

2023

Hampton Roads Hazard Mitigation Plan City of Norfolk Annual Report

June 2022 Final

Hampton Roads Hazard Mitigation Plan



City of Hampton
City of Newport News
City of Poquoson
City of Williamsburg
James City County
York County
City of Norfolk
City of Portsmouth
City of Suffolk
City of Virginia Beach
City of Chesapeake
Isle of Wight County
Town of Smithfield
Town of Windsor
City of Franklin
Southampton County
Surry County
Town of Claremont
Town of Dendron

AECOM

Department of City Planning

City of Norfolk

7/11/2023

Summary

In 2022, the Hampton Roads Planning District Commission updated the Hampton Roads Hazard Mitigation Plan. The City of Norfolk worked with the communities of Virginia Beach, Suffolk, Chesapeake, and Portsmouth on the Southside; the communities of Hampton, Newport News, Poquoson, Williamsburg, James City County, and York County on the Peninsula; and the communities of Isle of Wight County, Smithfield, Windsor, Franklin, Southampton County, Boykins, Branchville, Capron, Courtland, Ivor, and Newsoms in Western Tidewater to develop this plan.

This plan addresses goals and mitigation measures for hazards that Hampton Roads faces and serves as the Flood Mitigation Plan for the City of Norfolk. The region is vulnerable to a wide range of hazards that threaten the safety of residents, and have the potential to damage or destroy both public and private property and disrupt the local economy and overall quality of life. While the threat from hazards may never be fully eliminated, the Hampton Roads Hazard Mitigation Plan recommends specific actions designed to protect residents, business owners, and the built environment.

As part of our continued participation in the Community Rating System (CRS) program, a report of this plan and the progress the City of Norfolk has made in implementing the actions is required annually. This report will provide an overview of the City's efforts to complete the mitigation actions presented below.

The report is to be provided to City Council, as well as the National Flood Insurance Program, and will be published on the City of Norfolk flood awareness webpage for citizen review. This report will list the goals and objectives of the 2023 Hampton Roads Hazard Mitigation Plan and detail the actions that the City of Norfolk has taken to achieve these goals.

2022 Hampton Roads Hazard Mitigation Plan

Purpose:

- Protect life and property by reducing the potential for future damages and economic losses that result from natural hazards;
- Qualify for additional grant funding, in both the pre-disaster and post-disaster environment;
- Speed recovery and redevelopment following future disasters;
- Integrate existing mitigation documents;
- Demonstrate a firm local commitment to hazard mitigation principles; and
- Comply with state and federal legislative requirements tied to local hazard mitigation planning.

Goals and Objectives:

Goal 1: Increase community resiliency by reducing vulnerability to hazards.

- Objective 1.1: Reduce damage to repetitively flooded properties
- Objective 1.2: Protect existing and future development
- Objective 1.3: Protect critical facilities/infrastructure
- Objective 1.4: Maintain government services throughout hazard events
- Objective 1.5: Reduce hazard-related impacts on daily routines
- Objective 1.6: Preserve and enhance benefits of natural areas

Goal 2: Educate the public about hazard vulnerabilities and ways to reduce risk

- Objective 2.1: Encourage property owners to assume responsibility for reducing vulnerability

Goal 3: Strengthen and develop partnerships for mitigating hazard impacts

- Objective 3.1: Integrate mitigation concepts into local and regional government plans, policies and actions
- Objective 3.2: Improve and standardize hazard data collection and mapping
- Objective 3.3: Leverage shared resources in pursuit of funding for hazard mitigation projects
- Objective 3.4: Develop partnerships among local, regional, national, and international organizations

The City has instituted several policies that incorporate resilience strategies and green infrastructure measures into a comprehensive plan for protecting the City. Norfolk has implemented a Resilience Strategy, a Green Infrastructure Plan, Vision 2100, and new Zoning Ordinance. The recently adopted Zoning Ordinance requires resilient design either by additional stormwater management and design or by innovative and green construction design.

City of Norfolk Hazard Mitigation Plan Actions and Action Implementation

Mitigation Action 1: Maintain and protect the City’s beaches and shorelines using structural means.

Action Implementation: Ongoing – Norfolk has undertaken several projects to protect 144 miles of shoreline and 7.3 miles of beaches that are in progress through the Department of Public Works: Stormwater Division and The Office of Resilience. Projects include but are not limited to:

- A new fully accessible beach access ramp at Bay Point Drive to carry visitors across the primary dune line and directly onto the beach.
- Completed construction on the revetment at the end of Westwood Terrace.
- The design of the outfall extension at Chesapeake Blvd (to ensure no conflicts between drainage and beach expansion/maintenance).
- The design of a berm at Sylvan and Walnut Hill.
- Construction on seawall repair and berm installation at Cambridge and Carroll Place.

Mitigation Action 2: Maintain and protect the City’s beaches and shorelines using natural shoreline protection measures.

