Region 2000 Hazard Mitigation Plan

Participating Jurisdictions:

Altavista, Town of	Appomattox, Town of	Campbell County
Amherst County	Bedford County	Lynchburg City
Amherst, Town of	Bedford City	Pamplin City, Town of
Appomattox County	Brookneal, Town of	

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Developed and published by Region 2000 Staff.

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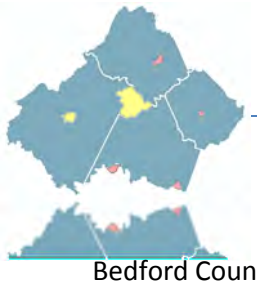


Executive Summary

This plan is an update of the Region 2000 Hazard Mitigation Plan. The original Hazard Mitigation Plan for Region 2000 was written in 2006. Although it is an update, this document has been redesigned so that it looks, feels, and reads differently than the original. This is due to several factors: new hazard information has become available that drives new definitions of risk, the region has matured and new capabilities are now available that drive new definitions of risk, the region has matured and new capabilities are now available, and the new format will allow readers to more easily understand the content. In addition, the original Hazard Mitigation Plan included several action items that have been completed, creating an opportunity for developing new mitigation strategies.

Mitigation is defined in the English language as “the action of lessening in severity or intensity”. Hazard mitigation focuses on lessening the severity and intensity of identified hazards as well as protecting life and property. A hazard mitigation plan produces specific measures to be taken by a community to reduce the vulnerability from hazards of future events and reducing the recovery time from damages incurred. Such a plan is created through a planning process with input from citizens, business owners, public safety officials, and other stakeholders.

This plan update includes an updated list of identified natural hazards that are considered to be a threat to each county, an update to the evaluation and analysis of the risks of exposure each jurisdiction in Region 2000 has, an update to the strategy for long and short mitigation of identified natural hazards and a plan for on-going review and maintenance of the Region 2000 Hazard Mitigation Plan. With these updated items, the plan follows the requirements for local mitigation planning as required under Section 322 of the Stafford Act (42U.S.C. 5165) and 44 CFR Part 201 as the necessary components of a local hazard mitigation plan and the new regulations for the program per 2012.

The Project Management Team reviewed each section of the plan to make sure the protocols adequately served the purpose of the plan. The plan maintenance section was reviewed and confirmed. The mitigation strategies section was reviewed and updated to include new mitigation strategies and update the ones in the existing plan.

In 2006, the Center for Geospatial Information Technology at Virginia Tech was contracted by Region 2000 to carry out the original Hazard Mitigation Plan. This update process was carried out in house by Region 2000 staff. Funding for the project was provided through a grant from the Virginia Department of Emergency Management with the appropriate match made by each local government in Region 2000.

Authority

Section 209 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-228, as amended), Title 44 of the Code of Federal Regulations (CFR), as amended by Section 201 of the Disaster Mitigation Act of 2000, outlines the steps for state and local governments to assess and mitigate all hazards as a requirement of receiving federal disaster assistance. A key requirement of the law is the creation of a local hazard mitigation plan.

The adoption of the Region 2000 Hazard Mitigation Plan Update 2013 by the participating jurisdictions assures continuing entitlement for Federal Emergency Management Agency (FEMA) grant assistance through the Hazard Mitigation Grant Program, the Pre-Disaster Mitigation Grant Program, the Flood Mitigation Assistance Program, and other federally-funded programs.

Jurisdictions

The Region 2000 Hazard Mitigation Plan is multi-jurisdictional in scope, covering the following jurisdictions:

The area covered by this plan includes:

Participating Communities	
Counties	**Towns**
Amherst County	Town of Altavista
Appomattox County	Town of Appomattox
Bedford County	Town of Amherst
Campbell County	Town of Brookneal
	Town of Pamplin City

Cities
City of Bedford
City of Lynchburg

The Region 2000 Hazard mitigation Plan and its 2013 update fulfills the requirements of the Sections 201.6(a)(3) and 201.6(c)(5) of the Disaster Mitigation Act of 2000 as administered by the Virginia Department of Emergency Management (VDEM) and FEMA, for multi-jurisdictional planning participation and adoption. This plan is awaiting evaluation and approval from FEMA before it can be evaluated and adopted by the eleven participating local governments. (Resolutions have not yet been adopted. Resolutions will become available upon approval by FEMA).

Participation

All jurisdictions listed in the above section of the Region 2000 Hazard Mitigation Plan participated in the creation of the original plan and this update to the plan. Representatives who were unable to attend planning meetings were given the opportunity to participate through meeting minutes and the review of draft material. Each jurisdiction will have participated through a formal resolution to be adopted, approving the plan update.

Participation in the Region 2000 hazard mitigation planning update process included a project management team and public participation. The project management team was made up of local officials from each jurisdiction, setting a meeting schedule and tracking participation and follow-up measures. The public participation side of the planning process included building awareness of the plan through public workshops and giving opportunities for plan review and comments. Region 2000 staff and the PMT oversaw the public education process and agreed that it was integral to the update.

Participation in the update included a series of four PMT meetings to review and update the plan. In addition, two public hearings were administered by Region 2000 staff and the PMT before the draft was provided to the participating localities' governing bodies. Dates and times of public meetings were available through the Region 2000 Hazard Mitigation Plan Update webpage.

Each of the jurisdictions in this plan was represented by either elected officials and/or staff from the locality with knowledge of local safety and emergency response. The membership of the PMT is in accordance with the requirements of Section 44 CFR 201.6(b)(2) for a multi-jurisdictional plan and the members are listed on the following page.

Table 1.1 Project Management Team Members

Name	Jurisdiction
Gary Roakes	Amherst County
Kelvin Brown	Amherst, Town of
Freddie Godsey	Appomattox County
Johnnie Roark	Appomattox County
Roxanne Paulette	Appomattox, Town of
Bob Mitchell	Pamplin City, Town of
Bart Warner	Bedford City
Seth Mowles	Bedford County
Marci Stone	Bedford County
Jack Jones	Bedford County
Tracy Fairchild	Campbell County
Randall Johnson	Campbell County
Dan Witt	Altavista, Town of
Mike Crews	Brookneal, Town of
Bill Aldridge	Lynchburg City
Todd Styles	Volunteer Firefighter
Philipp Gabathuler	Region 2000
Bob White	Region 2000

Introduction

The purpose of the Region 2000 Multi-Jurisdiction Hazard Mitigation Plan Update is to identify areas of concern from natural hazards in the region and describe how these concerns will be addressed through the implementation of mitigation actions. This plan satisfies section 322 requirements for local hazard mitigation planning.

The appendix for this sections contains the Disaster Mitigation Act of 2000 (DMA2K) requirements. Hazard mitigation is any sustained action taken to reduce or eliminate long term risk to life, property and the economy from a hazard event. In the past, federal legislation has provided primarily post-disaster funding for disaster relief, recovery, and some hazard mitigation planning. DMA2K is the latest legislation to address this planning process. DMA2K was enacted on October 10, 2000, when President Clinton signed the Act (Public Law 106-390). The new legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. As such, this Act establishes a pre-disaster hazard mitigation program and new requirements for the national Hazard Mitigation Grant Program (HMGP). States and local governments are required to adopt hazard mitigation plans to maintain eligibility for pre-disaster and post-disaster federal hazard mitigation funding.

In accordance with the requirements of the DMA2K, a multi-hazard mitigation plan was prepared for Region 2000. By having the mitigation plan in place, jurisdictions in Region 2000 will be able to better understand local hazards and the risks posed by them. During plan development, the project management team—made up of local emergency response officials—developed mitigation activities to lessen the impacts, and to acquire disaster-related grants in the aftermath of a disaster.

Region 2000, on behalf of its member jurisdictions, has developed this plan to serve as a guide to its jurisdictions when assessing potential vulnerabilities to natural hazards. When developing this plan, every effort was made to gather input from all aspects of the project area communities to assure that the results of this analysis will be as complete as possible. The planning area for this study includes the four counties, two cities, and five towns that make up Region 2000. The hazard mitigation plan only addresses natural hazards at this time, with a brief description of terrorism concerns in the region. Future updates of this plan will address these concerns.

Region 2000 was awarded a planning grant from Hurricane Isabel FEMA Hazard Mitigation Grant Program (HMGP) Virginia funds to update this plan. The grant application process was led by the Virginia Department of Emergency Management (VDEM), which provided valuable assistance to throughout the planning process.

A project management team was established to provide input to the planning process. The committee was made up of public representatives, private citizens, businesses, and organizations. Efforts to involve local and county departments, as well as other regional and community organizations that might have a role in the implementation of the mitigation actions or policies, included invitations to attend meetings and serve on the committee, e-mails of minutes and updates, and opportunities for input and comment on all draft deliverables.

The development of this plan is the collaboration of the efforts of state and local governments, emergency responders and public input. The members of the project management team were able to provide feedback on the development of the mitigation plan. This effort pulls together many community initiated actions and serves as a sounding board for all the jurisdictions within Region 2000.

Plan Organization

The Region 2000 Hazard Mitigation Plan is organized into six main sections. These sections being:

Section	Description
Community Descriptions	The Community Descriptions provides information on the geography and demographics of the region.
Planning Process	The *Planning Process* provides information on the makeup of the steering committee members, meetings for the committee members and public, and the steps taken to complete and adopt the mitigation plan.
Hazard Identification and Risk Assessment (HIRA)	The *HIRA* provides detailed descriptions and maps on how the region is impacted by various natural and man-made hazards.
Capability and Mitigation	The *Capability and Mitigation* section provides information on each community's rankings of mitigation actions and the capability to implement individual mitigation actions.
Plan Maintenance	The *Plan Maintenance* provides information on the region's ability to maintain and update the plan.
References	The *References* provides a listing of the different resources used in the development of this plan.
Appendices	The *Appendices* provides the figures, tables and reports that are referenced in the body of the plan.

Community Profiles

Summary of changes

The community profiles section underwent several changes in the plan update process. All demographic and economic data was updated according to US 2010 data or American Community Survey Data from 2006-2011. Since higher education has also become a strong contributing factor to the region, student enrollment numbers were closely monitored since the last plan and updated according to the academic institutions' numbers.

Updated National Flood Insurance Policy data was obtained from the Department of Conservation and Recreation and inserted into the National Flood Insurance Program section of each jurisdiction's profile.

The land use and geography described for each jurisdiction remains intact since no substantive change has occurred in either since the original plan was written in 2006.

Region 2000

Region 2000 is a business-friendly region in the heart of Virginia, just three hours south of the Washington DC metro area. Communities that make up the region include Amherst County, Bedford County, Appomattox County, Campbell County, Bedford City, Lynchburg City, and the towns of Altavista, Appomattox, Amherst, Brookneal and Pamplin City. The total population in 2010 of these communities was 252,634—up 14% from the 2000 Census.

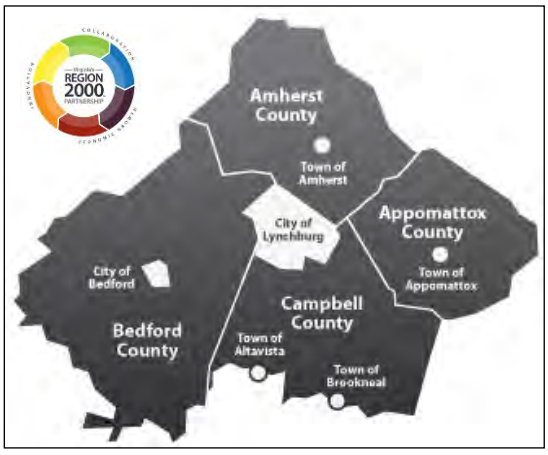


Figure 3.1 details the jurisdictions participating in the mitigation planning efforts.

Virginia Planning District Commissions (PDCs) were formed in 1968 through the Code of Virginia. Title §15.2, labeled Counties, Cities and Towns of title §15.2 chapter 42 labeled Regional Cooperation Act (§15.2-4200 through §15.2-4222). The PDCs serve as a network in providing the Commonwealth with complete statewide coverage. PDCs were developed to provide both technical and service programs to the governments they serve. In January 2001 the Central Virginia PDC was transformed into the Region 2000 and has recently become known simply as Region 2000.

The main purpose of the commission is to provide economic competitiveness on a regional scale, reduce redundancies in government, improve efficiency, enhance services, and improve implementation time for regional projects. The region's two major U.S. highways are 29 and 460. The highways have become corridors for most of the industrial, commercial, and residential development.

Primary economic categories in the region include higher education, wireless technology, manufacturing automation, nuclear energy, plastics, pharmaceuticals, and health care. Region 2000 belongs to one of the technology councils making up the Virginia Technology Alliance.

The region is rich in civil war history, with battlefields, historical parks, and museums found throughout. Climate in the region is mild, with average January and July temperatures at 35°F and 71°F and annual rainfall and snowfall at 40" and 21" respectively.

Amherst County

Amherst County is located near the geographic center of Virginia just north of the city of Lynchburg. The county was created in 1761 from Albemarle County and is named for Major General Jeffery Amherst, a hero of the battle of Ticonderoga. It is bounded on the northwest by Rockbridge County, to the south and southwest by Bedford County, Campbell County and the City of Lynchburg and on the northeast by Nelson County. The James River borders the county on the south and east with the crest of the Blue Ridge Mountains forming the western Boundary. According to the US Census, Amherst County had a 2010 population of 32,353. Half the population is located in the south central portion of the county near the City of Lynchburg and around Madison Heights. The Town of Amherst was incorporated in 1910 and is situated on the topographic divide separating Tribulation Creek and Rutledge Creek. The Town of Amherst serves as the county seat. As of the 2010 US census, the town had a total population of 2,231. Sweet Briar College, a private women's liberal arts and science college, enrolls approximately 700 students. The college, founded in 1901, encompasses 3,250 acres located in the foothills of the Blue Ridge Mountains. Elevations ranging from 500 feet to 4,000 feet provide the County with spectacular rolling countryside.

National Flood Insurance Program

Amherst County entered into the National Flood Insurance Program (NFIP) on July 17, 1978 with emergency entry on March 1, 1974. The current effective date for the FIRMs is September 19, 2007. They are currently in good participating standing with the program. The county has 46 flood policies in force with $9,848,800 losses paid. Amherst County plans to continue NFIP compliance. The Town of Amherst entered into the NFIP November 2, 1977 with emergency entry on February 7, 1974. The current effective date for the FIRMs is also September 19, 2007. They are currently in good participating standing with the program. The town has 2 flood policies in force with $128,029 losses paid. The Town of Amherst plans to continue NFIP compliance.

Land Use

Woodlands cover approximately three-fourths of the land, and most of the northwestern portion of the county is part of the George Washington National Forest. The US highway 29 corridor in the eastern region of the county has become the focal point for most commercial, industrial and residential development, especially near Lynchburg City.

Appomattox County

Appomattox County is located at the geographic center of Virginia. The lack of efficient intra-state communication and the need for localized service initiated the formation of the county by an act passed on February 8, 1845. This act designated that Buckingham, Prince Edward, Charlotte and Campbell counties each would give portions of their lands as of May 1, 1845. The county consists of 343 square miles of gently rolling terrain indicative of Virginia's Piedmont Region. Appomattox County is perhaps best known in history as the site of the end of the Civil War at Appomattox Court House. The county is bordered to the north by Amherst County, Buckingham County and Nelson County, to the south by Charlotte County, to the east by Prince Edward County and Campbell County to the west. The James River serves as the northwest border. The towns of Pamplin and Appomattox are within the county, with the Town of Appomattox being the county seat. The 2010 population of Appomattox County was 14,973, up 8.2% from the 2000 US Census.

Elevations range from 460 feet to 1,151 feet above sea level. Drainage is provided by the James River, Appomattox River, Roanoke River Drainage Area and Bent and Wreck Island Creeks.

National Flood Insurance Program

Appomattox County entered into the NFIP on July 17, 1978 with emergency entry on February 11, 1974. The current effective date for the FIRMs is January 2, 2008. They are currently in good participating standing with the program. The county has 8 flood policies in force with $253,216 losses paid. Appomattox County plans to continue NFIP compliance.

The Town of Appomattox entered into the NFIP on May 25, 1984 with emergency entry on February 22, 1974. The current effective date for the FIRMs is January 2, 2008. They are currently in good participating standing with the program. The town has 0 flood policies in force. The Town of Appomattox plans to continue NFIP compliance.

The Town of Pamplin City entered into the NFIP on February 12, 1976 with emergency entry on November 11, 1974. The current effective date for the FIRMs is October 2, 2009. They are currently in good participating standing with the program. The town has 0 flood policies in force. The Town of Pamplin City plans to continue NFIP compliance.

Land Use

Commercial forestland comprises more than half of the county's land area and a large portion of the rest of the county is crop and pasture lands. This natural resource base has helped foster a significant forestry, wood products, and furniture industry. Most of the commercial, industrial, and residential development exists along US 460 in central and southeastern portions of the county between Lynchburg City and the Town of Appomattox.

Bedford City

In 1782 the Town of Liberty was incorporated into Bedford County, and in 1890 changed its name to the Town of Bedford. In 1912, the town became known as Bedford City. The city is situated on U.S. Route 460 in the center of Bedford County and serves as the county seat. According to the 2010 U.S. Census, Bedford City is populated by 6,222 residents. The residents of this small City enjoy living in a small city with the convenience of being strategically located between the cities of Lynchburg and Roanoke, the largest cities in Central Virginia. The cities most popular attraction is the National D-day Memorial, in honor of the 19 "Bedford Boys" who died in the first minutes of the Normandy landings at Omaha Beach.

National Flood Insurance Program

Bedford City entered into the NFIP on June 1, 1978 with emergency entry on March 12, 1974. The current effective date for the FIRMs is September 29, 2010. They are currently in good participating standing with the program. The county has 2 flood policies in force with $0 losses paid. Bedford City plans to continue NFIP compliance.

Land Use

The city includes 6.77 square miles in Virginia's Western Piedmont area, surrounded by mountains and beautiful Smith Mountain Lake to the South. Most of the land use is low intensity residential, pastures, and forest, with commercial and industrial development stretching along the 460 corridors in central and southern portions of the city.

Bedford County

Bedford County consists of 764 square miles located in west-central Virginia just east of the Roanoke metropolitan area. Bedford County was formed in 1754 and named for the Fourth Duke of Bedford, a British Government official. In 1839, the Town of Liberty (now City of Bedford) was established within the county limits. The scenic Blue Ridge Mountains make up the county's western border. The James River forms the northeast boundary. The 23,400-acre Smith Mountain Lake is situated to the south on the Roanoke River. Communities bordering Bedford include Rockbridge County to the northwest, Amherst County to the north and northeast, Campbell County to the east, Pittsylvania County to the south and Franklin, Roanoke and Botetourt Counties to the west.

According to the 2010 U.S. Census, the population of Bedford County is 68,676—up 9.5% from the 2004 U.S. Census American Community Survey. The area has a rolling to hilly terrain with elevations from 800 feet to 4,200 feet above sea level, including the famous Peaks of Otter, Sharp Top and Flat Top, along the Blue Ridge Parkway on the county's western border.

National Flood Insurance Program

Bedford County entered into the NFIP on September 29, 1978 with emergency entry on January 16, 1974. The current effective date for the FIRMs is September 29, 2010. They are currently in good participating standing with the program. The county has 145 flood policies in force with $206,583 losses paid. Bedford County plans to continue NFIP compliance.

Land Use

The majority of Bedford County land use is forest and pastures, with commercial, industrial, and residential development focused in Bedford City and along Routes 460 and 221. Strategically located between the metropolitan areas of Lynchburg and Roanoke, the county is home to a diversified industrial base and displays an appealing quality of life. The good mix of industry, commerce and agriculture ensures a strong, diversified economy and a positive business climate. Most of the residential growth occurs near Smith Mountain Lake and Lynchburg City.

Campbell County

Campbell County is located in the south-central Piedmont Region of Virginia, in the foothills of the Blue Ridge Mountains. From its beginnings in 1781 as a frontier settlement, to its emergence as a tobacco producer and then a center for industrial manufacturing, Campbell County has continually evolved and grown with national and world changes. The county is bordered on the north by the city of Lynchburg and the James River and in the South by the Roanoke (Staunton) River. Campbell County is 115 miles west of Richmond, the state capital; 200 miles southwest of Washington, DC; and 200 miles west of Norfolk.

The Town of Brookneal, near Phelps Creek and Falling River, has been a center for commerce for the surrounding counties of Campbell, Charlotte, and Halifax since its founding in 1802. The unincorporated Town of Rustburg serves as the county seat.

Altavista is a relatively new town in southern Campbell County, incorporated in 1912. Residential and industrial growth occurred within the town boundaries until around 1960, after which the concentration of new development took place outside the boundaries. According to the 2010 U.S. Census, Campbell County has a population of 54,842.

National Flood Insurance Program

Campbell County entered into the NFIP on October 17, 1978 with emergency entry on December 27, 1973. The current effective date for the FIRMs is August 28, 2008. They are currently in good participating standing with the program. The county has 28 flood policies in force with $7,078,900 losses paid. Campbell County plans to continue NFIP compliance.

Town of Altavista entered into the NFIP on August 1, 1978 with emergency entry on February 19, 1974. The current effective date for the FIRMs is August 28, 2008. They are currently in good participating standing with the program. The town has 12 flood policies in force with $79,561 losses paid. Town of Altavista plans to continue NFIP compliance.

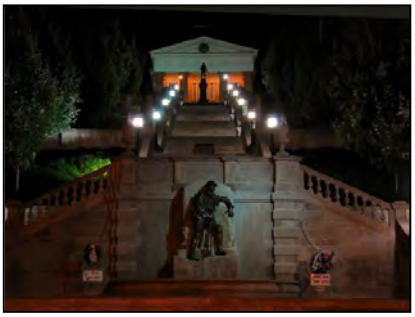
Town of Brookneal entered into the NFIP on March 1, 1978 with emergency entry on January 15, 1974. The current effective date for the FIRMs is August 28, 2008. They are currently in good participating standing with the program. The Town of Brookneal has 3 flood policies in force with $0 losses paid. Town of Brookneal plans to continue NFIP compliance.

Land Use

The majority of the county land use is a combination of forest, pastures, and farmland. Commercial and residential development is found near Lynchburg, in the towns of Brookneal and Altavista, and along Routes 29 and 501. Four-lane primary highways and rail service provide access to markets in the eastern portion of the county. Industrial activity in the county has concentrated around the towns of Brookneal and Altavista and the northern portion of the county close to Lynchburg.

Lynchburg City

The city of Lynchburg is located near the geographic center of Virginia. In 1757, John Lynch established a ferry service on the James. The ferry service remained profitable for many years, and by the end of the American Revolution, the village at Lynch's Ferry had itself become an important center of trade. Lynch saw the possibilities of establishing a town on the hill overlooking the ferry site, and in late 1784 petitioned the General Assembly of Virginia for a town charter. In October, 1786, the charter was granted, founding the town of Lynchburg.



Located on the James River, the city has a land area of 48 square miles and is bordered on the west by the Blue Ridge Mountains and Bedford County, to the south by Campbell County, and to the North by Amherst County. According to the 2010 U.S. Census, the city has a population of 75,568 and is a major highway and transportation hub that has contributed to its status as a broadly diversified manufacturing center. Lynchburg is 115 miles west of Richmond, the state capital; 52 miles east of Roanoke; 180 miles southwest of Washington, D. C.; and 200 miles west of the Port of Hampton Roads. Lynchburg is the central city of the Lynchburg Metropolitan Statistical Area (MSA), which—according to the 2010 U.S. Census—has a total population of 252,634. Liberty University, a private coeducational Christian university, enrolls over 7,000 students residentially and over 10,000 students in distance learning. The university, founded in 1971, encompasses 4,400 acres located in the foothills of the Blue Ridge Mountains and south of the James River.

National Flood Insurance Program

Lynchburg City entered into the NFIP on September 1, 1978 with emergency entry on September 18, 1973. The current effective date for the FIRMs is June 6, 2010. They are currently in good participating standing with the program. The city has 96 flood policies in force with $3,247,935 losses paid. Lynchburg City plans to continue NFIP compliance.

Land Use

Most of the city is low intensity residential, with commercial and industrial development focused in eastern portions of the city in the downtown region and along US Highways 460 and 501. The region’s overall quality of life is tied directly to the health of the city’s economy. The city keeps pace with changes in technology and telecommunications, attracting national and international businesses and fusing the local and regional market with the nation and the world.

Plan Linkage

Region 2000 encompasses a unique combination of both rural and urban life. This distinctive mix lent itself nicely in establishing the Region 2000 project management team in the update process for the Hazard Mitigation Plan. The following section outlines the development of the project management team and meetings held during the plan development.

Planning Process

Region 2000 applied for and was successful in obtaining FEMA Hazard Mitigation Grant Program (HMGP) planning funds that were made available from FEMA's Pre-Disaster Mitigation Program of 2010 for the Hazard Mitigation Update Process. The preparation of this plan update at the regional level was decided as the most cost and time effective solution for consistent and full coverage of the localities in Region 2000. The Appendix for this section includes the memorandums and letters from VDEM regarding funding and guidance for the region.

In 2010, Region 2000 began coordination with the counties of Amherst, Appomattox, Bedford, cities of Bedford and Lynchburg and the towns of Altavista, Brookneal, Amherst and Pamplin City to develop and implement the hazard mitigation update planning process. The appendix -2 contains the Letters of Intent that were signed by the participating localities.

Summary of Changes

The project management team reviewed this section of the plan as a part of the plan update and agreed upon the following changes. The public input methods were beefed up a bit in order to garner input from larger institutions within the region as well as neighboring planning districts. The methods in which the plan was incorporated into other major plans such as the comprehensive plan and the land use plan remained the same. The majority of changes in this section were geared toward raising public and institutional awareness for the plan.

Project Management Team

This planning process began by developing the Hazard Mitigation Plan "project management team" which was composed of representatives from the 11 jurisdictions (Table 4.1). Deputy Director for Region 2000 Core and Planning Services, Robert White, presided over of the planning efforts for the region. An important component to the beginning stages of this plan was to determine support from external sources, engaging public support and involvement, and evaluating the resources needed to develop and carry out the plan. Participating affiliates for this process included Region 2000 partnerships, local government officials, public representatives, businesses, citizens, and organizations.

Table 4.1 Project Management Team Members

Name	Jurisdiction
Gary Roakes	Amherst County
Kelvin Brown	Amherst, Town of
Freddie Godsey	Appomattox County
Johnnie Roark	Appomattox County
Roxanne Paulette	Appomattox, Town of
Bob Mitchell	Pamplin City, Town of
Bart Warner	Bedford City
Seth Mowles	Bedford County
Marci Stone	Bedford County
Jack Jones	Bedford County
Tracy Fairchild	Campbell County
Randall Johnson	Campbell County
Dan Witt	Altavista, Town of
Mike Crews	Brookneal, Town of
Bill Aldridge	Lynchburg City
Todd Styles	Volunteer Firefighter
Philipp Gabathuler	Region 2000
Bob White	Region 2000

Timetable of meetings

Three formal meetings were held throughout the planning process and about 25 meetings were held with individual localities in the update process. The formal meetings were held at the Region 2000 offices located in Lynchburg, the central location of Region 2000. The individual meetings were usually held by teleconference. All of the formal meetings were open to the public and advertised through the Region 2000 agency website as well as through the newspaper. Newspaper ads can be viewed in the appendix.

The Appendices for this section provide the agendas, dates and jurisdictions represented at the various project management team meetings. Every locality involved provided feedback and helped to mold the plan update into what they needed.

Project management team meetings

The three formal project management team meetings provided a forum for exchanging ideas and receiving feedback from the different localities. The first meeting held in May 2010 was held to re-educate the project management team on the goals and objectives of the original hazard mitigation plan and to scope the process out. The second meeting was held to discuss the HIRA portion of the update, with project management team member providing feedback on what information was still viable and what information needed to be updated. The third project management team meeting was held in order to update the Mitigation Goals and Strategies section.

Public Input

Public input was received in a variety of methods. The public was encouraged to attend the formal project management team meetings through the Region 2000 agency website and newspaper advertisements. The newspaper advertisement for public comment was placed in the News and Advance—a newspaper with expansive reach that goes beyond the boundary of Region 2000. The newspaper reaches businesses, academia, nonprofits, and other important community voices in the region. According to News and Advance Staff, the newspaper is circulated to all the jurisdictions in Region 2000 and beyond upon request. Region 2000 jurisdictions include the counties of Amherst, Appomattox, Bedford, and Campbell as well as the Cities of Lynchburg and Bedford and the towns of Appomattox, Amherst, Pamplin City, and Brookneal. The newspaper is circulated heavily to the area universities—including Liberty University, Sweet Briar College, Randolph College, and Lynchburg College. The newspaper is also available worldwide via their website: www2.newsadvance.com.

There was also a section on the website where comments on the update process could be posted and answered. Sections of the plan were made available online to the public as they were being updated.

Letters were also sent out to neighboring PDCs to inform them of our planning process as well as to gather input. The letter—included in the appendix for this section—was sent to the Roanoke Valley Alleghany Regional Commission, the Central Virginia Shenandoah Planning District Commission, the Thomas Jefferson Planning District Commission, the Commonwealth Regional Council, and the Southside Planning District Commission.

Development of the Plan

The next section required performing assessments of natural and manmade hazard vulnerabilities within the Region 2000 boundaries. Data for critical hazards within the region was collected and analyzed to identify the relative ranking of each hazard and delineate areas of highest concern.

Evaluation of each hazard involved assessing the risks and vulnerabilities of public and private buildings, facilities, utilities, communications, transportation systems, and other critical infrastructure, and determining estimated losses that would occur if the given hazard were to impact the region.

The comprehensive plans, budgets, and emergency operations plans were researched in the development of the Hazard Mitigation Plan update. Information from these existing plans that were reviewed as part of the update process were included where appropriate.

Upon completion of hazard assessments, hazard mitigation plans and strategies were developed for the region with an emphasis on developing disaster prevention and preparedness programs and actions to reduce the impact of natural and manmade disasters. This involved determining hazard mitigation priorities and developing mitigation strategies to avoid or minimize substantial human and economic costs of each disaster. In the development of the mitigation plan many resources were used to develop the actions for the various regions. The project management team members were able to provide Region 2000 staff with information obtained from Emergency Operations Plans (EOPs), Zoning, Jurisdictional manuals and capital improvement plans. The information provided by the communities was used in the development of the HIRA and mitigation actions.

Comprehensive Plans

A community's comprehensive plan provides the future vision for the community regarding growth and development. Hazard mitigation planning is not specifically addressed as a goal or objective in any of the comprehensive plans in the study area. Only one comprehensive plan includes a hazard mitigation strategy. However, many of the plans include land use or environmental protection goals that could support future mitigation efforts. These goals generally address flood-prone areas. There also may be opportunities to include hazard mitigation in revisions to the comprehensive plans and to link to existing goals. For example, limiting development in the floodplain (which can be considered mitigation) also may help meet open space goals laid out in a plan.

Stormwater Management Plans

Currently, the Environmental Protection Agency is requiring localities to update their stormwater regulations to meet new and heightened standards. This process will require significant funding to clean up existing and future sources of water runoff. The plan will be updated with new regulations when they become available.

Emergency Operations Plans

A comprehensive Emergency Operations Plan (EOP) typically predetermines actions to be taken by government agencies and private organizations in response to an emergency or disaster event. The plan describes the jurisdiction's capabilities to respond to emergencies and establishes the responsibilities and procedures for responding effectively to the actual occurrence of a disaster. Hazard mitigation is incorporated into the various operational phases of these plans.

Hazard mitigation is included as a functional annex to the Emergency Operations Plans developed by many jurisdictions. Generally, the annex describes the responsibilities of various departments and agencies, private businesses, and the public. The annex outlines a concept of operations that explains what activities will be undertaken before and after a disaster. Specific tasks are assigned to the Board of Supervisors/City Council (or other local governing body), Department of Emergency Services, Department of Health, Building Officials/County Engineer/Planning and Zoning, Law Enforcement, Fire Department and Emergency Crew, Superintendent of Schools, and Public Information Officer.

Multi-Jurisdictional Plan Adoption

In order to receive plan approval, each jurisdiction must formally adopt the hazard mitigation plan. Plan adoption is in the form of a resolution and has been adopted at each community's board meetings (local governing body).

Plan Linkage

The *Planning Process* should not be seen as an independent step in the development of the updated Hazard Mitigation Plan, but as a continual process that is integral in the entire plan.

The planning process documents the steps taken in establishing the FEMA grant and project management team through to the adoption.

The following section on the *Hazard Identification and Risk Assessment (HIRA)* uses the information gathered at the project management team meetings, jurisdictional meetings and public input. The information and data that was provided was then supplemented to create the HIRA for Region 2000. The updated HIRA outlines the hazards and vulnerabilities that impact the region.

Hazard Identification and Risk Assessment (HIRA)

Summary of Changes:

The following changes were made to the HIRA in the Hazard Mitigation Plan Update Process. The planning management team met on September 15th, 2011 and arrived at a ranking system for hazards in Region 2000 through a survey. The ranking system and survey results are located in the planning process sections and the Appendix. Winter storms, flood, drought, wind, wildfire, landslide and land subsistence and terrorism received the same rankings as in the original Hazard Mitigation Plan so they will be examined in much the same way.

Updated information from the 2010 Census was used *when available* in this update. The population data in Table 5.1 was updated using 2010 census data. The median value of housing units was recorded from the American Community Survey's 3 year estimates from 2007-2009.

The critical facilities layer was updated to reflect current conditions. The updated list includes airports, police stations, hospitals, fire stations, dams, schools, churches, select industrial sites, select industrial and manufacturing buildings, and large shopping centers. The updated list in its entirety can be found in the appendix. Local officials had an opportunity to comment on what critical facilities to include in the plan during the 9/15/11 project management team meeting.

The loss estimates from the original Hazard Mitigation Plan were produced through HAZUS analysis which used 2000 Census data for its calculations. The newest version of HAZUS is also running on 2000 Census Data so the numbers in the HAZUS section are consistent from the original plan to the 2011 update. FEMA stresses the use of best available data for the plan and the tables will be updated in subsequent updates as new data becomes available.

The federal emergency declarations table (Table 5.3) was updated with information from the FEMA website. There have been two additional federal emergency declarations for the area in Region 2000 since the original hazard mitigation plan was created in 2006. Both declarations were in response to the severe winter weather the Region felt in January and February of 2010.

The severe repetitive loss properties were updated with information from the Department of Conservation and Recreation.

FEMA State and Local Mitigation Planning how-to guides defines the risk assessment as "the process of measuring the potential loss of life, personal injury, economic injury, and property damage resulting from natural hazards by assessing the vulnerability of people, buildings, and infrastructure to natural hazards."

Purpose of HIRA

1. Identify the hazards that could affect the jurisdictions in Region 2000.

2. Profile hazard events and determine what areas and community assets are the most vulnerable to damage from these hazards

3. Estimate losses and prioritize the potential risks to the community

The first step—identifying hazards—will determine all the natural hazards that might affect the area. The hazards will be ranked to determine what hazards are most likely to impact the communities of Region 2000. Hazards that are determined to have significant impact (a ranking of 4 or 5 according to the survey completed by Region 2000 jurisdictions for the 2013 update) will be analyzed in the greatest detail to determine the magnitude of future events and the vulnerability for the community and the critical facilities. Hazards that receive a moderate impact ranking (a ranking of 3 according to the survey completed by Region 2000 jurisdictions for the 2013 update) will be analyzed with available data to determine the risk and vulnerability to the specified hazard. The limited impact hazards (those hazards with a ranking of 1 according to the survey completed by Region 2000 jurisdictions for the 2011 update) will be briefly outlined in the HIRA.

Regional Information

Table 5-1 and Figure 5-1 illustrate the land area of each of the communities in Region 2000, as well as the population in the communities and number of households. This information will prove to be a key component in determining the risk to communities from natural hazards.

Figure 5.1 Region 2000 Partnership Jurisdictions, Source: Region 2000

Table 5.1 Breakdown of Region 2000 Jurisdictions, Source 2010 US Census, ACS 2007-2009

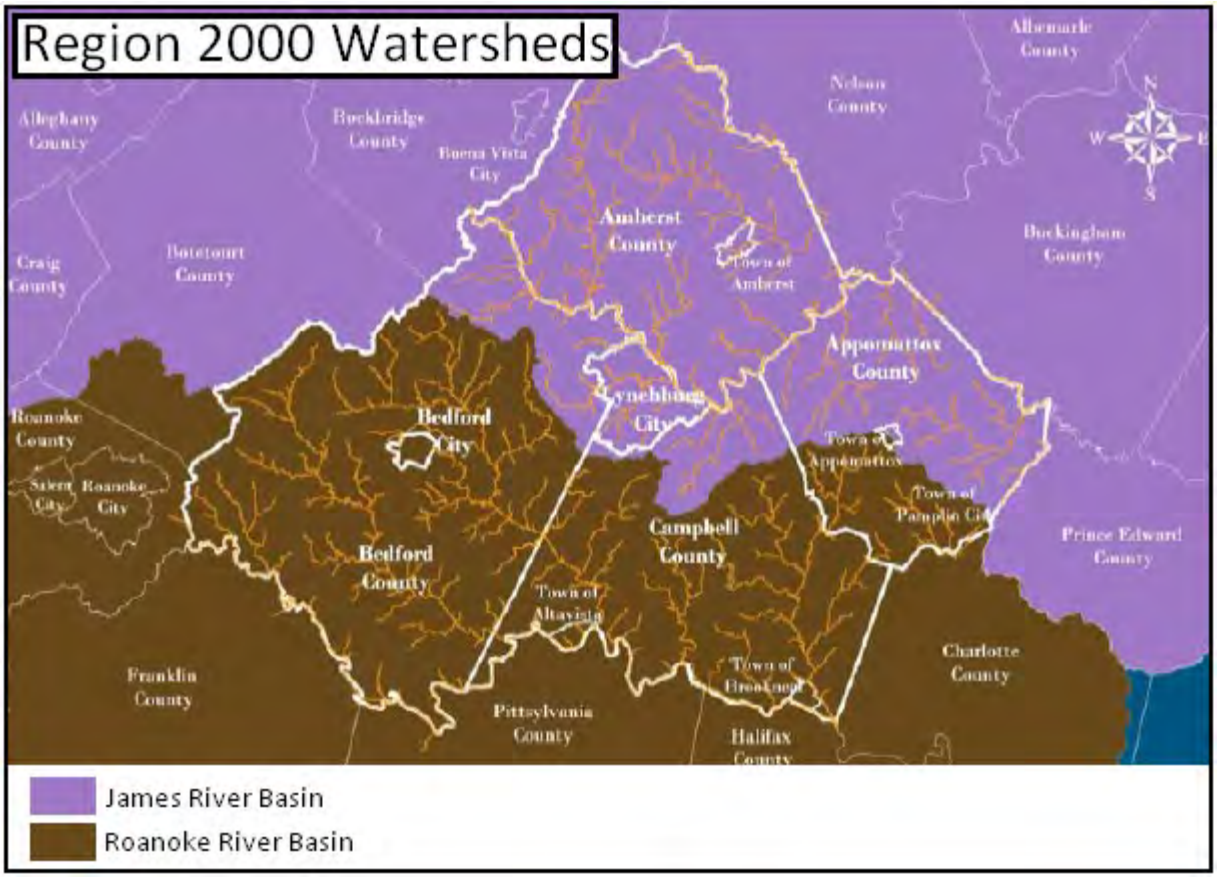
NAME	Area (Sq Mile)	2010 Pop	2010 Pop per Sq Mile	Median Home Value**	Total Housing Units
Amherst County	471.17	32,353	68.7	$149,700	13,976
Amherst, Town of	4.9	2,231	455.3	DATA N/A	1,032
Appomattox County	329.41	14,973	45.5	DATA N/A	6,921
Appomattox, Town of	2.1	1,733	825.2	DATA N/A	849
Pamplin City, Town of	0.25	219	876.0	DATA N/A	104
Bedford City	6.79	6,222	916.3	DATA N/A	2,920
Bedford County	757.02	68,676	90.7	$188,300	31,937
Campbell County	499.2	54,842	109.9	$138,400	24,769
Altavista, Town of	4.8	3,450	718.8	DATA N/A	1,669
Brookneal, Town of	3.6	1,112	308.9	DATA N/A	567
Lynchburg City	48.97	75,568	1543.1	$134,900	31,992

All data taken from the 2010 US Census except for **Median Home Value—taken from ACS2007-2009

Watersheds

The major watersheds for Region 2000 jurisdictions include the James River Basin and the Roanoke River Basin. The following Figure 5-2 illustrates the location of the major watershed boundaries for the jurisdictions in Region 2000. The region is separated by two major watersheds, the James River Basin to the north and the Roanoke River Basin to the south.

Figure 5-2. Region 2000 Watersheds, Source: VA-DCR



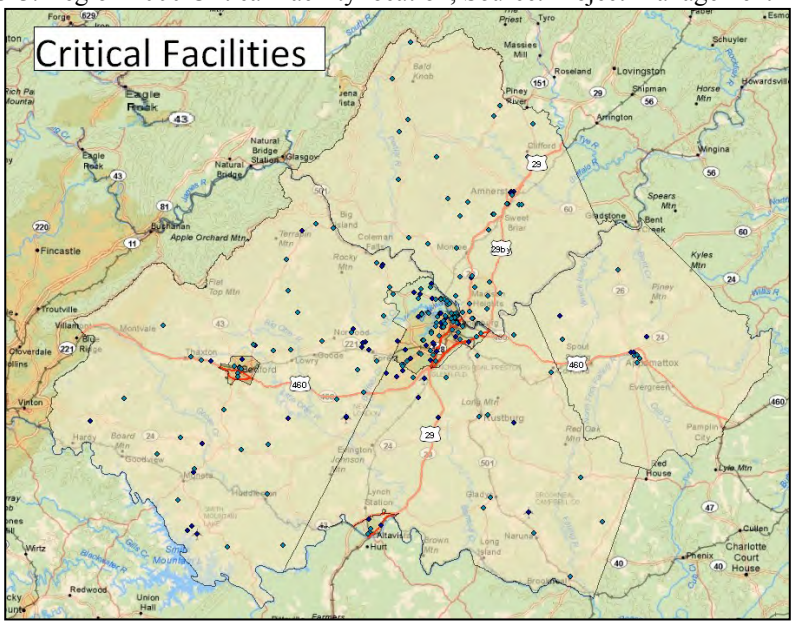
Critical Facilities

According to the FEMA State and Local Plan Interim Criteria, a critical facility is defined as a facility in either the public or private sector that provides essential products and services to the general public, is otherwise necessary to preserve the welfare and quality of life in the County, or fulfills important public safety, emergency response, and/or disaster recovery functions.

Critical facilities for Region 2000 were derived from a variety of sources. Information provided by the communities for the original Hazard Mitigation Plan was supplemented with ESRI data, FEMA HAZUS-MH location data. In this update, a list of critical facilities was given to each project management team member for review. Many of the critical facilities from the original plan are included in the update. Critical facilities in this plan update include all airports, police stations, hospitals, fire stations, dams, schools, churches, select industrial sites, select industrial and manufacturing buildings, and large shopping centers. This list was supported at the September 15th, 2011 meeting of the project management team. Please see the appendix for a full list of critical facilities and their locations.

Critical facilities, residential and industrial buildings within the 100 year floodplain were identified for flood analysis and wildfire analysis. The HAZUS-MH model was used to estimate damage from hurricanes in the region and is detailed in the hurricane section. Terrorism was addressed through consulting community Emergency Operations Plans, if available, for more detailed information.

Figure 5-3. Region 2000 Critical Facility location, Source: Project Management Team



Data Limitations

Inadequate information posed a problem for developing loss estimates for most of the identified hazards. The limiting factor for the data was that the hazard mapping precision is only at the county or jurisdiction level. Many of the hazards do not have defined damage estimate criteria.

Analysis for the region was completed using the best available data. The detail level of the data received from the communities drove the specifics of the vulnerability analysis. When detailed building footprint data was available, it was used to assess the vulnerability at a building specific level. When building specific data was not available, census blocks were used to assess the areas vulnerability to specific hazards. Flooding analysis was conducted using two main methods.

When communities provided real estate property values and building footprints, a detailed analysis was completed to determine the percent of property at risk. When real estate values were not readily available, 2000 Census data for average structure value per block was used as a replacement cost in the event of a disaster. In the case of the update, census data from 2000 will still be used since values from the 2010 Census have not been included in the HAZUS-MH datasets yet. This value can serve as a guide in assessing the impacts of various hazards. Dams or hazmat locations, when available, were included in with critical facilities and analysis preformed.

The FEMA guidelines emphasize using “best available” data for this plan. The impact of these data limitations will be shown through the different vulnerability assessments and loss estimation methods used for hazards. ***In the HIRA sections on each hazard, more detail will be provided on the data and analysis limitations.***

Region 2000 staff, as well as staff in the localities, provided available base map data and building information for the analysis. All other data was derived from existing sources or created by Region 2000 staff.

The FEMA guidelines emphasize using “best available” data for this plan. In the loss estimates section of the HIRA, the “best available” data was from 2000 Census data because the newest version of HAZUS software didn’t include 2010 data yet. Therefore, many of the loss estimates from the original Hazard Mitigation Plan remain in the updated plan.

Hazard Identification

Types of Hazards

While nearly all disasters are possible for any given area in the United States, the most likely hazards to potentially affect the communities in Region 2000 generally include:

- Droughts
- Earthquakes
- Flooding (Hurricanes)
- Hurricanes
- Landslides and Land Subsidence
- Terrorism
- Wildfires
- Wind (Hurricane/Tornado)
- Winter Storms (Ice/Snow)

Probability of Hazards

Hazards were ranked by the project management team to determine what hazards they judged to have the largest impact on their communities. The results are summarized in Table 5-2. The addition of a "Low" ranking by the project management team caused the earthquake hazard to be analyzed a bit further in this update. The earthquake hazard was originally ranked has having no impact on the area, but a recent earthquake in Virginia reminded the project management team that it is a possible threat. The type of analysis that was completed was determined by the type of data available and the scale of data available for the analysis. The project management team also decided that ranking the Region as a whole represented each jurisdiction's vulnerability. Therefore, the rankings in the table below stand true for all jurisdictions in Region 2000.

Table 5.2 Hazard Identification Results, Source: Project Management Team

Hazard Identification Results	
Hazard Type	**Rank**
Winter Storms (Ice/Snow)	High
Flood (Hurricane)	High
Drought	High
Wind (Hurricane/Tornado)	Medium
Wildfire	Medium
Landslide and Land Subsidence	Low
Terrorism	Low
Earthquake	Low

Rankings derived from the September 15th, 2011 meeting. Surveys attached in appendix.

Major Disasters

Table 5-3 lists the major disasters that have occurred in Region 2000 Jurisdictions including Presidential declared disasters. The table shows which hazards impacted each of the communities in Region 2000, as well as the designated federal disaster number. The region has had 9 declared disasters since 1969, with a majority of the disasters being split between flooding and with winter weather. Nine declared disasters have been noted for the time period prior to 1969, when FEMA began to denote disasters with declaration numbers. For a detailed description of the disaster for the region, consult the *Hazard History Tables* located in the appendix. The updated table includes two additional disasters that occurred since the original hazard mitigation plan was written. They both encompass the heavy snowfall that occurred at the beginning of 2010.

Table 5- 3. Region 2000 Federal Disasters, Source: FEMA

Communities Impacted	Date of Declaration	Federal Declaration #	Federal Description
Amherst, Appomattox, Lynchburg	1771	N/A	Severe Storms & Flooding
Amherst, Appomattox, Lynchburg	1870	N/A	Severe Storms & Flooding
Amherst, Appomattox	1877	N/A	Severe Storms & Flooding
Appomattox	1877	N/A	Severe Storms & Flooding
Amherst, Appomattox	1913	N/A	Severe Storms & Flooding
Amherst, Appomattox	1935	N/A	Severe Storms & Flooding
Amherst, Appomattox, Bedford City, Bedford	1936	N/A	Severe Storms & Flooding
Campbell	1937	N/A	Severe Storms & Flooding
Amherst, Appomattox, Bedford City, Campbell, Bedford	1940	N/A	Severe Storms & Flooding
Amherst, Bedford, Bedford City, Campbell, Lynchburg City	8/23/1969	274	Severe Storms & Flooding (Hurricane Camille): This major storm made landfall out of the gulf as a category 5 and weakened to a tropical depression before reaching the state. Precipitation trained over regions many hours, dropping more than 27 inches of rain in Nelson County and over ten inches in the area from Lynchburg to Charlottesville. Flooding and landslides, triggered by saturated soils, resulted in catastrophic damage. More than 150 people died and another 100 were injured. At the time, damage was estimated at more than $113 million.

Amherst, Appomattox, Bedford, Bedford City, Campbell, Lynchburg	6/23/1972	339	Tropical Storm Agnes: This event produced devastating flooding throughout the Mid-Atlantic States. Some areas of eastern Virginia received over 15 inches of rainfall as the storm moved through. The Potomac and James Rivers experienced major flooding, which created 5 to 8 feet flood waters in many locations along the rivers. Richmond was impacted the most by these high water levels. Water supply and sewage treatment plants were inundated, as were electric and gas plants. Only one of the five bridges across the James River was open, while the Downtown area was closed for several days and businesses and industries in the area suffered immense damage. Sixteen people lost their lives in the state and damage was estimated at $222 million. These startling numbers resulted in 63 counties and 23 cities qualifying for disaster relief.
Amherst, Appomattox, Bedford, Campbell	4/11/1994	1021	Severe Winter Ice Storm: This winter storm coated portions of Virginia with 1 to 3 inches of ice from freezing rain and sleet. This led to the loss of approximately 10 to 20 percent trees in some counties, which blocked roads and caused many people to be without power for a week. There were numerous automobile accidents and injuries from people falling on ice. Damages were estimates at $61 million.
Amherst, Bedford, Bedford City, Campbell, Lynchburg City	7/1/1995	1059	Severe Storms & Flooding
Amherst, Appomattox, Bedford, Campbell, Lynchburg City	1/13/1996	1086	Blizzard of 1996 (severe storm): Also known as the “Great Furlough Storm” due to Congressional impasse over the federal budget, the blizzard paralyzed the Interstate 95 corridor, and reached westward into the Appalachians where snow depths of over 48 inches were recorded. Several local governments and schools were closed for more than a week. The blizzard was followed with another storm, which blanketed the entire state with at least one foot of snow. To compound things, heavy snowfall piled on top of this storm’s accumulations in the next week, which kept snow pack on the ground for an extended period of time. This snow was eventually thawed by higher temperatures and heavy rain that fell after this thaw resulted in severe flooding. Total damage between the blizzard and subsequent flooding was over $30 million.
Amherst, Appomattox, Bedford, Bedford City, Campbell, Lynchburg	9/6/1996	1135	Hurricane Fran: This hurricane is notable not only for the $350 million in damages, but because of its widespread effects, including a record number of people without power and the closure of 78 primary and 853 secondary roads. Rainfall amounts between 8 and 20 inches fell over the mountains and Shenandoah Valley, leading to record-level flooding in many locations within this region. 100 people had to be rescued from the flood waters and hundreds of homes and buildings were damaged by the flood waters and high winds.
Amherst, Appomattox, Bedford, Campbell, Lynchburg City	2/28/2000	1318	2000 Winter Storms

Bedford, Bedford City, Lynchburg City	5/5/2002	1411	2002 Floods/Tornadoes
Amherst, Appomattox, Bedford, Bedford City, Campbell, Lynchburg	9/18/2003	1491	Hurricane Isabel was the costliest and deadliest hurricane in the 2003 Atlantic hurricane season. Wind and flood damage were reported in Region 2000 jurisdictions.
Amherst, Bedford	2/16/2010	1874	High amounts of snowfall throughout the state of Virginia cause the president to declare a major disaster for the entire state. Eligible local governments received federal funding on a cost sharing basis for emergency work and the repair or replacement of facilities damaged by the severe winter storm.
Amherst, Bedford	4/27/2010	1905	A second presidential disaster declaration was signed in response to the high amounts of snowfall that crippled parts of Virginia in February of 2010.

Mapping Considerations

Level of Hazard Mapping

Table 5-4 provides a breakdown of the natural hazards addressed in this plan. The level of planning consideration given to each hazard was determined by the committee members. Based on the input of committee members, the hazards were broken into three distinct categories which represent the level of consideration they will receive throughout the planning process.

In order to focus on the most critical hazards that may affect Region 2000 communities, the hazards assigned by a level of *High* or *Medium* will receive the most extensive attention in the remainder of the planning analysis, while those with a *Low* planning consideration level will be assessed in more general terms. Those hazards with a planning level of *None* will not be addressed in this plan. The level of *None* should be interpreted as not being critical enough to warrant further evaluation; however, these hazards should not be interpreted as having zero probability of impact.

In the original plan, earthquakes were designated with a hazard level of *None*, and were therefore not included in the analysis. The project management team for the 2011 update deemed earthquakes a viable threat to the region so a *Low* ranking was assigned. An earthquake is the shaking of the ground's surface caused by movements of the plates beneath it. According to the HAZUS analysis, earthquakes generate about $669,000 in annualized losses to the region.

Problem Spot Mapping

Additional areas of impact were noted by the committee members through a problem spot worksheet, as well as indicating what areas were of concern on paper maps for the region which is included in the appendix.

Each locality provided input, to the best of their ability, in determining what areas were concerns or "problems" in their communities. Multiple forums were used to develop a complete list of problem spot areas, including taking comments at two project management team meetings. The areas that the committee members and public indicated were taken into consideration during the analysis phase. The individual community problem spot maps

(Appendix) that were developed, based on community and public input, are:

Flooding
Amherst County
Bedford County
Campbell County
Altavista, Town of
Lynchburg City

Winter Storm
Amherst County
Bedford City
Lynchburg City

Wind
Lynchburg City

Thunderstorms
Bedford County

Landslide
Amherst County
Bedford Country

Hazard	Type	Detail Level	Analysis Level	Data Reference
Blizzards/ Winter Storms	Including winter storms, ice storms, and excessive cold	High	Covered by HIRA blizzards/winter storm analysis	NOAA National Weather Service Records, VirginiaView PRISM, Climate Source
Flooding	Riverine	High	Covered by HIRA flood analysis	FEMA DFIRM, Q3, and FIRM Mapping
Drought	Including excessive heat	High	Covered by HIRA drought analysis	Drought Monitor Task Force, Water Systems
Wind	Hurricane	Medium	Covered by HIRA hurricane analysis	FEMA DFIRM, Q3, and FIRM Mapping and ASCE Design Wind Speed Maps, FEMA HAZUS-MH model
	Tornado	Medium	Description and Regional Maps	NOAA National Weather Service Records
Wildfire	Wildfire	Medium	Covered by HIRA wildfire analysis	Virginia Department of Forestry
Landslide/Land Subsidence	Landslide/Land Subsidence	Low	Description and Regional Maps	USGS
Terrorism	Terrorism	Low	Description	Addressed in community Emergency Operation Plans (EOP)
Earthquake	Earthquake	Low	Description	FEMA HAZUS-MH

Severe Winter Storm (High Ranking)

Hazard History

The appendix includes descriptions of major winter storm events that have occurred in Region 2000. Events have been broken down by the date of occurrence and when available, by individual community descriptions. As Table 5-3 illustrates, a large percentage of the region's federal declared disasters were due to severe winter weather. When no community specific description is available, the general description should be used as representing the entire planning area. A complete winter storm hazard history is included in the appendix.

Hazard Profile

The impacts of winter storms are minimal in terms of property damage and long-term effects. The most notable impact from winter storms is the damage to power distribution networks and utilities. Severe winter storms have the potential to inhibit normal functions of the community. Governmental costs for this type of event are a result of the needed personnel and equipment for clearing streets. Private sector losses are attributed to lost work when employees are unable to travel. Homes and businesses suffer damage when electric service is interrupted for long periods of time. Health threats can become severe when frozen precipitation makes roadways and walkways very slippery, due to prolonged power outages, and if fuel supplies are jeopardized. Occasionally, buildings may be damaged when snow loads exceed the design capacity of their roofs or when trees fall due to excessive ice accumulation on branches. The primary impact of excessive cold is increased potential for frostbite, and potentially death as a result of over-exposure to extreme cold.

Some of the secondary effects presented by extreme/excessive cold are a danger to livestock and pets, and frozen water pipes in homes and businesses.

The maps for the ice and snowfall risks from the original Hazard Mitigation Plan are still viable. There has been no increasing or decreasing trend in snowfall amounts since the original plan was passed.

Predictability and Frequency

Winter storms can be a combination of heavy snowfall, high winds, ice and extreme cold. These are classified as extra-tropical cyclones that originate as mid-latitude depressions. Winter weather impacts the state of Virginia between the months of November and April, with varied intensities from east to west. In order to create a statewide winter weather hazard potential map that captures this variability, gridded climate data was obtained from the Climate Source and through the VirginiaView program. This data was developed by the Oregon State University Spatial Climate Analysis Service (SCAS) using **PRISM** (**P**arameter-elevation **R**egressions on **I**ndependent **S**lopes **M**odel). This climate mapping system is an analytical tool that uses point weather station observation data, a digital elevation model, and other spatial data sets to generate gridded estimates of monthly, yearly, and event-based climatic parameters. The project management team for the 2013 plan update agreed that this analysis would suffice for the update.

PRISM data was selected for this analysis because it is an interpolation system that incorporates elevation fluctuation into the regression equations that are used to predict the gridded variation of each climate parameter. This winter weather risk assessment uses monthly normal precipitation, mean annual days with snowfall greater than 1 inch, and mean monthly snowfall PRISM data to develop snow and ice potential maps for the state.

These datasets have been generated to incorporate topographic effects on precipitation, capture orographic rain shadows, and include coastal and lake effect influences on precipitation and snowfall. The monthly precipitation grid provides a 30-year climatological average of total precipitation in inches. The mean monthly snowfall grid provides a 30-year climatological average depth of freshly fallen snow in inches. The mean annual days map reveals the 30-year average of the number of days that a location will receive greater than 1 inch of snowfall in a 24 hour period in a given year.

A criterion of "greater than 1 inch" was selected for winter snowfall severity assessment because this depth will result in complete road coverage that can create extremely dangerous driving conditions that will require removal by the local community. This amount of snowfall in a 24 hour period can also lead to business closure and school delays or cancellation. Figure 5-4 shows the average number of days with snowfall greater than one inch for the state and Figure 5-5 shows the average number of days with snowfall greater than one inch for Region 2000. These assessments can act as indicators of the likelihood of future occurrences. Average number of days with snowfall greater than one inch increases dramatically near the mountain ranges. In Region 2000 the Blue Ridge Mountains in the northern portions of Amherst and Bedford counties receive the greatest amount of snowfall.

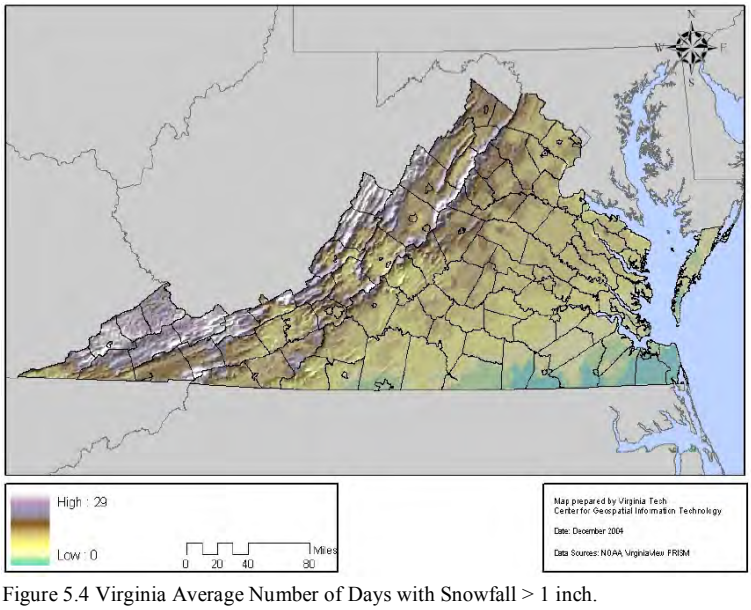
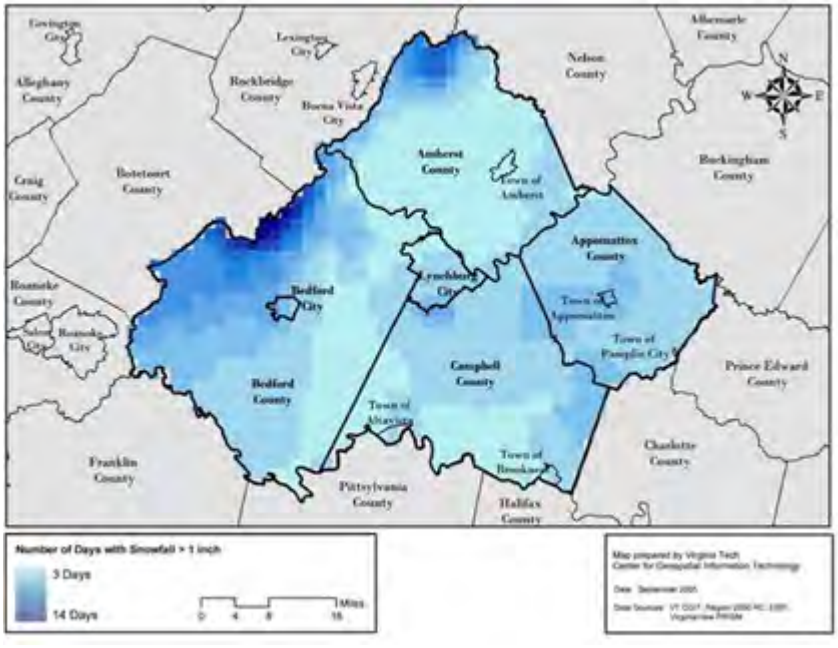


Figure 5.4 Virginia Average Number of Days with Snowfall > 1 inch.

Figure 5.5 Region 2000 Average Number of Days with Snowfall > 1 inch, Source: Virginia Tech CGIT



North Eastern Snowfall Impact Scale (NESIS)

The Northeast Snowfall Impact Scale (NESIS) was developed by members of the National Weather Service in 2004. The scale ranks high-impact snowstorms that impact the northeast corridor. The scale was developed because of the impact Northeast snowstorms can have on the rest of the country. The storms have large areas of 10 inch snowfall accumulations and the scale has five categories: Extreme, Crippling, Major, Significant, and Notable. The index is unique in that it uses population information as well as meteorological measurements. Because of this additional information, the NESIS scale gives an indication of a storm's societal impacts.

