

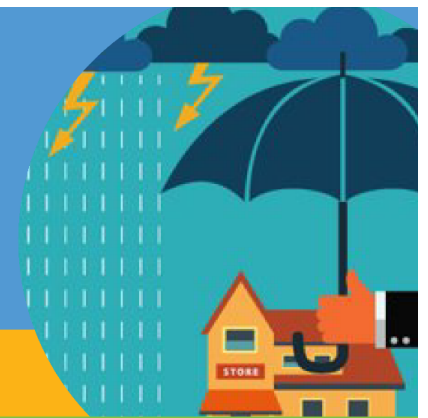


# SESSION 1

# WATERSHED AND FLOOD BASICS

# Be Flood Smart

## Flood Education Virtual Sessions



**JUNE 6, JUNE 13, JUNE 20, JUNE 27, 2024**

### DETAILS

#### DATE

Virtual Thursdays  
June 6-27, 2024

#### 12PM-1PM SESSIONS

[Click here to register via Zoom](#)

#### 6 PM SESSION

[Click here to register via Zoom](#)

#### COST

Free of Charge

The Department of the Environment will host virtual community flood education sessions to give residents the opportunity to interact with staff and partners. This four-session series will run weekly on Thursdays between June 6–June 27. It will focus on the topics of rainfall and stormwater runoff, flood risk reduction, flood insurance and disaster recovery. As we prepare for the start of hurricane season, this flood education series will equip residents with information and resources to: improve understanding of how and where floods occur, share techniques and practical measures for flood risk reduction, and prepare for disaster response and recovery. It will also provide the opportunity to interact with an insurance specialist regarding flood insurance coverage.

SESSION 1	SESSION 2	SESSION 3	SESSION 4
Thursday, June 6 12pm-1pm	Thursday, June 13 12pm-1pm & 6pm-7pm	Thursday, June 20 12pm-1pm	Thursday, June 27 12pm-1pm
Watershed and Flood Basics, Where Flooding Occurs	Flood Risk Reduction Measures – Residential Drainage, Green Infrastructure Practices and CIP Projects	Transfer Your Flood Risk, Purchase Flood Insurance	Disaster Response and Recovery



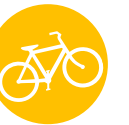
**sustainability** division



# WATERSHED BASICS

*June 6, 2024*

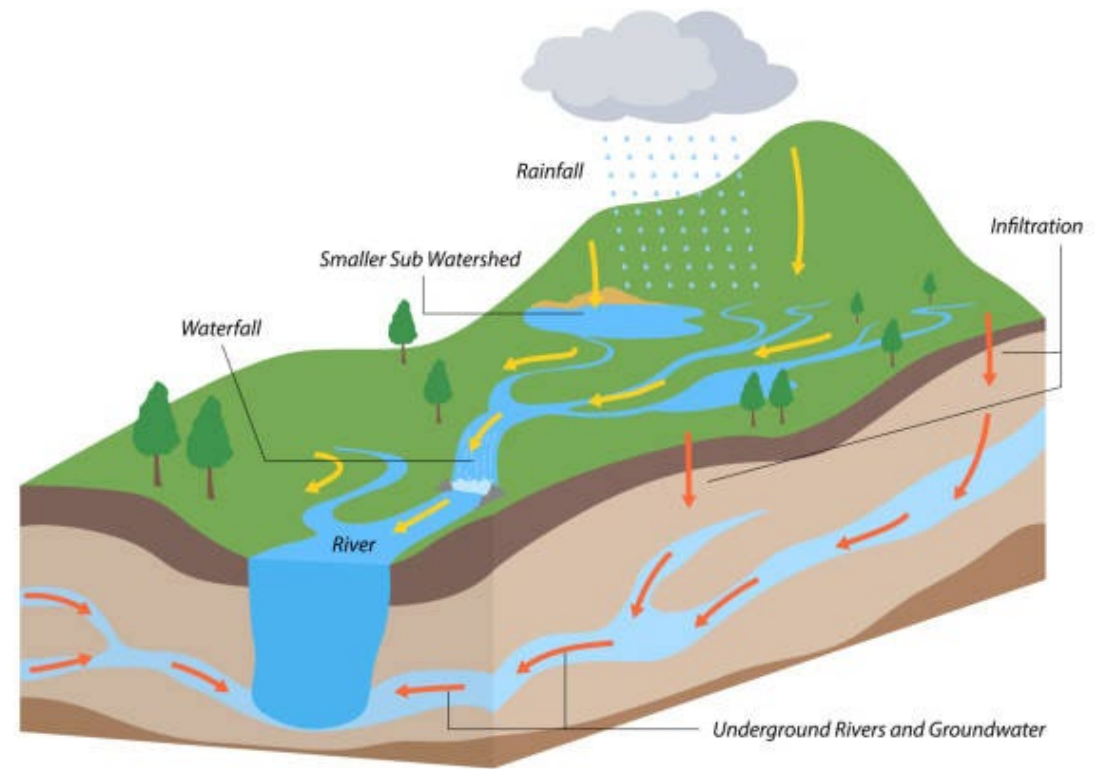
Lilantha Tennekoon, P.E., Flood Group Manager



