



Chapter 5: Capability Assessment

I. Introduction

This portion of the plan assesses the current capacity of the communities of Northern Virginia to mitigate the effects of the natural hazards identified in Chapter 4 of the plan. As part of the 2010 update, the capability assessment section includes an update to the capability matrices found in Chapter 7 of the 2006 plan, as well as section reformatting. Perhaps the biggest change in the 2010 capability assessment section is the addition of the capabilities of the Towns that participated in this plan update. This assessment includes a comprehensive examination of the following local government capabilities:

- Administrative Capability;
- Technical Capability;
- Planning and Regulatory Capability; and
- Fiscal Capability.

The purpose of conducting a capability assessment is to determine the ability of a local jurisdiction to implement a comprehensive mitigation strategy, and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs or projects.¹ As in any planning process, it is important to try to establish which goals, objectives, and/or actions are feasible, based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. A capability assessment helps to determine which mitigation actions are practical and likely to be implemented over time given a local government's planning and regulatory framework, level of administrative and technical support, amount of fiscal resources, and current political climate.

A capability assessment has two primary components: an inventory of a local jurisdiction's relevant plans, ordinances, or programs already in place; and an analysis of its capacity to carry them out. Careful examination of local capabilities will detect any existing gaps, shortfalls, or weaknesses with ongoing government activities that could hinder proposed mitigation activities and possibly exacerbate community hazard vulnerability. A capability assessment also highlights the positive mitigation measures already in place or being implemented at the local government level, which should continue to be supported and enhanced through future mitigation efforts.

For the 2010 update, each participating jurisdiction was given an opportunity to update their capability assessment information presented in the original 2006 plan. This effort included updating a Plans, Ordinances, and Programs table, Relevant Fiscal Resources table, and Relevant Staff and Personnel Resources table. Additionally, updates to the information presented below were conducted to better reflect the capabilities within the region as of 2010.

¹ While the Interim Final Rule for implementing the Disaster Mitigation Act of 2000 does not require a local capability assessment to be completed for local hazard mitigation plans, it is a critical step in developing a mitigation strategy that meets the needs of each jurisdiction while taking into account their own unique abilities. The Rule does state that a community's mitigation strategy should be "based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools" (44 CFR, Part 201.6(c)(3)).



II. Conducting the Capability Assessment

In order to facilitate an update of the 2006 inventory and analysis of local government capabilities throughout the Northern Virginia region, specific tables and components of the previous plan were distributed to the communities. These tables, which were completed by appropriate local government officials, requested information on a variety of “capability indicators” such as existing local plans, policies, programs, or ordinances that contribute to or hinder the community’s ability to implement hazard mitigation actions. Other indicators included information related to each jurisdiction’s fiscal, administrative, and technical capabilities, such as access to local budgetary and personnel resources for mitigation purposes.

At a minimum, the updates to the 2006 information provided an extensive inventory of existing local plans, ordinances, programs, and resources in place or under development, in addition to their overall effect on hazard loss reduction. The update thereby not only helps to accurately assess each jurisdiction’s degree of local capability, but also serves as a good source of introspection for those jurisdictions that want to improve their capabilities as identified gaps, weaknesses, or conflicts can be recast as opportunities for specific actions to be proposed as part of the community’s mitigation strategy.

III. Capability Assessment Findings

The findings of the capability assessment are summarized in this Plan to provide insight into the relevant capacity of participating jurisdictions to implement hazard mitigation activities. All information is based upon the input provided by local government officials through the Capability Assessment Survey and during meetings of the Mitigation Advisory Committee. All completed survey questionnaires are available from the NVRC upon request.

A. Administrative and Technical Capability

1. Administrative

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and if there are adequate personnel resources to complete these activities. The degree of intergovernmental coordination among departments will also affect administrative capability for the implementation and success of proposed mitigation activities.

The following table, originally developed under the 2006 Northern Virginia Hazard Mitigation plan, was updated as part of the 2010 planning process. A (Y) indicates that the given local staff member(s) is maintained through each particular jurisdiction’s local government resources. A (Y*) indicates that this capability is new as of the 2010 update. The Towns of Dumfries, Occoquan, and Quantico did not provide an update to the capability assessment.



