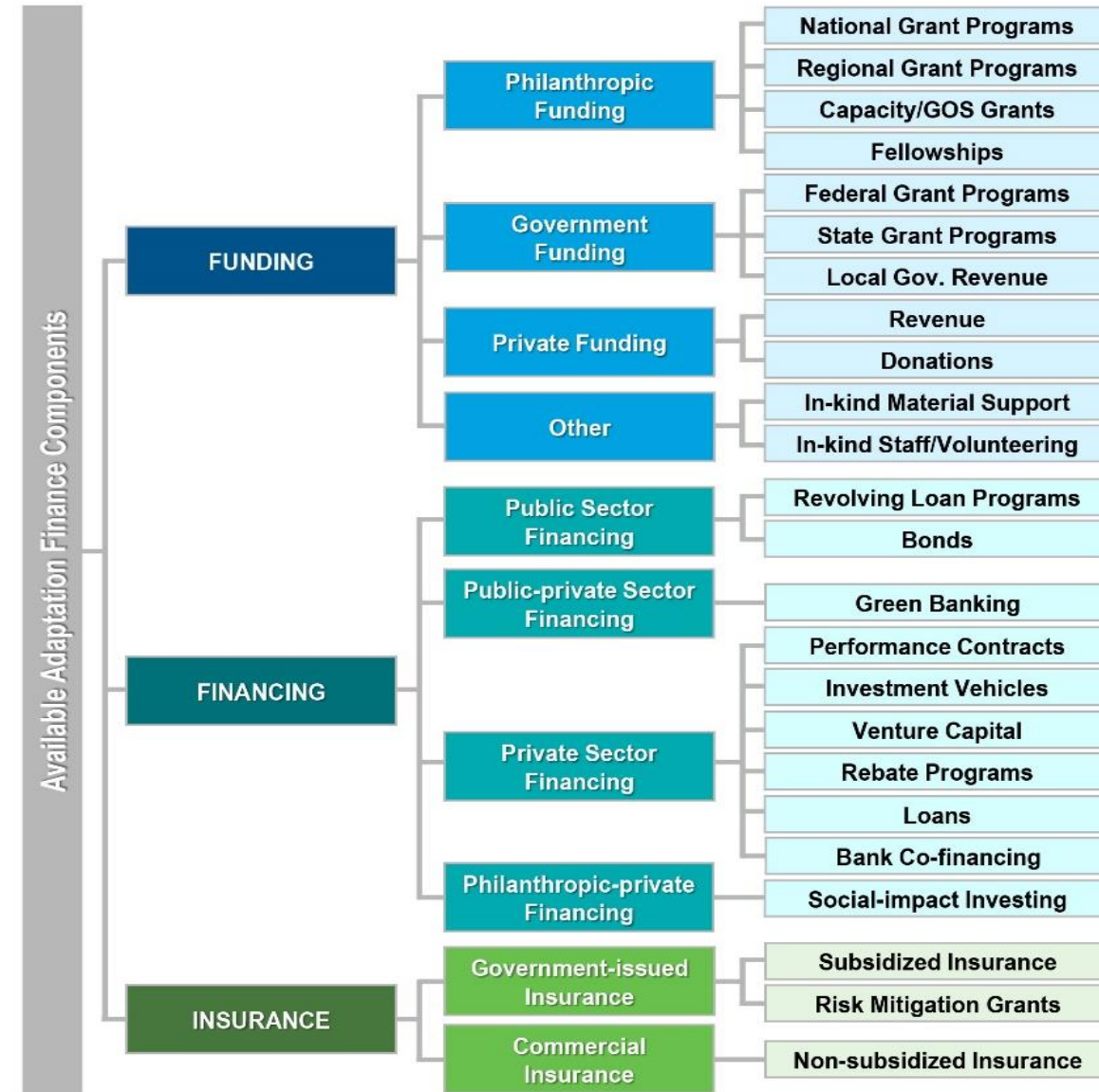
6. Given the projected climate impacts, what are potential adaptation strategies within your service area or for your project, across relevant functions (e.g., design, maintenance)? Use the information and examples from Chapter 5 to begin to identify potential adaptation strategies.






What adaptation options are no-regrets (i.e., generate benefits regardless of future climate) and/or could be implemented in the near-term? What adaptation options are no or low cost?

# Ch 6: Funding and Financing Sources

- Summarizes potential sources of funding and financing



# Ch 6: Funding and Financing Sources

Service Area	Agency and Program	Purpose of Funds	Amount of Available Funds	Eligible Applicants	Application Frequency
 <p>Water, wastewater, stormwater</p>	U.S. Environmental Protection Agency (EPA), Clean Water State Revolving Fund	Low-cost loans to support a wide range of water quality and wastewater infrastructure projects, including those dealing with stormwater and green infrastructure.	No Federal statutory maximum exists for eligible activities. Cost share: Loans have to be repaid 100%.	Municipality or intermunicipal; interstate or state agency; public, private, or nonprofit entity	Annual
 <p>Water, wastewater, stormwater</p>	EPA, Water Infrastructure Finance and Innovation Act (WIFIA) Program	Low-cost loans to upgrade aging water and wastewater infrastructure and manage stormwater to enhance resilience to flooding.	\$5 million minimum for small communities (i.e., less than 25,000 people) \$20 million minimum for all other communities Cost share: Up to 49% Federal/51% local	Local, state, tribal, and Federal government entities	Not specified
 <p>Water</p>	EPA, Drinking Water State Revolving Loan Fund	Low-cost loans for projects aimed at preserving the availability of clean drinking water. Funds could be leveraged to incorporate resilience measures, such as modifications to ensure system capacity during flooding and water quality treatment adjustments due to sea level rise.	No Federal statutory maximum exists for eligible activities. Cost share: Loans have to be repaid 100%	Includes existing publicly owned community water systems.	Not specified



# Toolkit Questions: Funding and Financing Sources

## Funding and financing: [Chapter 6](#)

7. What funding and financing sources are available to help implement the adaptation options? Use the information and examples from Chapter 6 to begin to identify potential funding and financing strategies for adaptation.

