



Northern Virginia Hazard Mitigation Plan
Annex 17-C: Town of Occoquan



November 2022

Town of Occoquan Overview

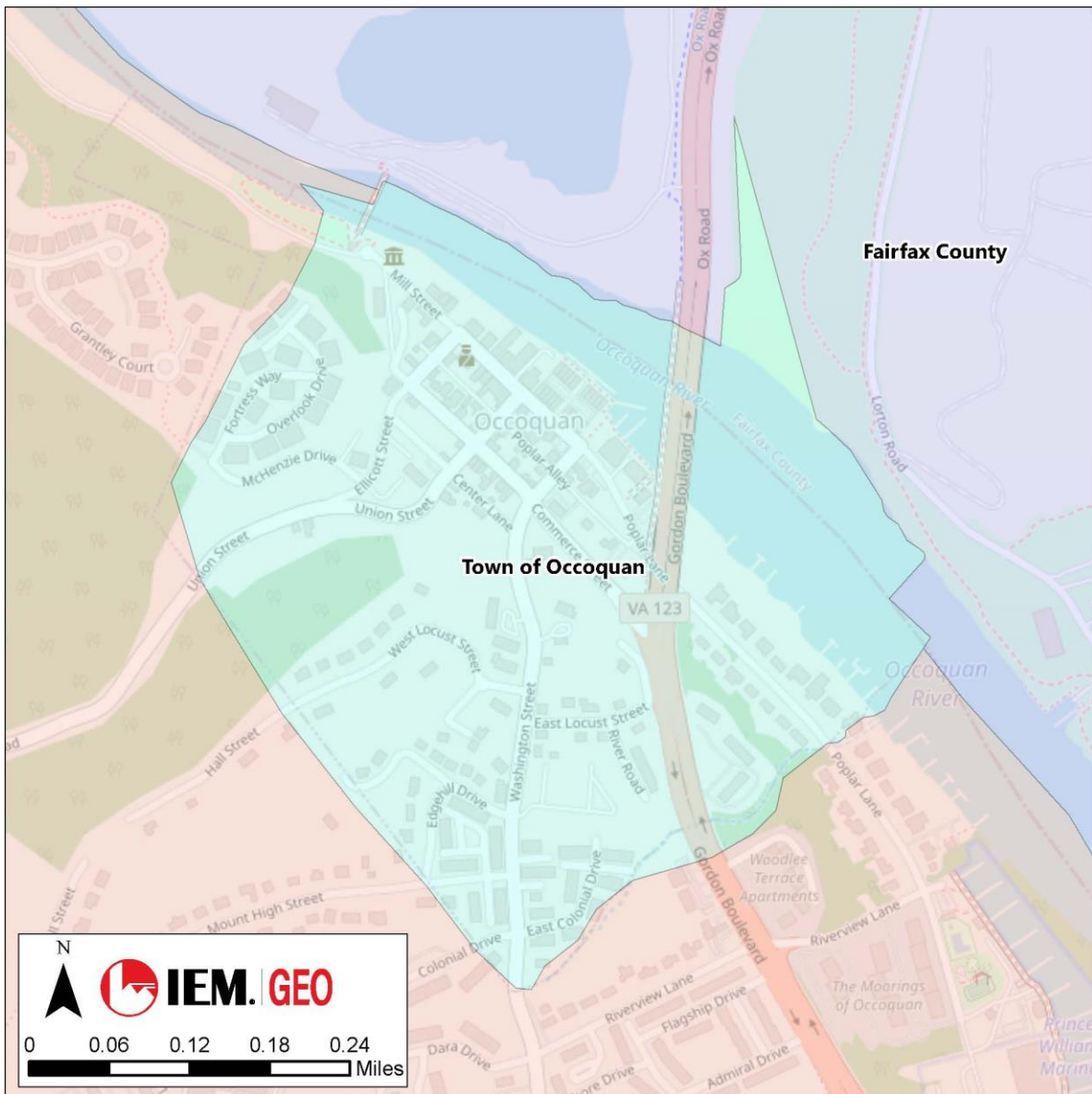








Table 1: Specific Jurisdictional Data

 ESTABLISHED	 LAND AREA	 2020 POPULATION	 GOVERNMENT ADDRESS	 HOUSEHOLDS	 MITIGATION FOCUS
1804	0.2 sq. mi.	1,053	314 Mill Street, PO Box 195, Occoquan, VA 22125	548	Flood/Flash Flood

Town of Occoquan's Risk Environment

The following is a snapshot of the details in this annex. The well-researched details form the basis of effective mitigation strategies to improve community resilience.

Hazard Event History

National Centers for Environmental Information (NCEI), 1950–June 2021

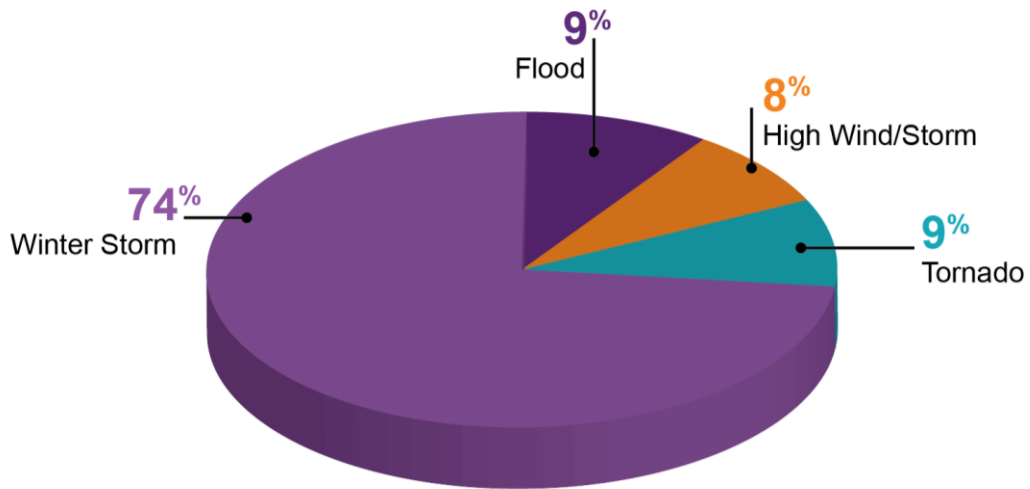


Figure 1: Percentage of Hazards

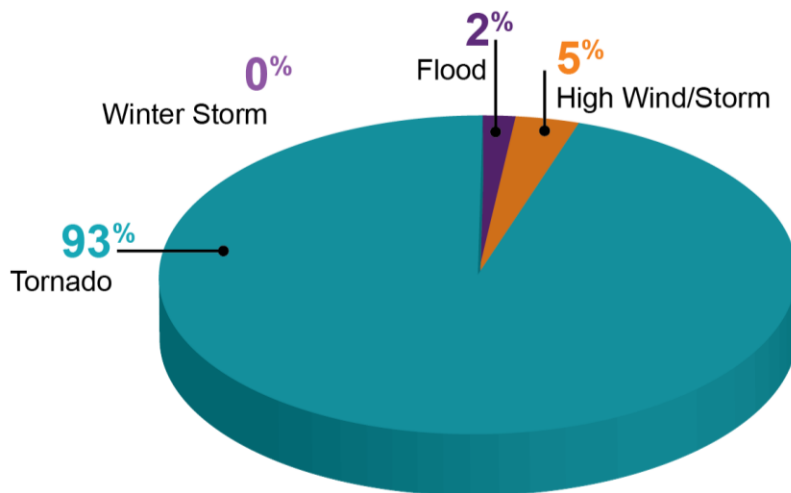


Figure 2: Property Damages from Natural Hazard Events

Natural Hazard Risk Ranking

Table 2: Natural Hazard Risk Ranking Summary

Hazard	Hazard Ranking
Dam Failure	High
Flood	High
Tornado	High
High Wind/Severe Storm	High
Winter Weather	Medium
Earthquake	Medium
Extreme Temperatures (Hot/Cold)	Medium
Karst/Sinkhole/Land Subsidence	Medium
Drought	Medium
Landslide	Low
Wildfire	Low

Community Lifelines and Respective Critical Assets

Table 3: Number of Critical Assets for Community Lifelines/Sectors

Lifeline/Sector	Number of Assets
Safety and Security	1
Food, Water, Shelter	17
Health and Medical	0
Energy	1
Communications	3
Transportation	2
Hazardous Materials	1
Education	1
Cultural/Historical	40
High Hazard Dams	1

A lifeline enables the continuous operation of government and business functions which are critical for human health, safety, or economic security. Lifelines are the most fundamental services for a community that, when stabilized, enable all other aspects of society to function. These lifelines are assets that may be a facility, infrastructure, operation, or entity.