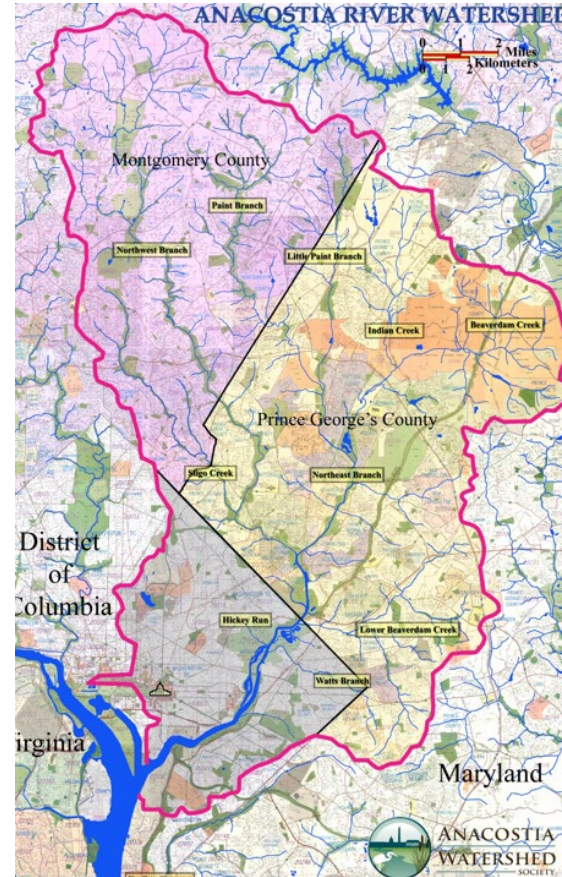
## WATERSHED BASICS

# WHAT IS A WATERSHED?

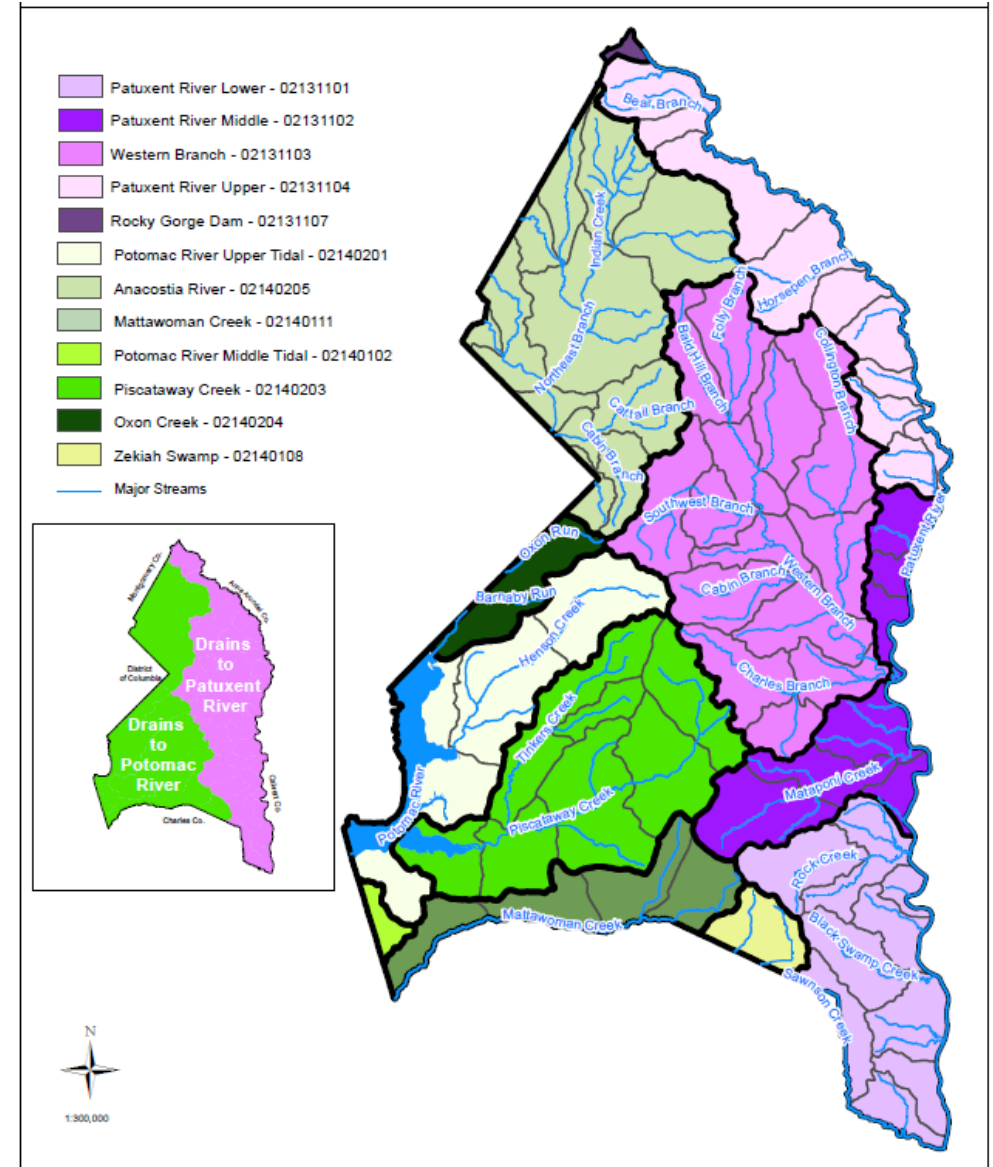
A LAND AREA WHERE ALL FLOWING SURFACE WATER CONVERGES TO A SINGLE OUTLET POINT, SUCH AS A RIVER MOUTH, OR TO ANOTHER BODY OF WATER, SUCH AS A LAKE.