Table 5.1. Administrative and Technical Capabilities

Jurisdiction	Planners with knowledge of land development and land management practices	Engineers or professionals trained in construction practices related to buildings and/or infrastructure	Planners or engineers with an understanding of natural and/or human-caused hazards	Emergency manager	Floodplain manager	Land surveyors	Scientist familiar with the hazards of the community	Staff with education or expertise to assess the community's vulnerability to hazards	Personnel skilled in Geographic Information Systems (GIS) and/or HAZUS ^{MH}	Resource development staff or grant writers
Alexandria, City of	Y	Y	Y	Y	Y	Y		Y	Y	Y
Arlington County	Y	Y	Y*	Y		Y	Y	Y	Y	
Clifton, Town of	Y*	Y*	Y*	Y*	Y*	Y*		Y*	Y*	Y*
Dumfries, Town of	Y	Y	Y	Y						Y
Fairfax County	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fairfax, City of	Y	Y	Y	Y*	Y	Y*		Y	Y	
Falls Church, City of	Y	Y	Y	Y	Y			Y	Y	Y
Haymarket, Town of	Y*	Y*								
Herndon, Town of	Y	Y	Y	Y	Y	Y*		Y*	Y	Y
Leesburg, Town of	Y	Y	Y*	Y*	Y*	Y*		Y*	Y*	Y*
Loudoun County	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y*
Manassas Park, City of	Y	Y	Y	Y	Y	Y		Y	Y	Y
Manassas, City of	Y	Y	Y		Y	Y		Y	Y	
Middleburg, Town of	Y*	Y*	Y*		Y*				Y*	
Occoquan, Town of										
Prince William County	Y	Y	Y	Y	Y	Y		Y	Y	Y
Purcellville, Town of	Y	Y	Y	Y	Y	Y		Y	Y	Y
Quantico, Town of										
Round Hill, Town of	Y*		Y*							
Vienna, Town of	Y	Y	Y	Y	Y	Y*		Y*	Y	Y*



As described previously, the planning area is comprised of four counties, five cities, and 11 towns. All of the counties in the planning area, Arlington County, Fairfax County, Loudoun County, and Prince William County, operate under a Board of Supervisors - County Administrator/Executive system. In this form of government, the elected board of supervisors appoints a county administrator who oversees daily operations of the county.

The Cities of Alexandria, Falls Church, Fairfax, Manassas, and Manassas Park operate under the City Council – City Manager system. The City Council is elected and it, in turn, appoints a City Manager who acts as the chief administrative officer and oversees daily business operations of the City.

The Towns of Clifton, Dumfries, Haymarket, Occoquan, and Round Hill operate under the Town Council – Mayor system; and the Towns of Herndon, Leesburg, Middleburg, Purcellville, and Vienna operate under a Town Council – Town Manager system, where the council appoints the Town Manager to act as the administrative officer.

Under the County Administrator, City, and Town Manager systems, each jurisdiction (with the exception of the Town of Quantico) has departments, councils, and boards that are responsible for the various functions of local government. The following table created for the 2010 update, highlights the departments in each jurisdiction that could facilitate the implementation of this hazard mitigation plan.

Table 5.2. Departments that could facilitate mitigation action implementation	
Jurisdiction	Departments
Alexandria, City of	Building and Fire Code Administration Fire Planning and Zoning Transportation and Environmental Services
Arlington County	Community Planning, Housing and Development Fire Department Environmental Services Office of Emergency Management
Clifton, Town of	Planning Commission
Dumfries, Town of	Town Council
Fairfax County	Office of Emergency Management Fire and Rescue Planning and Zoning Public Works and Environmental Services Water Authority
Fairfax, City of	Community Development and Planning Fire Department Public Works Police Department Utilities



Table 5.2. Departments that could facilitate mitigation action implementation	
Jurisdiction	Departments
Falls Church, City of	Development Services Environmental Services Public Safety
Haymarket, Town of	Planning Commission
Herndon, Town of	Public Safety Planning/Zoning
Leesburg, Town of	Planning and Zoning Police Department
Loudoun County	Fire, Rescue and Emergency Management Planning
Manassas Park, City of	Fire and Rescue Planning and Zoning Police Public Works
Manassas, City of	Emergency Preparedness Fire and Rescue Police Department Public Works Community Development
Middleburg, Town of	Zoning and Planning Police Department Engineering
Occoquan, Town of	Town Council
Prince William County	Fire and Rescue Planning Office Police Department Public Works
Purcellville, Town of	Planning Department Police Department Public Works
Quantico, Town of	None
Round Hill, Town of	Planning Commission
Vienna, Town of	Planning and Zoning Public Works Police

While exact responsibilities differ from jurisdiction to jurisdiction, the general duties of the departments highlighted in the table are described below.