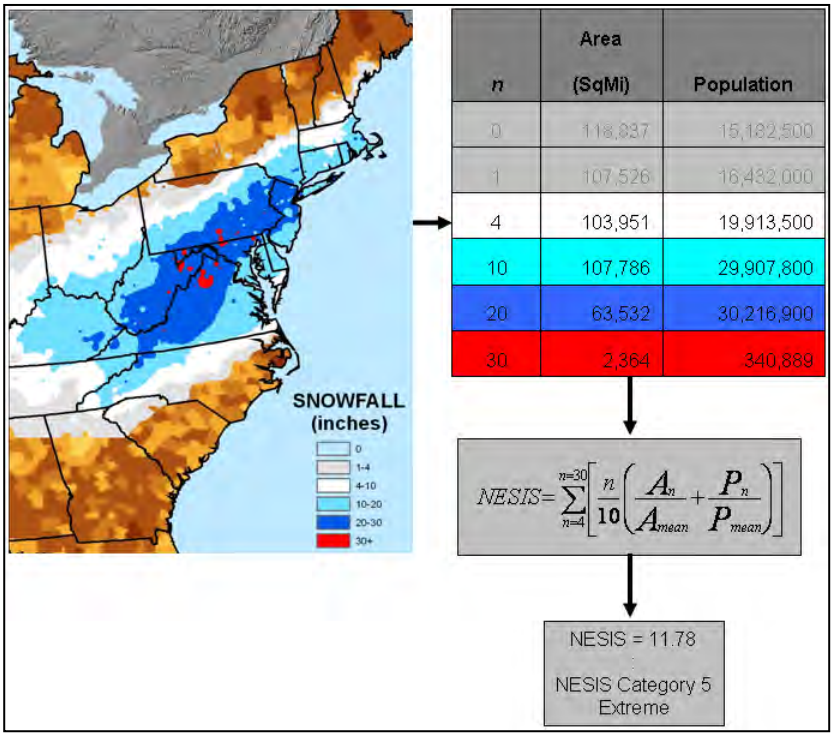


Figure 5.5a North Eastern Snowfall Impact Scale (NESIS)

Region 2000 is part of the Northeast urban corridor and is therefore included in the NESIS ranking system. Please see Squires and Lawrimore (2006) for more information.

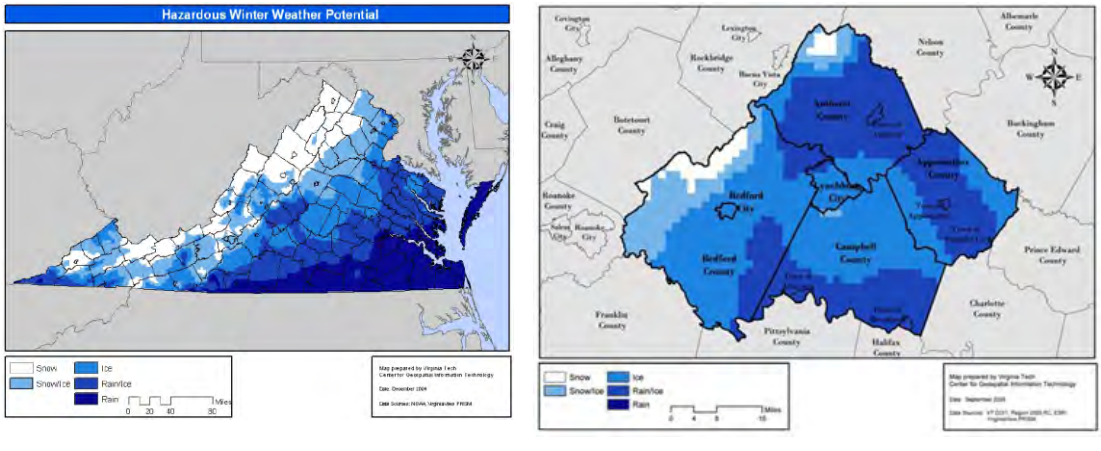
Ice Potential

Another challenge with winter weather in Virginia and in the region is the amount of ice that often comes as part of winter weather. Snowfall and ice potential are generated based on the percentage difference between the total precipitation from November to April and the corresponding liquid equivalent snowfall depth. Since snow falls in a frozen state, it does not accumulate on the surface the same way as rainfall would. In order to account for this difference, there are characteristic snow/rain relationships that have been created.

For example a value of 1 would mean that all of the precipitation at the location falls as liquid rainfall, and a value of 0.5 would mean that half of the precipitation falls as liquid rainfall and half falls as frozen precipitation. It is assumed that the lower the percentage the greater potential that precipitation within these months is falling as snow. The values in the middle of the two extremes would represent regions that favor ice conditions over rain and snow. A five quintile distribution was applied to the output statewide grid to split the percentages into five characteristic climatological winter weather categories (snow, snow/ice, ice, rain/ice, and rain). Figure 5.6 shows the statewide map and Figure 5.7 shows the Region 2000 map; for likelihood of future occurrences. The project management team agreed that these maps accurately depicted the level of risk of future events for their respective localities. The trend of ice potential in Virginia is highest in the area between the eastern edge of the Blue Ridge Mountains and the piedmont plateau since it usually snows in the mountains and rains on the coast.

Region 2000 receives a winter mix of snow, ice and rain/ice. As Figure 5.5 illustrates, the mountains in Amherst and Bedford Counties get a majority of the snow, while the southeast portion of the region receives a winter sleet mix.

Figure 5.7. Region 2000 Hazardous Winter Weather Potential Based on LEQ Precipitation, Source: Virginia Tech CGIT



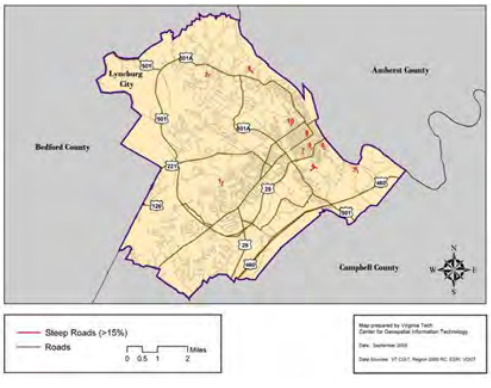
Steep Slopes

Lack of extensive GIS data throughout the region limited any other additional winter storm vulnerability assessment except in Lynchburg. The Lynchburg City GIS department was able to provide detailed streets and terrain data that could be used to identify streets that would be of a higher risk during ice storm events. A GIS analysis was performed to identify streets throughout with slopes greater than 15%, which would have vehicle traction issues during ice storms. Table 5.6 and Figure 5.8 illustrate selected roadways in the City of Lynchburg that have a slope greater than a 15%. These areas should be focused on as having a higher potential for accidents. The eastern portion of the city has a large amount of roads with greater than 15% slope.

Table 5.6 Lynchburg City Steep Slope Locations **(>15%), Source: VT CGIT**

1	500 Sandusky Dr. 15%
2	1700 Clayton Ave. 15%
3	130 Rockwell Rd. 15.3%
4	1400 Augusta St. 15.8%
5	N/A Paxton Ave. 16.8%
6	2000 Rose St. 17.3%
7	1220 17th St. 18.3%
8	600 11th St. 18.5%
9	1700 Locust St. 18.6%
10	200 Polk St. 19.2%

Figure 5.8 Lynchburg City Steep Slope Locations (>15%), Source: VT CGIT



Vulnerability Analysis

Figures 5.6 and 5.7 illustrate the overall winter weather and ice potential for the region. Figures 5.9 and 5.10 show the relative risk or vulnerability based on these previous maps. These were developed by assigning a high risk to those census blocks within the regions with the greatest potential for snowy days (> 1 in of snow) or ice. Division into high, medium and low were based on the levels predicted from potential maps. Tables 5.7 and 5.8 show the population in each locality impacted by the overall snowfall and ice risks.

Note Tables 5.7 and 5.8 indicate the town populations impacted; the county totals include the populations of the towns. Future revision of this plan will need to develop a method to calculate the potential loss from these winter storms. Areas of high susceptibility for snowfall (Figure 5.9) are centralized around the foothills of the Blue Ridge Mountains, with the highest snowfall risk around the Peaks of Otter in Bedford County. Relative ice potential (Figure 5.10) for the region has a slightly different trend of potential risk. The northern portion of Amherst County follows a

similar pattern as the snowfall risk. There is a band of high ice potential starting in Lynchburg City south into the majority of Campbell County and a southwest band of ice risk in Bedford County and City.

The winter weather mapping resolution does not support town based analysis, since most towns in Region 2000 would be represented by one or two pixels at this resolution. *As weather data has better spatial resolution in the future, the ability to create practical town based analysis will be improved.* While Tables 5.7 and 5.8 show town based vulnerability, the analysis method was designed to derive broad regional vulnerability comparisons, not pinpoint location comparisons. Also, the nature of winter storm preparedness and impact cannot be represented with snow or ice potential maps. Even though Bedford County may receive more snow than other localities, they may have more VDOT and power companies resources prepared to address winter weather than other communities.

The appendix contains the zoom-in maps for relative snowfall potential and relative ice potential for each of the localities in the region. The appendix contains a full size map for the region, followed by the subsequent locality maps. The northern portion of Bedford County has the highest relative snowfall risk for the region. Relative ice risk for the region is scattered in each of the localities, with high potential being in the northern portion of Amherst County, Lynchburg City, northern Campbell County, southeast Bedford County and Bedford City. These maps were consulted during the mitigation action development for potential sites of future actions

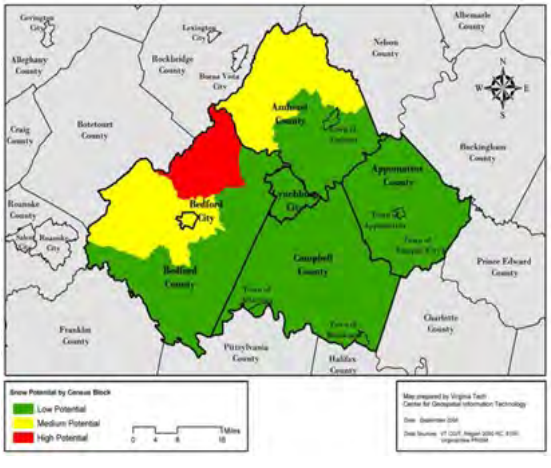


Figure 5.9. Region 2000 Snowfall Relative Risk, Source: VT CGIT

Table 5.7. Region 2000 Population Snowfall Relative Risk (from 2000 Census). *denotes town values that are also included in totals for the perspective County. 2000 Census information is the "best available" dataset for this section because the 2010 data isn't included in HAZUS software yet.

Community	Low	Medium	High	Total
Amherst	27,741	5,061	0	**32,802**
**Amherst, Town of*	*2,251*	*0*	*0*	***2,251***
Appomattox	14,068	0	0	**14,068**
**Appomattox, Town of*	*1,761*	*0*	*0*	***1,761***
**Pamplin City, Town of*	*199*	*0*	*0*	***199***
Bedford City	0	6,386	0	**6,386**
Bedford County	41,612	18,356	3,756	**63,724**
Campbell	51,078	0	0	**51,078**
**Altavista, Town of*	*3,425*	*0*	*0*	***3,425***
**Brookneal, Town of*	*1,259*	*0*	*0*	***1,259***
Lynchburg City	65,013	0	0	**65,013**
Total	**200,382**	**29,803**	**3,756**	**233,941**

Figure 5.10. Region 2000 Ice Relative Risk, Source: VT CGIT

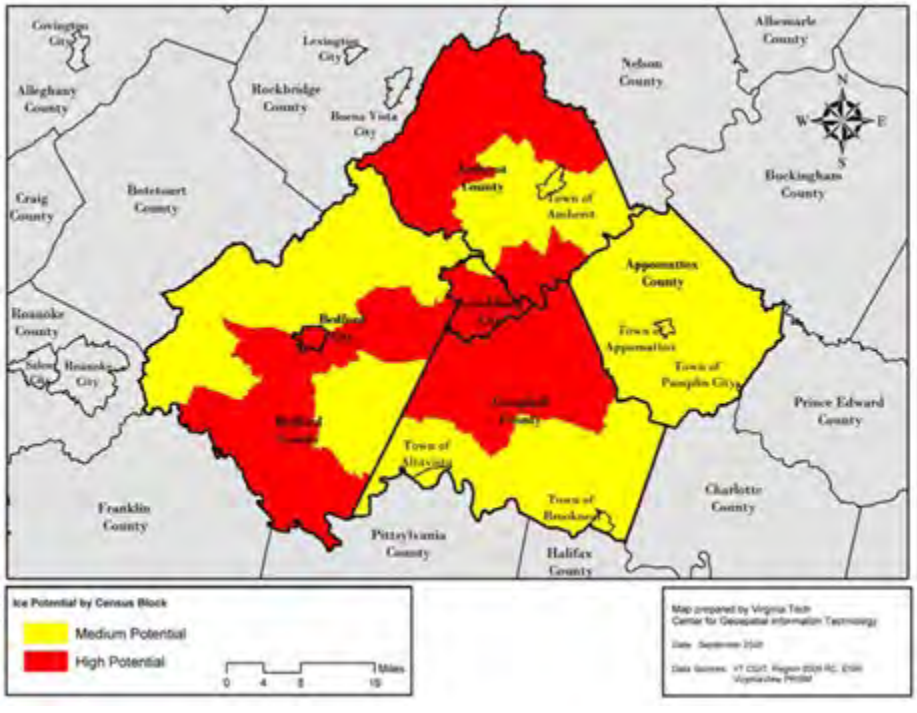


Table 5.8. Region 2000 Population Ice Relative Risk (from 2000 Census). *denotes town values that are also included in totals for the perspective County. 2000 Census information is the "best available" dataset for this section because the 2010 data isn't included in HAZUS software yet.

Community	Low	Medium	High	Total
Amherst County	0	14,257	18,545	**32,802**
**Amherst, Town of*	*0*	*2,251*	*0*	***2,251***
Appomattox County	0	14,068	0	**14,068**
**Appomattox, Town of*	*0*	*1,761*	*0*	***1,761***
**Pamplin City, Town of*	*0*	*199*	*0*	***199***
Bedford City	0	0	6,386	**6,386**
Bedford County	0	30,110	33,614	**63,724**
Campbell County	0	14,773	36,305	**51,078**
**Altavista, Town of*	*0*	*3,425*	*0*	***3,425***
**Brookneal, Town of*	*0*	*1,259*	*0*	***1,259***
Lynchburg City	0	4,774	60,239	**65,013**
Total	**0**	**77,982**	**155,959**	**233,941**

Flooding (High Ranking)

Hazard History

A table of all the major flood events that have occurred in Region 2000 is included in the appendix. Events have been broken down by the date of occurrence and when available, by individual community descriptions. When no community specific description is available, the general description should be used as representing the entire planning area. As Table 5.3 demonstrates, a large percentage of the region's declared disasters were due to flooding.

Hazard Profile

A flood occurs when an area that is normally dry becomes inundated with water. Floods may result from the overflow of surface waters, overflow of inland and tidal waters, dam breaks or mudflows. Flooding can occur at any time of the year, with peak hazards in the late winter and early spring. Snowmelt and ice jam breakaway contribute to winter flooding; seasonal rain patterns and torrential rains from hurricanes and tropical systems contribute to flooding. Development of flood-prone areas tends to increase the frequency and degree of flooding.

Floods are typically characterized by frequency. For example, the "1%-annual chance flood" is commonly referred to as the "100-year" flood. The 1%-percent annual chance flood is used for most regulatory and hazard identification purposes. While more frequent floods do occur, as well as larger events that has lower probabilities of occurrence.

Floods pick up chemicals, sewage, and toxins from roads, factories and farms. Therefore any property affected by the flood may be contaminated with hazardous materials. Debris from vegetation and man-made structures may also be hazardous following the occurrence of a flood. In addition, floods may threaten water supplies and water quality, as well as initiate power outages.

Flooding can pose some significant secondary impacts to the area where the event has taken place. Some of the impacts to consider include infrastructure and utility failure, impacts to roadways, water service and wastewater treatment. These impacts can affect the entire planning district, making the area vulnerable to limited emergency services.

Flood Maps

More detailed data was available as "Q3 flood maps" for a majority of the counties in the region. The Q3 flood maps are digital versions of the FEMA paper FIRMs that have been georectified and digitized. When a digital version of the floodplains was not available, digital paper copies of the FEMA Flood Insurance Rate Maps (FIRMs) were utilized. To be able to conduct analysis, the digital paper FIRMs were georectified and digitized. Bedford City was able to provide detailed data for Big Otter and Ivy Creek reaches.

These maps were used to determine the risk and vulnerability of flooding to the planning district. Figure 5.11 shows the extent of the FEMA mapped floodplain in the region.

Digital Q3 FEMA FIRMS maps were available for the following counties and are included in the appendix:

- Amherst County
- Appomattox County
- Bedford County
- Campbell County
- City of Lynchburg
- City of Bedford

Vulnerability Analysis

The project management team and data focus groups helped to document specific areas that are susceptible to flooding based on their local knowledge. These areas were taken into account when completing the hazard identification and risk assessment. Flooding problem spot maps and tables can be found in the appendix for section 5.

Many factors contribute to the relative vulnerabilities of areas within the floodplain. Some of these factors include development or the presence of people and property in the floodplain, flood depth, velocity, elevation, construction type, and flood duration.

Table 5.9 Total Value in Losses Paid by NFIP, Source: VDEM, DCR

	Entry in NFIP	FIRM Current Effective Date	Flood Insurance Policies	Insured Value	Claims	Total Value in Losses Paid
Cities:						
Lynchburg	9/1/1978	6/6/2010	96	$29,150,600.00	80	$3,247,935.56
Bedford	6/1/1978	9/29/2010	2	$78,000.00	0	$0.00
Counties:						
Amherst	7/17/1978	9/19/2007	46	$9,848,800.00	38	$9,848,800.00
Campbell	10/17/1978	8/28/2008	28	$7,078,900.00	12	$7,078,900.00
Bedford	9/29/1978	9/29/2010	145	$36,887,300.00	20	$206,583.05
Appomattox	7/17/1978	1/2/2008	10	$1,839,200.00	8	$253,216.06
Towns:						
Amherst	11/2/1977	9/19/2007	2	$450,800.00	29	$128,029.19
Pamplin	2/12/1976	2/12/1976	0	$0.00	0	$0.00
Appomattox	5/25/1984	5/25/1984	0	$0.00	0	$0.00
Brookneal	3/1/1978	8/28/2008	3	$589,400.00	0	$0.00
Altavista	8/1/1978	8/28/2008	12	$2,688,800.00	5	$79,561.38

FEMA-Designated Repetitive Loss Properties

Within a 10 year timeframe dating back to 1978, FEMA has provided a Repetitive Loss List of the properties in communities that have received two or more flood insurance claims greater than $1,000, from the National Flood Insurance Program (NFIP) within a 10 year timeframe. The Repetitive Loss list includes pertinent information regarding the property address, dates of claims, amounts received and owner information. Some of this information has been withheld from Table 5.10; see your local NFIP coordinator for specific information.

There are 25 repetitive loss properties in Region 2000, with an average payment of $32,461 per structure (Table 5.10). A majority of the repetitive loss structures for the region are non-residential properties. Note that FEMA designates counties, cities and towns separately in the

table. This table provides a listing of the houses that have repetitive loss; this list does not include all of the houses that have had damage due to flooding.

Table 5.10a Region 2000 Severe Repetitive Loss Structures, Source: FEMA

Locality	As of date	Mitigation Efforts and by what means?
LYNCHBURG	2/28/2011	Berm built by owners without FEMA/State funds.

Table 5.10b Region 2000 Repetitive Loss Structures, Source: FEMA

Locaility	Residential	Non-Residential	# of Claims	Total Losses
Amherst County	1	0	3	$74,723.03
Amherst, Town of	0	1	22	$122,011.86
Appomattox County	2	0	7	$246,937.00
Bedford County	2	1	20	$291,620.00
Lynchburg, City of	7	11	50	$1,978,130.00

Structures at Risk-Vulnerability

In general, when tax parcel level information on property value existed, then they were used in the flood loss analysis. When they were not available, average structural value per census block from HAZUS-MH was used (Table 5.11). Information from table 5.11 has not changed since the original plan. The "best available data" is represented in the table.

Table 5.11 Structural and Property Data Availability in Region 2000 Jurisdictions

Community	Structural and Property Data
Amherst County	GIS tax parcels without values; Average building value per census block from HAZUS-MH.
Amherst, Town of	GIS tax parcels without values; Average building value per census block from HAZUS-MH.
Appomattox County	Average building value per census block from FEMA HAZUS-MH
Appomattox, Town of	GIS tax parcels without values; Average building value per census block from HAZUS-MH.
Pamplin City, Town of	GIS tax parcels without values; Average building value per census block from HAZUS-MH.
Bedford City	GIS building footprints without values; Average building value derived from HAZUS-MH census blocks
Bedford County	GIS tax parcels with values
Campbell County	GIS tax parcels with values and building footprints
Altavista, Town of	GIS tax parcels with values and building footprints
Brookneal, Town of	GIS tax parcels with values and building footprints
Lynchburg City	GIS building footprints without values; Average building value derived from HAZUS-MH census block

The flood vulnerability was determined for each locality based on the intersection of floodplain mapping and structure value mapping. This varied by community based on the data availability. In communities like Bedford City, Campbell County and Lynchburg City where building footprints for structures were known, the intersection analysis showed which structures were entirely or partially within the floodplain. If a community only had parcel mapping, the mapping intersection determined which parcels were partially or entirely in the floodplain. When only census block mapping was available, the mapping intersection showed which census blocks where partially or entirely within the floodplain. Based on the mapping intersection and the number of households and housing units in the census block, an estimate was determined of the total structures flooded in each the census block.

Table 5.12 lists the total replacement value of structures vulnerable to flooding (both partially and entirely within the floodplain) in each community. These replacement values for structures were calculated as 10% greater than the assessed improvement values from community parcel data or from the HAZUS-MH census block average values. For communities without parcel level property values, these values are underestimates, especially for any non-residential structures in the floodplain.

Table 5.12 Structure Value Vulnerability, Source: HAZUS, US Census 2000

Community	Total Structure Value Vulnerability
Amherst County	$37,592,830
** Amherst, Town of*	*$2,788,170*
Appomattox County	$14,547,720
** Appomattox, Town of*	*$745,800*
**Pamplin City, Town of*	*$0*
Bedford City	$3,551,350
Bedford County	$206,103,700
Campbell County	$57,723,356
**Altavista, Town of*	*$2,384,820*
**Brookneal, Town of*	*$241,340*
Lynchburg City	$20,764,480
Total	**$346,443,566**

*denotes town values that are also included in totals for the perspective County.

Estimating Losses

Using the property values from Table 5.1 and 5.2, an estimate of the potential flood loss for each community was developed. Losses included structure and contents damage using a method based on FEMA Benefit Cost Analysis. Contents values were estimated as 30% of the structural replacement value. Structural damage percentages were based on the portion of the footprint, parcel, or census block that was in the floodplain. Table 5.13 shows the basis for these damage percentages and how they were assigned depending on the mapping detail. Contents damages were estimated as 50% greater than the structural damage percentage. These values were used to predict the damage from a 100-yr flood event for the structure.

To calculate an annualized flood damage estimate, it was assumed for each structure damages began with a 25-yr event. A percentage of the 100-yr flood damage value was used for events less frequent than the 100-yr event. For example, a parcel with 45% in the floodplain is estimated to have a structure worth

$100,000 based on the community parcel database. The replacement value of the structure would be $110,000 and the contents value $33,000. Based on 45% of the parcel in the floodplain, the structure would be in flood damage class 2, with 20% 100-yr structure damage and the 30% contents damage. The final 100-yr flood damage equals $22,000 structural plus $9,900 contents or $31,900 from a 100-yr flood event. Figure 5.12 shows the probability assumptions are used to estimate the annualized loss at $797.50.

Table 5.13. Flood Damage Classes, Source: HAZUS

Flood Damage Class	100-yr % Structural Damage	Representative Flood Depth Range	Mapped Footprints in Floodplain	Mapped Parcels in Floodplain	Mapped Census Blocks in Floodplain
1	11%	0 to +1 ft		< 33%	< 33%
2	20%	+1 to + 3 ft	Partial	33% - 66%	33% - 66%
3	28%	> 3 ft	Entire	> 66 %	> 66 %

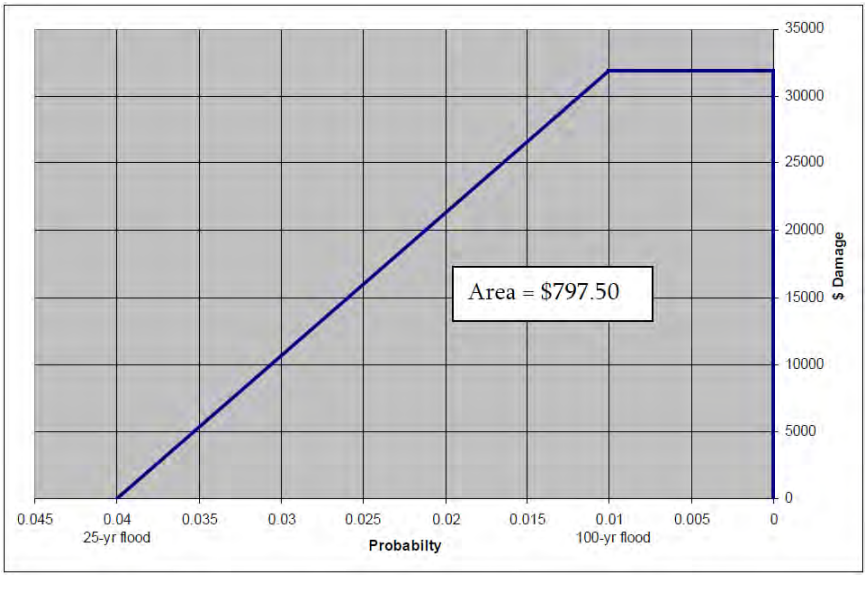


Figure 5.12. Example of Flood Loss Estimate Technique, Source: HAZUS

Table 5.14 provides the total flood loss estimates for each flood class and county. Figure 5.13 shows the census blocks where these losses occur. While most of the flood prone census blocks have less than $20,000 annual flood losses, there are a select number of locations in Bedford County with over $40,000 in one census block. Table 5.14 shows the annualized loss estimate for damage to structures and contents, broken down by community. From the table, Bedford County makes up 63% of the total estimated damage amounts followed by Amherst County with 15% of the total estimated damage amount. Figure 5.13 illustrates the distribution of annualized

flood damage for Region 2000. A large majority of the flood damage is within the "less than $20,000 annually" category, categorized by census blocks.

Table 5.14. Annualized Structure and Contents Loss Estimates, Source: HAZUS

Community	Total Loss Estimate
Amherst County	$133,471
* *Amherst, Town of*	$10,477
Appomattox County	$51,340
* *Appomattox, Town of*	$2,389
**Pamplin City, Town of*	$0
Bedford City	$31,410
Bedford County	$1,557,077
Campbell County	$162,655
**Altavista, Town of*	$85,893
**Brookneal, Town of*	$773
Lynchburg City	$159,046
Total	**$2,194,531**

*denotes town values that are also included in totals for the perspective County.

The appendix for this section contains the zoom-in maps for the annualized flood damages for each of the localities in the region. The Appendix contains a full size map for the region, followed by the subsequent locality maps. These maps were consulted during the mitigation action development for potential sites of future actions.

Jurisdictional specific annualized flood damage maps have been created for the region in the Appendix. It should be noted that no FEMA floodplain maps exist for the towns of Pamplin City. Each region is unique in their exposure to flooding. The following is a summation of the major trends illustrated on the jurisdictional specific maps:

- Amherst County receives most of its annualized flood damage in the southeastern portion of the county along the James River. The flood damages in the county, by Census block are less than $20,000 annually.
- The Buffalo River, Rutledge Creek, Williams Creek and Higginbotham Creek account for the annual flood damages in the Town of Amherst.
- Appomattox County has a sprinkling of annual flood damages throughout the county. The James River borders the northwest of the county, and Cedar Creek boarders the southeastern portion of the county.
- The Town of Appomattox has very limited annual flood damages. Purdums Branch and the South Fork of the Appomattox River run through the southern tip of the town.

- No FEMA flood plain maps exist of the Town of Pamplin City.
- Bedford County receives a high amount of flood damages as a result of Smith Mountain Lake in the southern tip of the County. Annual damage estimates range from $20,000 to $40,000 per Census block.
- Bedford City receives most of its flood damages from an unnamed tributary to Little Otter River. A majority of flood damages occurs outside of the city limits.
- Campbell County, like Appomattox County, has very limited annualized flood damages. A majority of the present damage occurs along the Roanoke River to the south and along Beaver Creek to the north.
- The majority of the Town of Altavista is within a flood damage area. The Roanoke River to the south accounts for high damages to Census block, with greater than $20,000 annual damage.
- The northern portion of the Town of Brookneal receives all of the annualized flood damages for the town. Falling River and the Brookneal Reservoir account for this damage.
- The City of Lynchburg receives most of its' flood damage from main stream branches. These bodies of water being the James River, Blackwater Creek and Ivy Creek.

Problem Spot Mapping

See the appendix for Figures and Tables summarizing the problem spot locations that were denoted by the project management team during the Sept 15th, 2011 meeting. These are areas of concern that were designated by the project management team and the public. When specific town information was provided it was included on the problem spot maps. If no information was provided by the localities, or they acknowledged there was no need for a specific map, the map was omitted from the Appendix.

Critical Facilities

The impacts of flooding on critical facilities can significantly increase the overall effect of a flood event on a community. It should be noted that these facilities have been determined to be in the floodplain using Geographic Information Systems (GIS) and should be used only as a planning tool. In order to accurately determine if a structure is actually in the floodplain, site-specific information must be available. Twenty critical facilities were denoted as being located within the FEMA designated floodplain (Table 5.15). Mitigation actions address these concerns for critical facilities.

Table 5.15. Critical Facilities in the Floodplain, Source: Project Management Team

Amherst County	Dodd's Store
Amherst County	Early Dam
Amherst County	Elon Water Works Dam
Amherst County	Graham Creek Res. Dam #1
Amherst County	Kick's Store
Amherst County	Holcomb Rock Dam
Amherst County	Midway Church
Amherst County	Pedlar Fire and Rescue
Amherst County	St. Paul's Mission School
Amherst County	St. Paul's Episcopal Mission
Appomattox County	East Fork Falling River #15 Dam
Appomattox County	East Fork Falling River #21 Dam
Bedford County	Bore Auger Church
Bedford County	Coleman's Fall Dam
Bedford County	Pent Holiness Church
Bedford County	Sharon Church
Bedford County	Sharon School (historical)
Bedford County	Steven's Chapel
Campbell County	Hazmat location
Campbell County	Altavista Area YMCA Discovery Place

Dams

Dam failure poses minimal risk as a hazard, but is a large potential threat to areas with large populations surrounding dams. One of the major events in Region 2000 took place on June 22 and 23, 1995 when the Timberlake dam failed. See the Appendix for a more detailed summary of this failure.

Many different scenarios can result in dam failure. Overtopping is one of the most common causes of dam failure, and it occurs when the dam's spillway is inadequate for dealing with excess water. During flood events, too much water to be properly handled by the spillway may

rush to the dam site, and flow over the top of the dam. Improper building construction, including using easily eroded construction materials, also frequently leads to the slow structural failure of dams. This failure can be compounded by underlying geological factors such as porous bedrock that loses structural integrity when saturated. Landslides pose two threats to dams, both upstream from the dam and at the dam site itself. At the dam site, a landslide could completely wipe out the dam from its foundation. A landslide upstream has the potential to send a wave of water surging towards the dam, quite possibly causing an overtopping event. Earthquakes are also a major threat to dams, though it is very rare that a dam will be completely destroyed by an earthquake. In the event of total failure, the most common cause is the liquefaction of fill along the dam wall. Terrorist attacks are also another concern for dam safety.

No matter what the cause of dam failure, the aftermath of such an event can range from moderate to severe. It is likely that the failure of major dams will cause widespread loss of life downstream to humans and animals, as well as extreme environmental stress along the flood path. Water supplies upstream could be left completely dry, while water supplies downstream are overrun or contaminated with debris from the ensuing flood.

The National Inventory of Dams provides information about individual dams. Figure 5.14 illustrates the locations and hazard potential of dams in the region. A large percentage of the dams in Region 2000 have been rated as low or significant potential for failure. The dam inventory also provides information on the downstream hazard potential of a dam failure.

The dam inventory divides the hazard potential into three categories: low, high and significant. The classification is based on two main criteria 1) Loss of human life and 2) Economic, environmental, and lifeline losses. Dams that were assigned a low potential indicate that there is a low potential for failure or miss-operation resulting in no probable human loss or economic and environmental losses. Significant potential for dam failure is often in predominantly rural or agricultural areas but could affect areas with populations and infrastructure. High potential areas are categorized by dam failure that would probably result in the loss of human life. It is important to note that the areas potentially affected if these dams were to fail are not restricted to these counties.

Figure 5.14. Region 2000 Dam Locations and Failure Potential, Source: NID

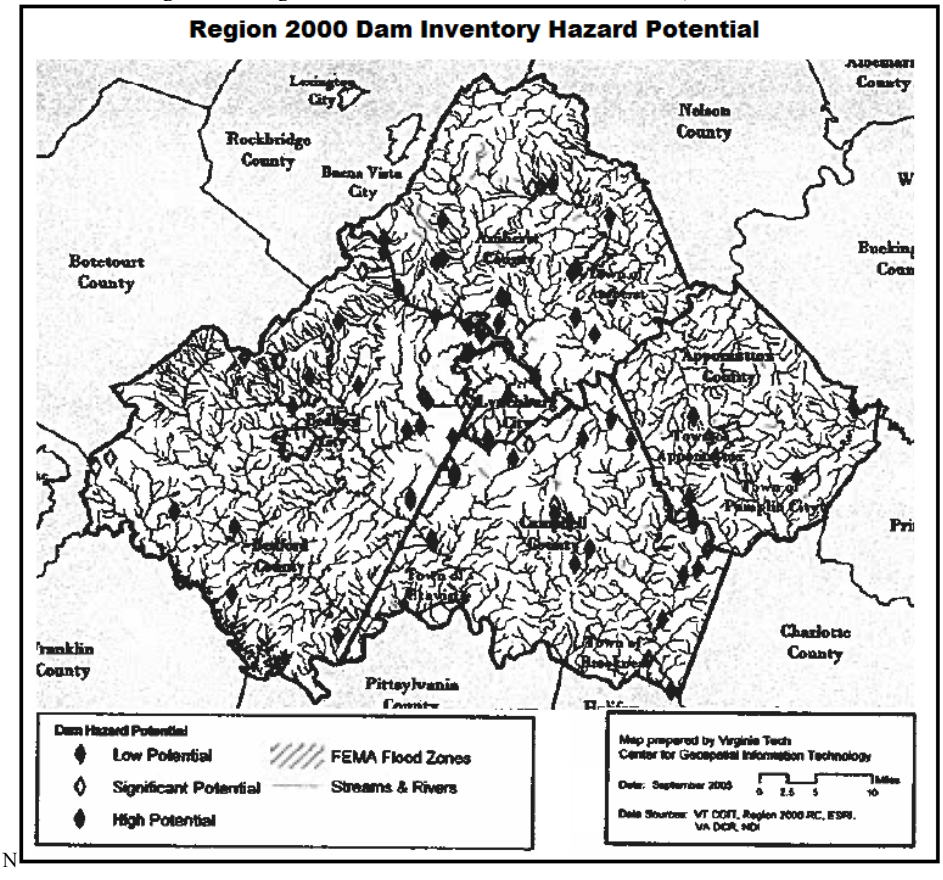


Table 5.16 denotes the classification that VA DCR uses to regulate dams in the Commonwealth. On-going dam inspections and Virginia's participation in the National Dam Safety Program maintained by FEMA and the U.S. Army Corps of Engineers serve as preventative measures against dam failures.

Virginia impounding structure regulations specify that each dam be classified based on potential loss of human life or property damage if it were to fail. Classification is based on a determination of the effects that a dam failure would likely have on people and property in the downstream inundation zone. *Hazard potential classifications* descend in order from *high* to *low*, *high* having the greatest potential for adverse downstream impacts in event of failure. This classification is unrelated to the physical condition of the dam or the probability of its failure. The hazard potential classifications are:

Table 5.16 Dam Classifications, Source: DCR

High	Dams that upon failure would cause probable loss of life or serious economic damage.
Significant	Dams that upon failure might cause loss of life or appreciable economic damage.
Low	Dams that upon failure would lead to no expected loss of life or significant economic damage. Special criteria: This classification includes dams that upon failure would cause damge only to property of the dam owner.

Safety standards become increasingly more stringent as the potential for adverse impact increases. For example, a *high hazard* dam -- that is, one whose failure would cause probable loss of human life -- is required to meet higher standards than a dam whose failure would not be as likely to result in such severe adverse consequences. Classification, however, is not static. Downstream conditions, including land use, can and often do change. Although a dam itself may remain relatively stable, it is subject to reclassification if a change occurs in the *downstream* inundation zone. For example, if new homes are built in the downstream inundation zone of a Class II, III or IV dam, the dam could be reclassified to Class I.

A change in hazard classification can create a dilemma because if a dam is reclassified, it usually does not meet the higher standards of the new hazard classification. To meet the required higher standards, the owner of the dam is often required to make expensive modifications. Any dam that does not meet the most extreme standards of a *high hazard* dam could become deficient in the future if land use in the downstream inundation zone changes.

To avoid the need for some of these expensive modifications, all affected parties -- dam owner, engineer, downstream land owners, and local governments -- need to work together. People should be aware of the impacts development downstream can have on the required standards of a dam. It is better and cheaper to address this potential problem beforehand rather than wait and deal with modifications later.

Drought (High Ranking)

Hazard History

Table 5.17 includes descriptions of major droughts that have occurred in Region 2000 jurisdictions. Events have been broken down by the date of occurrence and when available, by individual community descriptions. When no community specific description is available, the general description should be used as representing the entire planning area.

Table 5.17. Drought Hazard History, Source: FEMA

Date	Damages
1976-1977	Ten months of below average precipitation. The drought began in November of 1976 when rainfall totaled to only 50% to 75% of normal.
1985-1986	Very little rainfall began in December and the trend continued throughout the summer. Total precipitation January and February was 2 inches.
2001-2002	Stream levels were below normal with record lows observed at gages for the York, James, and Roanoke River Basins. By November of 2002 the US Secretary of Agriculture had approved 45 counties for primary disaster designation, while 36 requests remained pending.
2007-2008	Drought conditions were observed by the NOAA drought monitor throughout the commonwealth and remained stable in 2007. Drought conditions showed minor improvement in March of 2008 but statewide precipitation was below normal for the 2 year span (81% of normal).

Hazard Profile

A drought can be characterized in several different ways depending on the impact. The most common form of drought is agricultural. Agricultural droughts are characterized by unusually dry conditions during the growing season. Meteorological drought is an extended period of time (6 or more months) with precipitation less than 75 percent of the normal precipitation. Severity of droughts often depends on the community reliance on a specific water source. Many problems can arise at the onset of a drought, some of which include diminished water supplies and quality, livestock and wildlife becoming undernourished, crop damage, and possible wildfires. Secondary impacts from droughts pose problems to farmers with reductions in income, while food prices and lumber prices could drastically increase.

The impact of excessive heat is most prevalent in urban areas, where urban heat island effects prevent inner-city building from releasing heat built up during the daylight hours.

Secondary impacts of excessive heat are severe strain on the electrical power system and potential brownouts or blackouts.

Table 5.18 provides a summary of drought categories and impacts. Notice that water restrictions start off as voluntary and then become required. For excessive heat, the National Weather Service utilizes heat index thresholds as criteria for the issuance of heat advisories and excessive heat warnings.

Table 5.18 Drought Severity Classification

Drought Severity		
Category	**Description**	**Possible Impacts**
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.
D1	Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested
D2	Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed
D3	Extreme Drought	Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions

Drought response plans have been prepared for the region, which contain pertinent information on how the region responds on the eve and during drought conditions.

During long periods of drought, each locality imposes restrictions on water use. Some mitigation actions detail voluntary restrictions, community education, and developing and maintaining secondary water supplies on a regional basis.

Vulnerability Analysis

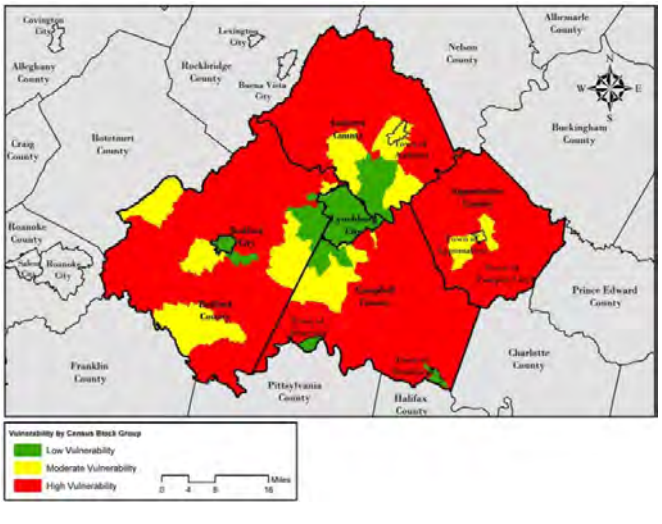
The 1990 U.S. Census data contained detailed information about source of water per census block group. For purposes of this analysis, it was assumed that areas with populations having less than 25% of public/private water systems had a high vulnerability ranking. When a drought occurs, these areas would likely have a larger impact since most homes receive their water from wells, which may dry up during a drought. Low vulnerability was assigned to regions with more than 50% of their population drawing from public or private water systems. Table 5.19 provides a summary of the 1990 population in three categories of drought vulnerability. Note that the table contains information specific to the towns; this information has also been included with the county totals. As a result of using 1990 U.S. Census data, at the tract level, there are some discrepancies with the town boundaries. Boundary adjustments into “high vulnerability” areas are a result of the older census data, which is a data limitation issue and remains an issue in the

2013 plan update. Future updates of this plan will use, if available, the most current census data for water systems. Figure 5.15 shows each of the designated categories for each of the jurisdictions. Most cities and towns are supplied by a public or private water system. Mitigation actions for the region reflect the regions concern for drought and water supply. Although there are areas in Region 2000 that have a "low" drought vulnerability distinction, the entire planning region is susceptible to future drought conditions.

Table 5.19. Region 2000 Population Drought Risk, Source: US Census 1990 *denotes town values that are also included in totals for the perspective County.

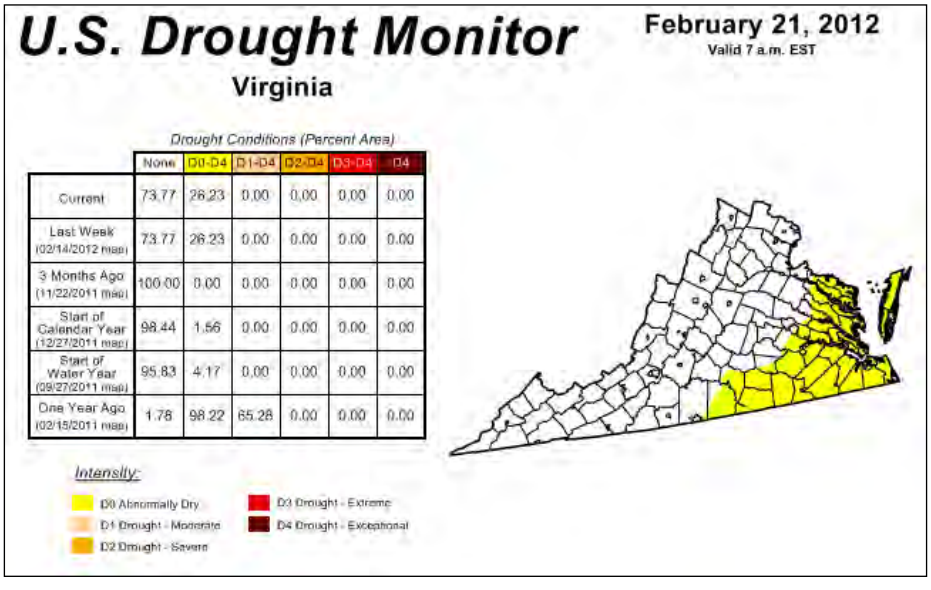
Percent Population with Public or Private Water Systems				
Community	**HIGH (< 25%)**	**MEDIUM (25% - 50%)**	**LOW (> 50 %)**	**TOTAL**
Amherst County	6,146	4,259	18,173	**28,578**
**Amherst, Town of*	*0*	*1,060*	*0*	*1,060*
Appomattox County	9,334	2,024	940	**12,298**
**Appomattox, Town of*	**0*	*1,707*	*0*	*1,707*
**Pamplin City, Town of*	*208*	*0*	*0*	*208*
Bedford City	0	0	6,073	**6,073**
Bedford County	27,365	10,116	8,175	**45,656**
Campbell County	21,819	6,337	19,416	**47,572**
**Altavista, Town of*	*0*	*0*	*3,686*	*3,686*
**Brookneal, Town of*	**0*	*0*	*1,344*	*1,344*
Lynchburg City	0	0	66,049	**66,049**
Total	**64,664**	**22,736**	**118,826**	**206,226**

Figure 5. 15. Region 2000 Drought Vulnerability, Source: VDEM



According to the project management team, drought remains of high concern. The data in this section also suggests a high degree of probability for future drought events in Region 2000 jurisdictions.

5.15 b. Drought Monitor for Virginia, Source: NOAA/NESDIS/NCDC

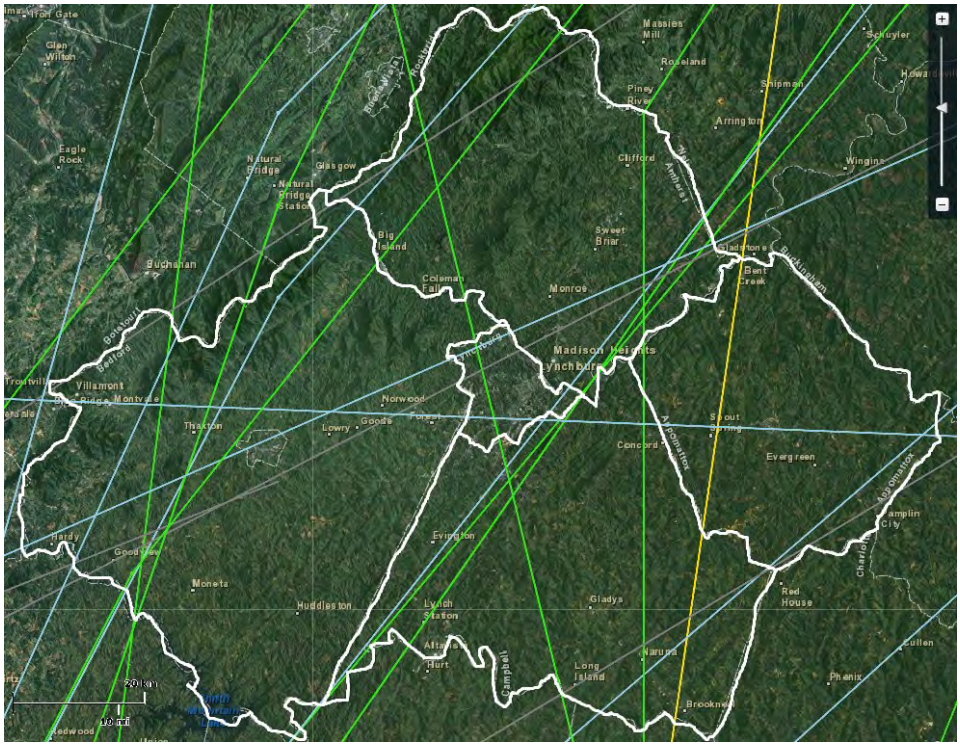


Hurricane Wind (Medium Ranking)

Hazard History

Events have been broken down by the date of occurrence and when available, by individual community descriptions. When no community specific description is available, the general description should be used as representing the entire planning area.

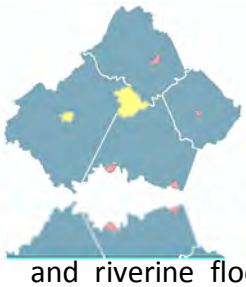
Figure 5.16 Region 2000 Hurricane Tracks from 1851-2010 Source: National Oceanic and Atmospheric Administration



The National Oceanic and Atmospheric Administration shows historical hurricane tracks from 1851 to 2010 (Figure 5.16). The hurricane track map gives an idea of the historical occurrences in Region 2000. A majority of the hurricanes that have tracked through the region were Category 1(not named in 1893, 1896, and 1893) with Tropical Depression Fran (1996) and Tropical Storm Camille (1969). It should be noted that Figure 5.16 indicates the location of the center of the hurricane. Impacts from hurricanes could span many miles in all directions of the designated track.

Hazard Profile

A tropical cyclone is the generic term for a non-frontal synoptic scale low-pressure system that originates over tropical or sub-tropical waters with organized convection and definite cyclonic surface wind circulation. Depending on strength, they are classified as hurricanes or tropical storms. Tropical cyclones involve both atmospheric and hydrologic characteristics, such as severe winds, storm, surge flooding, high waves, coastal erosion, extreme rainfall, thunderstorms, lightning, and, in some cases, tornadoes. Storm surge flooding can push inland,



and riverine flooding associated with heavy inland rains can be extensive. High winds are associated with hurricanes, with two significant effects: widespread debris due to damaged and downed trees and damaged buildings; and power outages.

Secondary hazards from a hurricane event could include high winds, flooding, heavy waves, and tornadoes. Once inland, the hurricane's band of thunderstorms produces torrential rains and sometimes tornadoes. A foot or more of rain may fall in less than a day causing flash floods and mudslides. The rain eventually drains into the large rivers, which may still be flooding for days after the storm has passed. The storm's driving winds can topple trees and utility poles, and damage buildings. Communication and electricity is lost for days and roads are impassable due to fallen trees and debris.

Hurricane Damage Scale

Hurricanes are categorized by the Safer-Simpson Hurricane Damage Scale listed below (Table 5.21). Following the table are detailed descriptions of each category and the potential damage caused by each. The Safer-Simpson Hurricane Damage Scale has changed since the original plan and are noted in Table 5.21.

Table 5.21 Safer-Simpson Hurricane Damage Scale, Source: National Weather Service

Hurricane Category	Sustained Winds (mph)	Summary	Description
1	74-95	Very dangerous winds will produce some damage	People, livestock, and pets struck by flying or falling debris could be injured or killed. Older (mainly pre-1994 construction) mobile homes could be destroyed, especially if they are not anchored properly as they tend to shift or roll off their foundations. Newer mobile homes that are anchored properly can sustain damage involving the removal of shingle or metal roof coverings, and loss of vinyl siding, as well as damage to carports, sunrooms, or lanais. Some poorly constructed frame homes can experience major damage, involving loss of the roof covering and damage to gable ends as well as the removal of porch coverings and awnings. Unprotected windows may break if struck by flying debris. Masonry chimneys can be toppled. Well- constructed frame homes could have damage to roof shingles, vinyl siding, soffit panels, and gutters. Failure of aluminum, screened-in, swimming pool enclosures can occur. Some apartment building and shopping center roof coverings could be partially removed. Industrial buildings can lose roofing and siding especially from windward corners, rakes, and eaves. Failures to overhead doors and unprotected windows will be common. Windows in high- rise buildings can be broken by flying debris. Falling and broken glass will pose a significant danger even after the storm. There will be occasional damage to commercial signage, fences, and canopies. Large branches of trees will snap and shallow rooted trees can be toppled. Extensive damage to power lines and poles will likely result in power outages that could last a few to several days.
2	96-110	Extremely dangerous winds will cause extensive damage	There is a substantial risk of injury or death to people, livestock, and pets due to flying and falling debris. Older (mainly pre-1994 construction) mobile homes have a very high chance of being destroyed and the flying debris generated can shred nearby mobile homes. Newer mobile homes can also be destroyed. Poorly constructed frame homes have a high chance of having their roof structures removed especially if they are not anchored properly. Unprotected windows will have a high probability of being broken by flying debris. Well-constructed frame homes could sustain major roof and siding damage. Failure of aluminum, screened-in, swimming pool enclosures will be common. There will be a substantial percentage of roof and siding damage to apartment buildings and industrial buildings. Unreinforced masonry walls can collapse. Windows in high-rise buildings can be broken by flying debris. Falling and broken glass will pose a significant danger even after the storm. Commercial signage, fences, and canopies will be damaged and often destroyed. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks. Potable water could become scarce as filtration systems begin to fail.
3	111-130	Devastating damage will occur	There is a high risk of injury or death to people, livestock, and pets due to flying and falling debris. Nearly all older (pre-1994) mobile homes will be destroyed. Most newer mobile homes will sustain severe damage with potential for complete roof failure and wall collapse. Poorly constructed frame homes can be destroyed by the removal of the roof and exterior walls. Unprotected windows will be broken by flying debris. Well-built frame homes can experience major damage involving the removal of roof decking and gable ends. There will be a high percentage of roof covering and siding damage to apartment buildings and industrial buildings. Isolated structural damage to wood or steel framing can occur. Complete failure of older metal buildings is possible, and older unreinforced masonry buildings can collapse. Numerous windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Most commercial signage, fences, and canopies will be destroyed. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to a few weeks after the storm passes.
4	131-155	Catastrophic damage will occur	There is a very high risk of injury or death to people, livestock, and pets due to flying and falling debris. Nearly all older (pre-1994) mobile homes will be destroyed. A high percentage of newer mobile homes also will be destroyed. Poorly constructed homes can sustain complete collapse of all walls as well as the loss of the roof structure. Well-built homes also can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Extensive damage to roof coverings, windows, and doors will occur. Large amounts of windborne debris will be lofted into the air. Windborne debris damage will break most unprotected windows and penetrate some protected windows. There will be a high percentage of structural damage to the top floors of apartment buildings. Steel frames in older industrial buildings can collapse. There will be a high percentage of collapse to older unreinforced masonry buildings. Most windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Nearly all commercial signage, fences, and canopies will be destroyed. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months.
5	>155	Catastrophic damage will occur	People, livestock, and pets are at very high risk of injury or death from flying or falling debris, even if indoors in mobile homes or framed homes. Almost complete destruction of all mobile homes will occur, regardless of age or construction. A high percentage of frame homes will be destroyed, with total roof failure and wall collapse. Extensive damage to roof covers, windows, and doors will occur. Large amounts of windborne debris will be lofted into the air. Windborne debris damage will occur to nearly all unprotected windows and many protected windows. Significant damage to wood roof commercial buildings will occur due to loss of roof sheathing. Complete collapse of many older metal buildings can occur. Most unreinforced masonry walls will fail which can lead to the collapse of the buildings. A high percentage of industrial buildings and low-rise apartment buildings will be destroyed. Nearly all windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Nearly all commercial signage, fences, and canopies will be destroyed. Nearly all trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months.

Vulnerability Analysis

HAZUS-MH was used to complete the wind analysis for vulnerability and loss estimates. The HAZUS software has been developed by FEMA and the National Institute of Building Sciences. Level 1, with default parameters, was used for the analysis done in this plan. For analysis purposes, the U.S. Census tracks are the smallest extent in which the model runs. The results of this analysis are captured in the vulnerability analysis and loss estimation.

HAZUS-MH uses historical hurricane tracks and computer modeling to identify the probabilistic tracks of a range of hurricane events. The appendix contains the individual wind speed maps (50-yr, 100-yr, and 1,000-yr events) for the jurisdictions in the region.

When a hurricane impacts these areas, these maps can be used to determine what areas will be more impacted than others (at the U.S. Census Track level). Results from the model were used to develop the annualized damages. The impacts of these various events are combined to create a total annualized loss or the expected value of loss in any given year. Figure 5.14 illustrates the annualized damages from hurricane winds. It should be noted that these are climatologically trend tracks, and therefore the specified track, realistically, can vary significantly from what is shown.

Building Types

Table 5.22 illustrates the probabilistic building stock exposure by building type to hurricanes. In Region 2000, wood-frame buildings account for a large percentage of the building stock. Table 5.23 illustrates the building stock exposure broken down by the type of occupancy. From the table, 83% of the building stock for Region 2000 is considered residential, with approximately 14% of the building stock coming from commercial and industrial.

HAZUS-MH hurricane model only conducts analysis at the U.S. Census track level; which is larger than all of the towns in Region 2000. Town exposure has been estimated based on the percentage of the housing units in the County.

Building Stock Exposure by Building Type						
Community	**Wood**	**Masonry**	**Concrete**	**Steel**	**MH**	**TOTAL**
Amherst County	$1,088,291	$466,536	$78,671	$135,504	$55,740	**$1,824,742**
**Amherst, Town of*	*$83,986*	*$36,004*	*$6,071*	*$10,457*	*$4,302*	*$140,820*
Appomattox County	$446,231	$173,247	$12,362	$43,398	$43,019	**$718,257**
**Appomattox, Town of*	*$58,727*	*$22,800*	*$1,627*	*$5,711*	*$5,662*	*$94,527*
**Pamplin City, Town of*	*$6,814*	*$2,646*	*$189*	*$663*	*$657*	*$10,969*
Bedford City	$238,566	$124,589	$27,091	$58,111	$1,090	**$449,447**
Bedford County	$2,513,542	$976,105	$70,447	$206,432	$166,762	**$3,933,288**
Campbell County	$1,649,161	$676,211	$59,213	$233,111	$161,113	**$2,778,809**
**Altavista, Town of*	*$123,194*	*$50,514*	*$4,423*	*$17,414*	*$12,035*	*$207,580*
**Brookneal, Town of*	*$43,305*	*$17,756*	*$1,555*	*$6,121*	*$4,231*	*$72,968*
Lynchburg City	$2,448,010	$1,235,429	$278,580	$565,286	$19,468	**$4,546,773**
Total	**$8,383,801**	**$3,652,117**	**$526,364**	**$1,241,842**	**$447,192**	**$14,251,316**
						All values are in thousands of dollars

Table 5.22. Building Stock Exposure by Building Type (from HAZUS-MH).

*denotes town values that are also included in totals for the perspective County.

Table 5.23. Building Stock Exposure by General Occupancy, Source: HAZUS

Building Stock Exposure By General Occupancy								
Community	Residential	Commercial	Industrial	Agri.	Religion	Gov't	Ed.	Total
Amherst County	$1,584,986	$142,958	$50,622	$3,360	$28,601	$939	$13,277	**$1,824,743**
**Amherst, Town of*	*$122,317*	*$11,032*	*$3,907*	*$259*	*$2,207*	*$72*	*$1,025*	*$140,820*
Appomattox County	$628,950	$64,068	$10,528	$2,496	$6,902	$2,234	$3,080	**$718,258**
**Appomattox, Town of*	*$82,774*	*$8,432*	*$1,386*	*$328*	*$908*	*$294*	*$405*	*$94,527*
**Pamplin City, Town of*	*$9,605*	*$978*	*$161*	*$38*	*$105*	*$34*	*$47*	*$10,969*
Bedford City	337543	$71,152	$22,262	$1,109	$13,507	$1,471	$2,403	**$449,447**
Bedford County	$3,486,963	$273,431	$88,455	$9,372	$59,213	$2,525	$13,335	**$3,933,294**
Campbell County	$2,306,096	$264,942	$122,837	$8,381	$45,326	$18,791	$12,447	**$2,778,820**
**Altavista, Town of*	*$172,268*	*$19,791*	*$9,176*	*$626*	*$3,386*	*$1,404*	*$930*	*$207,581*
**Brookneal, Town of*	*$60,555*	*$6,957*	*$3,226*	*$220*	*$1,190*	*$493*	*$327*	*$72,968*
Lynchburg City	$3,502,793	$694,372	$196,531	$3,514	$95,804	$5,863	$47,899	**$4,546,776**
Total	**$11,847,331**	**$1,510,923**	**$491,235**	**$28,232**	**$249,353**	**$31,823**	**$92,441**	**$14,251,338**
								All values are in thousands of dollars

*denotes town values that are also included in totals for the perspective County.

Critical Facilities

Vulnerability to critical facilities from hurricane winds is fairly uniform throughout the region. As Figure 5.17 shows, there is only slight variation in the region, with a few "hot spots". Bedford County, Bedford City, Lynchburg City and Campbell County have a slightly larger annualized hurricane loss when compared to Amherst and Appomattox Counties. Table 5.26 illustrates the percentage of critical facilities in the different annualized loss categories. Critical facilities that are located within towns have been included in the county totals. Future updates of this plan will hopefully include a region wide comprehensive database for critical facilities.

Loss Estimation

Table 5.24 provides the loss estimations from HAZUS-MH by building type. As noted earlier, wood structures compose the majority of the structures, and also account for the majority of the losses. Table 5.25 shows the loss by occupancy type. Note the differences between the totals in the tables are due to rounding in the calculations in HAZUS-MH.

HAZUS-MH hurricane model only conducts analysis at the U.S. Census track level; which is larger than all of the towns in Region 2000. Town building stock loss has been estimated based on the percentage of the housing units in the County.

Table 5.24. Building Stock Loss by Building Type, Source: HAZUS

Building Stock Loss by Building Type						
Community	**Wood**	**Masonry**	**Concrete**	**Steel**	**MH**	**TOTAL**
Amherst County	$106.52	$39.52	$2.11	$5.86	$5.86	**$159.87**
**Amherst, Town of*	*$8.22*	*$3.05*	*$0.16*	*$0.45*	*$0.45*	*$12.34*
Appomattox County	$55.77	$17.73	$0.40	$1.87	$5.39	**$81.16**
**Appomattox, Town of*	*$7.34*	*$2.33*	*$0.05*	*$0.25*	*$0.71*	*$10.68*
**Pamplin City, Town of*	*$0.85*	*$0.27*	*$0.01*	*$0.03*	*$0.08*	*$1.24*
Bedford County	$243.01	$81.25	$1.72	$7.68	$19.61	**$353.27**
Bedford City	$29.34	$12.80	$1.01	$3.66	$0.14	**$46.96**
Campbell County	$190.29	$69.36	$2.24	$11.24	$19.18	**$292.32**
**Altavista, Town of*	*$14.21*	*$5.18*	*$0.17*	*$0.84*	*$1.43*	*$21.84*
**Brookneal, Town of*	*$5.00*	*$1.82*	*$0.06*	*$0.30*	*$0.50*	*$7.68*
Lynchburg City	$299.48	$138.05	$10.80	$35.27	$2.55	**$486.15**
Total	**$924.41**	**$358.72**	**$18.28**	**$65.59**	**$52.73**	**$1,419.73**
						**All values are in thousands of dollars*

*denotes town values that are also included in totals for the perspective County

Table 5.25. Building Stock Loss by General Occupancy, Source: HAZUS

Building Stock Loss By General Occupancy								
Community	**Residential**	**Commercial**	**Industrial**	**Agri.**	**Religion**	**Gov't**	**Ed.**	**Total**
Amherst County	**$148.75**	**$6.12**	**$3.03**	**$0.18**	**$1.03**	**$0.04**	**$0.55**	**$159.70**
**Amherst, Town of*	*$11.48*	*$0.47*	*$0.23*	*$0.01*	*$0.08*	*$0.00*	*$0.04*	*$12.32*
Appomattox County	**$77.27**	**$2.71**	**$0.56**	**$0.16**	**$0.26**	**$0.18**	**$0.13**	**$81.27**
**Appomattox, Town of*	*$10.17*	*$0.36*	*$0.07*	*$0.02*	*$0.03*	*$0.02*	*$0.02*	*$10.70*
**Pamplin City, Town of*	*$1.18*	*$0.04*	*$0.01*	*$0.00*	*$0.00*	*$0.00*	*$0.00*	*$1.24*
Bedford County	**$335.38**	**$10.96**	**$4.20**	**$0.57**	**$1.99**	**$0.06**	**$0.50**	**$353.66**
Bedford City	**$40.02**	**$4.40**	**$1.52**	**$0.09**	**$0.68**	**$0.13**	**$0.13**	**$46.97**
Campbell County	**$268.54**	**$12.74**	**$8.04**	**$0.52**	**$1.81**	**$0.88**	**$0.53**	**$293.06**
**Altavista, Town of*	*$20.06*	*$0.95*	*$0.60*	*$0.04*	*$0.14*	*$0.07*	*$0.04*	*$21.89*
**Brookneal, Town of*	*$7.05*	*$0.33*	*$0.21*	*$0.01*	*$0.05*	*$0.02*	*$0.01*	*$7.70*
Lynchburg City	**$418.23**	**$45.11**	**$15.25**	**$0.30**	**$4.72**	**$0.48**	**$2.75**	**$486.84**
Total	**$1,288.19**	**$82.03**	**$32.60**	**$1.82**	**$10.49**	**$1.77**	**$4.60**	**$1,421.50**
								** All values are in thousands of dollars*

*denotes town values that are also included in totals for the perspective County.