# WATERSHED BASICS



- Prince George's County falls within the Chesapeake Bay watershed
- The County's nine (9) major watersheds convey stormwater runoff to the Anacostia River, Potomac River or Patuxent River





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WATERSHED BASICS

HOW DOES RUNOFF MOVE THROUGH A WATERSHED



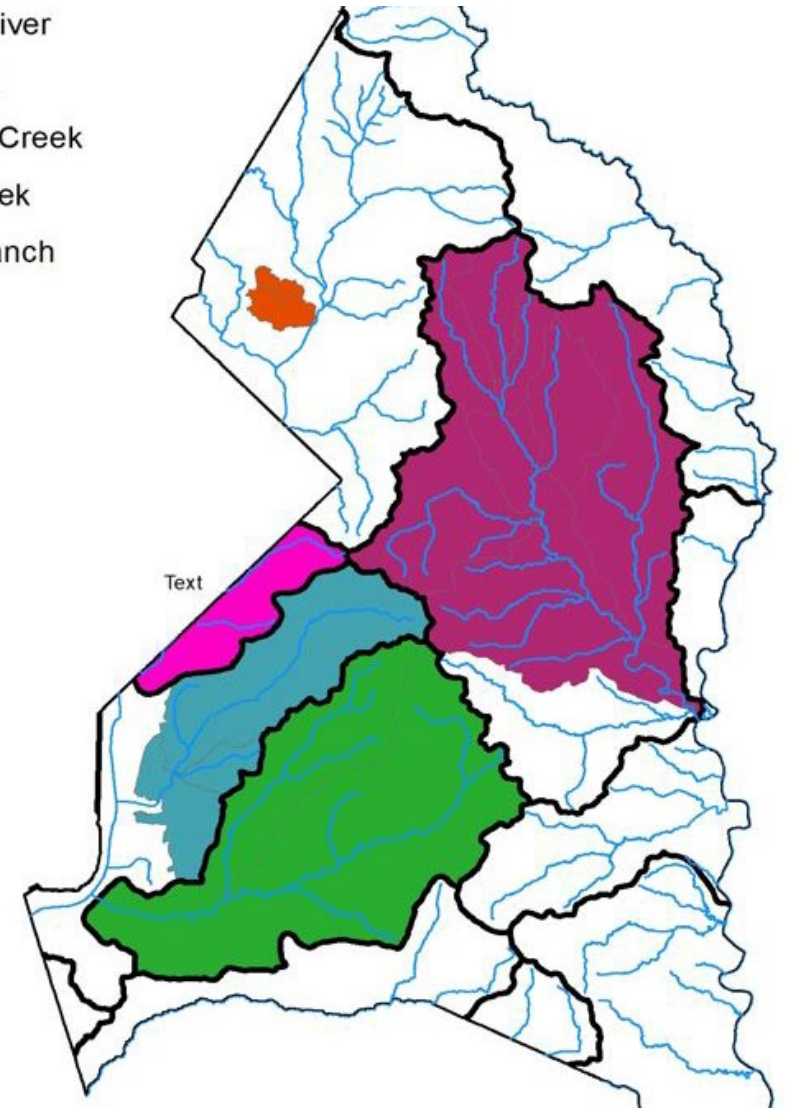
# WATERSHED BASICS

## WATERSHED STUDIES

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- WATERSHED LEVEL FLOOD HAZARD ASSESSMENT AND MITIGATION STUDY
  - PISCATAWAY CREEK
  - WESTERN BRANCH
  - OXON RUN
  - HENSON CREEK
  - ANACOSTIA RIVER SUB-WATERSHEDS
    - GUILFORD RUN
    - WELLS RUN

- Anacostia River
- Oxon Creek
- Piscataway Creek
- Henson Creek
- Western Branch





# FLOODING BASICS

Rainfall, Runoff and Flooding







Floods are the most frequent natural disaster and can occur within minutes or over days.

Incidences of flooding are becoming more common due to increases in extreme weather.

# Major Flood Events Over the Past Decade in the County

**Derecho** cause widespread power outages and offline water pumps

**Landslide** from saturated soils caused water main and sewer failures, 20+ homes evacuated

**Drought and excessive heat** cause uptick in brush fires

**Prolonged heat wave and extreme temperatures**, at least one heat-related death in the County

**Failed water main amid heat wave** caused 150,000+ residents in MD to lose water for days

Record snowfall from **Winter Storm Jonas** caused power outages and at least one death in the County