The OEM is responsible for the mitigation, preparedness, response, and recovery operations that deal with both natural and man-made disaster events. Fire/EMS departments provide medical



aid and fire suppression at the scene of accidents and emergencies. These departments are often responsible for responding to hazardous materials incidents.

The Planning Department addresses land use planning. This department, depending on the jurisdiction, may enforce the NFIP requirements and other applicable local codes. Zoning also may be managed by the Planning Department or it may be a separate office.

In some jurisdictions, the Utilities Department oversees community water facilities or natural gas provisions. In others, the Public Works Department oversees the maintenance of infrastructure including roadways, sewer and stormwater facilities and the community's water treatment facilities. This department also may review new development plans, ensure compliance with environmental regulations, and work with the Virginia Department of Transportation on road issues. Depending on the jurisdiction, the Department of Public Works may enforce the NFIP requirements.

2. Technical Capability

Mitigation cuts across many disciplines. For a successful mitigation program, it is necessary to have a broad range of people involved with diverse backgrounds. These people include planners, engineers, building inspectors, emergency managers, floodplain managers, people familiar with GIS, and grant writers. Technical capability can generally be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in using GIS to analyze and assess community hazard vulnerability.

GIS systems can best be described as a set of tools (hardware, software, and people) used to collect, manage, analyze, and display spatially-referenced data. Many local governments are now incorporating GIS systems into their existing planning and management operations. GIS is invaluable in identifying areas vulnerable to hazards. Access to the Internet can facilitate plan development, public outreach, and project implementation.

The table below summarizes the technical capabilities of the jurisdictions. When provided, the specific department that has the technical capability is identified.



5.3. Technical Capabilities of each Jurisdiction								
Jurisdiction	Land Use Planners	Civil or Building Engineers	Emergency manager	Floodplain manager	Staff familiar with hazards	GIS staff	Grant writers	Internet access?
Alexandria, City of	Planning & Zoning	Transportation & Environmental Services	Fire Department - Emergency Management	Transportation & Environmental Services	Fire Department - Emergency Management	Planning & Zoning	Planning & Zoning, City Administration	Yes
Arlington County	Community Planning	Environmental Services	Office of Emergency Management	Community Planning	Office of Emergency Management	Information Technology	County Administration, Police Department	Yes
Clifton, Town of	Planning Commission	Planning Commission	Public Safety	Planning Commission	Public Safety	Planning Commission	Planning Commission	Yes
Dumfries, Town of	Town Council	Town Council	Town Council	Town Council	Town Council	Town Council	Town Council	Yes
Fairfax County	Planning & Zoning	Public Works	Emergency Management	Planning and Zoning	Emergency Management	Information Technology	County Administration	Yes
Fairfax, City of	Community Development & Planning	Public Works	Public Safety - Emergency Management	Community Development & Planning	Community Development & Planning, Public Safety	Information Technology	City Administration	Yes
Falls Church, City of	Development Services	Environmental Services	Public Safety	Development Services	Development Services, Public Safety	Public Safety	Development Services	Yes
Haymarket, Town of	Planning Commission	Planning Commission	Planning Commission	Planning Commission	Planning Commission	Planning Commission	Town Council	Yes
Herndon, Town of	Planning Zoning	Planning & Zoning	Public Safety	Planning & Zoning	Public Safety	Public Safety	Town Council	Yes
Leesburg, Town of	Planning & Zoning	Planning & Zoning	Police Department	Planning & Zoning	Police Department	Police Department	Town Council	Yes
Loudoun County	Planning	Public Works	Fire, Rescue & Emergency Management	Planning	Fire, Rescue & Emergency Management	Fire, Rescue & Emergency Management	Planning	Yes



