



Tackling Nuisance Flooding in Prince George's County

Understanding the impacts of urban and high-tide nuisance flooding on Prince George's County's communities

Prince George's County, Maryland
July 24, 2023

Overview

Not all floods result in widespread disaster.

Some disrupt daily activities for up to several hours and then abate. Roads may be temporarily closed; the storm drain infrastructure may be overwhelmed; and yards may become submerged with water. While such floods do not typically pose significant threats to public safety, they compromise infrastructure, impact daily lives, and result in lost revenue and property damage.

In areas of the County's more densely populated areas, where water from rain events cannot absorb into the ground fast enough and does not have anywhere to go, it can accumulate in low-lying areas. This is called **urban flooding**.

Along the coastline, **high tide flooding** is also a concern. This is when low-lying areas such as streets are temporarily inundated during exceptionally high tide events. Sea level rise is expected to result in more frequent and costly high tide flood events as tide and storm surge heights increase and reach further inland.

Together, these two types of flooding are what is generally termed as nuisance flooding. Keep scrolling to learn more about high tide and urban flooding, how it affects Prince George's County, and what you can do.

What is high tide flooding?

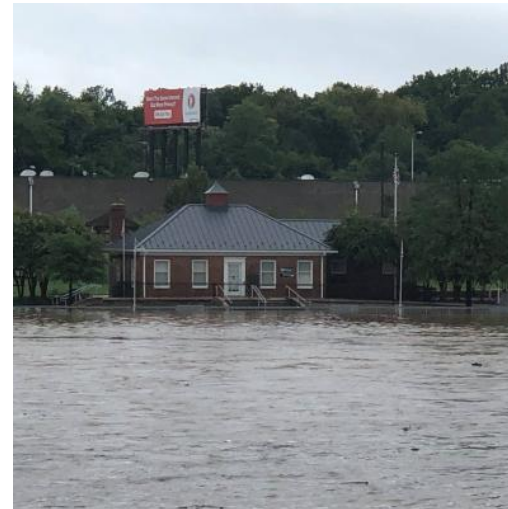
High tide flooding occurs in coastal areas when water from high tide events temporarily floods low lying areas. Whether

ankle- or two-feet deep, high tide flood events can lead to road closures, overwhelmed storm drains, and compromised infrastructure. This wear and tear takes a toll over time.

Here, in the Chesapeake Bay region, high tide flooding is increasing in frequency and becoming more common and a growing concern.

The National Oceanic and Atmospheric Administration (NOAA) reported that the national median high tide flood occurrence was 4 days in 2019, based on observations from NOAA's national tide gauge network. This is over double the median number of high tide floods experienced in 2000.

Within our region, the number of high tide floods experienced in 2019 - which was a particularly intense year for high tide flooding - was even higher. Records were set at tide gauges within the Chesapeake Bay region. The two nearest tide gauges to Prince George's County are the Washington, DC (near the Washington DC Police Harbor Patrol Unit) and Solomon's Island, MD gauges. Washington, DC experienced 10 high tide flood days in 2019, and Solomon's Island, MD had 11 high tide flood days.



