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Calvert County Flood Mitigation Plan: 2023 Annual Progress Report

Under the Federal Emergency Management Agency’s (FEMA) Community Rating System (CRS) Program, an annual report providing implementation status for the Calvert County Flood Mitigation Plan must be presented to the Calvert County Board of County Commissioners (BOCC). The status report must also be distributed to the media and be made publicly available. This Annual Progress Report will be advertised in a press release and published on Calvert County Government’s website.

Background

Calvert County’s 2011 “Flood Mitigation Plan for Calvert County, Maryland” was prepared by the Hazard Mitigation Steering Committee, consisting of representatives from Calvert County government, the Towns of Chesapeake and North Beach, residents, and consultants. The Hazard Mitigation Steering Committee met four times between November 2008 and June 2009, and held two public forums (April and June of 2009). The Plan was prepared between June 2009 and June 2011. Public hearings were held on July 20, 2011, before the Calvert County Planning Commission and July 26, 2011, before the BOCC. The BOCC adopted the Plan on August 24, 2011 (Resolution 2011-28-11).

Pursuant to Maryland House Bill 1427 (2019), §3-1018(b) and (c), the county submitted to the Maryland Department of Planning a plan to address nuisance flooding and posted this plan on the county’s website.¹

Update

Calvert County Government is updating the countywide flood mitigation plan, with expected completion in 2024. The Department of Planning & Zoning is leading this effort, along with the Department of Public Safety Emergency Management Division (DPS EMD), the Department of Public Works, and the Department of Technology Services, GIS Division. The Flood Mitigation Plan Planning Team consists of representatives from Calvert County government, MCM Consulting Group, and solicits feedback from residents. The Planning Team began meeting in October 2023 and held their first public meeting December 12, 2023. The plan update was introduced to the Planning Commission on November 15, 2023.

The FMP update will include updated hazard maps, flood data analysis, assessments of flood insurance claims, assessment of ecosystem services, and development trends. This updated plan will link local flood mitigation plans, reflect updates from the National Flood Insurance Program (NFIP), and address nuisance flooding. “Nuisance flooding” is defined as “high-tide flooding that causes a public inconvenience.”²

¹ Calvert County Department of Planning & Zoning, Nuisance Flooding Plan for Calvert County (1 Oct. 2020), <https://www.calvertcountymd.gov/DocumentCenter/View/32539/Nuisance-Flooding-Plan-for-Calvert-County---2020>.

² Md. Code Ann. Natural Resources §3-1001.

Contents of the 2011 Calvert County Flood Mitigation Plan

The state recommends that each plan include three critical components: an inventory of known flood hazard areas where tidal nuisance flooding occurs; identification of flood thresholds/water levels/conditions that lead to tidal nuisance flooding; and a mechanism to document tidal nuisance flood events and response activities.

Calvert County's 2011 Flood Mitigation Plan includes:

- The county's flooding history;
- A description of flooding issues impacting the county;
- A flood vulnerability assessment;
- Preventive measures (i.e., regulatory requirements, educational outreach, building codes, watershed management plans, NFIP measures);
- Property protection plans (i.e., relocation, elevation, flood insurance);
- Emergency services plans (i.e., emergency recognition, warning, response, critical facilities protection, recovery);
- Structural projects inventory (i.e., dams, bridges);
- Natural resource protection (i.e., wetland protection and forestland conservation, soils and erosion control); and
- Public outreach efforts (i.e., interactive GIS floodplain map).

Calvert County Flood Mitigation Goals

The Plan includes eight goals, supported by 35 actions. The eight goals are:

- 1) Direct population concentrations away from known or predicted high flood hazard areas through appropriate regulations.
- 2) Ensure new construction and reconstruction are resistant to flood damage.
- 3) Existing natural resources and open-space within the floodplain and watershed should be protected.
- 4) Ensure continued coordination during emergencies.
- 5) Ensure critical facilities are less vulnerable to flooding.
- 6) Reduce potential disruption of the county's infrastructure during hazard events.
- 7) Protect existing natural resources and open-space within the floodplain and watersheds.
- 8) Increase flood-awareness among county residents.

Calvert County Flood Mitigation Action Items & Status of Action Items

Action 1: Based on sea level rise and wave action, adopt a 2-foot minimum freeboard (currently 1 foot) above the base flood elevation for the county and municipalities.

Done.

In 2011, Calvert County amended its floodplain ordinance language, modeled after the FEMA's model ordinance, which includes a two-foot freeboard requirement. The ordinance was amended 11-10-2011 by Ordinance No. 43-14; Zoning Ordinance reference § 8-2.03.J.3.a (Elevation Requirements).