5.3. Technical Capabilities of each Jurisdiction								
Jurisdiction	Land Use Planners	Civil or Building Engineers	Emergency manager	Floodplain manager	Staff familiar with hazards	GIS staff	Grant writers	Internet access?
Manassas Park, City of	Planning & Zoning	Public Works	Police Department	Planning & Zoning	Police, Fire & Rescue	Police, Fire & Rescue	Planning & Zoning, City Administration	Yes
Manassas, City of	Community Development	Public Works	Emergency Preparedness	Community Development, Emergency Preparedness	Public Safety	Emergency Preparedness	Community Development	Yes
Middleburg, Town of	Zoning & Planning	Engineering	Police Department	Zoning & Planning	Police Department	Police Department	Zoning & Planning	Yes
Occoquan, Town of	Town Council	Town Council	Town Council	Town Council	Town Council	Town Council	Town Council	Yes
Prince William County	Planning Office	Public Works	Fire & Rescue, Police Department	Planning Office	Fire & Rescue, Police Department	Fire & Rescue, Police Department	Planning Office	Yes
Purcellville, Town of	Planning Office	Public Works	Police Department	Planning Office	Police Department	Police Department	Planning Office	Yes
Quantico, Town of	Town Council	Town Council	Town Council	Town Council	Town Council	Town Council	Town Council	Yes
Round Hill, Town of	Planning and Zoning	Utility Department	Community Policing	Planning and Zoning	Town Council	Planning and Zoning	Planning and Zoning	Yes
Vienna, Town of	Planning & Zoning	Public Works	Police	Planning & Zoning	Police	Police	Planning & Zoning	Yes



B. Planning and Regulatory Capability

Planning and regulatory capability is based on the implementation of plans, ordinances, and programs that demonstrate a jurisdiction's commitment to guiding and managing growth, development, and redevelopment in a responsible manner, while maintaining the general welfare of the community. It includes emergency operations and mitigation planning, comprehensive land use planning, and transportation planning, in addition to the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built, as well as protecting environmental, historic, and cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate hazard mitigation principles and practices into the local decision making process.

The Planning and Regulatory capability assessment is designed to provide a general overview of the key planning and regulatory tools or programs in place or under development, along with their potential effect on loss reduction. This information helps identify opportunities to address existing planning and programmatic gaps, weaknesses, or conflicts with other initiatives, in addition to integrating the implementation of this plan with existing planning mechanisms where appropriate.

The table below provides an update to the 2006 Northern Virginia Hazard Mitigation Plan. It summarizes relevant local plans, ordinances, and programs already in place or under development for participating jurisdictions. A (Y) indicates that the given item is currently in place and being implemented by the local jurisdiction (or in some cases by the County on behalf of that jurisdiction), or that it is currently being developed for future implementation. A (Y*) indicates that capability is new as of the 2010 update.



Table 5.4. Local plans, ordinances and programs

Jurisdiction	Hazard Mitigation Plan	Comprehensive Land Use Plan	Floodplain Management Plan	Open Space Management Plan	Stormwater Management Plan	Flood Response Plan	Emergency Operations Plan	SARA Title III Plan	Radiological Emergency Plan	Continuity of Operations Plan	Evac Plan	Disaster Recovery Plan
Alexandria, City of	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Arlington County	Y	Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y
Clifton, Town of	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Dumfries, Town of	Y	Y		Y	Y		Y				Y	
Fairfax County	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fairfax, City of	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Falls Church, City of	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Haymarket, Town of		Y*	Y*	Y*	Y*							
Herndon, Town of	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Leesburg, Town of	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Loudoun County	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y	Y	Y
Manassas Park, City of	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Manassas, City of	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Middleburg, Town of	Y*	Y*	Y*	Y*	Y*	Y*		Y*	Y*	Y*		Y*
Occoquan, Town of												
Prince William County	Y	Y	Y				Y	Y	Y	Y	Y	
Purcellville, Town of	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y
Quantico, Town of												
Round Hill, Town of		Y*			Y*							
Vienna, Town of	Y	Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y*