Figure 5.17. Region 2000 Annualized Total Hurricane Loss Estimate, Source: VDEM

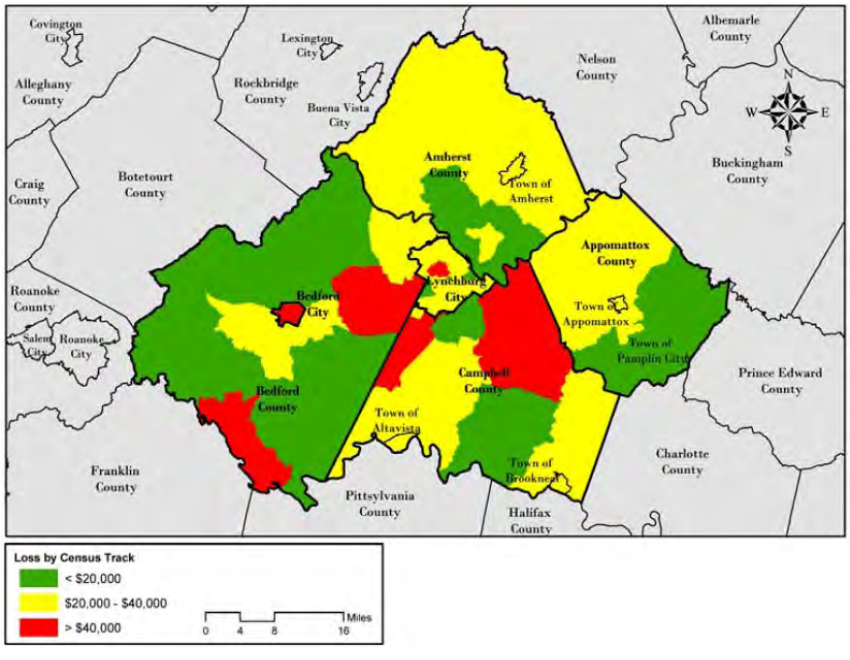


Table 5.26. Region 2000 Percentage of Annual Hurricane Loss by Critical Facility, Source: HAZUS

Community	<$20,000	$20,000 -$40,000	>$40,000
Amherst County	21%	79%	0%
Appomattox County	22%	78%	0%
Bedford County	62%	12%	26%
Bedford City	0%	0%	100%
Campbell County	15%	51%	34%
Lynchburg City	14%	81%	4%

Problem Spot Mapping

The project management team didn't pinpoint any specific areas in Region 2000 that were more susceptible to hurricane damage. This region wide approach mirrored the discussion that the project management team had that the entire region shared the same probability of a future hurricane event. Figure 5.19 shows that hurricane paths over the last 50 years are randomly distributed throughout the region. The region usually gets receives substantial hurricane damage once every 10-15 years.

Tornado Wind (Medium Ranking)

Hazard History

Table 5.27 includes descriptions of major tornado events that have touched down in Region 2000. Events have been broken down by the date of occurrence and when available, by individual community descriptions. When no community specific description is available, the general description should be used as representing the entire planning area.

Hazard Profile

Damaging winds typically are associated with tornadoes or land falling hurricanes. Isolated "downburst" or "straight-line" winds associated with any common thunderstorm can also cause extensive property damage. Tornadoes are classified as a rotating column of wind that extends between a thunderstorm cloud and the earth's surface. Winds are typically less than 100 mph, with severe tornado wind speeds exceeding 250 mph. The rotating column of air often resembles a funnel-shaped cloud. The widths of tornadoes are usually several yards across, with infrequent events being over a mile wide. Tornadoes and their resultant damage can be classified into six categories using the Fujita Scale (see Table 5.28). This scale assigns numerical values for wind speeds inside the tornado according to the type of damage and degree of the tornado. Most tornadoes are F0 and F1, resulting in little widespread damage. Tornado activity normally spans from April through July but tornadoes can occur at any time throughout the year. In Virginia, peak tornado activity is in July. Hot, humid conditions stimulate the tornadoes growth.

Strong tornadoes may be produced by thunderstorms and often are associated with the passage of hurricanes. On average, about seven tornadoes are reported in Virginia each year. The total number may be higher as incidents may occur over areas with sparse populations, or may not cause any property damage.

Tornadic thunderstorms also produce hail. Hailstorms are also outgrowths of severe thunderstorms. During summer months, when the difference between ground and upper level temperatures is significant, hail may develop. The size of the hailstones is directly related to the severity and size of the storm. Hail is described as chunks of ice, often in a spherical or oblong shape, that are produced by thunderstorms. The size of the hail greatly affects the magnitude or severity of damage. Storms can produce hail from as small as ¼ inch in diameter to up to 4 ½ inches. Depending on the size of hail determines the potential damage.

Table 5.28. Enhanced Fujita Tornado Intensity Scale, Source: National Weather Service

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

The classification of the tornado gives an approximate depiction of what the corresponding damage of the tornado will be. A majority of Virginia's tornadoes are F0 and F1 on the Fujita Scale, shown in Table 5.29. These result in minimal extensive damage. Damage that is likely to occur would be damage to trees, shrubbery, signs, antennas, with some damage to roofs and unanchored trailers.

Table 5.29. Virginia Tornado Statistics 1950-2007, Source: VDEM

	Number	% of all Tornadoes	Deaths	Injuries	Property Damages
F/EF0	194	34%	0	2	$5,838,000
F/EF1	242	42%	1	88	$514,508,000
F/EF2	84	14%	3	94	$171,843,000
F/EF3	30	5%	19	104	71,728,000
F/EF4	2	0.03%	4	248	$52,000,000
Unspecified	26	4%	0	3	$899,000
TOTAL	578		27	539	$814,169,000

Vulnerability Analysis

Tornadoes are high-impact, low-probability hazards. There have only been two documented tornado touchdowns in Region 2000 since 2006—one E0 near Brookneal and one E1 near Hixburg. The net impact of a tornado depends on the storm intensity and the vulnerability of development in its path. Many variables would need to be considered in order to establish an intensity-damage relationship.

Table 5.30 and Figure 5.18 show tornado occurrences in the region. Some areas in the region appear to be slightly more prone to tornadoes than others, especially in central Bedford County and Bedford City. It is thought that this is caused by topographical influences on thunderstorms such as the change in low-level wind flow and humidity caused by the orientation of the mountains. The probability of future occurrences of tornados is definite; predicting the potential locations for such events is inappropriate.

Since tornadoes are so infrequent and sporadic for the region, the Hurricane Wind analysis covers more probable high wind occurrences.

Table 5.30a. Region 2000 Tornado Touchdowns (1950-2007)

Tornadoes by Jurisdiction, 1950-2007	
Amherst County	2
Appomattox County	1
Bedford County	3
Bedford City	3
Campbell County	6
Lynchburg City	3

Table 5.30b. Virginia Tornadoes by Calendar Month (1950-2007)

Virginia Tornadoes by Calendar Month												
Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
F/EF0-F/EF1	13	13	14	36	60	44	72	64	81	21	11	1
F/EF2-F/EF4	4	0	3	16	14	12	9	14	26	12	6	0
Unspec.	0	1	2	2	4	2	9	3	0	2	0	1
TOTAL	17	14	19	54	78	58	90	81	107	35	17	2

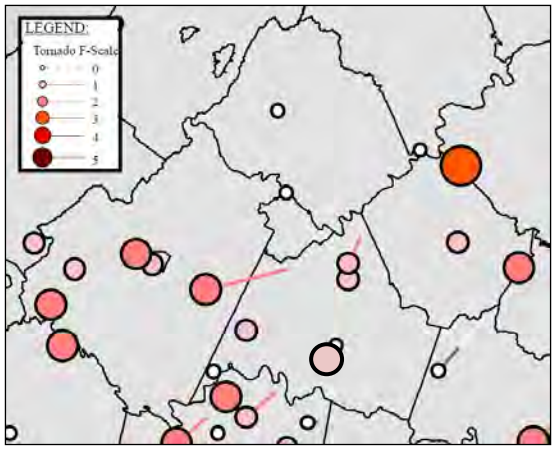


Figure 5.18. Historic Tornado Touchdowns and Tracks: 1950-2010. Sources: (VDEM, NOAA SVRGIS, VGIN, ESRI)

Wildfire (Medium Ranking)

Hazard History

The Virginia Department of Forestry website provided fire incidence data for fire years 1995-2001. The data provided by VDOF was summarized into the following tables.

Note that the tables do not include data for towns or cities; this data was not available through VDOF. Table 5.31 provides information on the breakdown of number of acres burned and the total amount of damage per county. Table 5.32 illustrates the cause of fire broken down by county. It is noted that the largest percentages of wildfires were caused by debris (44%), followed by 22% from miscellaneous causes.

Table 5.31. Wildfire Summary 1995-2001, Source: VDOF

Fire Year	2002		2003		2004		2005		2006	
County	Total Acres	Total Damage	Total Acres	Total Damage	Total Acres	Total Damage	Total Acres	Total Damage	Total Acres	Total Damage
Amherst	447.6	$1,010	25.8	$101,400	36.2	$113,750	18.1	$186,520	34.2	$197,670
Appomatox	55.1	$700	20.2	$0	2.5	$350	12.6	$2,000	88.4	$10,800
Bedford	107.3	$23,040	11	$1,100	47.1	$3,650	41.3	$11,900	219.9	$153,960
Campbell	97.6	$5,200	20.8	$15,750	44.7	$12,650	56.7	$28,350	62.5	$23,735
Total	707.6	$29,950	77.8	$118,250	130.5	$130,400	128.7	$228,770	405	$386,165

Fire Year	2007		2008		2009		2010		2011			
County	Total Acres	Total Damage	Total Acres	Total Damage	Total Acres	Total Damage	Total Acres	Total Damage	Total Acres	Total Damage	Acres Total	Damages Total
Amherst	1444	$92,525	147.8	$7,300	383.3	$422,200	34.7	$31,300	205.2	$100,300	2776.9	$1,253,975
Appomatox	11.6	$102,200	234.8	$279,025	19.5	$150,300	30.2	$101,370	25.7	$40,000	501	$686,745
Bedford	73.5	$183,650	1139.2	$13,500	36.9	$0	1007.7	$300,500	425.3	$0	3,109	$691,300
Campbell	176.4	$203,800	257	$806,200	63.1	$5,700	28.6	$10,306	187.8	$80,360	995	$1,192,051
Total	1705.5	$582,175	1778.8	$1,106,025	502.8	$578,200	1101.2	$443,476	844	$220,660	7381.9	$3,824,071

Table 5.32. Wildfire Causes 2001-2011, Source: VDOF

County	Lightening	Camp Fire	Smoking	Debris	Incendiary	Equip. Use	R&R	Children	Misc.	Total
Amherst	23	1	4	48	9	6	5	5	44	145
Appomattox	15	5	4	52	11	16	5	6	25	139
Bedford	11	2	3	56	8	32	10	5	29	156
Campbell	8	0	3	92	60	27	13	7	87	297

Hazard Profile

Wildfire is a unique hazard in that it can be significantly altered based on efforts to control its course during the event. The Virginia Department of Forestry (VDOF) indicates that there are three principle factors that can lead to the formation of wildfire hazards: topography, fuel, and weather. The environmental conditions that exist during these seasons exacerbate the hazard. When relative humidity is low and high winds are coupled with a dry forest floor (brush, grasses, leaf litter), wildfires may easily ignite.

Figure 5.19a Wildfire Risk Assessment, Source: VDOF

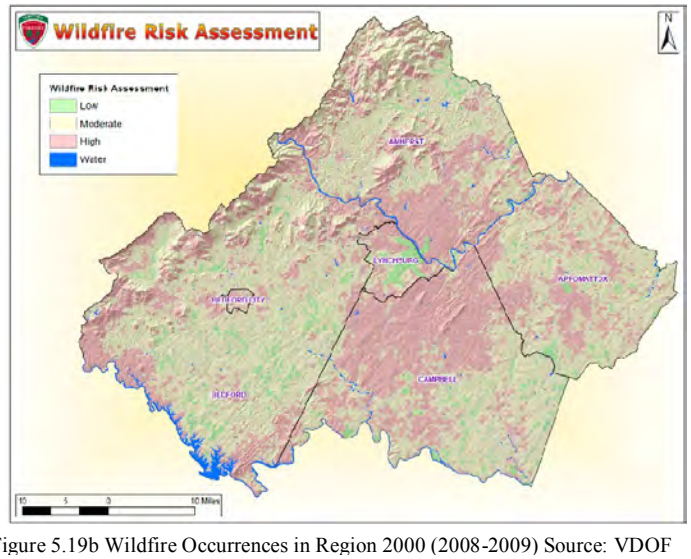
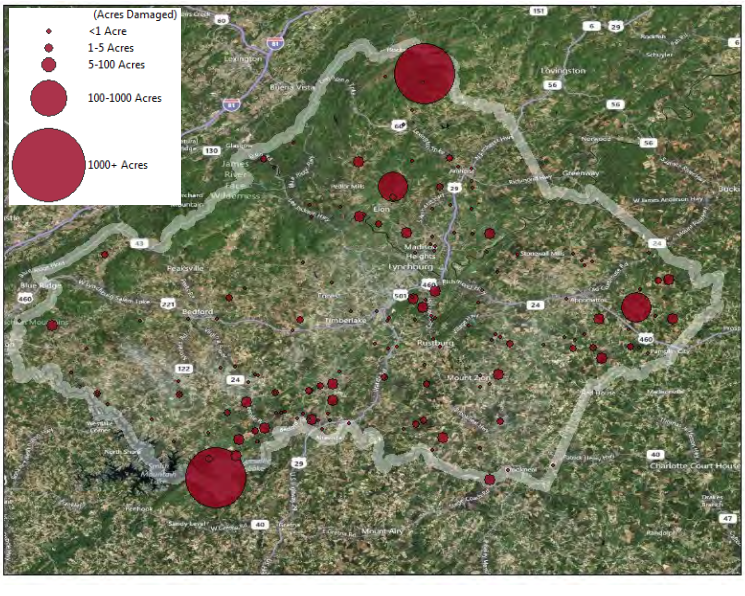
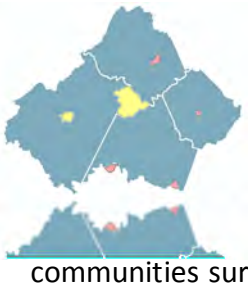


Figure 5.19b Wildfire Occurrences in Region 2000 (2008-2009) Source: VDOF



Years of drought can lead to environmental conditions that promote wildfires. Accidental or intentional setting of fires by humans is the largest contributor to wildfires. Residential areas or "woodland communities" that expand into wild land areas also increase the risk of wildfire threats. Spring (March and April) and fall (October and November) are the two seasons for wildfires.

Secondary effects from wildfires can pose a significant threat to the



communities surrounding the hazard. During a wildfire, the removal of groundcover that serves to stabilize soil can potentially lead to hazards such as landslides, mudslides, and flooding. In addition, the leftover scorched and barren land may take years to recover and the resulting erosion can be problematic.

Vulnerability Analysis

Figure 5.19a shows the wildfire hazard map developed by VDOF. In 2010 and 2011, VDOF examined which factors influence the occurrence and advancement of wildfires and how these factors could be represented in a GIS model. VDOF determined that historical fire incidents, land cover (fuels surrogate), topographic characteristics, population density, and distance to roads were critical variables in a wildfire risk analysis. The resulting high, medium, and low risk category reflect the results of this analysis. Campbell County has a large portion in the high potential category for wildfire risk, followed by Amherst County, Town of Amherst, Bedford County and Appomattox County. The bands of high potential could be a result of the state and national forests and parks located throughout the region. Figure 5.19b shows wildfire occurrences that were reported to the Virginia Department of Forestry in 2008 and 2009. In this two year study span, there were only four fires reported that damaged more than 100 acres of land. Figure 5.19b along with table 5.32 (causes of fire) show that there is no concentrated area of wild fire occurrences and that the risk of a damaging wildfire is equal throughout the wooded areas of Region 2000.

Department of Forestry

Table 33 illustrates the number of homes within woodland communities, as designated by Virginia Department of Forestry, in Region 2000. For Region 2000, 33% of the woodland homes fall into the high potential for a wildfire. Amherst County has the highest relative percentage of homes in areas of high wildfire potential at 63% of homes in the highest risk category. Bedford County has the second highest relative risk for wildfire with 32% of woodland homes at risk. Table 5.34 provides a breakdown of the number of critical facilities in wildfire prone areas. Campbell and Amherst Counties have a relatively high percentage of critical facilities at risk (49%, 44 %) followed by Bedford County (32%). Overall, Region 2000 has a relatively low number of critical facilities at risk to wildfire (37%) events. Figures and tables in Appendix 5.1 summarize the problem spot locations that were denoted by committee members.

Table 5.33. Woodland Homes Wildfire Risk, Source: HAZUS

Number of Woodland Homes by Fire Rank				
County	Medium Potential	High Potential	Grand Total	% High Risk
Amherst County	20	12	32	63%
Appomattox County	0	2	2	0%
Bedford County	18	38	56	32%
Campbell County	1	29	30	3%
Total	**39**	**81**	**120**	**33%**

Table 5.34. Region 2000 Critical Facilities Wildfire Vulnerability, Source: HAZUS

Number of Critical Facilities by Fire Risk					
Community	Low Potential	Medium Potential	High Potential	Total	% in High Risk
Amherst County	18	182	154	354	44%
Appomattox County	28	56	27	111	24%
Bedford County	21	258	130	409	32%
Bedford City	0	36	11	47	23%
Campbell County	56	124	173	353	49%
Lynchburg City	61	14	15	90	17%
Total	**184**	**670**	**510**	**1364**	**37%**

Landslide and Land Subsidence (Low Ranking)

Hazard History

No detailed hazard history was available for Region 2000. Figures 5.20 and 5.21 illustrate potential risk areas for the Commonwealth of Virginia.

Figure 5.20. Landslide Hazards for Virginia, Source: VDEM

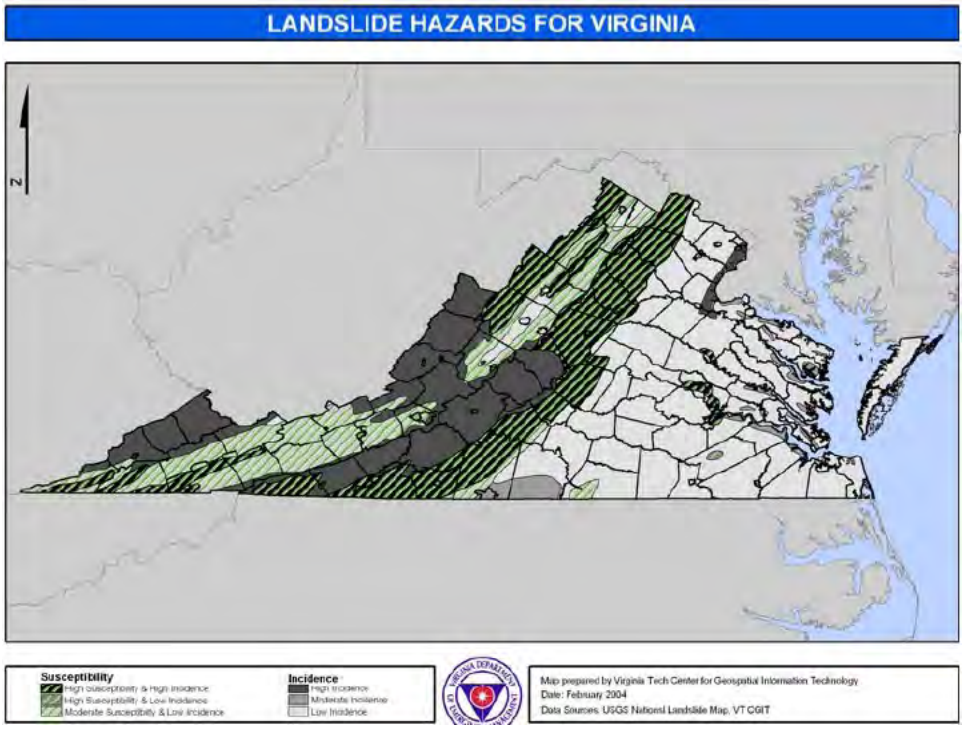


Figure 5.21a. Karst Regions and Historical Subsidence in Virginia, Source: VDEM

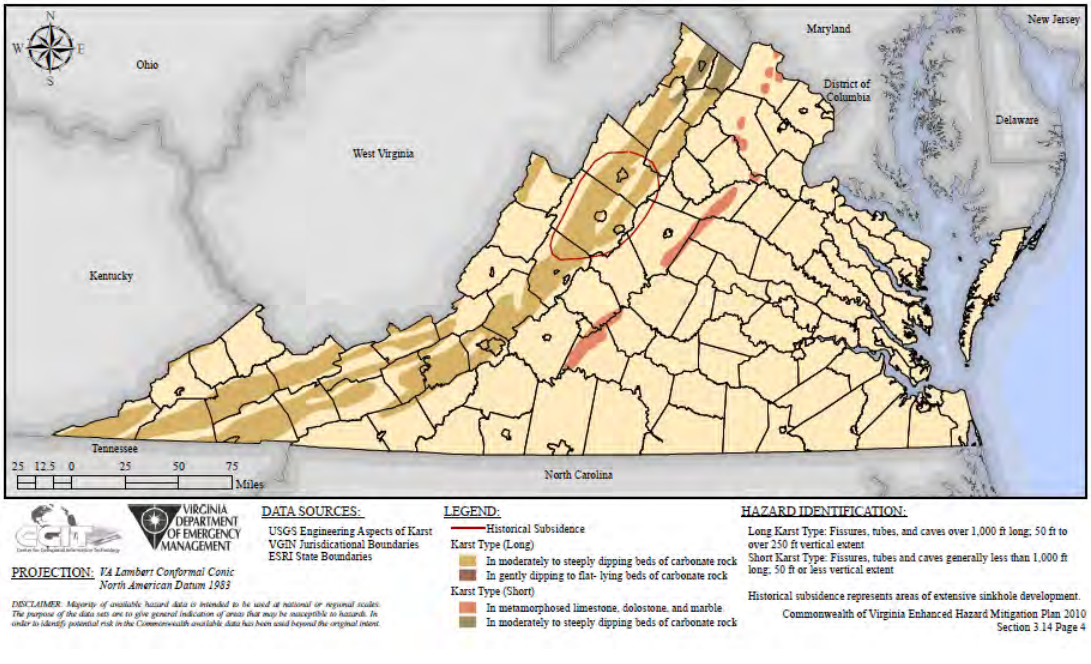
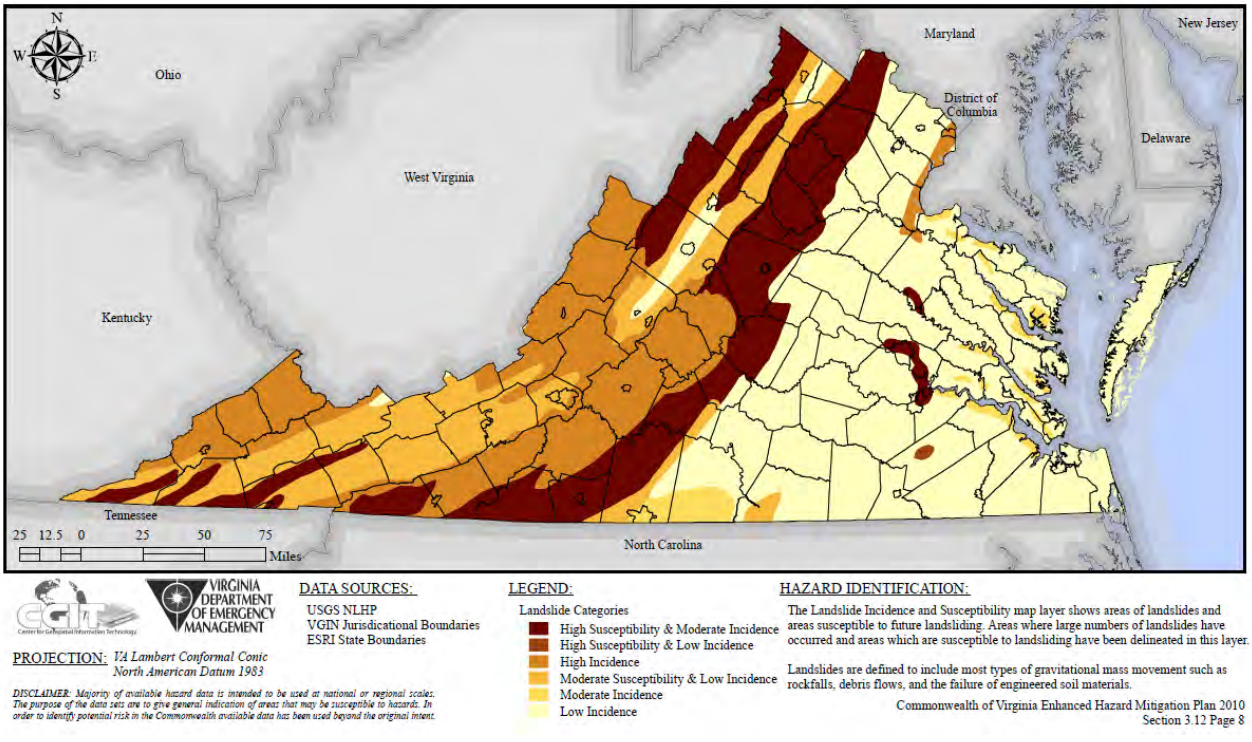


Figure 5.21b. Landslide Incidence and Susceptibility, Source: VDEM



Hazard Profile

Land subsidence is the lowering of surface elevations due to changes made underground. The USGS notes that land subsidence is usually caused by human activity such as pumping of water, oil, or gas from underground reservoirs. Land subsidence often occurs in regions with mildly acidic groundwater and the geology is dominated by limestone, dolostone, marble or gypsum. Karst is the term used to refer to geology dominated by limestone and similar soluble rocks. The acidic groundwater dissolves the surrounding geology creating sinkholes. Sinkholes are classified as natural depressions of the land surface. Areas with large amounts of karst are characterized by the presence of sinkholes, sinking streams, springs, caves and solution valleys.

The term “landslide” is used to describe the downward and outward movement of slope forming materials reacting under the force of gravity. Figure 5.21b gives an indication that the eastern portion of Region 2000 is the most susceptible to future landslide incidents. The term covers a broad category of events, including mudflows, mudslides, debris flows, rock falls, rock slides, debris avalanches, debris slides, and earth flows. These terms vary by the amount of water in the materials that are moving.

The USGS divides landslide risk into six categories. These six categories were grouped into three, broader categories to be used for the risk analysis and ranking; geographic extent is based off of these groupings. These categories include:

High Risk

1. High susceptibility to land sliding and moderate incidence.
2. High susceptibility to land sliding and low incidence.
3. High landslide incidence (more than 15% of the area is involved in land sliding).

Moderate Risk

4. Moderate susceptibility to land sliding and low incidence.
5. Moderate landslide incidence (1.5 – 15% of the area is involved in land sliding).

Low Risk

6. Low landslide incidence (less than 1.5% of the area is involved in land sliding).

The six categories were grouped into High (categories 1-3), Medium (categories 4-5), and Low (category 6) to assess the risk to state faculties, critical facilities and jurisdictions.

Several natural and human factors may contribute to or influence landslides. How these factors interrelate is important in understanding the hazard. The three principal natural factors are topography, geology, and precipitation. The principle human activities are cut-and-fill construction for highways, construction of buildings and railroads, and mining operations.

The USGS recognizes four major impacts caused by land subsidence:

- Changes in elevation and slope of streams, canals, and drains
- Damage to bridges, roads, railroads, storm drains, sanitary sewers, canals, and levees
- Damage to private and public buildings
- Failure of well casings from forces generated by compaction of fine-grained materials in aquifer systems

Landslides can cause serious damage to highways, buildings, homes, and other structures that support a wide range of economies and activities. Landslides commonly coincide with other natural disasters. Expansion of urban development contributes to greater risk of damage by landslides.

Hazard Areas

Region 2000 is located adjacent to the edge of the karst regions in Virginia (Figure 5.21). Campbell and Appomattox Counties have a higher relative susceptibility to landslides comparative to the rest of the region.

Vulnerability Analysis

There is no scientific information that would suggest the probability of a landslide event. The impact and extent of the damage will greatly hinge on where the landslide occurs. The largest danger from landslides and debris flows occurs in area of high relief or abrupt changes in topography, especially areas susceptible to slope failure initiated by sustained and/or heavy rain events.

Problem Spot Mapping

See Appendix 5.1 for Figures and Tables summarizing the problem spot locations that were present in the original Hazard Mitigation Plan and confirmed by the project management team. No new problem areas were noted in the plan update. When specific town information was provided it was included on the problem spot maps. If no information was provided by the localities, or they acknowledged there was no need for a specific map, the map was omitted from the Appendix.

Terrorism (Low Ranking)

Hazard History

No terrorism history was available for Region 2000 at the time of the update. Several of the communities in the region provided information about their Emergency Operation Plans (EOP). These plans are beginning to address terrorism as a concern in operation. Please consult local EOPs for further guidance.

The FEMA risk management series on mitigating potential terrorist attacks against buildings provides information on developing a realistic prioritization of human-caused hazards. The mitigation strategies section on this report should provide projects to address human caused hazard vulnerability. Future concepts to consider include:

I. Communities determine the relative importance of various critical and non-critical facilities and the asset of these systems

II. Determine the vulnerability to the specified hazard

III. Determine what threats are known to exist in the communities

Hazard Profile

Currently there is no universal definition for terrorism. Terror can be exhibited through many different forms. The code of Federal Regulations defines terrorism as “the unlawful use of force and violence against persons or property to intimidate or coerce a government, civilian population, or any segment thereof, in furtherance of political or social objectives.”

Hazard Areas

Local Emergency Operation Plans are beginning to address annexations and terrorism areas of concern. Consult these plans for further information.

Vulnerability Analysis

Vulnerability analysis, when available, has been conducted by the different localities. This information has been addressed in local Emergency Operation Plans.

Earthquakes

Hazard Profile

An earthquake is the motion or trembling of the ground produced by sudden displacement of rock in the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of caverns. The damage from earthquakes can span hundreds of thousands of square miles; cause extensive damage into the billions of dollars; and result in tremendous amounts of injuries and death because of their sudden and unpredictable nature. Earthquakes also have extensive ripple effects on the economic and social functioning of the affected area as well.

Hazard History

Though very rare, earthquakes have the potential to affect Region 2000. The table below shows all earthquakes that have been recorded by the USGS in Virginia.

Locality	Date	Magnitude
Giles County, VA	5/31/1897	5.9
Virginia	5/5/2003	3.9
Virginia	12/9/2003	4.5
Louisa County, VA	8/23/2011	5.8

Vulnerability Analysis

The majority of property damage and earthquake related deaths result from the failure and collapse of structures due to ground shaking. The level of damage depends upon the amplitude and duration of the shaking, which are directly related to a number of factors: amplitude, duration of the shaking, distance from the fault, and regional geology. Earthquakes can also cause landslides (the down-slope movement of soil and rock) and liquefaction (in which ground soil loses the ability to resist shear and acts much like quick sand).

The majority of earthquakes are caused by the release of stresses accumulated along fault planes along the Earth's outer crust. None of the major fault lines are located in or near Region 2000. The North American plate follows the continental border with the Pacific Ocean in the west, but follows the mid-Atlantic trench in the east. Earthquakes occurring along the mid-Atlantic trench usually pose little risk to humans. The greatest risk for earthquakes in the United States is along the Pacific Coast.

Earthquakes are measured in terms of their magnitude and intensity. Magnitude is measured using the Richter Scale—described in Table 5.35. The scale is based on an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude. Each unit increase in magnitude on the Richter Scale corresponds to a tenfold increase in wave amplitude, or a 32-fold increase in energy. Intensity is most commonly measured using the Modified Mercalli Intensity (MMI) Scale—described in Table 5.36) based on

direct and indirect measurements of seismic effects. The scale levels are typically described using roman numerals, with a I corresponding to imperceptible (instrumental) events, IV corresponding to moderate (felt by people awake), to XII for catastrophic (total destruction).

Table 5.35 Description of Richter Scale, Source: North Carolina Division of Emergency Management

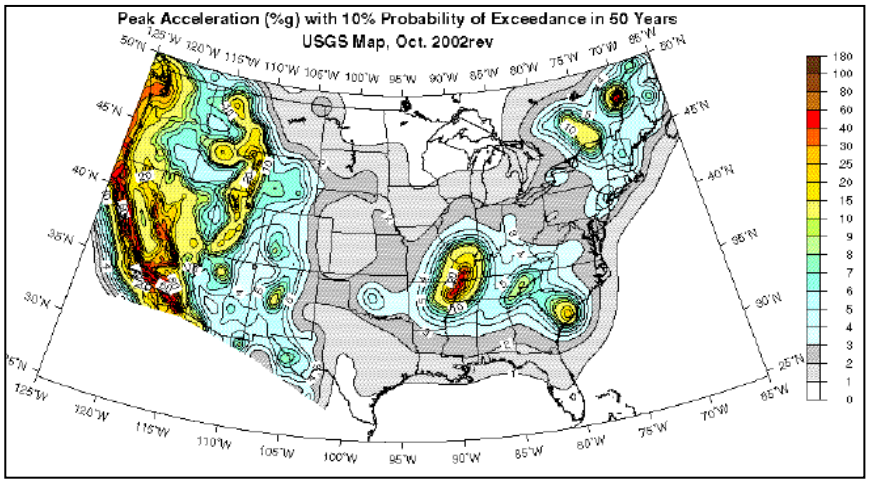
Richter Magnitudes	Earthquake Effects
<3.5	Generally not felt, but recorded.
3.5-5.4	Often felt, but rarely causes damage.
Under 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
6.1-6.9	Can be destructive in areas up to about 100 kilometers across where people live.
7.0-7.9	Major earthquake. Can cause serious damage over larger areas.
>8	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

Table 5.36 Description of Mercalli Intensity Scale, Source: Michigan Tech

Scale	Intensity	Description of Effects	Corresponding Richter Scale Magnitude
I	Instrumental	Detected mainly on seismographs, felt by very few people	1.0 – 2.0
II	Feeble	Some people feel it, especially on upper floors	2.0 – 3.0
III	Slight	Felt by people resting, especially on upper floors; May not be recognized as an earthquake	3.0 – 4.0
IV	Moderate	Felt by many people indoors, a few outdoors; may feel like a large truck rumbling by	4.0
V	Slightly Strong	Felt by almost everyone, some people awakened; small objects moved, trees and poles may shake.	4.0 – 5.0
VI	Strong	Felt by everyone; difficult to stand, some heavy furniture moved, some plaster falls; chimneys may be slightly damaged.	5.0 – 6.0
VII	Very Strong	Slight to moderate damage in well built, ordinary structures, considerable damage to poorly built structures; some walls may fall.	6.0
VIII	Destructive	Little damage in specially built structures, considerable damage to ordinary buildings, severe damage to poorly built structures; some walls collapse.	6.0 – 7.0
IX	Ruinous	Considerable damage to specially built structures, buildings shifted off foundations; ground cracked noticeably; wholesale destruction, landslides.	7.0
X	Disastrous	Most masonry and frame structures and their foundations destroyed; ground badly cracked; landslides, wholesale destruction.	7.0 – 8.0
XI	Very Disastrous	Total damage; few, if any, structures standing; bridges destroyed, wide cracks in ground, waves seen on ground.	8.0
XII	Catastrophic	Total damage; waves seen on ground; objects thrown up into air.	8.0 or greater

Figure 5.22 shows the probability that ground motion will reach a certain level during an earthquake. The data shows the "peak horizontal ground acceleration" which translates to the fastest measured change in speed for a particle at ground level that is moving horizontally due to an earthquake. The map shows that all of the jurisdictions in Region 2000 are located low probability area therefore remains a low future threat.

Figure 5.22 Peak acceleration with 10 percent probability of exceedance in 50 years, Source: USGS



Plan Linkage

The *Hazard Identification and Risk Assessment (HIRA)* takes a hazard specific approach in determining the regions concerns and vulnerabilities are. The information provided should be used as one of its planning tools in mitigating hazards. At this point in time data limitations provide a stumbling block in determining pinpoint locations of hazards.

This HIRA provides broad regional information that the communities should use in developing their mitigation actions.

Section VI on *Mitigation Actions* uses the HIRA findings and applies it to current and potential mitigation actions that will lessen the impacts from the hazards of concern. The Mitigation section bridges the gap of where the "problem spots" are and how they can mitigate them so they become less of a problem

Mitigation

Summary of Changes

The project management team reviewed this section of the plan as part of the plan update and agreed upon the following items. The description of the action goals was agreed upon to still be valid therefore remains in the plan. In regards to action development, the project management team decided it would be a good idea to incorporate new projects into the plan on a quarterly basis. The biggest portion of work for this section was addressing the existing mitigation actions and incorporating new ones. All of the mitigation actions from the original plan were reviewed and updated by the project management team. Most of these updates involved changing timelines and project scopes for specific projects. The various capability assessments were updated according to current budgets.

Purpose of Mitigation

There are many reasons why mitigation is important. The number one reason is for the assurance that the jurisdictions remain eligible for FEMA funding programs in the likelihood that the communities are involved in a disaster. The second reason to participate is to design and develop mitigation projects to be completed within the community. Hazard damage amounts substantially decrease when communities have mitigation projects and strategies in place. By becoming involved in the process it allows the communities to focus their efforts on specific hazard areas by incorporating and setting priorities for mitigation planning efforts.

Vision and Goals

The mitigation methods that were used for the Region 2000 Hazard Mitigation Plan Update mirror the Commonwealth of Virginia's plan. The project management team reviewed the methods used and determined that they are still valid and therefore remain unchanged. As part of the 2013 Hazard Mitigation Plan Update, the Project Management Team reviewed the goals from the original Hazard Mitigation Plan. The Project Management Team determined that all of the goals were still valid and therefore remained unchanged in the Plan Update. The Project Management Team also discussed the need to identify and describe progress towards achieving the goals since the release of the original Plan.

The vision for the Region 2000 Hazard Mitigation Plan Update is to lessen the impacts from natural and manmade hazards, prepare the region to respond to future events, and encourage regional collaboration by pursuing funding and promoting mitigation actions focusing on structural projects, education, information and data development, and policy and planning.

As part of the update process, the project management team reviewed the goals from the original plan and determined they are still valid and therefore remain unchanged. The goals identified below will be periodically reviewed as part of the Plan maintenance and any additional objectives or modifications will be incorporated into the next scheduled update.

These four goals define the four basic action categories for mitigation strategies:

Table 6.1 Description of action goals

Goal	Description
I. Structural Mitigation Projects	Identify and implement physical projects that will directly reduce impacts from hazards.
II. Policy and Planning	Incorporate mitigation concepts and objectives into existing and future policies, plans, regulations and laws in the Commonwealth.
III. Information and Data Development	Build capacity with information and data development to refine hazard identification and assessment, mitigation targeting and funding identification.
IV. Education and Outreach Activities	Through education and training, increase awareness of hazards and potential mitigation strategies.

Action Development

In the original plan, mitigation actions were developed using the Hazard Identification and Risk Assessment results, problem spot maps provided by local officials as well as from public input. General actions were developed for the region as a whole and further sculpted into region specific actions at the individual community action meetings.

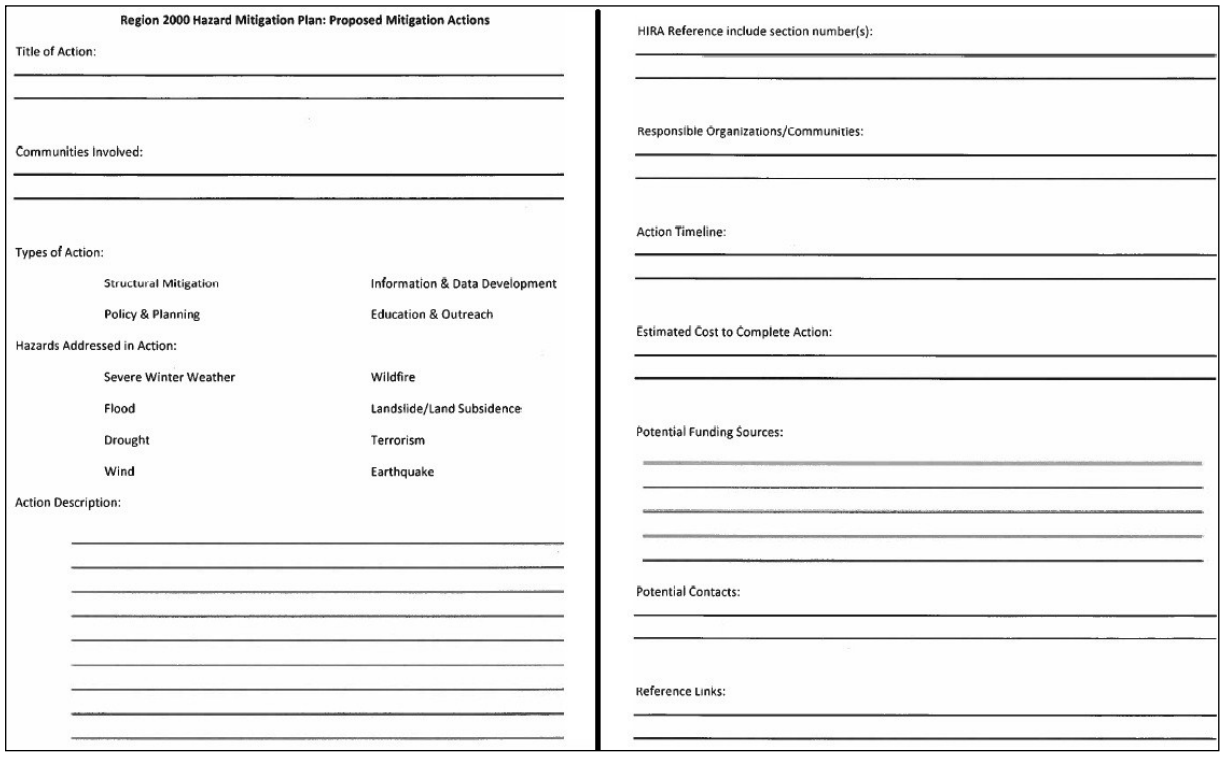
During the November 3rd, 2011 meeting for the Hazard Mitigation Plan Update, the project management team was asked to review these mitigation actions and determined that the items were still valid and therefore should not be changed. “Proposed Mitigation Action” packets were also posted to the project website so that members of the project management team could gather suggestions from other voices in their jurisdictions, including planners and trained emergency response personnel. Responses will be processed by Region 2000 Staff and included into the plan on a quarterly basis.

For the original plan creation, the project management team members were responsible for inviting local stakeholders to attend the action meetings and provide input to the plan.

Examples of stakeholders that were invited include emergency responders, zoning officials, and planners. Response and input from the stakeholders was invaluable to this section of the plan. Their feedback helped to mold the actions for their communities and provide information on what types of mitigation is currently being completed. The appendix for this section details the attendance at each of these meetings. The feedback gathered at these meetings was presented to the project management team for the 2011 Update and the team agreed that the feedback still represents the general feelings of the public officials and citizens in their jurisdictions and was therefore not changed.

The "Proposed Mitigation Action" worksheets include a cover page that details the goal type, action name, reference number, and hazards addressed the pages after the table provides detailed information on the action. An example of the action form (Figure 6.1) contains information regarding the communities involved in implementing the action, type of action, hazards addressed, project description, responsible organization, potential funding sources and timeframe for action completion. Additional mitigation actions will be added to the plan as additional action forms are completed. The project management team did not add any projects to the current list of actions from the original plan. This section of the hazard mitigation plan has an update on the current state of mitigation actions from the original plan.

Figure 6.1 Region 2000 Hazard Mitigation Plan: Proposed Mitigation Actions Worksheet



Region 2000 Hazard Mitigation Plan: Proposed Mitigation Actions

Title of Action:

Communities Involved:

Types of Action:

Structural Mitigation	Information & Data Development
Policy & Planning	Education & Outreach

Hazards Addressed in Action:

Severe Winter Weather	Wildfire
Flood	Landslide/Land Subsidence
Drought	Terrorism
Wind	Earthquake

Action Description:

HIRA Reference include section number(s):

Responsible Organizations/Communities:

Action Timeline:

Estimated Cost to Complete Action:

Potential Funding Sources:

Potential Contacts:

Reference Links:

Three different types of actions were developed for the region. The different types of actions were based on the region's and communities needs and capacities for completing the various actions. Mitigation Actions detail the actions that were proposed in the "Proposed Mitigation Action" worksheets handed out to the project management team. During the initial jurisdictional meetings for the original Hazard Mitigation Plan, action packets—similar to the one showed in Figure 6.1) were fleshed out to determine what projects the communities thought were applicable to their regions. The complete "Proposed Mitigation Action" worksheet is available in the appendix. No additional action items were presented by the steering committee in the hazard mitigation plan update.

The second type of action is denoted under the "Regional Actions" section. Regional Actions are the projects that all of the participating jurisdictions are involved in, with Region 2000 often taking the lead on the project.

Jurisdictional Actions are specific to the jurisdiction. These projects were independently proposed by the jurisdictions because of a specific need in their community. Multiple communities may have suggested the same action; these will be completed by the community depending on constraints of available resources.

Mitigation Actions

Community Ranking

For the original Hazard Mitigation Plan, public meetings were held for the participating jurisdictions (see Section 4 on the Planning Process). These meetings led to in-depth discussions about local concerns and ways to address them. Each community prioritized the actions by ability and ease to implement the action, political will, action benefits versus the cost, community need and availability of various funding sources. The STAPLE(E) method listed below was also utilized during prioritization. The general actions were changed and expanded to detail the community specific needs, using the framework developed in 2006.

The public input for the 2011 plan update took place by placing inquiries in the regional newspapers and libraries asking for input on this section. Public input in this section is pivotal in establishing mitigation actions that will have an effective impact on pre disaster planning. The complete advertisement and public awareness material is in the Appendix. No jurisdictional action items were added to the plan update since none were received at the time of this plan being published. Action items will be added to the plan on a quarterly basis or as necessary.

The STAPLE(E) prioritization method takes into account seven criteria:

1. Socially Acceptable

2. Technically feasible

3. Administrative support

4. Politically acceptable

5. Legal

6. Economically justifiable

7. Environmentally responsive

Other considerations when prioritizing will be how well the project reduces future losses, how they further the goals and objectives put forth in this plan, and the cost versus the benefit of the project.

Regional Actions

Once the jurisdictional action meetings were held, the Project Management Team met again to solidify the regional goals that were developed. Most of the regional actions include all of the communities in Region 2000. Outlined below is the listing of the regional goals and what jurisdictions are represented in them. The Appendix outlines the complete action plan. Stakeholders from each of the communities will be involved in the planning and implementation of the regional actions. Region 2000 staff will take the lead role on a number of the regional activities. The Regional Water System Action was ranked high by all of the participating jurisdictions and remained a priority throughout the update process. This action is in the beginning stages, with feasibility studies underway. With the completion of this project, the region will be more capable of dealing with high hazard events such as droughts.

- Regional Water System

Jurisdictional Actions

Community specific actions have been separated based on the scope of the activity. During the project management team meetings, the stakeholders elaborated on what they wanted or felt could be accomplished within their communities' capability. Outlined below are examples of community specific actions. It should be noted that the following projects are in addition to the projects that were developed and ranked in the Community Ranking section. The Appendix for section 6 contains the complete description for all action items and initiatives

Table 6.2 Jurisdictional actions and update status

	Action	Status
Amherst County	GIS System	**Completed**. A fully interactive parcel map is available through the county website.
	Promoting development of Local Emergency Planning Committee (LEPC)	**Completed**. The LEPC Committee Chair can be reached at (434)-946-9307.
Appomattox County	Well site feasibility, scoping and cost for installation	**No action taken**--lack of staff resources. Public works department would be responsible. Completion date dependent on staff resources.
	911 questionnaire	**No action taken**--lack of staff resources. Planning/Emergency Services department would be responsible. Completion date dependent on staff resources.
	GIS System	**No action taken**--lack of staff resources. Planning department would be responsible. Completion date dependent on staff resources.
	Promoting development of Local Emergency Planning Committee (LEPC)	**New action**. Awaiting staff support. Planning/Emergency Services department would be responsible. Completion date dependent on staff resources.
Bedford County	Economic development assessment of James and Roanoke River Interconnectivity	**No action taken**--lack of staff resources. Economic Development department would be responsible. Completion date dependent on staff resources.
	Promoting development of Local Emergency Planning Committee (LEPC)	**No action taken**--lack of staff resources. Planning/Emergency Services department would be responsible. Completion date dependent on staff resources.
	Identify and prioritize road maintenance and development	**No action taken**--lack of staff resources. Metropolitan Planning Organization/Planning department would be responsible. Completion date dependent on staff resources.
	Smith Mountain Lake debris removal maintenance	**No action taken**--lack of staff resources. Planning department would be responsible. Completion date dependent on staff resources.
Campbell County	No additional actions proposed	
	Promoting development of Local Emergency Planning Committee (LEPC)	**Completed**. The LEPC Committee Chair an be reached at (804)-946-9307.
Bedford City	Maintaining water sharing zone understanding	**Ongoing**. The City does this on a yearly basis.
	Promoting development of Local Emergency Planning Committee (LEPC)	**New action**. Awaiting staff support. Planning/Emergency Services department would be responsible. Completion date dependent on staff resources.
City of Lynchburg	Update snow removal plan.	**Completed/Ongoing**. Updated 4/5/2010. Public works and

		Emergency Service's departments are responsible.
	Promoting development of Local Emergency Planning Committee (LEPC)	**Completed**. The LEPC Committee Chair can be reached at (434) 455-4285.
Town of Altavista	No additional actions proposed	
Town of Amherst	Relocate water intake	**Completed**. Authorization to install a raw water intake structure with debris deflector was passed on December 6, 2011.
Town of Appomattox	Well site feasibility, scoping and installation	**No action taken**--lack of staff resources. Public works/planning department would be responsible. Completion date dependent on staff resources.
	911 questionnaire	**No action taken**--lack of staff resources. Planning/emergency services department would be responsible. Completion date dependent on staff resources.
Town of Brookneal	No additional actions proposed	
Town of Pamplin City	Well site feasibility, scoping and installation	**No action taken**--lack of staff resources. Planning/public works department would be responsible. Completion date dependent on staff resources.
	911 questionnaire	**No action taken**--lack of staff resources. Planning/emergency services department would be responsible. Completion date dependent on staff resources.

Mitigation Strategy for Localities with Repetitive Loss Properties

The Counties of Amherst, Bedford, and Appomattox as well as the Town of Amherst and the City of Lynchburg have repetitive loss properties within them defined by FEMA and the NFIP (See Table 5.10a and 5.10b). The project management team agreed that locating the hard addresses of these properties and sending Hazard Mitigation Grant Program information to the property owners on an annual basis would be an adequate action item. The letters will be sent out each February.

Capability Assessment

The capability assessment is a way to quantify the ability of the communities and Region 2000 to carry out actions that have been proposed in the hazard identification and risk assessment and the mitigation actions sections. Some of the jurisdictions already have in place mitigation items that work hand in hand with their ability to respond to event, or help to lessen their

impacts. Smaller jurisdictions, such as Appomattox County, Town of Appomattox, Town of Pamplin City, Amherst and the Town of Amherst, have more of a challenge. These challenges will be explained through the localities capability assessment and their reliance on Region 2000 for additional support. Mitigation actions that already are in place include actions 1-1 Weather Relater Education; 3-3 Drought Mitigation with Voluntary Restrictions; 4-4 Drought Mitigation with Agriculture Watering Locations; and 2 File for Life Forms/911 Questionnaires. Some regional actions are currently in the scoping and assessment phase of development; including Regional Water System – Creating a Secondary Water Supply and the National Weather Service Storm Ready Program. [See the Appendix for this section for complete descriptions on Action Items] With the advancement of proposed actions, (e.g., GIS systems) their governments will increase their ability to mitigate and respond. The availability of state and federal funds will directly drive the capability of the jurisdictions in Region 2000.

This section should serve as a guide to the communities on their limitations in preparedness, current capabilities, and what areas they need to improve to be able to successfully mitigate and recover from disasters that can impact their regions.

Local capability serves as the foundation for designing an effective hazard mitigation plan and action items. It not only helps establish the goals and objectives, but assures that those actions are realistically achievable under given local governing and capability. The jurisdictional assessment should detect any existing gaps, shortfalls, or weaknesses within existing governmental activities that could exacerbate a community's vulnerability. The assessment also will highlight the positive measures already in place or being completed at the local level, which should continue to be supported and enhanced, if possible, through future mitigation efforts.

Assessment was completed on six main areas for Region 2000, similar to the factors involved in the STAPLE(E) ranking criteria. These areas of capability being the following:

· Administrative Capability,

· Technical Capability,

· Fiscal Capability,

· Planning Capability,

· Legal Capability

Administrative Capability

There are three types of jurisdictions included in this Hazard Mitigation Plan: cities, counties, and towns. Cities are independent local government entities from any surrounding counties or

towns and have their own governing councils, constitutional officers, and administrative staffs. Counties also are independent local government entities similar to cities, but may contain incorporated towns within their boundaries. Incorporated towns are semi-independent local government entities, with taxing authority and other limited authority in addition to the surrounding county.

All of the counties in Region 2000 operate under a Traditional Form of government within the Commonwealth of Virginia. Under this form of government, an elected Board holds responsibility for the general legislative and administrative affairs of the jurisdiction. In the counties, a Board of Supervisors is elected, containing five to seven members from different districts within the county with a Chair and Vice Chair. The cities and towns in Region 2000 use a Mayor-Council Form of government. For cities, a City Council are elected, with council members being at large or representing specific wards or regions. Towns have a similar organization with a Town Council, with election of a Mayor and Council members.

For cities and counties, these forms of government also require election of other officers, known as Constitutional Officers, who are responsible for the administration of certain specific aspects of community affairs. This usually includes the clerk of the court, commissioner of revenue, commonwealth's attorney, sheriff, and treasurer. The elected boards can also hire an administrator who oversees daily operations of the community and community staff. In counties, this is the county administrator, while in cities and town this is the city or town manager. In counties and cities, the Board is responsible for establishing community policy via passage of resolutions and ordinances within limitations established by the General Assembly, approving an annual operating budget, setting tax rates, and making appointments to various boards and committees. The Board also approves land use plans and any subsequent amendments via re-zonings. Business is conducted in public meetings, though the Board may elect to enter into a Closed Session to discuss issues that are exempt from the Virginia Freedom of Information Act (FOIA), including personnel or legal issues.

The incorporated towns must have an elected governing body. Under the Mayor Council Form of government, the powers of government are vested in a Town Council. The Town Council is responsible for developing an annual Town budget, amending the Town Code, and developing policy to guide the activities of the Town. Council also has taxing authority and sets tax rates that are in addition to the County's rates for those citizens who live within the Town limits. A Mayor, not considered a member of Town Council, is also elected by all voters within the Town. The Mayor's duties include presiding over Council meetings and voting only in the event of a tie. The Mayor and Council Members are each elected to two-year terms.

The Town Council can choose to employ a Town Manager who is charged with overseeing the daily operations of the Town and carrying out the policy set forth by Council. Other functions of the Town Manager include communicating with the public and media, setting Council agendas

and preparing associated materials, and assisting Council as needed. The Town Manager represents Council at many local, regional, and state functions and directs that activities of various departments. Towns have zoning and planning authority though they may choose to use the county planning commission as their town planning commission. Towns have the ability to issue general obligation and revenue bonds. In addition, towns of over 5,000 may appoint an emergency services director and exercise emergency powers separate from the county.

Under the County Administrator or the City or Town Manager, each jurisdiction has numerous departments and boards that are responsible for the various functions of local government. Table 6.3 highlights the departments in each jurisdiction that could facilitate the implementation of this hazard mitigation plan.

Table 6.3 Region 2000 Key Departments by Jurisdiction

Region 2000 Key Departments by Jurisdiction		
Jurisdiction	Departments	
Amherst County	Emergency Services	Parks and Recreation
	Economic Development	Planning and Zoning
	Information Technology	Public Safety
	Inspections	Service Authority
	Maintenance	
Appomattox County	Parks and Recreation	County Planner
	County Sheriff	Building Inspector/Official
	Emergency Services	Health Inspector
	County Attourney	Social Services
Bedford County	Building Inspections	Parks and Recreation
	Fire and Rescue Services	Planning
	GIS	Utilities (PSA)
	Natural Resources	
Campbell County	Community Development	GIS
	Building Inspector/Official	Public Safety
	Emergency Services	Parks and Recreation
	Fire Chief	Zoning
	Economic Development	Utility and Service Authority
	Real Estate and Mapping	
City of Lynchburg	Community Planning and Development	Information Technology
	Economic Development	Parks and Recreation
	Emergency Services	Zoning
	Fire and EMS	Public Works
Bedford City	Electric	Parks, Recreation, and Cemetaries
	Emergency Services	Planning and Community Development
	Fire Chief	Public Services
Town of Altavista	Public Works	Fire Chief
	Zoning	
Town of Amherst	Planning	Fire Chief
Town of Appomattox	Clerk	
Town of Brookneal	Fire Chief	Public Works
Town of Pamplin City	Fire Chief	Public Utilities

Departmental Descriptions

Project management team members have been involved in the development of this mitigation plan in order to identify gaps, weaknesses or opportunities for enhancement with existing mitigation programs. Representatives of these departments have been involved in the development of this mitigation plan in order to identify gaps, weaknesses or opportunities for enhancement in existing mitigation programs. Although exact responsibilities differ from jurisdiction to jurisdiction, the general duties of the departments highlighted in Table 6.4 are described below.

The Building Inspections office or department enforces the Virginia Uniform Statewide Building Code (VUSBC). This code includes many floodplain management considerations as it impacts site construction.

Community Development departments are typically responsible for managing grant programs funded by the U.S. Department of Housing and Urban Development. These grant programs include the Community Development Block Grant Program and the HOME Program. Community Development departments also may develop residential and commercial revitalization plans for older areas, serve as a resource on housing and community development issues and undertake special redevelopment projects.

Economic Development departments concentrate on ensuring the growth and prosperity of existing businesses. These departments often administer small business loan programs, state economic development programs, and workforce training programs. They also may recruit new businesses.

Emergency Management or Services departments are responsible for the mitigation, preparedness, response and recovery operations that deal with both natural and man-made disaster events. Often, these functions may be included in a department of Public Safety that encompasses building inspections, emergency management, and fire safety. 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.

Parks and Recreation departments may be responsible for open space programs. If acquisition projects are undertaken, coordination with this department becomes critical. The Planning Department (or Department of Development) addresses land use planning. This department, depending on the jurisdiction, may enforce the National Flood Insurance Program requirements and other applicable local codes. See the Planning Capability Floodplain Management Section for the specific department that is responsible for enforcing the National Flood Insurance Program.

In Region 2000, the Public Utilities Department oversees the maintenance of infrastructure including roadways, sewer and stormwater facilities, and the community's electric, gas, wastewater and water treatment facilities. Depending on the jurisdiction, the Department of Public Works may enforce the National Flood Insurance Program requirements. See the Planning Capability Floodplain Management Section for the specific department that is responsible for enforcing the National Flood Insurance Program.

Hazard Mitigation cuts across all of these 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, zoning administrators, floodplain managers, and people familiar with Geographic Information Systems (GIS). It is also important that mitigation be assigned a specific responsibility to a department or person. Table 6.4 provides information on each jurisdiction's current staff and organizational capabilities in key areas related to mitigation.

Table 6.4 Region 2000 Administrative Capability

Region 2000 Administrative Capability [3]							
Jurisdiction	Land Use Planners	GIS Staff	Emergency Planners	Intergovernmental & Regional Cooperation	Building Inspectors	Fire Departments	Overall Administrative Capabilities
Amherst County	Yes	No	Yes (Emergency Services Director) –Works with Volunteer Organizations	Yes	Yes	Yes and Volunteer	Medium
Amherst, Town of	Yes	No	No	Yes	No	Full Time Chief and Volunteer	Low
Appomattox County	Yes	No	No - Volunteer Rescue Squad	Yes	Yes	Volunteer	Medium
Appomattox, Town of	Yes	No	No	Yes	No	No – Through Appomattox County	Low
Pamplin City, Town of	No	No	No	Yes	No	Full Time Chief and Volunteer	Low
Bedford City	Yes	No	Yes (Emergency Services Director)	Yes	Yes	Full Time Chief and Volunteer	High
Bedford County	Yes	Yes	Yes (Emergency Services Director)	Yes	Yes	Yes and Volunteer	Medium
Campbell County	Yes	Yes	Yes (Emergency Services Director) – Public Safety works with Volunteer Organizations	Yes	Yes	Full Time Chief and Volunteer	High
Altavista, Town of	Yes	No	No – Planning through Campbell County with Volunteer EMS	Yes	No	Full Time Chief and Volunteer	Medium
Brookneal, Town of	Yes	No	No	Yes	No	Full Time Chief and Volunteer	Low
Lynchburg City	Yes	Yes	Yes – Working with Fire & EMS Department	Yes	Yes	Yes	High

Technical Capability

Technical capability, in this plan, refers to the technology available to the jurisdictions to support mitigation programs and projects. A Geographic Information System (GIS) is critical in identifying potential vulnerable areas and for managing spatial information. Internet sites can be a powerful way to communicate with community members. Public education is an important element of a successful mitigation program.

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.

Table 6.5 summarizes the technical capabilities of the jurisdictions. Most of the jurisdictions have GIS capabilities. A majority of the jurisdictions have government websites that could be utilized to promote hazard mitigation.

Table 6.5 Region 2000 Technical Capabilities

Region 2000 Technical Capabilities

Jurisdiction	GIS Capabilities	Website	Overall Technical Capability
Amherst County	Yes	Yes	High
Appomattox County	Consultant	Yes	Low
Bedford County	Yes	Yes	Medium
Campbell County	Yes	Yes	High
Bedford City	Consultant	Yes	High
City of Lynchburg	Yes	Yes	High
Town of Altavista	Through Campbell County	Yes	Medium
Town of Amherst	Through Amherst County	Yes	Low
Town of Appomattox	Through Region 2000	Yes	Low
Town of Brookneal	Through Campbell County	Yes	Low
Town of Pamplin City	None	No, partial with county site	Low

Fiscal Capability

The local jurisdictions in the planning area 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 communities could easily afford to provide the local match for the existing hazard mitigation grant programs. This is a significant and growing concern 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.

