

KENT COUNTY NUISANCE FLOOD PLAN



September 2025

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Photo: Nuisance flooding at intersection of Sharp St and Chesapeake Ave in Rock Hall, 2016.

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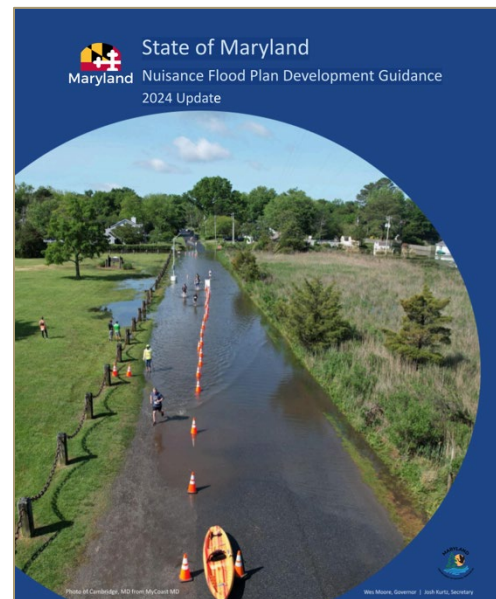
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Planning Requirement



Maryland Senate Bill (SB) 1006 states that “on or before July 1, 2019, a local jurisdiction that experiences nuisance flooding shall develop a plan to address nuisance flooding.” The legislation further specifies that the plan must be submitted to the Maryland Department of Planning, published on the local jurisdiction’s website, and updated at least every five years.

This Nuisance Flood Plan (NFP) follows the guidance as found in the State of Maryland Nuisance Flood Plan Development Guidance 2024 Update, which is an update to the 2019 Guidance.

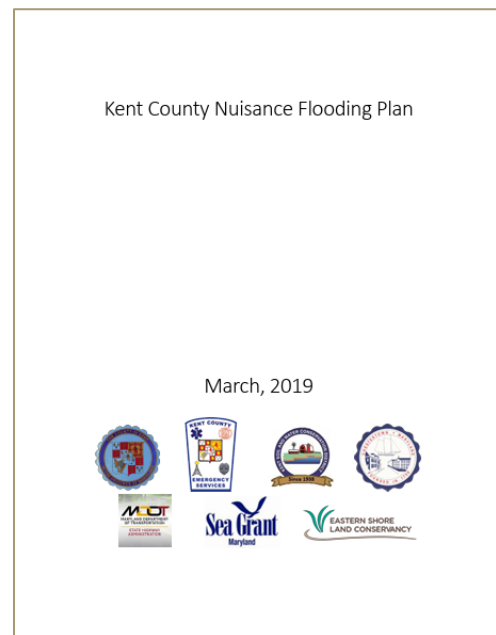


Introduction



Flooding is one of the most common natural hazards experienced in Kent County. Depending on the circumstances, flooding may be widespread or isolated, developing slowly or quickly. It may take the form of coastal, overland, or flash flooding. Floods may originate from severe weather or from the failure of dams or levees. **Nuisance flooding**, also referred to as high tide flooding, is a more specific and commonplace phenomenon which dictates a slighter response and threatens the community in less intrusive ways.

Generally, sources of flooding in Kent County include fluvial/riverine, pluvial, and coastal flooding. These types of flooding are exacerbated by both climate change and sea level rise. Definitions for these types of flooding are as follows:



Riverine/Fluvial: A fluvial flood, also known as a riverine flood, happens when a river, stream, or lake overflows onto the surrounding land. This can occur when the water level rises due to heavy rain or snowmelt.

Pluvial: Pluvial flooding is a type of flooding that occurs when heavy rainfall overwhelms the ground's ability to absorb water or a drainage system's capacity to manage it. Pluvial flooding can happen in any location, including urban and rural areas.

Coastal Flooding: Coastal flooding occurs when water from the ocean or other bodies of water covers normally dry land along the coast. It can be caused by high tides, storm surges, tsunamis, or a combination of these factors.

The National Oceanic and Atmospheric Administration (NOAA) defines nuisance flooding, or high tide flooding, as “flooding that leads to public inconveniences such as road closures. It is increasingly common as coastal sea levels rise.” The language of SB 1006 refers to nuisance flooding as “high-tide flooding that causes public inconvenience.” Nuisance flooding is typically unrelated to particular storm events, though it may be exacerbated by long-duration wind events or passing storm systems. As such, it is frequently referred to as “sunny day flooding.”

Nuisance flooding is capable of disrupting daily activities through a variety of mechanisms, such as the closure of roads due to high water, the inundation of yards and parks, and the impairment of engineered and natural drainage systems. Currently, these disruptions typically occur for a period of several hours and then abate. However, as a changing climate drives sea levels higher and precipitation events to greater severity, these repeated “nuisance” impacts will become significant stressors on the infrastructure, emergency response, public health, and fabric of the community.

Even without major storms, high tides can cause minor disruptions, often leading to inconveniences like road closures and overwhelmed storm drains. These events can occur on sunny days and are often referred to as sunny day flooding.

Source: NOAA

In Kent County, nuisance flooding occurs most predominately in locations near or adjacent to major bodies of water. Along the Chester River, nuisance flooding is common on residential and commercial properties. The Town of Chestertown has made major investments in flood mitigation at the municipal marina, park, and walkways along the riverbank. Elsewhere in the County, nuisance flooding is experienced as debris from farm fields enter ditches and eventually settles on roadways as ditches overflow. Culverts in low-lying areas may have difficulty conveying water adequately, causing ponding on low-lying roadways throughout the County.

Plan Development Process

The first step in the 2025 Nuisance Flood Plan development process included a review of the State of Maryland Nuisance Flood Plan Development Guidance 2024 Update, which was an update to the 2019 Nuisance Flood Plan Development Guidance. The guidance suggests a six-step process for approaching the 2025 update, which is described in more detail below.



Figure 1.

1

Determine the nuisance flood planning team.

- Kent County expanded its nuisance flooding committee, and several members are new for the 2025 update. A full listing of all committee members is available in Appendix II. Kent County Planning, Housing, and Zoning served as the lead agency for this plan update.
- The steering committee and nuisance flooding committee is comprised of representatives from Emergency Services, Eastern Shore Land Conservancy, Public Works, Kent County Soil Conservation District, Planning, Housing, and Zoning, State Highway Administration, University of Maryland Sea Grant Extension, and municipal representatives.

2

Evaluate and analyze existing plans.

- In addition to the review of the 2019 Nuisance Flood Plan, several other plans and resources have been reviewed and have informed this document including, but not limited to:
 - Kent County 2021 Hazard Mitigation Plan
 - Kent County Comprehensive Plan
 - 2023 Sea Level Rise Projections for Maryland
 - 2022 Land Preservation, Parks, & Recreation Plan
 - Zoning Ordinance
 - Building Codes

- Stormwater Management Ordinance

3**Evaluate thresholds and impacts, update as necessary.**

- For this plan update, various sources of information were obtained and utilized to identify nuisance flood prone areas including:
 - Kent County 9-1-1 Nuisance Flooding Log data
 - NOAA Sea Level Rise View – Minor Flood Threshold GIS data
 - Maryland MyCoast data
 - National Centers for Environmental Information (NCEI) Storm Event data

4**Develop the plan with updated recommendations.**

- Using the information gathered in step 2 and the data analysis completed in step 3, new recommendations were developed.
- Recommendations from the previous plan were reviewed. Those carried over for this plan update were modified, as necessary.
- The Nuisance Flood Committee had the opportunity to review and discuss in depth all recommendations at a virtual meeting held of June 2, 2025. Additionally, general review comments for the plan were sought at this time for a two-week review period.