Table 5.4. Local plans, ordinances and programs

Jurisdiction	Capital Improvements Plan	Economic Development Plan	Historic Preservation Plan	Flood Damage Prevention Ordinance	Zoning Ordinance	Subdivision Ordinance	Post-disaster Red/Rec. Ordinance	Building Code	Fire Code	National Flood Insurance Program	NFIP Community Rating System
Alexandria, City of	Y			Y	Y	Y		Y	Y	Y	Y
Arlington County	Y	Y	Y*	Y	Y	Y*		Y	Y	Y	Y
Clifton, Town of	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Dumfries, Town of	Y	Y		Y	Y	Y		Y	Y	Y	
Fairfax County	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fairfax, City of	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y*
Falls Church, City of	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y*
Haymarket, Town of	Y*				Y*	Y*				Y*	
Herndon, Town of	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*
Leesburg, Town of	Y	Y	Y	Y	Y	Y		Y	Y	Y	
Loudoun County	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y
Manassas Park, City of	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Manassas, City of	Y	Y	Y	Y	Y	Y		Y	Y	Y	
Middleburg, Town of										Y	
Occoquan, Town of										Y	
Prince William County	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y
Purcellville, Town of	Y	Y	Y	Y	Y	Y		Y	Y	Y	
Quantico, Town of										Y	
Round Hill, Town of	Y*				Y*	Y*			Y*	Y*	
Vienna, Town of	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y



A more detailed discussion on each jurisdiction’s planning and regulatory capability follows, along with the incorporation of additional information based on the narrative comments provided by local officials in response to the survey questionnaire. Copies of the completed surveys provide more detailed information on local capability, and can be obtained from the NVRC.

Emergency Management

Hazard mitigation is widely recognized as one of the four primary phases of emergency management. The three other phases include preparedness, response, and recovery. In reality each phase is interconnected with hazard mitigation as Figure 5.1 suggests. Opportunities to reduce potential losses through mitigation practices are most often implemented before disaster strikes, such as elevation of flood prone structures or through the continuous enforcement of policies that prevent and regulate development that is vulnerable to hazards because of its location, design, or other characteristics. Mitigation opportunities will also be presented during immediate preparedness or response activities (such as installing storm shutters in advance of a hurricane), and certainly during the long-term recovery and redevelopment process following a hazard event.



Planning for each phase is a critical part of a comprehensive emergency management program and a key to the successful implementation of hazard mitigation actions. As a result, the *Capability Assessment Survey* asked several questions across a range of emergency management plans in order to assess each jurisdiction’s willingness to plan and their level of technical planning proficiency.

Hazard Mitigation Plan: A hazard mitigation plan represents a community’s blueprint for how it intends to reduce the impact of natural and human-caused hazards on people and the built environment. The essential elements of a hazard mitigation plan include a risk assessment, capability assessment, and mitigation strategy.



Disaster Recovery Plan: A disaster recovery plan serves to guide the physical, social, environmental, and economic recovery and reconstruction process following a disaster. In many instances, hazard mitigation principles and practices are incorporated into local disaster recovery plans with the intent of capitalizing on opportunities to break the cycle of repetitive disaster losses. Disaster recovery plans can also lead to the preparation of disaster redevelopment policies and ordinances to be enacted following a hazard event.

- Eleven out of 20 jurisdictions have or are developing Disaster Recovery Plans, although some jurisdictions indicate that other plans include this topic, e.g., an emergency operations plan, and there is no separate disaster recovery plan that addresses long-term recovery issues.

Emergency Operations Plan: An emergency operations plan outlines responsibilities and the means by which resources are deployed during and following an emergency or disaster.

- Fifteen out of 20 jurisdictions have their own local emergency operations plans.

Continuity of Operation Plan: A continuity of operations plan establishes a chain of command, line of succession, and plans for backup or alternate emergency facilities in case of an extreme emergency or disaster event.

- Survey results indicate that seven jurisdictions do not have continuity of operations plans in place.

Radiological Emergency Plan: A radiological emergency plan delineates roles and responsibilities for assigned personnel and the means to deploy resources in the event of a radiological accident.

- Twelve jurisdictions have a plan to address radiological emergencies.

SARA Title III Emergency Response Plan: A Superfund Amendments and Re-authorization Act (SARA) Title III Emergency Response Plan outlines the procedures to be followed in the event of a chemical emergency such as the accidental release of toxic substances. These plans are required by federal law under Title III of the SARA, also known as the Emergency Planning and Community Right-to-Know Act.

- Fourteen jurisdictions have an Emergency Response Plan for chemical emergencies.

General Planning

The implementation of hazard mitigation activities often involves agencies and individuals beyond the emergency management profession. Stakeholders may include local planners, public works officials, economic development specialists, and others. In many instances, concurrent local planning efforts will help to achieve or complement hazard mitigation goals even though they are not designed as such. Therefore, the *Capability Assessment Survey* also asked questions regarding each jurisdiction's general planning capabilities and the degree to which hazard mitigation is integrated into other on-going planning efforts.