Under DMA 2000, FEMA has made special accommodations for "small and impoverished communities," who will be eligible for a 90% federal share, 10% non- Federal cost share for projects funded through the Pre-Disaster Mitigation (PDM) grant program. The definition is restricted to “communities of 3,000 or fewer individuals that is identified by the State as a rural community.” According to the current Interim Final Rule for Section 322 of the Act, none of the counties and cities in the planning area will qualify as a small and impoverished community.

Table 6.6 indicates the fiscal capabilities by jurisdiction in Region 2000. The overall and non-education budget for each community is listed. For cities and counties, educational funding usually makes up at least half of the overall budget. For town, educational funding is covered by the surrounding county.

Table 6.6 Region 2000 Jurisdictions' Fiscal Capabilities according to Approved FY2012 Budgets

Region 2000 Jurisdictions' Budgets (FY2012)			
Jurisdiction	**General Fund**	**Education**	**Overall Fiscal Capability**
Amherst County	$35,191,627	$47,045,916	Medium
Appomattox County	$37,889,429	$20,432,122	Medium
Bedford County	$84,070,649	$92,162,092	High
Campbell County	$10,518,284	$72,735,390	High
City of Lynchburg	$25,717,427	$31,828,499	High
Bedford City	$16,474,154	n/a	Medium
Town of Altavista	$4,654,600	n/a	Low
Town of Amherst	$1,705,514	n/a	Low
Town of Appomattox	$1,214,108	n/a	Low
Town of Brookneal	$579,469	n/a	Low
Town of Pamplin City	$74,000	n/a	Low

Source: Jurisdiction websites

Floodplain Management

Communities that regulate development in floodplains are able participate in the National Flood Insurance Program (NFIP). In return, the NFIP makes federally-backed flood insurance policies available for properties in the community. Table 6.7 shows when each of the jurisdictions began participating in NFIP. All of the jurisdictions in Region 2000 meet NFIP requirements. The table also provides the date of the Flood Insurance Rate Map (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 flood. As the table shows, seven of the eleven FIRMs in effect in the planning area are over twenty-five years old, three are over twenty years old, and one is thirteen years old. Much of the planning area has experienced dramatic growth over the past two decades that is not reflected in the FIRM. This difference may mean that the actual floodplain varies from that depicted on the map.

Region 2000 Jurisdictions are incorporating a range of techniques to reduce exposure and increase awareness to protect their citizens from flood hazards. Additionally, high-risk properties such as FEMA's Repetitive Loss Properties will be routinely targeted for outreach and education opportunities and the property owners will be aware of potential mitigation options that are available to reduce future damages from flooding. This annual awareness campaign will take place in February of each year. Notices will be sent to the addresses of the severe repetitive loss properties with information regarding potential mitigation options.

Table 6.7 NFIP Compliance and Flood Insurance Policy Information by Jurisdiction, Source: Department of Conservation and Recreation

Jurisdictions	Entry in NFIP	FIRM Current Effective Date	Flood Insurance Policies	Insured Value	Claims	Total Value in Losses Paid
Lynchburg	9/1/1978	6/6/2010	96	$29,150,600.00	80	$3,247,935.56
Bedford	6/1/1978	9/29/2010	2	$78,000.00	0	$0.00
Amherst County	7/17/1978	9/19/2007	46	$9,848,800.00	38	$9,848,800.00
Campbell County	10/17/1978	8/28/2008	28	$7,078,900.00	12	$7,078,900.00
Bedford County	9/29/1978	9/29/2010	145	$36,887,300.00	20	$206,583.05
Appomattox County	7/17/1978	1/2/2008	10	$1,839,200.00	8	$253,216.06
Town of Amherst	11/2/1977	9/19/2007	2	$450,800.00	29	$128,029.19
Town of Pamplin City	2/12/1976	1/2/2008	0	$0.00	0	$0.00
Town of Appomattox	5/25/1984	1/2/2008	0	$0.00	0	$0.00
Town of Brookneal	3/1/1978	8/28/2008	3	$589,400.00	0	$0.00
Town of Altavista	8/1/1978	8/28/2008	12	$2,688,800.00	5	$79,561.38

Virginia statutes provide cities and counties the land use authority. In particular, issues such as floodwater control, are empowered through §15.2-2223 and §15.2-2280. All of the jurisdictions in the planning area have adopted a local floodplain ordinance as a requirement of participation in the National Flood Insurance Program.

The Community Rating System (CRS) was implemented in 1990 as a program for recognizing and encouraging community floodplain management activities that exceed the minimum NFIP standards. Residents of communities that participate in CRS receive a reduction in the flood insurance premium. There are ten CRS classes: class 1 requires the most credit points and gives the largest premium reduction; class 10 receives no premium reduction. None of the jurisdictions in this hazard mitigation plan are members of the CRS.

Comprehensive Plans

A community's comprehensive plan provides the future vision for the community regarding growth and development. Hazard mitigation planning is not specifically addressed as a goal or objective in any of the comprehensive plans in the study area. Only one comprehensive plan includes a hazard mitigation strategy. However, many of the plans include land use or environmental protection goals that could support future mitigation efforts. These goals generally address flood-prone areas. There also may be opportunities to include hazard mitigation in revisions to the comprehensive plans and to link to existing goals. For example, limiting development in the floodplain (which can be considered mitigation) also may help meet open space goals laid out in a plan. Table 6.8 provides details on those sections of the community plans that relate to Hazard Mitigation.

Stormwater Management Plans

Currently, the Environmental Protection Agency is requiring localities to update their stormwater regulations to meet new and heightened standards. This process will require significant funding to clean up existing and future sources of water runoff. The plan will be updated with new regulations when they become available.

Emergency Operations Plans

A comprehensive Emergency Operations Plan (EOP) typically predetermines actions to be taken by government agencies and private organizations in response to an emergency or disaster event. The plan describes the jurisdiction's capabilities to respond to emergencies and establishes the responsibilities and procedures for responding effectively to the actual occurrence of a disaster. Hazard mitigation is incorporated into the various operational phases of these plans.

Hazard mitigation is included as a functional annex to the Emergency Operations Plans developed by many jurisdictions. Generally, the annex describes the responsibilities of various departments and agencies, private businesses, and the public. The annex outlines a concept of operations that explains what activities will be undertaken before and after a disaster. Specific tasks are assigned to the Board of Supervisors/City Council (or other local governing body), Department of Emergency Services, Department of Health, Building Officials/County Engineer/Planning and Zoning, Law Enforcement, Fire Department and Emergency Crew, Superintendent of Schools, and Public Information Officer. Table 6.8 provides details on those sections of the community plans that relate to Hazard Mitigation.

Table 6.8 Region 2000 Community Plans Related to Hazard Mitigation

Region 2000 Community Plans Related to Hazard Mitigation[5]				
Jurisdiction	**Comprehensive Plan**	**Stormwater Management Plan**	**Emergency Operations Plan**	**Planning Capability**
Amherst County	Yes – New version currently under development; Chapters related to Hazard Mitigation will include Environment, Community Facilities and Services, and Land Use. When plan is complete it will be posted to the County's website (tentative 5/2006).	No – Amherst County Code of Ordinances has adopted the and incorporated the State Erosion and Sediment Control Regulations	Yes	Medium
Amherst, Town of	N/A – Hazard Mitigation items covered in Amherst County Plan	No- Amherst County Code of Ordinances has adopted the and incorporated the State Erosion and Sediment Control Regulations	No – Emergency Services planning provided by Amherst County	Low
Appomattox County	Yes – Community Development Plan (AKA Comprehensive Plan) has chapters related to Hazard Mitigation including Natural Environment and Resources, Community Facilities and Services, Growth Management, and Information Technology	No	Yes	Medium
Appomattox, Town of	N/A – Hazard Mitigation items covered in Appomattox County Plan	No	No – Emergency Services planning provided by Appomattox County	Low
Pamplin City, Town of	N/A – Hazard Mitigation items covered in Appomattox County Plan	No	No – Emergency Services planning provided by Appomattox County	Low
Bedford City	Yes - Chapters related to Hazard Mitigation include Community Facilities and Services, Environment, and Existing Land Use	No	Yes	Medium
Bedford County	Yes – Chapters related to Hazard Mitigation include Environmental Factors, Utilities, and Land Use	No	Yes – New Master Plan for Fire & Rescue Services currently under development	Medium
Campbell County	Yes – New version currently under development; Chapters related to Hazard Mitigation include Forest Land Assessment, Infrastructure Development, Land Use, and Natural Environment	No – Chapter 8 of the Campbell County Code of 1988 details Erosions and Sedimentation Control and Stormwater Management	Yes – Includes Chapters on Hazard Mitigation and Human-Caused Hazards	High
Altavista, Town of	Yes - – Chapters related to Hazard Mitigation include Natural Environment, Community Facilities and Services, and Land Use	Yes – Addresses new state and federal environmental laws and regulations, floodplain management issues, design methods, and engineering practices.	No – Emergency Services planning provided by Campbell County	Medium
Brookneal, Town of	N/A – Hazard Mitigation items covered in Campbell County Plan	No	No – Emergency Services planning provided by Campbell County	Low
Lynchburg City	Yes – Chapters related to Hazard Mitigation include Citywide Land use and Development, Downtown and Riverfront Master Plan, Natural Systems, Parks & Recreation, Public Utilities, and Public Facilities	Yes – Stormwater issues addressed in Combined Sewer Overflow Project and Stormwater Management Ordinance	Yes – Includes Annex on Human Caused Hazards	High

Based on information from community websites, available through www.region2000.org

Plan Incorporation

Amherst County (including the Town of Amherst)

The Planning and Zoning department is responsible for updating and amending the Amherst County Comprehensive Plan. The plan covers, to varying degrees, all aspects of the cultural and physical landscape in Amherst County. The plan addresses land use types, roads, sewer and water services, public safety, public education, environmental issues, recreation, and even aesthetic issues. The plan has legal standing, in fact is required by Virginia law, but is used only to guide or influence actual courses of action by county government. Implementation of the plan usually takes the form of policy or law.

Through the Code of the County of Amherst, Virginia General Ordinances of the County (1987, codified through Ord. of April 19, 2005) Amherst County has adopted the Virginia Uniform Statewide Building Code and the State Erosion and Sediment Control Regulations. The purpose of these codes and regulations is to prevent the loss of property and life, health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by:

- Regulating uses, activities, and development which, acting alone or in combination with other existing or future uses, activities and development, will cause unacceptable increases in flood heights, velocities and frequencies.
- Restricting or prohibiting certain uses, activities, and development from locating within areas subject to flooding.
- Requiring all those uses, activities, and developments that do occur in flood proofed against flooding and flood damage.
- Protecting individuals from buying lands and structures which are unsuited for intended purposes because of flood hazards.

Appomattox County (including Town of Appomattox and Town of Pamplin City)

The local government staff along with the Joint Appomattox Planning Commission is responsible for updating and amending the community development plan. The Natural Environment section of the plan details objectives to minimize risks to personal safety and property from natural hazards as well as protect environmentally sensitive and/or scenic areas of the County. The Zoning Ordinances in Appomattox County include floodplain regulations. The purposes of the plan include:

- First, it establishes government policy used to help guide public and private activities as they relate to land use and resource utilization.

- Second, it is the basis for land development regulations and decisions (i.e. re-zonings and conditional use permits), capital improvement programming (i.e. public projects such as schools, parks and libraries), transportation, environmental and historical resource protection initiatives, new County programs and decisions concerning the distribution of County budget dollars to a multitude of programs and agencies.

- Most importantly, it serves as the community's guide for future development and as the vision for what the County should look like in twenty years.

Appomattox County along with its towns works with a variety of different agencies and organizations, one being Region 2000. Region 2000 is focused on providing economic competitiveness on a regional basis, reducing redundancy in government, improving efficiency, enhancing services, and improving implementation time for regional projects. This organization provides a forum for innovative and creative interaction in the effort to address quality of life issues on a regional basis and offers a variety of technical and program services to its member localities, particularly in the areas of grant applications and administration and geographic information systems (GIS).

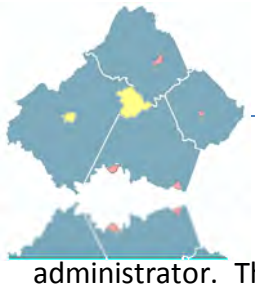
Bedford City

Bedford City goals include protecting and promoting sound development and growth practices that take into account environmental factors (i.e. flooding, fire, drought). The Department of Planning and Community Development includes planning, economic development, the building department, and code enforcement. This department reviews site plans and plat surveys, works with businesses looking to relocate or establish themselves in Bedford, works with the community to develop and update the Comprehensive Plan, administers the Land Development Regulations and Zoning and enforces the City Code as well as the Uniform Statewide Building Code (USBC). The Zoning Ordinances in Bedford City include floodplain regulations.

For the purpose of planning, the City of Bedford Land Development Regulations was divided into different types of districts. The intent of Flood Hazard District FH is to preserve and protect lives and property in the flood plains of the City and to satisfy the United States Department of Housing and Urban Development and the State Water Control Board requirements for full entry into the National Flood Insurance Program, upon adoption of the Official Flood Hazard District Map from an engineering study.

Bedford County

The Bedford County Department of Planning is responsible for updating the Comprehensive Plan for the County. The County administrator or his designee serves as the zoning



administrator. The zoning administrator is responsible for the enforcement of the zoning ordinance. The zoning ordinance in Bedford County includes floodplain regulations.

The zoning regulations and districts set forth in this ordinance are for the general purpose of implementing the comprehensive plan of Bedford County. The Zoning Ordinances in Bedford County include floodplain regulations. They are designed to achieve the general purposes of promoting the health, safety, and general welfare of the public, and of further accomplishing the objectives of Section 15.2-2200 of the Code of Virginia, as amended. To these ends, this ordinance is designed to give reasonable consideration to each of the following purposes:

- Provide for adequate light, air, convenience of access, and safety from fire, flood and other dangers;
- Reduce or prevent congestion in the public streets;
- Facilitate the creation of a convenient, attractive, and harmonious community;
- Facilitate the provision of adequate police, fire protection, disaster evacuation, civil defense, transportation, water, sewer, flood protection, schools, parks, forests, playgrounds, recreational facilities, airports, and other public requirements;
- Protect against destruction of, or encroachment upon, historic buildings or areas;
- Protect against one or more of the following: overcrowding of land, undue density of population in relation to the community facilities existing or available, obstruction of light or air, hazards and congestion in travel and transportation, or loss of life, health, or property from fire, flood, panic, or other hazards;
- Encourage economic development activities that provide desirable employment and enlarge the tax base;
- Provide for the preservation of agricultural and forested lands;
- Protect approach slopes and other safety areas of licensed airports, and;
- Protect surface and groundwater resources9.

Campbell County (including Town of Altavista and Town of Brookneal) Campbell County Community Development staffs, with the input of the Board of Supervisors, Planning Commission, and citizens are responsible for updating the Comprehensive Plan.

The County has adopted and incorporated the State Erosion and Sedimentation Regulations. The Campbell County Code of 1988 includes a chapter on Erosion and Sedimentation Control and Stormwater Management. The Zoning Ordinances in Campbell County include floodplain regulations. The purpose of this zoning ordinance is to promote the general health, safety and welfare of the public and for the accomplishment of the above stated objectives. To these ends, this ordinance has been designed to give reasonable consideration to each of the following purposes, where applicable:

- To provide for adequate light, air, convenience of access, and safety from fire, flood, crime and other dangers;

- To facilitate the provision of adequate police and fire protection, disaster evacuation, civil defense, transportation, water, sewerage, flood protection, schools, parks, forests, playgrounds, recreational facilities, airports and other public requirements;

- To protect against one or more of the following: overcrowding of land, undue density of population in relation to the community facilities existing or available, obstruction of light and air, danger and congestion in travel and transportation, or loss of life, health or property from fire, flood, panic and other dangers;

- To encourage economic development activities that provide desirable employment and enlarge the tax base;

- To provide for the preservation of agricultural and forestall lands and other lands of significance for the protection of the natural environment;

- To protect approach slopes and other safety areas of licensed airports, including United States government and military air facilities;

- To promote the creation and preservation of affordable housing suitable for meeting the current and future needs of the County as well as a reasonable proportion of the current and future needs of the planning district within which Campbell County is situated;

- To make reasonable provisions, not inconsistent with applicable state water quality standards, to protect surface water and ground water as defined in VA. CODE ANN. § 62.1-255 (Repl. Vol. 2001).

Lynchburg City

The vision of Lynchburg City is to take pride in being a sustainable community; one that protects and manages its limited natural, historical, and cultural resources in such a way that the community environment, which its residents value and which sustains us today will sustain future generations. In order to achieve its Vision for the future, the City of Lynchburg has adopted a number of goals for the city government, citizens, organizations, and businesses to work toward. These goals outline broad policies for future action that address the various elements of the City's character that its citizens wish to protect, improve, and enhance. In the Comprehensive Plan, they are used to frame more detailed objectives and strategies, the latter outlining the specific actions that the City and its partners can take to achieve the goals and realize its Vision for the future.

Community Planning and Development Department is responsible for updating the Lynchburg City Comprehensive Plan. Many City officials, boards, and commissions are responsible for implementation of the plan. They include the Planning Commission, the project management team, and City Staff. The Zoning Ordinances in Lynchburg City include floodplain regulations.

Legal Capability

This section will detail different legal considerations and their impact on local capability. In general, all Region 2000 jurisdictions operate within the same legal environment, so there are no major differences in legal capability among the jurisdictions.

Dillon Rule

The Commonwealth of Virginia is considered a Dillon Rule state, one of only five remaining in the nation along with Kentucky, Minnesota, North Carolina and Pennsylvania. The Dillon Rule, named for John Forest Dillon, chief justice of the Iowa Supreme Court in the late 1800's, is used to interpret state law when there is a question of whether or not a local government has a certain power. Under the Dillon Rule, should reasonable doubt exist as to whether or not a power has been granted to a local government, then the power has not been granted. Therefore, a local government can exercise no power or authority not expressly conferred on the locality by the Virginia General Assembly via the Code of Virginia or the local charter.

Local governments in Virginia have a wide range of tools available to them for implementing mitigation programs, policies and actions. A hazard mitigation program can utilize any or all of the four broad types of government powers granted by the State of Virginia, which are: (a) regulation, (b) acquisition, (c) taxation, and (d) spending. The scope of this local authority is subject to constraints; however, as all of Virginia's political subdivisions must not act without proper delegation from the state. All power is vested in the state and can only be exercised by local governments to the extent it is delegated. Thus, this portion of the capabilities assessment

will summarize Virginia's enabling legislation which grants the four types of government powers listed above within the context of available hazard mitigation tools and techniques.

Regulation

Virginia local governments have been granted broad regulatory powers in their jurisdictions. Virginia State Statutes bestow the general police power on local governments, allowing them to enact and enforce ordinances which define, prohibit, regulate or abate acts, omissions, or conditions detrimental to the health, safety, and welfare of the people, and to define and abate nuisances (including public health nuisances). Since hazard mitigation can be included under the police power (as protection of public health, safety and welfare), towns, cities and counties may include requirements for hazard mitigation in local ordinances. Local governments also may use their ordinance-making power to abate "nuisances," which could include, by local definition, any activity or condition making people or property more vulnerable to any hazard.

Land Use

Regulatory powers granted by the state to local governments are the most basic manner in which a local government can control the use of land within its jurisdiction. Through various land use regulatory powers, a local government can control the amount, timing, density, quality, and location of new development. All these characteristics of growth can determine the level of vulnerability of the community in the event of a natural hazard. Land use regulatory powers include the power to engage in planning, enact and enforce zoning ordinances, floodplain ordinances, and subdivision controls. Each local community possesses great power to prevent unsuitable development in hazard-prone areas.

Planning

According to State Statutes, local governments in Virginia may create or designate a planning agency. The planning agency may perform a number of duties, including make studies of the area, determine objectives, prepare and adopt plans for achieving objectives, develop and recommend policies, ordinances, and administrative means to implements plans, and perform other related duties.

The importance of the planning powers of local governments is illustrated by the requirement that zoning regulations be made in accordance with a comprehensive plan. While the ordinance itself may provide evidence that zoning is being conducted "in accordance with a plan," the existence of a separate planning document ensures that the government is developing regulations and ordinances that are consistent with the overall goals of the community.

Zoning

Zoning is the traditional and most common tool available to local governments to control the use of land. Broad enabling authority is granted for municipalities and counties in Virginia to engage in zoning. Land "uses" controlled by zoning include the type of use (e.g., residential, commercial, and industrial) as well as minimum specifications that control height and bulk such as lot size, building height and setbacks, and density of population. Local governments are authorized to divide their territorial jurisdiction into districts, and to regulate and restrict the erection, construction, reconstruction, alteration, repair or use of buildings, structures, or land within those districts. Districts may include general use districts, overlay districts, and special use or conditional use districts. Zoning ordinances consist of maps and written text.

Every locality in the state that enacts a zoning ordinance is required to also establish a board of zoning appeals. The responsibilities of the Board of Zoning Appeals include the ability to hear and decide appeals of decisions made by the Zoning Administrator; the ability to grant variances to provisions of the Zoning Ordinance based on strict guidelines; and the ability to provide interpretations for zoning district boundaries where uncertainty exists. The Board of Zoning Appeals does not have the authority to rezone property or to rule upon or revoke conditional use permits, powers reserved for the Board of Supervisors. Decisions of the Board of Zoning Appeals made be appealed to Circuit Court.

Subdivision Regulation

Subdivision regulations control the division of land into parcels for the purpose of building development or sale. Flood-related subdivision controls typically require that sub-dividers install adequate drainage facilities and design water and sewer systems to minimize flood damage and contamination. They also may prohibit the subdivision of land subject to flooding unless flood hazards are overcome through filling or other measures, and they prohibit filling of floodway areas.

Floodplain Regulation

All of the communities in the study area have adopted floodplain regulations that meet the minimum requirements of the National Flood Insurance Program. All of the communities have chosen to implement the floodplain ordinance as a zoning district (regular or overlay) including restrictions on manufactured homes. See the Planning Capability Floodplain Management Section for the specific details on how the jurisdictions implement their floodplain ordinance. These restrictions include the need for manufactured homes to be elevated and/or anchored to a permanent foundation.

Building Codes and Building Inspection

Many structural mitigation measures involve constructing and retrofitting homes, businesses and other structures according to standards designed to make the buildings more resilient to the impacts of natural hazards. Many of these standards are imposed through building codes. All of the jurisdictions have adopted the Uniform Virginia Statewide Building Code.

Local governments in Virginia also are empowered to carry out building inspections. It empowers cities and counties to create an inspection department, and enumerates their duties and responsibilities, which include enforcing state and local laws relating to the construction of buildings, installation of plumbing, electrical, and heating systems; building maintenance; and other matters. Most of the jurisdictions in the planning area have established a Building Inspections Office or have designated a Building Official to carry out building inspections.

Acquisition

The power of acquisition can be a useful tool for pursuing local mitigation goals. Local governments may find the most effective method for completely "hazard-proofing" a particular piece of property or area is to acquire the property (either in fee simple or a lesser interest, such as an easement), thus removing the property from the private market and eliminating or reducing the possibility of inappropriate development occurring. Virginia legislation empowers cities, towns, and counties to acquire property for public purpose by gift, grant, devise, bequest, exchange, purchase, lease or eminent domain. Acquisition has not been used by any of the communities in the planning area though it has been used successfully in other parts of Virginia.

Taxation

The power to levy taxes and special assessments is an important tool delegated to local governments by Virginia law. The power of taxation extends beyond merely the collection of revenue, and can have a profound impact on the pattern of development in the community. Communities have the power to set preferential tax rates for areas which are more suitable for development in order to discourage development in otherwise hazardous areas. Local units of government also have the authority to levy special assessments on property owners for all or part of the costs of acquiring, constructing, reconstructing, extending or otherwise building or improving flood protection works within a designated area. This can serve to increase the cost of building in such areas, thereby discouraging development.

Because the usual methods of apportionment seem mechanical and arbitrary, and because the tax burden on a particular piece of property is often quite large, the major constraint in using special assessments is political. Special assessments seem to offer little in terms of control over land use in developing areas. They can, however, be used to finance the provision of necessary

services within municipal or county boundaries. In addition, they are useful in distributing to the new property owners the costs of the infrastructure required by new development.

Localities in Virginia collect a 1% sales tax. In addition, all of the jurisdictions in the planning area levy property taxes.

Spending

The fourth major power that has been delegated from the Virginia General Assembly to local governments is the power to make expenditures in the public interest. Hazard mitigation principles should be made a routine part of all spending decisions made by the local government, including the adoption of annual budgets and the Capital Improvement Plan (CIP).

A CIP is a schedule for the provision of municipal or county services over a specified period of time. Capital programming, by itself, can be used as a growth management technique, with a view to hazard mitigation. By tentatively committing itself to a timetable for the provision of capital to extend services, a community can control growth to some extent, especially in areas where the provision of on-site sewage disposal and water supply are unusually expensive.

In addition to formulating a timetable for the provision of services, a local community can regulate the extension of and access to services. A CIP that is coordinated with extension and access policies can provide a significant degree of control over the location and timing of growth. These tools can also influence the cost of growth. If the CIP is effective in directing growth away from environmentally sensitive or high hazard areas, for example, it can reduce environmental costs.

Summary

Table 6.8 provides a summary of the overall capabilities, by jurisdiction. As seen in the table, three of the jurisdictions are indicated as having a high overall capability.

Table 6.8 Region 2000 Jurisdictions' Overall Capability Assessment

Region 2000 Overall Capability Assessment					
Jurisdiction	**Administrative Capability**	**Technical Capability**	**Fiscal Capability**	**Planning Capability**	**Overall Capability**
Amherst County	Medium	Medium	Medium	Medium	**Medium**
Amherst, Town of	Low	Low	Low	Low	**Low**
Appomattox County	Medium	Low	Medium	Medium	**Medium**
Appomattox, Town of	Low	Low	Low	Low	**Low**
Pamplin City, Town of	Low	Low	Low	Low	**Low**
Bedford City	High	High	Medium	Medium	**High**
Bedford County	Medium	Medium	High	Medium	**Medium**
Campbell County	High	High	High	High	**High**
Altavista, Town of	Medium	Medium	Low	Medium	**Medium**
Brookneal, Town of	Low	Low	Low	Low	**Low**
Lynchburg City	High	High	High	High	**High**

Each locality has a range of departments responsible for varying actions. Each locality has determined that their capability for the proposed and ongoing actions adequate relays what can be completed in their localities. Most localities in the region rely on their Local Emergency Planning Commission (LEPC) to implement mitigation actions. Localities that do not currently have an active LEPC have shown an interest in reconvening their organizations (see Section VI for Jurisdictional Actions).

Implementation and Plan Maintenance

The Region 2000 Hazard Mitigation Plan Update has pulled together many different resources into one document and should be considered a living document. The plan needs to be updated, adopted and submitted to the Virginia Department of Emergency Management (VDEM) and Federal Emergency Management Agency (FEMA) every five years.

Summary of Changes

The project management team reviewed this section of the plan as a part of the plan update and indicated the following changes. Project management team members indicated the need to increase awareness of grant opportunities among local governments. They also indicated the need to increase the Hazard Mitigation Plan's presence in other major plans such as the comprehensive plan and the emergency operations plan. The project management team agreed that the prioritization methods put forth in the original plan were still prevalent and could be used in the plan update. The maintenance of this plan will be the responsibility of the members of the project management team and representation of the jurisdictions involved. Meetings will be scheduled at the request of the plan's governing body. One of the ways the progress of the mitigation plan will be monitored through is the completion of the mitigation actions, which can be viewed in the Goals and Mitigation Strategies section on pp. 5-6.

Adoption

The eleven participating jurisdictions (Amherst County, Town of Amherst, Appomattox County, Town of Appomattox, Town of Pamplin City, Bedford County, Bedford City, Campbell County, Town of Altavista, Town of Brookneal, and Lynchburg City) will have to adopt the hazard mitigation plan formally once it is reviewed and passed by VDEM and FEMA.

Once the Hazard Mitigation Plan has been adopted by the individual governing bodies, the jurisdictions will be responsible for incorporating the plan into other local plans as follows:

• **Comprehensive Plans**: These plans are updated every three to five years for each jurisdiction according to specific state regulations. County plans sometimes will cover smaller towns' plans as well, due to limited planning capacity of the communities. When these plans are updated, the appropriate information for the community will be extracted from the Multi-Jurisdiction Hazard Mitigation Plan. For comprehensive plans, the HIRA portion of the Hazard Mitigation Plan will be the primary focus for integration, especially on the limitations to future development by the location of hazards such as floodplains or high slope areas. The planning departments of communities are the primary staff involved with comprehensive plan update.

• **Capital Improvement Plans (CIP)**: These plans are less formalized than Comprehensive Plans and are the primary tool for determining various community projects, such as street

improvements, infrastructure maintenance and repairs, and new community building construction, such as schools. CIPs also play a supporting role to justify expansion of community staff as new departments and programs are established in the annual budget process. The Mitigation Actions section of the Hazard Mitigation Plan will be integrated in each community's CIP and local budgeting as funding and politics allow. For actions such as education, existing or new staff may be able to expand their roles to conduct these projects. For "bricks and mortar" types of actions, these can be built into the CIP budget and timeline. For CIPs, the public works departments are the primary staff who develops these plans, while annual budgets fall to community administrators and boards.

• **Emergency Operation Plans (EOP)**: These plans focus primarily on the immediate response to emergency events. There are numerous important ties between response plans and mitigation plans, often in terms of personnel training and emergency equipment. Also, human-caused hazards such as hazardous materials spills are addressed in EOPs. To integrate the Hazard Mitigation Plan into community EOPs, the community emergency services directors and the Local Emergency Planning Commissions (LEPCs) will work with the community planning staff. For some hazards, like winter storms, the mitigation actions are extensions of response actions, such as clearing tree debris and having backup power available. For other hazards, like flooding, the mitigations actions may be led by planning staff, but first responders can provide valuable information about hazard impacts that will be useful for mitigation grant applications.

Tracking Incorporation of the Plan into Local Planning Processes

Plan incorporation will begin with each localities adoption of the mitigation plan. After the plan has been adopted, future implementation will take place in the form of steering committee meetings. When a hazard mitigation plan is put into action it is important to continuously monitor the goals, objectives, strategies, and projects to make sure that they are current and being implemented effectively. One of the best ways of carrying out a mitigation plan is to incorporate these components into the day-to-day functionality and priorities of the government and development of the region. Project Management Team members mentioned that the Hazard Mitigation Plan is reviewed alongside many other planning documents when jurisdictions draft their important planning documents such as:

- City or Town Comprehensive Plans
    - Land Use Plans
- Capital Improvement Budgets and Plans
- Economic Development Goals and Incentives-

Not only is it important to track incorporation of the plan, but another critical component to success in hazard mitigation is to monitor occurrence and impacts of natural and manmade hazards/disasters within communities in the region. This will not only keep the region up to date on hazard vulnerability but will also keep data and statistics current for analysis and future implementation purposes.

The final thing to consider during implementation is the security of all data and information involved in the plan. Maintain security of any information that pertains to vulnerabilities, security measures, and response plans. Ensure that sensitive information is handled in such a way as to maintain security and have adequate protections in place to ensure that sensitive information is not released when it is requested by members of the public who have no justifiable reason for seeing the information.

Monitoring Progress

This plan will be monitored through meetings of the governing bodies and steering committee members as they see fit. When updates of this plan are needed, the changes will be submitted to VDEM and FEMA for review. Jurisdictions will take on the responsibility for keeping the public involved with the updates and revisions of this plan. Programs are already in place at the local level to deal with different types of hazards.

These programs have been documented throughout this plan. In order to accomplish this method of tracking progress, committees and affiliated entities need to monitor agendas, attend meetings, send memos, monitor funding opportunities, keep stakeholders and the public updated, and promote a safe and sustainable community as a result of the actions within their plan. As the mitigation plan takes shape, progress reports should be compiled and distributed to state and federal agencies, local government, regional commissions, industry, organizations, and legislators.

Evaluating the Plan

Evaluation of the plan will be the responsibility of the governing bodies and steering committee members. Evaluation of the plan will take the form that they have followed in the development of this plan. Comments and additions will be obtained by the governing bodies and steering committee and they will be incorporated in the update of the plan. Realistically, funding for future updates and evaluations of this plan will fall heavily on state and federal resources.

Plan Update

During the implementation process, there may be road blocks, new objectives, new demands, or alternative strategies that arise which force the plan to be altered and updated. It is important to keep track of these changes and incorporate revisions into the plan when necessary. A five-year written update to the Hazard Mitigation Plan will be submitted to VDEM and FEMA for review, unless federal regulations change this timeframe or format. The local community planning and emergency services departments will work closely in updating the portions of the Multi-Jurisdiction Hazard Mitigation Plan that relates to that community. For some communities with greater local capacity, like Lynchburg City, the update to the plan may have the community develop a separate plan document. For the smaller communities, like Town of Brookneal, the plan update will be an integral part of the county's updated plan, since the town has limited planning capacity to update the plan themselves. The plan revisions will include new objectives and strategies, filling in gaps in data as new data becomes available, and describing alternative analysis and implementation procedures. Success in updating this plan involves:

- Evaluating successes and failures of implemented mitigation strategies
- Monitoring changes in and updating hazard risks, asset inventory, government policies and programs, and development trends
- Evaluating public and municipal participation in current implementation strategies

Prioritization

Mitigation plan implementation can flow more smoothly if strategies and projects are prioritized in an order that makes most sense given current hazard vulnerabilities and available funding. This includes prioritizing disaster assessments based on highest vulnerability rankings, targeting key locations and facilities that are impacted the most by each hazard, determining the budgeting requirements for each section of the mitigation plan, and staying on top of funding opportunities that can contribute to project completions. Low or no-cost recommendations have the greatest likelihood of succeeding, so these actions should be pursued first. Then, as new funding becomes available, other high priority projects can be initiated. As in the prioritization of the mitigation projects, the FEMA STAPLE(E) approach will be utilized to determine capability and feasibility of the proposed projects and plan updates. Prioritization will be completed at the jurisdictional level and will follow local evaluation criteria.

The STAPLE(E) prioritization method takes into account seven criteria:

1. Socially Acceptable
2. Technically feasible
3. Administrative support
4. Politically acceptable
5. Legal
6. Economically justifiable
7. Environmentally responsive

Other considerations when prioritizing will be how well the project reduces future losses, how they further the goals and objectives put forth in this plan, and the cost versus the benefit of the project.

Funding Opportunities

By tracking funding opportunities the jurisdictions will be able to apply these funding sources to implement imperative and costly mitigation actions. Pragmatically, funding opportunities from the state and federal government will be the keystone in the future updates of this plan.

Continued Public Involvement

The public will remain engaged and involved throughout the planning process by:

- There will be continued correspondence between members of the Project Management Team and the public. PMT members are encouraged to send comments received in public settings to Region 2000 to be incorporated into a database which will be accessed for the next plan update.
- Website announcements will be posted to invite the public to provide comments and suggestions during an annual public comment period. A potential timeframe for these annual updates is February 1st of each year.
- Public meetings will be held as a part of the planning revisions every five years.
- Copies of the plan will be available for public review at the planning offices of all Region 2000 jurisdictions, on the Region 2000 website, and at all jurisdictional libraries. Addendums and minor revisions will be inserted into the Appendices of these copies as they are completed.

Conclusions

With the updated Region 2000 Hazard Mitigation Plan adopted and in place, the region will have a better handle on mitigating the hazards that impact their region. The shift to mitigating hazards before they happen is prevalent within Region 2000. Through meetings and group interactions it was observed that the region works well together and already has in place a handful of actions to anticipate events. The region is currently working on some regional actions to mitigate against some of their highest ranked hazards.

Appendices for Region 2000 Hazard Mitigation Plan
TABLE OF CONTENTS

Section I

Appendix

Executive Summary

Appendix 1.1

Disaster Mitigation Act of 2000 Requirements

Federal Register

Tuesday,
February 26, 2002

Part III

Federal Emergency Management Agency

44 CFR Parts 201 and 206

Hazard Mitigation Planning and Hazard Mitigation Grant Program; Interim Final Rule

FEDERAL EMERGENCY MANAGEMENT AGENCY

44 CFR Parts 201 and 206

RIN 3067–AD22

Hazard Mitigation Planning and Hazard Mitigation Grant Program

AGENCY: Federal Emergency Management Agency.

ACTION: Interim final rule.

SUMMARY: This rule addresses State mitigation planning, identifies new local mitigation planning requirements, authorizes Hazard Mitigation Grant Program (HMGP) funds for planning activities, and increases the amount of HMGP funds available to States that develop a comprehensive, enhanced mitigation plan. This rule also requires that repairs or construction funded by a disaster loan or grant must be carried out in accordance with applicable standards and says that FEMA may require safe land use and construction practices as a condition of grantees receiving disaster assistance under the Stafford Act.

DATES: *Effective Date:* February 26, 2002.

Comment Date: We will accept written comments through April 29, 2002.

ADDRESSES: Please send written comments to the Rules Docket Clerk, Office of the General Counsel, Federal Emergency Management Agency, 500 C Street, SW., room 840, Washington, DC 20472, (facsimile) 202–646–4536, or (email) *rules@fema.gov.*

FOR FURTHER INFORMATION CONTACT: Margaret E. Lawless, Federal Insurance and Mitigation Administration, Federal Emergency Management Agency, 500 C Street, SW., Washington, DC, 20472, 202–646–3027, (facsimile) 202–646–3104, or (email) *margaret.lawless@fema.gov.*

SUPPLEMENTARY INFORMATION:

Introduction

Throughout the preamble and the rule the terms ''we'', ''our'' and ''us'' refer to FEMA.

Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act or the Act), 42 U.S.C. 5165, enacted under § 104 the Disaster Mitigation Act of 2000, (DMA 2000) P.L. 106–390, provides new and revitalized approaches to mitigation planning. This section: (1) Continues the requirement for a Standard State Mitigation plan as a condition of disaster assistance; (2) provides for States to receive an increased percentage of HMGP funds (from 15 to 20 percent of the total estimated eligible Federal assistance) if, at the time of the declaration of a major disaster, they have in effect a FEMA-approved Enhanced State Mitigation Plan that meets the factors listed in this rule; (3) establishes a new requirement for local mitigation plans; and (4) authorizes up to 7 percent of the HMGP funds available to a State to be used for development of State, tribal, and local mitigation plans. We will give Indian tribal governments the opportunity to fulfill the requirements of § 322 either as a grantee or a subgrantee. An Indian tribal government may choose to apply for HMGP funding directly to us and would then serve as a grantee, meeting the State level responsibilities, or it may apply through the State, meeting the local government or subgrantee responsibilities.

Section 322, in concert with other sections of the Act, provides a significant opportunity to reduce the Nation's disaster losses through mitigation planning. In addition, implementation of planned, pre-identified, cost-effective mitigation measures will streamline the disaster recovery process. The Act provides a framework for linking pre- and post-disaster mitigation planning and initiatives with public and private interests to ensure an integrated, comprehensive approach to disaster loss reduction. The language in the Act, taken as a whole, emphasizes the importance of strong State and local planning processes and comprehensive program management at the State level. The new planning criteria also support State administration of the HMGP, and contemplate a significant State commitment to mitigation activities, comprehensive State mitigation planning, and strong program management.

The planning process also provides a link between State and local mitigation programs. Both State level and local plans should address strategies for incorporating post-disaster early mitigation implementation strategies and sustainable recovery actions. We also recognize that governments are involved in a range of planning activities and that mitigation plans may be linked to or reference hazardous materials and other non-natural hazard plans. Improved mitigation planning will result in a better understanding of risks and vulnerabilities, as well as to expedite implementation of measures and activities to reduce those risks, both pre- and post-disaster.

Section 409 of the Stafford Act, 42 U.S.C. 5176, which required mitigation plans and the use of minimum codes and standards, was repealed by the DMA 2000. These issues are now addressed in two separate sections of the law: mitigation planning is in section 322 of the Act, and minimum codes and standards are in section 323 of the Act. We previously implemented section 409 through 44 CFR Part 206, Subpart M. Since current law now distinguishes the planning from the codes and standards in separate sections, we will address them in different sections of the CFR. We address the new planning regulations in Part 201 to reflect the broader relevance of planning to all FEMA mitigation programs, while the minimum standards remain in Part 206, Federal Disaster Assistance, Subpart M. The regulations implementing the Hazard Mitigation Grant Program are in Part 206, Subpart N. This rule also contains changes to Subpart N, to reflect the new planning criteria identified in section 322 of the Act.

The administration is considering changes to FEMA's mitigation programs in the President's Budget for FY 2003. However, States and localities still would be required to have plans in effect, which meet the minimum requirements under this rule, as a condition of receiving mitigation assistance after November 1, 2003.

Implementation Strategy. States must have an approved hazard mitigation plan in order to receive Stafford Act assistance, excluding assistance provided pursuant to emergency provisions. These regulations provide criteria for the new two-tiered State mitigation plan process: Standard State Mitigation Plans, which allow a State to receive HMGP funding based on 15 percent of the total estimated eligible Stafford Act disaster assistance, and Enhanced State Mitigation Plans, which allow a State to receive HMGP funds based on 20 percent of the total estimated eligible Stafford Act disaster assistance. Enhanced State Mitigation Plans must demonstrate that the State has developed a comprehensive mitigation program, that it effectively uses available mitigation funding, and that it is capable of managing the increased funding. All State Mitigations Plans must be reviewed, revised, and re-approved by FEMA every three years. An important requirement of the legislation is that we must approve a completed enhanced plan *before* a disaster declaration, in order for the State to be eligible for the increased funding.

We will no longer require States to revise their mitigation plan after every disaster declaration, as under former

section 409 of the Act, 42 U.S.C. 5176. We recommend, however, that States consider revising their plan if a disaster or other circumstances significantly affect its mitigation priorities. States with existing mitigation plans, approved under former section 409, will continue to be eligible for the 15 percent HMGP funding until November 1, 2003, when all State mitigation plans must meet the requirements of these regulations. If State plans are not revised and approved to meet the Standard State Mitigation Plan requirements by that time, they will be ineligible for Stafford Act assistance, excluding emergency assistance.

Indian tribal governments may choose to apply directly to us for HMGP funding, and would therefore be responsible for having an approved State level mitigation plan, and would act as the grantee. If an Indian tribal government chooses to apply for HMGP grants through the State, they would be responsible for having an approved local level mitigation plan, and would serve as a subgrantee accountable to the State as grantee.

This rule also establishes local planning criteria so that these jurisdictions can actively begin the hazard mitigation planning process. This requirement is to encourage the development of comprehensive mitigation plans before disaster events. Section 322 requires local governments to have an approved local mitigation plan to be eligible to receive an HMGP project grant; however, this requirement will not fully take effect until November 1, 2003. FEMA Regional Directors may grant an exception to this requirement in extenuating circumstances. Until November 1, 2003, local governments will be able to receive HMGP project grant funds and may prepare a mitigation plan concurrently with implementation of their project grant. We anticipate that the Predisaster Mitigation program authorized by section 203 of the Act, 42 U.S.C. 5133, will also support this local mitigation planning by making funds available for the development of comprehensive local mitigation plans. Managing States that we approve under new criteria established under section 404 of the Act, 42 U.S.C. 5170c(c), as amended by section 204 of DMA 2000 will have approval authority for local mitigation plans. This provision does not apply to States that we approved under the Managing State program in effect before enactment of DMA 2000.

Our goal is for State and local governments to develop comprehensive and integrated plans that are coordinated through appropriate State, local, and regional agencies, as well as non-governmental interest groups. To the extent feasible and practicable, we would also like to consolidate the planning requirements for different FEMA mitigation programs. This will ensure that one local plan will meet the minimum requirements for all of the different FEMA mitigation programs, such as the Flood Mitigation Assistance Program (authorized by sections 553 and 554 of the National Flood Insurance Reform Act of 1994, 42 U.S.C. 4104c and 42 U.S.C. 4104d), the Community Rating System (authorized by section 541 of the National Flood Insurance Reform Act of 1994, 42 U.S.C. 4022), the Pre-Disaster Mitigation Program (authorized by section 203 of the Stafford Act), the Hazard Mitigation Grant Program (authorized by section 404 of the Stafford Act), and the mitigation activities that are based upon the provisions of section 323 and subsections 406(b) and (e) of the Stafford Act. The mitigation plans may also serve to integrate documents and plans produced under other emergency management programs. State level plans should identify overall goals and priorities, incorporating the more specific local risk assessments, when available, and including projects identified through the local planning process.

Under section 322(d), up to 7 percent of the available HMGP funds may now be used for planning, and we encourage States to use these funds for local plan development. In a memorandum to FEMA Regional Directors dated December 21, 2000, we announced that this provision of section 322 was effective for disasters declared on or after October 30, 2000, the date on which the Disaster Mitigation Act of 2000 became law. Regional Directors are encouraging States to make these funds immediately available to local and Indian tribal governments, although the funds can be used for plan development and review at the State level as well.

As discussed earlier in this Supplementary Information, subsection 323(a) of the Stafford Act, 42 U.S.C. 5166(a), requires as a precondition to receiving disaster assistance under the Act that State and local governments, as well as eligible private nonprofit entities, must agree to carry out repair and reconstruction activities ''in accordance with applicable standards of safety, decency, and sanitation and in conformity with applicable codes, specifications, and standards.'' In addition, that subsection authorizes the President (FEMA, by virtue of Executive Order 12148, as amended) to ''require safe land use and construction practices, after adequate consultation with appropriate State and local officials'' in the course of the use of Federal disaster assistance by eligible applicants to repair and restore disaster-damaged facilities.

At the same time that we implement the planning mandates of section 322 of the Stafford Act, we are also implementing the Minimum Standards for Public and Private Structures provision of section 323 of the Act. This rule appears at Subpart M of Part 206 of Title 44 of the Code of Federal Regulations. As mentioned earlier, the section 322 planning regulations are in Part 201, while Part 206, Subpart M includes only the minimum codes and standards regulations mandated in § 323. The rule to implement § 323 of the Act reinforces the link between pre-disaster planning, building and construction standards, and post-disaster reconstruction efforts.

We encourage comments on this interim final rule, and we will make every effort to involve all interested parties prior to the development of the Final Rule.

Justification for Interim Final Rule

In general, FEMA publishes a rule for public comment before issuing a final rule, under the Administrative Procedure Act, 5 U.S.C. 533 and 44 CFR 1.12. The Administrative Procedure Act, however, provides an exception from that general rule where the agency for good cause finds the procedures for comment and response contrary to public interest. Section 322 of the Stafford Act allows States to receive increased post-disaster grant funding for projects designed to reduce future disaster losses. States will only be eligible for these increased funds if they have a FEMA-approved Enhanced State Mitigation Plan.

This interim final rule provides the criteria for development and approval of these plans, as well as criteria for local mitigation plans required by this legislation. In order for State and local governments to be positioned to receive these mitigation funds as soon as possible, these regulations must be in effect. The public benefit of this rule will be to assist States and communities assess their risks and identify activities to strengthen the larger community and the built environment in order to become less susceptible to disasters. Planning serves as the vital foundation to saving lives and protecting properties, having integrated plans in place can serve to both streamline recovery efforts and lessen potential future damages. Therefore, we believe it is contrary to the public interest to delay

the benefits of this rule. In accordance with the Administrative Procedure Act, 5 U.S.C. 553(d)(3), we find that there is good cause for the interim final rule to take effect immediately upon publication in the **Federal Register** in order to meet the needs of States and communities by identifying criteria for mitigation plans in order to reduce risks nationwide, establish criteria for minimum codes and standards in post-disaster reconstruction, and to allow States to adjust their mitigation plans to receive the increase in mitigation funding.

In addition, we believe that, under the circumstances, delaying the effective date of this rule until after the comment period would not further the public interest. Prior to this rulemaking, FEMA hosted a meeting where interested parties provided comments and suggestions on how we could implement these planning requirements. Participants in this meeting included representatives from the National Emergency Management Association, the Association of State Floodplain Managers, the National Governors' Association, the International Association of Emergency Managers, the National Association of Development Organizations, the American Public Works Association, the National League of Cities, the National Association of Counties, the National Conference of State Legislatures, the International City/County Management Association, and the Bureau of Indian Affairs. We took comments and suggestions provided at this meeting into account in developing this interim final rule. Therefore, we find that prior notice and comment on this rule would not further the public interest. We actively encourage and solicit comments on this interim final rule from interested parties, and we will consider them in preparing the final rule. For these reasons, we believe we have good cause to publish an interim final rule.

National Environmental Policy Act

44 CFR 10.8(d)(2)(ii) excludes this rule from the preparation of an environmental assessment or environmental impact statement, where the rule relates to actions that qualify for categorical exclusion under 44 CFR 10.8(d)(2)(iii), such as the development of plans under this section.

Executive Order 12866, Regulatory Planning and Review

We have prepared and reviewed this rule under the provisions of E.O. 12866, Regulatory Planning and Review. Under Executive Order 12866, 58 FR 51735, October 4, 1993, a significant regulatory action is subject to OMB review and the requirements of the Executive Order. The Executive Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The purpose of this rule is to implement section 322 of the Stafford Act which addresses mitigation planning at the State, tribal, and local levels, identifies new local planning requirements, allows Hazard Mitigation Grant Program (HMGP) funds for planning activities, and increases the amount of HMGP funds available to States that develop a comprehensive, enhanced mitigation plan. The rule identifies local mitigation planning requirements before approval of project grants, and requires our approval of an Enhanced State Mitigation plan as a condition for increased mitigation funding. The rule also implements section 323 of the Stafford Act, which requires that repairs or construction funded by disaster loans or grants must comply with applicable standards and safe land use and construction practices. As such the rule itself will not have an effect on the economy of more than $100,000,000.

Therefore, this rule is a significant regulatory action and is not an economically significant rule under Executive Order 12866. The Office of Management and Budget (OMB) has reviewed this rule under Executive Order 12866.

Executive Order 12898, Environmental Justice

Under Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, February 16, 1994, we incorporate environmental justice into our policies and programs. The Executive Order requires each Federal agency to conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that those programs, policies, and activities do not have the effect of excluding persons from participation in our programs, denying persons the benefits of our programs, or subjecting persons to discrimination because of their race, color, or national origin.

No action that we can anticipate under the final rule will have a disproportionately high or adverse human health and environmental effect on any segment of the population. Section 322 focuses specifically on mitigation planning to: Identify the natural hazards, risks, and vulnerabilities of areas in States, localities, and tribal areas; support development of local mitigation plans; provide for technical assistance to local and tribal governments for mitigation planning; and identify and prioritize mitigation actions that the State will support, as resources become available. Section 323 requires compliance with applicable codes and standards in repair and construction, and use of safe land use and construction standards. Accordingly, the requirements of Executive Order 12898 do not apply to this interim final rule.

Paperwork Reduction Act of 1995

As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) and concurrent with the publication of this interim final rule, we have submitted a request for review and approval of a new collection of information, which is contained in this interim final rule. Under the Paperwork Reduction Act of 1995, a person may not be penalized for failing to comply with an information collection that does not display a currently valid Office of Management and Budget (OMB) control number. The request was submitted to OMB for approval under the emergency processing procedures in OMB regulation 5 CFR 1320.1. OMB has approved this collection of information for use through August 31, 2002, under OMB Number 3067–0297.

We expect to follow this emergency request with a request for OMB approval to continue the use of the collection of information for a term of three years. The request will be processed under OMB's normal clearance procedures in accordance with provisions of OMB regulation 5 CFR 1320.10. To help us with the timely processing of the emergency and normal clearance submissions to OMB, we invite the general public to comment on the collection of information. This notice and request for comments complies with the provisions of the Paperwork

Reduction Act of 1995 (44 U.S.C. 3506(c)(2)(A)).

Collection of Information

Title: State/Local/Tribal Hazard Mitigation Plans under Section 322 of the Disaster Mitigation Act of 2000.

Abstract: Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistant Act, as amended by Section 104 of the Disaster Mitigation Act of 2000, provides new and revitalized approaches to mitigation planning. To obtain Federal assistance, new planning provisions require that each state, local, and tribal government prepare a hazard mitigation plan to include sections that describe the planning process, an assessment of the risks, a mitigation strategy, and identification of the plan maintenance and updating process. The Act provides a framework for linking pre- and post-disaster mitigation planning and initiatives with public and private interests to ensure an integrated, comprehensive approach to disaster loss reduction. Under Section 322 there is a two-tiered State mitigation plan process. State mitigation plans must be reviewed, revised, and submitted to us every 3 years.

(1) A *Standard State Mitigation Plan* must be approved by us in order for States to be eligible to receive Hazard Mitigation Grant Program (HGMP) funding based on 15 percent of the total estimated eligible Federal disaster assistance. This plan demonstrates the State's goals, priorities, and commitment to reduce risks from natural hazards and serves as a guide for State and local decision makers as they commit resources to reducing the effects of natural hazards.

(2) An *Enhanced State Mitigation Plan* must be approved by us for a State to be eligible to receive HMGP funds based on 20 percent of the total estimated eligible Federal disaster assistance. This plan must be approved by us within the 3 years prior to the current major disaster declaration. It must demonstrate that a State has developed a comprehensive mitigation program, is effectively using available mitigation funding, and is capable of managing the increased funding.

To be eligible to receive HMGP project grants, *local governments* must develop Local Mitigation Plans that include a risk assessment and mitigation strategy to reduce potential losses and target resources. Plans must be reviewed, revised, and submitted to us for approval every 5 years.

To receive HMGP project grants, *tribal governments* may apply as a grantee or subgrantee, and will be required to meet the planning requirements of a State or local government.

Estimated Total Annual Burden:

Type of collection/forms	No. of respondents	Hours per response	Annual burden hours
Update state or tribal mitigation plans (standard state mitigation plans)	18	320	5,760
State review of local plans	500 local plans	8	4,000
States develop Enhanced State Mitigation Plans	7	100	700
Local or tribal governments develop mitigation plans	500 local plans	300	150,000
Total burden			160,460

Comments: We are soliciting written comments to: (a) Evaluate whether the proposed data collection is necessary for the proper performance of the agency, including whether the information shall have practical utility; (b) evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) obtain recommendations to enhance the quality, utility, and clarity of the information to be collected; and (d) evaluate the extent to which automated, electronic, mechanical, or other technological collection techniques may further reduce the respondents' burden. FEMA will accept comments through April 29, 2002.

Addressee: Interested persons should submit written comments to Muriel B. Anderson, Chief, Records Management Section, Program Services and Systems Branch, Facilities Management and Services Division, Administration and Resource Planning Directorate, Federal Emergency Management Agency, 500 C Street, Street, SW., Washington, DC 20472.

FOR FURTHER INFORMATION CONTACT: You may obtain copies of the OMB paperwork clearance package by contacting Ms. Anderson at (202) 646–2625 (voice), (202) 646–3347 (facsimile), or by e-mail at *muriel.anderson@fema.gov.*

Executive Order 13132, Federalism

Executive Order 13132, Federalism, dated August 4, 1999, sets forth principles and criteria that agencies must adhere to in formulating and implementing policies that have federalism implications, that is, regulations that have substantial direct effects on the States, or on the distribution of power and responsibilities among the various levels of government. Federal agencies must closely examine the statutory authority supporting any action that would limit the policymaking discretion of the States, and to the extent practicable, must consult with State and local officials before implementing any such action.

We have reviewed this rule under E.O.13132 and have concluded that the rule does not have federalism implications as defined by the Executive Order. We have determined that the rule does not significantly affect the rights, roles, and responsibilities of States, and involves no preemption of State law nor does it limit State policymaking discretion.

However, we have consulted with State and local officials. In order to assist us in the development of this rule, we hosted a meeting to allow interested parties an opportunity to provide their perspectives on the legislation and options for implementation of § 322. Stakeholders who attended the meeting included representatives from the National Emergency Management Association, the Association of State Floodplain Managers, the National Governors' Association, the International Association of Emergency Managers, the National Association of Development Organizations, the American Public Works Association, the National League of Cities, the National Association of Counties, the National Conference of State Legislatures, the International City/County Management Association, and the Bureau of Indian Affairs. We received valuable input from all parties at the meeting, which we took into account in the development of this rule. Additionally, we actively encourage and solicit comments on this interim final rule from interested parties, and we will

consider them in preparing the final rule.

Executive Order 13175, Consultation and Coordination With Indian Tribal Governments

We have reviewed this interim final rule under Executive Order 13175, which became effective on February 6, 2001. Under the Hazard Mitigation Grant Program (HMGP), Indian tribal governments will have the option to apply for grants directly to us and to serve as ''grantee'', carrying out ''State'' roles. If they choose this option, tribal governments may submit either a State-level Standard Mitigation Plan for the 15 percent HMGP funding or a State-level Enhanced Mitigation Plan for 20 percent HMGP funding. In either case, Indian tribal governments would be able to spend up to 7 percent of those funds on planning. Before developing this rule, we met with representatives from State and local governments and the Bureau of Indian Affairs, to discuss the new planning opportunities and requirements of § 322 of the Stafford Act. We received valuable input from all parties, which helped us to develop this interim final rule.

In reviewing the interim final rule, we find that it does not have ''tribal implications'' as defined in Executive Order 13175 because it will not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes. Moreover, the interim final rule does not impose substantial direct compliance costs on tribal governments, nor does it preempt tribal law, impair treaty rights or limit the self-governing powers of tribal governments.

Congressional Review of Agency Rulemaking

We have sent this interim final rule to the Congress and to the General Accounting Office under the Congressional Review of Agency Rulemaking Act, Public Law 104–121. The rule is a not ''major rule'' within the meaning of that Act. It is an administrative action in support of normal day-to-day mitigation planning activities required by section 322 and compliance under section 323 of the Stafford Act, as enacted in DMA 2000.

The rule will not result in a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions. It will not have ''significant adverse effects'' on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises. This final rule is subject to the information collection requirements of the Paperwork Reduction Act, and OMB has assigned Control No. 3067–0297. The rule is not an unfunded Federal mandate within the meaning of the Unfunded Mandates Reform Act of 1995, Public Law 104–4, and any enforceable duties that we impose are a condition of Federal assistance or a duty arising from participation in a voluntary Federal program.

List of Subjects in 44 CFR Part 201 and Part 206

Administrative practice and procedure, Disaster assistance, Grant programs, Mitigation planning, Reporting and recordkeeping requirements.

Accordingly, Amend 44 CFR, Subchapter D—Disaster Assistance, as follows:

1. Add Part 201 to read as follows:

PART 201—MITIGATION PLANNING

Sec.

Authority: Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121–5206; Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; E.O. 12127, 44 FR 19367, 3 CFR, 1979 Comp., p. 376; E.O. 12148, 44 FR 43239, 3 CFR, 1979 Comp., p. 412; and E.O. 12673, 54 FR 12571, 3 CFR, 1989 Comp., p. 214.

§ 201.1 Purpose.

(a) The purpose of this part is to provide information on the polices and procedures for mitigation planning as required by the provisions of section 322 of the Stafford Act, 42 U.S.C. 5165.

(b) The purpose of mitigation planning is for State, local, and Indian tribal governments to identify the natural hazards that impact them, to identify actions and activities to reduce any losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources.

§ 201.2 Definitions.

Grantee means the government to which a grant is awarded, which is accountable for the use of the funds provided. The grantee is the entire legal entity even if only a particular component of the entity is designated in the grant award document. Generally, the State is the grantee. However, after a declaration, an Indian tribal government may choose to be a grantee, or may act as a subgrantee under the State. An Indian tribal government acting as grantee will assume the responsibilities of a ''state'', as described in this part, for the purposes of administering the grant.

Hazard mitigation means any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.

Hazard Mitigation Grant Program means the program authorized under section 404 of the Stafford Act, 42 U.S.C 5170c and implemented at 44 CFR Part 206, Subpart N, which authorizes funding for certain mitigation measures identified through the evaluation of natural hazards conducted under section 322 of the Stafford Act 42 U.S.C 5165.

Indian tribal government means any Federally recognized governing body of an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of Interior acknowledges to exist as an Indian tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

Local government is any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.

Managing State means a State to which FEMA has delegated the authority to administer and manage the HMGP under the criteria established by FEMA pursuant to 42 U.S.C. 5170c(c). FEMA may also delegate authority to tribal governments to administer and manage the HMGP as a Managing State.

Regional Director is a director of a regional office of FEMA, or his/her designated representative.

Small and impoverished communities means a community of 3,000 or fewer individuals that is identified by the State as a rural community, and is not a remote area within the corporate boundaries of a larger city; is economically disadvantaged, by having an average per capita annual income of residents not exceeding 80 percent of national, per capita income, based on

best available data; the local unemployment rate exceeds by one percentage point or more, the most recently reported, average yearly national unemployment rate; and any other factors identified in the State Plan in which the community is located.

The Stafford Act refers to the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93–288, as amended (42 U.S.C. 5121–5206).

State is any State of the United States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

State Hazard Mitigation Officer is the official representative of State government who is the primary point of contact with FEMA, other Federal agencies, and local governments in mitigation planning and implementation of mitigation programs and activities required under the Stafford Act.

Subgrantee means the government or other legal entity to which a subgrant is awarded and which is accountable to the grantee for the use of the funds provided. Subgrantees can be a State agency, local government, private non-profit organizations, or Indian tribal government. Indian tribal governments acting as a subgrantee are accountable to the State grantee.

§ 201.3 Responsibilities.

(a) *General.* This section identifies the key responsibilities of FEMA, States, and local/tribal governments in carrying out section 322 of the Stafford Act, 42 U.S.C. 5165.

(b) *FEMA.* The key responsibilities of the Regional Director are to:

(1) Oversee all FEMA related pre- and post-disaster hazard mitigation programs and activities;

(2) Provide technical assistance and training to State, local, and Indian tribal governments regarding the mitigation planning process;

(3) Review and approve all Standard and Enhanced State Mitigation Plans;

(4) Review and approve all local mitigation plans, unless that authority has been delegated to the State in accordance with § 201.6(d);

(5) Conduct reviews, at least once every three years, of State mitigation activities, plans, and programs to ensure that mitigation commitments are fulfilled, and when necessary, take action, including recovery of funds or denial of future funds, if mitigation commitments are not fulfilled.

(c) *State.* The key responsibilities of the State are to coordinate all State and local activities relating to hazard evaluation and mitigation and to:

(1) Prepare and submit to FEMA a Standard State Mitigation Plan following the criteria established in § 201.4 as a condition of receiving Stafford Act assistance (except emergency assistance).

(2) In order to be considered for the 20 percent HMGP funding, prepare and submit an Enhanced State Mitigation Plan in accordance with § 201.5, which must be reviewed and updated, if necessary, every three years from the date of the approval of the previous plan.

(3) At a minimum, review and, if necessary, update the Standard State Mitigation Plan by November 1, 2003 and every three years from the date of the approval of the previous plan in order to continue program eligibility.

(4) Make available the use of up to the 7 percent of HMGP funding for planning in accordance with § 206.434.

(5) Provide technical assistance and training to local governments to assist them in applying for HMGP planning grants, and in developing local mitigation plans.

(6) For Managing States that have been approved under the criteria established by FEMA pursuant to 42 U.S.C. 5170c(c), review and approve local mitigation plans in accordance with § 201.6(d).

(d) *Local governments.* The key responsibilities of local governments are to:

(1) Prepare and adopt a jurisdiction-wide natural hazard mitigation plan as a condition of receiving project grant funds under the HMGP, in accordance with § 201.6.

(2) At a minimum, review and, if necessary, update the local mitigation plan every five years from date of plan approval to continue program eligibility.

(e) *Indian tribal governments.* Indian tribal governments will be given the option of applying directly to us for Hazard Mitigation Grant Program funding, or they may choose to apply through the State. If they apply directly to us, they will assume the responsibilities of the State, or grantee, and if they apply through the State, they will assume the responsibilities of the local government, or subgrantee.