**Heavy precipitation event** caused extensive flooding, opening of sinkhole, lighting strikes

**Heavy precipitation** cause extensive flooding and property damage, vehicle rescues

2013

2016

2018

2020

2012

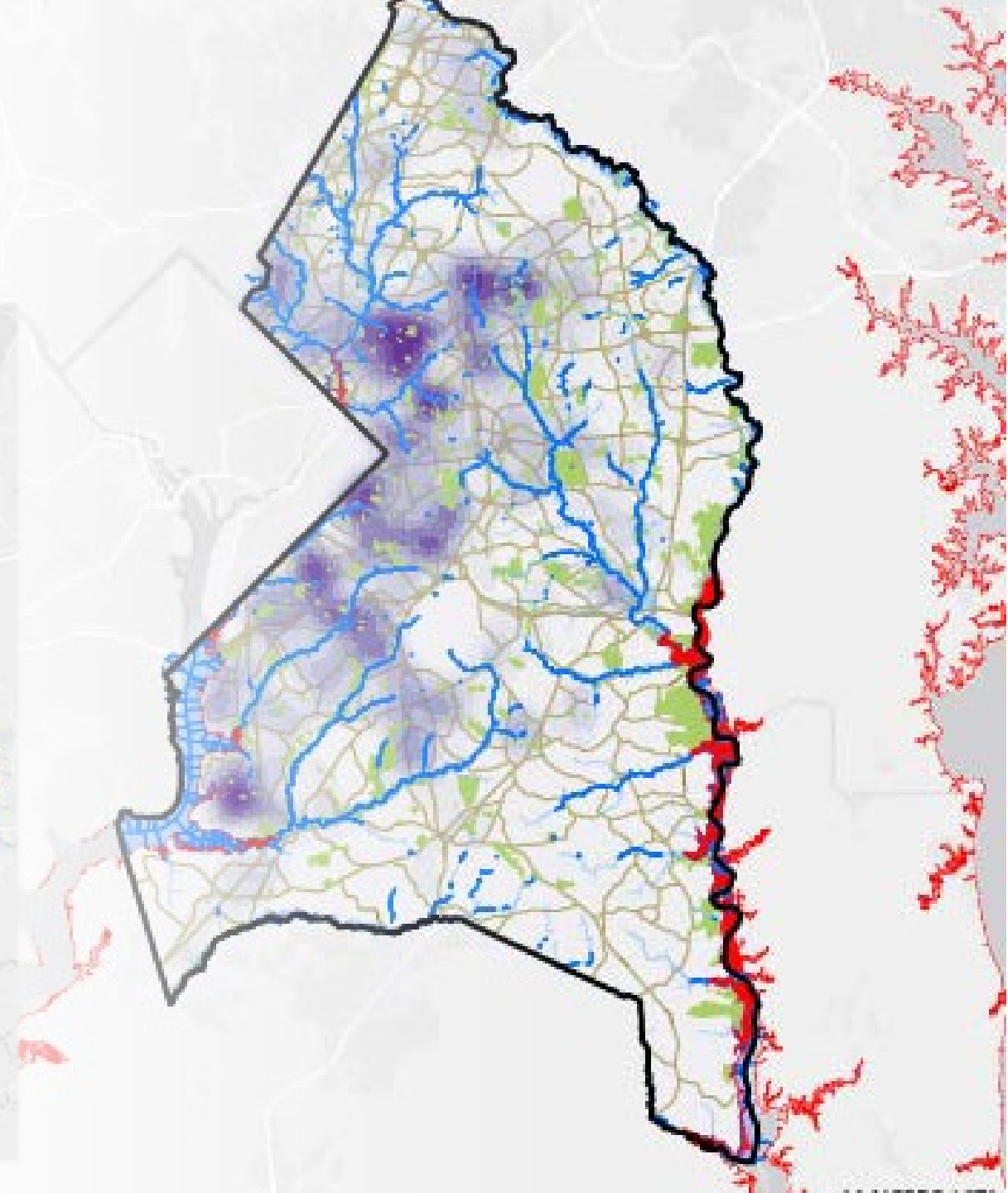
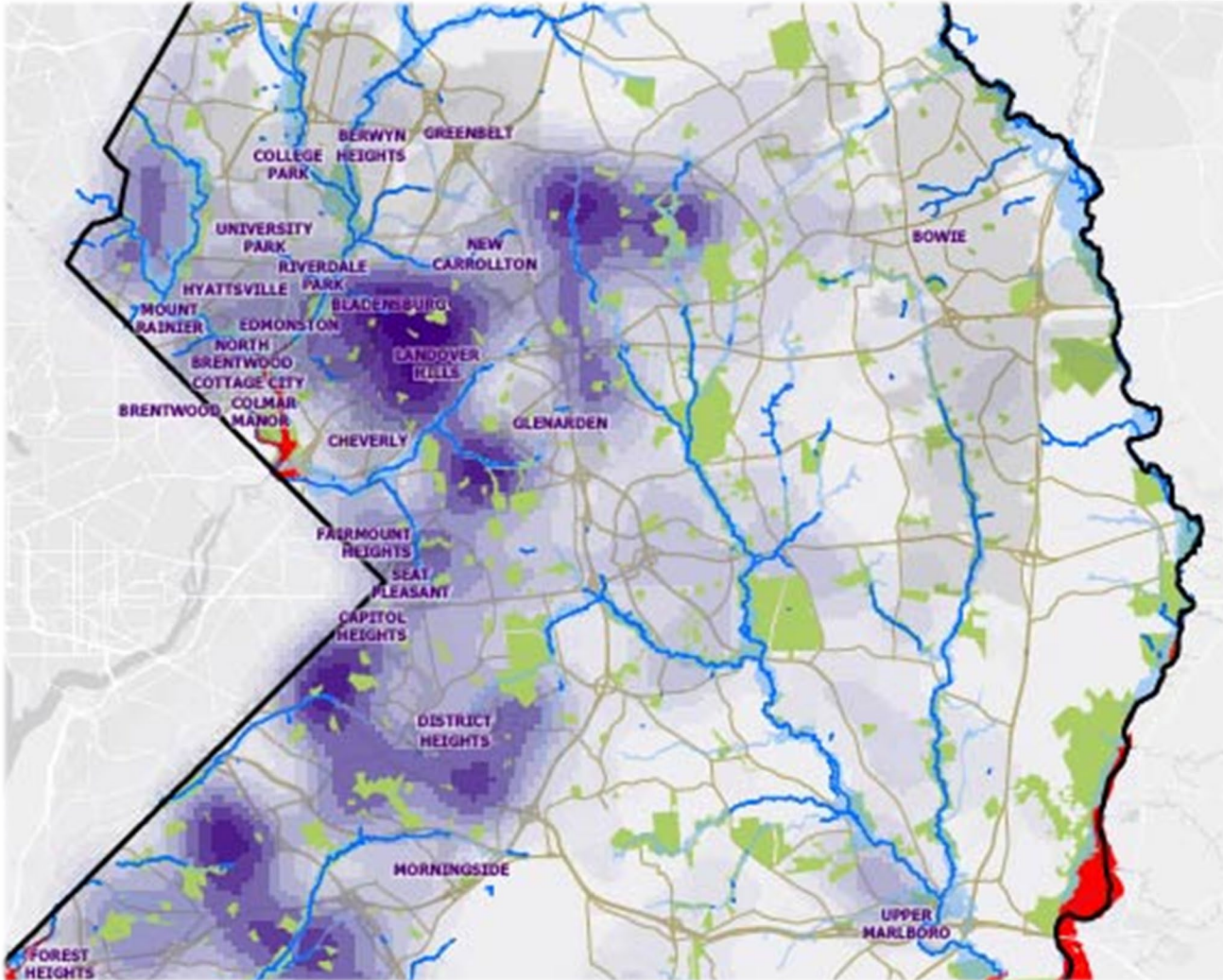
2014

2017

2019



# FLOODING HOTSPOTS



# FLOODING CAUSES



# RAINFALL RUNOFF AND FLOODING

## Flash Floods- Intense, Short-Duration



Surface Runoff due to flash floods overwhelms Conveyance Systems

Low lying areas and other areas where water does not drain away quickly can become ponded rapidly

## Tropical Storms- Widespread, Long Duration



River/Stream floods when riverbanks are overtopped

Rainfall is usually widespread to cause flooding along major streams

Rainfall may occur elsewhere from flooding and may occur before peak flooding



# WHAT IS A FLOODPLAIN?



A floodplain is an integral part of a stream system that receives flow during storm events and reduces stream flow by providing storage. They reduce the discharge of sediment and provides many ecological functions.

