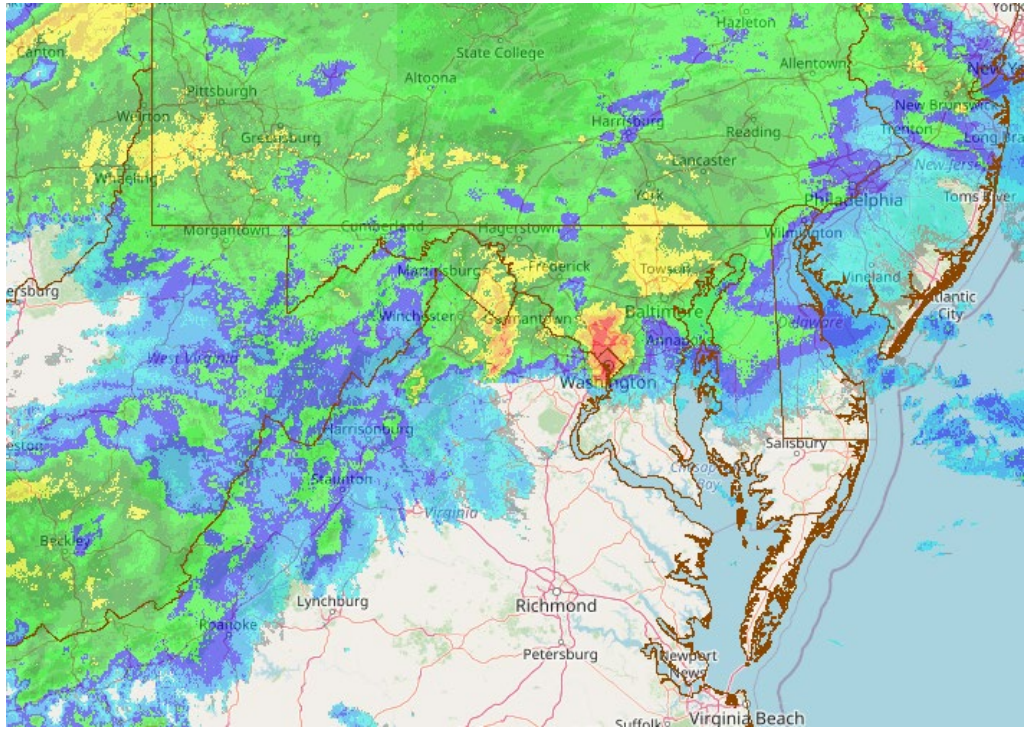
Montgomery County in Flood Management

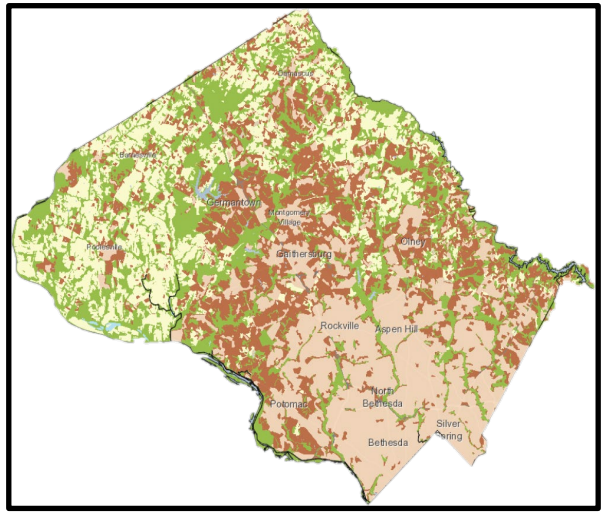
Mid-County Citizens Advisory Board
May 2025 Update