§ 201.4 Standard State Mitigation Plans.

(a) *Plan requirement.* By November 1, 2003, States must have an approved Standard State Mitigation plan meeting the requirements of this section, in order to receive assistance under the Stafford Act, although assistance authorized under disasters declared prior to November 1, 2003 will continue to be made available. In any case, emergency assistance provided under 42 U.S.C. 5170a, 5170b, 5173, 5174, 5177, 5179, 5180, 5182, 5183, 5184, 5192 will not be affected. The mitigation plan is the demonstration of the State's commitment to reduce risks from natural hazards and serves as a guide for State decision makers as they commit resources to reducing the effects of natural hazards. States may choose to include the requirements of the HMGP Administrative Plan in their mitigation plan.

(b) *Planning process.* An effective planning process is essential in developing and maintaining a good plan. The mitigation planning process should include coordination with other State agencies, appropriate Federal agencies, interested groups, and be integrated to the extent possible with other ongoing State planning efforts as well as other FEMA mitigation programs and initiatives.

(c) *Plan content.* To be effective the plan must include the following elements:

(1) Description of the *planning process* used to develop the plan, including how it was prepared, who was involved in the process, and how other agencies participated.

(2) *Risk assessments* that provide the factual basis for activities proposed in the strategy portion of the mitigation plan. Statewide risk assessments must characterize and analyze natural hazards and risks to provide a statewide overview. This overview will allow the State to compare potential losses throughout the State and to determine their priorities for implementing mitigation measures under the strategy, and to prioritize jurisdictions for receiving technical and financial support in developing more detailed local risk and vulnerability assessments. The risk assessment shall include the following:

(i) An overview of the type and location of all natural hazards that can affect the State, including information on previous occurrences of hazard events, as well as the probability of future hazard events, using maps where appropriate;

(ii) An overview and analysis of the State's vulnerability to the hazards described in this paragraph (c)(2), based on estimates provided in local risk assessments as well as the State risk assessment. The State shall describe vulnerability in terms of the jurisdictions most threatened by the identified hazards, and most vulnerable to damage and loss associated with hazard events. State owned critical or operated facilities located in the

identified hazard areas shall also be addressed;

(iii) An overview and analysis of potential losses to the identified vulnerable structures, based on estimates provided in local risk assessments as well as the State risk assessment. The State shall estimate the potential dollar losses to State owned or operated buildings, infrastructure, and critical facilities located in the identified hazard areas.

(3) A *Mitigation Strategy* that provides the State's blueprint for reducing the losses identified in the risk assessment. This section shall include:

(i) A description of State goals to guide the selection of activities to mitigate and reduce potential losses.

(ii) A discussion of the State's pre- and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including: an evaluation of State laws, regulations, policies, and programs related to hazard mitigation as well as to development in hazard-prone areas; a discussion of State funding capabilities for hazard mitigation projects; and a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.

(iii) An identification, evaluation, and prioritization of cost-effective, environmentally sound, and technically feasible mitigation actions and activities the State is considering and an explanation of how each activity contributes to the overall mitigation strategy. This section should be linked to local plans, where specific local actions and projects are identified.

(iv) Identification of current and potential sources of Federal, State, local, or private funding to implement mitigation activities.

(4) A section on the *Coordination of Local Mitigation Planning* that includes the following:

(i) A description of the State process to support, through funding and technical assistance, the development of local mitigation plans.

(ii) A description of the State process and timeframe by which the local plans will be reviewed, coordinated, and linked to the State Mitigation Plan.

(iii) Criteria for prioritizing communities and local jurisdictions that would receive planning and project grants under available funding programs, which should include consideration for communities with the highest risks, repetitive loss properties, and most intense development pressures. Further, that for non-planning grants, a principal criterion for prioritizing grants shall be the extent to which benefits are maximized according to a cost benefit review of proposed projects and their associated costs.

(5) A *Plan Maintenance Process* that includes:

(i) An established method and schedule for monitoring, evaluating, and updating the plan.

(ii) A system for monitoring implementation of mitigation measures and project closeouts.

(iii) A system for reviewing progress on achieving goals as well as activities and projects identified in the Mitigation Strategy.

(6) A *Plan Adoption Process.* The plan must be formally adopted by the State prior to submittal to us for final review and approval.

(7) *Assurances.* The plan must include assurances that the State will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding, in compliance with 44 CFR 13.11(c). The State will amend its plan whenever necessary to reflect changes in State or Federal laws and statutes as required in 44 CFR 13.11(d).

(d) *Review and updates.* Plan must be reviewed and revised to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities and resubmitted for approval to the appropriate Regional Director every three years. The Regional review will be completed within 45 days after receipt from the State, whenever possible. We also encourage a State to review its plan in the post-disaster timeframe to reflect changing priorities, but it is not required.

§ 201.5 Enhanced State Mitigation Plans.

(a) A State with a FEMA approved Enhanced State Mitigation Plan at the time of a disaster declaration is eligible to receive increased funds under the HMGP, based on twenty percent of the total estimated eligible Stafford Act disaster assistance. The Enhanced State Mitigation Plan must demonstrate that a State has developed a comprehensive mitigation program, that the State effectively uses available mitigation funding, and that it is capable of managing the increased funding. In order for the State to be eligible for the 20 percent HMGP funding, FEMA must have approved the plan within three years prior to the disaster declaration.

(b) Enhanced State Mitigation Plans must include all elements of the Standard State Mitigation Plan identified in § 201.4, as well as document the following:

(1) Demonstration that the plan is integrated to the extent practicable with other State and/or regional planning initiatives (comprehensive, growth management, economic development, capital improvement, land development, and/or emergency management plans) and FEMA mitigation programs and initiatives that provide guidance to State and regional agencies.

(2) Documentation of the State's project implementation capability, identifying and demonstrating the ability to implement the plan, including:

(i) Established eligibility criteria for multi-hazard mitigation measures.

(ii) A system to determine the cost effectiveness of mitigation measures, consistent with OMB Circular A–94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, and to rank the measures according to the State's eligibility criteria.

(iii) Demonstration that the State has the capability to effectively manage the HMGP as well as other mitigation grant programs, including a record of the following:

(A) Meeting HMGP and other mitigation grant application timeframes and submitting complete, technically feasible, and eligible project applications with appropriate supporting documentation;

(B) Preparing and submitting accurate environmental reviews and benefit-cost analyses;

(C) Submitting complete and accurate quarterly progress and financial reports on time; and

(D) Completing HMGP and other mitigation grant projects within established performance periods, including financial reconciliation.

(iv) A system and strategy by which the State will conduct an assessment of the completed mitigation actions and include a record of the effectiveness (actual cost avoidance) of each mitigation action.

(3) Demonstration that the State effectively uses existing mitigation programs to achieve its mitigation goals.

(4) Demonstration that the State is committed to a comprehensive state mitigation program, which might include any of the following:

(i) A commitment to support local mitigation planning by providing workshops and training, State planning grants, or coordinated capability development of local officials, including Emergency Management and Floodplain Management certifications.

(ii) A statewide program of hazard mitigation through the development of legislative initiatives, mitigation councils, formation of public/private

partnerships, and/or other executive actions that promote hazard mitigation.

(iii) The State provides a portion of the non-Federal match for HMGP and/or other mitigation projects.

(iv) To the extent allowed by State law, the State requires or encourages local governments to use a current version of a nationally applicable model building code or standard that addresses natural hazards as a basis for design and construction of State sponsored mitigation projects.

(v) A comprehensive, multi-year plan to mitigate the risks posed to existing buildings that have been identified as necessary for post-disaster response and recovery operations.

(vi) A comprehensive description of how the State integrates mitigation into its post-disaster recovery operations.

(c) *Review and updates.* (1) A State must review and revise its plan to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities, and resubmit it for approval to the appropriate Regional Director every three years. The Regional review will be completed within 45 days after receipt from the State, whenever possible.

(2) In order for a State to be eligible for the 20 percent HMGP funding, the Enhanced State Mitigation plan must be approved by FEMA within the three years prior to the current major disaster declaration.

§ 201.6 Local Mitigation Plans.

The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the State to provide technical assistance and to prioritize project funding.

(a) *Plan requirement.* (1) For disasters declared after November 1, 2003, a local government must have a mitigation plan approved pursuant to this section in order to receive HMGP project grants. Until November 1, 2003, local mitigation plans may be developed concurrent with the implementation of the project grant.

(2) Regional Directors may grant an exception to the plan requirement in extraordinary circumstances, such as in a small and impoverished community, when justification is provided. In these cases, a plan will be completed within 12 months of the award of the project grant. If a plan is not provided within this timeframe, the project grant will be terminated, and any costs incurred after notice of grant's termination will not be reimbursed by FEMA.

(3) Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan. State-wide plans will not be accepted as multi-jurisdictional plans.

(b) *Planning process.* An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

(c) *Plan content.* The plan shall include the following:

(1) Documentation of the *planning process* used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

(2) A *risk assessment* that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include:

(i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of:

(A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

(B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate;

(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

(iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

(3) *A mitigation strategy* that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section shall include:

(i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

(ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

(iii) An action plan describing how the actions identified in paragraph (c)(2)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

(iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

(4) A *plan maintenance process* that includes:

(i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

(ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

(iii) Discussion on how the community will continue public participation in the plan maintenance process.

(5) *Documentation* that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

(d) *Plan review.* (1) Plans must be submitted to the State Hazard Mitigation Officer for initial review and coordination. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval.

(2) The Regional review will be completed within 45 days after receipt from the State, whenever possible.

(3) Plans must be reviewed, revised if appropriate, and resubmitted for approval within five years in order to continue to be eligible for HMGP project grant funding.

(4) Managing States that have been approved under the criteria established by FEMA pursuant to 42 U.S.C. 5170c(c) will be delegated approval authority for local mitigation plans, and the review will be based on the criteria in this part. Managing States will review the plans within 45 days of receipt of the plans, whenever possible, and provide a copy of the approved plans to the Regional Office.

PART 206—FEDERAL DISASTER ASSISTANCE FOR DISASTERS DECLARED ON OR AFTER NOVEMBER 23, 1988

2. The authority citation for part 206 is revised to read as follows:

Authority: Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121–5206; Reorganization Plan No. 3 of 1978, 43 FR 41943, 3 CFR, 1978 Comp., p. 329; E.O. 12127, 44 FR 19367, 3 CFR, 1979 Comp., p. 376; E.O. 12148, 44 FR 43239, 3 CFR, 1979 Comp., p. 412; and E.O. 12673, 54 FR 12571, 3 CFR, 1989 Comp., p. 214.

2a. Revise Part 206, Subpart M to read as follows:

Subpart M—Minimum Standards

Sec.

§ 206.400 General.

(a) As a condition of the receipt of any disaster assistance under the Stafford Act, the applicant shall carry out any repair or construction to be financed with the disaster assistance in accordance with applicable standards of safety, decency, and sanitation and in conformity with applicable codes, specifications and standards.

(b) Applicable codes, specifications, and standards shall include any disaster resistant building code that meets the minimum requirements of the National Flood Insurance Program (NFIP) as well as being substantially equivalent to the recommended provisions of the National Earthquake Hazards Reduction Program (NEHRP). In addition, the applicant shall comply with any requirements necessary in regards to Executive Order 11988, Floodplain Management, Executive Order 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction, and any other applicable Executive orders.

(c) In situations where there are no locally applicable standards of safety, decency and sanitation, or where there are no applicable local codes, specifications and standards governing repair or construction activities, or where the Regional Director determines that otherwise applicable codes, specifications, and standards are inadequate, then the Regional Director may, after consultation with appropriate State and local officials, require the use of nationally applicable codes, specifications, and standards, as well as safe land use and construction practices in the course of repair or construction activities.

(d) The mitigation planning process that is mandated by section 322 of the Stafford Act and 44 CFR part 201 can assist State and local governments in determining where codes, specifications, and standards are inadequate, and may need to be upgraded.

§ 206.401 Local standards.

The cost of repairing or constructing a facility in conformity with minimum codes, specifications and standards may be eligible for reimbursement under section 406 of the Stafford Act, as long as such codes, specifications and standards meet the criteria that are listed at 44 CFR 206.226(b).

§ 206.402 Compliance.

A recipient of disaster assistance under the Stafford Act must document for the Regional Director its compliance with this subpart following the completion of any repair or construction activities.

Subpart N—Hazard Mitigation Grant Program

3. Revise § 206.431 to read as follows:

§ 206.431 Definitions.

Activity means any mitigation measure, project, or action proposed to reduce risk of future damage, hardship, loss or suffering from disasters.

Applicant means a State agency, local government, Indian tribal government, or eligible private nonprofit organization, submitting an application to the grantee for assistance under the HMGP.

Enhanced State Mitigation Plan is the hazard mitigation plan approved under 44 CFR part 201 as a condition of receiving increased funding under the HMGP.

Grant application means the request to FEMA for HMGP funding, as outlined in § 206.436, by a State or tribal government that will act as grantee.

Grant award means total of Federal and non-Federal contributions to complete the approved scope of work.

Grantee means the government to which a grant is awarded and which is accountable for the use of the funds provided. The grantee is the entire legal entity even if only a particular component of the entity is designated in the grant award document. Generally, the State is the grantee. However, an Indian tribal government may choose to be a grantee, or it may act as a subgrantee under the State. An Indian tribal government acting as a grantee will assume the responsibilities of a ''state'', under this subpart, for the purposes of administering the grant.

Indian tribal government means any Federally recognized governing body of an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of Interior acknowledges to exist as an Indian tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.

Local Mitigation Plan is the hazard mitigation plan required of a local or Indian tribal government acting as a subgrantee as a condition of receiving a project subgrant under the HMGP as outlined in 44 CFR 201.6.

Standard State Mitigation Plan is the hazard mitigation plan approved under 44 CFR part 201, as a condition of receiving Stafford Act assistance as outlined in § 201.4.

State Administrative Plan for the Hazard Mitigation Grant Program means the plan developed by the State to describe the procedures for administration of the HMGP.

Subgrant means an award of financial assistance under a grant by a grantee to an eligible subgrantee.

Subgrant application means the request to the grantee for HMGP funding by the eligible subgrantee, as outlined in § 206.436.

Subgrantee means the government or other legal entity to which a subgrant is awarded and which is accountable to the grantee for the use of the funds provided. Subgrantees can be a State agency, local government, private non-profit organizations, or Indian tribal government as outlined in § 206.433.

Indian tribal governments acting as a subgrantee are accountable to the State grantee.

4. Revise § 206.432(b) to read as follows:

§ 206.432 Federal grant assistance.

* * * * *

(b) *Amounts of assistance.* The total of Federal assistance under this subpart shall not exceed either 15 or 20 percent of the total estimated Federal assistance (excluding administrative costs) provided for a major disaster under 42 U.S.C. 5170b, 5172, 5173, 5174, 5177, 5178, 5183, and 5201 as follows:

(1) *Fifteen (15) percent.* Effective November 1, 2003, a State with an approved Standard State Mitigation Plan, which meets the requirements outlined in 44 CFR 201.4, shall be eligible for assistance under the HMGP not to exceed 15 percent of the total estimated Federal assistance described in this paragraph. Until that date, existing, approved State Mitigation Plans will be accepted.

(2) *Twenty (20) percent.* A State with an approved Enhanced State Mitigation Plan, in effect prior to the disaster declaration, which meets the requirements outlined in 44 CFR 201.5 shall be eligible for assistance under the HMGP not to exceed 20 percent of the total estimated Federal assistance described in this paragraph.

(3) The estimates of Federal assistance under this paragraph (b) shall be based on the Regional Director's estimate of all eligible costs, actual grants, and appropriate mission assignments.

* * * * *

5. Section 206.434 is amended by redesignating paragraphs (b) through (g) as paragraphs (c) through (h), respectively; adding a new paragraph (b); revising redesignated paragraphs (c) introductory text and (c)(1); and revising redesignated paragraph (d) to read as follows:

§ 206.434 Eligibility.

* * * * *

(b) *Plan requirement.* (1) For all disasters declared on or after November 1, 2003, local and tribal government applicants for subgrants, must have an approved local mitigation plan in accordance with 44 CFR 201.6 prior to receipt of HMGP subgrant funding. Until November 1, 2003, local mitigation plans may be developed concurrent with the implementation of subgrants.

(2) Regional Directors may grant an exception to this requirement in extraordinary circumstances, such as in a small and impoverished community when justification is provided. In these cases, a plan will be completed within 12 months of the award of the project grant. If a plan is not provided within this timeframe, the project grant will be terminated, and any costs incurred after notice of grant's termination will not be reimbursed by FEMA.

(c) *Minimum project criteria.* To be eligible for the Hazard Mitigation Grant Program, a project must:

(1) Be in conformance with the State Mitigation Plan and Local Mitigation Plan approved under 44 CFR part 201;

* * * * *

(d) *Eligible activities.* (1) *Planning.* Up to 7% of the State's HMGP grant may be used to develop State, tribal and/or local mitigation plans to meet the planning criteria outlined in 44 CFR part 201.

(2) *Types of projects.* Projects may be of any nature that will result in protection to public or private property. Eligible projects include, but are not limited to:

(i) Structural hazard control or protection projects;

(ii) Construction activities that will result in protection from hazards;

(iii) Retrofitting of facilities;

(iv) Property acquisition or relocation, as defined in paragraph (e) of this section;

(v) Development of State or local mitigation standards;

(vi) Development of comprehensive mitigation programs with implementation as an essential component;

(vii) Development or improvement of warning systems.

* * * * *

6. Revise § 206.435(a) to read as follows:

§ 206.435 Project identificaiton and selection criteria.

(a) *Identification.* It is the State's responsibility to identify and select eligible hazard mitigation projects. All funded projects must be consistent with the State Mitigation Plan. Hazard Mitigation projects shall be identified and prioritized through the State, Indian tribal, and local planning process.

* * * * *

7. Revise § 206.436 to read as follows:

§ 206.436 Application procedures.

(a) *General.* This section describes the procedures to be used by the grantee in submitting an application for HMGP funding. Under the HMGP, the State or Indian tribal government is the grantee and is responsible for processing subgrants to applicants in accordance with 44 CFR part 13 and this part 206. Subgrantees are accountable to the grantee.

(b) *Governor's Authorized Representative.* The Governor's Authorized Representative serves as the grant administrator for all funds provided under the Hazard Mitigation Grant Program. The Governor's Authorized Representative's responsibilities as they pertain to procedures outlined in this section include providing technical advice and assistance to eligible subgrantees, and ensuring that all potential applicants are aware of assistance available and submission of those documents necessary for grant award.

(c) *Hazard mitigation application.* Upon identification of mitigation measures, the State (Governor's Authorized Representative) will submit its Hazard Mitigation Grant Program application to the FEMA Regional Director. The application will identify one or more mitigation measures for which funding is requested. The application must include a Standard Form (SF) 424, Application for Federal Assistance, SF 424D, Assurances for Construction Programs, if appropriate, and an narrative statement. The narrative statement will contain any pertinent project management information not included in the State's administrative plan for Hazard Mitigation. The narrative statement will also serve to identify the specific mitigation measures for which funding is requested. Information required for each mitigation measure shall include the following:

(1) Name of the subgrantee, if any;

(2) State or local contact for the measure;

(3) Location of the project;

(4) Description of the measure;

(5) Cost estimate for the measure;

(6) Analysis of the measure's cost-effectiveness and substantial risk reduction, consistent with § 206.434(c);

(7) Work schedule;

(8) Justification for selection;

(9) Alternatives considered;

(10) Environmental information consistent with 44 CFR part 9, Floodplain Management and Protection of Wetlands, and 44 CFR part 10, Environmental Considerations.

(d) *Application submission time limit.* The State's application may be amended as the State identifies and selects local project applications to be funded. The State must submit all local HMGP applications and funding requests for the purpose of identifying new projects to the Regional Director within 12 months of the date of disaster declaration.

(e) *Extensions.* The State may request the Regional Director to extend the application time limit by 30 to 90 day

increments, not to exceed a total of 180 days. The grantee must include a justification in its request.

(f) *FEMA approval.* The application and supplement(s) will be submitted to the FEMA Regional Director for approval. FEMA has final approval authority for funding of all projects.

(g) *Indian tribal grantees.* Indian tribal governments may submit a SF 424 directly to the Regional Director.

Subpart H—Public Assistance Eligibility

* * * * *

8. Revise § 206.220 to read as follows:

§ 206.220 General.

This subpart provides policies and procedures for determinations of eligibility of applicants for public assistance, eligibility of work, and eligibility of costs for assistance under sections 402, 403, 406, 407, 418, 419, 421(d), 502, and 503 of the Stafford Act. Assistance under this subpart must also conform to requirements of 44 CFR part 201, Mitigation Planning, and 44 CFR part 206, subparts G—Public Assistance Project Administration, I—Public Assistance Insurance Requirements, J—Coastal Barrier Resources Act, and M—Minimum Standards. Regulations under 44 CFR part 9—Floodplain Management and 44 CFR part 10—Environmental Considerations, also apply to this assistance.

9. Section 206.226 is amended by redesignating paragraphs

(b) through (j) as paragraphs (c) through (k), respectively; adding a new paragraph (b); and revising redesignated paragraph (g)(5) to read as follows:

§ 206.226 Restoration of damaged facilities.

* * * * *

(b) *Mitigation planning.* In order to receive assistance under this section, as of November 1, 2003, the State must have in place a FEMA approved State Mitigation Plan in accordance with 44 CFR part 201.

* * * * *

(g) * * *

(5) If relocation of a facility is not feasible or cost effective, the Regional Director shall disapprove Federal funding for the original location when he/she determines in accordance with 44 CFR parts 9, 10, 201, or subpart M of this part 206, that restoration in the original location is not allowed. In such cases, an alternative project may be applied for.

* * * * *

Dated: February 19, 2002.

Michael D. Brown,

General Counsel.

[FR Doc. 02–4321 Filed 2–25–02; 8:45 am]

BILLING CODE 6718–05–P

Appendix 1.2
Letters of Intent

COMMONWEALTH of VIRGINIA

Department of Emergency Management

MICHAEL M CLINE
State Coordinator

JANET L. CLEMENTS
Deputy Coordinator

BRETT A. BURDICK
Deputy Coordinator

10501 Trade Court
Richmond, Virginia 23236-3713
(804) 897-6500
(TDD) 674-2417
FAX (804) 897-6506

To: Virginia Planning District Commission Executive Directors

From: George Roarty, Recovery and Mitigation Division Director

Subject: FY 2010 FEMA Unified Hazard Mitigation Grant Program

Date: June 9, 2009

The Virginia Department of Emergency Management (VDEM) is pleased to announce that the period of availability for four of FEMA's five hazard mitigation program grants opened on June 1, 2009. To ensure project application eligibility and entry into FEMA's eGRANTS system all project applications must be submitted to VDEM on or before 5:00 PM Thursday, October 15, 2009. The four annually funded hazard mitigation programs must be cost-effective and compliant with the *FY 2010 Hazard Mitigation Assistance (HMA) Unified Guidance*. A brief summary follows:

The **Pre-Disaster Mitigation Grant Program (PDM)** is a nationally competitive program. The federal share is 75% with the remaining 25% from non-federal funds. The program supports local all-hazard mitigation plan development and revision, disaster resistant university plans and mitigation projects.

The **Repetitive Flood Claims Program (RFC)** is a nationally competitive program targeting repetitive loss structures. Listed properties are available for your community through VDEM upon request, privacy must be maintained regarding these databases. Applicant structures must be insured through the National Flood Insurance Program. The federal share is either 90% but can be up to 100% if specific criteria are met.

The **Flood Mitigation Assistance Program (FMA)** provides an annual appropriation in flood mitigation funds for Virginia based on the number of flood insurance policies in effect. Some states cannot use their allocation and their funds may be available through a nationally competitive process. The program targets repetitive loss properties in local jurisdictions with an approved FMA plan or FMA-compliant all hazard mitigation plan. The federal share for this program is 75%

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, the City of Lynchburg hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

The **City of Lynchburg** enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, **City of Lynchburg** agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name: __City of Lynchburg_____

Locality Administrator: __L. Kimball Payne_____

Phone #/Email: (434)455-3990 kpayne@lynchburgva.gov

Planning Agency Contact: _William A. Aldrich_____

Phone #/Email: (434)455-4285 william.aldrich@lynchburgva.gov

Affirmation (please check one):

☒ **City of Lynchburg** WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ **City of Lynchburg** WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update,** nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

L Kimball Payne City Manager — 9/29/09
Administrator **Date**

William A. Aldrich — 9/30/09
Planning Agency Contact **Date**

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, Amherst County hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

Amherst County enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, Amherst County agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name: __Amherst County_____

Locality Administrator: __C. Lee Lintecum_____

Phone #/Email: __434-946-9400_____

Planning Agency Contact: __Gary M. Roakes_____

Phone #/Email: 434-946-9307 gmroakes@countyofamhest.com

Affirmation (please check one):

☒ Amherst County WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ Amherst County WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update**, nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

C. Lee Lintecum
Administrator

November 12, 2009
Date

Gary M. Roakes
Planning Agency Contact

November 12, 2009_
Date

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, Appomattox County hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

Appomattox County enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, **Appomattox County** agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name:	Appomattox County
Locality Administrator:	Aileen T. Ferguson
Phone #/Email:	434/352/2637; aileen.ferguson@appomattoxcountyva.gov
Planning Agency Contact:	Johnnie Roark
Phone #/Email:	434/352/2637; johnnie.roark@appomattoxcountyva.gov

Affirmation (please check one):

- ☑ Appomattox County WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

- ☐ **Appomattox County** WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update,** nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

Aileen T. Ferguson — 10/1/09
Administrator — **Date**

John C. Roark — 10/1/09
Planning Agency Contact — **Date**

Bedford County

OFFICE OF THE COUNTY ADMINISTRATOR

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, Bedford County hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

Bedford County enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, Bedford County agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name:	Bedford County
Locality Administrator:	Kathleen D. Guzi
Phone #/Email:	540.586.7601 / k.guzi@co.bedford.va.us
Planning Agency Contact:	Jack W. Jones, Jr., Fire & Rescue Chief
Phone #/Email:	540.587.0700 / j.jones@co.bedford.va.us

Affirmation (please check one):

☑ Bedford County WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ Bedford County WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update,** nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

Kathleen D Guzi — September 21, 2009
Administrator **Date**

Jack W. Jones, Jr. — Sept 24 2009
Planning Agency Contact **Date**

122 EAST MAIN STREET, SUITE 202, BEDFORD, VIRGINIA 24523
(540) 586-7601 • FAX: (540) 586-0406
www.co.bedford.va.us

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, "~~Insert Jurisdiction~~ Campbell Co" hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

Campbell County enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above. Any funding commitments herein required would be subject to Board of Supervisors approval and appropriation.

Upon conclusion of the process, **Campbell County** agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III

Locality Name:	Campbell County
Locality Administrator:	C. William Gillespie Jr.
Phone #/Email:	434-332-9642 cwgillespie@co.campbell.va.us
Planning Agency Contact:	Karen C. Briggs
Phone #/Email:	434-332-9843 kcbriggs@co.campbell.va.us

Affirmation (please check one):

☒ Campbell County WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ **Campbell County** WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update**, nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

C. William Gillespie
Administrator

11/5/09
Date

Karen C Briggs
Planning Agency Contact

11/5/09
Date

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, the **Town of Altavista** hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

The Town of Altavista enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, the Town of Altavista agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name:	Town of Altavista
Locality Administrator:	J.W. Coggsdale, III
Phone #/Email:	434-369-5001/ jwcoggsdale@ci.altavista.va.us
Planning Agency Contact:	Daniel Witt, MPA,
Phone #/Email:	434-369-5001/ dnwitt@ci.altavista.va.us

Affirmation (please check one):

☒ The Town of Altavista WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ The Town of Altavista WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update,** nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

Administrator	10-15-09 **Date**
Planning Agency Contact	10-15-09 **Date**

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, Town of Amherst hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

Town of Amherst enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, **Town of Amherst** agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name: Town of Amherst

Locality Administrator: Jack Hobbs

Phone #/Email: 434.946.7885 jack.hobbs@amherstva.gov

Planning Agency Contact: Jack Hobbs

Phone #/Email: 434.946.7885 jack.hobbs@amherstva.gov

Affirmation (please check one):

X Town of Amherst WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ Town of Amherst WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update,** nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

_____ 10/15/09
Administrator **Date**

_____ 10/15/09
Planning Agency Contact **Date**

P. O. BOX 705
210 LINDEN STREET
APPOMATTOX, VA 24522

PHONE: (434) 352-8268
FAX: (434) 352-2126

TOWN MANAGER
BART S. VAN NIEUWENHUISE

Town of Appomattox

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, **Town of Appomattox** hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

Town of Appomattox enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, **Town of Appomattox"** agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name:	Town of Appomattox
Locality Administrator:	Bart S. Van Nieuwenhuise
Phone #/Email:	434.352.8268 bvannieuwenhuise@appomattoxva.gov
Planning Agency Contact:	SAME
Phone #/Email:	SAME

Affirmation (please check one):

☑ **Town of Appomattox** WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ **Town of Appomattox** WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update,** nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

Bart S Van Nieuwenhuise — 10-9-09
Administrator **Date**

Bart S Van Nieuwenhuise — 10-9-09
Planning Agency Contact **Date**

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, **the Town of Brookneal** hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

The Town of Brookneal enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, **the Town of Brookneal** agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name:	Town of Brookneal
Locality Administrator:	Buster Nicholson
Phone #/Email:	434.376.3124/townmanager@townofbrookneal.com
Planning Agency Contact:	~~Region 2000~~ SAME
Phone #/Email:	SAME

Affirmation (please check one):

X **The Town of Brookneal** WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ **The Town of Brookneal** WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update,** nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

Amos Nicholson — 11-10-09
Administrator — 11-10-09 **Date**

SAME — SAME
Planning Agency Contact — **Date**

Letter of Intent
To Participate in the Region 2000 All Hazard Mitigation Plan Update

By signing this Letter of Intent, "Insert Jurisdiction" hereby commits to participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** to be prepared by the Region 2000 Local Government Council in accordance with the requirements outlined in the Code of Federal Regulations Title 44 Part 201.6, and guidance provided by the Virginia Department of Emergency Management.

"Insert Jurisdiction" enters into this agreement voluntarily and commits to participate fully in the plan revision, acknowledging that such participation shall include, but not limited to, local attendance/representation at upcoming planning and public meetings, responses to detailed inquiries and data requests, and fulfillment of the local match requirement by providing and tracking in-kind services and materials associated with those activities described above.

Upon conclusion of the process, **"Insert Jurisdiction"** agrees to submit the completed revised plan to its governing body for formal adoption as required under the Code of Virginia Sections 15.2-2226 and 15.2-2231 following preliminary approval by the Virginia Department of Emergency Management and the Federal Emergency Management Agency (FEMA), Region III.

Locality Name: Town of Pamplin City, VA

Locality Administrator: Robert G. Mitchell, Mayor

Phone #/Email: Ph. 434-248-6514, townofpamplin@aol.com

Planning Agency Contact: SAME

Phone #/Email: SAME

Affirmation (please check one):

☒ **"Insert Jurisdiction"** WILL participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update** in accordance with the agreement, regulations, and guidance cited above, and in accordance with any grant agreements made to provide the region with federal and/or state funding to support such revisions.

☐ **"Insert Jurisdiction"** WILL NOT participate in the revision of the **Region 2000 All Hazard Mitigation Plan Update,** nor will it seek to develop its own mitigation plan as described by the regulations and guidance cited above. Furthermore, this locality understands that by NOT developing a plan, or participating in the revision of the regional plan, it will not be eligible for the federal and/or state hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP) and the annual Hazard Mitigation Assistance (HMA) programs.

Signatures:

Robert G. Mitchell — Nov 16, 2009
Administrator **Date**

Robert G. Mitchell — Nov 16, 2009
Planning Agency Contact **Date**

Section IV

Appendix

Planning Process

Appendix 4.1

Letter stating change of budget

Region 2000 Local Government Council
828 Main Street, 12th Floor
Lynchburg, Virginia 24504
Phone: 434-845-3491
Fax: 434-845-3493
www.region2000.org

April 12, 2011

Mr. Michael M. Cline, State Coordinator of Emergency Management
Virginia Department of Emergency Management
10501 Trade Court
Richmond, VA 23236

RE: Hazard Mitigation Grant PDM-2010-000-003

Dear Mr. Cline,

We would appreciate your consideration in the allowing the Region 2000 staff to update our regional Hazard Mitigation Grant instead of using an outside consultant.

Carrying out the process in house will allow Region 2000 staff to expand their mitigation knowledge to further assist localities in identifying projects to reduce future impacts from hazard events. Our staff already has existing knowledge of the area and relationships with members of the Project Management Team which will encourage a dynamic planning process. Our staff also has the technical capability to facilitate the plan update which will include a revised and updated hazard identification and risk assessment, vulnerability analysis, capability assessment, community profiles, and updated goals and strategies.

No additional funds are requested as part of this change. This request would change the budget and the timeline for the project.

Thanks for your consideration. Bob White, LGC Deputy Director is coordinating our work on this project and can be reached at 434 845-5678 x 220 or bwhite@region2000.org if you have any questions about our request.

Sincerely,

Gary Christie
Executive Director

CC Bob White
Phillip Gabathuler

Attachments:
Revised Scope of work
Revised Budget
Revised Timeline

Appendix 4.2
Hazard Mitigation Assistance cost-share requirements

Region 2000 Local Government Council
828 Main Street, 12th Floor
Lynchburg, VA 24504
Phone: 434-845-3491
Fax: 434-845-3493
www.region2000.org

October 13, 2009

Mr. George Roarty
Director, Recovery and Mitigation
Virginia Department of Emergency Management
10501 Trade Court
Richmond, VA 23236

RE: Hazard Mitigation Assistance cost-share requirements

Dear Mr. Roarty:

The Region 2000 Local Government Council is applying for FY2010 Pre-Disaster Mitigation (PDM) Grant Program funded through the Federal Emergency Management Agency. We understand that the PDM grant requires a 75% federal and 25% non-federal cost share. The non-federal cost share will be fulfilled by the participating localities' cash contribution.

The Region 2000 Local Government Council recognizes that the goal of the PDM program and mitigation planning is to identify natural hazards and reduce risk and vulnerability. Based on our previous experience managing the Region 2000 Regional Commission All Hazard Mitigation Plan planning grant (VA1491-000-011, August 17, 2004, FEMA disaster number 1491) we are well positioned to implement and administer the project with that goal in mind.

We break down the non-federal match as follows:

Amherst Co.	2,403.69
Appomattox Co.	983.31
Bedford Co.	5,348.40
Campbell Co.	3,862.30
Bedford City	486.60
Lynchburg	5,711.53
Altavista	200.00
Amherst Town	200.00
Appomattox Town	200.00
Brookneal	200.00
Pamplin	200.00

Sincerely,

Gary F. Christie
Executive Director

Virginia Department of Emergency Management

Summary Sheet for Application Assurances and Certifications

Name of Applicant: Region 2000 Lcoal Government Council

Project Title: Region 2000 All Hazard Mitigation Plan Update/Revision

Applicant's Designated Agent: Gary F. Christie, Exective Director

This summary sheet references Assurances and Certifications that must be read, signed and submitted as part of each application for hazard mitigation funding. The Applicant's Designated Agent must indicate each item included in the application package. Failure to submit this required information will result in the delay or possible removal of the application from hazard mitigation funding consideration.

The complete application package includes submittal of the following items:

- [x] Application for Pre-Disaster Mitigation funding
- [na] Signed Maintenance Agreement
- [x] Signed FEMA Form 20-16 which includes the following:
  - [x] FEMA Form 20-16A- Assurances- Non-Construction Programs (if applicable to project type)
  - [na] FEMA Form 20-16B- Assurances- Construction Programs (if applicable to project type)
  - [x] Completed FEMA Form 20-16C- Certifications Regarding Lobbying: Debarment, Suspension, and Other Responsibility Matters: and Drug Free Workplace Requirements
  - [x] Completed and Signed SF LLL- Disclosure of Lobbying Activities

The undersigned certifies that the checked items have been read and signed.

GARY F. CHRISTIE — *Name of Designated Agent*

EXECUTIVE DIRECTOR — *Title*

Gary F Christie — *Signature of Designated Agent*

10/14/09 — *Date*

APPLICATION FOR FEDERAL ASSISTANCE

OMB Approval No. 0348-0043

2. DATE SUBMITTED	Applicant Identifier
3. DATE RECEIVED BY STATE	State Application Identifier
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

1. TYPE OF SUBMISSION:

Application: [ ] Construction [X] Non-Construction
Preapplication: [ ] Construction [ ] Non-Construction

5. APPLICANT INFORMATION

Legal Name: Region 2000 Local Government Council

Organizational Unit:

Address (give city, county, state, and zip code):
828 Main Street, 12th Floor, Lychburg, VA 24504-1522

Name and telephone number of person to be contacted on matters involving this application (give area code)
Bob White 434.845.3491

6. EMPLOYER IDENTIFICATION NUMBER (EIN): 54-0850361

6.a. DUNS NUMBER 130508539

7. TYPE OF APPLICANT: (enter appropriate letter in box) [I]

A. State
B. County
C. Municipal
D. Township
E. Interstate
F. Intermunicipal
G. Special District
H. Independent School Dist.
I. State Controlled Institution of Higher Learning
J. Private University
K. Indian Tribe
L. Individual
M. Profit Organization
N. Other (Specify) _____

8. TYPE OF APPLICATION:

[X] New [ ] Continuation [ ] Revision

If Revision, enter appropriate letter(s) in box(es) [ ] [ ]

A. Increase Award
B. Decrease Award
C. Decrease Duration
D. Decrease Duration
Other (specify):

9. NAME OF FEDERAL AGENCY:
Federal Emergency Management Agency

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 97-047

TITLE: pre disaster mitigation program grant

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:
Region 2000 All Hazard Mitigation Plan Update/Revision

12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.):
counties of Appomattox, Amherst, Bedford, Campbell, cities of Lychburg, Bedford, towns of Pamplin, Altavista, Amherst, Brookneal, Appomattox

13. PROPOSED PROJECT:

Start Date	Ending Date
7102010	6302012

14. CONGRESSIONAL DISTRICTS OF:

a. Applicant	b. Project
Region 2000 Local Government Council	Region 2000 All Hazard Mitigation Plan Update/Revision

15. ESTIMATED FUNDING:

a. Federal	$ 58,500.00
b. Applicant	$
c. State	$
d. Local	$ 19,500.00
e. Other	$
f. Program Income	$
g. TOTAL	$ 78,000.00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:
DATE: _____

b. NO. [X] PROGRAM IS NOT COVERED BY E.O. 12372
[ ] OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

[ ] Yes If "Yes," attach an explanation [X] No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Type Name of Authorized Representative	b. Title	c. Telephone Number
Gary F.Christie	Exzecutive Director	434.845.3491

d. Signature of Authorized Representative: Gary F Christie

e. Date Signed: 10/14/09

Previous Edition Usable
Authorized for Local Reproduction

Standard Form 424 (REV. 7-97)
Prescribed by OMB Circular A-102

FEDERAL EMERGENCY MANAGEMENT AGENCY SUMMARY SHEET FOR ASSURANCES AND CERTIFICATIONS	O.M.B. No. 3067-0206 Expires February 29, 2004

FOR FY 2011	CA FOR *(Name of Applicant)* Region 2000 Local Government Council

This summary sheet includes Assurances and Certifications that must be read, signed, and submitted as a part of the Application for Federal Assistance.

An applicant must check each item that they are certifying to:

Part I	[x]	**FEMA Form 20-16A, Assurances-Nonconstruction Programs**
Part II	[ ]	**FEMA Form 20-16B, Assurances-Construction Programs**
Part III	[x]	**FEMA Form 20-16C, Certifications Regarding Lobbying; Debarment, Suspension, and Other Responsibility Matters; and Drug-Free Workplace Requirements**
Part IV	[x]	**SF LLL, Disclosure of Lobbying Activities (If applicable)**

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the identified attached assurances and certifications.

Gary F. Christie **Typed Name of Authorized Representative**	**Executive Director** **Title**
Gary F. Christie **Signature of Authorized Representative**	10/14/09 **Date Signed**

NOTE: By signing the certification regarding debarment, suspension, and other responsibility matters for primary covered transaction, the applicant agrees that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by FEMA entering into this transaction.

The applicant further agrees by submitting this application that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the FEMA Regional Office entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions. (Refer to 44 CFR Part 17.)

Paperwork Burden Disclosure Notice

"Public reporting burden for this form is estimated to average 1.7 hours per response. Burden means the time, effort and financial resources expended by persons to generate, maintain, retain, disclose, or to provide information to us. You may send comments regarding the burden estimate or any aspect of the form, including suggestions for reducing the burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0206). You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Please do not send your completed form to the above address.

FEDERAL EMERGENCY MANAGEMENT AGENCY

ASSURANCES-NON-CONSTRUCTION PROGRAMS

Note: Certain of these assurances may not be applicable to your project or program. If you have any questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. Section 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the nineteen statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration) 5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. Sections 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. Section 794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. Sections 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) Sections 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290-dd-3 and 290-ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Acts of 1968 (42 U.S.C. Section 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Title II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or Federally assisted programs. These requirements apply to all interest in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply with provisions of the Hatch Act (5 U.S.C. Sections 1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. Sections 276a to 276a-7), the Copeland Act (40 U.S.C. Section 276c and 18 U.S.C. Sections 874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. Sections 327-333), regarding labor standards for federally assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. Section 1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. Section 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. Section 1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. Section 4801 et seq.) which prohibits the use of lead based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act of 1984.

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

19. It will comply with the minimum wage and maximum hours provisions of the Federal Fair Labor Standards Act (29 U.S.C. 201), as they apply to employees of institutions of higher education, hospitals, and other non-profit organizations.

Gary F Christie
Signature

10/14/09
Date

FEDERAL EMERGENCY MANAGEMENT AGENCY

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 44 CFR Part 18, "New Restrictions on Lobbying; and 28 CFR Part 17, "Government-wide Debarment and suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Federal Emergency Management Agency (FEMA) determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

A. As required by section 1352, Title 31 of the U.S. Code, and implemented at 44 CFR Part 18, for persons entering into a grant or cooperative agreement over $100,000, as defined at 44 CFR Part 18, the applicant certifies that:

(a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with the making of any Federal grant, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement;

(b) If any other funds than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or an employee of Congress, or employee of a member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, "Disclosure of Lobbying Activities," in accordance with its instructions;

(c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontract(s) and that all subrecipients shall certify and disclose accordingly.

☐ Standard Form LLL, "Disclosure of Lobbying Activities" attached.
(This form must be attached to certification if nonappropriated funds are to be used to influence activities.)

2. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS (DIRECT RECIPIENT)

As required by Executive Order 12549, Debarment and Suspension, and implemented at 44 CFR Part 67, for prospective participants in primary covered transactions, as defined at 44 CFR Part 17, Section 17.510-A. The applicant certifies that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of Federal benefits by a State or Federal court, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this application been convicted of ar had a civilian judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or perform a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application had one or more public t ransactions (Federal, State, or local) terminated for cause or default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or shall shall attached an explanation to this application.

3. DRUG-FREE WORKPLACE (GRANTEES OTHER THAN INDIVIDUALS)

As required by the Drug-Free Workplace Act of 1988, and implemented at 44 CFR Part 17, Subpart F, for grantees, as defined at 44 CFR Part 17, Sections 17.615 and 17.620:

A. The applicant certifies that it will continue to privide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions tht will be taken against employees for violation of such prohibition;

(b) Establishing an on-going drug free awareness program to inform empoyees about:

(1) The dangers of drug abuse in the workplace;
(2) The grantee's policy of maintaining a drug-free workplace;
(3) Any available drug counseling, rehabilitation, and employee assistance programs; and
(4) the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant to be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and

(2) Notify the employee in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction.

(e) Notifying the agency, in writing, within 10 calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to the applicable FEMA awarding office, i.e., regional office or FEMA office.

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

8. the grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, City, County, State, Zip code)

Region 2000 Local Government Council

828 Main Street, 12th Floor

Lynchburg, VA 24504-1522

Check ☐ if there are workplaces on file that are not identified here.

Section 17.630 of the regulations provide that a grantee that is a State may elect to make one certification in each Federal fiscal year. A copy of which should be included with each application for FEMA funding. States and State agencies may elect to use a Statewide certification.

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure)

1. Type of Federal Action:	2. Status of Federal Action:	3. Report Type:
[ ] a. contract	[X] a. bid/offer/application	[X] a. initial filing
b. grant	b. initial award	b. material change
c. cooperative agreement	c. post-award	For Material Change Only:
d. loan		year _____ quarter _____
e. loan guarantee		date of last report _____
f. loan insurance		

4. Name and Address of Reporting Entity:	5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:
[ ] Prime [X] Subawardee Tier _____, *if known*:	
REGION 2000 LOCAL GOV'T COUNCIL 828 MAIN STREET, 12TH FLOOR LYNCHBURG, VA 24504-1522	
Congressional District, *if known*: 5, 6	**Congressional District, *if known*:**

6. Federal Department/Agency:	7. Federal Program Name/Description:
Federal Emergency Management Agency	pre disaster mitigation program CFDA Number, *if applicable*: 97.047
8. Federal Action Number, *if known*:	**9. Award Amount, *if known*:**

10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):*	b. Individuals Performing Services *(including address if different from No. 10a) (last name, first name, MI):*
na	na

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature: Gary F Christie Print Name: Gary F. Christie Title: Executive Director Telephone No.: 434.845.3491 Date: 10/14/09

Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

2008 Unified Hazard Mitigation (HMA) Application

This notice clarifies the roles of the Virginia Department of Emergency Management (VDEM) in regards to the 2008 HMA Application(s) submitted by Region 2000 Local Government Council, Virginia. Following the submission of a completed application, VDEM will assign an HMA project number and enter the application into the Federal eGrants system. Once data entry commences minor changes may be made at the discretion of the VDEM Project Specialist and all major changes (i.e. budget, scope of work, etc.) will seek approval from the aforementioned community.

Please check the appropriate box and sign at the bottom of this notice.

☒ **I accept the above rules of eGrants data entry**

☐ **I do not accept the above rules of eGrants data entry**

Gary F. Christie

Signature

10/14/09

Date

Gary F. Christie, Executive Director

Name and Title

434.845.3491

Phone Number

Appendix 4.3

Hazard Mitigation Update Grant Application and Approval

COMMONWEALTH of VIRGINIA

Department of Emergency Management

MICHAEL M CLINE
State Coordinator

JACK KING
Chief Deputy Coordinator

BRETT A. BURDICK
Deputy Coordinator

10501 Trade Court
Richmond, Virginia 23236-3713
(804) 897-6500
(TDD) 674-2417
FAX (804) 897-6506

September 21, 2010

Bob White
Executive Director
828 Main Street, 12th Floor
Lynchburg, VA 24504

RE: Virginia's Region 2000 Local Government Council All Hazards Mitigation Plan Update
PDM-2010-000-003

Dear Mr. White:

I am pleased to notify you that the Federal Emergency Management Agency has approved the project titled "Region 2000 All Hazards Mitigation Plan Update." The funds have been obligated through the FY 2010 Pre-Disaster Mitigation Grant Program. Attached you will find the grant award package. Please read all documents carefully prior to initiating your project. Your project cannot begin until the authorized agent has signed the grant award package. No reimbursements will be made until the award package is signed and received by the Virginia Department of Emergency Management. Please sign each of the two copies of the grant award package and return one to the attention of Debbie Messmer, hazard mitigation coordinator.

Again, congratulations on approval of this project. If you have questions regarding this award or the implementation of your project, please contact Debbie Messmer at (804) 897-6500 or by email at debbie.messmer@vdem.virginia.gov .

Sincerely,

Michael M. Cline

MMC/MWW/djm

Enclosures

COMMONWEALTH of VIRGINIA

Department of Emergency Management

MICHAEL M. CLINE
State Coordinator

JACK KING
Chief Deputy Coordinator

BRETT A BURDICK
Deputy Coordinator

10501 Trade Court
Richmond, Virginia 23236-3713
(804) 897-6500
(TDD) 674-2417
FAX (804) 897-6506

Pre-Disaster Mitigation Grant Program
Grant Agreement
PDM-2010-000-003

This Agreement is made as of this 21st day of September 2010 by and between the Virginia Department of Emergency Management, hereinafter called "VDEM," and the Virginia's Region 2000 Local Government Council herein after called the "Sub-grantee."

The parties to this Agreement, in consideration of the mutual covenants and stipulations set out herein, agree as follows:

(1) GENERAL PROVISIONS:
This Agreement is a sub-grant award of federal funds from VDEM to the sub-grantee. VDEM has received a grant from the Department of Homeland Security Federal Emergency Management Agency Pre-Disaster Mitigation Grant Program, Catalog of Federal Domestic Assistance Number 97.047. The sub-grantee shall implement the project as set forth in the grant Agreement documents. These documents consist of:
(1) Executed Grant Agreement;
(2) Scope of Services, Attachment A;
(3) Project Budget, Attachment B;
(4) Milestone Table, Attachment C; and
(5) Grant Assistance Agreements and VDEM-FEMA General Terms and Conditions and Assurances; Attachment D.

State agencies acting as the sub-grantee shall report all federal funds received as part of this Agreement as federal pass-thru funds on their agency's Schedule of Federal Assistance.

Nothing in this Agreement shall be construed as authority for either party to make commitments which will bind the other party beyond the Scope of Work contained herein. Furthermore, the sub-grantee shall assign, sublet or subcontract any work related to this Agreement or any interest it may have herein with full compliance with federal and state procurement regulations. The schedule of service set forth in the Scope of Work and Milestone Table shall be deemed to have been consented to, as required by the preceding sentence, upon the execution of this Agreement by VDEM.

(2) SCOPE OF SERVICES:

The sub-grantee shall provide the service to VDEM set forth and summarized in the Scope of Work (Attachment A) and Milestone Table (Attachment C). All deliverables shall conform to accepted standards and practices. If there is any change in the original scope of work, a formal request must be made to VDEM for review and approval prior to implementing the change. These attachments are consistent with the original VDEM-FEMA (Federal Emergency Management Agency) grant project application. The sub-grantee shall provide VDEM with quarterly reports and a final report on the progress of work set forth in the Scope of Work. The quarterly reports and final report shall contain the following components: (1) a narrative describing in detail the progress of the sub-grantee in fulfilling the provisions of the Scope of Works; (2) Reimbursement Requests as needed that itemize the expenses incurred by the sub-grantee, including separate columns for the federal, state and the sub-grantee's matching contribution to the total cost of services as reflected in the Project Budget-Attachment B; and (3) the schedule of specific project tasks with target completion dates and actual completion dates (Milestone Table – Attachment C). The first quarterly report is due to VDEM at the end of the first complete quarter following the award of the grant.

Reporting Period	Report Due to VDEM
January 1 – March 31	no later than April 15
April 1 – June 30	no later than July 15
July 1 – September 30	no later than October 15
October 1 – December 31	no later than January 15

(3) TIME OF PERFORMANCE:

The services of the sub-grantee shall begin on the date of sub-grantee's signature of this document and terminate on 6-30-2012, unless otherwise altered through provisions of this Agreement or extended by written authorization of VDEM. Requests for time of performance extension must be received in writing by VDEM within 75 days of termination date with reasons for requested time of performance extension and a revised Milestone Table – Attachment C. All time limits stated are of essence of this Agreement. All funds must be obligated no later than the project completion date. The final request for reimbursement must be received no later than 60 days after the completion date for the project.

(4) COMPENSATION:

The total grant award from VDEM is **$78,000** provided through the FY2010 Pre-Disaster Mitigation Grant Program. VDEM shall provide funds for the project identified in the Scope of Work (Attachment A) totaling **$58,500**. The sub-grantee agrees to provide a match in the amount of **$19,500.** The sub-grantee is aware of and shall comply with cost-sharing requirements of federal and state mitigation grant assistance; specifically that federal assistance is limited to 75% of eligible expenditures, and the sub-grantee shall provide from the sub-grantee's funds 25% of eligible costs. The non-federal funds must be from a non-federal funding source and can be completely fulfilled by in-kind services as long as financial records document them as such.

VDEM shall release the grant award to the sub-grantee on a cost-reimbursement basis upon receipt and approval of the sub-grantee's quarterly and final reports and deliverables as required by this Agreement or at other times agreed to by VDEM. Any cost overruns incurred by the sub-grantee during the time of performance shall be the responsibility of the sub-grantee. The sub-grantee shall spend the funds according to the specified categories of the contract budget. The sub-grantee shall use mitigation grant funds solely for the purposes for which these funds are provided and as approved by FEMA and VDEM. General policies for determining allowable costs are established in 44 Code of Federal Regulations (CFR), Part 13.22 (included in Attachment D) and the appropriate OMB circulars that identify cost principles for different kinds of organizations. Minor shifts of the funds among categories by the sub-grantee, not to exceed 10% of any budget line item are permissible, but in no case can the total expenditures exceed the amount provided by this contract. Shifts in funds exceeding 10% among budget line items must be approved in writing by VDEM.

(5) ASSISTANCE:
VDEM agrees upon request of the sub-grantee to furnish, or otherwise make available to the sub-grantee, copies of existing non-proprietary materials in the possession of VDEM that are reasonably related to the subject matter of this Agreement and are necessary to the sub-grantee for completion of its performance under this Agreement. VDEM Recovery and Mitigation Division staff will provide technical support to the sub-grantee and make periodic site visits to monitor progress.

(6) ACKNOWLEDGEMENTS:
The role of the Virginia Department of Emergency Management (VDEM) and the Federal Emergency Management Agency (FEMA) must be clearly stated in all press releases, news articles, requests for proposals, bid solicitations and other documents describing this project, whether funded in whole or part.

Acknowledgement of financial assistance, with VDEM and FEMA logos, must be printed on all reports, studies, web sites, and other products (including map products) supported, in whole or in part, by this award or any sub-award. The sub-grantee is responsible for contacting VDEM staff in adequate time to obtain the logo in camera-ready or digital form. The final draft must be approved by VDEM staff prior to production. The acknowledgement should read as follows:

This report was funded by the Federal Emergency Management Agency through the Virginia Department of Emergency Management, via Grant Agreement Number PDM-2010-000-003 for $78,000.

(7) CREATION OF INTELLECTUAL PROPERTY:
To the extent that the copyright to any copyrightable material created pursuant to this Agreement is owned by the sub-grantee and/or the sub-grantee is empowered to license its use, VDEM agrees to grant to the sub-grantee, and hereby does grant to the sub-grantee, a license to use the materials so owned for public, not-for-profit purpose within the territory of the Commonwealth and shall execute and deliver such further documents as the Commonwealth may reasonably request for the purpose of acknowledging or implementing such license.

A copyright notice shall be placed in an appropriate location on any copyrightable material being distributed or published. Such notice shall include (1) either the symbol "©", the word "Copyright", or the abbreviation "Copr."; (2) the year of first publication; and (3) the name of the copyright owner (the Commonwealth of Virginia). This information shall be followed by the words, "all rights reserved."

(8) STRUCTURAL MITIGATION REQUIREMENTS:
Specific requirements must be adhered to for structural mitigation projects such as structural relocation, property acquisition and demolition and structural retrofitting or improvement as detailed in Attachment D. These requirements can include deed restrictions, operation and maintenance plans and insurance requirements, as dictated by the specific grant and project requirements.

(9) BREACH AND TERMINATION:

In the event of breach by the sub-grantee of this Agreement, VDEM shall provide written notice to the sub-grantee specifying the manner in which the Agreement has been breached. If a notice of breach is given and the sub-grantee has not substantially corrected the breach within sixty (60) days of receipt of the written notice, VDEM shall have the right to terminate the Agreement. The sub-grantee shall be paid for no service rendered or expense incurred after receipt of the notice of termination, except such fees and expenses incurred prior to the effective date of termination that are necessary for curtailment of its work under the Agreement. Termination of this Agreement can occur as an effect of one of two results: First, as a result of the proper completion and closeout of this project. Second, termination may occur as a result of *Termination for Convenience* or other termination as allowed or required by 44 CFR for projects which cannot be completed as described in the FEMA-approved grant project application and the Scope of Services – Attachment, herein. Communication of this decision and information related to the project termination will be provided to the sub-grantee in coordination with FEMA through registered mail.

IN WITNESS THEREOF the parties have caused this Agreement to be executed by the following duly authorized officials:

Sub-grantee:	**Grantor:**
Virginia's Region 2000 Local Government Council	**Virginia Department of Emergency Management**
By: Gary F Christie	By:
Date: 11/9/10	Date: 11/5/10
Authorized sub-grantee signatory	State Coordinating Officer

Attachment A
PDM-2010-000-003
Project Scope of Work

Project Sponsor: Virginia's Region 2000 Local Government Council

Project Title: Region 2000 Regional Hazard Mitigation Plan Update

Project Description from VDEM-FEMA PDM application:

This will be a review and update/revision of the Region 2000 Regional Commission All Hazard Mitigation Plan. The Plan that was approved by FEMA in August, 2006. The update will involve an evaluation and revision of the various sections of the plan, including a revised planning process, capability assessment, Hazard Identification and Risk Assessment (HIRA), vulnerability assessment, and the plan maintenance section. Mitigation strategies will also be reviewed, evaluated, and updated to better prepare the participating localities for the risks associated with the hazards addressed in the plan. Information on hazards that have occurred since the 2006 plan will be included in the revision, and data on estimated losses, repetitive loss properties, and properties at risk will be updated to the extent possible. Land use data for the region will be updated for the plan, based on information from local comprehensive plans and other plans. In addition, updated DFIRM data, where available, will be used to map the flood hazard areas of each locality. Mr. White, Deputy Director, Region 2000 Local Government Council, will oversee the Plan update. He will provide oversight of the tasks involved in the update.A consultant will assist with Plan development. These tasks will include data collection for the purpose of updating the HIRA, GIS mapping of land use patterns, critical facilities, hazard areas such as flood zones, and other relevant assets/facilities. Mapping will also outline areas that are most vulnerable to natural hazards. The Council, working with the consultant, will also facilitate the review and update of mitigation strategies, and facilitating public involvement. The Virginia Department of Emergency Management will assist in providing hazard data from the state hazard mitigation plan and other assistance as needed. The Council will form a Project Management Team (PMT), and ask each participating locality to appoint a member to serve on that team. That member could be a local government staff, law enforcement officer, fire/rescue personnel, member of the local governing body, or other relevant stakeholders. The PMT will assist Council and consultant staff in reviewing and updating the plan, and individual team members will serve as liaisons between the Council and consultant and their respective locality. In addition to the PMT, other stakeholders in the region will be invited to participate through a series of meetings on the project.

Attachment B
PDM-2010-000-003
Project Budget

Project Awarded Budget – Funding Source:

Federal Project Funds – PDM	$	58,500
Local Match	$	19,500
Total Project Costs	**$**	**78,000**

Project Budget from VDEM-FEMA PDM application:

ACTIVITY	NUMBER	COST	TOTAL COST
Project Management	**1**	**$3,900**	**$3,900**
Consultant to Facilitate Plan Review	**1**	**$74,100**	**$74,100**
	TOTAL PROJECT COSTS		**$78,000**

Attachment C
PDM-2010-000-003
Project Milestone Table

Description Of Task	Starting Point	Unit Of Time	Duration	Unit Of Time
Establish Mitigation Plan Project Management Team (key stakeholders)	1	DAYS	1	MONTHS
Review current plan and identify data requirements	1	MONTHS	1	MONTHS
Meet with PMT to go over process, timeline for project completion	2	MONTHS	1	DAYS
Hazard Identification and Risk Assessment (HIRA)	2	MONTHS	2	MONTHS
Present findings of HIRA to PMT for review/comment	4	MONTHS	1	DAYS
Presentations to local governing bodies/other public groups to promote awareness and solicit feedback on planning process	4	MONTHS	3	MONTHS
Set goals for mitigation strategies and review mitigation activities	7	MONTHS	1	MONTHS
Capability assessment and mitigation strategy development	8	MONTHS	2	MONTHS
Print draft mitigation plan, Comprehensive plan review by local Planning Commissions/Governing Bodies	10	MONTHS	3	MONTHS
Preliminary Plan Review by VDEM	13	MONTHS	1	MONTHS
Plan review and FEMA conditional approval pending adoption	14	MONTHS	2	MONTHS
Public hearings/Mitigation Plan adoption by Local Governing Bodies	16	MONTHS	2	MONTHS
Final Mitigation Plan approval	18	MONTHS	1	MONTHS
Finalize project, print and distribute final copies	19	MONTHS	1	MONTHS
Estimate the total duration of the proposed activity			20	MONTHS

Attachment D
Administrative Requirements and Guidance

Federal Administration and Guidance Documents:

1. OMB Circular A-133 **AUDITS OF STATES, LOCAL GOVERNMENTS, AND NON-PROFIT ORGANIZATIONS**

2. 44 CFR 13 **UNIFORM ADMINISTRATIVE REQUIREMENTS FOR GRANTS AND COOPERATIVE AGREEMENTS TO STATE AND LOCAL GOVERNMENTS**

3. 44 CFR Part 201**MITIGATION PLANNING** [FMA, PDM and HMGP planning projects only]

4. 44 CFR Part 206 – Subpart N – **HAZARD MITIGATION GRANT PROGRAM**

5. CATEX documentation (where required)

6. Structural Mitigation Project Requirements (where required)

7. FEMA Award Package

Award Letter

U.S. Department of Homeland Security
FEMA Region III
615 Chestnut Street
Philadelphia, PA 19106

FEMA

George Roarty
Director, Recovery and Mitigation Division, Virginia Department of Emergency Management
10501 Trade Court

Richmond, VA 23236-0000

Dear **George Roarty**:

Enclosed is an executed copy of FEMA Form 76-10A reflecting the award to your FY **2010 PDMC** Grant (**PDMC-03-VA-2010**). Your SMARTLINK Grant Payment Account will be adjusted accordingly.

By accepting this award you assume certain administrative and financial responsibilities including the timely submission of all financial and programmatic reports, resolution of all interim audit findings and the maintenance of a minimum level of cash on hand. Should you not adhere to these responsibilities, you will be in violation of the terms of this award.

If you have any questions regarding this matter, please call **Karen Van Osten** at **215-931-5518**.

Sincerely,

Kathryn Duran
Assistance Officer

www.fema.gov

PDMC Agreement Articles

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

Pre-Disaster Mitigation - Competitive Grant Agreement Articles **CFDA# 97.047**

GRANTEE: Virginia Department of Emergency Management

AGREEMENT NUMBER: EMP-2010-PC-0002 AMENDMENT NUMBER: 0

DESIGNATED AGENCY: Virginia Department of Emergency Management

PERFORMANCE PERIOD: 30-SEP-10 - 30-SEP-13

GENERAL INFORMATION:

The Pre-Disaster Mitigation - Competitive (PDMC) grant program provides funding for cost-effective hazard mitigation activities that complement comprehensive mitigation program, reduce injuries, loss of life, and damage and destruction of property.

ARTICLE I - FEMA AUTHORITY

The United States of America through the Federal Emergency Management Agency (FEMA) which is now incorporated into the Department of Homeland Security, (hereinafter referred to as "the Grantor") agrees to grant to the state/Indian tribe/territory government, through its designated agency named above (hereinafter referred to as "the Grantee") funds in the amount specified on the obligating document, to support the Pre-Disaster Mitigation - Competitive Grant Program, authorized under the &203 Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. & &5121-5206 (Stafford Act), and activated under this Grant Award.