Figure 3: Community Lifeline Components

Community Lifelines Outlined

- **Safety and Security:** Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
- **Food, Water, Shelter:** Food, Water, Shelter, Agriculture
- **Health and Medical:** Medical Care, Public Health, Patient Movement, Medical Supply Chain, Fatality Management
- **Energy:** Power Grid, Fuel
- **Communications:** Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch
- **Transportation:** Highway/Roadway/Motor Vehicle, Mass Transit, Railway, Aviation, Maritime
- **Hazardous Materials :** Facilities, HAZMAT, Pollutants, Contaminants

Mitigation Capabilities Summary

Table 4: Capability Assessment Summary Ranking for Town of Occoquan

Capability	Ranking
Planning and Regulatory	Moderate
Safe Growth	Moderate
Administrative and Technical	Moderate
Financial	Low
Education and Outreach	Moderate

Hazard Mitigation Plan Points of Contact

Table 5: Points of Contact Information

Contact Type	Contact Information
Primary Point of Contact	Jason Forman, Deputy Chief of Police Town of Occoquan 571-284-0549 jforman@occoquanva.gov
Secondary Point of Contact	Katie Kitzmiller, Deputy Emergency Management Coordinator Prince William County 571-359-3501 kkitzmiller@pwcgov.org

Town of Occoquan

This annex presents the following jurisdiction-specific information provided by the Town of Occoquan for the 2022 update to the *Northern Virginia Hazard Mitigation Plan (NOVA HMP)*.

Table of Contents

- 1. Jurisdiction Profile 1**
 - 1.1. Location 1**
 - 1.2. History..... 1**
 - 1.3. Demographics, Economy, and Governance..... 2**
 - 1.4. Built Environment and Community Lifelines 3**
 - 1.4.1. Safety and Security..... 3
 - 1.4.2. Food, Water, Shelter..... 3
 - 1.4.3. Health and Medical..... 3
 - 1.4.4. Energy..... 4
 - 1.4.5. Communications..... 4
 - 1.4.6. Transportation 4
 - 1.4.7. Hazardous Materials..... 4
 - 1.4.8. Education 4
 - 1.4.9. Recreational, Cultural and Historic Sites, and Assets 4
 - 1.5. Growth and Development Trends 5**
- 2. Jurisdiction Planning Process 6**
 - 2.1. Public Participation 6**
- 3. Jurisdiction-Specific Hazard Event History..... 7**
- 4. Hazard Risk Ranking 8**
 - 4.1. Additional Hazard Risk Considerations..... 9**
 - 4.1.1. Non-Natural Hazards 9
- 5. Vulnerability Assessment 10**
 - 5.1. National Flood Insurance Program..... 10**
 - 5.2. Population..... 11**
 - 5.3. Built Environment and Community Lifelines and Assets..... 11**
 - 5.4. Environment 12**
 - 5.5. Economy..... 12**
 - 5.6. Cultural and Historical Assets 13**
- 6. Capability Assessment..... 14**
 - 6.1. Capability Assessment Summary Ranking and Gap Analysis 14**
 - 6.1.1. Planning and Regulatory Capabilities Summary 15
 - 6.1.2. Administrative and Technical Capabilities Summary..... 15

6.1.3. Safe Growth Capabilities Summary..... 16

6.1.4. Financial Capabilities Summary 16

6.1.5. Education and Outreach Capabilities Summary 16

6.2. Capability Summary – Activities that Reduce Natural Hazard Risk or Impacts..... 17

7. Resilience to Hazards..... 18

7.1. National Risk Index..... 18

7.2. New Hazard Risk Challenges or Obstacles to Be Monitored in the Next Planning Cycle ... 18

8. Mitigation Actions..... 19

8.1. Goals and Objectives 19

8.2. Status of Previous Actions 19

8.3. New Mitigation Actions 19

8.4. Action Plan for Implementation and Integration 19

9. Annex Maintenance Procedures 20

9.1. Maintenance of the NOVA HMP, Base Plan..... 20

9.2. Maintenance of the Jurisdiction Annex..... 20

 9.2.1. Plan Maintenance Schedule 20

10. Annex Adoption..... 22

11. Attachments..... 23

11.1. Attachment 1: Adoption Resolution 24

11.2. Attachment 2: Documentation of Public Participation..... 25

11.3. Attachment 3: Mitigation Actions 26

List of Tables

Table 1: Specific Jurisdictional Data..... i

Table 2: Natural Hazard Risk Ranking Summary iii

Table 3: Number of Critical Assets for Community Lifelines/Sectors..... iii

Table 4: Capability Assessment Summary Ranking for Town of Occoquan v

Table 5: Points of Contact Information v

Table 6: Population and Growth Rate 2

Table 7: Economic Data..... 2

Table 8: Number of Assets per Community Lifeline/Sector 3

Table 9: Local Planning Participants 6

Table 10: Federal Disaster and Emergency Declarations, 2017–2021 , Prince William County 7

Table 11: Significant Hazard Events, Town of Occoquan, 2017–2021 7

Table 12: Hazard Risk Ranking Summary, Natural Hazards..... 8

Table 13: Hazard Risk Ranking Summary, Non-Natural Hazards 9

Table 14: National Flood Insurance Program Status, Town of Occoquan 10

Table 15: NFIP Policy and Claims Status, Town of Occoquan 10

Table 16: NFIP Status, October 18, 2021..... 10

Table 17: Capability Assessment Ranking Summary, Town of Occoquan 14

Table 18: Capability Summary – Activities That Reduce Natural Hazard Risk or Impacts 17
Table 19: Action Plan for Implementation and Integration, Town of Occoquan..... 19
Table 20: Town of Occoquan Plan Maintenance Responsibilities for the NOVA Hazard Mitigation Plan
(Base Plan) 20
Table 21: Town of Occoquan Jurisdiction Annex Maintenance Procedure 20

List of Figures

Figure 1: Percentage of Hazards ii
Figure 2: Property Damages from Natural Hazard Events ii
Figure 3: Community Lifeline Components..... iv
Figure 4: Race and Ethnicity Demographics..... 2
Figure 5: The Town of Occoquan Critical Assets Located in the Flood Zone..... 12

1. Jurisdiction Profile

Established	1734
Chartered	1804
Total Land Area	0.2 sq. mi.
Geographic Region	Piedmont
Persons Per Household	1.92
Persons Per Square Mile	5,265
Median Age	35.6
Elevations	7 feet

1.1. Location

The Town of Occoquan is located along the Occoquan River in both Prince William County (PWC) and Fairfax County. The town is situated 88 miles north of the Commonwealth of Virginia's capital of Richmond and is 23 miles south of the Nation's capital of Washington, D.C.