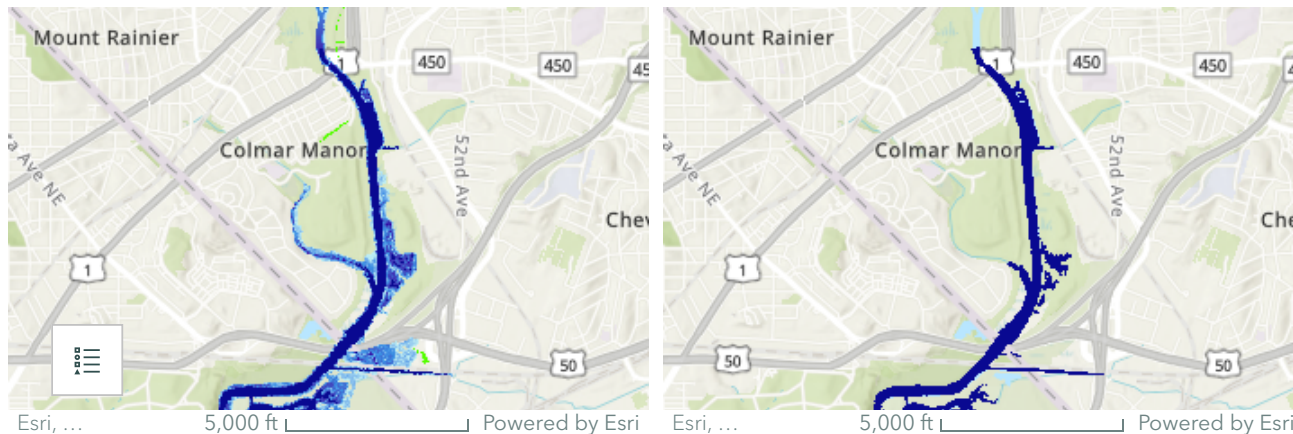
Bladensburg Waterfront Park is overwhelmed with water during a high tide flood event.

Tide Gauge Location	Record HTF (days/year)	Year of Record	Typical HTF Days in 2000	HTF Days in 2019	2020 HTF Outlook	Peak HTF Season
Solomons Island, MD	11	2019	1	11	6-9	Fall
Washington, DC	22	2018	3	10	6-11	Spring

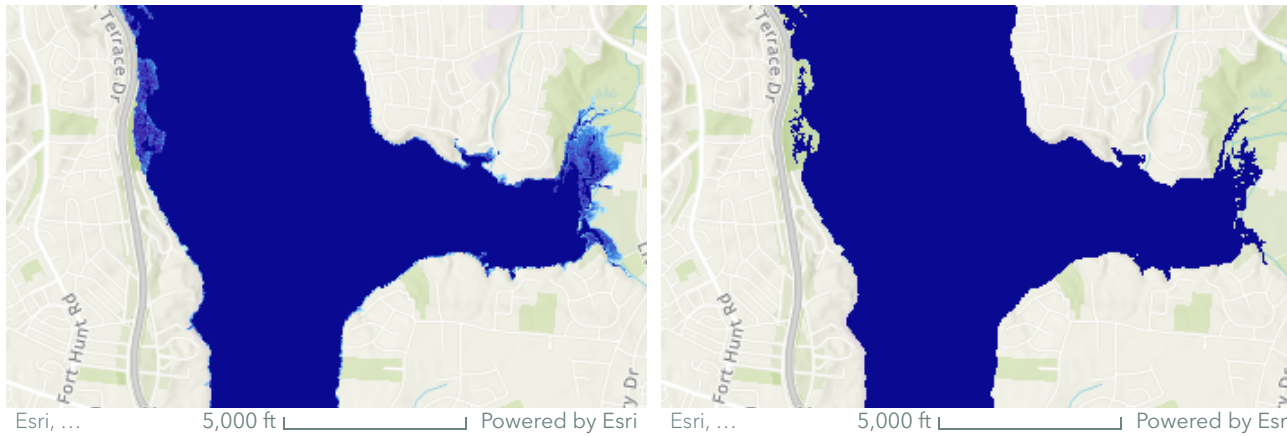
Source: NOAA | 2019 State of U.S. High Tide Flooding with a 2020 Outlook

This increase in high tide flood events is due to sea level rise. Between 1950 and 2022, the sea level off Maryland's coast rose 11 inches, and the speed at which it is rising has only accelerated. In Prince George's County, recent projections show that sea level is expected to increase between 1 to 1.6 feet by 2050 and over 2.7 feet by 2100, based on a 2005 starting point.