Action Implementation: Ongoing – The Public Works: Stormwater Division and Office of Resilience have projects which restore the natural protective functions of the beaches and shorelines. Projects include, but are not limited to:

- Construction of the Pleasant Point Living Shoreline, and the design of living shorelines at Riverside Memorial Park, Granby Street Park, Walters Drive, East Ocean View Community Center, and Highland Park
- Placement of Beach Grasses and protective sand fencing in various locations to preserve the integrity of the primary dune line.
- Approximately 264,500 CY of sand has been placed along the beach in Willoughby and West Ocean View in conjunction with the Virginia Port Authority project to deepen the Thimble Shoal Channel.
- The development of a Water Quality Master Plan, to identify future shoreline and water quality projects, has begun.

Mitigation Action 3: Provide educational engagement and improve communications to residents to increase awareness of vulnerability to multiple hazards. Focus on hurricanes, sea level rise, flooding, nuisance flooding and severe repetitive flood losses. Provide engagement that increases citizens’ ability to take mitigative actions prior to disaster event. Focus on hurricane preparedness and flood mitigation.

Action Implementation: Ongoing - Many education and engagement campaigns exist throughout the Norfolk. Social media posts, Norfolk Alert, community events, HRUBS bill inserts, storm warnings, mailings, and civic league presentations are some of the means used for communication. Many of these actions are detailed in Norfolk’s CRS Program for Public Information.

Mitigation Action 4: Continue to implement capital improvements that improve stormwater management and control flooding, especially for undersized and out-of-date drainage systems and patterns.

Action Implementation: Ongoing – The Department of Public Works continues to review and implement capital improvements including designs for:

- Major drainage improvements in Glenwood Park, East Ocean View, Glenrock, Coleman Place, Lowery Road, and Janaf Place
- BMP retrofits to assist with flooding and water quality at the St Paul’s Blue Greenway, Meadow Lake, Silver Lake, and Lake Whitehurst
- Chesapeake Blvd Outfall Extension
- Maintenance and upgrades at numerous smaller outfalls, drainage channels, pump stations, and nuisance roadway flooding locations

Mitigation Action 5: Identify and improve critical facilities and infrastructure to minimize flood and wind damage, specifically targeting schools, EOC and emergency shelters. Action may also include placing utility lines underground or preemptive traffic systems for emergency vehicles. Purchase and install generators or other continuous power sources for critical facilities and infrastructure. This action may include, but is not limited to pump stations, EOC, shelters, underpasses and important traffic signals. Include critical public facility generator requirements and required connection materials in the USACE Emergency Power Facility Assessment Tool (EPFAT).

Action Implementation: Ongoing - The Department of Emergency Management has applied for a grant for a generator at the Norfolk Public School food warehouse. Additionally, the City Planning Department explored the option of placing or requiring utilities underground for certain land uses through a Zoning Ordinance amendment during 2022. Ultimately, the

department decided to shift its approach away from the Zoning Ordinance to explore the possibility of making changes to the City Code instead.

Mitigation Action 6: Protect flood-prone structures through the following ongoing actions:

- 1) Incorporate CDC's Social Vulnerability Index tools to align actions with the City's commitment to being a diverse, equitable and inclusive city;
- 2) Give highest priority to protection of "severe repetitive losses" as defined by the National Flood Insurance Program (NFIP), including verifying the location of all repetitive losses, verifying location and need for mitigation;
- 3) Second highest priority to mitigation of historic resources, or meeting the Secretary of the Interior's standards for eligibility as a historic resource. Historic resources should be protected in place, or relocated; raised not razed;
- 4) Prepare Repetitive Loss Area Analyses for CRS credit under CRS Activity 512(b);
- 5) Elevate, acquire, relocate or otherwise retrofit structures. This action includes Mitigation Reconstruction projects for non-historic resources, ground floor conversion projects and basement fill projects;
- 6) Target potential properties or clusters of properties on low elevations near wetlands for purchase and conversion to public open space.

Action Implementation: Ongoing- The Coastal Storm Risk Management (CSRM) project phasing has been structured so that the projects protecting the most socially vulnerable areas begin first. The City reviews repetitive loss data to prioritize potential home elevation projects through grant funding. In 2020, Norfolk was awarded a Flood Mitigation Assistance Grant to elevate four historic homes on Yarmouth Street.

Mitigation Action 7: Implement a full rollout of Crisis Track to improve post-event damage assessment procedures so that damages, event frequencies, and other data are more readily available for mitigation planning and fully integrated into VDEM and FEMA's SDE Tool.

Action Implementation: Ongoing-Crisis Track has been implemented as of 2022. Employees on the Damage Assessment Team received training in 2022 and will receive annual refresher training.

Mitigation Action 8: Implement actions to improve Community Rating System (CRS) classification to at least a Class 4 with a 30 percent discount on most flood insurance policies.