1.2. History

The Town of Occoquan is located along the Occoquan River in the northeastern portion of Prince William County and the southeastern portion of Fairfax County. The Town occupies approximately 125 acres, including 25 acres of the Occoquan River. While the populated portion of the Town is located along the southern shore of the Occoquan River, the Town boundary extends into the Fairfax County. The Town is situated at the "fall line," which delineates the Piedmont and Coastal Plain geological provinces and represents the end of the navigable waters of the Occoquan River. The downtown and Poplar Lane portions of Occoquan are on a relatively level and low lying plain adjacent to the river. To the southwest of this low-lying plain is a ridge underlain by mostly granite rock. The ridge is dissected by several small streams that empty into the river. The largest stream is Ballywack Branch. The other streams are Furnace Branch, Boundary Branch, Phelps Creek, and the tributary of Boundary Branch designated as Edgehill Creek. The "high ground" located in Town is generally rolling with some very steep slopes and rocky outcrops adjacent to streams and the river plain.

Occoquan established its commercial and residential successes long before Virginia was a colony when Captain John Smith traveled the Occoquan River to establish trade routes between the Dogue Indians and English settlers. The rolling hills, strong waterfalls, and natural beauty of the area attracted entrepreneurs like John Ballandine. During the late eighteenth century, he established Occoquan as a full-service town with mills, forges, stores, tolling points, and multiple residences.

1.3. Demographics, Economy, and Governance

Table 6: Population and Growth Rate¹

Year	Population	Percent Increase over Previous Census
1980	241	
1990	361	49.8%
2000	759	110.2%
2010	934	23.1%
2020	1,053	%

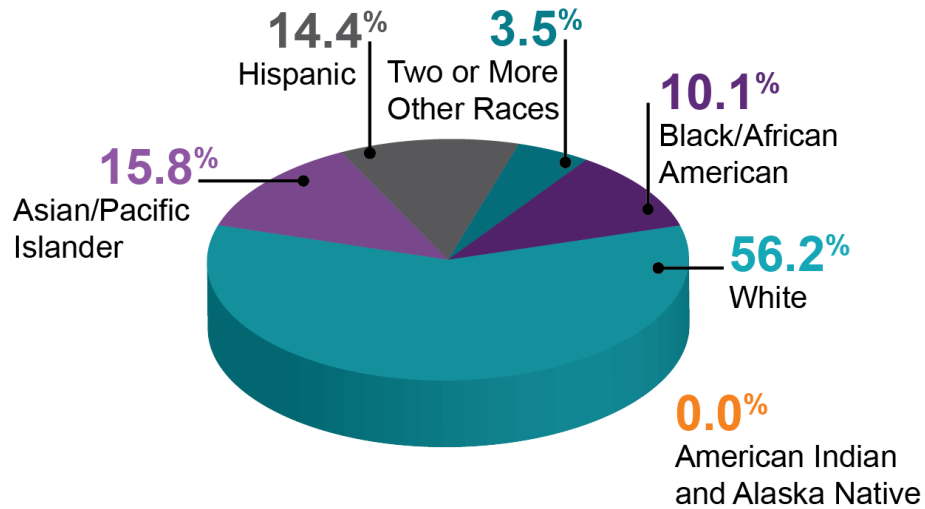


Figure 4: Race and Ethnicity Demographics

Table 7: Economic Data

Economy	Data
Median Household Income (2020)	\$110,000
Unemployment Rate (September 2021)	3.2%
Per Capital Income (2020)	\$61,542
Median House or Condo Market Value (2019)	\$214,800
Percentage Below Poverty (2020)	3.6%

The Town of Occoquan is managed by a council-manager form of government, in which the Council is the governing body, elected by the public, and the manager is appointed by the Council to carry out the policies it establishes. Occoquan’s Town Council consists of five council members and the mayor and are

¹ [U.S. Census Bureau: Occoquan town, Virginia](#)

elected for four-year terms. The Town Hall is located at 314 Mill Street and houses the Town's operations, including staff offices, Town Council, and board and commission meetings. The Town Police Department operates out of their Headquarters located at 124 Commerce St.

1.4. Built Environment and Community Lifelines

The information related to Community Lifelines and critical assets in the Town of Occoquan presented in this section has been collected from multiple sources, including Hazus (Version 4.2) and government websites. Data extracted from the Hazus Level 1 assessment indicates that the Town has an estimated 57 critical and historic assets. Due to the delay in collecting and verifying data and the method of documenting location and jurisdiction used in Hazus, this may not reflect the current inventory maintained by the Town of Occoquan.

The Town of Occoquan maintains a detailed list of community lifeline facilities, sites, and critical assets.

Table 8: Number of Assets per Community Lifeline/Sector

Lifeline/Sector	Number of Assets
Safety and Security	1
Food, Water, Shelter	17
Health and Medical	0
Energy	1
Communications	3
Transportation	2
Hazardous Materials	1
Education	1
Cultural/Historical	40
High Hazard Dams	1

1.4.1. Safety and Security

The Town of Occoquan Police Department (OPD) is the primary law enforcement agency responsible for the Town. The Prince William County Police Department and Fairfax County Police Departments respectfully supports the OPD with its day-to-day mission.

Fire and Rescue services are provided by the Prince William County and Fairfax County Fire and Rescue Departments.

1.4.2. Food, Water, Shelter

Food commodities are available throughout the Town from public retail providers, wholesalers, and contracted services for specific institutions and facilities. Additional contracts may be entered into for post-disaster needs.

1.4.3. Health and Medical

There are no medical facilities in the Town of Occoquan.

1.4.4. Energy

The Town receives its energy from Dominion Power. Within the Town there is a Dominion Power switch bringing power resources across the Occoquan River from Fairfax County into Prince William County.

1.4.5. Communications

The Town of Occoquan has an Emergency Notification System (ENS) which serves as the primary information alert system for residents and business within the Town. The Town is supported by the Prince William County Office of Emergency Management with additional ENS capabilities.

Fairfax County Department of Emergency Management and Security supports the Town with the Occoquan Reservoir Dam siren and notification system.

The Town's public safety is dispatched through Prince William County and Fairfax County 911 systems. The Town of Occoquan Police Department operates upon the Prince William County Public Safety Communications System and has inoperable communications with Fairfax County and regional Public Safety partners.

Privately owned communications sector critical infrastructure exists in the Town.

1.4.6. Transportation

The Town of Occoquan owns and maintains a public dock providing for maritime transportation upon the Occoquan River.

Route 123 runs north and south through the Town, connecting with Interstate 95 (I-95) and U.S. Route 1 just south of Occoquan. Route 123 has been identified by the Virginia Department of Transportation (VDOT) as a primary thoroughfare.

1.4.7. Hazardous Materials

Daily. Hazardous Materials are transported and stored within the Town of Occoquan.

1.4.8. Education

There are no public educational facilities within the Town of Occoquan. Occoquan elementary school is located 0.4 miles outside of the Town's Corporate limits. A privately owned, special needs education and care facility is located within the town. This is not a 24/7 facility.

1.4.9. Recreational, Cultural and Historic Sites, and Assets

There are 40 historical buildings in the Town under Historic Preservation, National, and VA registries. The Town created an Old and Historic District Overlay to preserve their historic district and history.

The Town of Occoquan maintains two public parks located along the Occoquan River. The Town also owns 17 acres of property within a conservation easement and includes a blazed trail that connects to Prince William County's Occoquan Greenway Trail. In addition, the Town of Occoquan has a

collaborative partnership with Northern Virginia Park Authority who maintains the Occoquan Regional Park located along the Occoquan River on the Fairfax County shoreline. The Town also owns and maintains a free public kayak and canoe access ramp on suitable for people with ambulatory disabilities.