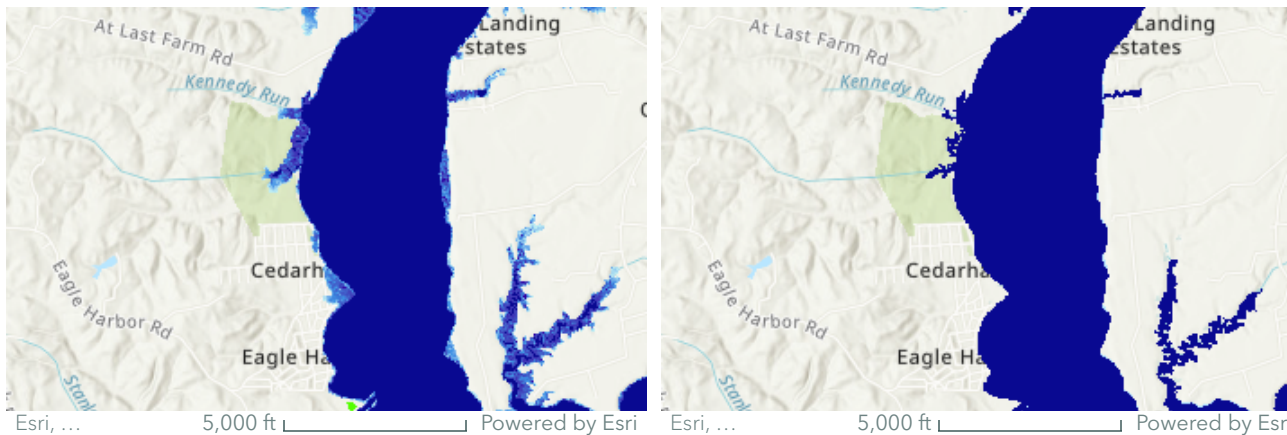
Use the slide bar below to see what low-lying areas are predicted to be impacted by a 2-foot sea level rise around the Colmar Manor, Fort Washington, and Eagle Harbor areas (based on NOAA's [Sea Level Rise Viewer](#)).



Potential flooding of the Anacostia River and low-lying areas around Colmar Manor, MD (Left side = current conditions, Right side = 2-foot sea level rise)



Potential flooding of the Potomac River and low-lying areas around Fort Washington, MD (Left side = current conditions, Right side = 2-foot sea level rise)



Potential flooding of the Patuxent River and low-lying areas around Eagle Harbor, MD (Left side = current conditions, Right side = 2-foot sea level rise)

What is urban flooding?

Whereas high tide flooding occurs along the coastline, urban flooding can happen almost anywhere, even if you are far

from a water source.

Urban flooding occurs when rain falls on hard, impervious surfaces such as buildings, sidewalks, and roads and overwhelms the existing storm drain infrastructure, leaving it with nowhere to go. As population increases and more and more lands become built up, the amount of impervious surfaces similarly increases. Urban flooding can be linked to historic flood events, like when Tropical Storm Isaias passed through Prince George's County in August 2020, or the flash flood experienced in September 2020.



A road in Brandywine is impassable after a slow moving band of heavy rain.

More often, however, it happens during typical, short-duration rain events, resulting in overwhelmed storm drains, water pooling on streets and yards, and wet basements. Even small amounts of rain can impact aging or inadequate storm drain infrastructure.