# Toolkit Questions: Next Steps

## Next steps

8. What are your next steps to address these climate impacts and plan for these adaptation options?



For the selected adaptation strategies, would there be implications to other service areas? Are there other agencies or departments (inside or outside your jurisdiction) your DPW or DOT should coordinate with?



# Next Steps to Operationalize the Guide

# Next Step: Enhancing Climate Resilience and Interjurisdictional Coordination

**BALTIMORE METROPOLITAN COUNCIL** **BRTB**  
Baltimore Regional Transportation Board

## Planning, Designing, Operating, and Maintaining Local Infrastructure in a Changing Climate

A Resource Guide for Departments of Public Works and Departments of Transportation in the Baltimore Region

- TRANSPORTATION
- STORMWATER
- WATER
- WASTEWATER
- FACILITIES
- SOLID WASTE

City of Baltimore | City of Annapolis | Anne Arundel County | Baltimore County  
Carroll County | Harford County | Howard County | Queen Anne's County



Further operationalize Guide by **developing more detailed guidance** and considering recommendations to **institutionalize ongoing interjurisdictional coordination** for three service areas

- TRANSPORTATION
- STORMWATER
- WATER

- **Project started in May, runs through February 2023**

# For More Information

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**Eileen Singleton, P.E.** | Principal Transportation Engineer

410-732-0500 x 1033 | [esingleton@baltometro.org](mailto:esingleton@baltometro.org) | [www.baltometro.org](http://www.baltometro.org)

Climate Change Resource Guide:

<https://baltometro.org/environment/planning-areas/climate-change-resilience>



# Carroll County Water Resource Coordination Council

Hampstead \* Manchester \* Mt. Airy \* New Windsor  
Carroll County Health Department



\* Sykesville \* Taneytown \* Union Bridge \* Westminster  
Carroll County Government

## WRCC Meeting Summary December 21, 2022

### **Attendees:**

#### Municipalities:

- Kevin Hann, Chair
- Jim Wieprecht, Vice Chair
- John Dick
- Gary Dye
- Mayor Perry Jones
- Rodney Kuhns
- Steve Miller
- Kevin Rubenstein
- Dick Swanson

#### CC LRM:

- Brenda Dinne
- Glenn Edwards
- Chris Heyn
- Claire Hirt
- Byron Madigan
- Kelly Martin
- Denise Mathias
- Zach Neal
- Janet O'Meara
- Ed Singer
- Pat Varga

#### Health Department:

- Richard Brace

#### CCG Others:

- Andy Watcher, CC DPW
- Lydia Rogers, CC M&B

#### Guest Speakers:

- Ray Bahr, MDE

#### Others:

- 

### **1. Opening Statement**

#### **Chair – Kevin Hann**

Mr. Miller opened the meeting on behalf of the Chair and Vice Chair [at 2:35pm](#). He will be officially retiring on January 13, 2023. He expressed his appreciation for the work of the WRCC members and staff.

#### **Vice Chair – Jim Wieprecht**

Mr. Wieprecht took over the meeting. He had nothing additional in opening remarks.

### **2. Approval of Meeting Summary – November 16, 2022**

Approval of the November meeting summary was discussed. No changes were made.

**APPROVAL OF MINUTES:** Motion was made by Dick Swanson and seconded by Steve Miller to approve the November 16, 2022, meeting summary as written. Motion carried.

### **3. A-StoRM and Maryland Stormwater Regulations – Ray Bahr, Stormwater, Dam Safety, and Flood Management Program, Maryland Department of the Environment**

Mr. Bahr gave a brief overview of the A-StoRM program and how it got started. The primary focus of A-StoRM is to address urban flooding. He discussed some of the various programs and initiatives, such as the NPDES permits, the Water Resources Element, and the Hazard Mitigation Plans. The solutions for which many of the issues addressed by the efforts may overlap and be able to provide benefits to multiple programs.

He discussed the update of the Maryland stormwater regulations to incorporate quantity management and update precipitation data. He also described the effort to complete pilot watershed studies to determine the type of data that is needed for these studies and how to prioritize watersheds for solutions. MDE anticipates releasing draft stormwater regulations for public review in the spring 2023.

Someone from the Sea Grant program will be contacting County staff to coordinate on the review and proving of data regarding areas of frequent flooding.

*Reference/Attachment:*

- PowerPoint: *Maryland's Stormwater Management Program: Updates & Initiatives (attached)*

#### **4. Areas of Frequent Flooding: GIS Online – Clair Hirt & Chris Heyn**

Based on the A-StoRM effort and in anticipation the MDE requesting local data on areas of frequent flooding, staff compiled initial county data to identify these areas, including information from Department of Public Works (DPW) regarding road closures due to flooding. Staff created an online GIS application for the municipalities to add knows areas of flooding within the municipalities. Claire Hirt demonstrated the application. Mr. Heyn requested the municipalities review and add data and/or comments before the January 25 WRCC meeting.

Staff will then identify priorities based on hotspots and areas of multiple benefits, such as environmental uplift and crossing assessments (DPW).

Mount Airy data may include both the Carroll and Frederick County sides of the town. The Frederick County data can be pulled out separately and sent to Frederick County if they request it.

Ray Bahr (MDE) may ask Ms. Hirt to speak to a group of other counties about this initiative. He sees a need for defining areas of flooding to provide consistency across the state.

*Reference/Attachment:*

- N/A

#### **5. Water Resources Element (WRE 2024) Update / Discussion – Brenda Dinne**

The contract with Hazen & Sawyer has been signed. Ms. Dinne will request that they come to the January 25 meeting to discuss coordination and any other kickoff items.