5**Submit the Plan.**

- The plan was submitted by the Kent County Department Planning, Housing, and Zoning to the Maryland Department of Planning and shared with the Maryland Department of Natural Resources for review. Upon receipt of confirmation the plan was posted on the Kent County website, as required by statute.

6**Implement the Plan.**

- Kent County will implement the NFP in accordance with the plan implementation section of this plan. This includes making the plan publicly available, updating as needed, implementing recommendations, and continuing public education and outreach efforts.

Preparing for Nuisance Flooding



Because nuisance flooding is a complex problem, strong partnerships between planning, public works, emergency management, and geographic information systems (GIS) are necessary for Kent County to properly prepare for the impacts of nuisance flooding. In

particular, it is important that departments collaborate to inventory and map chronically inundated areas.

As part of the nuisance flood planning process for Kent County, a team of staff created a thorough inventory of known flood hazard areas, which can be found as Table 4.

Departments involved in the nuisance flood planning and inventory process can be found in Appendix II.

In addition to mapping, accurate flood forecasting and warning is critical to the safety and preparedness of a community. Weather forecast data is received from the National Weather Service (NWS) forecasting office at Mt. Holly, New Jersey. Critical tide information is received from the NOAA tide gauge stationed at Tolchester Beach, as well as additional gauges elsewhere throughout the Chesapeake Bay. These gauges allow Kent County to be aware of and prepare for possible nuisance flooding impacts.

The Kent County Office of Emergency Services (OES) maintains a close relationship with NWS Mt. Holly, receiving notifications of special hazards and watches or warnings of severe weather before the community is impacted. The timeliness of these severe weather alerts is critical when the potential for public safety impacts exists, such as in flood situations. Additionally, it is the responsibility of the Kent County OES to disseminate public safety information via [Everbridge](#), the County's mass notification system, and social media outlets, such as [Facebook](#). When nuisance flooding is anticipated, it may be necessary for Kent County OES to initiate a message to flood hazard areas via Everbridge and social media outlets with details about flood severity, duration, or impacts such as road closures.

Responding to Nuisance Flooding



Nuisance flooding response typically takes the form of public warning, monitoring, and physical actions such as deployment of barriers, signage, or road closures. Thresholds are maintained for Kent County which direct a set of actions based on a particular inundation level or frequency of flooding. These thresholds are meant to supplement actions directed by the Kent County Emergency Operations Plan. Flood thresholds and associated actions are included in Table 1.

Table 1: Flooding Thresholds and Required Actions in Kent County			
Threshold	Response Level	Related Flooding Threshold	Required Action
Forecast data from the NWS or NOAA tide gauge indicates likely nuisance flooding impacts	Level I – Public Warning	Minor Flooding: 3.5 feet MLLW*	Make the public aware of nuisance flooding threat via mass notification emails, social media, etc.
Flood waters are present below nuisance levels and are rising	Level II – Monitor Inundation	Moderate Flooding: 4.5 feet MLLW	Deploy DPW and SHA personnel to monitor flood levels as needed and place high water signs at impacted locations.
Flood waters are high enough to warrant temporary road closures	Level III – Flood Response	Major Flooding: 5.5 feet MLLW	Place additional DPW and SHA personnel on standby; close roads and reroute traffic as flooding reaches hazardous levels.

* Mean Lower Low Water

When flooding reaches such a severity that life safety, critical infrastructure, and key resources are threatened, “nuisance” flooding levels have been exceeded. Below are response concepts consistent with the Kent County Emergency Operations Plan which may become necessary as flood waters ride beyond nuisance levels.

- Response
 - Lifesaving activities
 - Incident containment
 - Public health concerns
 - Maintenance of transportation routes
 - Maintenance of critical facilities
 - Public warning mechanisms
 - Responder health & safety
 - Media & VIP management
 - Control & Coordination of operations
 - Provision of transport, shelter and documentation of displaced persons
 - Restoration of normality
- Recovery
 - Handover from life saving
 - Facilitate the restoration of systems to normality
 - Assess damage and return vital life support systems to minimum, operating standards

- Collate financial cost of the event
- Legal implications, claim investigation
- Debrief & compilation of final report
- Community & restoration of services

Flood Categories and Thresholds



The National Weather Service uses three main flood categories: minor, moderate, and major. These categories are based on the potential for property damage and public threat. The NWS also uses flood stage terminology to describe the severity of flooding along rivers. Nuisance or high tide flooding is attributed to the minor flood category.

According to NOAA for the Tolchester Beach, MD tide gauge (Station ID: 8573364), the official thresholds for coastal flooding are defined relative to MLLW:

- Minor Flooding: 3.5 feet MLLW
- Moderate Flooding: 4.5 feet MLLW
- Major Flooding: 5.5 feet MLLW

These thresholds are established to indicate the severity of coastal flooding impacts, with minor flooding typically causing minimal or no property damage, moderate flooding posing a threat to property and safety, and major flooding resulting in significant threats to life and property.

Note: Minor tidal flooding starts at 3.5 feet above MLLW at Tolchester Beach tide gauge. This minor flood threshold is associated with the beginning of nuisance flooding.

According to NOAA, the following impacts can be expected at each flood threshold level for Kent County:

Minor 3.5 ft (MLLW): Flooding begins in Rock Hall, Skinners Neck, Piney Neck, McKinleyville and Cliffs City. Flooding begins along the Chester River in Chestertown and also south of Chestertown along Quaker Neck Road.

Moderate 4.5 ft (MLLW): At this level, additional roadways near the bay and its tidal tributaries in Cecil County and Kent County begin to flood. Lives may be at risk when people put themselves in harm's way. Some damage to vulnerable structures may begin to occur.

Major 5.5 ft (MLLW): At this level, widespread roadway flooding begins near the bay and its tidal tributaries in Kent County (and Cecil County). Vulnerable homes and businesses may be damaged as water levels rise further above this threshold. Numerous roads become impassable, and some neighborhoods may be isolated. The flood waters become a danger to anyone who attempts to cross on foot or in a vehicle.



Figure 2. Example of Minor (left), Moderate (middle), and Major (right) flooding. Source: National Weather Service.

Documented Flooding



Documenting the extent and impacts of nuisance flooding is critical to public safety and the long-term resilience of Kent County. Nuisance flooding events are documented and updated on a regular basis for emergency planning purposes. A review of flood documentation provides Kent County a comprehensive view of trends in flooding over time. The following factors are recorded by Kent County OES and DPW for tracking and archived by County GIS staff. This includes instances of nuisance flooding addressed by SHA and communicated over the radio.

- Date, time, and location of nuisance flooding
- Impacts (e.g. “x amount of water on the roadway,” “ditch overflow,” “docks underwater,” etc.)
- Agency notified and action taken

Results of these documentation efforts are shown in Table 2, which includes nuisance flooding events documented by Kent County between 2019 and 2023. See Appendix III for a copy of the Kent County nuisance flooding documentation tool.