1.5. Growth and Development Trends

The Town of Occoquan Comprehensive Plan 2016–2026 outlines the development the Town would like to realize and goes into greater detail about land use, growth, and development trends. The Town continues to steadily grow, and while it does not have room to grow out, it will continue to infill. The continuations of their mixed-use business model will allow for residents and business owners to live and work in a neighborhood partnership.

2. Jurisdiction Planning Process

For the 2022 NOVA HMP update, the Town of Occoquan followed the planning process described in **Section 2, Base Plan**. In addition to providing representation to the Northern Virginia Hazard Mitigation Planning Group, the Town supported the local planning process requirements by coordinating with representatives from other departments and agencies within its jurisdiction.

Table 9: Local Planning Participants

Name	Position/Title	Department/Agency
Adam Linn	Town Manager	Town of Occoquan
Jason Forman	Deputy Chief of Police	Town of Occoquan

The jurisdiction identified its chief hazard mitigation planning responsibility as representing the Town in coordination with the Prince William County representative to the Emergency Managers Group. The Town also identified the following tasks as part of its mitigation planning responsibilities:

- Hazard risk and vulnerability assessment
- Provide technical data and hazard information
- Capabilities assessment
- Mitigation strategy development
- Sponsor mitigation actions
- Review plan drafts and provide input
- Public outreach activities
- Implementation of the plan
- Maintaining the plan

Town of Occoquan planning participants coordinated primarily by means of virtual meetings during the planning process, and as needed, independently to carry out planning activities completed through a series of worksheets that provided background information on the history of hazard events, hazard risks and vulnerabilities, capabilities, and past mitigation efforts. Additional planning process documentation of the Planning Group meetings is included in the **Base Plan, Appendix A**.

2.1. Public Participation

Several opportunities for public involvement were provided during the planning process, including a Public Hazard Survey, which was posted and advertised on the Town's website: [Town of Occoquan, VA \(occoquanva.gov\)](http://TownofOccoquan.VA(occoquanva.gov)).

In addition to the survey, the public was offered the opportunity to review and provide input to the draft 2022 Plan update. Notification of the Draft Plan release was made through the same town web link. Documentation of the public survey and draft plan review is included in **Attachment 2** of this annex.

3. Jurisdiction-Specific Hazard Event History

The Town of Occoquan' comprehensive hazard history is generally combined with that of Prince William County and described in [Sections 4 and 5, Base Plan](#).

The National Oceanic and Atmospheric Administration (NOAA) National Center for Environmental Information (NCEI) Storm Events Database includes 1,019 recorded natural meteorological events that took place in Prince William County between January 1, 1950, and May 2021. The County and its municipalities have been included in three Federal Disaster Declarations and emergencies between 2017 and May 2021.

Table 10: Federal Disaster and Emergency Declarations, 2017–2021, Prince William County

Declaration	Date	Hazard	Assistance Type
DR-4512-VA	4/2/2020 (continuing)	COVID-19 Pandemic	Individual Assistance, Public Assistance
EM-3448-VA	3/13/2020 (continuing)	COVID-19 Pandemic	Public Assistance (Category B)
EM-3403-VA	9/11/2018	Hurricane Florence	Public Assistance (Category B)

Tables 18 and 19 in [Annex 17: Prince William County](#) provide a summary of all high wind/severe storm and severe winter storm events that have occurred in Prince William County between 1950 and May 31, 2021.

Table 11: Significant Hazard Events, Town of Occoquan, 2017–2021

Date	Hazard	Event and Description
March 2020–TBD	Pandemic COVID-19	Worldwide pandemic affecting all aspects of life

4. Hazard Risk Ranking

After developing hazard profiles, the Town of Occoquan conducted a two-step quantitative risk assessment for each hazard that considered population vulnerability, geographic extent/location, probability of future occurrences, and potential impacts and consequences. The numerical scores for each category were totaled to obtain an overall risk score, which is summarized as one of these risk and vulnerability classifications:

- **Low:** Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for hazards with a minimal or unknown record of occurrences or for hazards with minimal mitigation potential.
- **Medium:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating. The potential damage is more isolated and less costly than a widespread disaster.
- **High:** The criteria consistently fall in the high classifications and the event is likely/highly likely to occur with severe strength over a significant to extensive portion of the planning area.

The two-step hazard risk ranking methodology is detailed in [Section 4, Base Plan](#).

The overall risk score for each hazard served as the basis for determining whether a vulnerability assessment should be conducted. Natural hazard profiles are presented within the hazard sub-sections in [Section 5, Base Plan](#), and local detail is provided in the Jurisdiction Annexes. Non-natural hazard profiles are presented in [Volume II of the Base Plan](#).

Table 12: Hazard Risk Ranking Summary, Natural Hazards

Hazard	Total Probability Score	Total Consequence Score	Overall Risk Score	Hazard Ranking
Dam Failure	4.0	7.9	11.9	High
Flood	4.0	6.9	10.9	High
Tornado	4.0	6.0	10.0	High
High Wind/Severe Storm	4.0	5.4	9.4	High
Winter Weather	4.0	4.2	8.2	Medium
Earthquake	2.0	4.7	6.7	Medium
Extreme Temperatures (Hot/Cold)	4.0	2.4	6.4	Medium
Karst/Sinkhole/Land Subsidence	2.0	3.2	5.2	Medium
Drought	2.0	2.0	4.0	Medium
Landslide	2.0	2.0	4.0	Low
Wildfire	2.0	2.0	4.0	Low

Table 13: Hazard Risk Ranking Summary, Non-Natural Hazards

Hazard	Total Probability Score	Total Consequence Score	Overall Risk Score	Hazard Ranking
Active Violence	4.0	6.1	10.1	High
Civil Unrest	4.0	6.1	10.1	High
Hazardous Materials	4.0	6.0	10.0	High
Terrorism	4.0	5.9	9.9	Medium
Communication Disruption	4.3	5.2	9.5	Medium
Cyberattack	4.3	5.2	9.5	Medium
Infectious Disease/Public Health	4.0	3.9	7.9	Low

Based on the hazard risk scores, the Town of Occoquan evaluated the level of risk for 18 hazards: 11 natural and 7 non-natural.

Nine natural hazards were identified as high or medium risk hazards to which the jurisdiction is vulnerable:

- **High:** Dam failure, flood, tornado, and high wind/severe storm
- **Medium:** Winter weather, earthquake, extreme temperatures, karst/sinkhole/land subsidence

Six non-natural hazards were ranked as high or medium risk:

- **High:** Infectious disease/public health, terrorism, and civil unrest
- **Medium:** Cyberattack and hazardous materials

All other hazards are ranked as “low,” signifying a minimal risk.

4.1. Additional Hazard Risk Considerations

4.1.1. Non-Natural Hazards

Volume II of the 2022 Northern Virginia Hazard Mitigation Plan addresses non-natural hazards identified by the Town of Occoquan.

5. Vulnerability Assessment

The methodology for calculating loss estimates presented in this annex is the same as that described in [Section 4, Base Plan](#). Quantitative loss estimates are provided when available. Qualitative measurement considers hazard data and characteristics, including the potential impact and consequences based on past occurrences. Accompanying the data is a discussion of community assets potentially at risk during a hazard event.

The assets at risk were identified during the planning process as potential assets vulnerable to one or more hazards.

5.1. National Flood Insurance Program

The Town of Occoquan is a participant in the National Flood Insurance Program (NFIP).