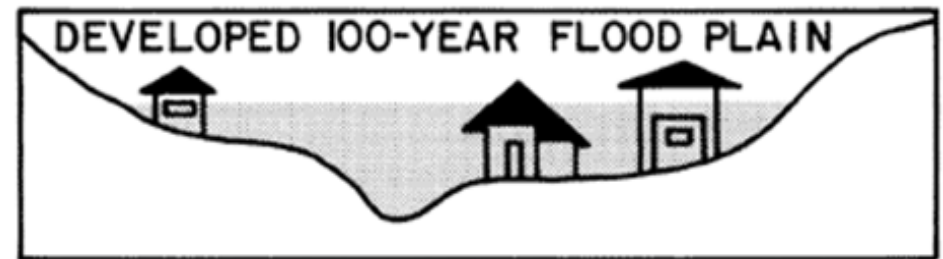
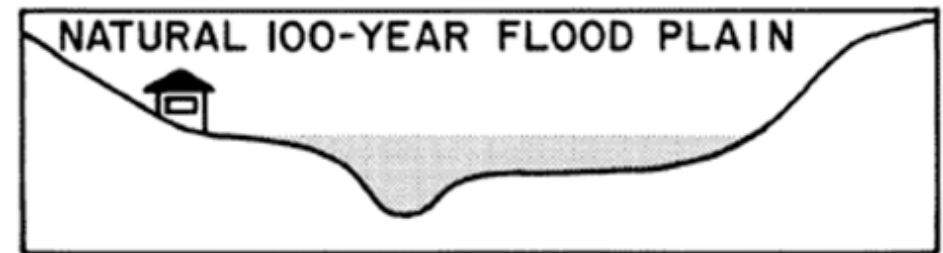


A 100-Year floodplain is that land area adjoining a stream that has a 1% chance of being equaled or exceeded in any given year.



# RIVERINE FLOODING

- Flooding caused by rivers when they overtop their banks



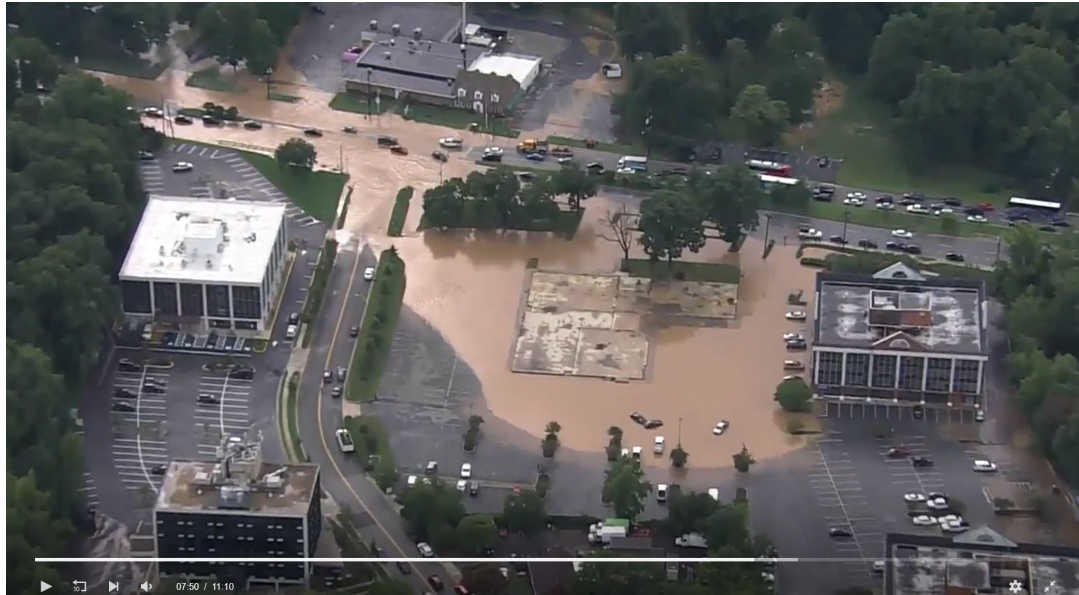
**Building on floodplains increases the risk of flood hazards.**



# EXAMPLE – RIVERINE FLOODING

Floodplain Boundary – Anacostia River

August 2022 Storm Flooding  
– Kenilworth Ave.





# FLASH FLOODS

- Caused by intense, localized, short-duration storms that rapidly overwhelm storm drain systems and small creeks causing flooding on street and property lots
- In Prince George's County, summer thunderstorms are a frequent cause of such storm events
- Flooding usually occurs outside of floodplains in flat or low-lying areas
- During the past decade, most flooding in the County is due to these types of events