Ms. Dinne has received the capacity management plan workbooks from all municipalities except for Mount Airy. The demand information will be added in January after the Buildable Land Inventory model is run.

*Reference/Attachment:*

- N/A

#### **6. Municipal Stormwater Projects Update – Janet O'Meara**

Janet O'Meara provided an update on the municipal stormwater restoration projects. All term contracts have been executed.

*Reference/Attachment:*

- Handout: *Town Project Status*

#### **7. Other**

- NPDES Phase 1 MS4 Permit: Mr. Bahr indicated that the County's and municipalities' joint, fifth-generation permit will be issued December 30, 2022.
- NPDES Annual Report: The reports were officially submitted to MDE on December 21, 2022, via hardcopies to Mr. Ray Bahr.
- 20SW Industrial Permits: The permits have been issued. NOIs will be accepted starting in February. Training is available, with the next one being January 11. Glenn Edwards will send a link to the municipalities.

- 17SI Permits for Swimming Pool Discharges: Swimming pools were split out into their own general permit, which has been issued. Training is available. Municipalities with municipal pools may want to look into the training.
- Good Housekeeping Practices: The new permit requires good housekeeping practices for non-20SW facilities. County staff clarified with MDE that these practices do not need to be inspected annually.

## **8. Adjournment**

The meeting adjourned at 3:58 PM. The next monthly meeting is scheduled for Wednesday, January 25, at 2:30 PM.

**MEETING ADJOURNMENT:** Motion was made by Mayor Jones and seconded by Dick Swanson to adjourn the December 21, 2022, meeting. Motion carried.

### **Upcoming Meetings:**

- ☐ *Regular Monthly Meeting – Wednesday, January 25, 2023*

# TOWN PROJECT STATUS

December 21, 2022

## FUTURE PROJECTS:

**Michael's Property (Hampstead)** – Project is on hold until Town has obtained approval from property owners to move forward.

**Meadow Ridge Basin 2 (Westminster)** – Retrofit of existing facility to provide water quality through a surface sand filter. This site is adjacent to the pump station at the edge of the City limits. Design proposals came in higher than anticipated—we will rebid the design under the new term contract. We are reviewing the final documents for the term contracts now, so we hope to rebid this soon.

**Manchester East (Manchester)** – We are looking into opportunities for a new stormwater facility north of Manchester Valley High School, adjacent to the pump station.

## CONCEPT DESIGN:

**Hampstead Valley 1 (Hampstead)** – Retrofit of existing detention basin to a surface sand filter. Site is located just south of Lower Beckleysville Road near a production well. CLSI is currently working on a concept plan of a triple facility design. We anticipate a concept submittal this week.

**Hampstead Valley 4 (Hampstead)** – New surface sand filter and stream restoration proposed between Century Street and Downhill Trail. Culverts at Downhill Trail require realignment into the HOA parcel for dam breach approval. A review was completed by SWM and the project received concept approval. CLSI is working on the Preliminary design plans and integrating the stream design.

**New Windsor Wetland (New Windsor)**- Survey data on the sewer force main was obtained to design around for the wetland facility. A resubmittal of the concept plans and report are anticipated at the end of the month. Accommodations for the underlying karst geology are being evaluated.

**Roberts Field Wet Facility (Hampstead)** – Retrofit of wet pond to new hybrid wet pond/submerged gravel wetland. Wallace Montgomery & Associates (WMA) has received comments on the concept plans, and is currently underway with addressing comments for the next submittal.

**Carroll County Health Department (Westminster)** – We are currently looking at an alternative solution to treat the stormwater from the Health Department and adjacent neighbor storm drains via the Langdon facility. Survey work has been completed to locate the existing sanitary line. CLSI is beginning the concept for the storm drain design.

### **FINAL DESIGN:**

**North Carroll Library (Hampstead)** – The construction plans are currently out to bid for the underground sand filter. Bids close on December 21.

### **CONSTRUCTION:**

**Locust Street (Citizens Energy) (Union Bridge)** – The stormwater management facility and storm drains are complete. The engineer is working to complete the as-built plans and report.

### **PLANNING PROJECTS:**

**Little Pipe Creek Restoration Opportunities** – The County has executed the grant agreement with the National Fish and Wildlife Foundation (NFWF). The Quality Assurance Project Plan (QAPP) developed by Carroll County and CWP was submitted for review. Comments were received and addressed. The document has been returned to NFWF for further review.

### **TREE PLANTING PROJECTS:**

**All the municipal plantings have completed their maintenance period and are now the responsibility of the municipalities. Please make sure that these areas are being mowed at least three (3) times per season.**



# Maryland's Stormwater Management Program

## Updates and Innovations

December 21, 2022

Raymond P Bahr, MDE

Stormwater, Dam Safety, and Flood Management Division



Maryland  
Department of  
the Environment

# Why Update Maryland's Stormwater Program ?



From 2006 to 2020, more than 2,500 flood-related incidents affected state-maintained roadways in Maryland, including this Sept. 8, 2011, flood at Maryland 301 and Route 4 in Upper Marlboro, where the west branch of the Patuxent River overflowed.