Table 2: Documented Flooding – 911 Nuisance Flood Logs (January 2019 to December 2023)				
Date	Time	Location	Impact(s)	Reason
10/12/19	N/A	Rock Hall Harbor / Waterman’s Crab House	N/A	Tropical Storm Melissa / Full Moon
8/4/20	N/A	Foot of High St, Chestertown	Nuisance Flooding	Hurricane Isaias

Table 2: Documented Flooding – 911 Nuisance Flood Logs (January 2019 to December 2023)				
Date	Time	Location	Impact(s)	Reason
8/4/20	N/A	Chestertown Marina	Nuisance Flooding	Hurricane Isaias
2/20/20	16:00	East Neck Island at the Bridge	Flooding causing road closure	Coastal Flooding
2/20/20	17:08	MD Rt. 289 / Country Club	Road closure due to flooding	Coastal Flooding
1/15/20	19:40	MD Rt. 289 / Country Club	Flooding on Bridge	High Tide
1/15/20	20:30	Byford Ct	Flooding on Bridge	Storm
1/15/20	20:30	Horse Ln	Flooding on Road	Storm
1/15/20	21:48	County Roads	Flooding on Bridge	Storm
9/1/21	18:45	E. Nicholson	Road Flooded / Impassable	Tropical Storm Ida
9/1/21	18:49	MD Rt. 289 / Hillcrest Rd	Flooding	Tropical Storm Ida
9/1/21	19:01	Bessick Corner Rd	Flooding / Road Impassable	Tropical Storm Ida
9/23/21	9:37	North Hawthorne Ave	-	Heavy Rain / High Tide
9/23/21	9:37	Chesapeake Ave	-	Heavy Rain / High Tide
9/23/21	9:37	Sharp St	-	Heavy Rain / High Tide
9/23/21	9:52	MD Rt. 298 / Hanesville	-	Heavy Rain
9/23/21	11:18	MD Rt. 20 / Wesley Chapel	-	Heavy Rain
9/23/21	11:23	N Water Street	-	Heavy Rain
9/23/21	11:23	Foot of High St	-	Heavy Rain
9/23/21	11:30	Quaker Neck Rd	-	Heavy Rain
10/29/21	16:00	MD Rt. 289 / Country Club	High Water	Rain/Wind Event
10/29/21	16:00	High St & Water St	Flooding	Rain/Wind Event
10/30/21	3:00	Route 20 & Hawthorne	Flooding	Rain/Wind Event

Table 2: Documented Flooding – 911 Nuisance Flood Logs (January 2019 to December 2023)				
Date	Time	Location	Impact(s)	Reason
4/30/23	19:38	Fairlee Rd / Fish Hatchery	-	Heavy Rain
4/30/23	19:40	Frederick Ave	-	Heavy Rain
4/30/23	19:40	Hawthorne Ave / MD Route 20 / Haven Rd	-	Heavy Rain
4/30/23	21:10	Fairlee Rd / Hanesville Rd	-	Heavy Rain
12/27/23	21:45	Fairlee Rd / Melitota Rd	Entire Road Flooded	Heavy Rain

Source: Kent County 9-1-1 Nuisance Flood Logs (January 2019 to December 2023)

Results from utilization of the 9-1-1 Nuisance Flood Log for the four-year period of 2019 through 2023 indicate that certain roadways are prone to repetitive nuisance flooding. Roadways with more than one instance of nuisance flooding as documented in the nuisance flood log include:

- Fairlee Road
 - @ Fish Hatchery Road
 - @ Hanesville Road
 - @ Melitota Road
- High Street
 - @ Foot of High Street
 - @ Water Street
- MD Route 289 Quaker Neck Road (@ Country Club)

Additionally, the following roadways were identified as having experienced nuisance flooding in the last 5-year planning period (2020 to 2025) by consulting the NCEI Storm Event Database.

- Maryland Route 298 near Fairlee: Flash Flooding due to thunderstorms amounting in rainfall totals of 3 to 5 inches.
- Crosby Rd (Crosby): Heavy rain and poor drainage flooding.
- High St (Chestertown): High Tide Flooding
- Bloomingneck Rd (Betterton): Coastal Storm

The locations of nuisance flooding captured by the NCEI Database are consistent with locations identified by this NFP.

Finally, historical flooding is also documented by records of coastal storm events from the NCEI Storm Events Database. Coastal storm events with associated nuisance flooding are shown in Table 3, along with their peak water level and associated flood threshold.

Table 3: Top 5 High Tide by Peak – Coastal Storm Events (1996-2024) – Tolchester Tide Gauge MHHW, MLLW						
Event	Date	Peak (MHHW)	Peak (MLLW)	Minor	Moderate	Major
Hurricane Isabel	9/19/2003	6.18 ft	7.91 ft			X
East Coast Winter Storm	1/10/2024	3.61 ft	5.34 ft		X	
Hurricane Debby	8/9/2024	3.28 ft	5.02 ft		X	
Coastal Low Pressure	10/30/2021	3.21 ft	4.94 ft		X	
Hurricane Fran	9/7/1996	3.15 ft	4.89 ft		X	

Source: <https://tidesandcurrents.noaa.gov/inundationdb/inundation.html?id=8573364>

Identified Nuisance Flood Prone Roadways



Roadways prone to nuisance flooding in Kent County are identified with information from the following sources:

- Kent County 9-1-1 Nuisance Flooding Log data (Table 2)
- Nuisance Flood Plan Committee members (Table 4)
- NOAA Sea Level Rise View – Minor Flood Threshold GIS data (Table 5, 6, & 7)
- NCEI Storm Event data

For the 2025 NFP update, roadway segments within the minor [NOAA High Tide Flooding](#) GIS data layer were identified. NOAA has mapped the geographic extent of high tide flooding in relation to minor, moderate, and major flood thresholds. These are newly identified roadways which were not already included in the NFP. *Note: the minor flood scenario was selected as it corresponds most closely to nuisance flooding. Additionally, areas within this geographic extent would also be vulnerable to moderate and major flooding.*

Table 4: Locations Identified by County Roads Staff and NFP Workgroup Members		
Map ID	Location	Notes from County Roads and NFP workgroup members
1	Eastern Neck Road - ENI-NWR	Regularly under water at significant tide - entrance bridge to Bogles Wharf Road
2	Bogles Wharf Road - ENI-NWR	Regularly under water at significant tide - entire road can flood
3	Grays Inn Landing Road	Whole length of road can flood. 3 homes along the water and a public landing will flood
4	Allen's Lane	Bay can come up the ditches (worse on Allen's Lane than Green Lane) - almost entire length of road can be impacted