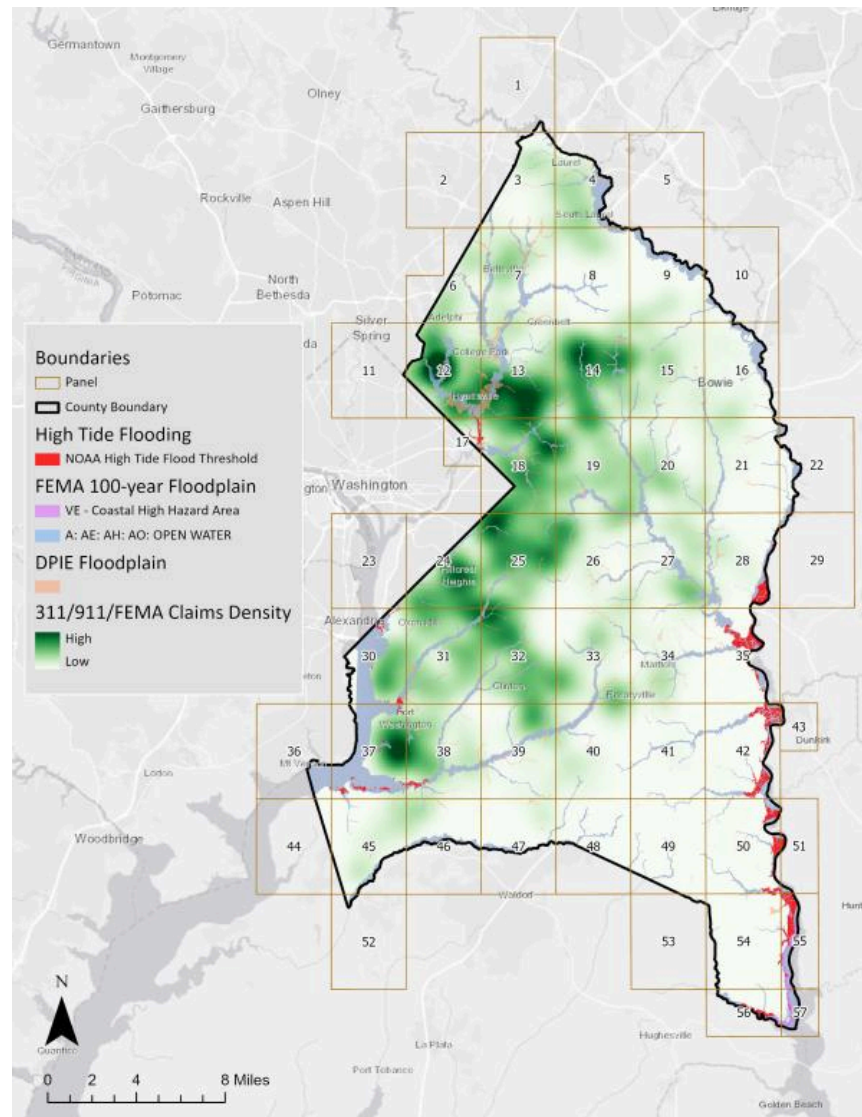
As population increases and heavy precipitation becomes more frequent due to climate change, urban flooding is expected to become an even greater challenge.

Where is urban flooding a problem?

Urban flooding is on the rise in Prince George's County. Aging and inadequate infrastructure, coupled with more intense rain events and a lack of spongy areas to absorb heavy

rainfall, have increased the occurrences of urban flooding. Predicting urban flooding, however, is challenging. Localized storm events are hard to predict. A summer thunderstorm can impact one neighborhood and cause significant damage while sparing the next. A blocked storm drain inlet or a clogged storm drain pipe may worsen the situation.

Information collected from flood related PGC311 and 911 calls and flood insurance claims was used to identify areas where the risk and impact of nuisance flooding are greater. This map shows where certain hot spots exist within the County. Better mapping of citizen notifications regarding damages can help the County better pinpoint where to focus response resources and longer-term projects to reduce flooding.

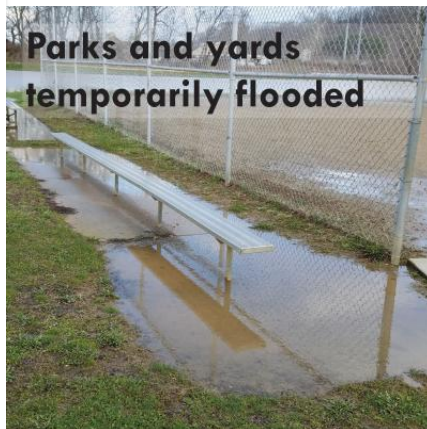


PGC311 and 911 Call Drainage/Flooding Complaints and Flood Insurance Claims Density in Prince George's County

What are the impacts?