Jonathan Newton/The Washington Post via Getty Images

- Severe weather events, sea level rise, and climate change are contributing to increased flooding that threatens our communities, residents, and natural heritage
- Flooding can be especially devastating to economically disadvantaged or historically neglected communities
- Local land use planning is already being informed by updated flood maps and State policies like Coast Smart
- Time to apply the same principles to stormwater management in our developed communities and areas subject to flooding
- We need work together to solve the challenge of flooding prevention and resiliency
- This is just the first step in a long term process that will continue into the future

# Updated Stormwater Management Law 2021

- Identify most recent precipitation data available
- Investigate flooding events since 2000 to identify potential areas of concern
- Revise Maryland's stormwater quantity management standards every five years
- MDE's plan for meeting the new law's requirements to General Assembly in November 2021 (A-StoRM Report)
- Update other stormwater regulations as necessary every five years



**Maryland**  
Department of  
the Environment

**Advancing Stormwater Resiliency in Maryland  
(A-StoRM)  
Maryland's Stormwater Management Climate  
Change Action Plan**

**FY 2021 Data**

Prepared for:

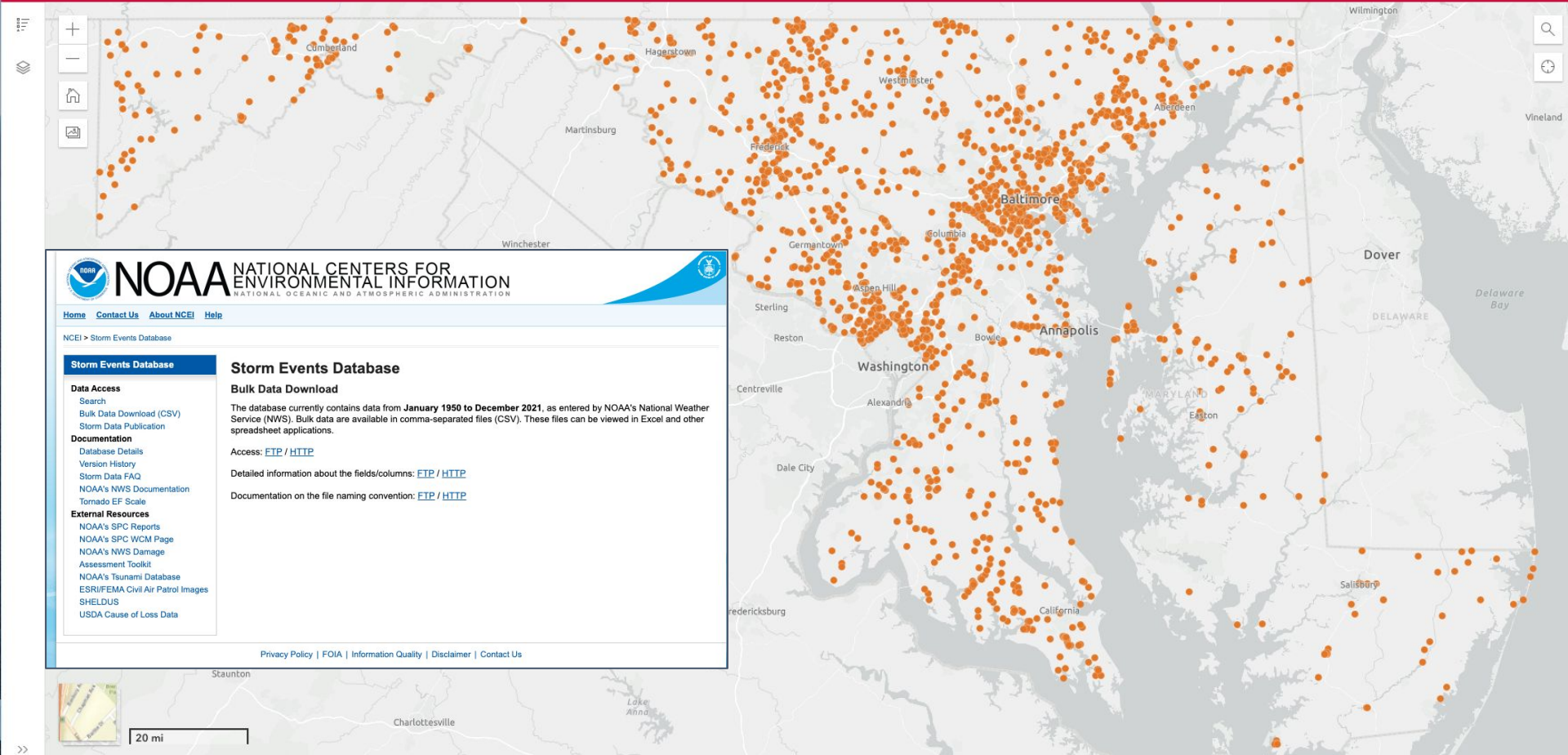
Bill Ferguson, Senate President  
Maryland General Assembly

Adrienne A. Jones, House Speaker  
Maryland General Assembly

# Maryland's Precipitation Data

*Precipitation Data: “historical data that describes the relationship between precipitation, intensity, duration, and return period (frequency)”*

- IDF curves based on **Technical Paper No. 40 (TP40)**, *Rainfall Frequency Atlas of the U.S.*, developed in 1961 by the United States Department of Agriculture, Soil Conservation Service
- **2004 NOAA Atlas 14**, *Precipitation-Frequency Atlas of the United States, Volume 2*
- **2025 Maryland updates** to NOAA Atlas 14 with future predictions
- RAND Corporation future **projected IDF curves for the Chesapeake Bay Watershed** based on the current NOAA Atlas 14 Volume 2 precipitation data with a range of predictions for future climate change



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- [NOAA's NWS Documentation](#)
- [Tornado EF Scale](#)

**External Resources**

- [NOAA's SPC Reports](#)
- [NOAA's SPC WCM Page](#)
- [NOAA's NWS Damage Assessment Toolkit](#)
- [NOAA's Tsunami Database](#)
- [ESRI/FEMA Civil Air Patrol Images](#)
- [SHELDUS](#)
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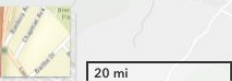
The database currently contains data from **January 1950 to December 2021**, as entered by NOAA's National Weather Service (NWS). Bulk data are available in comma-separated files (CSV). These files can be viewed in Excel and other spreadsheet applications.