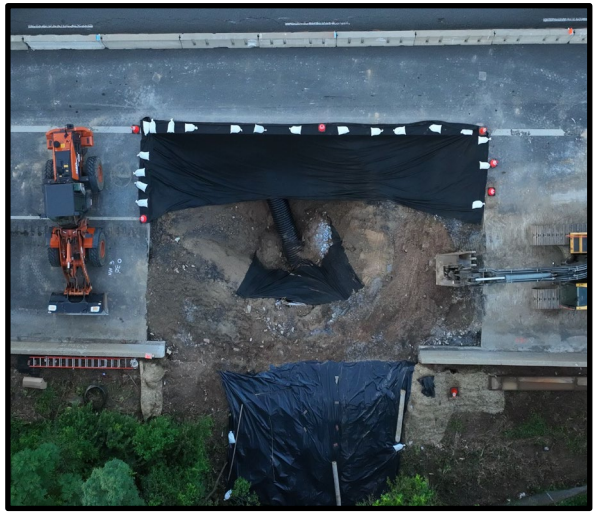
Background

Reasons for Increased Flooding

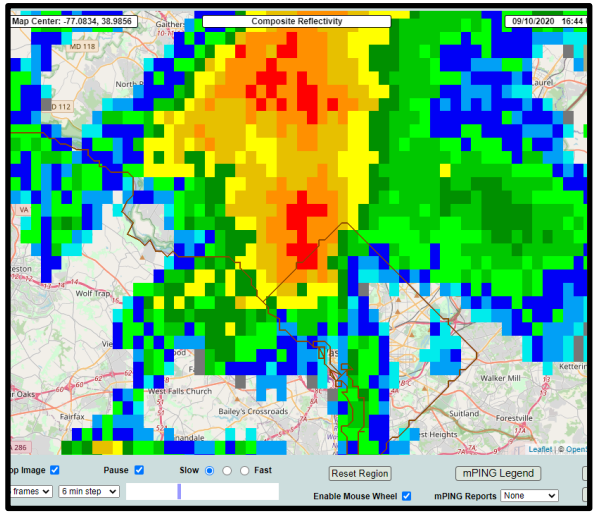
Increases in impervious area



Aging infrastructure built to older design standards



Increases and changes in precipitation



Types of Flooding in Montgomery County