Table 14: National Flood Insurance Program Status, Town of Occoquan

NFIP Data	Date
Initial flood hazard boundary map (FHBM) identified	7/19/1974
Initial flood insurance rate map (FIRM) identified	1/5/1995
Date of the current effective map	1/5/2015
Regular-Emergency date	9/1/1978
Digital Flood Insurance Rate Map (DFIRM)/(Q3)	Unknown

Table 15: NFIP Policy and Claims Status, Town of Occoquan

NFIP Policy	Claims Status
Policies In-Force	34
Premiums Paid	\$57,025
Total Claims	19
Total Payment	\$65,187

Table 16: NFIP Status, October 18, 2021

Category	NFIP Topic	Source of Information	Comments
Staff Resources	Is the Community FPA or NFIP Coordinator certified?	Community FPA	Yes
Staff Resources	Is floodplain management an auxiliary function?	Community FPA	Unknown
Staff Resources	Provide an explanation of NFIP administration	Community FPA	Map assistance, permit review, public outreach,

Category	NFIP Topic	Source of Information	Comments
	services (e.g., permit review, GIS, education or outreach, inspections, engineering capability).		map revision records, and inspections.
Staff Resources	What are the barriers to running an effective NFIP program in the community, if any?	Community FPA	No in-house GIS
Compliance History	Is the community in good standing with NFIP?	State NFIP Coordinator, FEMA NFIP Specialist, community records	Yes
Compliance History	Are there any outstanding compliance issues (i.e., current violations)?		No
Compliance History	When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?		Unknown

Additional hazard information for the Town of Occoquan is presented in the [Base Plan](#).

5.2. Population

Estimates of the number of residents in the Town of Occoquan vulnerable to each hazard are presented in the various hazard sections in the [Base Plan](#).

The Centers for Disease Control and Prevention's (CDC) Social Vulnerability Index (SVI) is a tool that can be used to identify specific vulnerable populations.

The Overall CDC SVI for Prince William County, including the Town of Occoquan, is presented in [Annex 17: Prince William County](#).

5.3. Built Environment and Community Lifelines and Assets

Using Hazus data available, scenarios were run at the county level for earthquake, flood, and hurricane wind to determine potential exposure of buildings, infrastructure, and economy. Information presented in [Annex 17: Prince William County](#) includes the Town of Occoquan.

Vulnerabilities include structures, systems, resources, and other assets defined by the community as susceptible to damage and loss from hazard events. The vulnerability of critical infrastructure is presented within the lifeline sector categories identified by FEMA.

Overlaying the critical facilities in Occoquan on the mapped flood zones illustrate that there are two critical facilities in the flood zone: one police station and one water facility.

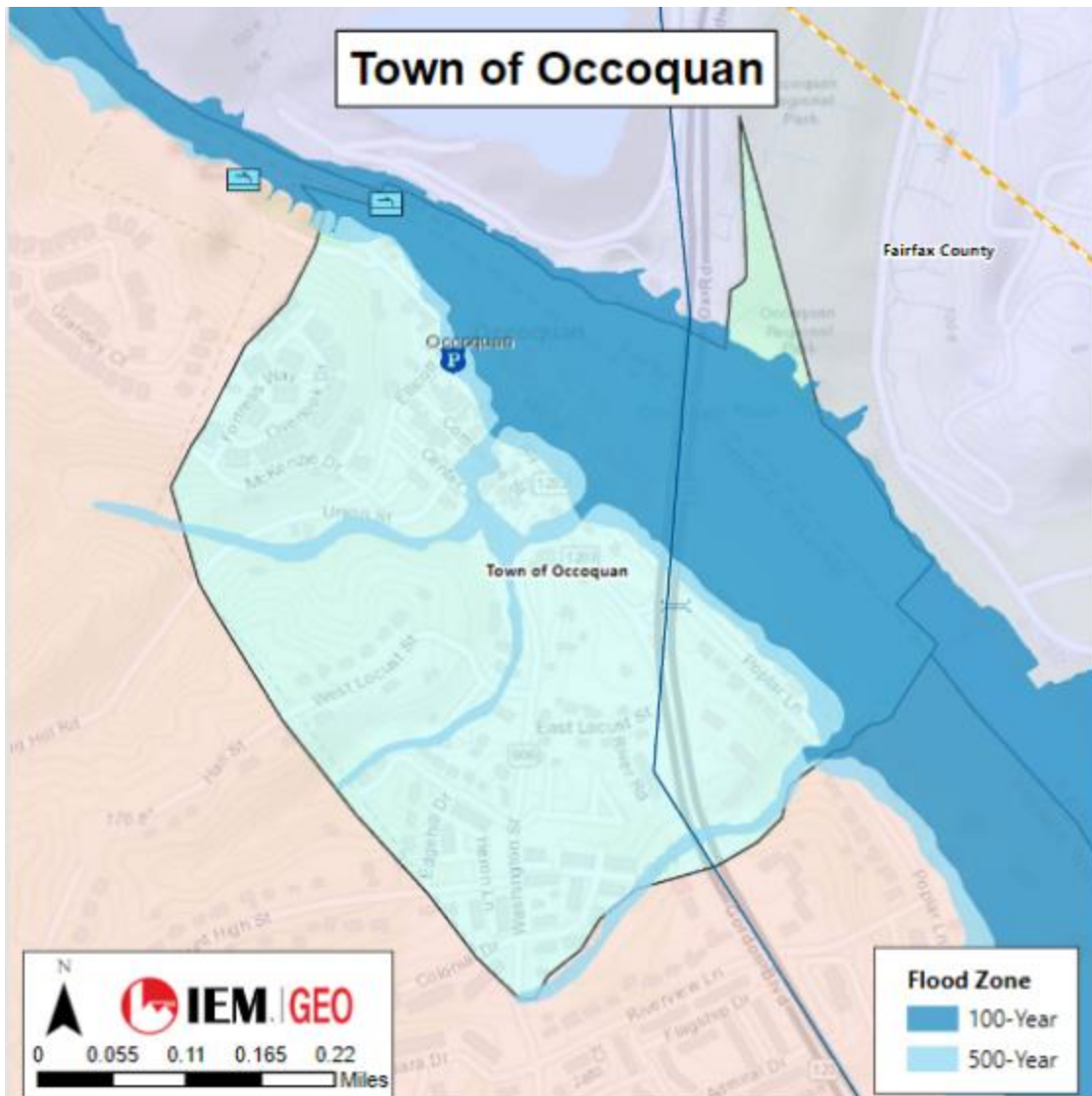


Figure 5: The Town of Occoquan Critical Assets Located in the Flood Zone

5.4. Environment

Information related to environmental vulnerability is presented in the hazard-specific sections of the **Base Plan**.

Additional environmental community assets in Prince William County include the Occoquan Bay National Wildlife Refuge as a critical habitat due to their forests, meadows, marshes, and grasslands and the presence of many bird species.

5.5. Economy

Information related to economic vulnerability is presented in the hazard-specific sections of the **Base Plan**. Specific direct economic losses (in thousands of dollars) related to a 2,500-year 6.5 magnitude earthquake event are identified by Hazus for specific assets and presented in **Annex 17: Prince William County**.

5.6. Cultural and Historical Assets

Information related to vulnerability of cultural and historical assets are presented in the hazard-specific sections of the **Base Plan**. There are numerous historic buildings in the Town and the Occoquan Historical District is listed on the National Register of Historical Places.

Historic structures and sites are frequently more vulnerable to flood hazards due to the typical development of a city or town along waterways. Because removing historic structures from their original site affects their historical value, there are challenges to protecting these fragile sites.