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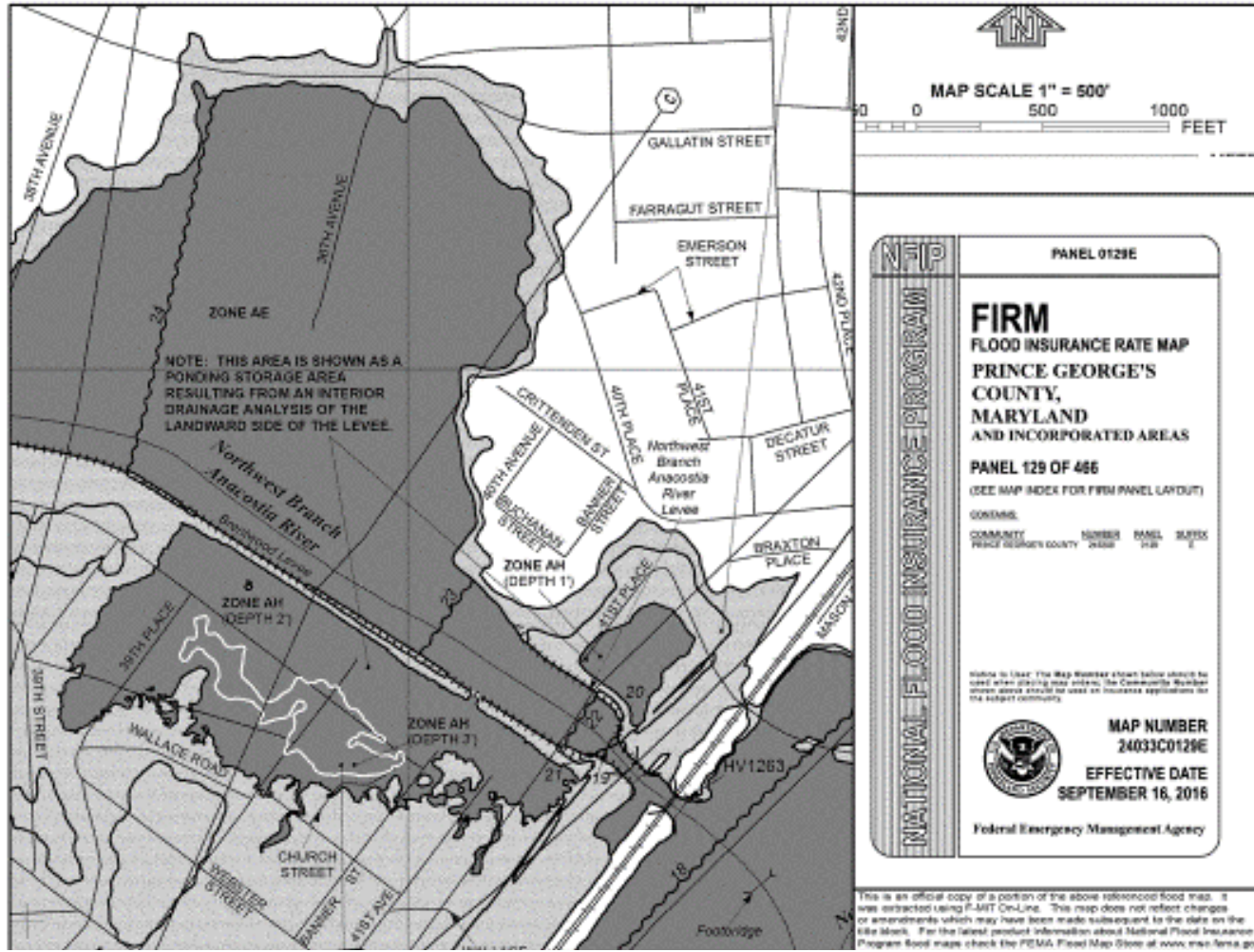
## EXAMPLES – FLASH FLOODING



# WEB MAP SOURCES- FLOOD INFORMATION







# FEMA FLOOD INSURANCE RATE MAP (FIRM)

**NFIP** PANEL 0129E

**FIRM**  
FLOOD INSURANCE RATE MAP  
PRINCE GEORGE'S  
COUNTY,  
MARYLAND  
AND INCORPORATED AREAS

PANEL 129 OF 466  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:  
COMMUNITY: PRINCE GEORGE'S COUNTY  
NOVEMBER 2016  
PANEL 129  
SUFFIX 1

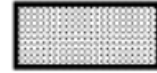
Notes to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
24033C0129E  
**EFFECTIVE DATE**  
SEPTEMBER 16, 2016

Federal Emergency Management Agency

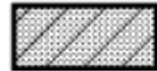
This is an official copy of a portion of the above referenced flood map. It was extracted using FIRM On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.mnfirma.gov](http://www.mnfirma.gov).

# FLOOD ZONES FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)



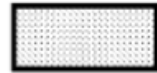
## SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.



## FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



## OTHER FLOOD AREAS

### ZONE X

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



## OTHER AREAS

### ZONE X

Areas determined to be outside the 0.2% annual chance floodplain.