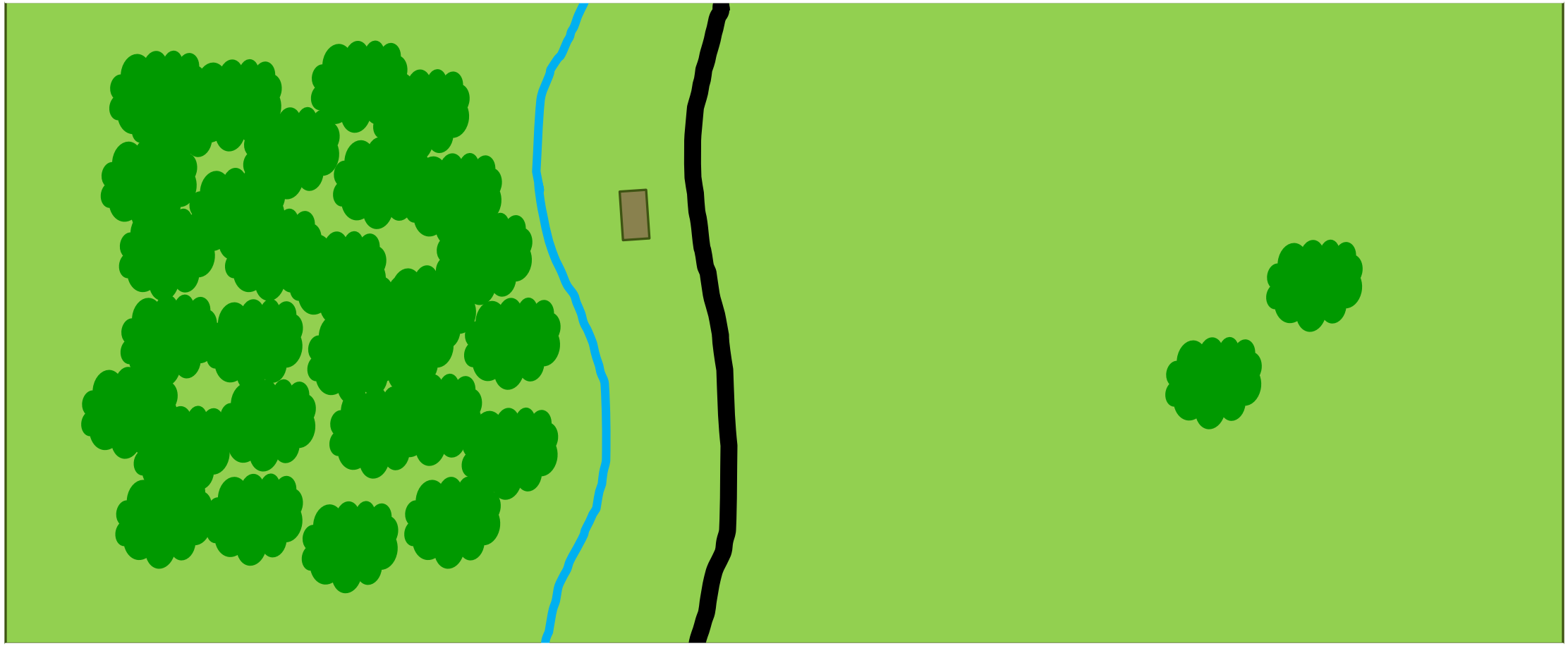
Fluvial / Riverine

Precipitation creates flows that overtop stream and river channels

Pluvial / Urban

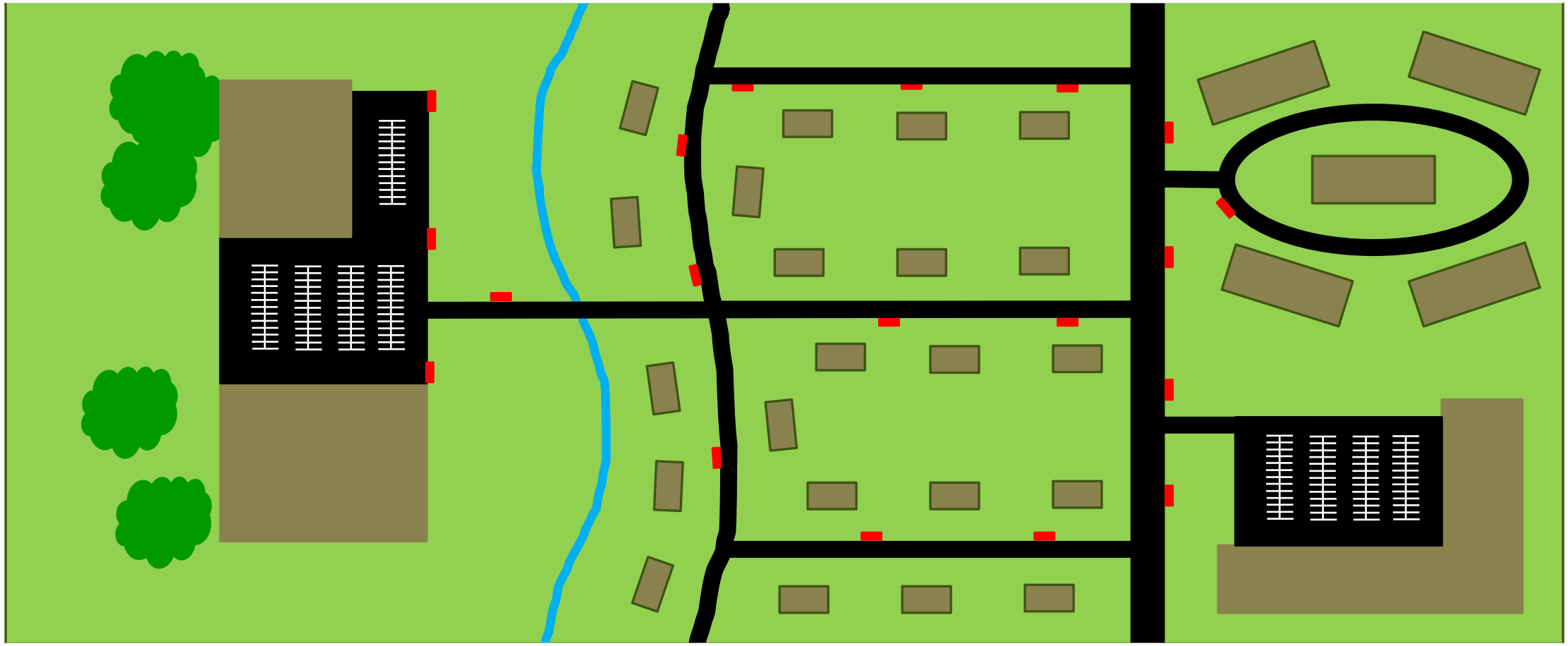
Precipitation creates flows that exceed the capacity of drainage infrastructure