Action 2a: Review zoning density and restrict zoning to low density in the 100-year floodplain (conservation, agricultural or large lot residential use) outside the Town Centers.

In Progress.

This is being considered as part of the county's Zoning Ordinance update, which is ongoing.

Action 2b: Consolidate the floodplain ordinance into the County's Zoning Ordinance.

Done.

The floodplain ordinance is found in Calvert County's Zoning Ordinance, § 8-2.03 Floodplain Area.

Action 3: Emphasize the criticality in rejoining the CRS Program. Hire a consultant to complete the CRS application and develop a template for future use.

Done.

In May 2015, FEMA approved Calvert County's participation in the CRS Program with a rating of 8, representing a 10% reduction in flood insurance premiums for property owners owning structures in the Special Flood Hazard Areas. In April, 2023, this discount was applied to all property owners within Calvert County. The Department of Planning & Zoning currently reports on CRS status and is currently updating the Flood Mitigation Plan, which will improve Calvert County's CRS rating.

Action 4a: Riverine FIRMs have been completed and coastal FIRMs are underway. Incorporate coastal information once available and dFIRM (riverine) information into future flood mitigation planning efforts.

In progress.

The Flood Insurance Rate Maps (FIRMs) were officially approved and adopted on November 19, 2014. The new FIRM information was integrated into Calvert County's small area flood mitigation planning. Under the National Oceanic and Atmospheric Administration's (NOAA) Coastal Communities Initiative Grant (administered by Maryland's Department of Natural Resources), P&Z completed several small area flood mitigation plans for some of the county's most flood-prone communities:

- The Cove Point Community Flood Mitigation Plan was adopted in 2014. Cove Point is the county's most flood-prone community.
- The Broomes Island Flood Mitigation Plan was adopted in 2016. Broomes Island is the county's second most flood-prone community.
- The Breezy Point and Neeld Estate Flood Mitigation Plan was drafted in 2016. Breezy Point/Neeld Estate is the county's fifth most flood-prone area.
- The Solomons Flood Mitigation Plans began being drafted in 2017.
- The municipalities of the Town of Chesapeake Beach and the Town of North Beach have flood mitigation plans. These towns are responsible for their plans' adoption, at their discretion. The towns are the third and fourth most flood-prone communities in the county. On July 13, 2023, the Town of North Beach adopted the 2023 North Beach Compound Flood Action Plan.³
- Digital FIRMS (dFIRMs) are used in flood mitigation efforts.

Action 4b: Continue to require that recorded subdivision plats show the 100-year floodplain.

Done.

Applicants must show the 100-year floodplain on subdivision plats.

Action 5a: Consider elevation or acquisition of the identified repetitive loss properties in specific areas – all of Cove Point, and Means Drive and Bayside Drive in Chesapeake Beach.

Ongoing.

The Division of Emergency Management (EM), in coordination with the Department of Planning & Zoning, continues to support County residents interested in mitigation activities for their properties in the floodplain. In 2023, EM staffed a new position for a Hazard Mitigation Specialist to coordinate hazard mitigation grant applications and projects.

Grant activities for 2023 include the following: EM received a grant award for \$302,525.12 in federal funding for the acquisition and demolition of a repetitive flood loss property on West Ave. in Dares Beach; a new application was submitted for FY2023 Flood Mitigation Assistance for mitigation reconstruction of a repetitive

³ See https://www.northbeachmd.org/sites/g/files/vyhlf4786/f/uploads/2023-06-28_north_beach_compound_flood_action_plan_final.pdf.

loss flood property in Long Beach; and staff continued to support homeowners in Long Beach, Broomes Island, and Neeld Estates with elevation projects funded in 2018.

Action 5b: Develop a comprehensive plan that identifies specific properties for acquisition, demolition, or flood-proofing of structures in Cove Point Beach, Lusby.

Not started.

The Division of Emergency Management has worked with multiple homeowners in Cove Point who are interested in acquisition or elevation; however, participation in these programs is voluntary.

Action 6: Consider lowering the threshold for cumulative substantial improvements from 50 percent to 40 percent so that more buildings meet the flood protection standards.

Rejected by FEMA.

This was discussed with FEMA representatives in 2022 and deemed an unwise action. However, staff is considering adopting a cumulative ten-year period for calculating Substantial Improvement and Substantial Damage.

Action 7: Identify uninsured property owners in known flood hazard areas and encourage them to purchase flood insurance.

Ongoing.