The Grantee agrees to abide by the Grant Award terms and conditions as set forth in this document.

ARTICLE II - PROJECT DESCRIPTION

The Grantee shall perform the work described in the application package and made a part of these Grant Agreement Articles.

ARTICLE III - PERIOD OF PERFORMANCE

The initial performance period for the Grantee shall be equal to the longest performance period of the Sub-grantee awards. The period of performance shall be through 30-SEP-13. All costs must be incurred during the period of performance unless pre-award costs are approved.

ARTICLE IV - AMOUNT AWARDED

This Grant is for the administration and completion of an approved Pre-Disaster Mitigation - Competitive grant award for fiscal year 2010. Grant Agreement funds shall not be used for other purposes. If costs exceed the maximum amount of FEMA funding approved, the Grantee shall pay the costs in excess of the approved budget.

The approved budget for this award by category is:

Line Item	Federal	Non-Federal	Total
Personnel	$0.00	$0.00	$0.00
Fringe Benefit	$0.00	$0.00	$0.00
Travel	$0.00	$0.00	$0.00
Equipment	$0.00	$0.00	$0.00
Supplies	$0.00	$0.00	$0.00

Contractual	$584,820.48	$194,940.47	$779,760.95
Construction	$0.00	$0.00	$0.00
Other	$0.00	$0.00	$0.00
TOTAL DIRECT	$584,820.48	$194,940.47	$779,760.95
TOTAL BUDGET	$584,820.48	$194,940.47	$779,760.95

The Grantee shall follow Emergency Management and Assistance Regulations found in Title 44 Code of Federal Regulations (CFR) Part 13, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments, Office of Management and Budget Circulars A-102 and A-87, and program guidance to implement this Grant Award.

ARTICLE V - COST SHARE

The cost-share requirement for this award is **75%** Federal and **25%** non-Federal. Small, impoverished communities may receive a Federal cost share of up to 90% of the total cost to implement eligible PDMC activities.

a. The approved budget for state and/or non-small, impoverished communities: Federal funds of $584,820.45 (825.0%) and non-Federal funds of $194,940.50 (275.0%) for a total approved amount of $779,760.95.

b. The following small, impoverished communities have been approved for cost share less than the required 25% non-Federal:

Subgrantee	Federal funds	%	Non-Federal funds	%	Total approved amount
Total	$0.00	0.00%	$0.00	0.00%	$0.00

c. The total approved budget of Federal funds is $584,820.45 and non-Federal funds are $194,940.50 for a total approved amount of $779,760.95, which includes the combination of a. and b. above.

ARTICLE VI - FEMA OFFICIALS

FEMA officials are as follows:

The Project Officer shall be an official at the FEMA Regional Office who will be responsible for the program and technical monitoring of the work and technical performance of the activities described in the application.

The Project Officer is: JOHN SCHMIERER

The Assistance Officer is the FEMA official who has full authority to negotiate, administer and execute all business matters of the Grant Award.

The Assistance Officer is: Kathryn Duran

ARTICLE VII - TERMS AND CONDITIONS

The specific terms and conditions of this agreement are as follows:

ASSURANCE COMPLIANCE:
The certifications signed by the Grantee in the application relating to maintenance of a Drug-Free workplace (44 CFR Part 17, Subpart F) and New Restrictions on Lobbying (44 CFR Part 18) apply to this grant agreement and are incorporated by reference.

BUDGET REVISIONS:
The Grantee shall follow prior approval requirements for budget revisions found in 44 CFR 13.30. Transfer of funds between total direct cost categories in the approved budget shall receive the prior approval of FEMA when such cumulative transfers among those direct cost categories exceed ten percent of the total budget.

If a Grantee estimates that it will have obligated funds remaining after the end of the performance period, the Grantee must report this to the FEMA Regional Office at the earliest possible time and ask for disposition instructions.

CLOSE OUT:
Reports Submission:
Per 44 CFR 13.50, when the appropriate grant award performance period expires, the Grantee shall submit the following documents within 90 days: (1) a final Financial Status Report (FF 20-10), (2) final program performance report, (3) an inventory of equipment purchased under each grant's funds, (4) an inventory of Federally-owned property, (5) other required documents specified by program regulation.

Report Acceptance:
FEMA shall review the Grantee reports, perform the necessary financial reconciliation, negotiate necessary adjustments between the Grantee and FEMA's records, and close out the grant in writing.

Record Retention:
Records shall be retained for 3 years (except in certain rare circumstances described in 44 CFR 13.42) from the date the final financial status report is submitted to FEMA in compliance with 44 CFR 13.42.

CONSTRUCTION PROJECT REQUIREMENTS:

1. Acceptance of Federal funding requires FEMA, the Grantee and any Subgrantees to comply with all Federal, state and local laws prior to the start of any construction activity. Failure to obtain all appropriate Federal, state and local environmental permits and clearances may jeopardize Federal funding.
2. Any change to the approved scope of work will require re-evaluation by FEMA for Grantee and Subgrantee compliance with the National Environmental Policy Act and other laws and Executive Orders.
3. If ground disturbing activities occur during construction, the Grantee and any Subgrantees must ensure monitoring of ground disturbance and, if any potential archeological resources are discovered, the Subgrantee will immediately cease construction in that area and notify the Grantee and FEMA.

COPYRIGHT:
The Grantee is free to copyright any original work developed in the course of or under the agreement. FEMA reserves a royalty-free, nonexclusive and irrevocable right to reproduce, publish or otherwise use, and to authorize others to use the work for Government purposes. Any publication resulting from work performed under this agreement shall include an acknowledgement of FEMA financial support and a statement that the publication does not constitute an endorsement by FEMA or reflect FEMA views.

COST SHARE:
The Grantee shall follow cost-sharing requirements mandated by program guidance, statute or regulation and in compliance with 44 CFR 13.24. Cost-share funding shall be available with the approval of each grant. Performance Period extensions shall not be approved for delays caused by lack of cost-share funding.

ENFORCEMENT:
FEMA enforcement remedies shall be processed as specified in 44 CFR 13.43, Enforcement when the Terms and Conditions of this Grant Award are not met.

EQUIPMENT/SUPPLIES:
The Grantee must comply with the regulations listed in 44 CFR 13.32, Equipment, 44 CFR 13.33 Supplies, and 44 CFR 13.36 Procurement, and must be in compliance with state laws and procedures.

FUNDS TRANSFER:
No transfer of funds to agencies other than those identified in the approved grant agreement shall be made without prior approval of FEMA.

INSURANCE:
In compliance with Public Law 103-325, Title V National Flood Insurance Reform Act of 1973, section 582 requires that any person receiving Federal assistance for the repair, replacement, or restoration for damage to any personal or residential property at any time must maintain flood insurance if the property is located in a Special Flood Hazard Area.

PAYMENT:
Grantee shall be paid using the Federal Health and Human Services (HHS) Payment Management System-SMARTLINK, provided Grantee maintains and complies with procedures for minimizing the time between transfer of funds from the US Treasury and disbursement by the Grantee and subgrantees. The Grantee commits itself to: 1) initiating cash draw downs only when actually needed for its disbursement; 2) timely financial reporting per FEMA requirements, using the SF 269 or equivalent report; and 3) imposing the same standards of timing and amount upon any secondary Grantee.

Subgrantees must comply with the same payment requirement as the Grantee and must comply with the requirements specified in the Grantee's subgrant award agreements.

DUPLICATION OF PROGRAMS:
FEMA will not provide assistance under the its programs for activities that it determines another Federal program has a more specific or primary authority to provide. FEMA also will not provide assistance for the applicant or subapplicant's legal obligations. FEMA may disallow or recoup amounts that duplicate other authorities.

DUPLICATION OF BENEFITS:
FEMA will not provide assistance under the program for activities that duplicate benefits received by or available to applicants, subapplicants and other project participants from insurance, other assistance programs, legal awards, or any other source to address the same purpose. Such individual or entity must notify the Grantee and FEMA of all benefits that it receives or anticipates from other sources for the same purpose, and must seek all such benefits available to them. FEMA will reduce the grant by the amounts available for the same purpose from another source. If FEMA provides assistance under this PDMC program when other benefits are available, the Grantee will be liable to FEMA for any duplicative amounts that are received from other sources, and must reimburse FEMA for such amounts. FEMA also will not provide assistance for the applicant or subapplicant's legal obligations, such as those imposed by a legal settlement, court order or State law.

NON DISCRIMINATION:
The program must be administered in an equitable and impartial manner, without discrimination on the grounds of race, color, religion, nationality, sex, age, or economic status. The program complies with Section 308 of the Stafford Act and Title VI of the 1964 Civil Rights Act and other applicable laws. All applicants/Grantees must comply with Title VI, including State and local governments distributing Federal assistance.

Applicants/Grantees and subapplicants/subgrantees will ensure that no discrimination is practiced. Applicants must consider fairness, equity, and equal access when prioritizing and selecting project subapplications to submit with their application. Subapplicants and subgrantees must ensure fairness, equity and equal access when consulting and making offers of mitigation to property owners that benefit from mitigation activities.

CHANGES IN SCOPE OF WORK:
Requests for changes to the SOW after award are permissible as long as they do not change the nature or total project cost of the activity, properties identified in the subapplication, the feasibility and effectiveness of the project, or the benefit cost ratio. Requests must be supported by adequate justification from the applicant in order to be processed. The justification is a description of the proposed change, a written explanation of the reason or reasons for the change; an outline of remaining funds available to support the change; and a full description of the work necessary to complete the activity. All approvals will be at FEMA's discretion, and there is no guarantee that SOW changes will be approved.

PERFORMANCE PERIODS:
Program/Project/subgrant Approval and/or Awards:

All grant award activities, including all projects and/or activities approved under each subgrant award, shall be completed within the time period prescribed and authorized on the obligating documents. All costs must be incurred within the approved performance period or be approved pre-award costs.

EXTENSIONS:,
Requests for time extensions to the Performance Period will be considered but will not be granted automatically and must be supported by adequate justification submitted to the Regional Office in order to be processed. This justification is a written explanation of the reason or reasons for the delay; an outline of remaining funds available to support the extended Performance Period; and a description of performance measures necessary to complete the activity. Without justification, extensions requests will not be processed. Financial and progress reports must be current in order for a time extension to be considered.

RECOUPMENT OF FUNDS:
FEMA will recoup mitigation planning grant funds for grants that do not meet the deliverable criteria of an adopted, FEMA-approved mitigation plan by the end of the performance period.

RECOVERY OF FUNDS:
The Grantee will process the recovery of assistance paid to subgrantees processed through error, misrepresentation, or fraud or if funds are spent inappropriately. Recovered funds shall be submitted to FEMA as soon as the funds are collected, but no later than 90 days from the expiration date of the appropriate grant award agreement.

All fraud identifications will be reported to the FEMA Inspector General's office. The Grantee agrees to cooperate with investigation conducted by the FEMA Inspector General's office.

REFUND, REBATE, CREDITS:
The Grantee shall transfer to FEMA the appropriate share, based on the Federal support percentage, of any refund, rebate, credit or other amounts arising from the performance of this agreement, along with accrued interest, if any. The Grantee shall take necessary action to effect prompt collection of all monies due or which

may become due and to cooperate with FEMA in any claim or suit in connection with amounts due.

REPORTS:

Federal Financial Report (SF 425):

The Grantee shall submit the Federal Financial Report (FFR) to the FEMA Regional Office within 30 days of the first Federal quarter following the initial grant award. The Grantee shall submit quarterly FFRs thereafter until the grant ends. Reports are due on January 30, April 30, July 30, and October 30. A report must be submitted for every quarter of the period of performance, including partial calendar quarters, as well as for periods where no grant activity occurs. Future awards and fund draw downs may be withheld if these reports are delinquent.

Performance Report:

The Grantee shall submit performance reports to the FEMA Regional Office within 30 days after end of each quarter. The report shall consist of a comparison of actual accomplishment to the approved activity objectives. The Regional Administrator may waive the initial report. The Grantee shall submit quarterly performance reports thereafter until the grant ends. Reports are due January 30, April 30, July 30, and October 30. Quarterly performance report shall report the name, completion status, expenditure, and payment-to-date of each approved activity/sub-grant award under the Grant Award.

Final Reports:

The Grantee shall submit a Final FFR and Performance Report 90 days after the end date of the performance period.

TERMINATION:

The Grantee, subgrantee, or FEMA may terminate grant award agreements by giving written notice to the other party at least seven (7) calendar days prior to the effective date of the termination. All notices are to be transmitted via registered or certified mail, return receipt requested. The Grantee's authority to incur new costs will be terminated upon the date of receipt of the notice or the date set forth in the notice. Any costs incurred up to the earlier of the date of the receipt of the notice or the date of termination set forth in the notice will be negotiated for final payment. Close out of the grant award will be commenced and processed as prescribed under Article VII. 3.

ARTICLE VIII - GOVERNING PROVISIONS

The Grantee and any sub-grantees shall comply with all applicable laws and regulations. A non-exclusive list of laws and regulations commonly applicable to FEMA grants is attached hereto for reference only.

The Grantee and any subgrantees shall also be bound by the Program Guidance document. The following Office of Management and Budget circulars are also applicable to this grant:

OMB Circular A-110 Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations

OMB Circular A-102 Uniform Administrative Requirements for Grants and Cooperative Agreements with State and Local Governments

OMB Circular A-87 Cost Principles for State and Local Governments

OMB Circular A-21 Cost Principles for Educational Institutions

OMB Circular A-102 Uniform Administrative Requirements for Grants and Cooperative Agreements with State and Local Governments

OMB Circular A-133 Audits of States, Local Governments, and Non-Profit Organizations

Commonly Applicable Statutes and Regulations

The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, 42 U.S.C. 5121 et seq., and Related Authorities

Sections 1361(A) of the National Flood Insurance Act of 1968 (NFIA, or "the Act"), 42 USC 4104c, as amended by the National Flood Insurance Reform Act of 1994 (NFIRA), Public Law 103-325 and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004, Public Law 108-264

Title 44 of the Code of Federal Regulations (CFR)

44 CFR Part 79-Flood Mitigation Grants

44 CFR Part 80-Property Acquisition and Relocation for Open Space

44 CFR Part 9-Floodplain Management and Protection of Wetlands

44 CFR Part 10-Environmental Considerations

44 CFR Part 13-Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments

31 CFR Part 205-Rules and Procedures for Funds Transfers

APPLICATION Grant application received by FEMA on 03-DEC-09.

Award Package (Part 3 of 3)

FEDERAL EMERGENCY MANAGEMENT AGENCY
OBLIGATING DOCUMENT FOR AWARD/AMENDMENT

1a. AGREEMENT NO.	2. AMENDMENT NO.	3. RECIPIENT NO.	4. TYPE OF ACTION	5. CONTROL NO.
EMP-2010-PC-0002	**0**	**54-6002286**	**STD**	**P100246N**

6. RECIPIENT NAME AND ADDRESS	7. ISSUING FEMA OFFICE AND ADDRESS	8. PAYMENT OFFICE AND ADDRESS
Virginia Department of Emergency Management 10501 Trade Court , Richmond VA , 23236-0000	**FEMA Region III 615 Chestnut Street , 615 Chestnut Street Philadelphia, PA - 19106 Specialist:JOHN SCHMIERER**	, ,

9. NAME OF RECIPIENT PROJECT OFFICER	PHONE NO.	10. NAME OF FEMA PROJECT COORDINATOR	PHONE NO.
George Roarty	**804-897-6500**	**JOHN SCHMIERER**	

11. EFFECTIVE DATE OF THIS ACTION	12. METHOD OF PAYMENT	13. ASSISTANCE ARRANGEMENT	14. PERFORMANCE PERIOD	
09-10-2010	**H**	**S**	From:**09-30-2010**	To:**09-30-2013**
			Budget Period From:	To:

15. DESCRIPTION OF ACTION
a. (Indicate funding data for awards or financial changes)

PROGRAM NAME ACRONYM	CFDA NO.	ACCOUNTING DATA (ACCS CODE)	PRIOR TOTAL	AMOUNT AWARDED THIS	CURRENT TOTAL AWARD	CUMMULATIVE NON-

		XXXX-XXX-XXXXXX-XXXXX-XXXX-XXXX-X	AWARD	ACTION + OR (-)		FEDERAL COMMITMENT
PDMC	**97.047**	**2010-69-5760RB-9032-4101-D**	**$0.00**	**$584,820.45**	**$584,820.45**	**$194,940.50**
		TOTALS	**$0.00**	**$584,820.45**	**$584,820.45**	**$194,940.50**

b. To describe changes other than funding data or financial changes, attach schedule and check here.
No

16 a. FOR NON-DISASTER PROGRAMS: RECIPIENT IS REQUIRED TO SIGN AND RETURN THREE (3) COPIES OF THIS DOCUMENT TO FEMA (See Block 7 for address)

16b. FOR DISASTER PROGRAMS: RECIPIENT IS NOT REQUIRED TO SIGN

This assistance is subject to terms and conditions attached to this award notice or by incorporated reference in program legislation cited above.

17. RECIPIENT SIGNATORY OFFICIAL (Name and Title)
Signed by **George Roarty GRANTEE**

DATE
09-15-2010

18. FEMA SIGNATORY OFFICIAL (Name and Title)
Signed by

DATE

Appendix 4.4
January 25, 2011
Meeting Minutes

From: Philipp Gabathuler [mailto:pgabathuler@region2000.org]
Sent: Tuesday, January 25, 2011 3:09 PM
To: Messmer, Debbie; Coates, Robert
Cc: White, Bob (DHCD)
Subject: R2K Hazard Mitigation Plan Update

All,

Thank you for coming to the Region 2000 office to discuss the HM plan update. I gained a better understanding of the next steps for our update process. The following is a summary of the meeting and the items we need from each other to get started:

1. **Discussion of updated plan's layout**: Robbie mentioned that there is a document with links to all the sources of the various maps used for Hazard Mitigation Plans. I look forward to receiving this document as it will assist in inventorying what we already have.

   Maps in the original HMP document that have updated data since 2006 will be changed and changes will be mentioned in an appendix. Maps in the document that don't have new data since 2006 will remain the same and a note will be added in the appendix as to why it hasn't been updated.

   In the 2006 Plan, the HAZUS extension for ArcGIS Desktop was used for calculating building exposure and damage cost. Learning this software extension will be essential for updating tables for the new plan. Notes will be added in an appendix for the tables that have been updated and those that remained unchanged. Robbie, could you send me the link for the HAZUS download site?

   An introduction should be added to the beginning of each chapter in the updated plan that describes if/how it has changed. Contact with local officials and updated data from NCDC and other sources will reveal events that have occurred since 2006 and will be the basis for these introductions.

2. **Public outreach effort**: FEMA requires one advertised public meeting for the update process, but it was mentioned that a good practice was to have one public meeting following the HIRA process and one following the Final Draft phase.

   Involving each locality means having meetings with local officials and publicizing the update process in an appropriate manner: newspaper, town hall meeting agenda, etc.

   Involving academia is also something FEMA requires where applicable. Region 2000 has several academic institutions which should be contacted about the update process in an appropriate manner. Contact with academic institutions will most likely be addressed by adding them the Region 2000 monthly newsletter recipients list.

3. **Goals and strategies section**: FEMA requires that a minimum of 1 new regional strategy arise in the plan update process. Discussion with local officials on eligible future projects could increase input for this section.

   Discussing project rankings will also be important for updating this section.

4. **Budget and scheduling**: I will be working on the budget worksheet this week and get it out for review at the beginning of February.

   Debbie, could you send me the scheduling crosswalk as well as the milestones table for a HMP update?

I am really looking forward to getting the ball rolling on this project!

Thanks,

Philipp

Appendix 4.5
May 5, 2011 Meeting Agenda

Hazard Mitigation Plan

Update Process

May 5, 2011 10 AM Agenda

1. Introductions

2. Overview of time table/scope of work (Philipp Gabathuler—Region 2000):

   - Time table (Attachment A)

   - This project includes
      A. Identifying hazards that have occurred since the 2006
      B. Calculating data on estimated losses
      C. Identifying repetitive loss properties and properties at risk
      D. Updating land use data, critical facilities, hazard areas such as flood zones, and other relevant assets and facilities in the region based on information from local comprehensive plans and other plans—(Attachment B)
      E. Using GIS mapping to outline areas that are most vulnerable to natural hazards.

   - Region 2000 Staff will also facilitate the review and update of mitigation strategies through involvement with public and private entities in the Region.

3. Billing: The Pre-Disaster Mitigation (PDM) Grant Program funded through the Federal Emergency Management Agency requires a 75% federal and 25% non-federal cost share. The non-federal cost share will be fulfilled by the participating localities' cash contribution.

Amherst Co.	$2,403.69
Appomattox Co.	983.31
Bedford Co.	5,348.40
Campbell Co.	3,862.30
Bedford City	486.60
Lynchburg	5,711.53
Altavista	200.00
Amherst Town	200.00
Appomattox Town	200.00
Brookneal	200.00
Pamplin	200.00

4. Overview of the Hazard Mitigation Plan Update process (Debbie Messmer, Robbie Coates—VDEM).
      A. FEMA Presentation
      B. Review examples of mitigation strategies to better prepare the participating localities for the risks associated with the hazards addressed in the plan.
      C. Hazard Mitigation Grants discussion

5. Next Steps

Attachment A: Project Schedule

Description of Task	Starting Point	Duration	Meeting with PMT
Establish Mitigation Plan Project Management Team (PMT) (key stakeholders)	July 1, 2011	30 days	YES
Review current plan and identify data requirements	August 1, 2011	30 days	
Meet with PMT to go over process, timeline for completion	September 1, 2011	1 day	YES
Hazard Identification and Risk Assessment (HIRA)	September 1, 2011	60 days	
Present findings of HIRA to PMT for review/comment	November 1, 2011	1 day	YES
Presentations to local governing bodies/other public groups to promote awaremness and solicit feedback	November 1, 2011	45-90 days	
Capability assessment and mitigation strategy development	February 1, 2012	45 days	
Set goals for mitigation strategies and review mitigation activities	March 1, 2012	1 day	YES
Print draft mitigation plan	March 15, 2012	15 days	
Comprehensive plan review by local Planning Commissions/Governing Bodies	April 1, 2012	90 days	
Print revised mitigation plan	July 1, 2012	15 days	
Preliminary Plan Review by VDEM	July 15, 2012	30 days	
Plan review and FEMA conditional approval pending adoption	August 15, 2012	60 days	
Public hearings/Mitigation Plan adoption by Local Governing Bodies	October 15, 2012	90 days	
Final Mitigation Plan approval	January 15, 2013	30 days	
Finalize project, print and distribute final copies	February 15, 2013	15 days	
Estimate the totla duration of the proposed activity:		**20 MONTHS**	

Attachment B: List of Figures for Hazard Mitigation Plan

Section	Page	Name	Layer	Source	Availability
III	2	Regional Map	General		
V	5	Region 2000 RC Boundaries	General		
V	6	Region 2000 Watershed	Watersheds (Chowan, James, Roanoke River Basins)	VT CGIT, Region 2000 RC, ESRI, NWS HHD)	
			Streams/Rivers	VT CGIT, Region 2000 RC, ESRI, NWS HHD)	
V	7	Region 2000 Critical Facility Locations	Critical facilities	VT CGIT, Region 2000 RC, ESRI, FEMA HAZUS-MH)	
V	21	VA Avg. # of days with Snowfall > 1 inch	HI/LO	NOAA VAView PRISM	
V	22	Region 2000 RC Avg. # of Days with Snowfall >1 inch	3 Days/14 Days	VDOT, Region 2000, ESRI, VAView PRISM	
V	24	Virginia Hazardous Winter Weather Potential Based on LEQ Precipitation	Type of precip (Snow, Ice, Rain, etc.)	NOAA VAView PRISM	
V	25	Region 2000 RC Hazardous Winter Weather Potential Based on LEQ Precipitation	Type of precip (Snow, Ice, Rain, etc.)	NOAA VAView PRISM, VT CGIT, Region 2000 RC, ESRI	
V	26	Lynchburg City Steep Slope Locations (>15%)	Steep roads (>15%)	VDOT, Region 2000 RC, ESRI	
			Roads	VDOT, Region 2000 RC, ESRI	
V	28	Region 2000 RC Snowfall Relative Risk	Snow potential by census block	VT CGIT, Region 2000 RC, ESRI, VAView Prism	
V	29	Region 2000 RC Ice Relative Risk	Ice potential by Census Block	VT CGIT, Region 2000 RC, ESRI, VAView Prism	
V	39	Region 2000 RC FEMA desination Floodplains	FEMA Flood Zones	VT CGIT, ESRI, Region 2000 RC, VDOT, FEMA FIRMs	
			Major Water Bodies	VT CGIT, ESRI, Region 2000 RC, VDOT, FEMA FIRMs	
			Streams/Rivers	VT CGIT, ESRI, Region 2000 RC, VDOT, FEMA FIRMs	
V	51	Region 2000 RC Dam Inventroy Hazard Potential	Dam Hazard Potential (Low, Significant, High)	VT CGIT, Region 2000 RC, ESRI, VA DCR, NDI	
V	46	Region 2000 RC Flood Losses by Census Block	N/A (Does not show up in hard copy of plan)	-	
V	55	Region 2000 RC Drought Vulnerability	Vulnerability by Census Blck Group (Low, Mod, Hi)	VT CGIT, Region 2000 RC, ESRI, 1990 US Census	
V	58	Hurricane Tracks in Virginia	Type of storm (Tropical depression, storm, hurricane)	Tropical Storm History USGS, National Weather Service Tropical Prediction Center, National Hurricane Center	
V	64	Annualized Hurricane Wind Losses	Loss by Census Track	VT CGIT, Region 2000 RC, ESRI, FEMA HAZUS-MH)	
V	70	Region 2000 RC- Tornado Touchdowns	Magnitude	VT DOT, Region 2000 RC, ESRI, NCDC	
V	73	Region 2000 RC Wildfire Vulnerability	Wildfire Vulnerability (Lo, Med, Hi)	VT CGIT, Region 2000 RC, ESRI, VA DOF	
V	75	USGS Landslide susceptibility and incidence in Virginia	Susceptibility of landslide hazards	USGS National Landslide Map, VT CGIT	
			Incidence of landslide hazards	USGS National Landslide Map, VT CGIT	
V	76	Karst Regions in Virginia	Karst regions	USGS Aquifer Map, VT CGIT	

Appendix 4.6
May 5, 2011 Meeting Minutes

May 5

Kickoff Meeting

Hazard Mitigation Plan Meeting Minutes

1. What is the plan about?

HMP represents jurisdictions' commitment to reduce risk from Natural Hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards.

Hazard mitigation is any sustained action taken to reduce or eliminate long term risk to life, property and the economy from a natural hazard event.

States and local governments are required to adopt a HMP to qualify for pre & post disaster mitigation funding (Hazard Mitigation Grant Program).

2. How is plan set up?
    1. Community Descriptions: Provides information on the geography and demographics of the region.
    2. Planning Process: provides information on the makeup of the steering committee members, meetings for the committee members and public, and the steps taken to complete and adopt the mitigation plan.
    3. Hazard Identification and Risk Assessment (HIRA) provides detailed descriptions and maps on how the region is impacted by various natural and man-made hazards.
    4. Capability and Mitigation section provides information on each community's rankings of mitigation actions and the capability to implement individual mitigation actions.
    5. Plan Maintenance: provides information on the region's ability to maintain and update the plan.
    6. References: provides a listing of the different resources used in the development of this plan.
    7. Appendices: provides the figures, tables and reports that are referenced in the body of the plan.

Appendix 4.7 Newspaper Advertisement for Public Comment

The News & Advance

Lynchburg News & Advance Order Confirmation for Ad #0002471410-01

Client	REGION 2000 REGIONAL COMM.	**Payor Customer**	REGION 2000 REGIONAL COMM.	**Acct. Exec**	cmarsh
Client Phone	434-845-3491	**Payor Phone**	434-845-3491		
Account#	3312739	**Payor Account**	3312739		
Address	828 MAIN ST,12TH FLOOR LYNCHBURG VA 24504-1522 USA	**Payor Address**	828 MAIN ST,12TH FLOOR LYNCHBURG VA 24504-1522	**Ordered By**	MGILLEY
Fax	434-845-3493				
EMail	mgilley@region2000.org				

Total Amount	**$193.50**
Payment Amt	**$0.00**
Amount Due	**$193.50**

Status

Materials

Tear Sheets	Proofs	Affidavits	PO Number	Blind Box
1	0	0		

Payment Method

Confirmation Notes:

Text: Hazard Identification and Risk Assessment Draft for Public Comment

Order Notes:

Ad Number	Ad Type	Color	Production Color
0002471410-01	CLP Legal Liner	<NONE>	
Pick Up Number	**Ad Size**	**Production Method**	**Production Notes**
	1.0 X 45 Li	AdBooker (liner)	

Product	Placement/Class	Position	# Inserts
Run Schedule Invoice Text			
Run Dates			
Tag Line			

LYN News and Adv CLP:: _Legal Ads - CLP **_Legal Notices-Legal-CLP** 1

HAZARD IDENTIFICATION AND RISK ASSESSMENT DRAFT FOR PUBLIC

11/2/2011

HAZARD IDENTIFICATION AND RISK ASSESSMENT DRAFT FOR PUBLIC

Ad Content Proof Actual Size

Local Government Council

Region 2000 Hazard Identification and Risk Assessment Draft available for Public Comment

The Region 2000 Hazard Identification and Risk Assessment section for the Region 2000 Hazard Mitigation Plan Update is now open for a 30-day public comment period. Public input on this section of the plan is important, and residents are highly encouraged to review the section and offer comments. The formal comment period will close December 1, 2011. The Region 2000 Hazard Mitigation Plan Update draft can be viewed in its entirety at www.region2000.org/hazard-mitigation-homepage.html. The plan is also available for review at the Region 2000 Local Government Council office located at 828 Main Street, 12th Floor, Lynchburg, Virginia.

Mitigation planning is the process state and local governments use to identify risks and vulnerabilities associated with natural hazards and to develop long-term strategies for protecting people and property from the effects of future hazard events. The mitigation planning process involves identifying and profiling natural hazards that will most likely occur, as well as assessing the vulnerability of people, critical facilities and structures. The plan identifies the region's mitigation strategy, which helps guide local mitigation planning and project efforts.

For more information or to provide comments, please contact Philipp Gabathuler, Planner, Region 2000 Local Government Council, 828 Main Street, Lynchburg, VA 24504-1522. pgabathuler@region2000.org. Ph. 434-845-5678 ext. 217.

Section V

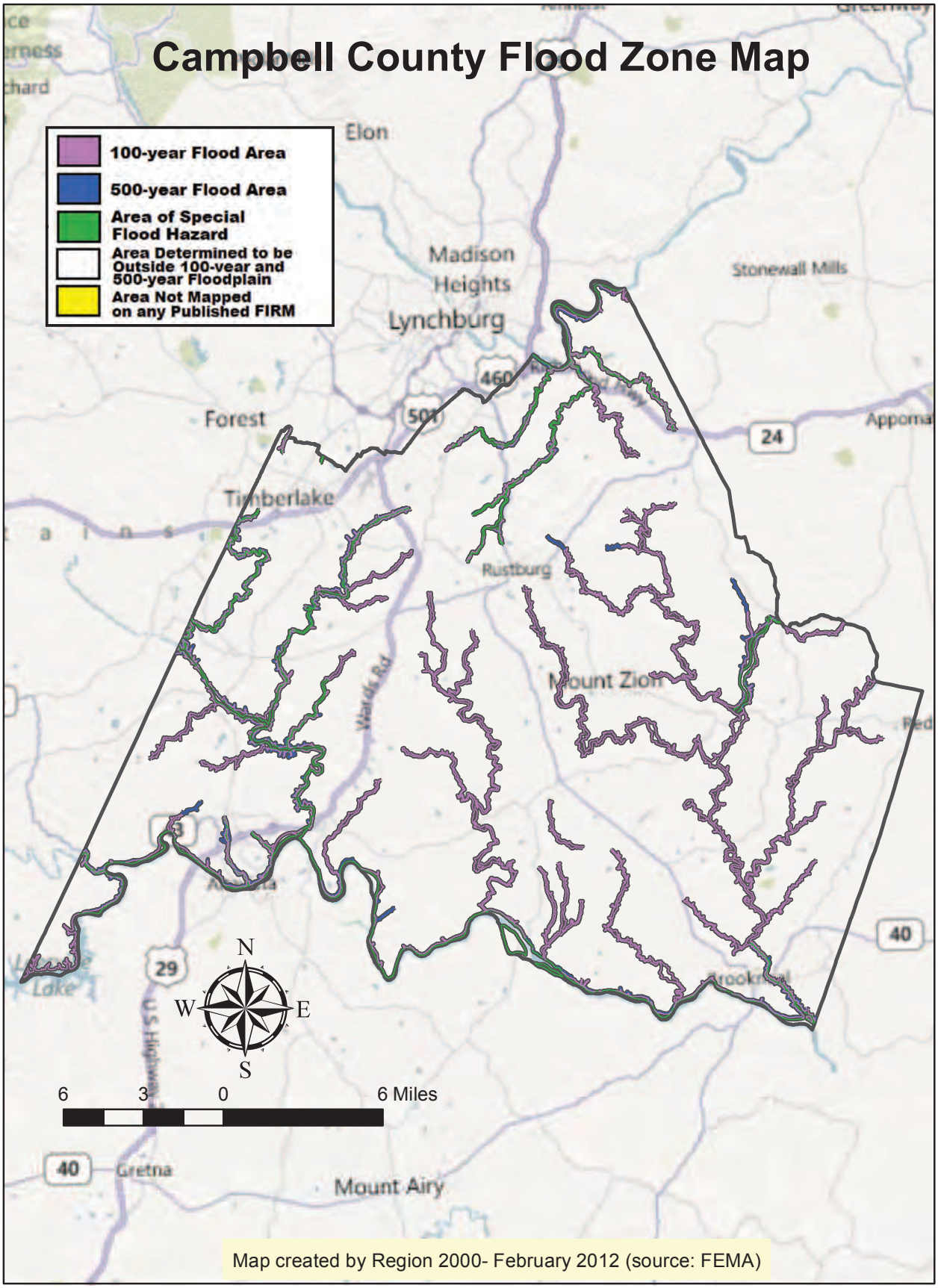
Appendix

Hazard Identification and Risk Assessment (HIRA)

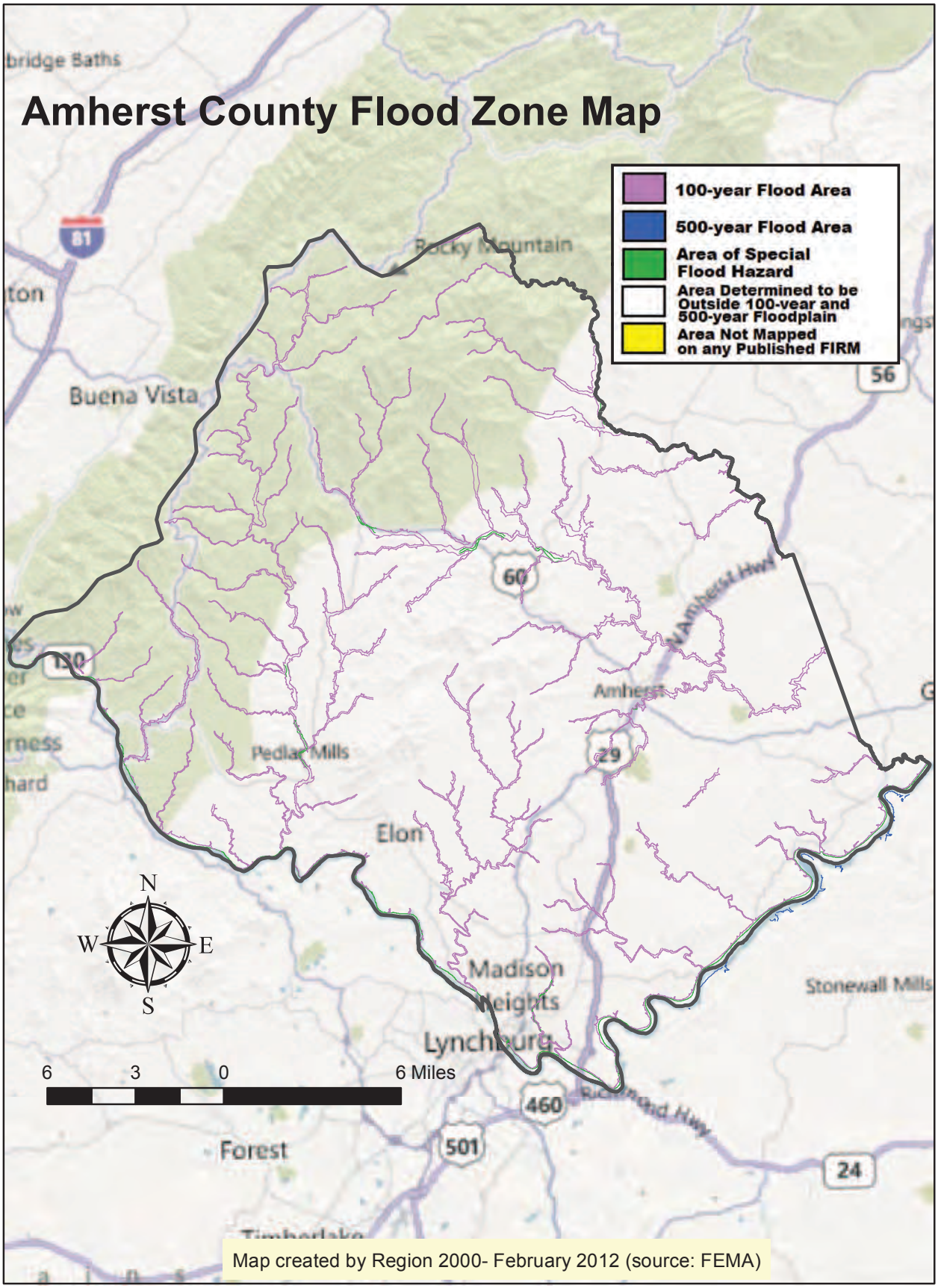
Appendix 5.1

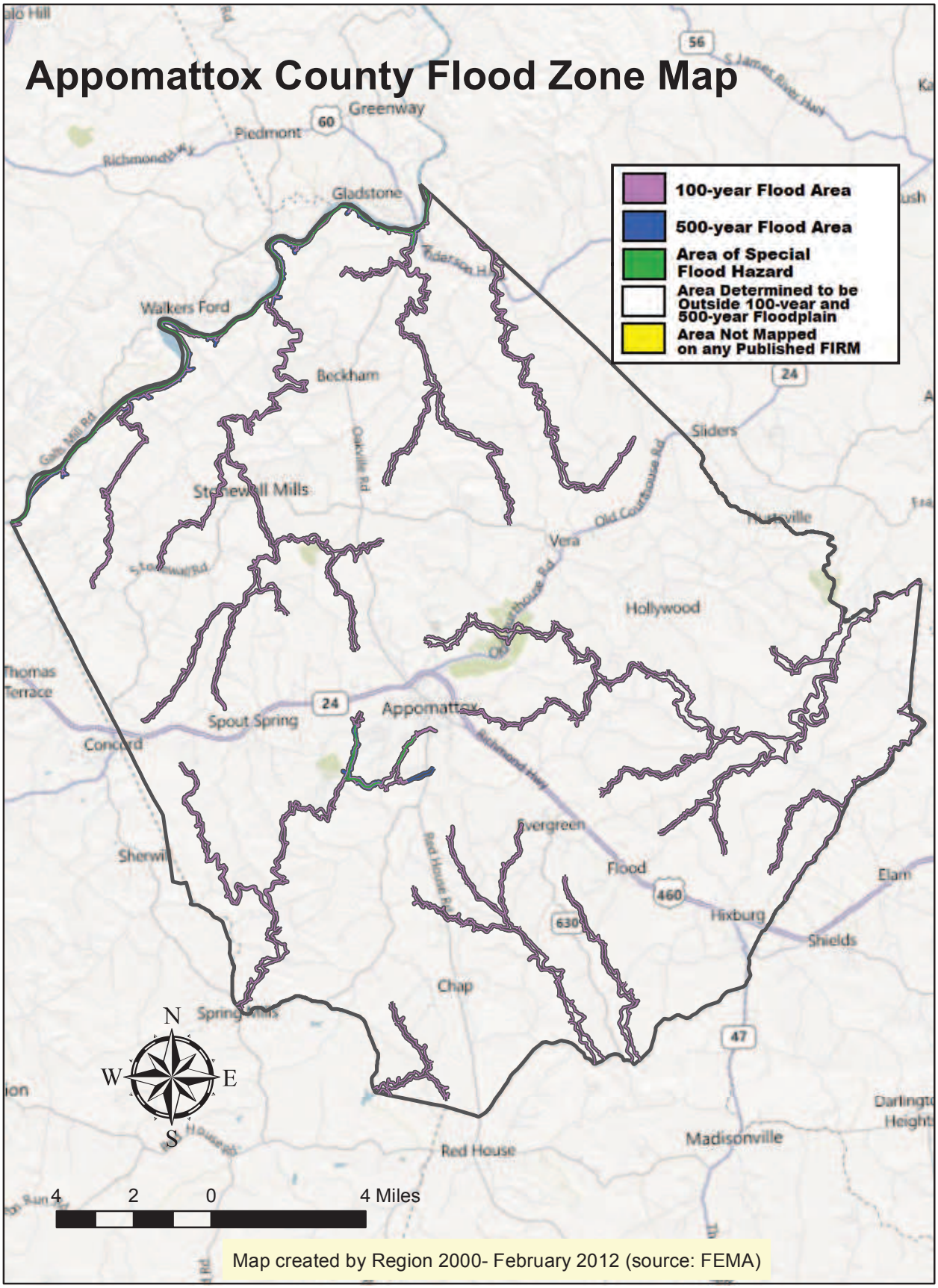
Flood Maps

Campbell County Flood Zone Map



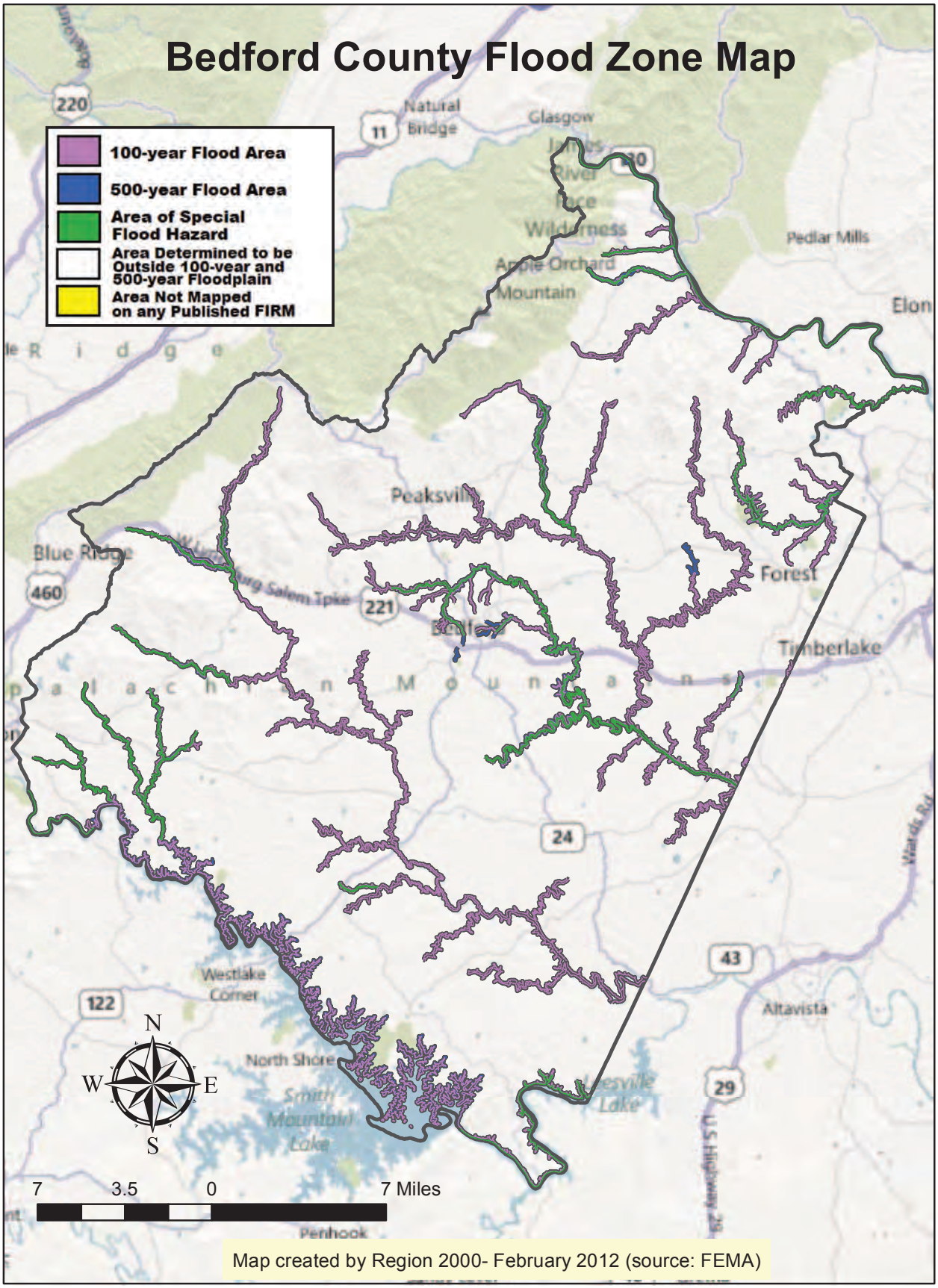
Map created by Region 2000- February 2012 (source: FEMA)


Amherst County Flood Zone Map
100-year Flood Area
500-year Flood Area
Area of Special Flood Hazard
Area Determined to be Outside 100-year and 500-year Floodplain
Area Not Mapped on any Published FIRM
Buena Vista
Elon
Madison Heights
Lynchburg
Forest
Stonewall Mills
Amherst
Pedlar Mills
N
S
E
W
6 3 0 6 Miles
Map created by Region 2000- February 2012 (source: FEMA)



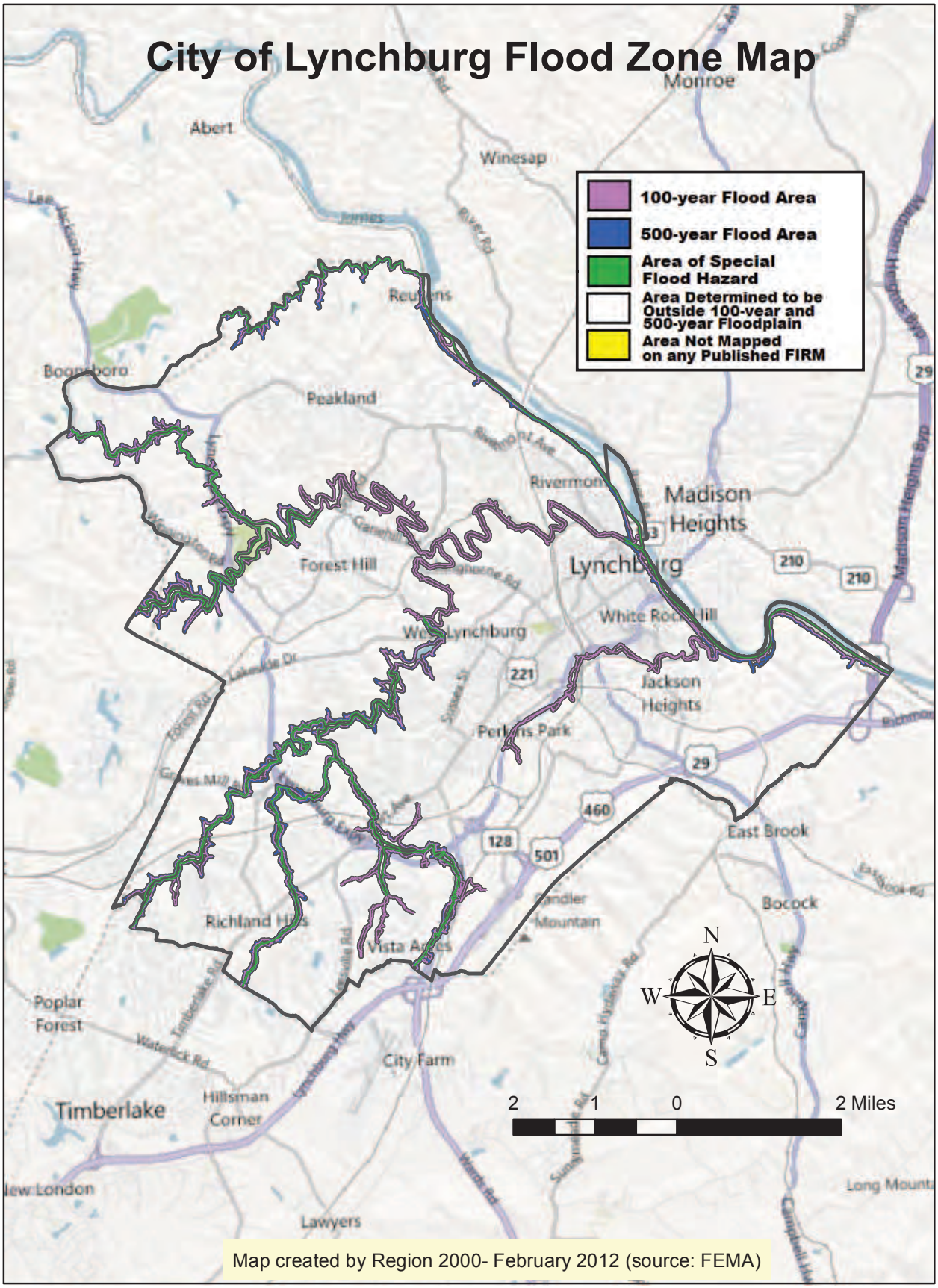
Map created by Region 2000- February 2012 (source: FEMA)

Bedford County Flood Zone Map



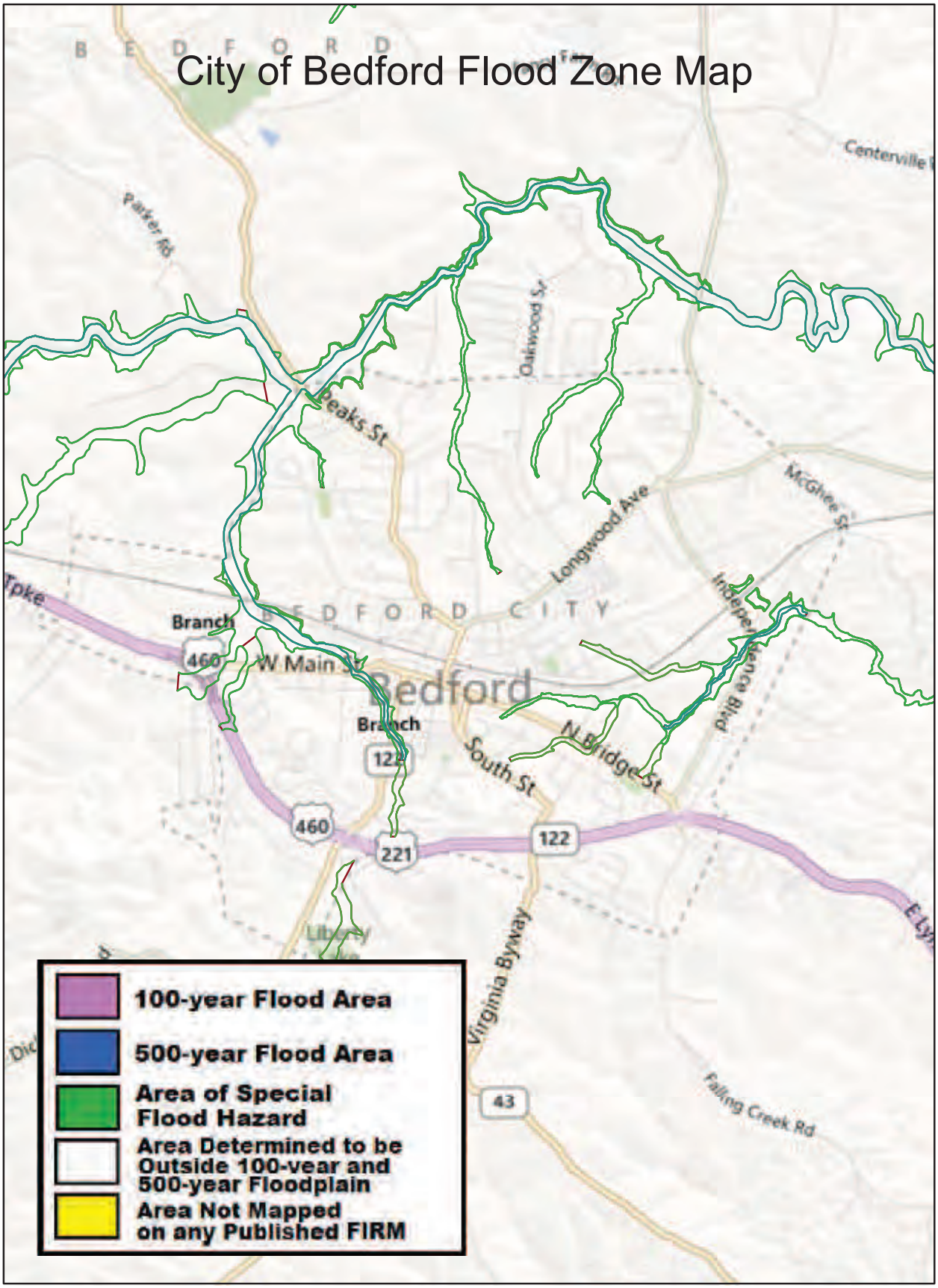
Map created by Region 2000- February 2012 (source: FEMA)

City of Lynchburg Flood Zone Map



Map created by Region 2000- February 2012 (source: FEMA)

City of Bedford Flood Zone Map



Appendix 5.2
Historical Weather Occurrences

Historical Wind Occurrences

In Region 2000 (Includes Hurricanes/Tornadoes)

1950-2011

Primary Sources: National Oceanic and Atmospheric Administration, Historical Society (Newspapers)

Date	Damages
February 1, 1951	**Appomattox County:** Miniature twister struck and demolished an Appomattox farm.
May 14, 1976	A strong line of thunderstorms produced several small tornadoes in the region. **Amherst County:** A small tornado along Old Winesap Road took the roof off of one home; one mobile home was knocked off its foundation; tree limbs were downed. No injuries were reported.
March 21, 1984	**Campbell County:** Touched down in Altavista and remained on the ground for 3/4 of a mile, clearing a path 200 yards wide.
March 22, 1984	A severe thunderstorm passed through the region in the middle of the night with high winds and one tornado. **Town of Altavista:** A minor tornado touched down for three-quarters of a mile and cleared a path 200 yards wide. The tornado destroyed a barn, two sheds, two campers, and several fence lines. No injuries were reported. **Bedford County:** About 500 customers lost power. **Campbell County:** Roads were littered with over 40 downed trees
July 9, 1990	**Amherst County:** A tornado touched down near Pleasant View farm. Minor damage to one house and barn were reported, with no injuries.
June 10, 1996	A severe thunderstorm whipped through the south end of Campbell County Monday, with tornadoes touching down in Henry and Pittsylvania County. A tornado ripped the roof off a house on Virginia route 640. **Campbell County**: Staunton River reached a crest of about 18 feet. A funnel cloud was also sighted near William Campbell High School.
July 15, 1996	A fierce storm, possibly a tornado, whipped through the City of Bedford and the surrounding areas Monday afternoon, damaging several homes. **Bedford City**: Damage reported in the vicinity of Macon and Peaks Streets, and Lake and Whitfield Drives. House damaged on Rough Drive. A tornado caused damage near Stewartsville and near a saw mill north of US 460. Damages from the storm were estimated at $200,000.

Date	Damages
April 17, 2000	Thunderstorms during the late morning through evening of the 17th generated a tornado, and produced hail up to one and three quarter inches in diameter, damaging winds, flash flooding, and lightning damage. A tornado briefly touched down in a field in Gladys. No damage was reported. Lightning struck a house 2 miles north of Altavista, starting a fire that burned to house to the ground. A second house in Brookneal was struck by lightning starting a fire that caused minor damage. **Campbell County:** A tornado briefly touched down in a field west of Gladys, no damage was reported. A house in Brookneal was struck by lightning, starting a fire that caused minor damage. **Altavista:** The storm drove into the southwestern portion of the county, pelting Altavista with dime-sized hail and carrying showers and thunderstorms into the north of the County. Lightning struck a house 2 miles north of Altavista, starting a fire that burned the house to the ground.
April 28, 2002	Two tornadoes swirled through Bedford and Campbell counties damaging hundreds of homes and businesses, knocking down power lines and injuring several people. More then 200 homes, 6 businesses, 2 churches damaged and 20 recreational vehicles damaged. **Bedford County:** Damages estimated over 6 million dollars. **Bedford City:** Estimated 1.6 million dollars in damage. 130 homes affected, 12 mobiles destroyed and 8 single family homes destroyed. **Campbell County:** Damages estimated at over 2.75 million dollars. Damages included 15 homes, 3 businesses and 1 church destroyed.

City of Lynchburg Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
6/8/2007	A large tree was blown down. Severe thunderstorms produced wind damage and hail up to the size of quarters across portions of southwest Virginia.
7/19/2007	Thunderstorm winds blew down several large trees on Thomas Road and Brandon Road. Damage values are estimated. In advance of an approaching cold front, thunderstorms developed during the afternoon hours of the 19th. Some of these increased to severe levels producing damaging winds with numerous reports of trees being blown down and hail ranging from nickel to quarter size.
7/19/2007	Thunderstorm winds blew down limbs that were five to six inches in diameter. Damage values are estimated. In advance of an approaching cold front, thunderstorms developed during the afternoon hours of the 19th. Some of these increased to severe levels producing damaging winds with numerous reports of trees being blown down and hail ranging from nickel to quarter size.
8/21/2007	Trees were blown down. A frontal boundary to the northeast, kept an unstable environment over the area during the afternoon of August 21st. An upper disturbance passed overhead which helped to trigger numerous thunderstorms. Some of of these storms were severe with damaging winds and large hail.
11/15/2008	A large tree was blown down at the corner of 5th and Taylor street in downtown Lynchburg. A cold front swept across Virginia November 15th. Strong southerly winds ahead of the front helped bow out a line of thunderstorms, which brought damaging winds to the ground over portions of the Virginia piedmont late on the morning of the 15th.
5/12/2010	A large tree was blown down by thunderstorm winds. As it fell, it knocked down power lines and bent a power pole. The tree came to rest on the porch of a house. Damage values are estimated. A broad region of thunderstorms progressed through the region. Some of these storms reached severe criteria and producing damaging winds.
5/12/2010	Trees were blown down by thunderstorm winds near the intersetion of Campbell Avenue and Kemper Street. Damage values are estimated. A broad region of thunderstorms progressed through the region. Some of these storms reached severe criteria and producing damaging winds.
6/12/2010	A large tree was blown down on a sidewalk at Alexander and Biltmore. Damage amounts are estimated. Other reports of trees down on multiple city roads as well as thousands of power outages. Two thunderstorm complexes moved around a ridge centered over the southeastern states and into Virginia. The first complex strengthened when it moved east of the Blue Ridge and produced widespread wind damage. The second complex arrived in the evening and produced flash flooding across the mountain empire of Virginia.
6/16/2010	Trees were blown down on Williams Road. Damage amounts are estimated. A cold frontal approaching along with a lee trough provided enough low level convergence for scattered thunderstorms to develop. Enough instability was present for a few of these storms to become severe producing damaging winds.

City of Lynchburg Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
9/22/2010	Thunderstorm winds blew multiple trees down at the 2100 block of Old Forest Road. Damage values are estimated. A very unstable atmosphere with plenty of potential for strong downdrafts of wind existed across the the region. Strong thunderstorms formed during the late afternoon and lasted into the early evening. Several of these storms realized the potential for the damaging winds and resulted in the downing of numerous trees.
4/5/2011	Thunderstorm winds blew down power lines and trees across the city. The roof of Depot Grille was partially torn off by the winds as well. A strong upper level low pressure system and cold front moved across the region on the night of the 4th into early on the 5th of April. A line of showers and thunderstorms accompanied this front. This line intensified as it approached the Blue Ridge and entered into an area of higher instability. This intensification resulted in areas of wind damage, mainly along and east of the Blue Ridge.
6/12/2011	Numerous trees were blown down within a two mile swath. Many were blown down on Mayfield Drive and others were blown down on Gaddy Road, and within an apartment complex off Lakeside Drive near the intersection with Route 501. Damage values are estimated. Scattered showers and storms accompanied the passage of a cold front. Some of these storms increased to severe levels with damaging winds and large hail in areas along and east of the crest of the Blue Ridge.
6/18/2011	Thunderstorm winds knocked a six inch diameter limb off a tree and onto power lines at the 3200 block of Forest Brook Road. Damage values are estimated. Thunderstorm complexes moved southeast from Kentucky into Tennessee. Outflow boundaries from these complexes moved eastward into Virginia and touched of showers and storms. Some of these storms increased to severe levels and produced damaging thunderstorm winds.
6/28/2011	Thunderstorm winds blew trees down across the City of Lynchburg. Damage values are estimated. A cold front swept through the region on the 28th. Multiple clusters of storms accompanied the front as it progressed. Some of these storms increased to severe levels and produced large hail and damaging winds.

Amherst County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
5/21/2004	Severe thunderstorms on the afternoon and evening of May 21st from the Roanoke Valley south to Southside Virginia produced hail up to the size of golf balls and destructive winds that toppled trees and power and telephone lines.
6/11/2004	Scattered severe storms on the afternoon of the 11th produced damaging winds. Reports of trees down were common. One microburst event at a marina in Pulaski County downed 8 trees and one power pole. The fallen trees caused damage to a boat shelter and boats.
4/3/2005	Deep closed upper level low and associated surface low passed directly over southwest Virginia on April 2nd. The surface low deepened significantly as it exited and headed northeast. Unusualy strong low level winds developed in the deep, cyclonic flow in the storm's wake. The strongest wind gusts topped out in the 50 to 56 kt range for at least a one hour time frame. The winds caused widespread (mostly tree and powerline) damage over the favored high (cross-mountain flow) wind locations. Wet soil conditions likely aggravated the tree damage. There were also a few reports of structural damage (mainly roof and siding damage).
8/16/2005	Tree down. A weak frontal boundary stalled just north of the area, with impulse working southeast into a highly unstable atmosphere, brought scattered severe thunderstorms to Western Virginia during the afternoon and evening of the 16th.
1/14/2006	A cold front passed across Virginia in the early morning hours of the 14th. After sunrise, winds increased and very strong gusts during the day resulted in numerous reports of trees down, many power lines down, power outages, signs blown down or bent, and some structural damage from trees falling on buildings, and shingles being blown off roofs.
4/3/2006	Numerous severe thunderstorms developed in the unstable air the afternoon of the 3rd in advance of an approaching cold front. Severe wind gusts downed trees and some powerlines in many locations.
4/7/2006	A line of severe thunderstorms progressed acrossed the area the evening of the 7th in association with a cold front. Numerous reports of both damaging winds around 60 to 75 mph downing trees and/or power lines and large hail were common with these storms as they moved through the region. Additional severe storms formed behind the main line of storms later in the evening across far southwest Virginia.
6/23/2006	Thunderstorm winds downed several large trees along the Blue Ridge Parkway near Peaks of Otter. The Public Safety Director of Amherst reported 20-30 trees downed by thunderstorm winds in Amherst county. There was an isolated strip about 3/4 mile long of 2 foot diameter trees downed.
6/28/2006	Thunderstorm winds downed several trees 1 mile southeast of Goode in Bedford county. A severe thunderstorm produced penny sized hail 2 miles east of Blacksburg. Thunderstorm winds downed numerous trees along the Blue Ridge Parkway near the Virginia 130 Intersection. A stop sign was also uprooted from the ground.