Pre-Development

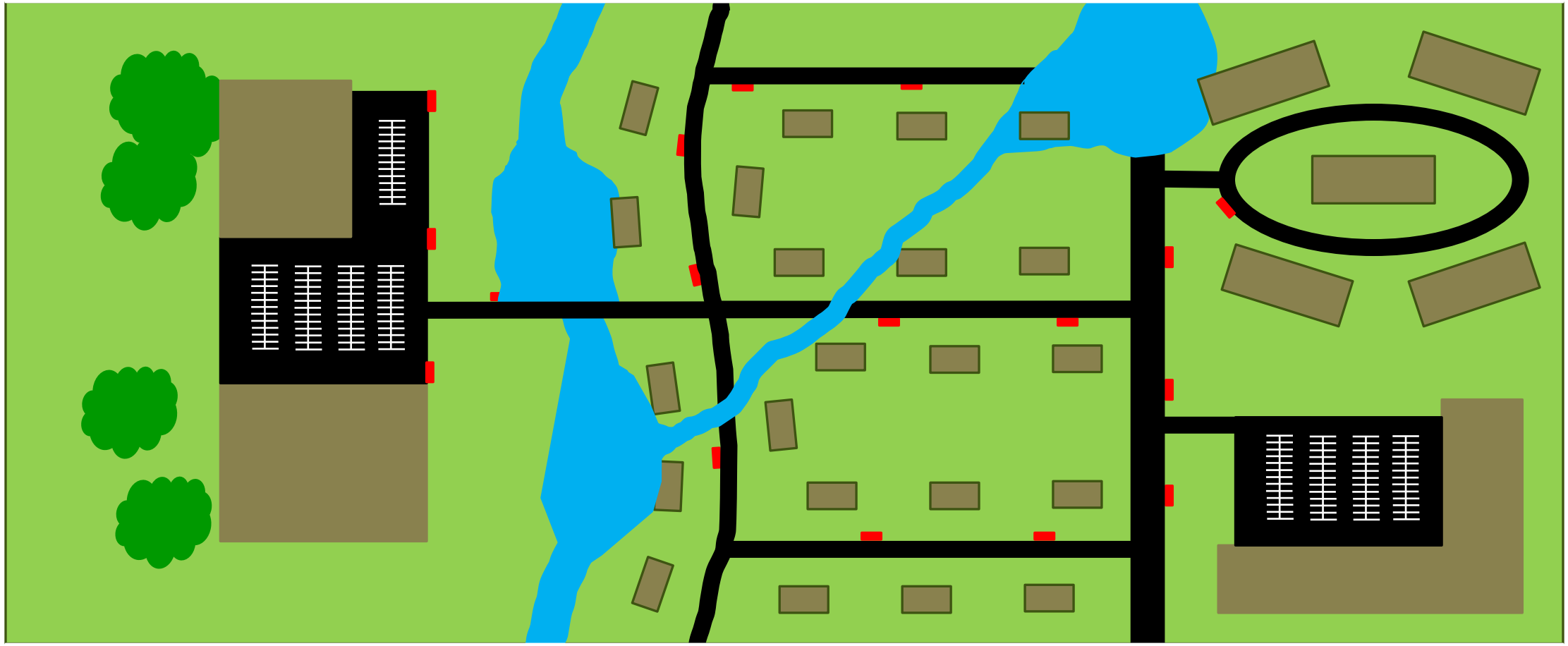


Pre-Development – Extreme Rain Event

Post-Development



Post-Development – Extreme Rain Event



Comprehensive Flood Management Plan

Goals of the Comprehensive Flood Management Plan

1. Understand the County's current and future flood risk and vulnerability through hydrologic and hydraulic (H&H) modeling

2. Understand and modify the County's programs, regulations, communications, and other government activities that address, or contribute to, flood risk and vulnerability

3. Ensure racial equity and social justice issues are considered during every facet of this effort.

Participating Agencies

- Emergency Management & Homeland Security
- Environmental Protection
- Montgomery Parks
- Montgomery Planning
- Permitting Services
- Transportation
- Representatives from the CE's Office

Phases of the CFMP

Phase 1

- Completed in FY23
- Prioritize watersheds for detailed engineering assessments in Phase 2
- Review programs and policies related to understanding and responding to flooding