Action Implementation: Ongoing – Norfolk is currently in the scoping stages of developing a Watershed Master Plan in order to meet the CRS prerequisite requirement for a Class 4. More information can be read in Mitigation Action 12.

Mitigation Action 9: Assess and protect historic resources and structures from flooding and sea level rise. Measures should include short-, medium- and long-term solutions.

Action Implementation: Ongoing – The City of Norfolk is in the process of a multi-year resurvey of our historic resources. Grants have been submitted for increased survey work and funding for more survey work has been requested. The City is currently working with the United States Army Corps of Engineers, Virginia Department of Historic Resources to update the Programmatic Agreement for how historic and archeologic resources will be treated as part of the CSRSM project. The USACE is also assisting to fund historic resource survey work in the Areas of Potential Effect (APE) for the CSRSM project. Other actions include:

- Hosting Keeping History Above Water Conference in May 2022
- The National Park Service published Guidelines on Flood Adaptation for Rehabilitating Historic Buildings and one of the authors, Jennifer Wellock, presented to the City Planning Commission Sept. 2022 regarding why historic resource surveys are important to communities and how the NPS can assist after a disaster.
- The West Freemason Historic District was resurveyed in 2022 and Campostella Heights and Central Park are currently in the process of being resurveyed.
- An ongoing plan to keep the survey up to date is being created.
- There are plans to update the Historic District design Guidelines to include the National Park Service Guidelines on Flood Adaptation for Rehabilitating Historic Buildings

Mitigation Action 10: Identify and implement resilient strategies throughout the city to provide better watershed, neighborhood and parcel specific flood protection and mitigation. Perform feasibility study for coastal storm risk protection for Norfolk southside neighborhoods based on future sea level rise and flood conditions. Other projects include, but are not limited to recommendations of the Joint Land Use Study in conjunction with the City of Virginia Beach and the U.S. Navy, as well as the Norfolk Coastal Storm Risk Management solutions.

Implementation Action: Ongoing- The City of Norfolk completed the Ohio Creek Watershed Project, transforming neighborhoods that frequently faced coastal flooding due to sea level rise and major rainfall events. Funded through the National Disaster Resiliency Competition (NDRC), this project addresses the climate equity and environmental justice actions identified in Norfolk’s 2015 Resilience Strategy. The project consists of a system of coastal levees, floodwalls, tide gates and pump stations. The project exceeds minimum stormwater quality requirements by converting most street verges into retention areas for stormwater and replacing significant portions of the neighborhood’s streets with pervious pavement.

The Norfolk Coastal Storm Risk Management Project has been divided into a total of 5-phases to be implemented over a 10-year period. Phase 1 will protect the most vulnerable populations within Norfolk. Norfolk CSRSM Project is currently in the Preliminary Engineering Design Phase (PED) with construction scheduled to begin in mid-2024.

Mitigation Action 11: Explore partnership with NASA to use Interferometric Synthetic Aperture Radar (InSAR) to study changes in the rate of localized subsidence and possible links to relative sea level rise.

Implementation Action: Ongoing- The City of Norfolk is continuing to explore the potential partnership with NASA to use InSAR technology to study localized subsidence and possible links to relative sea level rise.

Mitigation Action 12: Update the City’s Combined Coastal and Precipitation Flooding Master Plan to meet the minimum CRS requirements for a Watershed Master Plan.

Implementation Action: Ongoing- A Community Flood Preparedness Grant was obtained by the City to fund the update to the Combined Coastal and Precipitation Flooding Master Plan. The plan is currently in the scoping and data gathering phase.

Mitigation Action 13: Obtain direct technical assistance to incorporate green infrastructure, social vulnerability, and environmental justice into Benefit-Cost Analysis/Ratio (BCA/R) calculations for structural/hybrid flood protection measures for the Southside communities of Berkley and Campostella.

Action Implementation: Ongoing- The City applied for FEMA Building Resilient Infrastructure and Communities (BRIC) grant funding specifically to conduct BCA/R (Benefit Cost Analysis/Ratio) calculations for structural/hybrid flood protection measures for the Southside communities of Berkley and Campostella.

Implementation Action: Ongoing- The City received a notice of non-selection for the grant funding. The City conducted meetings with the Government Accountability Office to discuss preference to determine if federal agencies can create a system whereby agencies can utilize another agency’s BCA methodology. Norfolk is proposing the USACE utilize HUD’s BCA to justify the Southside receiving structural flood measures since there’s a clear environmental justice concern for that geographic area.

Mitigation Action 14: Increase number of real-time flood inundation storm sensors installed throughout the City and made available for public API integration within Norfolk Open GIS Data portal.

Implementation Action: Ongoing- The HRPDC and the City collaborated to install four (4) Storm Sensors which distribute alerts to WAZE. Access to the data portal can be requested for city staff or researchers but is not yet ready to broadly open it up to the public because each person needs a login. Additionally, training is scheduled in 2023 for users which might lead to other alert systems and further integration.