Comprehensive Land Use Plan: A comprehensive land use plan establishes the overall vision for what a community wants to be and serves as a guide to future governmental decision making. Typically a comprehensive plan contains sections on demographic conditions, land use, transportation elements, and community facilities. Given the broad nature of the plan and its



regulatory standing in many communities, the integration of hazard mitigation measures into the comprehensive plan can enhance the likelihood of achieving risk reduction goals, objectives, and actions.

- Survey results indicate that 16 jurisdictions have a comprehensive land use plan. All the jurisdictions indicated that their land use plans either strongly support or help facilitate hazard loss reduction. Some jurisdictions indicated that although hazard mitigation is not specifically addressed in the plan, some elements of the plan might be relevant to hazard mitigation (e.g., environmental protection).

Capital Improvements Plan: A capital improvement plan guides the scheduling of spending on public improvements. A capital improvements plan can serve as an important mechanism for guiding future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments.

- Survey results indicate that all jurisdictions have a capital improvements plan in place or under development. Most of these are five-year plans that are updated annually, and all survey respondents indicated they either support or facilitate loss reduction efforts in their community.

Historic Preservation Plan: A historic preservation plan is intended to preserve historic structures or districts within a community. An often overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards, and the identification of ways to reduce future damages.³⁶ This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards, or are within a historic district that cannot easily be relocated out of harm's way.

- In 2006, survey results indicate that 10 out of 14 jurisdictions have a historic preservation plan for their communities. Arlington County, the Town of Dumfries, and the Town of Vienna indicated that they do not have any plans that address historic preservation. In 2010, this information was not changed.

Zoning Ordinances: Zoning represents the primary means by which land use is controlled by local governments. As part of a community's police power, zoning is used to protect the health, safety, and welfare of those in a given jurisdiction that maintains zoning authority. A zoning ordinance is the mechanism through which zoning is typically implemented. Since zoning regulations enable municipal governments to limit the type and density of development, it can serve as a powerful tool when applied in identified hazard areas.

- Survey results indicate that all jurisdictions in the Northern Virginia region have adopted and enforce a zoning ordinance. All jurisdictions indicated that their zoning ordinance either strongly supports or helps facilitate hazard loss reduction.

Subdivision Ordinances: A subdivision ordinance is intended to regulate the development of housing, commercial, industrial, or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.²

² For additional information regarding the use of subdivision regulations in reducing flood hazard risk, see



- Survey results indicate that all jurisdictions in the Northern Virginia region, except Arlington County, have adopted and enforce a subdivision ordinance. The jurisdictions indicated that their ordinance either strongly supports or helps facilitate hazard loss reduction.

Building Codes, Permitting and Inspections: Building Codes regulate construction standards. In many communities permits are issued for, and inspections of work take place on, new construction. Decisions regarding the adoption of building codes (that account for hazard risk), the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community.

- The Virginia Uniform Statewide Building Code (USBC) is a State regulation promulgated by the Virginia Board of Housing and Community Development for the purpose of establishing minimum regulations to govern the construction and maintenance of buildings and structures. As of October 1, 2003, the 2000 version of the International Building Code and International Fire Code were adopted by the Commonwealth of Virginia.
- As provided in the USBC Law, the USBC supersedes the building codes and regulations of the counties, municipalities, and other political subdivisions and state agencies.

The adoption and enforcement of building codes by local jurisdictions is routinely assessed through the Building Code Effectiveness Grading Schedule (BCEGS) program developed by the Insurance Services Office, Inc. (ISO).³ Under the BCEGS program, ISO assesses the building codes in effect in a particular community and how the community enforces its building codes, *with special emphasis on mitigation of losses from natural hazards*. The results of BCEGS assessments are routinely provided to ISO's member private insurance companies, which in turn may offer ratings credits for new buildings constructed in communities with strong BCEGS classifications. The concept is that communities with well-enforced, up-to-date codes should experience fewer disaster-related losses, and as a result should have lower insurance rates.

In conducting the assessment, ISO collects information related to personnel qualification and continuing education, as well as number of inspections performed per day. This type of information combined with local building codes is used to determine a grade for that jurisdiction. Table 5.5 shows the BCEGS rating for the jurisdictions in the Northern Virginia region. The grades range from 1 to 10, with the lower grade being better. A BCEGS grade of 1 represents exemplary commitment to building code enforcement, and a grade of 10 indicates less than minimum recognized protection.