Phase 2

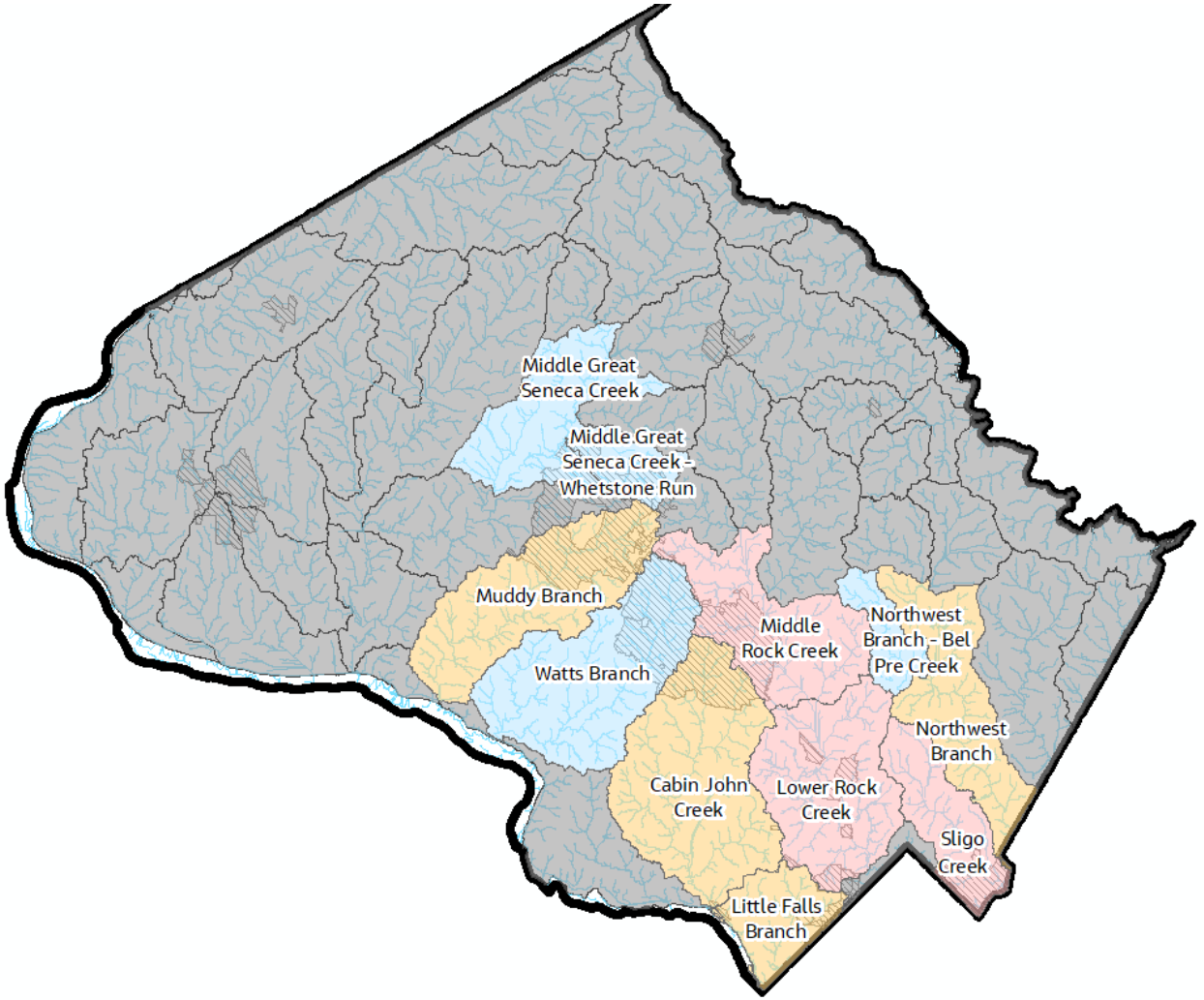
- Ongoing FY24 to FY27
- Conduct engineering assessments in the priority watersheds identified in Phase 1
- Develop, and begin to implement, program and policy recommendations to address flooding

Phase 3

- FY27 & Beyond
- Implementation of prioritized flood mitigation alternatives in the priority watersheds
- Continue to develop and implement program and policy recommendations to address flooding

Timeline for Watershed Modeling

- Eleven watersheds should be modeled by 2027. Sligo in 2024, Rock Creek (Lower & Middle) in 2025, and the others in 2026.
- Models will show flood risk of 10-year to 500-year storms.
- Models will be created for now, 2050, and 2100.
- These models have updated assumptions about precipitation and impervious area.