### ZONE D

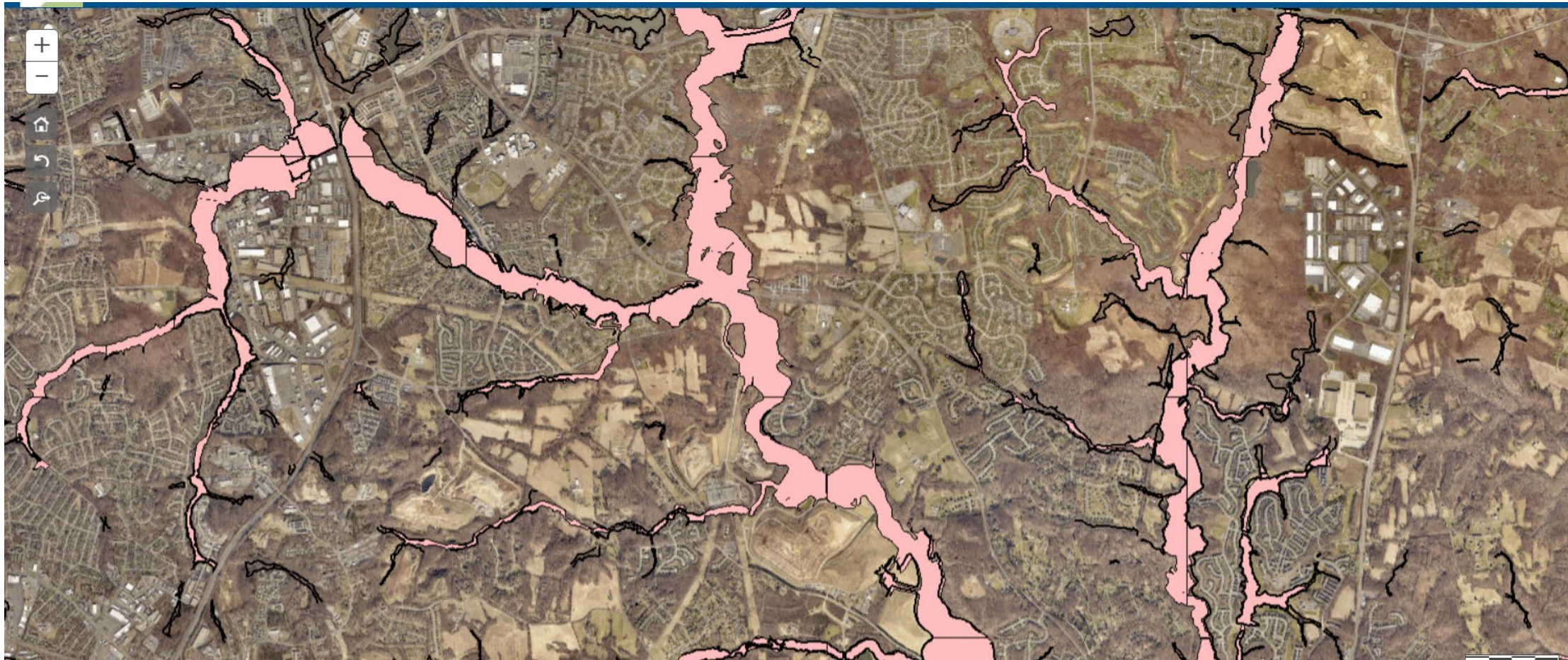
Areas in which flood hazards are undetermined, but possible.

Flood Insurance Rate Maps define areas of flooding risk

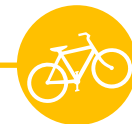


# PG ATLAS

[PGAtlas.com](http://PGAtlas.com)



 Floodplain







# STAYING INFORMED OF SEVERE WEATHER AND COMMUNICATING FLOODING ISSUES



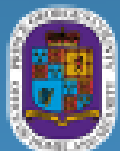


# *Alert Prince George's*

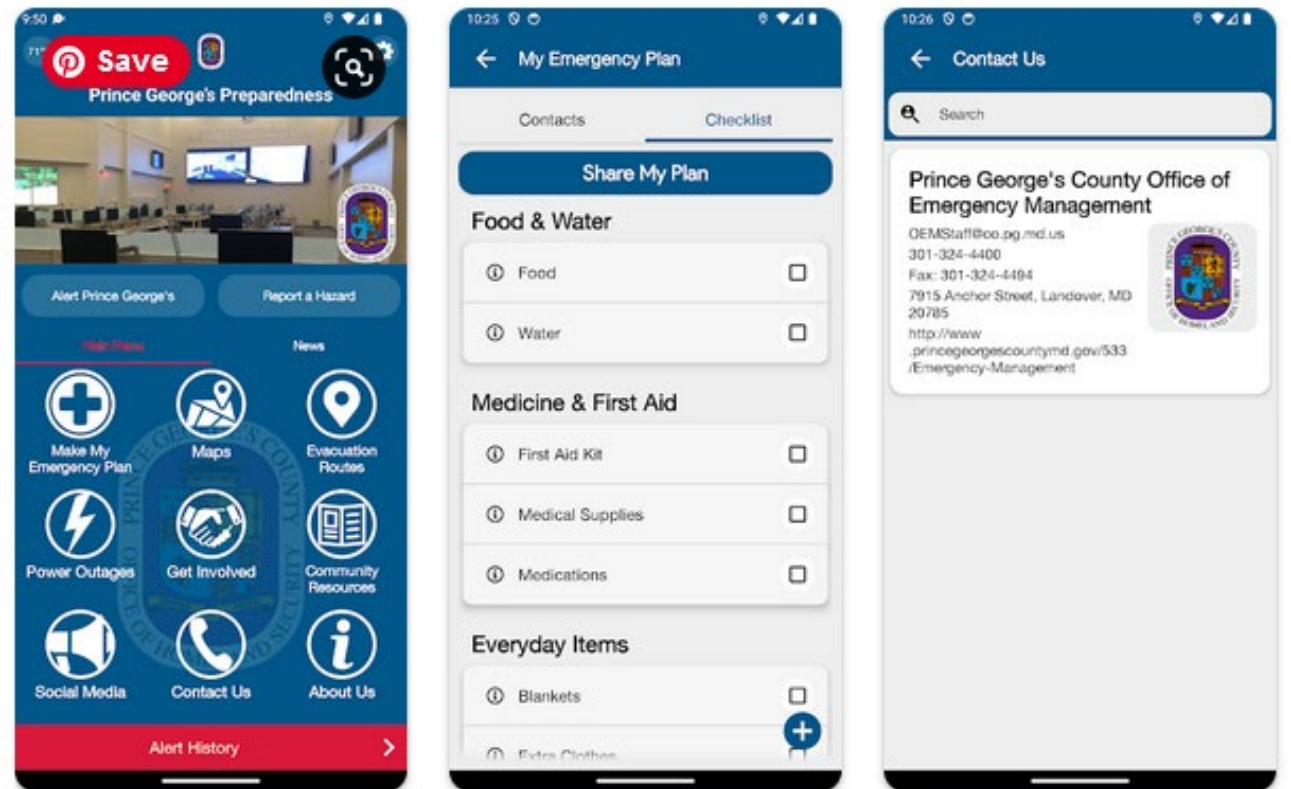
## **Public Notification System**

*Alert Prince George's* is Prince George's County's "Public" communications system that sends emergency alerts, notifications, and updates to your registered devices. It is information sharing between County Government and interested participants who wish to receive critical, real-time information. Alert Prince George's operates on an enhanced software platform that expands alert and notification capabilities. As a subscriber, you will be able to receive information regarding traffic conditions, government closures, public safety incidents, and severe weather. Users are provided with more ways to receive accurate, timely, and secure information before, during, and after an emergency or disaster.