Table 4: Locations Identified by County Roads Staff and NFP Workgroup Members		
Map ID	Location	Notes from County Roads and NFP workgroup members
5	Green Lane	Bay can come up the ditches - approximately 200' back from the Bay
6	Burris Road	Where creek is close
7	Swan Creek Road	West of Burris Road - heavy rain
8	Humphrey's Point Road	Where adjacent to water (2 houses can be cut off)
9	Skinner's Neck Landing	-
10	McKinleyville Road	(along Lawyer's Cove?) Might need to be relocated due to sea level rise - residences, seafood business, and marina affected
11	Shipyard Lane Landing	-
12	Cumberland Avenue	At stream crossing can flood, rest of the area has enough Elevation to be safe
13	Fairlee Landing	Pier underwater with storm tide
14	Buck Neck Landing	Storm tide will flood section of Road along the water
15	Bessicks Corner Road	At Still Pond Creek Road - bridge and creek crossing flood at rain/tide combination
16	Still Pond Creek Landing	Road is low and near the water
17	Still Pond Neck Road	From creek crossing behind neighborhood to Coast Guard Station
18	Still Pond Road	At unnamed creek above Urieville Lake
19	Bloomfield Road	-
20	Turners Creek Landing	Parking lot will flood
21	Station Road	At Urieville Creek crossing
22	Daves Hill Road	Heavy rain + tide will back up creek
23	Duck Puddle Road	Just south of Dave's Hill - floods on heavy rain
24	Gregg Neck Road	Near private landing - tidal
25	Foxhole Landing	Can flood on strong tide
26	MD 313 bridge in Millington	Water at bottom of deck during storm tide; SHA: At Chester River Bridge - flooding issues during hurricane type storms
27	Sandfield	Millington neighborhood of West Street, Middle Street, and Race Streets has to evacuate for hurricanes. Sea level rise will make 12-15 homes in this neighborhood unlivable.
28	Shadding Reach Landing	On significant tide
29	Morgnec Road	East of MD 298 - flood on heavy rain
30	Mallard Road	Where the pond meets the river and crosses road
31	Brices Mill Road	At Langford Road - two wooden bridges can flood with very high Tides + rain
32	Quaker Neck Landing	And 1 house - tidal flooding
33	Cliffs City Road	Houses west of landing will be cut off by sea level rise
34	Bessicks Corner Road	There is a plan in place to close the road if the pond dam ever Fails

Table 4: Locations Identified by County Roads Staff and NFP Workgroup Members		
Map ID	Location	Notes from County Roads and NFP workgroup members
35	Cliffs City/Land's End Road/MD 289	Sometimes floods during significant events; SHA - end of state maintenance - flooding issues during heavy rain
36	Handy Point Road	-
37	Perkins Hill Road	Occasionally floods
38	Lovers Lane (Chestertown)	Occasionally where the pond is close to the road
39	Morgnec Road/MD 444	-
40	Ricauds Branch Road	Road just west of bridge can flood during significant events
41	Walnut Tree Road	Low bridge - floods during significant events
42	Golts Road	-
43	Quinn Road	-
44	Kennedyville Road	-
45	Olivet Hill Road	-
46	Cromwell Clark Road	At stream - flooding issues during heavy rain - pipe replaced but it is a large drainage area
47	Blacks Station Road	Where waterway meets the road
48	Turners Creek Road	At entrance to Sassafras NRMA
49	Worton Road	At intersection with Railroad tracks. Also floods along tracks behind the houses on Worton-Lynch Road
50	Augustine Herman Highway	Where waterway goes under the road
51	John Hanson Road/MD 289	-
52	MD 289	Where pond drains along shoulder
53	Massey Crossroads	-
54	Landing - end of High Street	-
55	Remembrance Park/Horsey Lane	-

These locations are mapped in Appendix I.

Table 5: Roadways Identified within the Minor Nuisance Flood Hazard Area		
Map ID	Road Name	County Owned (Y/N)
56	Berryman Rd	Yes
57	Blue Star Memorial Hwy	No
58	Buckingham Rd	Yes
59	Carolina Ave	No
60	Chesapeake Ave	No
61	Crompton Rd	No
62	Delaware Ave	No
63	Florida Ave	No
64	Hillmont Dr	No
65	Kentucky Ave	No

Table 5: Roadways Identified within the Minor Nuisance Flood Hazard Area		
Map ID	Road Name	County Owned (Y/N)
66	Landing Ln	No
67	N Hawthorne Ave	No
68	N Queen St	No
69	N Water St	No
70	Paradise Point Ln	No
71	River Rd	No
72	Rock Harbor Dr	No
73	S Cross St	No
74	S Hawthorne Ave	No
75	Spring Cove Rd	Yes
76	Tennessee Ave	No
77	Tolchester Beach Rd	Yes
78	Walnut Landing Rd	Yes
79	Walnut St	No

Source: [NOAA Coastal Flood Exposure Mapper – High Tide Flooding Imagery](#).

Roads are included on this Table if they were within the [Minor Flooding Impact Threshold](#).

These locations are mapped in Appendix I.

Table 6: Roads Identified by NFP Workgroup Members		
Map ID	Road Segment	Length (miles)
80	Allens Ln	0.57
81	Black Bottom Rd	2.50
82	Bogles Wharf Rd	0.70
83	Chesterville Bridge Rd	1.05
84	Grays Inn Landing Rd	0.06
85	Number Ten School Rd	1.52
86	Walnut Tree Rd	2.78
87	Black Bottom Rd	0.09
88	Bradford Johnson Rd	0.08
89	Golts Rd	0.07

These locations are mapped in Appendix I.

Table 7: Locations Identified by SHA for NFP Workgroup		
Map ID	Location	SHA Notes
90	MD 20	At Wesley Chapel - flooding issues during heavy rain
91	MD 298	At Buck Neck Road - flooding issues during heavy rain
92	MD 291	Edge Road - flooding issues during hurricane type storms
93	MD 291	East of Crane Street - flooding issues during hurricane type storms
94	MD 290	North of Chesterville - flooding issues during heavy rain
95	MD 299	At Sassafras River bridge - flooding issues during hurricane type storms
96	MD 289	At CRYCC pond - flooding issues during heavy rain

These locations are mapped in Appendix I.

Vulnerable Community Resources



Critical and public facilities as identified within the County's 2021 Hazard Mitigation Plan (HMP) are integrated into this Nuisance Flood Plan. These facilities were mapped in relation to the high tide flooding data layer included as part of NOAA's Coastal Flood Exposure Mapper. Critical facilities as assessed in the 2021 HMP include the following facility types: County Owned, Fire Stations, Educational, Medical, Police Stations, State Facilities, Water Treatment Plants, and Wastewater Treatment Plants.

There are a total of 84 critical and public facilities included in this database. Facilities were mapped relative to the minor flood threshold as this is equivalent to nuisance flooding. Results indicate that none of the identified facilities are within the minor flood threshold area.

Additionally, critical and public facilities within a 200-foot buffer around identified nuisance flood prone roadways were determined. Only one public facility was identified utilizing this method – the Cliff City Boat Ramp – which is a public landing at the end of Cliffs City Road, consisting of a bulkhead and pier. Nuisance flooding at this location would impact public usage of the boat ramp but, due to the rural nature of the ramp, would not prevent any residents from leaving or returning to their homes.

In addition to critical facilities, residential and commercial building structures were examined alongside the minor flood threshold. This analysis determined that 35 residential structures and 5 commercial structures are within the minor flood threshold geographic extent. Nearly half (i.e., 15) are within the Gratitude area which has been mapped in Figure 2, next page.