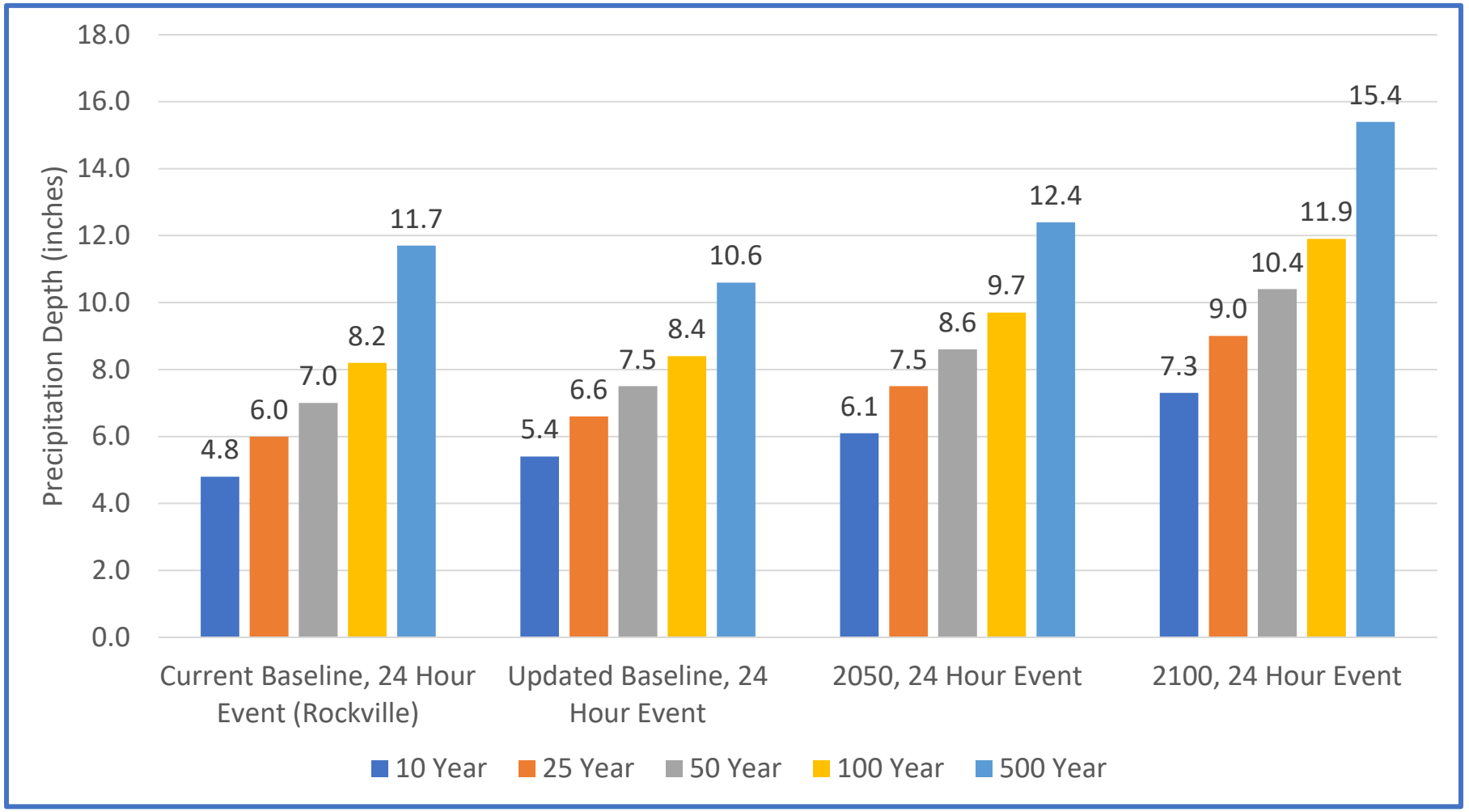


Watershed Attributes

Tier	Watershed	Area (Acres)	Estimated Population	Estimated Population in Areas with SVI > 0.5	% of Population in Areas with SVI > 0.5
1	Middle Rock Creek	10,780	77,117	37,756	49.0%
	Lower Rock Creek	12,005	113,565	26,610	23.4%
	Sligo Creek	6,156	68,817	25,792	37.5%
2	Cabin John Creek	16,303	73,477	5,275	7.2%
	Little Falls Branch	4,821	43,454	0	0.0%
	Northwest Branch	9,706	58,495	21,078	36.0%
	Muddy Branch	12,531	57,984	8,526	14.7%
3	Middle Great Seneca Creek	9,028	58,791	21,503	36.6%
	Middle Great Seneca Creek – Whetstone Run	3,049	44,518	41,154	92.4%
	Northwest Branch – Bel Pre Creek	2,866	27,935	15,919	57.0%
	Watts Branch	14,231	45,036	1,560	3.5%
	Total	**101,476**	**669,189**	**205,173**	**30.7%**