P&Z conducts this action on a case-by-case basis and informs residents owning property in the floodplain that flood insurance is mandatory. This is accomplished through permit review; public outreach efforts involved with preparing the small area flood mitigation plans for Cove Point, Broomes Island, Breezy Point, Neeld Estate, and the Towns of Chesapeake and North Beach; public outreach through the CRS Program including notifying property owners in repetitive loss areas; and through public outreach informing residents of flood hazards and sea level rise scenarios.

Planning & Zoning staff are working with the Department of Communications & Media Relations to release a five-part video series on regulated floodplains, the effects of living in a Special Flood Hazard Area, substantial improvements or damage, the National Flood Insurance Program, and the importance of the Community Rating System. Finally, staff is updating the County's floodplain management websites and planning further public education of flooding hazards during the update of the flood mitigation plan.

Action 8a: Identify more state-of-the-art capabilities to provide emergency services to the public.

Done.

Calvert County's DPS EMD has upgraded its mass notification system to send targeted messages to high risk groups. Additionally, NOAA has started to conduct river gauge projections, which allows DPS EMD to see predicted flood level estimates. This allows DPS EMD to notify residents who may be affected by flooding prior to the potential flood event.

Action 8b: Ensure more complete notifications to the public throughout the county, particularly in the northern end of the county where sirens are ineffective.

In progress.

The Division of Emergency Management continues to expand its implementation of Calvert County Alert for residents county-wide. Residents are able to sign up for many different types of alerts, including ones for hazardous weather. When hazardous weather is anticipated or occurring, EM coordinates closely with Communications and Media Relations to ensure cross-posting of important alerts across the County website and social media platforms. Additionally, residents are able to download the Calvert Prepare mobile app to access more information and planning resources. Calvert Prepare also links to the MyCoast mobile app to encourage the reporting of flooding throughout the County. Lastly, EM actively promotes Maryland's Know Your Zone campaign to increase awareness and understanding of hurricane evacuation zones.

Action 9: Prepare a power-backup plan for the county's critical facilities. Incorporate SMECO's Reliability Project to improve power service to the county.

Done.

The Division of Emergency Management has upgraded its emergency generator systems for the courthouse and all critical facilities. In addition, the Southern Maryland Electric Cooperative (SMECO) Reliability Project, which upgraded a 230-kV power line feeding into Calvert County, was completed in November 2014. The SMECO Reliability Project isolates problems on the transmission system and re-routes power to minimize large-scale, time-consuming service disruptions. The upgrade provides more reliable power service to Calvert County, including its critical and county facilities.

Action 10: Continue to develop routine procedures that require examination of the potential for flood damage to road, culvert, water line, or sewer line as well as regular maintenance.

Ongoing.

The Department of Public Works is working with the University of Maryland to examine changing precipitation patterns and their interplay with stormwater infrastructure.

Action 11: Conduct a flood audit to identify ways to protect critical facilities in or near the 100-year floodplain: Industrial Park Wastewater Treatment Plant on Skipjack Road; Chesapeake Beach Wastewater Treatment Plant; North Beach Water Treatment Plant; North Beach Volunteer Fire Company; Our Lady Star of the Sea School; and Hallowing Point Station and Solomon's Police Station. The flood audit should include a review of the flood hazard at site, low entry points, warning times, etc. as well as specific mitigation options to prevent future damage.

In Progress.

The Industrial Park Waste Water Treatment Plant (WWTP) has been closed, and all sewage from the Industrial Park is pumped to the Prince Frederick WWTP. According to the Calvert County Flood Mitigation Plan, the county does not have any critical facilities in the 100-year floodplain (p. 23). Rather, the above referenced facilities are within 100 meters of the 100-year floodplain.

The State of Maryland owns the Hallowing Point Station Building, and it has begun a planning study to relocate the building out of the floodplain.

The Chesapeake Beach Waste Water Treatment Plant (WWTP) is located outside of the floodplain; however, the WWTP is impacted by inflow and infiltration (I&I) and due, in part, to its proximity to the 100-year floodplain. The Town of Chesapeake Beach has installed measures to address I&I. For example, "cups" were placed on some of the manholes subject to flooding; pumps and tanks were installed at 31st Street and C Street to pump rain and nuisance flood waters to the row boat marina; a shellfish protection tank was installed to store a day's worth of flow for the plant and store rain; the revetment was raised at the end of Bayside Road (MD 261) and 28th Street. I&I has been addressed within the WWTP service area serving the Town of Chesapeake Beach, and a Scadia System was installed to gauge if there is I&I coming from the portion of the WWTP service area serving Anne Arundel County. A flood gate was installed in 1987/1988. However, the Critical Area Commission required that the flood gate remain open to allow the natural flow of water. The flood gate has been open ever since and is now suspected to be rusted open.