Subdivision Design in Flood Hazard Areas. 1997. Morris, Marya. Planning Advisory Service Report Number 473. American Planning Association: Washington, D.C.

³ Participation in BCEGS is voluntary and may be declined by local governments if they do not wish to have their local building codes evaluated.



Table 5.5. BCEGS Rating for the Northern Virginia Region		
Jurisdiction	Year of Evaluation	BCEGS Rating
Arlington County	2000	3
Fairfax County	1997	3
Loudoun County	1997	3
Prince William County	1997	4
Alexandria, City of	1998	3
Fairfax, City of	1998	4
Falls Church, City of	1999	5
Manassas, City of	1997	4
Manassas Park, City of	2000	3
Dumfries, Town of	1997	5
Herndon, Town of	1997	3
Leesburg, Town of	1997	3
Purcellville, Town of	1997	3
Vienna, Town of	N/A	N/A

Source: Insurance Services Office, Inc. (ISO)

1. NFIP participation

Communities that regulate development in floodplains are able to participate in the NFIP. In return, the NFIP makes federally-backed flood insurance policies available for eligible properties in the community. All of the participating jurisdictions included in this planning initiative participate in the NFIP. The table below shows when each of the jurisdictions began participating in the NFIP. The table also provides the date of the FIRM in effect in each community. These maps were developed by FEMA or its predecessor and show the boundaries of the 100-year and 500-year floods. As the table shows, 13 of the maps are over 15 years old. Parts of the planning area have experienced dramatic growth over the past decade that is not reflected in the FIRM. This difference may mean that the actual floodplain varies from that depicted on the map.

Table 5.6. Communities participating in the NFIP.					
Community Name	Init FHBM Identified	Init FIRM Identified	Current Effective Map Date	Reg-Emer Date	DFIRM/Q3
Arlington County		10/1/1969	5/3/1982	12/31/1976	DFIRM
Fairfax County	5/5/1970	3/5/1990	3/5/1990	1/7/1972	DFIRM
Town of Herndon	6/14/1974	8/1/1979	8/1/1979	8/1/1979	
Town of Vienna	8/2/1974	2/3/1982	2/3/1982	2/3/1982	
Town of Clifton	3/28/1975	5/2/1977		5/2/1977	
Loudoun County	4/25/1975	1/5/1978	7/5/2001	1/5/1978	DFIRM
Town of Leesburg	8/3/1974	9/30/1982	7/5/2001	9/30/1982	
Town of Purcellville	7/11/1975	11/15/1989	7/5/2001	11/15/1989	
Town of		7/5/2001	7/5/2001	7/31/2001	



Table 5.6. Communities participating in the NFIP.

Community Name	Init FHBM Identified	Init FIRM Identified	Current Effective Map Date	Reg-Emer Date	DFIRM/Q3
Middleburg					
Town of Round Hill	5/13/1977	7/5/2001	7/5/2001	1/10/2006	
Prince William County	1/10/1976	12/1/1981	1/5/1995	12/1/1981	DFIRM
Town of Dumfries	6/18/1976	5/15/1980	1/5/1995	5/15/1980	
Town of Haymarket	8/9/1974	1/17/1990	1/5/1995	1/31/1990	
Town of Occoquan	7/19/1974	9/1/1978	1/5/1995	9/1/1978	
Town of Quantico	11/1/1974	8/15/1978	1/5/1995	8/15/1978	
City of Alexandria	8/22/1969	8/22/1969	5/15/1991	5/8/1970	Q3
City of Fairfax	5/5/1970	12/23/1971	6/2/2006	12/17/1971	DFIRM
City of Falls Church	9/6/1974	2/3/1982	7/16/2004	2/3/1982	DFIRM
City of Manassas	5/31/1974	1/3/1979	1/5/1995	1/3/1979	DFIRM
City of Manassas Park	3/11/1977	9/29/1978	1/5/1995	9/29/1978	DFIRM

as of 7/6/2010 <http://www.fema.gov/cis/VA.html>

C. Fiscal Capability

For Fiscal Year 2010, the budgets of the participating jurisdictions range from \$1.3 Million (Town of Middleburg) to \$1.2 Billion (Fairfax County). The table below shows the total budget amounts for each jurisdiction in addition to the amount budgeted for public safety, public works and their respective planning and zoning departments. The Towns of Clifton, Quantico, and Occoquan and the City of Manassas Park did not have fiscal year 2010 budgetary information available for review.