Amherst County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
7/19/2006	Thunderstorms began developing during the afternoon hours of the 19th due primarily to daytime heating in an already unstable atmosphere. Some of these increased to severe levels, producing both damaging wind gusts, and large hail. As evening arrived, severe storms continued to be a treat thanks to the approach and then arrival of a dying meso-scale convective complex that moved out of the Ohio Valley and into our region. Again, damaging wind gusts, and large hail resulted from these severe storms.
7/20/2006	Afternoon thunderstorms developed across parts of the the region. Some of these storms produced damaging winds in the 60 to 70 mph range, downing some trees.
12/1/2006	Two trees downed near Madison Heights. A strong cold front swept east across the Appalachians on the 1st of December resulting in gusty west winds.
2/14/2007	Trees down at Peaks of Otter.Northwest winds behind a departing winter storm off the Virginia coast gusted over 60 mph and brought trees down across portions of southwest Virginia.
4/16/2007	Trees were blown down countywide. A very strong pressure gradient developed as a vigorous area of low pressure moved northeast from the North Carolina coast to off the Long Island coast developing into a nor'easter and high pressure progressed into the area from the midwest. Trees and power lines were knocked down as a result of the strong winds which were common across the region. There was also some minor damage to some structures. Most areas experienced wind gusts between 50 and 60 mph...with isolated wind gusts approaching 70 mph.
5/12/2007	Two large trees blown down, along with numerous branches. Severe thunderstorms developed along the foothills in Virginia during the afternoon and evening of May 12th. The storms brought hail up to the size of golf balls and wind damage.
6/8/2007	Severe thunderstorms produced wind damage and hail up to the size of quarters across portions of southwest Virginia.
6/19/2007	The roof of home was damaged and large trees were uprooted.Severe thunderstorms produced wind damage and hail up to the size of quarters.
6/19/2007	Four to five trees down on Highway 60 East. Severe thunderstorms produced wind damage and hail up to the size of quarters.
6/25/2007	Numerous large tree limbs down. Severe thunderstorms created wind damage and hail up to penny sized.
8/16/2007	Penny sized hail fell 15 miles west of Amherst.Scattered severe thunderstorms developed ahead of a cold front during the afternoon of August 16th. These storms brought damaging winds and large hail from the southern Shenandoah Valley east into the Virginia piedmont.
8/19/2007	A severe thunderstorm produced penny sized hail 5 miles east of Alto, VA. A severe thunderstorm produced penny sized hail over northern Amherst County, VA, August 19th.

Amherst County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
8/21/2007	Trees were blown down. A frontal boundary to the northeast, kept an unstable environment over the area during the afternoon of August 21st. An upper disturbance passed overhead which helped to trigger numerous thunderstorms. Some of of these storms were severe with damaging winds and large hail.
4/26/2008	A cold front moved through the area bringing with it showers and thunderstorms. Some of the storms produced large hail and damaging winds.
6/7/2008	Two four-inch diameter tree limbs were blown down by thunderstorm winds. Outflow boundaries from earlier showers and thunderstorms interacted with a warm, moist and unstable air mass to trigger severe thunderstorms. These storms produced damaging winds and large hail on June 7.
6/27/2008	Several trees were blown down by thunderstorm winds on Ned Brown Road. The trees fell into power lines resulting in an electrical fire. Damage values are estimated.
2/12/2009	High winds blew down trees between Lowesville and Piney River. Trees were also blown down along Highway 29 south of Amherst.
2/10/2010	Strong northwest winds behind a strengthening coastal low brought down a tree in the Pedlar Mills area and scattered trees throughout the rest of the county.
2/26/2010	A tree was reported down on Route 151 due to high winds.
5/12/2010	A tree was blown down on Waughs Ferry Crossing near Route 130. Damage values are estimated.
5/12/2010	A tree was blown down on High Peak Road. Damage values are estimated.
5/14/2010	A cold front approached the region during the day and passed through the evening hours. Storms developed along and ahead of this front, many of which increased to severe magnitude and produce mainly large hail with some wind damage reports.
5/23/2010	Half dollar size hail fell on Pine Hill Drive. Damage values are estimated. Scattered thunderstorms developed during the early afternoon hours across portions of Virginia. A couple of these managed to produce some hail ranging from penny to half dollar size.
5/28/2010	Golfball size hail was reported along Little Piney Road. Damage values are estimated. A backdoor cold front pushed south into the region and stalled along the crest of the Blue Ridge along a north to south orientation. During the afternoon and early evening, numerous thunderstorms developed along and near the front. Some of these produced damaging wind and hail along with flash flooding.
6/12/2010	Trees were blown down in Madison Heights. A large road sign was also blown over on Route 29. Damage amounts are estimated.
7/20/2010	Thunderstorm winds knocked down a tree on Zane Snead Drive near Boxwood Farm Road.
8/4/2010	A tree was blown down onto a house at the intersection of Elon Road and Horeshoe Bend Rd. A complex of thunderstorms, some severe, crossed the region during the evening hours producing pockets of winds damage over a wide area.Numerous trees were blown down by thunderstorm winds on Route 130 and Route 29.

Amherst County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
8/5/2010	Numerous trees were blown down. A cold front crossed into the area at peak heating of the day creating high instability along with moderate wind shear. Scattered thunderstorms developed ahead of the front as well as more organized lines closer to the front, producing downburst winds but very little hail.
8/5/2010	Two trees were blown down on Lovelady Creek Road. A cold front crossed into the area at peak heating of the day creating high instability along with moderate wind shear. Scattered thunderstorms developed ahead of the front as well as more organized lines closer to the front, producing downburst winds but very little hail.
8/26/2010	A one-foot diameter tree limb was blow down. A combination of daytime heating, instability and low-level moisture ahead of a cold front resulted in scattered showers and thunderstorms. Some of the stronger cells produced golf-ball size hail and winds up to 60 mph causing tree damage.
9/22/2010	Quarter size hail fell on Turtle Hollow Road. A very unstable atmosphere with plenty of potential for strong downdrafts of wind existed across the the region.
9/30/2010	Small stream flooding occurred along Higginbottom Creek, and Higginbottom Road was flooded and closed because of the water. Damage values are estimated.
12/1/2010	Thunderstorm winds blew a tree down on Higginbotham Creek Road. Damage values are estimated. Trees were downed in association with thunderstorms along a cold front as it passed through the region.
2/25/2011	Around 20 trees and power lines were blown down by high winds across Amherst county.
4/26/2011	Southerly winds out ahead of a deep trough over the southern plains ushered in warm and humid air into the region. The resulting instability, combined with moderate winds aloft, combined to produce an environment marginally favorable for severe weather. Thunderstorms formed mainly along and east of the Blur Ridge during the afternoon, and several of these storms became severe with large hail and damaging winds.
5/23/2011	Isolated storms drifted across the area and became briefly severe over Amherst County.
6/12/2011	Thunderstorm winds blew trees down for a one mile stretch along Route 151 between Piney River and Clifford. Damage values are estimated.
6/28/2011	Thunderstorm winds blew a tree down. Damage values are estimated.A cold front swept through the region on the 28th. Multiple clusters of storms accompanied the front as it progressed. Some of these storms increased to severe levels and produced large hail and damaging winds.
7/4/2011	Numerous trees blown down across Amherst county.
8/14/2011	A large oak tree reported blown down by thunderstorm winds
8/25/2011	Trees were reported down from thunderstorm winds along Route 60.
8/25/2011	Trees were blown down by thunderstorm winds on River Road near Madison Heights.
8/27/2011	Around five trees were blown down across the county.

Amherst County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
9/1/2011	Several trees were blown down near the intersection of Highway 29 and 151. Damage values are estimated.
11/23/2011	Trees were reported blown down in several locations across Amherst county.

Appomattox County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
6/23/2006	Large trees were downed between Evergreen and along Route 696 in Pamplin in Appomattox.
7/19/2007	Thunderstorm winds blew a tree down on Route 727. Damage values are estimated. In advance of an approaching cold front, thunderstorms developed during the afternoon hours of the 19th. Some of these increased to severe levels producing damaging winds with numerous reports of trees being blown down and hail ranging from nickel to quarter size.
8/21/2007	Many trees were blown down. A frontal boundary to the northeast, kept an unstable environment over the area during the afternoon of August 21st. An upper disturbance passed overhead which helped to trigger numerous thunderstorms. Some of of these storms were severe with damaging winds and large hail.
3/4/2008	Two trees were downed by thunderstorm wind gusts along Oakville Road near Gladstone. A strong cold front moving through the area brought severe thunderstorms with damaging winds.
7/7/2008	A tree was blown down. Damage values are estimated. An uncharacteristic area of relatively cool low pressure moved southeast out of Canada into the region. Daytime heating due to sunshine combined with the relatively cooler low overhead and helped to result in a very unstable atmosphere. The result was the formation of thunderstorms with numerous reports of severe hail and damaging winds.
7/8/2008	A tree was blown down. Damage values are estimated. An uncharacteristic area of relatively cool low pressure moved southeast out of Canada into the region. Daytime heating due to sunshine combined with the relatively cooler low overhead and helped to result in a very unstable atmosphere. The result was the formation of thunderstorms with numerous reports of severe hail and damaging winds.
11/15/2008	A tree was blown down onto a power line along Gala Lake Road. A cold front swept across Virginia November 15th. Strong southerly winds ahead of the front helped bow out a line of thunderstorms, which brought damaging winds to the ground over portions of the Virginia piedmont late on the morning of the 15th.
5/12/2010	Power lines were blown down on Autumn Lane near Lucy Street and Chilton TD near Promise Lane Road. Damage values are estimated. A broad region of thunderstorms progressed through the region. Some of these storms reached severe criteria and producing damaging winds.
7/13/2010	Thunderstorm winds caused the roof of building to partially collapse on cars in a car lot. A strong upper level trough of low pressure moved across the Mid-Atlantic region during the afternoon and evening. Large scale lift in advance of this feature tapped into deep moisture to produce scattered severe thunderstorms in portions of western Virginia.
8/4/2010	Two trees were reported down on Old Evergreen Road. A complex of thunderstorms, some severe, crossed the region during the evening hours producing pockets of winds damage over a wide area.

Appomattox County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
8/5/2010	Several trees were brought down along Route 24 and Route 460. A cold front crossed into the area at peak heating of the day creating high instability along with moderate wind shear. Scattered thunderstorms developed ahead of the front as well as more organized lines closer to the front, producing downburst winds but very little hail. Some training of cells occurred resulting in some flash flooding as well. Every Virginia county in the warning area had a warning issued at one point or another.
11/16/2010	Thunderstorm winds blew down a tree and power line on Piney Mountain Road. A line of low-topped thunderstorms developed ahead of a strong cold front associated with a surface low that moved through the Ohio Valley to the west of the Allegheny mountains. Several locations east of a Martinsville to Lynchburg line reported damage.
6/28/2011	Thunderstorm winds blew trees down at Hollywood. Damage values are estimated. A cold front swept through the region on the 28th. Multiple clusters of storms accompanied the front as it progressed. Some of these storms increased to severe levels and produced large hail and damaging winds.
7/24/2011	Thunderstorm winds blew down numerous trees across the area. Trees were down on Red House Road, Promise Land Road, Country Club Road and Purdum Mill Road. Another weak upper level storm system under a ride of high pressure aloft, moved out of West Virginia into our area during the afternoon. This combined with a trough of low pressure in the Piedmont helped trigger afternoon showers and thunderstorms. Enough instability was present for a few of these to become severe.
7/30/2011	Thunderstorm winds knocked several trees down. A cold front and an outflow boundary from earlier thunderstorms upstream both moved across the area during the afternoon. These boundaries helped spark numerous showers and thunderstorms. Enough instability developed during the afternoon to allow some of these storms to become severe.
7/30/2011	Several trees down across the southern half of the county. One was down on Route 644, one on Route 679, one on Route 643, one on Route 719, one on Route 604, and another on Lee Grant Avenue. A cold front and an outflow boundary from earlier thunderstorms upstream both moved across the area during the afternoon. These boundaries helped spark numerous showers and thunderstorms. Enough instability developed during the afternoon to allow some of these storms to become severe.

Bedford County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	Description
5/9/2004	Severe thunderstorms were scattered across far southwest Virginia during the afternoon and early evening of May 9th. Hail sizes ranged up to golf ball size, and there was an isolated report of a downed tree.
5/21/2004	Severe thunderstorms on the afternoon and evening of May 21st from the Roanoke Valley south to Southside Virginia produced hail up to the size of golf balls and destructive winds that toppled trees and power and telephone lines.
5/22/2004	During the afternoon of May 22nd, severe thunderstorms over the Roanoke Valley produced large hail ranging up to tea cup size with an isolated report of severe winds blowing a tree down on top of power lines.
5/23/2004	In the late morning and early afternoon of May 23rd, severe thunderstorms impacted areas of southwest Virginia mainly just east of the Blue Ridge Mountains. Hail sizes ranged up to golf ball size, and some wind gusts were strong enough to down some trees.
7/10/2004	During the afternoon of the 10th, severe thunderstorms produced wind damage and large hail across portions of Western Virginia. A severe thunderstorm in Franklin County, downed several trees in the Glade Hill community, with trees falling on and damaging vehicles and several homes.Thunderstorm winds downed trees across Botetourt County, including some that fell on a vehicle along Interstate 81 in Troutville. Trees were also downed in Stuart, as well as other parts of Patrick County. Winds downed trees in Moneta, Chatham and Woodlawn as well. In Woodlawn, trees fell on a vehicle on Highway 221.
9/17/2004	At 1212 EST, an F0 tornado touched down near Dickerson Road, and the width was less than 50 yards. The tornado damage path widened and varied from 100 yards to as much as 300 yards, as it did moderate to strong F1 damage to trees. A few homes suffered only minor damage to shingles and roofs, mainly due to trees falling on them. As the F1 tornado crossed Highway 24 at 1215 EST, it continued to damage trees, and was about 75 yards wide. A poorly constructed building was demolished. As the tornado moved north, it continued to down trees. Also, a car was pivoted in a driveway but undamaged. Minor structural and roof damage to homes occurred, as the tornado increased to a weak F2. The tornado weakened to F0 by 1217 EST, downing more trees along County Road 619.
9/17/2004	In Campbell County, trees were downed on 2 vehicles. In Appomattox County, many trees were downed. In Bedford County, many large trees were downed, near Peaks of Otter. Many trees were downed in Galax.
3/23/2005	A thunderstorm during the afternoon of the 23rd produced hail up to quarter sized and damaging winds in Montgomery county. Thunderstorms on the afternoon of the 23rd produced penny sized hail across portions of Roanoke and Bedford counties in southwest Virginia.

Bedford County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	Description
4/16/2005	Cold arctic high pressure over the region allowed for clear skies and light winds, the perfect combination for cold temperatures. Sub-freezing were reported across parts of the Roanoke Valley and Southside Virginia. Specific morning low temperature for Campbell Co. and the City of Lynchburg include 26 at Brookneal, 28 in the City of Lynchburg and 31 at the Lynchburg Airport; for Bedford Co. include 31 at Holcomb Rock; for Pittsylvania Co. include 28 at Chetham; for Roanoke Co and City include 31 at the airport and 32 in the city; for Henry Co include 30 at the Martinsville Airport; for Patrick Co. include 29 in the eastern part of the County.
6/6/2005	Severe thunderstorms during the evening of the 6th produced hail up to nickel sized near Rocky Mount in Franklin county. Thunderstorm winds during the evening of the 6th downed trees near Huddleston in Bedford.
8/16/2005	Six trees downed in a yard. A weak frontal boundary stalled just north of the area, with impulse working southeast into a highly unstable atmosphere, brought scattered severe thunderstorms to Western Virginia during the afternoon and evening of the 16th.
12/15/2005	A winter storm moved across southwest Virginia on the afternoon and night of the 15th of December. A band of sleet, snow and freezing rain moved through the region. As the storm progressed east, it coated the area with a 1/4 to 3/4 inch of ice. Appalachian Power reported that falling trees, tree limbs and power lines interrupt electric service to 38,000 customers especially in Campbell, Patrick, Henry and Carroll counties. Close to 10,000 customers lost power in the Lynchburg area. The Virginia State Police reported numerous accidents.
1/14/2006	A cold front passed across Virginia in the early morning hours of the 14th. After sunrise, winds increased and very strong gusts during the day resulted in numerous reports of trees down, many power lines down, power outages, signs blown down or bent, and some structural damage from trees falling on buildings, and shingles being blown off roofs.
4/3/2006	Numerous severe thunderstorms developed in the unstable air the afternoon of the 3rd in advance of an approaching cold front. Severe wind gusts downed trees and some powerlines in many locations.
4/7/2006	A line of severe thunderstorms progressed acrossed the area the evening of the 7th in association with a cold front. Numerous reports of both damaging winds around 60 to 75 mph downing trees and/or power lines and large hail were common with these storms as they moved through the region.
5/14/2006	Numerous thunderstorms developed late in the morning on the 14th, lasting into the afternoon. Severe storms brought mainly large hail, up to half dollar size, to southwest Virginia. Isolated wind damage also occurred, resulting in a few trees down.
6/23/2006	Thunderstorm winds downed several large trees along the Blue Ridge Parkway near Peaks of Otter. The Public Safety Director of Amherst reported 20-30 trees downed by thunderstorm winds in Amherst county. There was an isolated strip about 3/4 mile long of 2 foot diameter trees downed.

Bedford County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	Description
6/28/2006	Thunderstorm winds downed several trees 1 mile southeast of Goode in Bedford county. A severe thunderstorm produced penny sized hail 2 miles east of Blacksburg. Thunderstorm winds downed numerous trees along the Blue Ridge Parkway near the Virginia 130 Intersection. A stop sign was also uprooted from the ground.
7/4/2006	Thunderstorms fired in advance of an approaching cold front. Some of these reached severe criteria and produced damaging wind gusts between roughly 60 and 80 mph. The most common form of damage was downed trees and powerlines. There was one area that reported structural damage. Near Smith Mountain Lake northeast of Burnt Chimney there was structural damage to decks, roofs, a chimney and two cars. There was also a couple of reports of hail the size of pennies to nickels with the thunderstorms. One storm also helped to produce flash flooding in the town of Cana in Carroll County when high rushing waters blocked the portion of Airport Church Road at U.S. 52 and Wards Gap.
7/4/2006	Thunderstorms fired in advance of an approaching cold front. Some of these reached severe criteria and produced damaging wind gusts between roughly 60 and 80 mph. The most common form of damage was downed trees and powerlines. There was one area that reported structural damage. Near Smith Mountain Lake northeast of Burnt Chimney there was structural damage to decks, roofs, a chimney and two cars.
7/13/2006	In advance of a cold front thunderstorms developed. Some of these storms reached severe limits by produced damaging winds in the 60 to 70 mph range. Trees were downed in numerous locations. Lightning stuck struck two apartment buildings. One of the structures had a portion of an exterior wall blown into its interior room causing damage, and a little charring.
7/13/2006	In advance of a cold front thunderstorms developed. Some of these storms reached severe limits by produced damaging winds in the 60 to 70 mph range. Trees were downed in numerous locations. Lightning stuck struck two apartment buildings. One of the structures had a portion of an exterior wall blown into its interior room causing damage, and a little charring.
7/19/2006	Thunderstorms began developing during the afternoon hours of the 19th due primarily to daytime heating in an already unstable atmosphere. Some of these increased to severe levels, producing both damaging wind gusts, and large hail.
7/21/2006	Daytime heating helped to produce scattered thunderstorms across the region. Some of these strengthened to severe levels and produced wind gusts of 60 to 70 mph that helped to down trees and tree limbs. One tree fell on two cars and a fence in the City of Bedford. Also, severe hail fell continuously in the City of Bedford for 21 minutes. During this time, the hail ranged from penny size to quarter size. Very heavy rains also accompanied the City of Bedford storm.
5/12/2007	A large tree fell pulling power lines down. EPISODE NARRATIVE: Severe thunderstorms developed along the foothills in Virginia during the afternoon and evening of May 12th. The storms brought hail up to the size of golf balls and wind damage.

Bedford County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	Description
5/28/2007	Severe thunderstorms brought wind damage and large hail to portions of southwest Virginia during the afternoon of May 28th.
5/28/2007	Trees were downed on Dickerson Mill Road. EPISODE NARRATIVE: Severe thunderstorms brought wind damage and large hail to portions of southwest Virginia during the afternoon of May 28th.
5/28/2007	A tree was blown down on Walnut Hollow Road. EPISODE NARRATIVE: Severe thunderstorms brought wind damage and large hail to portions of southwest Virginia during the afternoon of May 28th.
5/31/2007	Several trees downed. EPISODE NARRATIVE: Severe thunderstorms developed during the afternoon of May 31st, and continued into the evening. These storms formed along a dying backdoor cold front, with a moist, unstable air mass in place. The storms produced large hail and damaging winds to portions of southwest Virginia.
6/11/2007	Severe thunderstorms produced wind damage and hail up to quarter sized.
6/19/2007	A couple of trees down. EPISODE NARRATIVE: Severe thunderstorms produced wind damage and hail up to the size of quarters.
6/19/2007	Trees down. EPISODE NARRATIVE: Severe thunderstorms produced wind damage and hail up to the size of quarters.
6/25/2007	Severe thunderstorms created wind damage and hail up to penny sized.
7/16/2007	Thunderstorms formed during the afternoon of the 16th. Some of these storms reached severe levels producing damaging winds gusts and penny to quarter size hail.
7/17/2007	Thunderstorms formed during the afternoon of the 17th. Some of these storms were severe, producing damaging wind gusts and hail ranging from penny to quarter size.
7/19/2007	Thunderstorm winds blew large tree limbs down on a golf course. Damage values are estimated. EPISODE NARRATIVE: In advance of an approaching cold front, thunderstorms developed during the afternoon hours of the 19th. Some of these increased to severe levels producing damaging winds with numerous reports of trees being blown down and hail ranging from nickel to quarter size.
7/19/2007	In advance of an approaching cold front, thunderstorms developed during the afternoon hours of the 19th. Some of these increased to severe levels producing damaging winds with numerous reports of trees being blown down and hail ranging from nickel to quarter size.
7/19/2007	Thunderstorm winds blew down numerous trees. Damage values are estimated. EPISODE NARRATIVE: In advance of an approaching cold front, thunderstorms developed during the afternoon hours of the 19th. Some of these increased to severe levels producing damaging winds with numerous reports of trees being blown down and hail ranging from nickel to quarter size.
7/19/2007	Thunderstorm winds blew down a tree. Damage values are estimated. EPISODE NARRATIVE: In advance of an approaching cold front, thunderstorms developed during the afternoon hours of the 19th. Some of these increased to severe levels producing damaging winds with numerous reports of trees being blown down and hail ranging from nickel to quarter size.

Bedford County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	Description
7/29/2007	A heavy rain producing thunderstorm prompted a small creek along Brookstone Road to significantly leave its banks. Subsequently, a home ended up having water surrounding it at one point. EPISODE NARRATIVE: Slow moving, heavy rain producing thunderstorms caused flash flooding to take place over parts of the area. One of these storms also reached severe limits and uprooted some trees.
8/16/2007	Hail up to the size of quarters fell 5 mile east of the city of Bedford. EPISODE NARRATIVE: Scattered severe thunderstorms developed ahead of a cold front during the afternoon of August 16th. These storms brought damaging winds and large hail from the southern Shenandoah Valley east into the Virginia piedmont.
8/21/2007	Trees were blown down. EPISODE NARRATIVE: A frontal boundary to the northeast, kept an unstableenvironment over the area during the afternoon of August 21st. An upper disturbance passed overhead which helped to trigger numerous thunderstorms. Some of of these storms were severe with damaging winds and large hail.
9/1/2007	Hay,grain, soy and tobacco production was down forty to fifty percent due to the drought. The southwest portion of Campbell county had the greatest losses. EPISODE NARRATIVE: Drought conditions worsened across southwest Virginia, as seventeen counties fell into a severe drought (D2) on September 1st. This severe drought continued through the end of September. Crop damage estimates are from county extension offices.
2/6/2008	A strong cold front moving into the area triggered a few thunderstorms, some of which became severe. These isolated severe thunderstorms brought wind damage to portions of southwest Virginia.
2/6/2008	A couple of large limbs were downed by severe thunderstorm winds. EPISODE NARRATIVE: A strong cold front moving into the area triggered a few thunderstorms, some of which became severe. These isolated severe thunderstorms brought wind damage to portions of southwest Virginia.
2/10/2008	Several trees were downed across the county. EPISODE NARRATIVE: A fast moving arctic front swept across the area February 10th. In its wake, very strong west winds and wind gusts ensued over the area. Each county in southwest Virginia received wind damage. These high winds also touched off several wildfires. Three of the largest wildfires were Little Cuba (2700 acres) in Craig County, Black Horse (1500 acres) in Bedford County, and Green Ridge Mountain (about 4000 acres) in Roanoke County. Despite the size of these fires, no personal property was damaged or destroyed.
4/26/2008	Thunderstorm winds blew down trees across Highway 460. Power lines were also blown down by the winds. Damage values are estimates. EPISODE NARRATIVE: A cold front moved through the area bringing with it showers and thunderstorms. Some of the storms produced large hail and damaging winds.
6/7/2008	Thunderstorm winds knocked down one tree on State Route 737. Damage values are estimated. EPISODE NARRATIVE: Outflow boundaries from earlier showers and thunderstorms interacted with a warm, moist and unstable air mass to trigger severe thunderstorms. These storms produced damaging winds and large hail on June 7.

Bedford County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	Description
6/22/2008	An upper level area of low pressure moved across the region ahead of a weak upstream cold front. These features combined with an unstable air mass to produce widespread strong to severe thunderstorms that produced not only large hail but also included some wind damage on June 22. These severe storms lingered well after the loss of heating.
6/28/2008	A tree was blown down on Route 655 west of the Smith Mountain Lake Airport. Damage values are estimated. EPISODE NARRATIVE: A cold front moving into moist, unstable air across southwest Virginia triggered scattered thunderstorms on June 28. A few of these storms produced damaging wind gusts and large hail over the foothills of Virginia.
7/8/2008	A tree was blown down. Damage values are estimated. EPISODE NARRATIVE: Winds associated with a strong upper level jet wrapping into the area behind an exiting upper level disturbance were brought downward to the surface by associated severe thunderstorms.
7/9/2008	Trees of two to three feet in diameter were blown down and blocked Route 24. Damage values are estimated.
7/22/2008	A large outflow boundary from an overnight thunderstorm complex moved through the region during the morning and early afternoon hours of July 22. This prevented thunderstorm development until early evening when storms started developing.
4/20/2009	A cold front passed through the area and generated some thunderstorms. Some of these storms reached severe levels and produced penny to nickel size hail.
6/3/2009	A moderately unstable air mass and seasonably strong mid-level shear helped to produce widespread multicellular storms beginning in the early afternoon of June 3rd. The storms began primarily as hail-makers but later in the day transitioned to damaging winds across a fairly wide area.
6/11/2009	Thunderstorm winds brought down one tree in Bedford. EPISODE NARRATIVE: A large complex of thunderstorms pushed from Tennessee and Kentucky into the western forecast area by late afternoon of June 11th.
8/5/2009	Large tree limbs were blown down. EPISODE NARRATIVE: A moist and unstable air mass ahead of cold front, along with an strong upper disturbance, contributed to the development of organized thunderstorms August 5th. Severe thunderstorms were scattered across portions of southwest Virginia, and brought mainly wind damage, with a few areas receiving up to nickel sized hail.
8/19/2009	A tree was blown down on Goodview Road. EPISODE NARRATIVE: A thunderstorm produced damaging winds in Bedford County during the afternoon of August 20th.
2/10/2010	Strong northwest winds behind a strengthening coastal low caused power outages due to a tree down on power lines on Highway 24 east of Vinton. A measured wind gust of 63 mph was also recorded in Stewartsville, and a tree was blown down on a car on Route 24 in Chamblissburg.
2/26/2010	A wind gust to 71 MPH was recorded in Stewartsville. Several trees were also reported down in the same area.

Bedford County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	Description
3/22/2010	A single wide mobile home was blown 6 inches off its foundation by thunderstorm winds. One large oak tree was also blown down.
4/5/2010	Storms fired up initially in the afternoon of the 5th over the western mountains south of a front stalled out over the Ohio Valley. The primary severe mode was large hail over the mountains with some scattered wind damage in the piedmont.
5/28/2010	A tree was blown down on Hurricane Drive. Damage values are estimated.
6/19/2010	Trees were blown down blocking traffic at 6500 Jeters Chapel Road. Damage amounts are estimated.
6/28/2010	Trees were blown down on Smith Mountain Lake Parkway near Huddleston. Damage amounts are estimated.
7/8/2010	Several trees were knocked down by thunderstorm winds on Centerville Road. EPISODE NARRATIVE: Low pressure was located off the Carolina coast and spread moisture westward into the area which aided in the development of severe isolated to scattered thunderstorms mainly across the Virginia Southside.
7/9/2010	Johns Creek was reported to have water briefly out of its banks and caused roads to be closed. EPISODE NARRATIVE: Low pressure was located off the Carolina coast and spread moisture westward into the area which aided in the development of isolated to scattered thunderstorms. Heavy rains caused flash flooding in Bedford County.
7/13/2010	Numerous large tree limbs were blown down by thunderstorm winds on Bentwood Drive. EPISODE NARRATIVE: A strong upper level trough of low pressure moved across the Mid-Atlantic region during the afternoon and evening. Large scale lift in advance of this feature tapped into deep moisture to produce scattered severe thunderstorms in portions of western Virginia.
7/20/2010	Several trees were blown down in the Eagle Eyrie area near Route 501. EPISODE NARRATIVE: Warm and moist air ahead of a cold front in the Ohio Valley combined with an upper level low pressure system to spark scattered severe thunderstorms across southwest Virginia.
7/29/2010	One tree was blown down along Route 668 near New London Road.
8/4/2010	One tree was blown down. EPISODE NARRATIVE: A complex of thunderstorms, some severe, crossed the region during the evening hours producing pockets of winds damage over a wide area.
8/5/2010	Evington Road was closed due to flood waters flowing over the road.
9/22/2010	A thunderstorm wind gust was estimated at 60 mph.
7/12/2011	Thunderstorm winds blew multiple trees down along Forest Road just outside of the City of Bedford limits. Damage values are estimated.

Campbell County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
7/19/2006	Thunderstorms began developing during the afternoon hours of the 19th due primarily to daytime heating in an already unstable atmosphere. Some of these increased to severe levels, producing both damaging wind gusts, and large hail. As evening arrived, severe storms continued to be a treat thanks to the approach and then arrival of a dying meso-scale convective complex that moved out of the Ohio Valley and into our region.
4/6/2006	Cold arctic high pressure over the region allowed for sub-freezing temperatures after a period of relatively mild weather in late March and very early April 2007. The mild weather helped to jump start the growing season across the area, and freezing temperatures, as low as the lower to middle 20s F, lead to significant crop damage.
4/16/2007	Trees were blown down in Campbell County and across the City of Lynchburg. Some of these fallen trees brought down powerlines in the process. At one point, 4600 electrical customers in the Lynchburg area were without power.
5/21/2007	Thunderstorm winds blew the roof off a 60 by 100 foot barn. A severe thunderstorm produced wind damage to a barn in Campbell County during the evening of May 21st.
6/11/2007	Severe thunderstorms produced wind damage and hail up to quarter sized.
6/25/2007	Tree down on Browns Mill Road. Severe thunderstorms created wind damage and hail up to penny sized.
6/28/2007	Power lines down. Severe thunderstorms during the afternoon contained damaging winds and hail up to nickel sized.
7/19/2007	Thunderstorm winds blew a tree down on Sunnymeade Road. Damage values are estimated. In advance of an approaching cold front, thunderstorms developed during the afternoon hours of the 19th. Some of these increased to severe levels producing damaging winds with numerous reports of trees being blown down and hail ranging from nickel to quarter size.
8/9/2007	Severe thunderstorm winds blew a roof off a barn, displaced sheds, and downed five to six trees. It also damaged a crop of hay.
8/16/2007	Trees and power lines were blown down. Scattered severe thunderstorms developed ahead of a cold front during the afternoon of August 16th. These storms brought damaging winds and large hail from the southern Shenandoah Valley east into the Virginia piedmont.
8/21/2007	Two large road signs were snapped off. Damage amounts are rough estimates. A frontal boundary to the northeast, kept an unstable environment over the area during the afternoon of August 21st. An upper disturbance passed overhead which helped to trigger numerous thunderstorms. Some of of these storms were severe with damaging winds and large hail.
8/26/2007	Numerous large tree limbs were blown down on a golf course. A rain shelter also sustained wind damage. A weak cold front moved through western Virginia August 26th. A couple of thunderstorms that developed became severe over the piedmont, producing wind damage.

Campbell County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
12/16/2007	Trees down along Three Creeks Road near Gladys. As low pressure moved northeast along the East Coast, strong northwest winds in its wake resulted in downed trees and power lines.
2/10/2008	Trees were blown down across the county and in the city of Lynchburg. One tree fell onto a car in Altavista. A fast moving arctic front swept across the area February 10th. In its wake, very strong west winds and wind gusts ensued over the area. Each county in southwest Virginia received wind damage. These high winds also touched off several wildfires. Three of the largest wildfires were Little Cuba (2700 acres) in Craig County, Black Horse (1500 acres) in Bedford County, and Green Ridge Mountain (about 4000 acres) in Roanoke County. Despite the size of these fires, no personal property was damaged or destroyed.
6/3/2008	Lightning struck a shed and caught it fire. Damage amounts are estimated. Low level boundaries, an unstable airmass, and an upper level disturbance provided the trigger for isolated severe thunderstorms during the afternoon and evening of June 3, across southwest Virginia. One severe thunderstorm produced a brief EF0 tornado in the city of Roanoke. Other severe storms produced hail up to the size of golf balls.
9/6/2008	A large culvert pipe was washed out along Route 637 (Whitehall Road) making the road impassable. Tropical Storm Hanna made landfall along the North Carolina/South Carolina border during the early morning of September 6th as a strong tropical storm.
7/11/2009	Thunderstorm winds blew down a tree and a power line along Main Street. Damage values are estimated. Scattered thunderstorms developed over parts of southwest Virginia the afternoon of July 11. One of these storms reached severe levels and produced damaging thunderstorms winds.
7/17/2009	A brief tornado touchdown occurred just north of Epsons Road, two miles west of Brookneal. The tornado downed and snapped numerous trees. Damage values are estimated. In the advance of a strong cold front, numerous showers and thunderstorms developed. Many of these grew to severe levels and produced damaging winds and hail. Enough rotation existed for the development of three tornadoes, two occurring in Pittsylvania County and one in southern Campbell County.
7/17/2009	A microburst occurred near the intersection of Epsons Road and McIver Road west of Brookneal. Damaging winds downed many trees. Some of the fallen trees damaged two houses and destroyed three sheds. Damage values are estimated. In the advance of a strong cold front, numerous showers and thunderstorms developed. Many of these grew to severe levels and produced damaging winds and hail. Enough rotation existed for the development of three tornadoes, two occurring in Pittsylvania County and one in southern Campbell County.
7/26/2009	Thunderstorm winds blew a tree down on Pigeon Run Road and several trees down on Three Creeks Road. Damage values are estimated. A cold front slowly made its way across the region. Numerous showers and thunderstorms were associated with it. Some of these storms reached severe levels once the front was east of the crest of the Blue Ridge.

Campbell County Wind Occurrences (Hurricane/Tornado) since 2006	
Date	**Description**
2/10/2010	Strong northwest winds behind a strengthening coastal low caused scattered tree damage damage across the county through the day of the 10th. A transformer power line was also down near Altavista.
4/6/2010	Structure fires from lightning strikes were reported in the Concord area. Storms fired up initially in the afternoon of the 5th over the western mountains south of a front stalled out over the Ohio Valley. The primary severe mode was large hail over the mountains with some scattered wind damage in the piedmont.
9/22/2010	Thunderstorm winds blew a tree down on a vehicle. One person in the vehicle was injured. Damage values are estimated.
4/16/2011	Numerous trees down and shingles blown off of houses near Brookneal. A strong closed upper level low pressure moved across the Ohio valley, producing a variety of extreme weather across southwest Virginia. In advance of this system, strong southeast winds produced wind damage across the higher elevations.
5/3/2011	Thunderstorm winds caused damage to numerous trees. Falling branches damaged a car and a fence in the Richland Hills area off Timberlake Road. A strong cold front crossed the region in the late afternoon and evening hours of the 3rd with storms erupting across the Virginia piedmont.
6/28/2011	Thunderstorm winds blew trees down. One of the falling trees brought down a power line. Damage values are estimated. A cold front swept through the region on the 28th. Multiple clusters of storms accompanied the front as it progressed. Some of these storms increased to severe levels and produced large hail and damaging winds.
7/30/2011	Several trees were blown down by thunderstorm winds across the southwest part of the county. One was on Route 626, another at the 100 block of Route 712 and another on Route 628. Power lines were also downed by some of these trees. A cold front and an outflow boundary from earlier thunderstorms upstream both moved across the area during the afternoon. These boundaries helped spark numerous showers and thunderstorms. Enough instability developed during the afternoon to allow some of these storms to become severe.
10/19/2011	Strong winds mixed down to the surface during a rain shower, knocking down a tree on a house along Thomas Jefferson Road in Forest, and also overturning bleachers and throwing bleachers through a fence at Jump Park. Damage amounts are estimated.

Historical Flood Occurrences

In Region 2000

1905-2011

Primary Sources: National Oceanic and Atmospheric Administration, Historical Society (Newspapers)

Date	Damages
June 9, 1905	James River crested at 23 feet.
August 23, 1969	Torrential rains resulting from the stalling of Hurricane Camille by a cold front caused record floods on the Piney, Pedlar and Buffalo Rivers; each with over three times the discharge compared to normal conditions. Some estimates claim that over 40 inches of rain fell on the mountains of the region in a five hour period. The James River peaked at 26 feet. **Amherst County:** More than 100 people died in Amherst and neighboring Nelson Counties. **Lynchburg City:** Five reported dead due to flooding. Five to six feet of water was noted in the business district. US 29 was blocked due to the floodwaters.
October 10, 1972	Flooding events caused large amounts of damages to primary and secondary roads throughout the region. **Amherst County:** Amherst with $142,000 in road damages. There were about 200 locations damaged on secondary roads with eight locations on primary roads suffering substantial damage. Amherst 125,000 in secondary roads, 17,000 in primary roads. **Appomattox County:** Damage estimates for the county were greater than $20,000 to secondary roads, $5,000 to primary roads, **Campbell County:** Damages to primary roads estimated at $8,000.

Date	Damages
November 4 - 7, 1985	The remnants of Hurricane Juan combined with successive weather fronts dropped up to 10 inches of rain on the region, causing severe flooding of the James River and its tributaries. Governor Robb appealed to President Reagan for federal aid for 11 localities after the floods caused over $50 million in damage. **Amherst County:** Severe flood damage to homes along River Road. Damages were reported at $5.7 million ($2 million alone to Treasure Island). **Appomattox County:** Private property damage totaled $411,000; Agricultural losses totaled $33,000 and damage to public property was reported at $63,000. **Bedford County:** Damage was estimated at $4.5 million. **Lynchburg:** The James River crested at 35 feet: the highest level ever recorded here. City officials estimated damage to private homes, businesses and industries at $30 million and damage to publicly owned facilities at $6.3 million. Concord Turnpike and Jefferson and Hydro streets needed road work and debris removal. The Lynchburg foundry was under 24 inches of mud.
November 9, 1985	Flash flooding occurred in normally dry hollows. The James River crested at 35 feet, 17 feet above flood level. The City of Lynchburg suffered severe damages as well as surrounding counties. Damages for counties within the regional commission suffered damages estimated at $12.5 million. **Lynchburg City:** A railroad car and several unidentified containers were found floating near the carter glass bridge. Eight people were injured by what was thought to be chlorine fumes. Businesses were overwhelmed with flooding from the James River (by Williams Viaduct). More than 20 buildings were covered to their rooftops and sustained substantial damages. Griffin Pipe Products sustained almost 3 million in damages. Liberty University's football practice facility was flooded with damages to equipment (estimates ranged between $110,000 - 115,000). Flood damages to the city top $52 million. Damages to private homes, businesses and industries around $44.5 million. Damages to publicly owned facilities (sewer and streets) were around $7.5 million. Flood damage in surrounding counties was estimated at $12.5 million.
May 19, 1992	The James river crested at 23 feet.

Date	Damages
June 5, 1993	A devastating line of thunderstorms with hurricane-force winds, heavy rains and marble-sized hail tore through Central Virginia, flooding low-lying areas, downing thousands of trees and leaving 50,000 homes without power. Minor structural damage was widespread. No fatalities were reported. **Amherst County:** $250,000 in damage was reported, $60,500 of which was uninsured. **Appomattox County:** Over $5 million in damage was reported, over half of which was uninsured. **Bedford County:** 175 residents of Elks National Home were evacuated when a fallen tree ruptured a propane tank and severe structural damage was reported at Poplar Forest. **Campbell County:** Over $5 million in damage was reported, 60% of which was agricultural damage. Telephone and cable services were disrupted, several mobile homes blew over; some secondary roads were entirely impassible. **Lynchburg:** Over $20.4 million in damage was reported. Lynchburg Municipal Airport reported sustained wind gusts in excess of 70 m.p.h. and was closed for 10 hours. More than 80 people sought emergency medical care at Lynchburg General Hospital. More than 100 power poles needed replacement resulting in 80% of APCO's service area losing power. Two hangars were severely damaged at Falwell Airport. The back wall of the Old Academy of Music Theater was ripped off, as well as the steeple from First Baptist Church, which blew onto and through the church's roof. More than 14,000 homes were without power 48 hours after the storm, and 300 people were without power 5 days after the storm.
November 27, 1993	**Lynchburg City:** A section of Forest Brook Road was closed for several hours as a bridge near the Cavalier Steel plant became covered by water due to heavy rains.
August 17, 1994	**Bedford:** Around 1.25 inches of rain fell as the remnants of Tropical Storm Beryl moved through. One lane of U.S. 460 near Virginia 313 was briefly closed due to high water.
January 15, 1995	The James River crested at 19 feet, one foot above flood stage. **Lynchburg City:** At Holcomb Rock, between Lynchburg and Big Island the river is expected to crest at 27-28 feet with a flood stage of 22 feet. Nine cows seeking refuge from a flooded pasture in a low section along 460 were struck, causing five accidents.

Date	Damages
June 22, 1995	Over two days of torrential downpours dropped over ten inches of rain in some areas of Central Virginia. **Town of Altavista:** Lynch Creek overflowed its banks and sent water gushing into three town landmarks – the Lane Col, Shreve Park and the YMCA and deposited one to two feet of mud on town streets. **Amherst County:** At times, rain fell at the rate of about 2.5 inches per hour. Over 100 Appalachian Power customers were without electricity. **Bedford County:** U.S. 221 was washed out in several places. The road was also blocked due to a mudslide near Little Otter bridge and was underwater near Aylor's store. Virginia Routes 811, 660 and 621 were also closed due to flooding. **Campbell County:** Over eight inches of rain fell in less than two days. Timber Lake dam failed, releasing a torrent of water down Buffalo Creek. The 75-acre lake dropped four feet in 30 minutes. A rescue worker was killed as he attempted to reach one of three stranded cars on the U.S. 460 bridge as water rose to almost 5 feet above the road surface on the bridge. The Staunton River north of Altavista crested at nine feet above flood stage. The U.S. 29 bridge over Otter Creek was closed due to floating debris. Virginia Route 683 was closed for three days. Three homes were severely damaged near Buffalo Creek and the Buffalo Creek Nature Area was closed. A local woman was killed as her car was swept away by over eight feet of water on Turkey Foot Road. **Lynchburg County:** At times, the rain fell at the rate of about 2.5 inches per hour.
June 28, 1995	Heavy rains struck just six days after up to ten inches fell on the region. **Amherst County:** Heavy rains released a torrent of mud and water down mountainsides and onto U.S. 501, stranding three truck drivers for an entire day. Georgia Pacific's Big Island paper mill was forced to suspend operations due to rising water. Parts of U.S. 60 and Virginia Routes 130, 778 and 685 were closed due to flooding. **Bedford County:** Parts of Virginia Routes 24, 122 and 221 were closed due to flooding. **Lynchburg City:** Around $2 million dollars damage was reported as the James River overflowed its banks.

Date	Damages
July 1-6, 1995	Damaged roads and high water from the worst flooding in decades in Virginia's Piedmont and Shenandoah Valley. Six people had been killed and 2 missing in floodwaters stretching from North to South along the Blue Ridge Mountains. Dozens of homes were destroyed and others will have to be razed because they are no longer safe. Flood damages were substantial for local farmers. **Amherst County:** Due to flooding, one road in the County was closed. **Bedford County:** 400 acres of milling wheat worth 4.25 a bushel was degraded to a lower grade that sells as 3 a bushel. **Bedford City:** A four foot wide sinkhole formed along South Street, police closed two blocks until damages could be repaired. **Campbell County:** Due to flooding, three roads in the County had to be blocked off. Much of the County's crop damage occurred along the Otter River and nearby Buffalo, Flat and Troublesome Creeks. They suffered $720,000 in damage to hay and corm crops.
January 19, 1996	Heavy rains, melting snow, and high winds Friday morning shut down schools, closed roads, and flooded low-lying areas. Problems continued when the James River crested downstream from Lynchburg through Amherst and Nelson Counties. **Bedford County:** Portions of US 460 near Montvale were closed from flooding. Small trees were felled with no injuries were reported. The James River crested upstream from Lynchburg near Big Island, flooding portions of Georgia-Pacific paper mill. **Lynchburg City:** City officials evacuated residential roads near the James River. Residents on Hydro Street and Ruesens Road were also evacuated. Houses along Timberlake Drive suffered minor flood damages. **Town of Altavista:** Lynch Creek flooded portions of Pittsylvania Avenue, Main Street, and 7th Street. The Altavista Life Saving building as well as Shreve Park and War Memorial Park suffered water damage. Schools were closed due to dangers of flash flooding.

Date	Damages
September 6, 1996	Hurricane Fran caused flash flooding that closed portions of most area highways and downed trees, leaving thousands without electricity. **Amherst County**: 20 roads were closed due to flooding. **Town of Amherst**: 300 residents were without power. **Lynchburg City**: 200 residents were without power. Hardest hit areas of flooding included Old Forest Road near Lynchburg College and the Greenwood and Sandusky apartments near the intersection of Greenwood and Oakdale Drives. **Bedford County**: 200 residents were without power. **Campbell County**: The historic Marysville Covered Bridge was destroyed. Trees were uprooted. 40 roads, including US 460 near Bedford County line and VA 24 west of US 29 were closed because of excess water.
January 28, 1998	Heavy rainfall in the region resulted in some moderate damage. Rainfall totals for region ranged from 1 to 3 inches. **Appomattox County:** Heavy rains resulted in Wreck Island Creek flooding Route 666 about 4 miles west-northwest of Oakville. The bridge and adjacent road was damaged by the flooding.
August 8, 1998	Thunderstorms on the 8th produced very heavy rain resulting in flash flooding. Thunderstorm rains flooded Route 29, five miles south of Lynchburg, **Lynchburg City:** About 2-3 inches fells in an hour in Lynchburg. Minor flooding and roads blocks for a few hours in Lynchburg area. Street included Fort Avenue, Sandusky Drive, McConville Rd., US 460. Flooding subsided in several hours.
September 5, 1999	Heavy rain from Tropical Storm Dennis downgraded to a tropical depression, brought over 3 inches of rain over two days at the Lynchburg airport. Some small creeks and streams flooded. **Bedford County:** Street flooding at the intersection of Route 24 and Route 122, eight and a half miles south of the City of Bedford and flooded Goose Creek onto adjacent roads, 10.5 miles south of the City of Bedford. High winds downed a tree onto State Route 863. **Lynchburg City:** The area received over three inches of rain in two days.

Date	Damages
September 29, 1999	Thunderstorms on the 29th produced damaging winds, flash flooding, and two tornadoes. **Amherst County:** Flooding caused the closing of Route 460 one mile north of Concord, stranding a motorist, numerous small streams and roads in Amherst County. Schools closed in Amherst County where over a dozen roads were closed due to flooding. **Appomattox County:** Flooded Mill Stream Bridge in Gretna, and several streams in western Appomattox County, closing several roads. **Campbell County:** Six creeks in western Campbell County flooded, closing several roads. **Lynchburg City:** Several roads were closed due to flooding. Thunderstorms spawned tornados in the area. One tornado was 50 yards wide and maximum winds were also estimated at about 80 miles an hour. In Lynchburg, 4.5 inches of rain over 48 hours. Problem areas were Hollins Mills Rd over Blackwater Creek, Greenwood Dr. at Greenwood Manor Apartments in Sandusky area, and 12th street between Harrison and Polk Street had a mudslide.
April 16, 2000	This storm resulted in four inches of rain in 2 hours. **Bedford County:** Four inches of rain fell in 2 hours. Communication center lost power; the water treatment plant had some flooding, damage several pump stations and electrical equipment.
June 5, 2001	Thunderstorms during the afternoon and evening of the 5th produced hail up to nickel size, flash flooding, and damaging winds. **Bedford City:** Thunderstorm winds downed trees in Bedford. A tent was also blown over in Bedford, resulting in minor injuries to a photographer. **Campbell County:** Several creeks flooded in northern Campbell County causing street closures in Timberlake. **Lynchburg City:** Heavy thunderstorm rains caused Dreaming Creek to flood Route 460 in Lynchburg,
February 22, 2003	Minor to moderate flooding occurred on the James River from the 22nd through the 24th. The river crested on the 22nd at 19.86 feet at Lick Run. Heavy rain brought flooding, combined with rain and wind could result in fallen trees and power outages. **Amherst County:** Flooding was noted near Beck Creek. **Campbell County:** Several roads in Altavista were closed, including 7th street and west, country club and pocket roads. **Lynchburg City:** Two streets were closed due to flooding (Greenwood Road). Several basements at Greenwood Apartments were flooded.

Date	Damages
August 17-18, 1955	The category one hurricane named Diane caused heavy rains, compounding the flooding caused by Connie not even a week earlier. The lowest pressure seen across Virginia was 29.48" at Lynchburg. Several locations on the eastern slope of the Blue Ridge mountains recorded over a foot of rain. However, the heaviest flooding occurred along portions of the Shenandoah River Basin. High tides were also experienced, in addition to the rains. Damage in Virginia totaled $10.7 million. This hurricane produced over $686 million in damage, mainly due to its disastrous floods across the East Coast
August 23, 1969	Torrential rains resulting from the stalling of Hurricane Camille by a cold front caused record floods on the Piney, Pedlar and Buffalo Rivers; each with over three times the discharge compared to normal conditions. Some estimates claim that over 40 inches of rain fell on the mountains of the region in a five hour period. **Amherst County:** More than 100 people died in Amherst and neighboring Nelson Counties.
June 23, 1972	Hurricane Agnes. James river seen topping flood stage as rains continue. torrential rains in Lynchburg closed many of the city's though fares and industrial plants. At least on apartment complex was evacuated. Greenwood apartments on greenwood drive were evacuated as the creek flowing into College Lake overflowed. Many roads closed as a result of flooding. Caused minor backyard flooding along even the smallest rivers, agricultural and structural damage along major rivers.
November 4 - 7, 1985	The remnants of Hurricane Juan combined with successive weather fronts dropped up to 10 inches of rain on the region, causing severe flooding of the James River and its tributaries. Governor Robb appealed to President Reagan for federal aid for 11 localities after the floods caused over $50 million in damage. **Amherst County:** Severe flood damage to homes along River Road. Damages were reported at $5.7 million ($2 million alone to Treasure Island). **Appomattox County:** Private property damage totaled $411,000; Agricultural losses totaled $33,000 and damage to public property was reported at $63,000. **Bedford County:** Damage was estimated at $4.5 million. **Lynchburg City:** The James River crested at 35 feet: the highest level ever recorded here. City officials estimated damage to private homes, businesses and industries at $30 million and damage to publicly owned facilities at $6.3 million. Concord Turnpike and Jefferson and Hydro streets needed road work and debris removal. The Lynchburg foundry was under 24 inches of mud.

Date	Damages
August 17, 1994	**Bedford:** Around 1.25 inches of rain fell as the remnants of Tropical Storm Beryl moved through. One lane of U.S. 460 near Virginia 313 was briefly closed due to high water. **Lynchburg City**: Greater that 70 mph winds knocked down trees and power lines. Two million in damages.
September 6, 1996	Hurricane Fran caused flash flooding that closed portions of most area highways and downed trees, leaving thousands without electricity. **Lynchburg City** Twenty roads were closed due to flooding. Tens of thousands of American electric power company customers were without power. The storm closed businesses, schools and forced evacuations. The floodwaters formed a lake between Greenwood Dr and Sandusky Drive. Hardest hit areas of flooding included Old Forest Road near Lynchburg College and the Greenwood and Sandusky apartments near the intersection of Greenwood and Oakdale Drives. **Town of Amherst**: Three hundred residents were without power. **Bedford County**: Two hundred residents were without power. 40 roads, including US 460 near Bedford County line and VA 24 west of US 29 were closed because of excess water. **Campbell County**: Residents of the apartment complex were rescued with boats. Brookneal was hit hard by rising water on the Staunton River. In Brookneal the Staunton crested at 39.7 feet Campbell County had excess water from Otter Creek, Seneca Creek and Falling River spilling into the Staunton. The historic Marysville Covered Bridge was destroyed. Trees were uprooted.
September 18, 2003	Hurricane Isabel was expected to take a northerly jog that spared central VA from the brunt of its wind and rain. At 5:15pm at least 3,000 residents from Roanoke and east to Lynchburg and Lovington were without power (American Electric). Declared state of emergency **Appomattox County**: Declared state of emergency; Appomattox county lost most of its power (supplied y Southside electric and Dominion power) said it would be several days before power was restored. **Lynchburg City**: Over three thousand people in the city were without power

City of Lynchburg Flood Occurrences since 2006	
Date	**Description**
6/28/2006	Widespread rains of 2 to 4 inches with local amounts up to 6 inches produced large river flooding along the James River and along the upper Roanoke River. The crest along the James River at Lynchburg was 19.74 feet at 1300 pm on the 28th
8/24/2010	City police reported that Sandusky Drive was closed between Rhonda Road and Greenwood Drive due to rapidly flowing water well over 6 inches in depth. A later report said the water from Burton Creek reached 2 feet of depth in the parking lot of Sandusky Park.

Amherst County Flood Occurrences since 2006	
Date	**Description**
7/3/2004	Heavy rain producing thunderstorms caused flash flooding across parts of Tazewell, Wythe and Amherst counties. Streets were closed from flash flooding in Fall Mills, and Speedwell. Maple Creek flooded Warrick Barn Road in Lowesville.
9/30/2004	The remnants of Hurricane Jeanne brought torrential rains to Southwest Virginia during the 28th and 29th. This brought minor to major flooding to rivers in the area from late September into early October. On the James River, Buchanan, Holcomb Rock and Bremo Bluff had moderate flooding, while Covington, Lick Run, Lynchburg, Bent Creek and Scottsville experienced minor flooding. At Buchanan in Botetourt County, the river crested at 25.67 feet, where the flood stage is 17 feet. At Holcomb Rock in Amherst County, the river crested at 24.33 feet, where the flood stage is 22 feet.
11/29/2005	A period of heavier rains during the morning and afternoon of the 29th, produced flash flooding of the Piney River and ajacent streams in Amherst County. A gage along Piney River reached 12.06, the 4th highest level since 1949. Many roads in the county were closed.
11/29/2005	Rainfall of 4 to as much as 10 inches over a 36 hour period caused flooding along several creeks and rivers in counties along and either side of the Blue Ridge. Several roads were closed due to high water, especially in Amherst County.
6/28/2006	Widespread rains of 2 to 4 inches with local amounts up to 6 inches produced large river flooding along the James River and along the upper Roanoke River. The crest along the James River at Holcomb Rock was 22.74 feet at 800 am on the 28th. The crest along the James River at Lynchburg was 19.74 feet at 1300 pm on the 28th.
5/14/2009	South Fork Stovall Creek flooded portions of Route 130 in the Madison Heights community, resulting in the road being closed.
6/3/2009	A moderately unstable air mass and seasonably strong mid-level shear helped to produce widespread multicellular storms beginning in the early afternoon of June 3rd. The storms began primarily as hail-makers but later in the day transitioned to damaging winds across a fairly wide area.
6/9/2009	A tree was blown over near intersection of Route 29 and State Route 610.
8/22/2009	Trees were blown down on Route 151 near Clifford.
1/25/2010	Heavy rain caused a stream to leave its bank and a flash flood flowed over Buffalo Springs Turnpike. The road was then closed. Damage values are estimated.
1/25/2010	Heavy rain prompted flash flooding on Horsley Creek and the flowing water went across Wagon Trail Road. The road was closed. Damage values are estimated.
1/25/2010	Flash flooding caused a portion of Turkey Mountain Road to wash out. Damage values are estimated. Abundant rain advanced north into the region in advance of an area of low pressure to the west while a frontal boundary remained draped over the region.

Amherst County Flood Occurrences since 2006	
Date	**Description**
1/25/2010	Heavy rains caused a culvert to collapse on Mansion Way. Damage values are estimated. Abundant rain advanced north into the region in advance of an area of low pressure to the west while a frontal boundary remained draped over the region
5/28/2010	Flash flooding occurred along Woodson Road as heavy rain caused streams to leave their banks. Damage values are estimated. A backdoor cold front pushed south into the region and stalled along the crest of the Blue Ridge along a north to south orientation. During the afternoon and early evening, numerous thunderstorms developed along and near the front. Some of these produced damaging wind and hail along with flash flooding.
4/16/2011	Flooding was occurring alon Buffalo Springs Turnpike. A strong closed upper level low pressure moved across the Ohio valley, producing a variety of extreme weather across southwest Virginia.

Appomattox County Flood Occurrences since 2006	
Date	**Description**
10/7/2006	Across the county roads were flooded and closed. 30 to 35 mph winds brought small trees down thanks to the saturated soil around their root systems. Since the 5th of October, rainfall to some degree had been falling over portions of southwest and south central Virginia. Rainfall amounts were on the order of four inches in the 48 hour period. On the 7th, a slow moving area of upper level low pressure helped to maintain a persistent area of heavy rain over this same region. Rainfall amounts were on the order of an additional 2 inches, which was enough to prompt flash flooding in Buckingham and Appomattox Counties. Also, with the ground now saturated, wind speeds of only 30 to 35 mph were able to down some trees.
7/28/2007	Thunderstorms produced two to three inches of rain over parts of Appomattox County. This heavy rain prompted Phelps Creek to leave its banks. Heavy rain producing, slow moving thunderstorms helped to promote flash flooding over parts of the area.
9/6/2008	Route 627 was closed near the Appomattox-Prince Edward County line due to high water running over the road. Tropical Storm Hanna made landfall along the North Carolina/South Carolina border during the early morning of September 6th as a strong tropical storm.
1/25/2010	Heavy rain prompted a flash flood to occur across Highway 460. Damage values are estimated. Abundant rain advanced north into the region in advance of an area of low pressure to the west while a frontal boundary remained draped over the region. An average of 2 to 5 inches of rain fell from this system onto an already saturated ground from recent snow melt and rainfall. The heavy rain contributed to widespread flash flooding, mudslides, areal flooding, and river flooding.
8/16/2010	Stonewall Creek was reported out of its banks. A retired NWS employee reported 3.78 inches of rain. An area of showers and thunderstorms moved from west to east across southwest Virginia during the afternoon and few stronger embedded cells were able to produce wind gusts up to severe levels. Another cell tracked from eastern Campbell across Appomattox County and produced very heavy rain in a short time, with reports of up to 4 inches of rain and flash flooding.

Bedford County Flood Occurrences since 2006	
Date	Description
9/8/2004	The remnants of Tropical Depression Frances brought a brief tornado, flash flooding, and a few severe thunderstorms to portions of Southwest Virginia during the late morning and early afternoon of the 8th. In Buckingham County, an F0 tornado briefly touched down 2 miles WNW of Gold Hill, damaging and snapping numerous trees. In Bedford County, flash flooding near Stewartsville closed Highway 619. In Franklin County, a severe thunderstorm brought down several trees in Rocky Mount. In Campbell County, a severe thunderstorm downed trees across Route 683 near Evington.
9/28/2004	The Remnants of Hurricane Jeanne resulted in heavy rains which created widespread flash flooding on 28th of September in Floyd, Franklin, Patrick, Bedford and Roanoke counties and the City of Salem. Several roads were closed due to flooding in Floyd, Franklin, Patrick, Bedford and Roanoke counties.
6/27/2006	Widespread rains of 2 to 4 inches with local amounts up to 6 inches produced large river flooding along the James River and along the upper Roanoke River. The crest along the James River at Buchanan was 18.73 feet at 1145 am on the 26th. The crest along the James River at Holcomb Rock was 22.74 feet at 800 am on the 28th. The crest along the James River at Lynchburg was 19.74 feet at 1300 pm on the 28th.
11/16/2006	Highway 122 closed due to flooding. EPISODE NARRATIVE: Plenty of moisture ahead of a cold front moving across the Ohio and Tennessee Valleys led to heavy rainfall. As much as 4 inches of rain fell during this event leading to some flash flooding across portions of western Virginia on the 16th of November.
4/9/2007	Cold arctic high pressure over the region allowed for sub-freezing temperatures after a period of relatively mild weather in late March and very early April 2007.
5/19/2009	A local stream flooded Triggs Road, 4 miles south-southwest of Goode, causing it to collapse. EPISODE NARRATIVE: A boundary was draped across southwest Virginia during the evening of May 14th and slowly drifted south toward the North Carolina border May 15th. Showers with embedded thunderstorms slowly moved along this boundary, setting up a training of heavy rains. This caused flash flooding over portions of southwest Virginia from the New River Valley east into the Piedmont.
1/25/2010	Heavy rain in steep terrain help to cause a mudslide that covered the intersection of Route 221 and Brookhill Road. Damage values are estimated.
9/30/2010	Bethel Church Road was closed due to flash flooding. Damage values are estimated. EPISODE NARRATIVE: On the 25th of September, a powerful area of low pressure was located over the southeastern U.S. Several weak centers of low pressure formed over the Gulf Coast area from the 26th to 28th and pushed northeast along a stationary boundary bringing very high moisture from the Gulf and Atlantic Ocean.