Access: [FTP](#) / [HTTP](#)

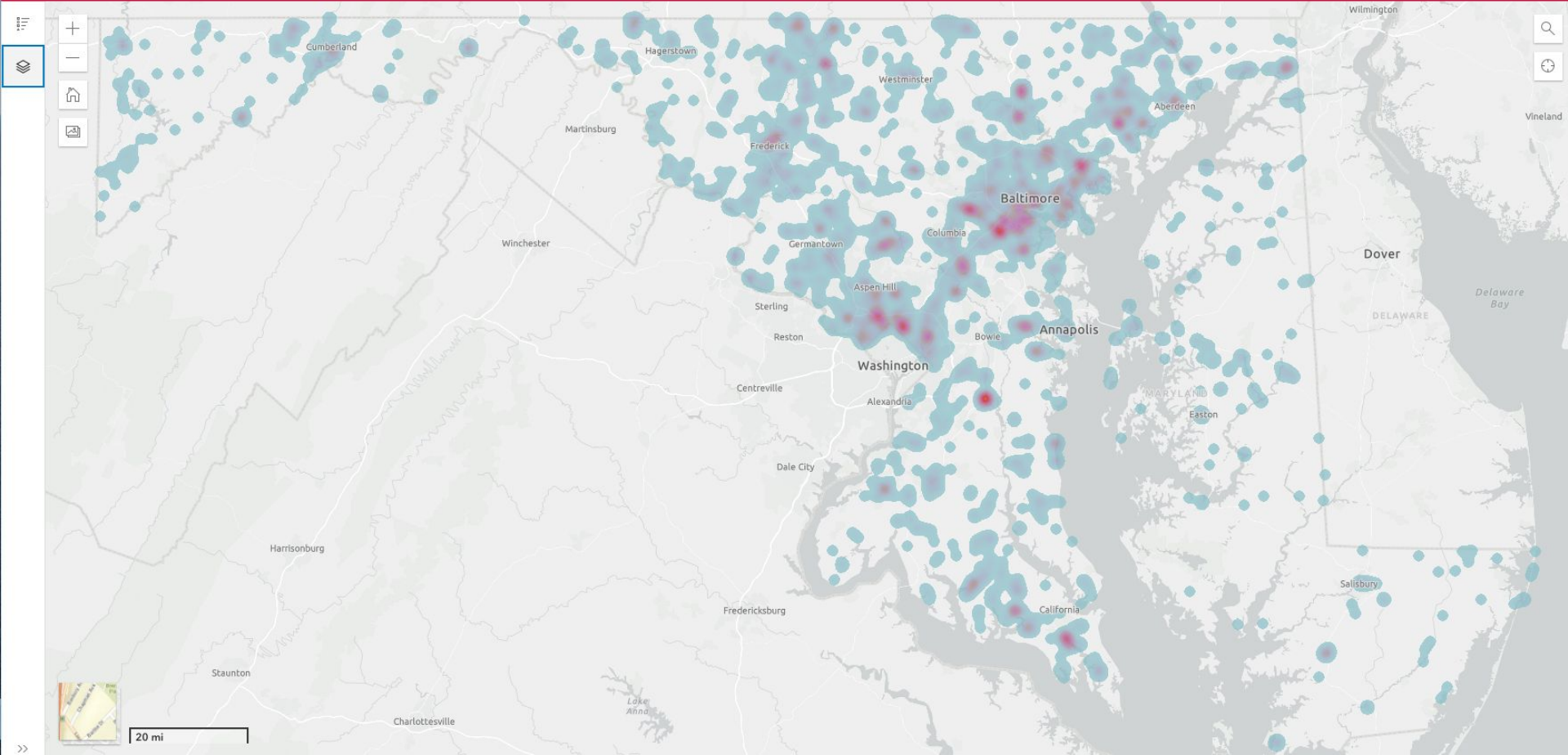
Detailed information about the fields/columns: [FTP](#) / [HTTP](#)

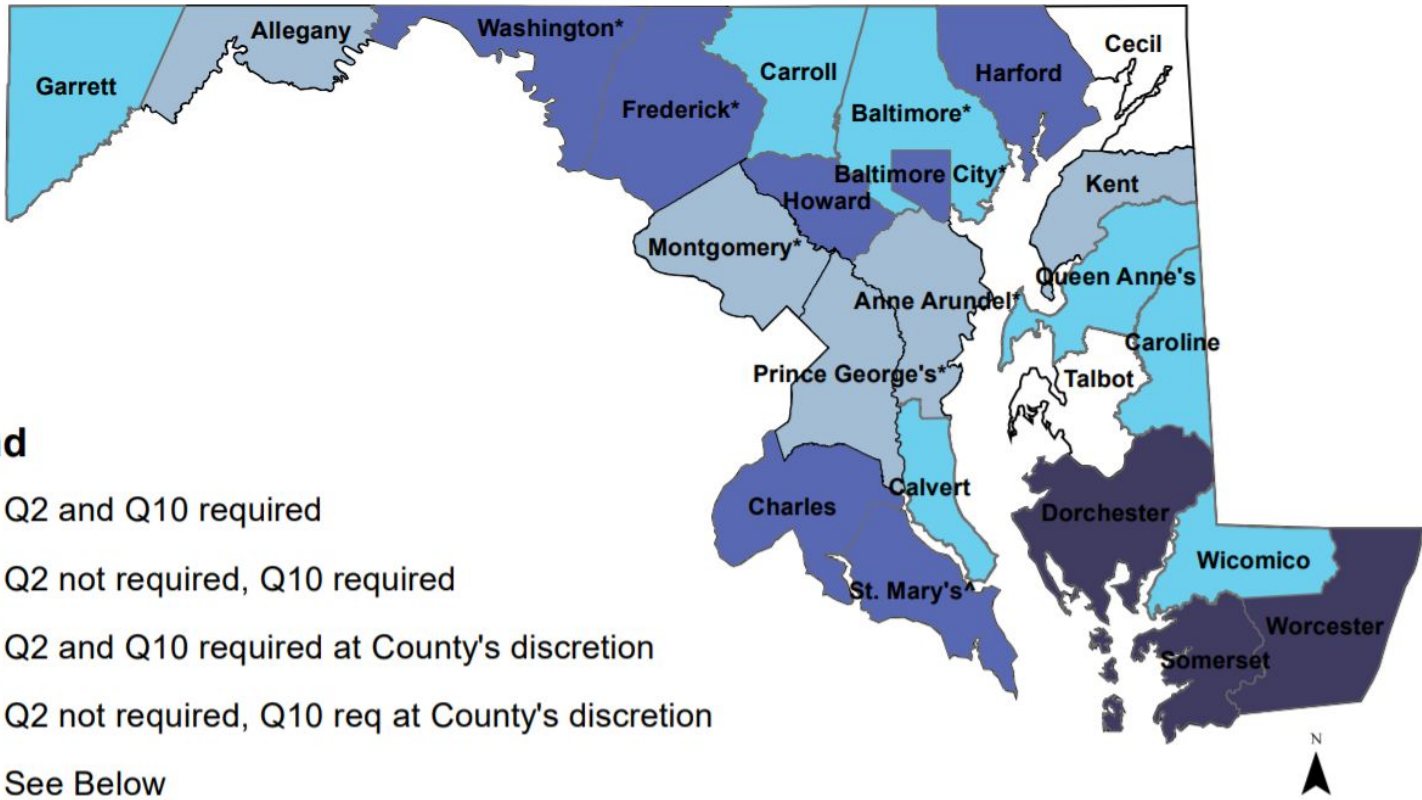
Documentation on the file naming convention: [FTP](#) / [HTTP](#)