Table 5.7. 2010 budgets by jurisdiction

Jurisdiction	FY 2010 Budget (\$)	Public Works Budget (\$)	Public Safety Budget (\$)	Planning Budget (\$)
Alexandria, City of	530M	27.2M	33M	5.3M
Arlington County	946.8M	70.2M	104M	9.2M
Clifton, Town of	<i>Not Available for Review</i>			
Dumfries, Town of	4M	0.25M	1.3M	0.215M
Fairfax County	1.21B	421M	62.8M	10.6M



Table 5.7. 2010 budgets by jurisdiction				
Jurisdiction	FY 2010 Budget (\$)	Public Works Budget (\$)	Public Safety Budget (\$)	Planning Budget (\$)
Fairfax, City of	126M	10.9M	19.1M	2M
Falls Church, City of	66.9M	0.671M	9.4M	0.746M
Haymarket, Town of	1.2M	0.116M	0.352M	.0038M
Herndon, Town of	41.1M	8.8M	8.5M	1.3M
Leesburg, Town of	45.1M	10.9M	10.9M	1.58M
Loudoun County	1.1B	<i>Not Available for Review</i>	131M	0.607M
Manassas Park, City of	<i>Not Available for Review</i>			
Manassas, City of	100M	7.5M	19M	.462M
Middleburg, Town of	1.3M	<i>Not Available for Review</i>	0.48M	0.142M
Occoquan, Town of	<i>Not Available for Review</i>			
Prince William County	845M	1.9M	13M	0.93M
Purcellville, Town of	13.5M	2.8M	1.5M	0.564M
Quantico, Town of	<i>Not Available for Review</i>			
Round Hill, Town of	2.7 M	1.4 M	<i>Not Available for Review</i>	<i>Not Available for Review</i>
Vienna, Town of	20.8M	6.7M	5.6M	.746M

The counties, cities, and towns receive most of their revenue through State and local sales tax, local services, and through restricted intergovernmental contributions (Federal and State pass through dollars). It is unlikely that any of the counties, cities, or towns could easily afford to provide the local match for the existing hazard mitigation grant programs. Considering the current budget deficits at both the State and local government level in Virginia, combined with the apparent increased reliance on local accountability by the Federal government, this is a significant and growing concern.

The following table is an update to the 2006 Northern Virginia Hazard Mitigation Plan. The table highlights each jurisdiction’s fiscal capability through the identification of locally available financial resources. A (Y) indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for State and Federal mitigation grant funds). A (Y*) indicates that capability is new as of the 2010 update.



5.8. Fiscal capabilities by jurisdiction

Jurisdiction	Capital Improvement Programming	Community Development Block Grants	Special Purpose Taxes	Gas / Electric Utility Fees	Water / Sewer Fees	Stormwater Utility Fees	Development Impact Fees	General Obligation Bonds / Revenue Bonds / Special Tax Bonds	Partnering Arrangements or Intergovernmental Agreements
Alexandria, City of	Y	Y	Y		Y		Y	Y	Y
Arlington County	Y	Y	Y*	Y*	Y*	Y*		Y	Y
Clifton, Town of	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Dumfries, Town of	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fairfax County	Y	Y	Y	Y	Y	Y*	Y*	Y	Y
Fairfax, City of	Y		Y		Y				
Falls Church, City of	Y	Y			Y	Y	Y	Y	Y
Haymarket, Town of	Y*							Y*	
Herndon, Town of	Y	Y	Y	Y*	Y	Y*	Y*	Y	Y
Leesburg, Town of	Y		Y*	Y	Y			Y	Y
Loudoun County	Y	Y	Y					Y	Y*
Manassas Park, City of	Y	Y			Y	Y		Y	Y
Manassas, City of	Y	Y	Y	Y	Y	Y		Y	Y
Middleburg, Town of	Y*	Y*			Y*			Y*	Y*
Occoquan, Town of									
Prince William County	Y	Y	Y		Y	Y	Y	Y	Y
Purcellville, Town of	Y	Y			Y			Y	Y
Quantico, Town of									
Round Hill, Town of	Y*			Y*	Y*			Y*	Y*
Vienna, Town of	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*