6. Capability Assessment

The Town of Occoquan reviewed its legislative and departmental capabilities to identify resources, strengths, and gaps for implementing hazard mitigation efforts. Using a capabilities assessment worksheet, the community documented existing institutions, plans, policies, ordinances, programs, and resources that could be brought to bear on implementing the mitigation strategy. The capabilities in relation to hazard mitigation were assessed in the following categories:

- Planning and regulatory
 - Implementation of ordinances, policies, site plan reviews, local laws, state statutes, plans, and programs that relate to guiding and managing growth and development
- Administrative and technical
 - County, and Town staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions
- Safe growth
 - Use of community planning through comprehensive plans as hazard mitigation to increase community resilience
- Financial
 - Resources that a jurisdiction has access to or is eligible to use to fund mitigation actions
- Education and outreach
 - Programs and methods that could be used to implement mitigation activities and communicate hazard-related information

In addition to the Capabilities Assessment Worksheet, the Town completed a jurisdiction needs identification questionnaire that summarized changes in and enhancements of capabilities since the last plan. This information is integrated into the summaries in this section.

6.1. Capability Assessment Summary Ranking and Gap Analysis

The jurisdiction ranked the level of capability in relation to each assessment category as a means of identifying where elements could be strengthened or enhanced. Capabilities were ranked on a qualitative basis as demonstrated by the jurisdiction's authorities, programs, plans, and/or resources:

- **Limited:** The jurisdiction is generally unable to implement most mitigation actions.
- **Low:** The jurisdiction has some capabilities and can implement few mitigation actions.
- **Moderate:** The jurisdiction has some capabilities, but improvement is needed in order to implement some mitigation actions.
- **High:** The jurisdiction has significant capabilities, as demonstrated by its authorities, programs, plans and/or resources, and it can implement most mitigation actions.

Table 17: Capability Assessment Ranking Summary, Town of Occoquan

Capability	Ranking
Planning and Regulatory	Moderate
Administrative and Technical	Moderate
Safe Growth	Moderate
Financial	Low
Education and Outreach	Moderate

6.1.1. Planning and Regulatory Capabilities Summary

The Town is working toward utilizing an all-hazards approach when developing any jurisdictional plans and land use planning ordinances and building codes are an effective measure for reducing hazard impacts and are adequately administered and enforced.

Planning and Regulatory Capability Analysis: Moderate

The Town maintains a 2016-2026 Comprehensive Plan, updated in 2021, and a Capital Improvement Program which is updated annually.

The 2016-2026 Comprehensive Plan addresses strong zoning, subdivision, floodplain, stormwater management, and erosion and sediment control ordinances used to reduce hazard impacts by protecting people and property. This document can be leveraged to implement more mitigation actions within the Town.

The Capital Improvement Program (CIP) is the Town's five-year plan for capital projects that is reviewed and updated annually as part of the budget process. The CIP identifies stormwater projects but focuses more on deferred maintenance issues.

The Town of Occoquan has a robust emergency planning and preparedness program. This program is in the process of completing a Continuity of Operations Plan (COOP), an All-Hazards Plan (AHP), a Town Evacuation Plan, and the design of a emergency management public outreach program. The Town is a member of the Prince William County local Emergency Operations Plan (EOP).

Within the Town of Occoquan building codes and site plan review requirements are enforced.

The Prince William County Joint Local Emergency Planning Committee (LEPC) provides umbrella inclusion for the Town of Occoquan.

To strengthen these capabilities, the Town plans to update the floodplain ordinance and ensure all plans (comprehensive plans, codes and ordinances, etc.) are up to date and current according to local, state, and federal guidelines and regulations.

6.1.2. Administrative and Technical Capabilities Summary

Due to the limited number of Town staff, the Town of Occoquan leverages regional partnerships as well as contract resources.

Administrative and Technical Capability Analysis: Moderate

The Town has extensive capabilities that can be expanded through the use of consulting firm(s) for various tasks. For specific expansion of those capabilities, the Town has reached out to other consultants on an as-needed basis.

6.1.3. Safe Growth Capabilities Summary

- Growth guidance instruments such as future land-use policies, regulations, and maps identify natural hazard areas such as floodplains and discourage or prohibit development or redevelopment within these areas.
- Environmental policies encourage appropriate development to protect ecosystems.
- Public safety plans and procedures address emergency evacuation and other safety measures associated with safe growth.
- The building code contains provisions to strengthen or elevate construction to withstand hazard forces.
- The zoning ordinances conform to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas.

Safe Growth Capability Analysis: Moderate

The Town of Occoquan has safe growth regulatory and enforcement capabilities to limit or prevent inappropriate development in identified hazard areas and protect the natural environment.

6.1.4. Financial Capabilities Summary

- The Town of Occoquan CIP could provide funding for mitigation project in the future but does not currently.
- The Town has the authority to incur debt through general obligation bonds and/or special tax bonds, as well as fees for utility services and impact fees for new development.
- The Town participates in multiple federal and state funding programs through various disciplines.

Financial Capability Analysis: Low

The Town of Occoquan has access to and eligibility for multiple funding resources, including state and federal funding. These external funding sources have been used in the past for stream restoration, roadway project funding, and road improvements. More money can be used to improve traffic flow to get people out during emergencies. Additional funding streams could be used for a flood warning system and broadband to improve access to the internet and emergency information.

6.1.5. Education and Outreach Capabilities Summary

- Prince William County is designated as a StormReady community, which includes the Town in components of public education and training. The Town of Occoquan Police Department which includes Emergency Management functions is near completion of a Public Outreach Program which will work in collaboration with Prince William County Office of Emergency Management to educate business and residents on evacuation procedures and hazards facing the Town.

- The Town works with governmental and non-profit agencies to help clean up rivers, streams and reduce flooding.

Education and Outreach Capability Analysis: Moderate

The Town will increase public awareness through collaboration with Prince William County Office of Emergency Management with a local public outreach program.

6.2. Capability Summary – Activities that Reduce Natural Hazard Risk or Impacts

As a component of the capability assessment, the Town of Occoquan identified activities related to each natural hazard that support risk reduction. They are listed in the following Table.

Table 18: Capability Summary – Activities That Reduce Natural Hazard Risk or Impacts

Hazard	Activity
Dam Failure (Including Levees)	<ul style="list-style-type: none"> • Public education and operational plans address preparedness and response to reduce risk.
Drought	<ul style="list-style-type: none"> • Public education and operational plans address preparedness and response to reduce risk. • Land use and environmental policies acknowledge the importance of protecting the natural environment.
Earthquake	<ul style="list-style-type: none"> • State and international building codes provide for seismic design regulations. • Public education and operational plans address preparedness and response to reduce risk.
Extreme Temperature	<ul style="list-style-type: none"> • Public education and operational plans address preparedness and response to reduce risk.
Flood/Flash Flood	<ul style="list-style-type: none"> • Floodplain administration and regulations ensure that inappropriate activities and future development in the floodplain are prohibited. • Stormwater management program and projects address flood prevention and risk reduction.
High Wind/Severe Storm	<ul style="list-style-type: none"> • State and international building codes provide for wind load design regulations.
Karst/Sinkhole/Land Subsidence	<ul style="list-style-type: none"> • Land use and environmental policies acknowledge the importance of protecting the natural environment.
Landslide	<ul style="list-style-type: none"> • Land use and environmental policies acknowledge the importance of protecting the natural environment.
Tornado	<ul style="list-style-type: none"> • Public education and operational plans address preparedness and response to reduce risk.
Wildfire	<ul style="list-style-type: none"> • Public education and operational plans address preparedness and response to reduce risk.
Winter Storm	<ul style="list-style-type: none"> • Public education and operational plans address preparedness and response to reduce risk.
Non-Natural Hazards	<ul style="list-style-type: none"> • Public education and operational plans address preparedness and response to reduce risk.