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# Flooding Events





Cecil: Q2 required for Coastal Plain, Q10 required for Piedmont

Talbot: Q2 control requires post-development peak discharge rate be within 10% of pre-development peak discharge rate. Q10 not required

County^: Q100 required

County\*: Q100 required at County's discretion

County: Q100 not required

# SWM Quantity Management Questions

## **What precipitation data should we be using for SWM design storm?**

- Existing precipitation or future climate change projections
- Shorter duration storm events (e.g., 3 hour or 6 hour), or continue using 24 hour storm data, or both

## **What type of quantity management design criteria should we be considering?**

- Statewide quantity mandates for all new development, redevelopment
- Additional requirements for watersheds with known flooding events
- New watershed studies and flood management plans be mandated jurisdiction-wide

## **How do we ensure that new criteria do not make flooding worse?**



# Flooding – What Are We Missing ?

- Piped urban stream systems
- Undersized culverts
- Clogged, broken pipes and channels
- State and local design inconsistencies



# Regulatory Gaps

Areas Available for  
New Development

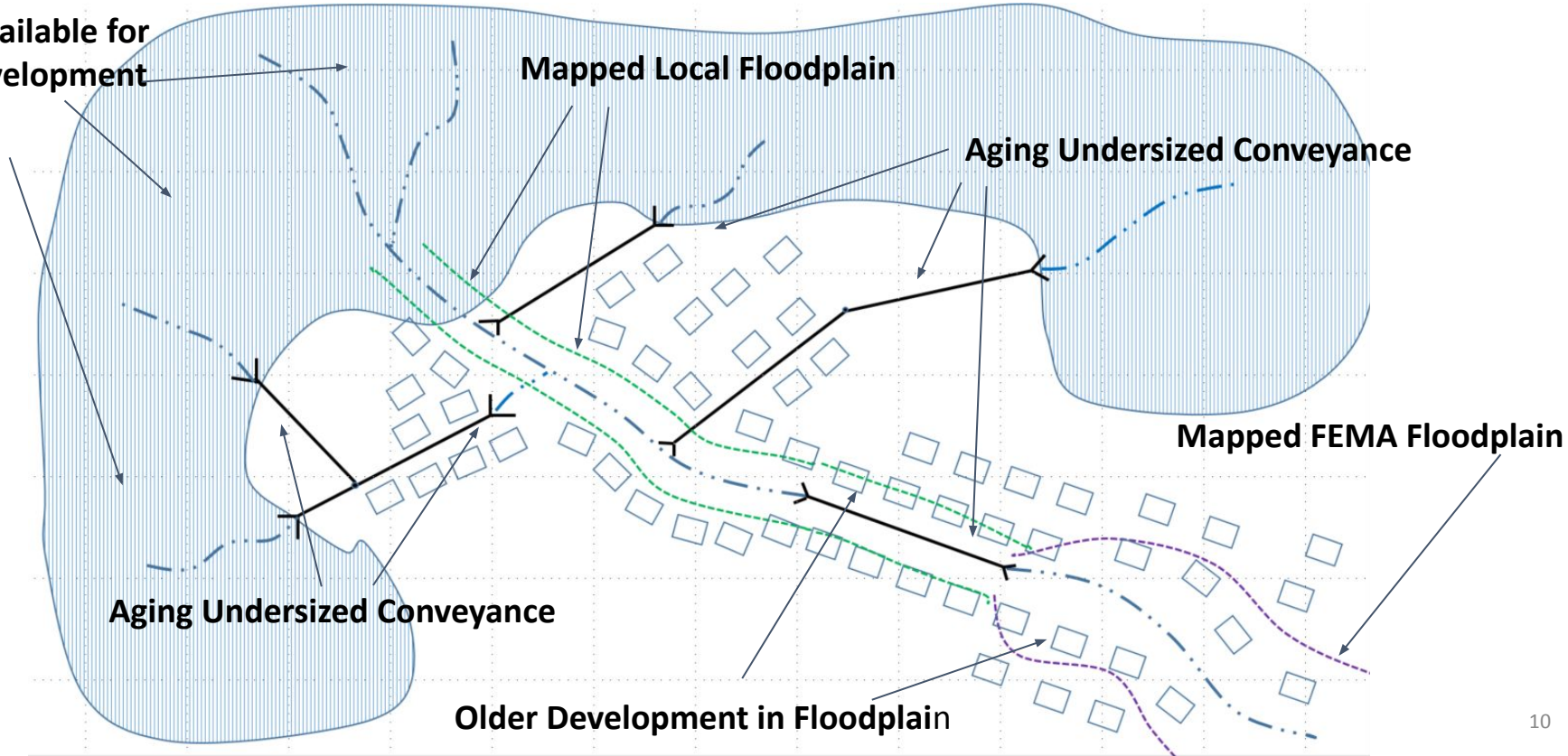
Mapped Local Floodplain

Aging Undersized Conveyance

Mapped FEMA Floodplain

Aging Undersized Conveyance

Older Development in Floodplain