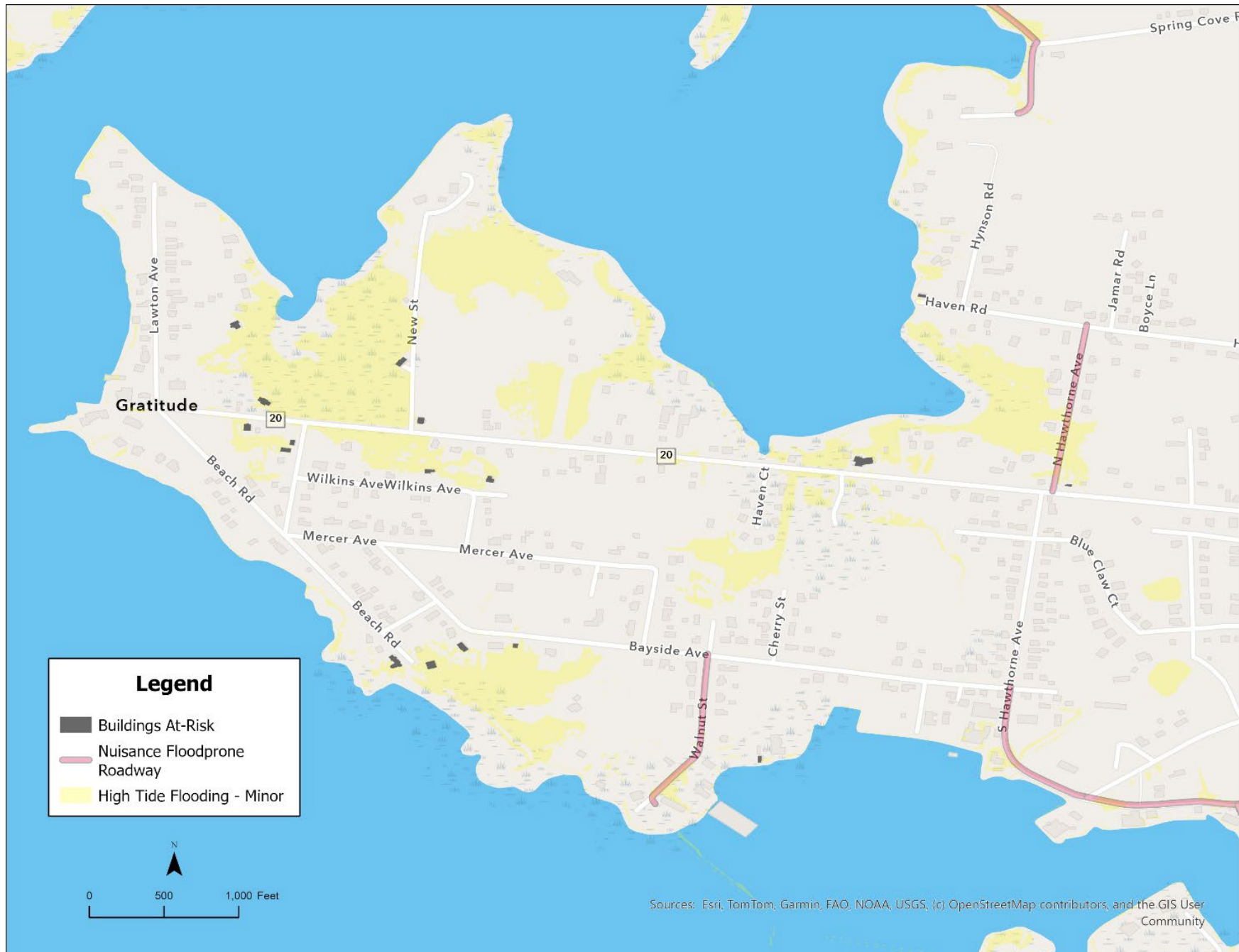


Figure 3. Buildings within NOAA's Minor High Tide Flooding area.

Social Vulnerability



Social vulnerability, particularly within the context of nuisance flooding, refers to the heightened susceptibility of certain groups or individuals to the impacts of frequent, shallow flooding, which can be disruptive and damaging even without causing major catastrophic events. These impacts can disproportionately affect communities with lower incomes, limited mobility, or other social and economic disadvantages. Nuisance flooding, characterized by its recurrent nature and often subtle but persistent impacts, exacerbates the vulnerability of these groups by disrupting daily life, impacting infrastructure, and potentially leading to long-term health and economic consequences.

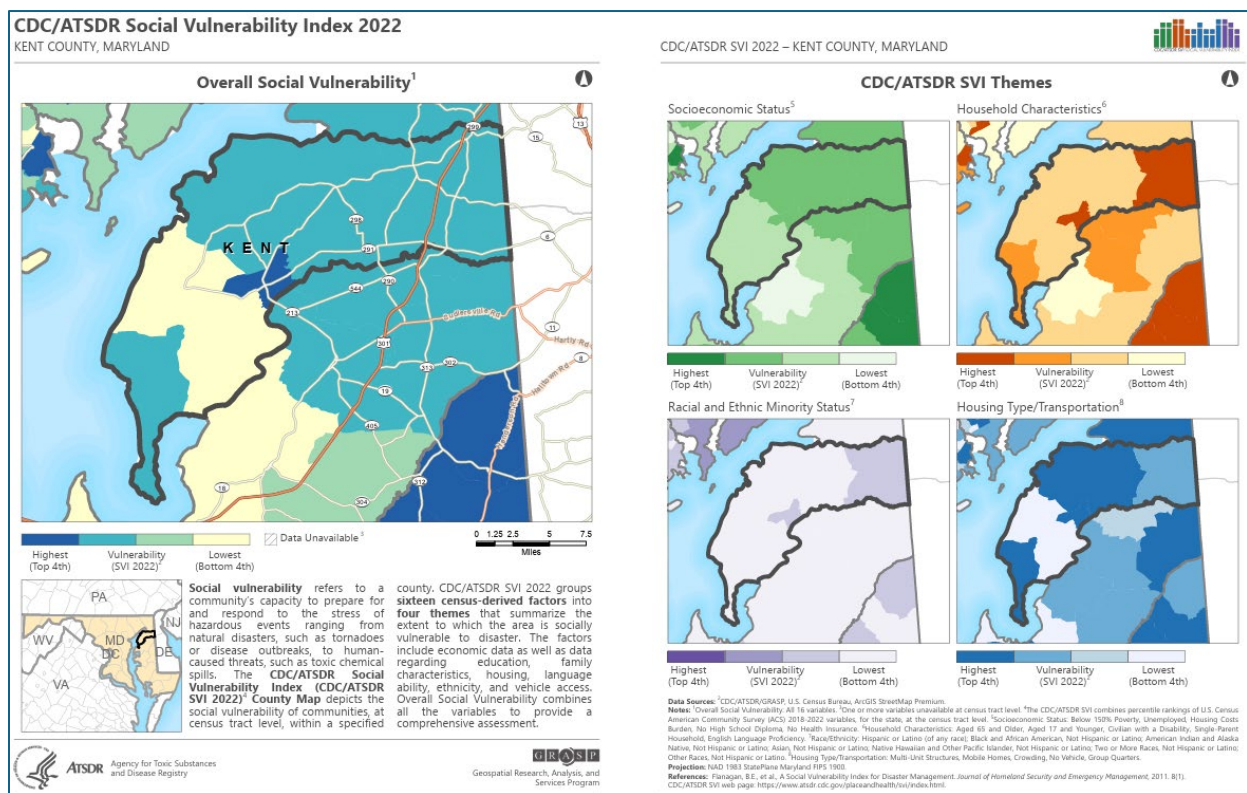


Figure 4. CDC Social Vulnerability Index 2022 for Kent County.