Hazard	Activity
	<ul style="list-style-type: none"> Beginning with the 2022 NOVA HMP, hazard mitigation planning is being integrated into existing planning and risk reduction activities for technological and human-caused hazards.
Climate Change	<ul style="list-style-type: none"> Ongoing resilience planning will allow for the identification and mitigation of climate change-related issues in future planning cycles.

7. Resilience to Hazards

7.1. National Risk Index

The National Risk Index (NRI) is a dataset and online tool developed by FEMA and other partners to help illustrate communities in the United States at risk for 18 natural hazards. It provides an overview of hazard risk, vulnerability, and resilience. The designation of “low risk” is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.

Hazard risk is calculated on data for a single hazard type and reflects the relative risk for that hazard type and should be considered only as a baseline relative risk measurement for the purpose of a general comparison with the local hazard risk ranking in the Hazard Risk Ranking section of this annex.

In addition, some hazards are defined differently from the hazards in this plan, so a direct hazard-to-hazard comparison of risk is not able to be determined. The NRI is a county-level risk ranking, which includes the towns and is presented in [Annex 17: Prince William County, Section 7](#).

7.2. New Hazard Risk Challenges or Obstacles to Be Monitored in the Next Planning Cycle

- The risk of cyber-related incidents on critical infrastructure and key resource sites
- Climate change
- Increases in the number of excessive rainfall events that impact new areas with flooding

8. Mitigation Actions

8.1. Goals and Objectives

The Town of Occoquan Planning Team adopted the regional goal statement presented in [Section 8, Base Plan](#).

8.2. Status of Previous Actions

The Town of Occoquan did not identify any mitigation actions during the 2017 Northern Virginia Hazard Mitigation Planning process.

8.3. New Mitigation Actions

The Town of Occoquan has identified new mitigation actions for this plan update: [Attachment 3](#) of this annex includes a table that summarizes each new action, describing the proposed activity, priority level, estimated cost, and lead agency.

8.4. Action Plan for Implementation and Integration

The Town of Occoquan will collaborate with the Prince William County Office of Emergency Management in accomplishing hazard mitigation activities within the Town. The Town of Occoquan Town Manager is responsible for implementing the mitigation plan. Tasks to ensure the Town's actions are implemented are integrated into the *Action Plan for Implementation and Integration* (which includes the prioritized list of Mitigation Actions) and plan maintenance procedures are described in the next section. The *Action Plan for Implementation and Integration* describes how the Town's hazard mitigation risk assessment and goals will be incorporated into its existing plans and procedures.

Table 19: Action Plan for Implementation and Integration, Town of Occoquan

Existing Plan or Procedure	Description of How Mitigation Will Be Incorporated or Integrated
Maintain regulatory requirements of the National Flood Insurance Program (NFIP).	Revise Town ordinance to help maintain NFIP requirements.
Continue public engagement in mitigation planning.	Public outreach within the Town.
Identify opportunities for mitigation education and outreach.	Determine how the Town's newsletter, website and social media can be used for outreach.
Review/update emergency plans to address evacuation and sheltering.	Finalize Town Evacuation Plan, Traffic Incident Management Plan, and All Hazards Plan.

9. Annex Maintenance Procedures

9.1. Maintenance of the NOVA HMP, Base Plan

The point of contact for the Northern Virginia Mitigation Project Team is the facilitator for the process to monitor, evaluate, and update the **NOVA HMP, Base Plan**. This facilitator is responsible for initiating the annual activities, convening the NOVA Planning Team (made up of the Emergency Managers Group and Planning Group), and providing follow-up reports to designated entities defined in the method and schedule for the plan maintenance process, as outlined in **Section 3, Base Plan**.

. This process will involve representatives from all participating jurisdictions.

Table 20: Town of Occoquan Plan Maintenance Responsibilities for the NOVA Hazard Mitigation Plan (Base Plan)

Activity	Responsibilities
Monitoring the Plan	<ul style="list-style-type: none"> • Represent the jurisdiction during the monitoring process. • Collect, analyze, and report data to Prince William County/NOVA Planning Group. • Maintain records and documentation of all jurisdictional monitoring activities. • Help disseminate reports to stakeholders and the public. • Promote the mitigation planning process with the public and solicit public input.
Evaluating the Plan	<ul style="list-style-type: none"> • Represent the jurisdiction during the evaluation process. • Collect and report data to the Prince William County/NOVA Planning Group. • Maintain records and documentation of all jurisdictional evaluation activities. • Help disseminate information and reports to stakeholders and the public.
Updating the Plan	<ul style="list-style-type: none"> • Represent the jurisdiction during the planning cycle, including plan review, revision, and update process. • Collect and report data to the Prince William County/NOVA Planning Group. • Maintain records and documentation of all jurisdictional plan review and revision activities. • Help disseminate reports to stakeholders and the public.

9.2. Maintenance of the Jurisdiction Annex

In addition to maintenance of the **NOVA HMP Base Plan**, the Town of Occoquan Mitigation Planning Coordinator will facilitate the method and schedule for maintaining the **Jurisdiction Annex**. The Town's maintenance method and schedule may coincide with that of Prince William County and be conducted simultaneously.

9.2.1. Plan Maintenance Schedule

- **Monitor:** Annually and/or following major disaster(s)
- **Evaluate:** Annually and/or following a major disaster(s)
- **Update:** Annual tasks over the five-year planning cycle; planning process in the fifth year

Table 21: Town of Occoquan Jurisdiction Annex Maintenance Procedure

Activity	Procedure and Schedule	Outcome
Monitoring the Annex	<ol style="list-style-type: none"> 1. Schedule the annual plan review with the jurisdiction planning team. 2. Review the status of all mitigation actions, using the Mitigation Action Implementation Worksheet (NOVA HMP Base Plan, Section 3, Attachment A). 	<ul style="list-style-type: none"> • Produce an annual report that includes the following: <ul style="list-style-type: none"> ▪ Status update of all mitigation actions. ▪ Summary of any changes in hazard risk or vulnerabilities and capabilities. ▪ Summary of activities conducted for the Action Plan for Implementation and Integration.
Evaluating the Annex	<ol style="list-style-type: none"> 1. Schedule the annual plan evaluation with the jurisdiction planning team. 2. Evaluate the current hazard risks and vulnerabilities, and hazard mitigation capabilities using the Planning Considerations Worksheet (NOVA HMP Base Plan, Section 3, Attachment C). 	<ul style="list-style-type: none"> • Submit the annual report to the Prince William County/NOVA HMP Planning Team Point of Contact.
Updating the Annex	<ol style="list-style-type: none"> 1. Coordinate with Prince William County and the Northern Virginia jurisdictions to identify the method and schedule for the five-year update of the NOVA HMP. 2. Participate in the planning process. 3. Provide input related to the plan components. 4. Following FEMA Approvable Pending Adoption (APA) designation, adopt the updated plan. 	<ul style="list-style-type: none"> • Adoption of the FEMA-approved plan every five years will maintain the Town's eligibility for federal post-disaster funding.

Mitigation actions presented in the Town of Occoquan Jurisdiction Annex may be reviewed, revised, and updated at any time.

The Town of Occoquan will continue to be a planning partner with multiple jurisdictions and regional entities, including Prince William County, to identify hazard mitigation opportunities that reduce risk to the hazards identified in this plan.

10. Annex Adoption

The Town of Occoquan Jurisdiction Annex will be adopted simultaneously with the adoption of the *NOVA HMP* and the *Prince William County Annex*.