We're still trying to get a handle on how much the steady drip, drip, drip of nuisance flooding — both from high tide and urban flood events — costs us. However, what we do know is that, due to climate change, the risk of nuisance flooding is growing.

See below for examples of the ways in which urban and high tide flooding are impacting Prince George's County's communities and municipalities.



What can you do?

Many people think that if they're not in the 100-year floodplain mapped by FEMA, then they're not at risk of being impacted by a flood. This is simply not true. In addition, FEMA's 100-year floodplain maps don't take into account the impact climate change is having on extreme weather and sea-level rise. Here are some steps you can take to protect you and your family.

Stay informed

- Visit the Department of the Environment's Flood Management page to learn more about what the County's agencies are doing to address nuisance Flooding.
- Register for emergency notifications by installing the County's free emergency communications program by getting the Office of Emergency Management's free mobile application from Google Play or the Apple App Store, or by visiting the County's Alert Prince George's website.

Be prepared

- Consider getting flood insurance. Protection against loss due to floods is not covered under basic property insurance policies. All homeowners, renters, and business owners are eligible for flood insurance. Visit the National Flood Insurance Program online at www.floodsmart.gov for more information.
- Flood proof your home. Find tips on waterproofing & drainage systems, sump pumps, wet yards, and more in the County's Residential Drainage Manual.

- Help keep leaves from clogging the storm drain. Leaves, yard waste, and other debris can block water from entering the storm drain system, causing the road to flood. If you see a storm drain inlet that's clogged with debris or in need of repair, report it to [**PGC311**](#).
- Be a good neighbor. Fences can block storm flows — runoff from storm precipitation — and cause water to pond in your yard or your neighbor's yard. Make sure your fence is [**installed properly**](#).
- Be careful when performing grading changes on your property, such that it does not impact natural drainage patterns and/or all water to pool near a structure on your property.
- For every percent increase in hard, impervious surfaces like paved roads, parking lots, roofs, and even highly compacted soils, the chance of flooding increases on average by [**3.3%**](#). Consider removing impervious areas such as extra parking pads or a patio and install green infrastructure features like permeable pavement, rain gardens, cisterns, or conservation landscaping. You may be eligible to receive a [**Rain Check Rebate**](#) for doing so. When enacted at a widespread scale, these practices have been shown to make significant improvements in abating urban flooding.

Stay safe

- If you live in a basement apartment, be ready to move to a higher floor during periods of heavy rain and/or evacuate if needed.
- Turn around. Don't drown! Over 1/2 of all flood-related drownings occur when a vehicle is driven into hazardous

flood water. Just six inches of moving water can knock you down. Most cars can be swept away in one foot of water. Two feet of rushing water is powerful enough to carry away SUVs and trucks. NEVER drive or walk in flood waters.

- Call 911 if you are in immediate danger.

Reach out

- Report flood events through [**PGC311**](#). The more data we collect, the greater our understanding of the problem. Your voice matters. When reporting a flood event through PGC311, please upload photos, if available, and provide the exact date of occurrence.

PGC311

Visit the County's [**Department of the Environment, Office of Emergency Management**](#), and the [**Departments of Permits, Inspection, and Enforcement**](#) websites for more tips and recommendations.

About this story

This story map was created in collaboration with Prince George's County's Nuisance Flood Plan Steering Committee. Special thanks go out to Mayor

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Story	Low Impact Development Center, Inc.
Cover Photo	NOAA
Other Photos	Bladensburg Waterfront Park - Town Colmar Manor Ponded water in roadway - Town of Colmar Manor Parks and yards temporarily flooded - Dan Keck Shoreline Erosion and Polluted Waterways - Chesapeake Bay Program. Other photos courtesy of Prince George's County.