As depicted in Figure 4, the most socially vulnerable census tract in Kent County is 24029950300, which includes Chestertown. Compared to other census tracts in Maryland, social vulnerability in this part of Kent County is high. It is also worth noting that the southernmost census tract in the county, 24029950500, exhibits higher levels of social vulnerability and experiences a large amount of high tide flooding.

Kent County participated in the Maryland Department of Health Office of Preparedness & Response (OP&R) 2024 Jurisdictional Risk Health Assessment. Part of that assessment

involved determining each state jurisdiction's health vulnerabilities to natural hazards. Kent County identified flooding has the 2nd highest risk hazard in the county. Vulnerable populations in Kent County as identified by this risk assessment included:

- The older population - The county has a high percentage of residents aged 55 and older, at 46%. This makes the elderly population particularly vulnerable to the top hazards identified, including flood.
- Residents with limited transportation options - The county lacks a robust public transportation system, which could make it difficult for some, especially the elderly, to evacuate or access services during an emergency.
- Residents with limited broadband/internet access - Around 22% of the county's population lacks broadband access, which could impact their ability to receive emergency information and alerts.

Action Items and Recommendations



Activities and projects to reduce the impacts from nuisance flooding have been recommended as part of this plan update process. Recommendations are based on the identification of nuisance flood prone roadways, vulnerable community resources, and populations. The nuisance flood plan committee has reviewed and refined the recommendations included in the 2025 NFP.

Both the Comprehensive Plan and the Hazard Mitigation Plan for Kent County address measures by which the impacts of flooding can be mitigated, or lessened, by structural and nonstructural means. The purpose of the Nuisance Flood Plan is to augment and support the information and recommended actions found in other planning documents. According to the County's 2021 HMP (p. 1-16):

The Comprehensive Plan addresses the County's accelerated erosion by high winds and high tides, overland flow, and shoreline cliff sluffing and identifies strategies to reduce erosion along Kent County's 268 miles of tidal shoreline. Both the Comprehensive Plan and the Hazard Mitigation Plan identify shoreline control/stabilization measures and both residential and agricultural best management practices as viable means of reducing accretion/erosion of Kent's highly erodible soils. Both plans also emphasize the maintenance, enforcement, and strengthening of floodplain regulations and participation in the Community Rating System. All county projects will be evaluated for consistency with both the Comprehensive Plan and the Hazard Mitigation Plan.

The principles of floodplain management are fundamental to the proper mitigation of nuisance flooding in Kent County. Higher standards – such as freeboard, development restrictions in the floodplain, etc. – can be effective in mitigating the effects of both nuisance flooding and other major flooding events.

Kent County’s HMP identifies six broad categories for hazard mitigation activities. These categories include:

Public Education and Awareness. Actions to inform and educate citizens, elected officials, and property owners about potential ways to mitigate for hazards that can occur in the County. Such actions include outreach programs, projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

Prevention. Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection. Actions that involve the modification of existing critical and public facilities, buildings, structures, and public infrastructure to protect them from hazards. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and infrastructure modification.

Natural Resource Protection. Actions that, in addition to minimizing hazard losses also preserve or restore the functions of natural protection systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration preservation.

Emergency Services. Actions that protect people and property during and immediately after a disaster or hazard event. Services include warning systems and emergency response services.

Structural Projects. Actions that involve the construction of structures to reduce the impact of a hazard event. Such structures include dams, levees, floodwalls, seawalls, retaining walls, barrier islands, and safe rooms.

The 2021 HMP developed and prioritized action items specific to flooding, which might include nuisance flooding. Those action items identified as high priority are indicated.

1. Create awareness among county residents of the potential hazards associated with floodplain areas and the ways they can protect themselves and their properties from flood events. – **High Priority**
2. Consider adopting an expanded floodplain (i.e. including the 0.2% chance “500-year” floodplain) or a “coastal resilience overlay zone” for greater protection from sea level rise and an increased margin of safety against errors in FEMA flood risk maps.

3. Create a prioritized list of properties for land acquisition for flood mitigation and conservation.
4. Design with additional elevation when repairing or upgrading county bulkheads, retaining walls, jetties, riprap, and docks to preserve function with rising water levels.
5. Place fixed high-water signage on vulnerable bridges & roads. – **High Priority**
6. Develop a Flood Mitigation Plan. – **High Priority**

Note: recommendations included in this plan will be incorporated into Kent County's 2026 Hazard Mitigation Plan update, which is currently in development.

In addition to actions specified in the HMP, the NFP includes activities which Kent County will implement or consider implementing to mitigate the impacts of nuisance flooding. These activities, included in Table 8, support the four areas of focus found in the Hazard Mitigation Plan. They also support recommendations and actions from [Kent County's 2016 Climate Change and Sea Level Rise Adaptation Report](#) and goals and strategies of the [Kent County Comprehensive Plan](#).

Table 8: Recommended Activities To Reduce Impacts From Nuisance Flooding	
Structural	
o	Enact floodplain ordinance or codes which mandate the use of freeboard beyond current requirements. (Update: adopted 3 feet above freeboard in 2025)
o	Improve stormwater management infrastructure to convey water more effectively from flood-prone areas.
o	Conduct regular maintenance of drainage and stormwater control systems.
Nonstructural	
Public Information	
o	Communicate the risk of nuisance flooding in non-emergency times to residents and businesses via mass mailings, social media, press releases, or automated phone calls.
o	Disseminate flood preparedness information to enable a safer and more aware public in the face of flooding.
o	Integrate nuisance flooding-related public messaging in Kent County's existing public information plan and materials.
Planning	
o	Ensure Kent County's NFP is kept up to date and referenced in the Hazard Mitigation Plan and other pertinent locations.
o	Schedule meetings of the nuisance flooding planning committee on an as-needed basis to address flood-related issues and review plans.
o	Improve stormwater management planning and strengthen policies to reduce runoff.
Implementation	

- Educate and train County staff on responsibilities under the NFP.
- Preserve floodplains as open spaces through the use of legal protection status.
- Protect and restore natural coastal features (forests, marshes, dunes, underwater grasses, and oysters) that can reduce the impacts of flooding.

Recommended projects aimed at reducing the impacts of nuisance flooding have also been developed for this plan update. Projects, as included in Table 9, are more detailed than the proposed activities and are based on the county's current capabilities in relation to the areas in this plan identified as experiencing nuisance flooding. While recommended projects may take more coordination and resources to successfully implement, they are meant to be realistic in their scope for Kent County. Projects include a title, description and implementation, timeline (e.g., short term, medium term, long term), lead departments, and potential funding sources.