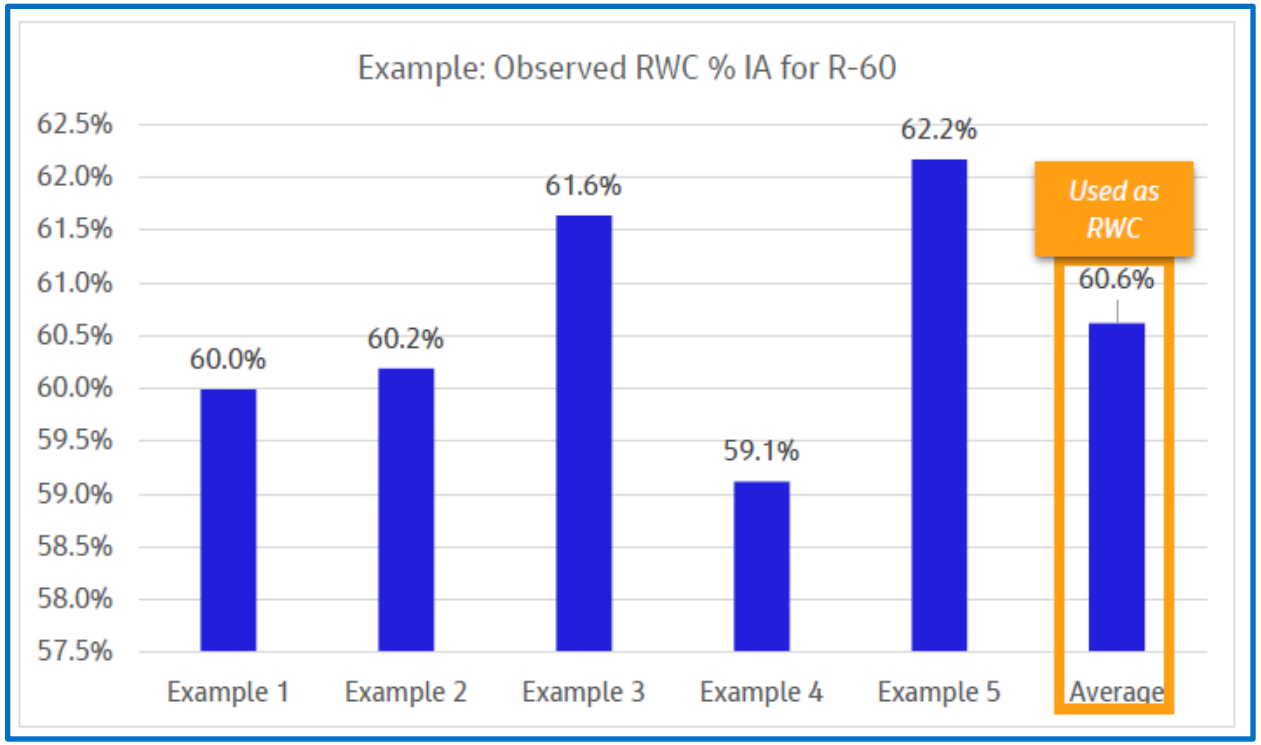
Flood Modeling

Precipitation Assumptions

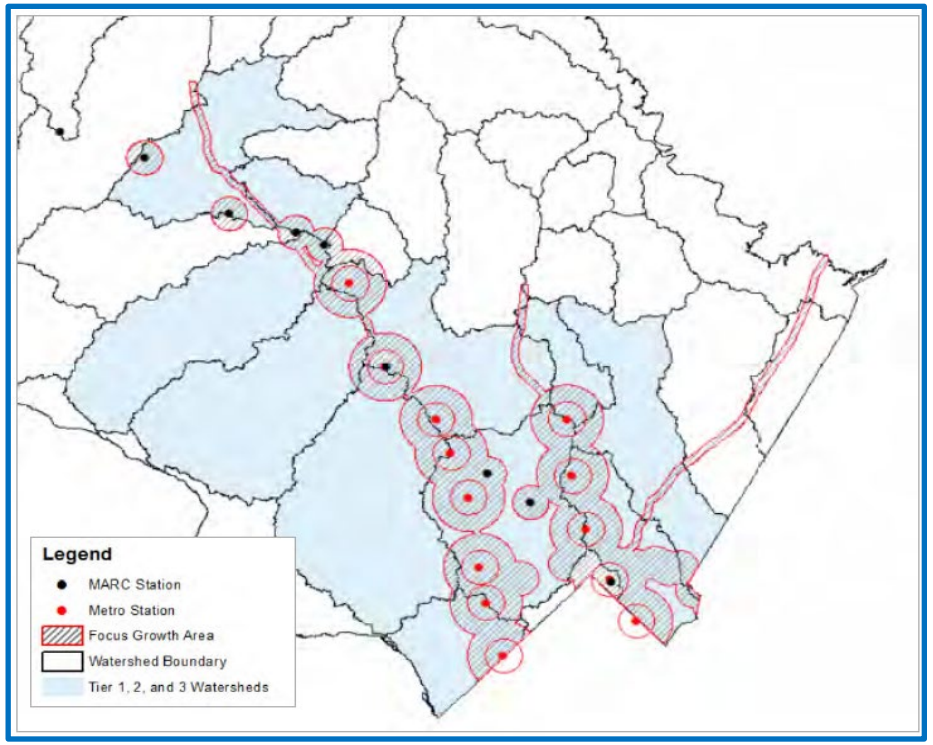


Impervious Area Assumptions

"Reasonable Worst Case" based on current development



"Focused Growth Areas" around transit corridors

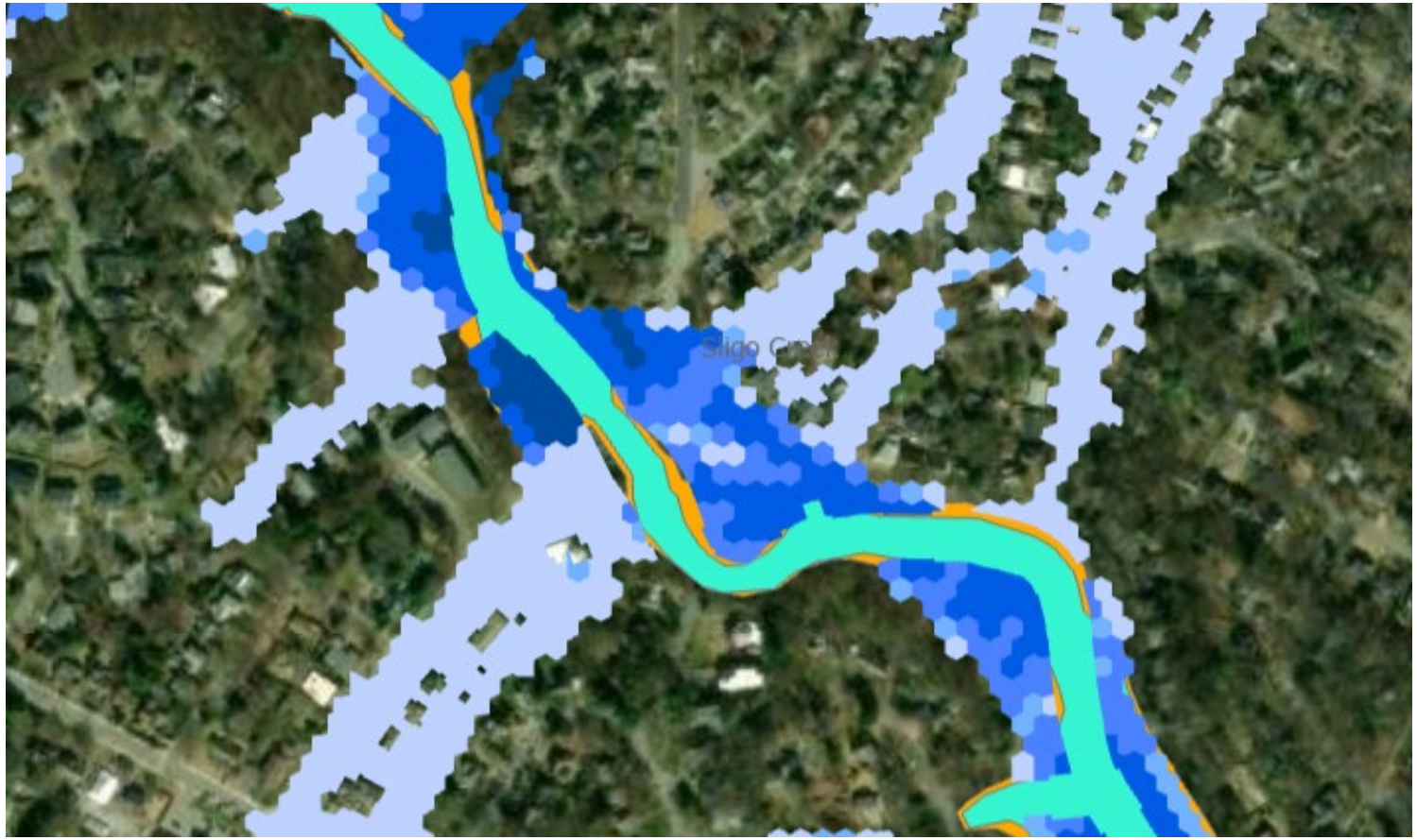


Model Outputs

FEMA Floodplains

Model Outputs

Result of CFMP Flood Modeling



Next Steps

Capital Improvement Projects

As each watershed is modeled, an analysis will be conducted to identify the most potentially impactful stormwater conveyance and storage projects.

There will be several constraints to consider, including:

- Conveyance infrastructure, e.g., pipes, channels, etc. form a networked system, so all enhancements must consider downstream impacts.
- Utilities and other existing infrastructure may limit or increase the cost of improving or constructing conveyance and storage, particularly in more developed areas.

Planning and Building Code Updates

The County will never be able to mitigate all future flood risk. Thus, it will be important to make decisions that allow us to better live with water. The goal will be to ensure we are building the right kinds of structures in the right places to reduce flood risk in the long-term.

Technical experts from relevant agencies, supported by Jacobs, will be evaluating potential changes to:

- Stormwater management requirements
- Building codes
- Development review processes

Plans are underway for a series of workshops on these issues in 2025.

Homeowner Support

Two activities are underway to help homeowners mitigate the impact of flooding.

1. Creating an interactive map where residents can see the potential flooding resulting from different storm events. This will allow residents to understand their particular risk and plan accordingly.
2. Applying to join the Community Rating System (CRS) program under the National Flood Insurance Program (NFIP). Successful participation in this program reduces flood insurance premiums for ALL county residents.

Community Outreach

Multifaceted outreach on flooding will include:

- How to view and interpret the flood risk mapping tool
- How to stay safe during major rain events
- The benefits of flood insurance for property owners and renters
- Steps property owners can take to reduce their flood risk
- Information on County flood mitigation projects