Alert Prince George's is for everyone. Be Prepared, Get Connected and Stay Informed!



# STAY INFORMED



- Visit DoE's Flood Management page to learn more about what County agencies are doing to address flooding.
- Register for emergency notifications by installing the County's free emergency communications app – *Prince George's Preparedness*.



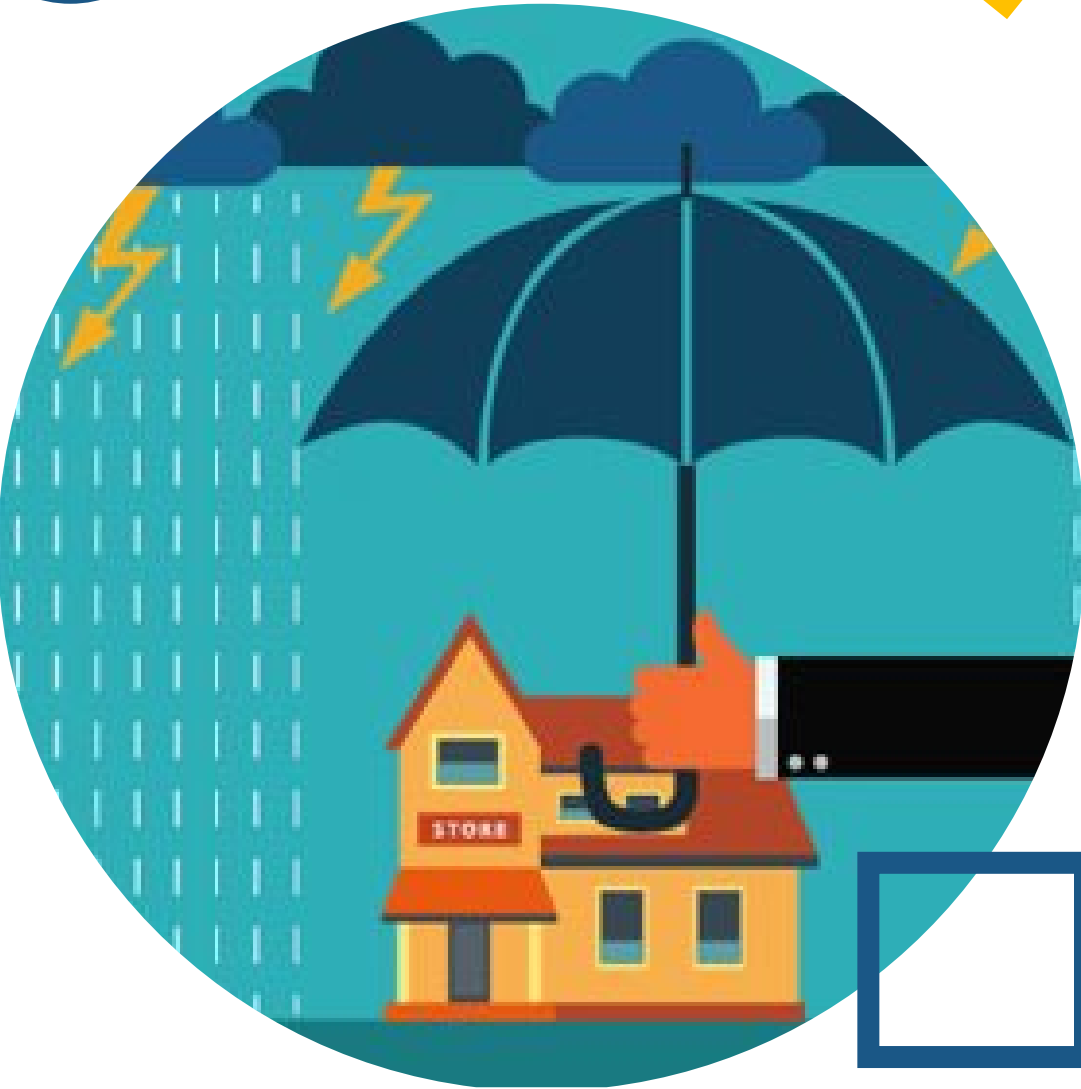


## REACH OUT

- Use PGC311 to inform the County of nuisance flooding or other concerns
- Use the PGC311 Mobile App or Web Portal
- To speak to a Live Agent between 7 am -7 pm, Monday - Friday, call 3-1-1 or dial 301-883-4748 if outside of the County
- Provide as much detail as possible including date of flooding and upload photos if available
- Connect with us via email at [doecares@co.pg.md.us](mailto:doecares@co.pg.md.us) or via phone at – 301-883-5810

**For life threatening emergencies,  
please call 911**





# QUESTIONS

We are also interested in your feedback  
Please use the chat feature to tell us-

- What prompted you to join us this afternoon?
- What other topics would you like us to cover?



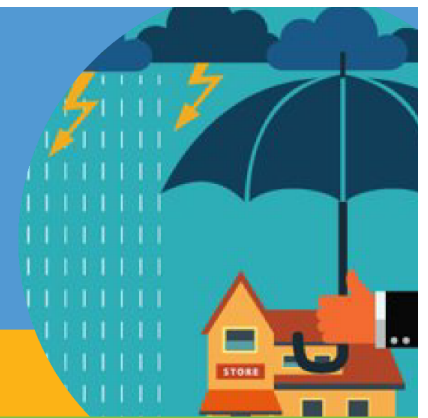


# NEXT SESSION

## SESSION 2: FLOOD RISK REDUCTION MEASURES

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# CONTACT US

Prince George's County Department of the Environment  
1801 McCormick Drive, Suite 500  
Largo, Maryland  
(301) 883-5810