Table 9: Recommended Projects					
#	Project Title	Description & Implementation	Timeline	Project Partners	Funding Source(s)
1	Flood Sensor Network	Deploy cost-effective Wi-Fi (or hard lined) flood sensors at key flood-prone areas such as chronic sites (e.g., Fairlee Rd, MD 289, Chestertown). Integrate sensor data with GIS for real-time monitoring and alerts.	Long Term (5+ years)	Emergency Services, DPW, GIS	NOAA CPO, MD Resiliency Through Restoration Program
2	High Water Signage Installation and Monitoring Initiative	To reduce risk by placing fixed high-water signage at roadways frequently impacted by nuisance flooding, particularly in known flood-prone areas. The project will improve situational awareness, prevent accidental entry into flooded zones, and support emergency response operations.	Short Term (1–2 yrs)	DPW	HMGP, Maryland Resiliency Through Restoration Program, Local capital improvement budget (for signage/infrastructure), Chesapeake Bay Trust Green Streets, Green Jobs, Green Towns Grant
3	Roadway Flood Resilience Retrofit Plan	Elevate or redesign critical road segments (e.g., Quaker Neck Rd, Bogles Wharf Rd).	Long Term (5+ yrs)	DPW, SHA	MD DOT SHA Grants, FEMA HMA
4	Community Flood Ambassador Program	Train local volunteers to report flooding, assist neighbors, and raise awareness. This would also aim to increase local usage of MyCoast for nuisance flooding event reporting.	Short Term (1–2 yrs)	OES, Health Dept	Local health funds, AmeriCorps, MD OP&R grants
5	Flood-Ready	Recognize public/private facilities that	Short Term	Planning, Chamber	Local funds, Coastal Zone

Table 9: Recommended Projects					
#	Project Title	Description & Implementation	Timeline	Project Partners	Funding Source(s)
	Certification Program	implement flood mitigation strategies.	(1–2 yrs)	of Commerce	Management Program
6	Green Stormwater Infrastructure	Identify county-owned properties that may benefit from the installation of bioswales, rain gardens, or permeable pavement to reduce impacts of nuisance flooding. Use existing stormwater management plans to help identify and prioritize areas, as applicable.	Medium Term (2–3 yrs)	Public Works	EPA Clean Water SRF
7	Nature-Based Infrastructure Study	To the extent feasible, coordinate with organizations and non-profits that are actively constructing, or have plans to construct, sites for living shorelines, marsh restoration, oyster reefs (e.g., McKinleyville) on private properties. As a co-benefit, encourage sites that may also reduce impacts from nuisance flooding.	Medium Term (2–4 yrs)	DPW, Sea Grant, SCD	NFWF Coastal Resilience Fund
8	Stormwater Utility or Nuisance Flood Fee	Implement fee based on impervious surfaces to fund stormwater improvements. Assess and manage via Public Works.	Medium Term (2–3 yrs)	Public Works	Locally generated revenue
9	Interagency Flood Task Force	Coordinate Planning, DPW, OES, and Towns for cohesive response. Regular meetings and joint exercises.	Short Term (1–2 yrs)	Planning, Public Works, Emergency Services	Operational budgets, shared resources
10	Social Vulnerability Outreach Coordination	Coordinate with non-profits and other local entities to develop and support targeted outreach efforts to socially vulnerable populations that may be significantly impacted by nuisance flooding. The southernmost portion of the county experiences both high social vulnerability and nuisance flooding.	Short Term (1–2 yrs)	Planning, Public Works, Emergency Services, UMS, other local entities that work with socially vulnerable groups and/or cultural and historical sites.	Operational budgets, shared resources

Projections for Future Impacts



The areas impacted by nuisance flooding are projected to increase gradually in the coming years as changing climate elevates water levels and drives precipitation patterns to new extremes. This shift, however, is likely to accelerate gradually over time. New areas will also become impacted, leading to an increased number of businesses, residents, and critical infrastructure at risk. Public services will also be more frequently impaired as flooding increases.

Kent County will maintain a level of awareness of data made available by NOAA, the State of Maryland, the University of Maryland Center for Environmental Science, and other scientific institutions as it pertains to the community and local flood risks. These risks of increased nuisance flooding will be communicated appropriately to residents and decision makers and direct them to take appropriate action in the areas of emergency response and hazard mitigation. Elected officials and County staff will utilize venues such as County Commissioners' meetings and Planning Commission meetings to communicate information on long-term flood risks. Future projections of sea level change and nuisance flooding should also be integrated into land use planning, floodplain management, comprehensive planning, and capital investment planning.

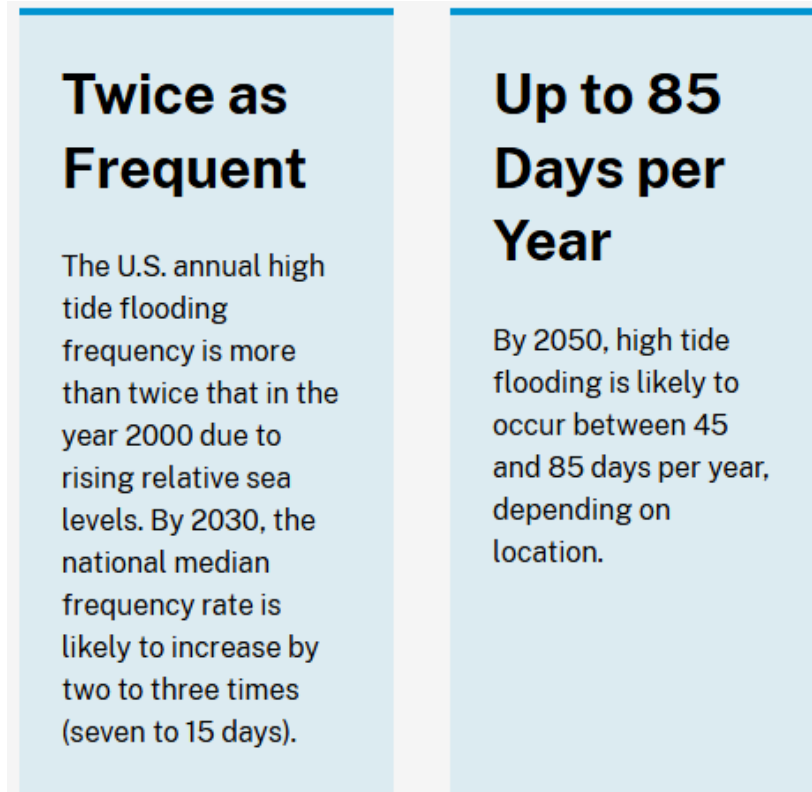


Figure 4. Nuisance Flooding Projections. Source: NOAA Office for Coastal Management.

Plan Implementation



To effectively implement the NFP Update, Kent County must meet both local objectives and comply with statewide requirements under Maryland Senate Bill 1006 and updated State of Maryland Nuisance Flood Plan Development Guidance (2024). The following implementation steps aligns these requirements with Kent County's specific capabilities.

1. **Develop and adopt** a nuisance flood plan (✓ already done for 2025).
2. **Submit** the plan to the Maryland Department of Planning (MDP) for review. Other agencies, such as DNR, may also review the NFP.
3. **Publish** the plan on the county's website. Kent County will make the NFP available online at www.kentcounty.com, as well as make printed copies available upon request.
4. **Update** the plan at least **every 5 years**.