# Who's Involved in Flood Management ?

**National Oceanic and Atmospheric Administration**

**Department of Agriculture Hazard Mitigation Grant Program Wetlands and Waterways**

**Maryland Coast Smart Department of Natural Resources**

**Dam Safety Programs Land Use Zoning Emergency Management Agencies**

**Commission on Environmental Justice and Sustainable Communities**

**Nuisance Flooding Plans Climate Change Commission**

**Department of Planning Water Resources Element**

**Flood Control and Watershed Management Grants Program**

**Comprehensive Plans Federal Emergency Management Agency**

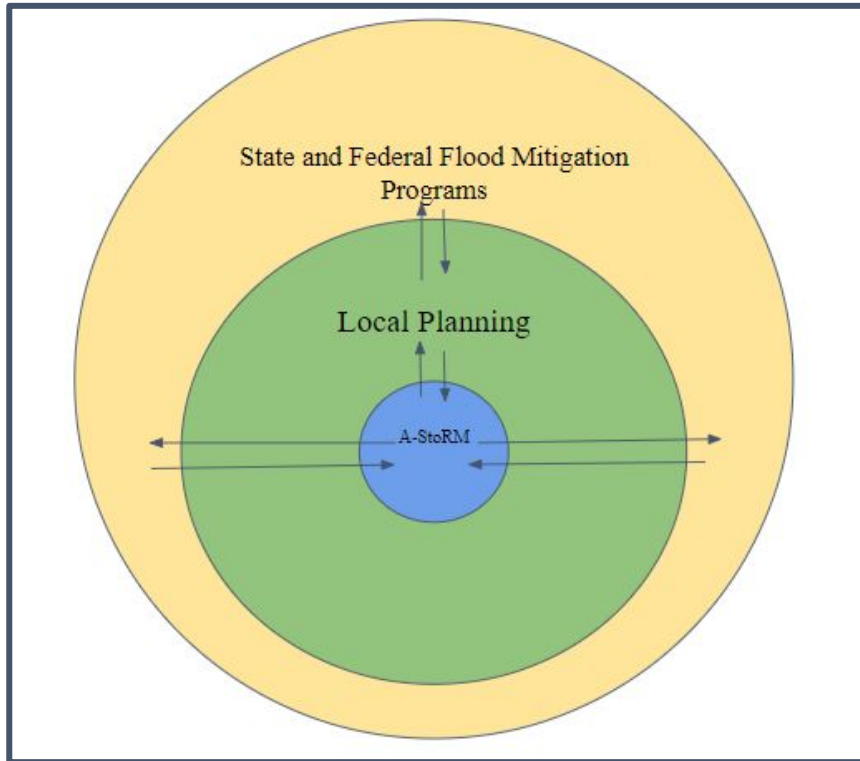
**Watershed Management Plans Stormwater Management Programs**

**National Flood Insurance Program Department of Emergency Management**

**Hazard Mitigation Plans Erosion and Sediment Control Programs**

**Department of the Environment**

# Updating SWM as an Opportunity



- Work within existing local planning processes
- Not intended to duplicate the information within local hazard mitigation, comprehensive, and nuisance flooding plans
- Complement and expand the scope of local flood risk mitigation
- Integrate better with existing state and federal agencies responsible for flood management that can provide funding

# Watershed Studies Are the Key

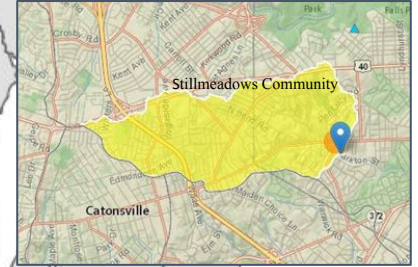
- Key to Understanding What Has Happened
- Key to Understanding What Can Happen
- And Key to Understanding What Changes Need to Happen
- A W/S Study is a (Key) First Step to Unlocking State and Federal Grants for Solutions
  - W/S Studies Are Required for matching State CFMGP funds (and...)
  - W/S Studies Demonstrate Understanding and Solutions for Federal BRIC and FMA Grants / Now at Historic Funding Levels / Nationally Competitive Grants...