The North Beach Volunteer Fire Department is subject to nuisance flooding from rainwater flowing from adjacent uplands in the Town of Chesapeake Beach and Calvert County. P&Z met with the Town of Chesapeake Beach in May 2016 to identify flooding/nuisance flooding issues.

A flood audit still needs to be conducted for Our Lady Star of the Sea School and the Sheriff's Office Substation in Solomons.

Action 12a: Elevate the entrance into the Cove Point neighborhood to allow easier access during emergency situations.

Rejected due to geographic features.

If elevating the entrance to Cove Point (Lighthouse Boulevard) were done, managing the stormwater runoff would be a challenge. A drainage ditch adjacent to the roadway would not be an adequate stormwater management measure. The combination of sandy soils and a high water table will contribute to a drainage ditch's eventual and inevitable failure. Several years ago, the county installed a drainage ditch along the south side of Lighthouse Boulevard that was three feet wide and three feet deep, accompanied by an 18-inch pipe for water storage. The drain worked for two to three years, but due to the fact that Cove Point is a sand spit, located in the floodplain and next to a tidal marsh, the drain failed/filled. The drainage ditch adjacent to the Cove Point Marsh has also failed due to the same reasons. Culverts under the road are also not an option because they are likely to become clogged and become a maintenance issue or fail. Additionally, clogged culverts could worsen flooding. Therefore, elevating the road may alleviate flooding at the community's entrance, but it will likely cause drainage and flooding issues in other areas of the neighborhood, potentially exacerbating existing flooding (details on page 16 of the Cove Point Community Flood Mitigation Plan).

Action 12b: Investigate the possibility and feasibility of constructing a culvert with riser from the southwest corner of the Cove Point freshwater marsh to the Chesapeake Bay along Park Drive to mitigate flooding of Cove Point from freshwater sources.

Rejected due to geographic features.

See answer to Action 12a.

Action 13: Continue to implement stormwater best management practices (BMPs) during construction or as part of a project's design to permanently address nonpoint source pollutants. In addition to improving water quality, BMPs can have flood related benefits. By managing runoff, they can attenuate flows and reduce the peaks after a storm.

Ongoing.

Action 14 a: Prepare a presentation to demonstrate future adverse impacts caused by development not accounted for, and the benefits of planning, improved mapping and regulatory standards.

Not started.

The update of the flood mitigation plan will include improved mapping.

Action 14b: Include information on hazards in the county's and municipalities' newsletters (*Calvert Currents*) as the well as county's website.

Ongoing.

Planning & Zoning staff are revising the county's website to ensure information accessibility. *Calvert Currents* addressed the following flood-hazard issues: cliff instability in the area of Driftwood Beach in Lusby (March 28); hurricane season and the alert system (June 12 and 20, July 31); National Preparedness month and the Calvert ALERT system (Sept. 4); and advertising an update to the flood mitigation plan and seeking public feedback via a five-minute survey (Dec. 18).

Action 14c: Conduct environmental and safety education programs to teach children about flooding, forces of nature, significance of protecting watersheds and floodplains and educate the floodplain property owners and elected officials.

In Progress.

In 2023, Planning & Zoning staff worked with the Environmental Commission at three outreach events: Earth Arts Fest (April 22, 2023); Calvert County Fair Youth Day (September 29, 2023); and Patuxent River Appreciation Day (October 7, 2023). At these events staff demonstrated a 3-D watershed model, handed out

information sheets, operated a prize-wheel where participants could win prizes for answering questions about Calvert County's environment.

Action 15: Continue to promote the use of NOAA radios as a source of immediate information by disseminating information at public meetings, community and senior centers, and citizen associations.

Ongoing.

Action 16: Conduct training sessions on the use of dFIRMS to stakeholder groups including planners, engineers, realtors, and community leaders.

Ongoing.

The Maryland Department of Emergency Management and FEMA periodically hold these trainings and these are advertised in the county newsletter.

Action 17a: Make dFIRMS available for download on the county website.

Modified and done.

Residents are now directed to the FEMA Flood Map Service Center (MSC) to obtain dFIRMS. The MSC is the official online location to find all flood hazard mapping products created under the NFIP and is the authoritative source for dFIRMS.

Action 17b: Develop a map website that allows users to determine their FIRM zone and other property information. Also consider adding links to gauges to provide real-time water levels and National Weather Service flood crest predictions. Include additional data with aerial photographs and information on additional hazards, flooding outside mapped areas, and zoning and development regulations.

Done.