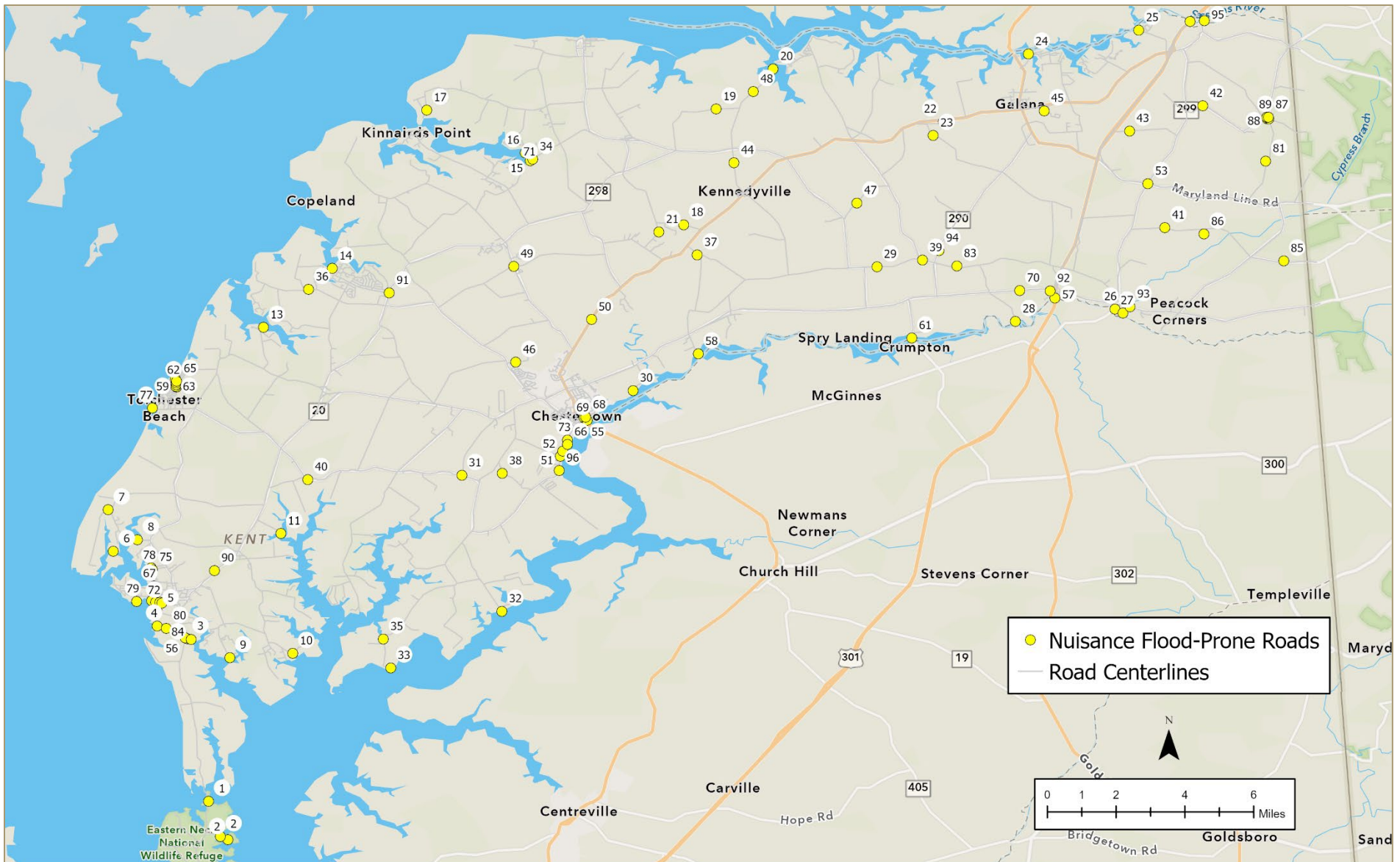
The Kent County Department of Planning, Housing and Zoning will remain the lead agency for conducting implementation. Office of Emergency Services, Department of Public Works, and GIS will support planning. Ideally, the Planning Department designates an NFP Implementation Coordinator who would oversee coordination, scheduling, projects, and grant pursuits in the next five-year planning period.

Meetings to discuss potential updates to the NFP will be held annually, with representatives from the steering committee and stakeholder group as identified in Appendix II. Representatives from outside these identified groups will also be invited to attend, as necessary. Additionally, Kent County will continue to document occurrences of nuisance flooding over the next five years through utilization of the 9-1-1 Nuisance Flooding Documentation Tool in Appendix III.

The county will continue outreach with the public regarding flooding, including nuisance flooding. Outreach is conducted through the county's website, social media, and media release. Outreach efforts also provide the county with an opportunity to keep residents up to date on the status of nuisance flood projects, gather feedback from impacted communities (e.g., Chestertown and Rock Hall), and share any other relevant NFP updates.

Finally, the NFP will help inform other planning documents, including future updates to the Hazard Mitigation Plan, Comprehensive Plan, Capital Improvement Plans, and other planning documents and efforts related to nuisance flooding, shoreline erosion, and/or infrastructure resilience.

Appendix I – Map of Identified Nuisance Flood-prone Roadways in Kent County



Nuisance Flood-Prone Roads

Nuisance Flood-Prone Roads are listed on Tables 4, 5, 6, and 7. The Map ID included on each table corresponds to the numbered nuisance flood-prone road depicted on the map.

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

Appendix II – Nuisance Flooding Committee Members

Steering Committee		
Name	Agency	Email
William Mackey	Kent County Department of Planning, Housing, and Zoning	wmackey@kentgov.org
Brian Pearsall	Kent County Office of Emergency Services	bpearsall@kentgov.org
Owen Bailey	Eastern Shore Land Conservancy	OBailey@eslc.org
Dan Mattson	Kent County Department of Public Works	dmattson@kentgov.org
Robert Baldwin	Kent County Soil Conservation District	rbaldwin@kentgov.org
Rob Tracey	Kent County Planning, Housing and Zoning	rtracey@kentgov.org

Stakeholder Committee		
Name	Agency	Email
Tyler Arnold	Kent County Planning, Housing and Zoning	tarnold@kentgov.org
Dan Bitter	Kent County Department of Public Works	dbitter@kentgov.org
Mike Usilton	Kent County Department of Public Works	musilton@kentgov.org
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Dr. Erin Crowley-Champoux	University of Maryland Sea Grant Extension	eacc1@umd.edu
Dr. Kayle Krieg	University of Maryland Sea Grant Extension	kayle@umd.edu

Municipal Representatives		
Name	Agency	Email
Town Manager Tom Mogle	Town of Betterton	tmogle@townofbetterton.com
Bradley Moore	Town of Chestertown	zoning@chestertown.com
Mayor John Carroll	Town of Galena	jcarroll@townofgalena.com
Town Manager Jo Manning	Town of Millington	townadmin@millingtonmd.us
Town Manager Bob Resele	Town of Rock Hall	rresele@rockhallmd.gov

Appendix III – 9-1-1 Nuisance Flooding Documentation Tool

9-1-1 Nuisance Flooding Log										
Date	Time	Caller's Name	Caller's Phone	Dispatcher	Location Information	Impacts	Agency Notified	Agency Staff Notified (Name)	Action Taken (if known)/Notes	Trigger