11. Attachments

- Attachment 1: Adoption Resolution
- Attachment 2: Documentation of Public Participation
- Attachment 3: Mitigation Actions

11.1. Attachment 1: Adoption Resolution

[This page is a placeholder for the Adoption Resolution for this jurisdiction.]

11.2. Attachment 2: Documentation of Public Participation

October 1, 2021 | Uncategorized | Kirstyn Jovanovich

We need your assistance!

Northern Virginia jurisdictions are preparing an update to the **2017 Northern Virginia Hazard Mitigation Plan**. The regional plan will identify local policies and actions for reducing risk and future losses from hazards such as floods, severe storms, wildfires, winter weather, and more.

The plan will meet key federal planning regulations that require local governments to develop a hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance, including funding for hazard mitigation projects.

This survey provides an opportunity for you to share your opinions and participate in the mitigation planning process. The information you provide will help us better understand your hazard concerns and can lead to mitigation activities that help lessen the impacts of future disasters.

Participation in the survey is voluntary and none of the information you provide will be attributed to you.

[Take the Survey](#)

Town News

- Northern Virginia Hazard Mitigation Public Survey
- Town Council Meeting: October 5, 7:00 pm
- Public Hearing on Proposed Occoquan Town Charter Update – October 5, 7:00 p.m.
- OCQ 2021 River Paddle Challenge – October 2, 2021
- Movie Night in the Park: Hocus Pocus – October 23

11.3. Attachment 3: Mitigation Actions

2022 Action Item	Agency/Department Mitigation Actions	Lead Agency/Department Organization	Hazard	Funding Source	Target Completion Date	Interim Measure of Success	Priority	Comment
2022-1	Public Safety Communication Enhancements: This will include Portable and mobile radios as well as Computer Aided Dispatch (CAD) Computers.	Occoquan Police Department	All Hazards	Various funding sources	2023	Assessment of need has been completed. Initial planning meetings have begun.	High	PWCPD is assisting with this action.
2022-2	Public Safety Maritime Operations: The acquisition of watercraft used for public safety operations.	Occoquan Police Department	All Hazards	Various funding sources	2023	Looking for funding sources	Medium	
2022-3	Alternate Power Supply: Ensuring Town facilities has alternate reliable power sources through the acquisition of standalone emergency generators.	Occoquan Police Department	All Hazards	Various funding sources	2024	Assessment of need has been completed. Initial planning meetings have begun, and funding sources sought after	High	PWCOEM is assisting with this action.
2022-4	Emergency Management Plans: Development and Implementation of a Town Comprehensive Emergency Management Program.	Occoquan Police Department	All Hazards	Various funding sources	2023	Initial DRAFTS of documents have been completed	Medium	

2022-5	Emergency Management Plans: Development and Implementation of a Continuity Of Operations (COOP) Program and Plan	Occoquan Police Department	All Hazards	Various funding sources	2023	Initial DRAFTS of documents have been completed	Medium	
2022-6	Emergency Management Plans: Development and Implementation of a All-Hazards Plan	Occoquan Police Department	All Hazards	Various funding sources	2023	Initial DRAFTS of documents have been completed	Medium	
2022-7	Emergency Management Plans: Development and Implementation of a Town Evacuation Plan	Occoquan Police Department	All Hazards	Various funding sources	2023	Initial DRAFTS of documents have been completed	Medium	
2022-8	Emergency Management Plans: Development and Implementation of a Traffic Incident Management Plan	Occoquan Police Department	All Hazards	Various funding sources	2023	Initial DRAFTS of documents have been completed	Medium	
2022-9	Emergency Management Plans: Development and Implementation of a comprehensive acts of violence program	Occoquan Police Department	All Hazards	Various funding sources	2023	Initial DRAFTS of documents have been completed	Medium	
2022-10	Acts of Violence Program: Acquisition of a special operations vehicle used to store and deploy acts of violence equipment as well as have the capability of running incident command during an act of violence, high threat incidents and special/pre-planned events.	Occoquan Police Department	All Hazards	Various funding sources	2024	Assessment of need has been completed and funding sources sought after	High	

2022-11	Acts of Violence Program: Acquisition of equipment and training needed to respond to and mitigate acts of violence, high threat incidents and special/pre-planned events.	Occoquan Police Department	All Hazards	Various funding sources	2023	Policy and planning has been completed. Initial funding received for equipment and acquisition is in progress.	High	
2022-12	Traffic Incident Management: Acquisition of TIM equipment needed to effectively respond to and facilitate an evacuation of the Town.	Occoquan Police Department	All Hazards	Various funding sources	2024	Assessment of need completed	Medium	
2022-13	Weather Incidents: Acquisition of equipment and training needed to properly mitigate the effects of severe and winter weather impacting the Town.	Occoquan Police Department	All Hazards	Various funding sources	2024	Assessment of need completed	Medium	
2022-14	Weather Incidents: Design and Build a Storm Ready facility for public safety and Town government to ensure essential functions can resume.	Occoquan Police Department	All Hazards	Various funding sources	2026	Assessment of need completed	Medium	
2022-15	Cyber Initiatives: Completion of a cyber threat analysis on Town systems	Occoquan Police Department	All Hazards	Various funding sources	2024	Assessment of need completed. Funding sources sought after	High	

2022-16	Cyber Initiatives: Acquisition of systems to detect, deter and defend Town systems from a Cyber Attack	Occoquan Police Department	All Hazards	Various funding sources	2024	Assessment of need completed. Funding sources sought after	High	
2022-17	Cyber Initiatives: Acquisition of redundant Information Technology systems to ensure Essential Functions during a Continuity Event or Cyber Attack	Occoquan Police Department	All Hazards	Various funding sources	2024	Assessment of need completed. Funding sources sought after	High	
2022-19	Operations: Completion of an ADA facilities assessment of all Town facilities.	Occoquan Police Department	All Hazards	Various funding sources	2023	Assessment of need completed. Funding allocated and actions began.	Medium	
2022-20	Operations: Expansion and rehabilitation of the Town Dock to allow more maritime travel into and out of the Town.	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-21	Town Facilities Improvements: – Implementing flood and severe weather mitigation improvements, such as waterproofing, to Town facilities, including Town Hall and the Mill House Museum.	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-22	Town Facilities Improvements: Updating Town Hall energy systems and envelope in order to increase resiliency to hazard	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	

	events and reduce future mitigation costs.							
2022-23	Stormwater System Improvements: Center Lane pipe replacement	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-24	Stormwater System Improvements: Commerce Street pipe reinforcement	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-25	Stormwater System Improvements: 200 Mill Street culvert/sidewalk repair	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-26	Stormwater System Improvements: Execute stormwater system mapping and planning project to assess current condition and needs of the system.	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-27	Stormwater System Improvements: Repair, retrofit, and construct BMPs in accordance with results of stormwater system planning project.	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-28	Stormwater System Improvements: Town-wide streambed restoration in accordance with the results of the stormwater system planning project. Potential areas include: Ballywack Branch, Furnace Branch, Boundary Branch, and Phelps Creek.	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	

2022-29	Stormwater System Improvements: Implement riparian buffer restoration and other green BMPs to reduce runoff and erosion along the Occoquan River, informed by the results of the stormwater system planning project.	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-30	Infrastructure Preparedness: Underground Town power lines to protect Town energy systems from hazard events and ensure LED street lighting remains on in the event of an emergency.	Town of Occoquan	All Hazards	Various funding sources	2026	Assessment of need completed.	Medium	
2022-31	Infrastructure Preparedness: Installing water hazard markings in potentially dangerous and/or sensitive areas of the Occoquan River.	Occoquan Police Department	All Hazards	Various funding sources	2023	Assessment of need completed.	Medium	PWCOEM is assisting with this action