The county has developed a floodplain map for the public which provides the following information: (1) flood zone; (2) base flood elevation; and (3) Limit of Moderate Wave Action (LiMWA). See

https://geocortex.calvertcountymd.gov/Public/Index.html?configBase=http://ccg-gisweb04.ccgext.local/Geocortex/Essentials/Public4120/REST/sites/Flood_Hazard/viewers/HTML5_4_12_1/virtualdirectory/Resour.

Action 18: Include public awareness and outreach activities related to floodplain management as part of the Patuxent River Day activities.

Done.

See response to Action 14c.

Action 19a: For a property in North Beach, consider the following actions: a) install water equalizing vents to allow flooding without damage; and c) elevate all utilities above the Base Flood Elevation.

Ongoing.

The Division of Emergency Management has not received any requests from homeowners in this area for information on acquisition or elevation.

Action 19b: For properties on Mears Drive in Chesapeake Beach, consider the following actions: a) install water equalizing vents to allow flooding without damage; and b) elevate all utilities to upper floor level.

Ongoing.

The Division of Emergency Management has not received any requests from homeowners in this area for information on acquisition or elevation.

Action 19c: Consider acquisition and demolition of properties on Bayside Road in Chesapeake Beach. As a short-term option, install flood shields at all door openings and elevate all utilities above the Base Flood Elevation.

Ongoing.

The Division of Emergency Management has not received any requests from homeowners in this area for information on acquisition or elevation.

Action 20: Investigate the feasibility of constructing a flood wall in the Towns of Chesapeake Beach and North Beach that would protect the residential and commercial properties in the two towns.

Ongoing.

In 2022, the Division of Emergency Management provided technical assistance to the Town of North Beach for a Flood Mitigation Assistance grant application for flood mitigation along 5th and 7th Streets. Award notifications were released in 2023; the application was not selected for funding.

Action 21a: Work with the Flood Hazard Mitigation Steering Committee and members of the public who are interested in flood-related issues to implement this plan and review its progress.

Modified and in progress.

The Department of Planning & Zoning is leading an interdepartmental group in updating the countywide Flood Mitigation Plan. This includes representation from our Communications and Media Relations Department and public outreach planning.

Action 21b: Meet every six months to review projects that have been completed, altered, or are no longer applicable.

Modified and in progress.

See answer to Action 21a. The interdepartmental group meets regularly as part of updating the flood mitigation plan.

Action 21c: Update the Flood Mitigation Plan every five years and after a flood event.

Ongoing.

Staff are currently updating the flood mitigation plan, scheduled to be completed in 2024.

Action 21d: Integrate this Plan into the All-Hazard Mitigation Plan as an annex.

Done.

The Calvert County, Maryland 2010 Hazard Mitigation Plan Update was approved by the BOCC on July 26, 2012. The plan includes the Flood Mitigation Plan as Appendix A. The Calvert County, Maryland 2018 Hazard Mitigation Plan Update was approved by the BOCC on July 12, 2018. The 2018 Hazard Mitigation Plan has been organized to align with the goals of the Flood Mitigation Plan and references the information included within the document throughout the plan.

The Calvert County Hazard Mitigation Plan is currently being updated; the updated flood mitigation plan will be added as an appendix.

Action 22) Investigate flooding of Western Shores Blvd. with Western Shores Citizen Association.

Not started.

Summary of Status of the Actions and Recommendations

Of the 35 actions, 10 are done, 7 are in progress, 12 are ongoing, 3 were rejected as not feasible, and 3 have not begun.

1. The Department of Planning and Zoning is performing a comprehensive update of Calvert County's Flood Mitigation Plan. The next public meeting for updating the Flood Mitigation Plan is scheduled January 18, 2024.
2. When the Division of Emergency Management applies for another round of FEMA Hazard Mitigation Grant monies, continue to reach out to property owners on Mears Drive and Bayside Road in Chesapeake Beach (addresses action item 5).
3. The Calvert County Nuisance Flood Plan can be found on the County website at <https://www.calvertcountymd.gov/554/Floodplain-Management>.
4. When the Calvert County Comprehensive Plan and Zoning Ordinance are updated, review zoning density and suggest restricting zoning to lower density in the 100-year floodplain (conservation, agricultural or large lot residential use) outside of Town Centers, and consider designating a zoning district for the 100-year floodplain, similar to the county's current wetlands zoning district (addresses action item 2).
5. Initiate and/or complete actions/sub-actions 11, 14a, 14c, 21a, 21b, and 22 when resources become available.
6. Calvert County's Community Assistance Visit is set for the Fall of 2024 and Calvert County is seeking to improve their CRS score.