# Pilot Watershed Studies



Little Youghiogheny R

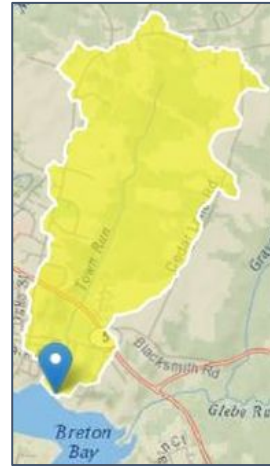


Gwynns Falls



## Legend

-  Maryland 12 Digit Watersheds
-  Maryland 8 Digit Watersheds



Breton Bay

# Consultation Requirements Under SB 227/HB 295



**The following groups shall be consulted on all proposed regulatory updates at least 6 months in advance:**

- The Commission on Environmental Justice and Sustainable Communities
- Stakeholder Group with expertise on stormwater design standards and climate science with following members:
  - An academic institution
  - The Chesapeake Bay Program
  - The Chesapeake Bay Commission
  - The Maryland Department of Emergency Management
  - The Maryland Association of Soil Conservation Districts
  - Local governments
  - A private sector entity with design and construction experience
  - An association that has expertise in stormwater restoration projects

**In addition to the required consultations, MDE is meeting with various technical advisory groups and accept questions and comments on the A-StoRM hub**

# Expectations of the Stakeholder Group

- Comments by **January 17, 2023** to [raymond.bahr@maryland.gov](mailto:raymond.bahr@maryland.gov)
  - Impact of proposed regulation changes
    - Incorporate precipitation data from Atlas 14
    - Increase standard for ESD from 2.7” to 3.0”
  - Ideas on how to close current scientific gaps regarding stormwater management that can lead to further thoughtful regulation changes



# *Next Steps:* Public Participation

- **Spring 2023**
  - Draft for public review
  - Public comment period
- **A-StoRM Hub**
  - **[sb-227-maryland.hub.arcgis.com](https://sb-227-maryland.hub.arcgis.com)**



<https://sb-227-maryland.hub.arcgis.com/>

## Key Project Components



Community  
Engagement



Information  
Exchange



Watershed  
Mapping and  
Assessment



Updated  
Stormwater  
Standards



Targeted  
Funding  
Opportunities

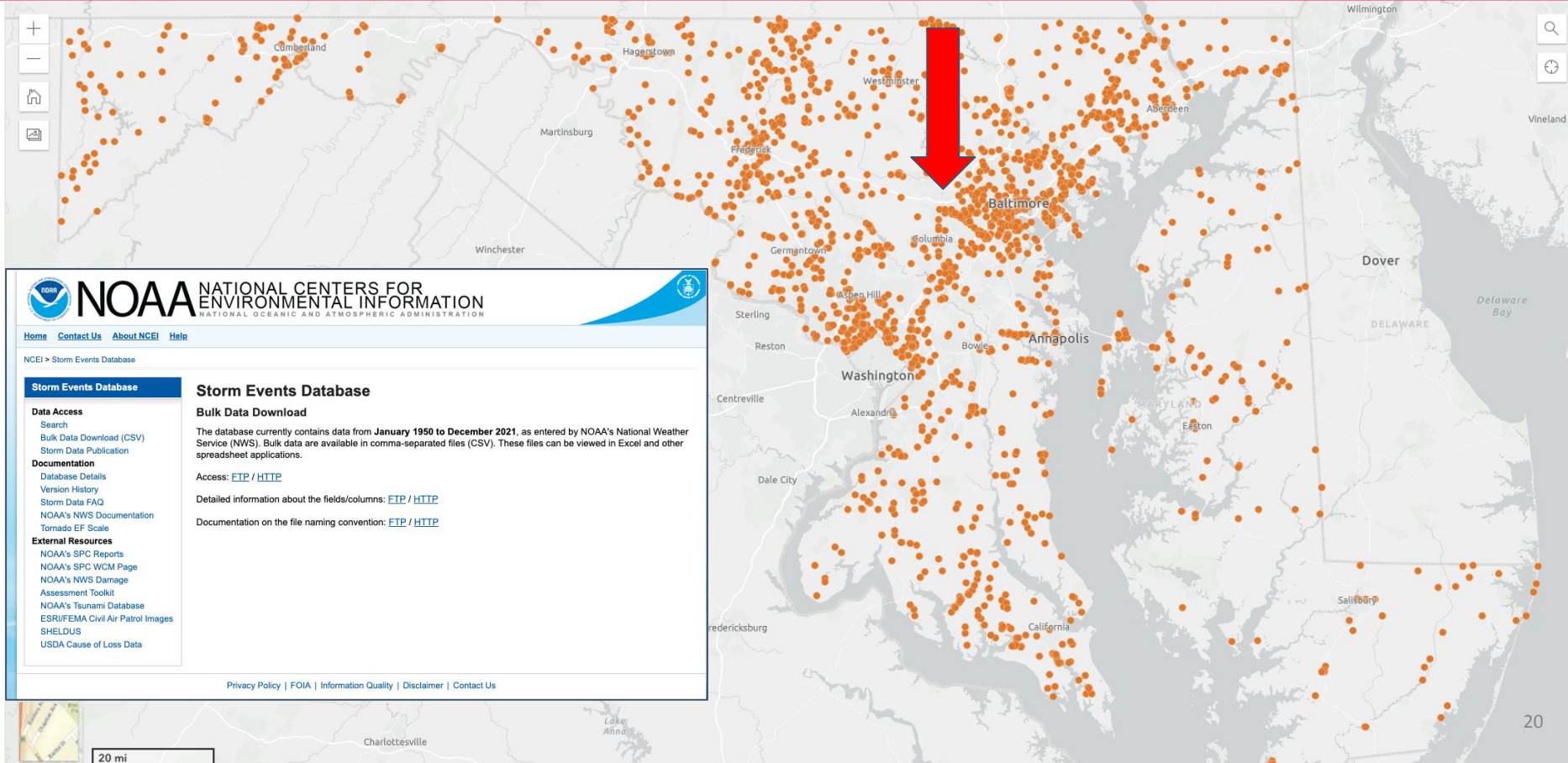
**Questions / Comments / Thoughts ?**

**Thank You !**

Email : [Raymond.bahr@maryland.gov](mailto:Raymond.bahr@maryland.gov)

# Hint: Somebody Gets Flooded !

## Flooding Events



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# Stakeholder Consultation Group

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## Subsequent years and participation