Bedford County Flood Occurrences since 2006	
Date	Description
12/1/2010	Flash flooding prompted the closure of Foster Road between Quarles Road and Nester Road where it crosses Goose Creek. Damage values are estimated. EPISODE NARRATIVE: A major storm affected the eastern U.S. during the period of November 30 - December 1 as a powerful upper low and surface system moved into the Great Lakes proving an extended period of deep southerly flow across the region.
8/13/2011	Heavy rains of 3 to 5 inches in several hours caused road closures in several locations. The Beford Cooperative obsever had 4.77 inches ending at 8 AM on the 14th. Roads close due to flooding included Highway 43 from Fancy Farm Road north Peaks of Otter; the intersection of Forbes Mill road and Jopling Road; intersection of Woods Road and Peaks Road and the intersection of Glass Hill Road and Otterville Road.
8/25/2011	A total of 46 trees were uprooted or snapped at the trunk. Many of them were very large trees located on Mack Updike Circle near the intersection of State Roads 24 and 122. All appeared be blown down toward the east.

Campbell County Flood Occurrences since 2006	
Date	**Description**
7/27/2007	Thunderstorms over Campbell County produced heavy rain that prompted Seneca Creek to leave its banks. Heavy rain producing, slow moving thunderstorms helped to promote flash flooding over parts of the area.
5/15/2009	Numerous roads were flooded by Buffalo Creek in the Timberlake area. A boundary was draped across southwest Virginia during the evening of May 14th and slowly drifted south toward the North Carolina border May 15th. Showers with embedded thunderstorms slowly moved along this boundary, setting up a training of heavy rains. This caused flash flooding over portions of southwest Virginia from the New River Valley east into the Piedmont.
1/25/2010	Flash flooding caused Stage Road to be impassable. Damage values are estimated. Abundant rain advanced north into the region in advance of an area of low pressure to the west while a frontal boundary remained draped over the region. An average of 2 to 5 inches of rain fell from this system onto an already saturated ground from recent snow melt and rainfall. The heavy rain contributed to widespread flash flooding, mudslides, areal flooding, and river flooding.

Historical Winter Storm Occurrences

In Region 2000 (Includes Ice/Snow)

1950-2011

Primary Sources: National Oceanic and Atmospheric Administration, Historical Society (Newspapers)

Date	Damages
June 1, 1993	70+ winds knocked down trees and power lines. Two million dollars worth of damages.
December 20, 1993	A winter storm passed through the region, surprising the area with up to six inches of snow. Dozens of minor accidents were reported, but no power outages. The heavier snow was concentrated in Amherst, Appomattox and Campbell counties.
December 28, 1993	A thin layer of ice covered roads and sidewalks and shut down government and private businesses in Lynchburg and the surrounding counties for 1-2 days.
February 11, 1994	More than four inches of ice and sleet covered the entire region, knocking out heat and electricity for over 40,000 homes and businesses. The ice also caused numerous structural leaks. The ice storm was followed by rain, causing flooded basements and standing water on roadways. The damage exceeded $25 million in Central Virginia. Schools were closed for 3 to 5 days. **Amherst County:** Ice storm was in February 11-13- declared in April --Matt recorded this event. 2.6 million dollars in estimates from the federal government and city estimates. **Bedford County:** Damages totaled just over $1 million. Mayor Shelton declared a local emergency due to fallen trees and power outages. Almost the entire county was without power for over a day. About $50,000 damage was reported alone from a car-transport truck sliding into another vehicle and off the road on U.S. 460 at Blue Ridge Avenue. **Campbell County:** Utility damage was estimated at $5 million; agricultural losses were estimated at $320,000. **Lynchburg City:** Storm damage estimates surpassed $19 million. A large tree fell and crushed a car at Lynchburg College and a small section of roof collapsed at K mart under the weight of the ice. Rivermont Ave, Boonsboro Rd, Langhorne Rd, Old Forest Rd, and Hollins Mill Rd were all completely blocked by downed trees. Four schools were used as shelters for those without power. Almost 7,000 residents were without power for over five days.

Date	Damages
January 30, 1995	Six to eight inches of snow fell across the region, catching the area by surprise. Most schools and offices were closed. Appomattox man killed on 460 in Campbell County during snow storm. Temperatures dropped into the 20s with wet roads beginning to freeze. VDOT crews scattered about 500 tons of sodium chloride on the roads. Five inches of snow fell between Friday and Monday, with nine inches on the Blue Ridge parkway.
December 7, 1995	Six to eight inches of snow fell across the region, catching the area by surprise. Most schools and offices were closed. **Lynchburg City:** Lynchburg General Hospital reported several snow-related accidents.
December 30, 1995	Five inches of snow fell between Friday and Monday, with nine inches on the Blue Ridge parkway. Appomattox man killed on 460 in Campbell County during snow storm. **Amherst County:** Temperatures dropped into the 20s with wet roads beginning to freeze. VDOT crews scattered about 500 tons of sodium chloride on the roads.
January 6, 1996	Winter weather brought snow and high winds to central Virginia, with expected snowfalls to reach 18-24 inches. **Lynchburg City:** Snowfall by Sunday (January 7) reached 2.5 inches
January 12, 1996	More snowfall in Central Virginia caused road crews to work overtime. Government offices opened one hour late. **Lynchburg City**: snowfall accumulation reached 2.7 inches
January 19, 1996	Heavy rains, melting snow, and high winds Friday morning shut down schools, closed roads, and flooded low-lying areas. Problems continued when the James River crested downstream from Lynchburg through Amherst and Nelson Counties. **Bedford County:** Portions of US 460 near Montvale were closed from flooding. Small trees were felled with no injuries were reported. The James River crested upstream from Lynchburg near Big Island, flooding portions of Georgia-Pacific paper mill. **Lynchburg City:** City officials evacuated residential roads near the James River. Residents on Hydro Street and Ruesens Road were also evacuated. Houses along Timberlake Drive suffered minor flood damages. **Town of Altavista:** Lynch Creek flooded portions of Pittsylvania Avenue, Main Street, and 7th Street. The Altavista Life Saving building as well as Shreve Park and War Memorial Park suffered water damage. Schools were closed due to dangers of flash flooding.

Date	Damages
February 3, 1996	Snow continued to fall in Central Virginia, with snowfalls estimated around 13-24 inch totals. Snowfall in surrounding counties reported snowfall totals of 10-14 inches. Wind chill brought temperatures down to 15-25 degrees below zero. **Lynchburg City**: snowfall reported at 11.4 inches. **Appomattox County**: snowfall totaled 9 inches **Amherst County**: All roads in Amherst were impassable.
February 9, 1996	Icy roads caused dozens of accidents Friday morning. **Amherst County**: schools closed on Friday. **Lynchburg**: 16 vehicle accidents reported.
February 16, 1996	Eight inches of snowfall on Friday pushed Lynchburg City seasonal totals to 51.2 inches, a record. Snow closed schools and roads in the area. Area counties appealed for waivers due to missed school days.
March 7, 1996	**Lynchburg:** Five inches of snow blanketed Lynchburg City on Thursday and Friday, raising the city's winter snowfall to 56.4 inches. A couple of minor injuries due to automobile accidents.
April 10, 1997	Hard freeze in Central Virginia caused damage to local peach and apple orchards. Temperatures dropped to 24 degrees F.
December 27, 1997	Moderate to occasionally heavy snow developed in southwestern Virginia during the early morning hours on the 27th and continued well into the evening hours. Snow accumulations were mostly from 4 to 7 inches. Hazardous road conditions resulted in numerous traffic accidents.
December 29, 1997	Moderate to occasionally heavy snow developed in southwestern Virginia during the early morning hours on the 27th and continued well into the evening hours. Snow accumulations were mostly from 4 to 7 inches. Area totals were 2 inches in Appomattox County, up to six inches in Lynchburg, Bedford, Campbell, and Amherst. Hazardous road conditions resulted in numerous traffic accidents. **Lynchburg:** On Lynchburg expressway, slick conditions cause problem southbound into the City between Main and Grace streets, also Langhorne Road north of Cranehill drive.
January 15, 1998	Freezing rain and freezing drizzle on the 15th resulted in ice buildup on trees in excess of one quarter inch in portions of Patrick, Henry, Floyd, Pulaski, Giles, Montgomery, Roanoke, Botetourt, Allegheny, Campbell, and Pittsylvania Counties. The weight of the ice broke off tree limbs and knocked down power lines.
February 4, 1998	Freezing rain and freezing drizzle from the early afternoon hours on the 4th through around noon on the 6th at elevations above 2800 feet resulted in major accumulations of ice on exposed objects. At elevations above 3600 feet, ice accumulations were up to 5 inches thick. The weight of the ice brought down power lines, power poles, and trees. **Appomattox County:** Few minor roads were closed **Lynchburg:** Minor flooding was reported. Winds and saturated ground caused trees to be knocked down, causing about 2,300 AEP customers to lose power.

Date	Damages
December 23, 1998	Sleet and freezing rain developed during the morning hours on the 23rd and continued into late afternoon hours. Freezing rain redeveloped overnight and continued into the late morning and early afternoon hours on the 24th. Ice accumulated from 1/4 to 1/2 inch on exposed objects in most areas. However, there were some ice accumulations around one inch. The weight of the ice downed trees limbs and power lines which resulted in numerous power outages. Some people were without power for a few days. Ice covered roads and bridges resulted in numerous traffic accidents and some injuries. **Lynchburg:** Sleet and freezing rain started after lunchtime in Lynchburg and wreaked havoc on rush-hour roadways through the area. State and local police reported dozens of wrecks throughout the region, including several on US 460 and US 29 that tied up rush hour traffic.
January 25, 2000	Snow developed around midnight on the 25th and ended around mid morning on the 25th. Snow accumulations ranged from 2 to 8 inches in Bedford and Henry counties, to 10 to 16 inches east of a line from Lynchburg to Danville. **Appomattox County:** Snow Totals: 6 to up to 10 inches; Worst since 1996. This surprise snow storm was called by a larger than normal Nor'easter which caused widely varying snowfall throughout the State. It took several days to clear roads, especially in Amherst, Appomattox, and Campbell Counties. **Campbell County:** Snow Totals: 7 to Up to 12 inches; hardest hit county in region; minor power outage in Concord. **Lynchburg:** Snow Totals: Up to 7 inches; Due to volume of snow city had to use contract labor for snow removal, where snow was dumped into the James River; minor power outage in Boonsboro area.
February 22, 2001	A burst of heavy snow during the morning of the 22nd accumulated from 2 to 4 inches resulting in hazardous travel conditions. The snowfall formed a dangerous icy sheet on roadways as it froze at sunset causing over 150 accidents in the area with no serious injures. Lynchburg City: Accidents reports on Lynchburg Expressway near Stadium Road and 2312 Old Forest Road, and on US 501 on bridges near old forest road.
January 2, 2002	Snow developed during the late evening on the 2nd and accumulated 5 to 10 inches before ending midday on the 3rd. Campbell County received from 6 to 9 inches, while Altavista received 7 inches. **Campbell County:** Accidents from slick road included VA 40 east of Brookneal and on US 501 near Brookneal.
January 19, 2002	Snow developed during the morning of the 9th and accumulated 5 to 7 inches before changing to sleet and freezing rain, then ending late in the evening.
December 4, 2002	Snow during the afternoon of the 4th through early morning of the 5th accumulated from 5 to 10 inches across the area. Five inches of freezing precipitation covered the ground and roads in Lynchburg. Appomattox, Bedford and Campbell, Lynchburg and Amherst had totals varying from 4 to 6 inches. Numerous accidents were reported on snow and ice covered roads. Three car pileups on US 460 near Appomattox, US 501 in Lynchburg.

Winter Storm Occurences Historic Record

Date	Damages
January 16, 2003	Snow accumulated 3 to 6 inches across northern Campbell County and Lynchburg, with over 60 automobile accidents reported. Major roads were clogged and traffic on highways, such as US 29 was Re-routed. An 8 car pileup was reported in the 1700 block of Wards Ferry Road.
January 30, 2003	Snow during the morning and afternoon of the 30th accumulated 4 to 7 inches across Bedford, Campbell, and Buckingham counties. **Lynchburg:** dumped snow up to 7 inches in the Lynchburg area.
February 6, 2003	Snow during the afternoon of the 6th through the early morning of the 7th accumulated from 5 to 8 inches. A few cars slid into ditches on wards ferry road.
February 15, 2003	Snow, sleet, and freezing rain fell from late on the 15th through much of the 17th. Ice accretions ranged from 1/4 to 1/2 of an inch. Snow and sleet accumulations ranged from 5 to 8 inches in the Allegheny Highlands and Appomattox and Buckingham Counties in the east. Virginia declared state of emergency - national guard brought in to help with snow removal. As of Sunday afternoon Campbell and Bedford received 1.5 inches of icy precipitation, Amherst county received 3 inches. Amherst county's primary and secondary roads were in severe condition.
February 26, 2003	Snow and ice developed during the late afternoon of the 26th and continued through the evening of the 27th. Ice accretion ranged from 1/4 of an inch to as much as an inch in southern Pittsylvania and Halifax counties downing numerous trees and power lines. In addition, snow fall amounts across Bedford, Campbell, and Appomattox Counties ranged from 4 to 6 inches. **Lynchburg City:** Lynchburg police reported 24 accidents and 14 disabled vehicles. Top 10 winters of all-time.
January 10, 2004	Small snow storm blankets central VA. Lynchburg received more than 2 inches of snow overnight.
January 25, 2004	A winter storm on the 25th dumped from 4 to 7 inches across Western Virginia. The higher amounts fell from Roanoke County southwest into portions of the New River Valley, with local higher amounts in portions of Campbell County, in the piedmont. Numerous accidents were reported, due to slick roads, but the majority across the region was minor. **Lynchburg**: Lynchburg police and surrounding counties reported accidents as conditioned worsened. Four inches of snow at the Lynchburg regional airport, this closed briefly.
February 15, 2004	A potent upper level storm system moved across North Carolina during the afternoon and evening of the 15th, moving off the coast early on the 16th. This storm brought a swath of heavy snow to a good portion of Western Virginia. Amounts ranged from 4 to 8 inches in a path from the Mountain Empire of Southwest Virginia, east to the Blue Ridge from Floyd County south to the North Carolina border, then east into the foothills and piedmont of southern Virginia. The highest amounts of 7 to 8 inches were reported in portions of Smyth, Wythe, Grayson, Floyd and Franklin counties. **Campbell County:** Numerous accidents. Some on the US 501 south of Rustburg. US 460.

Amherst County Winter Storm Occurrences (Ice/Snow) since 2006	
Date	**Description**
1/29/2005	A low pressure system tracking along the east coast brought a wintry mix of precipitation to the region. Ice accretion was one quarter of an inch in most locations with a few isolated locations in Charlotte Co. receiving one half inch accretion. Snowfall was very much a secondary element with 1 to 3 inches being the norm, except for Grayson Co., where amounts ranged from 4 to 6 inches.
2/28/2005	A very strong winter storm moved across the southeastern U.S., then up the east coast during the 28th of February. This storm brought heavy snow amounts to most of southwestern Virginia from the piedmont to the mountains. The snow was mixed at times with sleet across the piedmont. Snowfall totals ranged from 5 to 10 inches across most of the area. The highest amounts occurred along the Blue Ridge mountains, with 10 to 12 inches across western Franklin County, into southern portions of Roanoke County, including the city. The amounts were lighter in the piedmont with 3 to 6 inches on average.
12/9/2005	A winter storm produced a mixture of snow, sleet and freezing rain across southwest Virginia on the morning of 9th of December.This storm brought significant ice accumulation of a quarter to a half inch of ice to southwest Virginia. Across Bath county, 5 inches of snow and sleet fell. Virginia State police reported several vehile accidents in Campbell, Amherst, and Tazewell counties.
12/15/2005	A winter storm moved across southwest Virginia on the afternoon and night of the 15th of December. A band of sleet, snow and freezing rain moved through the region. As the storm progressed east, it coated the area with a 1/4 to 3/4 inch of ice. Appalachian Power reported that falling trees, tree limbs and power lines interrupt electric service to 38,000 customers especially in Campbell, Patrick, Henry and Carroll counties. Close to 10,000 customers lost power in the Lynchburg area. The Virginia State Police reported numerous accidents.
2/13/2007	Low pressure moved from the Tennessee Valley to the Virginia coast bringing a period of freezing rain to portions of southwest Virginia. Ice accretions ranged from one quarter to one half inch, with up to an inch and a quarter of ice on the Blue Ridge Parkway in Floyd County. The ice brought tree limbs down and scattered power outages.
4/7/2007	Cold arctic high pressure over the region allowed for sub-freezing temperatures after a period of relatively mild weather in late March and very early April 2007. The mild weather helped to jump start the growing season across the area, and freezing temperatures, as low as the lower to middle 20s F, lead to significant crop damage.
4/8/2007	Apples and pears experienced a 50% loss. Crop damage and dollar amounts listed represent the losses for 3 consecutive nights of freezing weather. Cold arctic high pressure over the region allowed for sub-freezing temperatures after a period of relatively mild weather in late March and very early April 2007. The mild weather helped to jump start the growing season across the area, and freezing temperatures, as low as the lower to middle 20s F, lead to significant crop damage for most counties. All reports of monetary losses in this report are preliminary estimates.

Amherst County Winter Storm Occurrences (Ice/Snow) since 2006	
Date	**Description**
12/15/2007	Ice accumulations of 0.25 to 0.40 occurred across Roanoke county. Highest ice accumulations fell across Bent Mountain. Low pressure moving northeast across the region created rain in subfreezing temperatures which resulted in a quarter to one inch of ice accumulation. Ice accumulations downed trees and power lines.
2/10/2008	A fast moving arctic front swept across the area February 10th. In its wake, very strong west winds and wind gusts ensued over the area. Each county in southwest Virginia received wind damage. These high winds also touched off several wildfires. Three of the largest wildfires were Little Cuba (2700 acres) in Craig County, Black Horse (1500 acres) in Bedford County, and Green Ridge Mountain (about 4000 acres) in Roanoke County. Despite the size of these fires, no personal property was damaged or destroyed.
3/4/2008	Trees were downed across northern Amherst county. A strong cold front moving through the area brought severe thunderstorms with damaging winds.
3/1/2009	Five to ten inches of snow fell across the county causing sporadic power outages and travel problems. March was ushered in with the biggest and for most of the area the only signifcant snowstorm of the 2008-2009 season.
12/18/2009	Snowfall amounts ranged from 14 inches in the southeast to 18 inches in the northwest part of the county. Very hazardous travel conditions prevailed during the storm across the entire region.
1/30/2010	Snowfall amounts across Amherst county totaled 10.0 inches at Hot Springs and 6.8 inches at Millboro.
2/5/2010	Light to moderate moved into the county during the early morning hours on the 5th. The snow turned to a mixture of snow, freezing rain, and sleet during the afternoon, before ending as snow late at night into the day on the 6th. Most of Amherst county saw between 6 and 9 inches of snow. Roadways became slick, with many reports of vehicles sliding off roads across the state.
12/16/2010	Snow amounts ranged from 3.5 inches near Naola to 5.0 inches at Lowesville. Some light sleet and freezing rain fell on top the snow at the conclusion of the event. Damage values are estimated.

Appomattox County Winter Storm Occurrences (Ice/Snow) since 2006	
Date	**Description**
2/13/2007	Low pressure moved from the Tennessee Valley to the Virginia coast bringing a period of freezing rain to portions of southwest Virginia. Ice accretions ranged from one quarter to one half inch, with up to an inch and a quarter of ice on the Blue Ridge Parkway in Floyd County. The ice brought tree limbs down and scattered power outages.
1/27/2009	Ice accretion across the county was one-quarter of an inch. This amount of ice brought a few limbs down in the community of Madison Heights and scattered trees down countywide. Damage values are estimated. Sub-freezing air was in place across the region as a warm front moved north into the area. Rain associated with the front fell and encountered the frigid air at the surface. The result was the formation of a layer of ice over mainly trees and other elevated surfaces. When the event was over, there was a coating of ice between one-quarter of an inch and one-half of an inch.
3/1/2009	Five to ten inches of snow fell across the county causing sporadic power outages and travel problems. March was ushered in with the biggest and for most of the area the only signifcant snowstorm of the 2008-2009 season. A complex and deep surface and upper-level system brought rain to much of the area late 28 February, which changed over to snow in the western portion of the region. A secondary low pressure area tracked over the Carolinas to the Virginia coast early on March 1, allowing all areas to eventually change over to snow. Snow totals ranged from less than an inch in the far west to over 12 inches in parts of the piedmont. There were reports of trees down and power outages in portions of Campbell, Amherst, and Appomattox counties with up to 14 inches of snow reported near Huddleston in Bedford County. The 10 inches that fell at Lynchburg was the highest 1-day amount since February, 1996.
12/18/2009	Snowfall amounts ranged from 10 inches in the southeast to 14 inches in the northwest part of the county. Very hazardous travel conditions prevailed during the storm across the entire county. Low pressure tracked from the northeast Gulf coast early on December 18th reaching a position near Alma, Georgia as a 997 mb low by Friday the 18th at 5 PM EST. The storm continued moving northeast and deepened to a 986 mb low near Cape Hatteras by 10 AM December 19th. Heavy snow began around midday on the 18th and snows rapidly accumulated to warning criteria levels by late afternoon or early evening in all of the Virginia counties. All forms of travel were rendered extremely difficult for several days due to this storm and numerous vehicle accidents were reported. Final snow totals ranged from less than 6 inches in the far southeast counties to over 25 inches in parts of Alleghany, Rockbridge, Montgomery and Bath counties. This was the biggest snowstorm to affect western Virginia since the January 6-8, 1996 storm. Several stations set December single-storm snowfall records from this storm including Roanoke and Blacksburg.

Appomattox County Winter Storm Occurrences (Ice/Snow) since 2006	
Date	**Description**
1/30/2010	Snowfall amounts across the county totaled 10.0 inches at Hot Springs and 6.8 inches at Millboro. A cold front moved through the area on January 28th. Behind this front cold air was left in its wake. On the 29th, an area of low pressure moved the northern edge of the Gulf of Mexico before heading north and strengthening along the eastern coast of the U.S. on the 30th. This series of events allowed for plenty of moisture to fall as snow across the area with total accumulations ranging from the five to fifteen inch range.

Bedford County Winter Storm Occurrences (Ice/Snow) since 2006	
Date	Description
12/19/09	Snow amounts ranged from 10 inches in the southeast to 15 inches in the northwest. Very hazardous travel conditions prevailed during the storm across the entire county.
1/21/10	ice accretion totaled 0.38 inches three miles east of Sylvatus, 0.33 inches in Gladesboro, 0.25 inches in Fancy Gap, and 0.25 inches three miles west of Fries Junction. EPISODE NARRATIVE: Cold high pressure was in place across the area as warm, moist air overspread the region in association with a warm front moving north across the region. The result was rain that fell onto sub-freezing surface that produced up to one-half inch of ice.
1/29/10	Snowfall amounts across the county totaled 10.0 inches at Daleville and 9.0 inches at Buchanan.
2/5/10	Light to moderate moved into the county during the early morning hours on the 5th. The snow turned to a mixture of rain, freezing rain, and sleet during the afternoon, before ending as snow late at night into the day on the 6th. Snowfall accumulations of 7 to 8 inches were reported across the county.

Campbell County Winter Storm Occurrences (Ice/Snow) since 2006	
Date	**Description**
2/1/2008	A quarter of an inch of glaze occurred across the western portions of the county, including Lynchburg.
3/2/2009	Four to twelve inches of snow fell across the county causing sporadic power outages and travel difficulties. March was ushered in with the biggest and for most of the area the only signifcant snowstorm of the 2008-2009 season.
12/18/2009	Snow amounts ranged from 10 inches in the southeast to 15 inches in the northwest. Very hazardous travel conditions prevailed during the storm across the entire county.
1/29/2010	Snowfall amounts across the county totaled 10.0 inches at Daleville and 9.0 inches at Buchanan.
2/6/2010	Light to moderate moved into the county during the early morning hours on the 5th. The snow turned to a mixture of snow, freezing rain, and sleet during the afternoon, before ending as snow late at night into the day on the 6th. Most of the county saw between 6 and 9 inches of snow. Roadways became slick, with many reports of vehicles sliding off roads across the state. A strong low pressure system moved from the Gulf Coast to off the North Carolina coast. A secondary low moved west of Virginia over Kentucky, bringing a nose of warm air in aloft. This led to a mixture of snow, sleet, freezing rain, and rain across southwest Virginia, with many areas seeing significant snow or ice accumulations.

Historical Drought Occurrences

In Region 2000

1950-2011

Primary Sources: National Oceanic and Atmospheric Administration, Historical Society (Newspapers)

Amherst County Drought Occurrences since 2006	
Date	**Description**
10/2/2007	Drought conditions increased into the Severe (D2) Category on October 2nd and remained at that level of severity through October 30th before dropping into the Abnormally Dry (D0) Category. Apples were of poor size and there was no second hay planting. Mandatory water restrictions were in place for Amherst County for most of the month.

Appomattox County Drought Occurrences since 2006	
Date	**Description**
10/2/2007	Drought conditions increased into the Severe (D2) Category on October 2nd and remained at that level of severity through October 30th before dropping into the Abnormally Dry (D0) Category. Apples were of poor size and there was no second hay planting. Mandatory water restrictions were in place for Amherst County for most of the month. Drought conditions worsened from September into October with parts of southwest Virginia entering into the Extreme (D3) Category from Severe (D2) the month before. Elsewhere other counties entered into or remained in the Severe (D2) Category.
1/29/2008	A Moderate (D2) drought existed over the eastern part of the county. During the last week of the month, some Virginia counties had drought conditions worsen into the Moderate (D2) category of drought.
2/1/2008	Severe to extreme drought conditions persisted at the beginning of February, with the extreme drought confined to southwest Grayson County. By the end of the month, conditions had improved to moderate to severe, with severe conditions over the southwestern half of the county. Severe to Extreme Drought Conditions continued into February over portions of southwest Virginia. Mainly this area encompassed most of the piedmont, south to the North Carolina border, and west to the mountains. By the end of the month, conditions improved over the mountains and portions of the foothills.
3/1/2008	Several precipitation events impacted the region, helping to improve the drought status from severe (D2) to moderate (D1). As La Nina weakened during the month of March, the area received close to 84 percent of normal rainfall. This allowed drought conditions to improve across Virginia. Extreme (D3)drought conditions in the southeast corner of the region improved to severe (D2) drought conditions. Severe (D2) drought conditions only remained across far southern Virginia by the end of March.
8/31/2008	Severe drought conditions crept into the extreme southern areas of the county for the latter half of the month. Rainfall was mainly confined to the typical summertime showers and thunderstorms for much of the month of August. Drought conditions in the moderate category at the beginning of the month, worsened to severe by August 19th. The effects of the remnants of Tropical Storm Fay toward the end of the month in terms of the long-term drought were significant. Nearly all areas experienced a one category improvement in the September 2nd issuance of the U.S. Drought Monitor.

Bedford County Drought Occurrences since 2006	
Date	**Description**
10/1/2007	The county began the month in the Severe (D2) Category of drought. It maintained this level of severity until October 30th when the drought category was downgraded to the Abnormally Dry (D0) Category. Voluntary water restrictions were in place for Bedford County for most of the month. EPISODE NARRATIVE: Drought conditions worsened from September into October with parts of southwest Virginia entering into the Extreme (D3) Category from Severe (D2) the month before. Elsewhere other counties entered into or remained in the Severe (D2) Category. Rainfall the last week of October helped to mitigate the drought severity with all but the counties in far southwest Virginia dropping below the Severe (D2) Category.
8/19/2008	Severe drought conditions crept into the extreme southern areas of the county for the latter half of the month. EPISODE NARRATIVE: Rainfall was mainly confined to the typical summertime showers and thunderstorms for much of the month of August. Drought conditions in the moderate category at the beginning of the month, worsened to severe by August 19th. The effects of the remnants of Tropical Storm Fay toward the end of the month in terms of the long-term drought were significant. Nearly all areas experienced a one category improvement in the September 2nd issuance of the U.S. Drought Monitor.

Campbell County Drought Occurrences since 2006	
Date	**Description**
9/1/2007	Hay,grain, soy and tobacco production was down forty to fifty percent due to the drought. The southwest portion of Campbell county had the greatest losses. Drought conditions worsened across southwest Virginia, as seventeen counties fell into a severe drought (D2) on September 1st. This severe drought continued through the end of September. Crop damage estimates are from county extension offices.
10/1/2007	The county began the month in the Severe (D2) Category of drought. It maintained this level of severity until October 30th when the drought category was downgraded to the Abnormally Dry (D0) Category. Voluntary water restrictions were in place for Bedford County for most of the month. Drought conditions worsened from September into October with parts of southwest Virginia entering into the Extreme (D3) Category from Severe (D2) the month before.
1/29/2008	A Moderate (D2) drought existed over the eastern part of the county. During the last week of the month, some Virginia counties had drought conditions worsen into the Moderate (D2) category of drought.
2/1/2008	Severe to extreme drought conditions persisted at the beginning of February, with the extreme drought confined to southwest Grayson County. By the end of the month, conditions had improved to moderate to severe, with severe conditions over the southwestern half of the county. Severe to Extreme Drought Conditions continued into February over portions of southwest Virginia. Mainly this area encompassed most of the piedmont, south to the North Carolina border, and west to the mountains. By the end of the month, conditions improved over the mountains and portions of the foothills.
3/25/2008	Several precipitation events impacted the region, helping to improve the drought status from severe (D2) to moderate (D1). As La Nina weakened during the month of March, the area received close to 84 percent of normal rainfall. This allowed drought conditions to improve across Virginia. Extreme (D3)drought conditions in the southeast corner of the region improved to severe (D2) drought conditions. Severe (D2) drought conditions only remained across far southern Virginia by the end of March.
8/19/2008	Severe drought conditions crept into the extreme southern areas of the county for the latter half of the month. Rainfall was mainly confined to the typical summertime showers and thunderstorms for much of the month of August. Drought conditions in the moderate category at the beginning of the month, worsened to severe by August 19th. The effects of the remnants of Tropical Storm Fay toward the end of the month in terms of the long-term drought were significant. Nearly all areas experienced a one category improvement in the September 2nd issuance of the U.S. Drought Monitor.

Appendix 5.3 FIRM Status by Locality

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Release 4.05.04.00, 03/31/2011 -- Build 045,

Community Overview

Community:	AMHERST COUNTY *	**State:**	VIRGINIA
County:	AMHERST COUNTY	**CID:**	510010

Program:	Regular	**Emergency Entry:**	03/01/1974	**Regular Entry:**	07/17/1978
Status:	PARTICIPATING			**Status Effective:**	07/17/1978
Current Map:	09/19/2007	**Study Underway:**	NO	**Level of Regs:**	D
FIRM Status:	REVISED			**Initial FIRM:**	07/17/1978
FHBM Status:	SUPERCEDED BY FIRM			**Initial FHBM:**	11/22/1974

Probation Status:

Probation Effective:	**Probation Ended:**
Suspension Effective:	**Reinstated Effective:**
Withdrawal Effective:	**Reinstated Effective:**

CRS Class / Discount:				**Policies in Force:**	46
Effective Date:				**Insurance in Force:**	$9,848,800.00
CAV Date:	06/28/2011	**Workshop Date:**		**No. of Paid Losses:**	38
CAC Date:		**GTA Date:**	06/27/2011	**Total Losses Paid:**	$1,246,823.64
☐ **Tribal Community**		**Community Website:**		**Sub. Damage Claims Since 1978:**	20

☐ **Upton Jones Claims** ☐ **HMGP Projects**

☐ **ICC Claims** ☐ **FMA Projects**

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Community Overview

Community:	APPOMATTOX COUNTY *	**State:**	VIRGINIA
County:	APPOMATTOX COUNTY	**CID:**	510011

Program:	Regular	**Emergency Entry:**	02/11/1974	**Regular Entry:**	07/17/1978
Status:	PARTICIPATING			**Status Effective:**	07/24/1978
Current Map:	01/02/2008	**Study Underway:**	NO	**Level of Regs:**	D
FIRM Status:	REVISED			**Initial FIRM:**	07/17/1978
FHBM Status:	SUPERCEDED BY FIRM			**Initial FHBM:**	08/02/1974

Probation Status:			
Probation Effective:		**Probation Ended:**	
Suspension Effective:	07/17/1978	**Reinstated Effective:**	07/24/1978
Withdrawal Effective:		**Reinstated Effective:**	

CRS Class / Discount:				**Policies in Force:**	10
Effective Date:				**Insurance in Force:**	$1,839,200.00
CAV Date:	05/08/2007	**Workshop Date:**		**No. of Paid Losses:**	8
CAC Date:	01/27/2003	**GTA Date:**		**Total Losses Paid:**	$253,216.06
		Community Website:		**Sub. Damage Claims Since 1978:**	4

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Community Overview

Community:	BEDFORD COUNTY *	**State:**	VIRGINIA
County:	BEDFORD COUNTY	**CID:**	510016

Program:	Regular	**Emergency Entry:**	01/16/1974	**Regular Entry:**	09/29/1978
Status:	PARTICIPATING			**Status Effective:**	09/29/1978
Current Map:	09/29/2010	**Study Underway:**	NO	**Level of Regs:**	D
FIRM Status:	REVISED			**Initial FIRM:**	09/29/1978
FHBM Status:	SUPERCEDED BY FIRM			**Initial FHBM:**	04/25/1975

Probation Status:			
Probation Effective:		**Probation Ended:**	
Suspension Effective:		**Reinstated Effective:**	
Withdrawal Effective:		**Reinstated Effective:**	

CRS Class / Discount:				**Policies in Force:**	145
Effective Date:				**Insurance in Force:**	$36,887,300.00
CAV Date:	11/16/2009	**Workshop Date:**		**No. of Paid Losses:**	20
CAC Date:		**GTA Date:**	05/26/2011	**Total Losses Paid:**	$206,583.05
☐ **Tribal Community**		**Community Website:**	http://www.co.bedford.va.us	**Sub. Damage Claims Since 1978:**	2
☐ **Upton Jones Claims**				☐ **HMGP Projects**	
☐ **ICC Claims**				☐ **FMA Projects**	

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Community Overview

Community:	CAMPBELL COUNTY *	**State:**	VIRGINIA
County:	CAMPBELL COUNTY	**CID:**	510028

Program:	Regular	**Emergency Entry:**	12/27/1973	**Regular Entry:**	10/17/1978
Status:	PARTICIPATING			**Status Effective:**	10/17/1978
Current Map:	08/28/2008	**Study Underway:**	YES	**Level of Regs:**	D
FIRM Status:	ALL ZONE A, C AND X - NO ELEVATION DETERMINED			**Initial FIRM:**	10/17/1978
FHBM Status:	SUPERCEDED BY FIRM			**Initial FHBM:**	11/22/1974

Probation Status:			
Probation Effective:		**Probation Ended:**	
Suspension Effective:		**Reinstated Effective:**	
Withdrawal Effective:		**Reinstated Effective:**	

CRS Class / Discount:				**Policies in Force:**	28
Effective Date:				**Insurance in Force:**	$7,078,900.00
CAV Date:	01/16/2008	**Workshop Date:**		**No. of Paid Losses:**	12
CAC Date:	02/06/2003	**GTA Date:**		**Total Losses Paid:**	$503,766.42
☐ **Tribal Community**		**Community Website:**		**Sub. Damage Claims Since 1978:**	2

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Community Overview

Community:	BEDFORD, CITY OF	**State:**	VIRGINIA
County:	BEDFORD CITY	**CID:**	510015

Program:	Regular	**Emergency Entry:**	03/12/1974	**Regular Entry:**	06/01/1978
Status:	PARTICIPATING			**Status Effective:**	06/01/1978
Current Map:	09/29/2010	**Study Underway:**	YES	**Level of Regs:**	D
FIRM Status:	REVISED			**Initial FIRM:**	06/01/1978
FHBM Status:	SUPERCEDED BY FIRM			**Initial FHBM:**	06/28/1974

Probation Status:

Probation Effective: **Probation Ended:**

Suspension Effective: **Reinstated Effective:**

Withdrawal Effective: **Reinstated Effective:**

CRS Class / Discount:

Effective Date:

CAV Date:

CAC Date: 03/06/2003

Workshop Date:

GTA Date: 07/20/2010

Community Website: http://www.bedfordva.gov

Policies in Force: 2

Insurance in Force: $78,000.00

No. of Paid Losses:

Total Losses Paid:

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Community Overview

Community:	LYNCHBURG, CITY OF	**State:**	VIRGINIA
County:	LYNCHBURG CITY	**CID:**	510093

Program:	Regular	**Emergency Entry:**	09/18/1973	**Regular Entry:**	09/01/1978
Status:	PARTICIPATING			**Status Effective:**	09/01/1978
Current Map:	06/03/2008	**Study Underway:**	YES	**Level of Regs:**	D
FIRM Status:	REVISED			**Initial FIRM:**	09/01/1978
FHBM Status:	SUPERCEDED BY FIRM			**Initial FHBM:**	08/09/1974

Probation Status:			
Probation Effective:		**Probation Ended:**	
Suspension Effective:		**Reinstated Effective:**	
Withdrawal Effective:		**Reinstated Effective:**	

CRS Class / Discount:				**Policies in Force:**	96
Effective Date:				**Insurance in Force:**	$29,150,600.00
CAV Date:	06/28/2011	**Workshop Date:**		**No. of Paid Losses:**	80
CAC Date:	05/29/2003	**GTA Date:**	06/27/2011	**Total Losses Paid:**	$3,247,935.56
☐ **Tribal Community**		**Community Website:**		**Sub. Damage Claims Since 1978:**	1

☐ **Upton Jones Claims**	☐ **HMGP Projects**
☐ **ICC Claims**	☐ **FMA Projects**

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Community Information System

Release 4.05.04.00, 03/31/2011 -- Build 045,

Community Overview

Community:	AMHERST, TOWN OF	**State:**	VIRGINIA
County:	AMHERST COUNTY	**CID:**	510193

Program:	Regular	**Emergency Entry:**	02/07/1974	**Regular Entry:**	11/02/1977
Status:	PARTICIPATING			**Status Effective:**	11/02/1977
Current Map:	09/19/2007	**Study Underway:**	NO	**Level of Regs:**	D
FIRM Status:	REVISED			**Initial FIRM:**	11/02/1977
FHBM Status:	SUPERCEDED BY FIRM			**Initial FHBM:**	01/31/1975

Probation Status:			
Probation Effective:		**Probation Ended:**	
Suspension Effective:		**Reinstated Effective:**	
Withdrawal Effective:		**Reinstated Effective:**	

CRS Class / Discount:				**Policies in Force:**	2
Effective Date:				**Insurance in Force:**	$450,800.00
CAV Date:	06/30/1992	**Workshop Date:**		**No. of Paid Losses:**	29
CAC Date:	02/06/2007	**GTA Date:**	06/27/2011	**Total Losses Paid:**	$128,029.19
☐ **Tribal Community**		**Community Website:**		**Sub. Damage Claims Since 1978:**	2

☐ **Upton Jones Claims** ☐ **HMGP Projects**

☐ **ICC Claims** ☐ **FMA Projects**

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Community Information System

Release 4.05.04.00, 03/31/2011 -- Build 045,

Community Overview

Community: APPOMATTOX, TOWN OF **State:** VIRGINIA
County: APPOMATTOX COUNTY **CID:** 510194

Program: Regular **Emergency Entry:** 02/22/1974 **Regular Entry:** 05/25/1984
Status: PARTICIPATING **Status Effective:** 05/25/1984

Current Map: 01/02/2008 **Study Underway:** YES **Level of Regs:** B
FIRM Status: ALL ZONE A, C AND X - NO ELEVATION DETERMINED **Initial FIRM:** 05/25/1984
FHBM Status: SUPERCEDED BY FIRM **Initial FHBM:** 05/06/1977

Probation Status:
Probation Effective: **Probation Ended:**
Suspension Effective: **Reinstated Effective:**
Withdrawal Effective: **Reinstated Effective:**

CRS Class / Discount:
Effective Date:
CAV Date: 08/27/1992 **Workshop Date:**
CAC Date: 01/30/2003 **GTA Date:**
Community Website:

Policies in Force:
Insurance in Force:
No. of Paid Losses:
Total Losses Paid:
Sub. Damage Claims Since 1978:

☐ **Tribal Community**

☐ **Upton Jones Claims** ☐ **HMGP Projects**
☐ **ICC Claims** ☐ **FMA Projects**

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Community Information System

Release 4.05.04.00, 03/31/2011 -- Build 045,

Community Overview

Community:	BROOKNEAL, TOWN OF	**State:**	VIRGINIA
County:	CAMPBELL COUNTY	**CID:**	510030

Program:	Regular	**Emergency Entry:**	01/15/1974	**Regular Entry:**	03/01/1978
Status:	PARTICIPATING			**Status Effective:**	03/28/1978
Current Map:	08/28/2008	**Study Underway:**	YES	**Level of Regs:**	D
FIRM Status:	REVISED			**Initial FIRM:**	03/01/1978
FHBM Status:	SUPERCEDED BY FIRM			**Initial FHBM:**	05/17/1974

Probation Status:			
Probation Effective:		**Probation Ended:**	
Suspension Effective:	03/01/1978	**Reinstated Effective:**	03/28/1978
Withdrawal Effective:		**Reinstated Effective:**	

CRS Class / Discount:		**Policies in Force:**	3
Effective Date:		**Insurance in Force:**	$589,400.00
CAV Date:	01/16/2008 **Workshop Date:**	**No. of Paid Losses:**	
CAC Date:	06/26/1992 **GTA Date:**	**Total Losses Paid:**	
	Community Website:	**Sub. Damage Claims Since 1978:**	

☐ **Tribal Community**

☐ **Upton Jones Claims** ☐ **HMGP Projects**

☐ **ICC Claims** ☐ **FMA Projects**

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Community Information System

Release 4.05.04.00, 03/31/2011 -- Build 045,

Community Overview

Community: PAMPLIN CITY, TOWN OF **State:** VIRGINIA
County: APPOMATTOX COUNTY **CID:** 510228

Program: Regular **Emergency Entry:** 11/11/1974 **Regular Entry:** 02/12/1976
Status: PARTICIPATING **Status Effective:** 02/12/1976

Current Map: 10/02/2009 **Study Underway:** NO **Level of Regs:**
FIRM Status: ALL ZONE C&X PUBLISHED FIRM **Initial FIRM:** 10/02/2009
FHBM Status: NEVER MAPPED **Initial FHBM:**

Probation Status:
Probation Effective: **Probation Ended:**
Suspension Effective: **Reinstated Effective:**
Withdrawal Effective: **Reinstated Effective:**

CRS Class / Discount:
Effective Date:
CAV Date: **Workshop Date:**
CAC Date: **GTA Date:** 09/16/2009
Community Website:

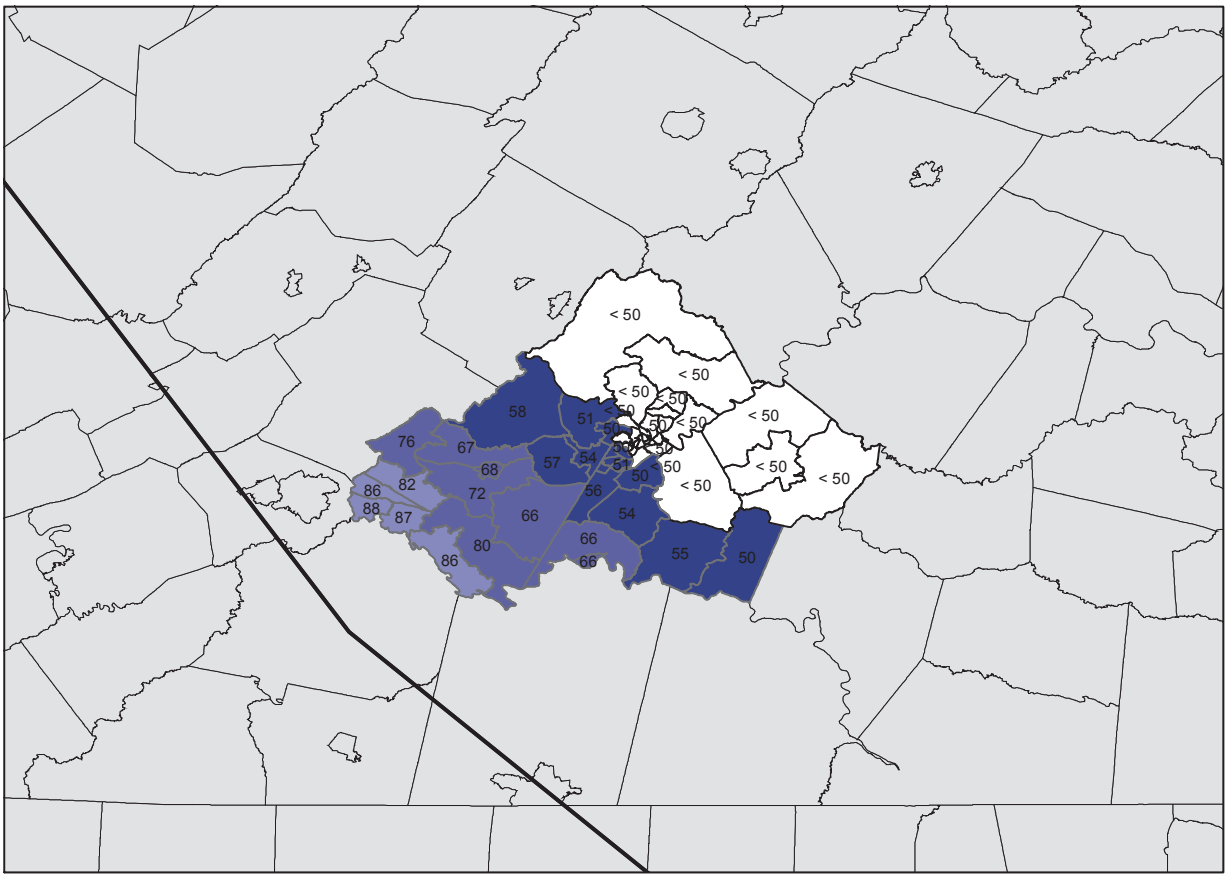
Policies in Force:
Insurance in Force:
No. of Paid Losses:
Total Losses Paid:
Sub. Damage Claims Since 1978:

☐ **Tribal Community**

☐ **Upton Jones Claims** ☐ **HMGP Projects**
☐ **ICC Claims** ☐ **FMA Projects**

Appendix 5.4
HAZUS-MH Wind Speed Maps

Region 2000
Probabilistic 50 Year Hurricane Event



Legend

50 Year Storm Track

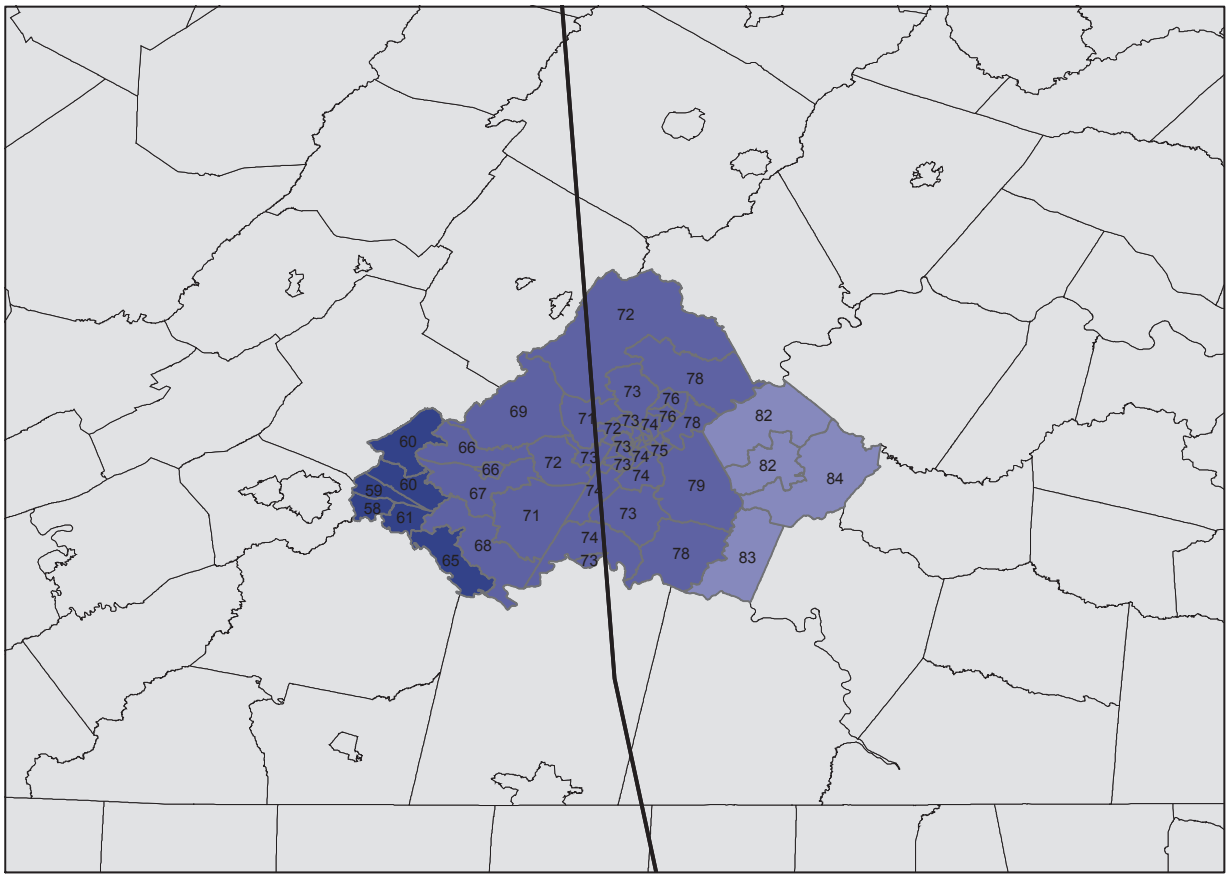
50 Year Event Peak Gusts (mph)

- < 50
- 50 - 65
- 65 - 80
- 80 - 95
- 95 - 110
- 110 - 125
- 125 - 140
- 140 - 155
- 155 - 170
- 170 - 185
- 185 - 200
- > 200

50 25 0 50 Miles

N W E S

Region 2000
Probabilistic 100 Year Hurricane Event



Legend

100 Year Storm Track

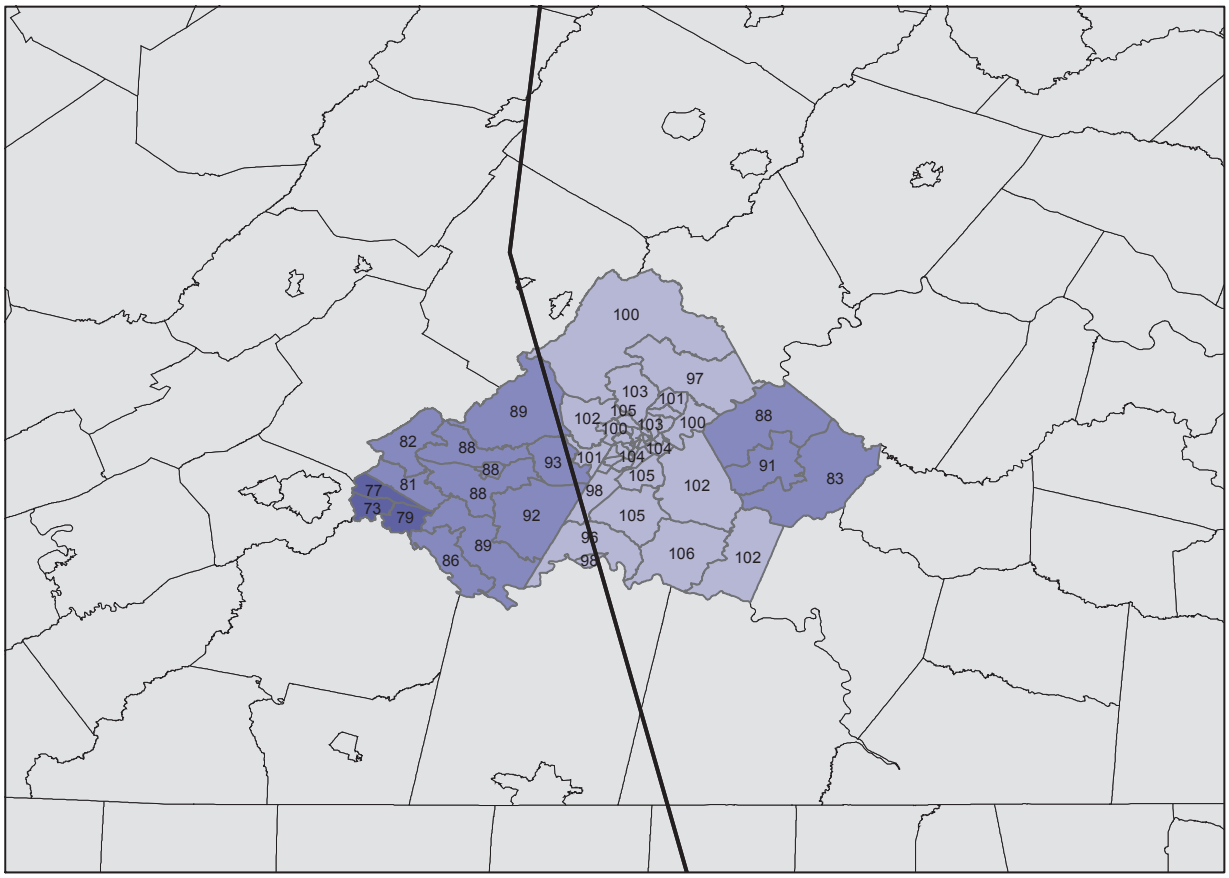
100 Year Event Peak Gusts (mph)

- < 50
- 50 - 65
- 65 - 80
- 80 - 95
- 95 - 110
- 110 - 125
- 125 - 140
- 140 - 155
- 155 - 170
- 170 - 185
- 185 - 200
- > 200

40 20 0 40 Miles

N W E S

Region 2000
Probabilistic 1000 Year Hurricane Event



Legend

1000 Year Storm Track

1000 Year Event Peak Gusts (mph)

- < 50
- 50 - 65
- 65 - 80
- 80 - 95
- 95 - 110
- 110 - 125
- 125 - 140
- 140 - 155
- 155 - 170
- 170 - 185
- 185 - 200
- > 200

40 20 0 40 Miles

N W E S

Appendix 5.5
Completed HIRA Worksheets

UNKNOWN

TOWN OF AMHERST

Hazard Identification and Risk Assessment

REGION 2000

	Winter Storms (Ice/Snow)	Flood (Hurricane)	Drought	Wind (Hurricane/Tornado)	Wildfire	Landslide and Land Subsidence	Terrorism	Earthquake			
Region 2000	5	5	5	6-2	3	1	1	1			
Amherst County											
Amherst, Town of	5	4	4	1	3	1	1	1			
Appomattox County											
Appomattox, Town of											
Pamplin City, Town of											
Bedford City											
Bedford County											
Campbell County											
Altavista, Town of											
Brookneal, Town of											
Lynchburg City											

Hazard Index Ranking

Impact → / Frequency of Occurrence ↓	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 (Highest)	4 (High)	4 (High)	3 (Medium)
Likely	5 (Highest)	4 (High)	3 (Medium)	2 (Low)
Possible	4 (High)	3 (Medium)	2 (Low)	2 (Low)
Unlikely	3 (Medium)	2 (Low)	1 (Lowest)	1 (Lowest)
Highly Unlikely	2 (Low)	1 (Lowest)	1 (Lowest)	1 (Lowest)

Source: FEMA, 1997

The HIRA process will determine all the natural hazards that might affect the area. The hazards will be ranked to determine what hazards are most likely to impact the communities of Region 2000. Just like the 2006 HIRA, hazards that are determined to have significant impact (*ranking of 5 or 4*)will be analyzed in the greatest detail to determine the magnitude of future events and the vulnerability for the community and the critical facilities. Hazards that receive a moderate impact ranking (*ranking of 3*) will be analyzed with available data to determine the risk and vulnerability to the specified hazard. The limited impact hazards (*ranking of 2 or 1*) will be briefly addressed in the plan.

Frequency of Occurrence

Highly Likely	Near 100 Percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 10 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability iun the next year of less than once chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.

Source: FEMA, 1997

Consequences of Impact

Catastrophic	Multiple Deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of property is severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of property is severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life impact, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of property is severely damaged.

Source: FEMA, 1997

1000 styles
Bedford Co Fir & Rsc

REGION 2000

Hazard Identification and Risk Assessment

	Major Storms (Ice/Snow)	Hazd (Hurricane)	Drought	Wkd (Hurricane/Tornado)	Wildfire	Landslide/Land Subsidence	Terrorism	Earthquake			
Region 2000											
Amherst County											
Amherst, Town of											
Appomattox County											
Appomattox, Town of											
Pamplin City, Town of											
Bedford City											
Bedford County	M	H	H	M	M	L	L	L			
Campbell County											
Altavista, Town of											
Brookneal, Town of											
Lynchburg City											

The HIRA process will determine all the natural hazards that might affect the area. The hazards will be ranked to determine what hazards are most likely to impact the communities of Region 2000. Just like the 2006 HIRA, hazards that are determined to have significant impact (*ranking of 5 or 4*)will be analyzed in the greatest detail to determine the magnitude of future events and the vulnerability for the community and the critical facilities. Hazards that receive a moderate impact ranking (*ranking of 3*) will be analyzed with available data to determine the risk and vulnerability to the specified hazard. The limited impact hazards (*ranking of 2 or 1*) will be briefly addressed in the plan.

Hazard Index Ranking

Impact → / Frequency of Occurrence ↓	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 (Highest)	4 (High)	4 (High)	3 (Medium)
Likely	5 (Highest)	4 (High)	3 (Medium)	2 (Low)
Possible	4 (High)	3 (Medium)	2 (Low)	2 (Low)
Unlikely	3 (Medium)	2 (Low)	1 (Lowest)	1 (Lowest)
Highly Unlikely	2 (Low)	1 (Lowest)	1 (Lowest)	1 (Lowest)

Source: FEMA, 1997

Frequency of Occurrence

Highly Likely	Near 100 Percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 10 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability iun the next year of less than once chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years

Source: FEMA, 1997

Consequences of Impact

Catastrophic	Multiple Deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of property is severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of property is severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life impact, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of property is severely damaged.

Source: FEMA, 1997

Johnnie Roark

Hazard Identification and Risk Assessment

Region 2000	Winter Storms (Ice/Snow)	Flood (Hurricane)	Drought	Wind (Hurricane/Tornado)	Wildfire	Landslide and Land Subsistence	Terrorism	Earthquake
Amherst County								
Amherst, Town of								
Appomattox County	5	5	5	4	4	2	1	1
Appomattox, Town of								
Pamplin City, Town of								
Bedford City								
Bedford County								
Campbell County								
Altavista, Town of								
Brookneal, Town of								
Lynchburg City								

Hazard Index Ranking

Impact → / Frequency of Occurrence ↓	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 *(Highest)*	4 *(High)*	4 *(High)*	3 *(Medium)*
Likely	5 *(Highest)*	4 *(High)*	3 *(Medium)*	2 *(Low)*
Possible	4 *(High)*	3 *(Medium)*	2 *(Low)*	2 *(Low)*
Unlikely	3 *(Medium)*	2 *(Low)*	1 *(Lowest)*	1 *(Lowest)*
Highly Unlikely	2 *(Low)*	1 *(Lowest)*	1 *(Lowest)*	1 *(Lowest)*

Source: FEMA, 1997

The HIRA process will determine all the natural hazards that might affect the area. The hazards will be ranked to determine what hazards are most likely to impact the communities of Region 2000. Just like the 2006 HIRA, hazards that are determined to have significant impact (*ranking of 5 or 4*)will be analyzed in the greatest detail to determine the magnitude of future events and the vulnerability for the community and the critical facilities. Hazards that receive a moderate impact ranking (*ranking of 3*) will be analyzed with available data to determine the risk and vulnerability to the specified hazard. The limited impact hazards (*ranking of 2 or 1*) will be analyzed using the best available data to determine the risk to the community.

Frequency of Occurrence

Highly Likely	Near 100 Percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 10 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability iun the next year of less than once chance in the next 100 years.
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Source: FEMA, 1997

Consequences of Impact

Catastrophic	Multiple Deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of property is severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of property is severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life impact, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of property is severely damaged.

Source: FEMA, 1997

Roxanne Tawlette
Town of Appomattox

REGION 2000

Hazard Identification and Risk Assessment

	Winter Storm (Ice/Snow)	Hazmat (Hurricane)	Drought	Wind (Hurricane/Tornado)	Wildfire	Landslide and Land Subsidence	Terrorism	Earthquake			
Region 2000											
Amherst County											
Amherst, Town of											
Appomattox County											
Appomattox, Town of	5	5	5	4	4	2	1	1			
Pamplin City, Town of											
Bedford City											
Bedford County											
Campbell County											
Altavista, Town of											
Brookneal, Town of											
Lynchburg City											

Hazard Index Ranking

Impact → / Frequency of Occurrence ↓	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 (Highest)	4 (High)	4 (High)	3 (Medium)
Likely	5 (Highest)	4 (High)	3 (Medium)	2 (Low)
Possible	4 (High)	3 (Medium)	2 (Low)	2 (Low)
Unlikely	3 (Medium)	2 (Low)	1 (Lowest)	1 (Lowest)
Highly Unlikely	2 (Low)	1 (Lowest)	1 (Lowest)	1 (Lowest)

Source: FEMA, 1997

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Highly Unlikely	Little to no probability in next 100 years

Source: FEMA, 1997

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Limited	Some injuries, complete shutdown of critical facilities for more than one week. more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life impact, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of property is severely damaged

Source: FEMA, 1997

Tracy Fairchild
Campbell County

Hazard Identification and Risk Assessment

Region 2000	Winter Storms (Ice/Snow)	Flood (Hurricane)	Drought	Wind (Hurricane/Tornado)	Wildfire	Landslide and Land Subsistence	Terrorism	Earthquake
Amherst County								
Amherst, Town of								
Appomattox County								
Appomattox, Town of								
Pamplin City, Town of								
Bedford City								
Bedford County								
Campbell County	M-H	H	M-H	M-H	Med	Low	Low	Low
Altavista, Town of								
Brookneal, Town of								
Lynchburg City								

Hazard Index Ranking

Impact → / Frequency of Occurrence ↓	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 (Highest)	4 (High)	4 (High)	3 (Medium)
Likely	5 (Highest)	4 (High)	3 (Medium)	2 (Low)
Possible	4 (High)	3 (Medium)	2 (Low)	2 (Low)
Unlikely	3 (Medium)	2 (Low)	1 (Lowest)	1 (Lowest)
Highly Unlikely	2 (Low)	1 (Lowest)	1 (Lowest)	1 (Lowest)

Source: FEMA, 1997

The HIRA process will determine all the natural hazards that might affect the area. The hazards will be ranked to determine what hazards are most likely to impact the communities of Region 2000. Just like the 2006 HIRA, hazards that are determined to have significant impact (*ranking of 5 or 4*)will be analyzed in the greatest detail to determine the magnitude of future events and the vulnerability for the community and the critical facilities. Hazards that receive a moderate impact ranking (*ranking of 3*) will be analyzed with available data to determine the risk and vulnerability to the specified hazard. The limited impact hazards (*ranking of 2 or 1*) will be analyzed using the best available data to determine the risk to the community.

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Source: FEMA, 1997

Consequences of Impact

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Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of property is severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life impact, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of property is severely damaged.

Source: FEMA, 1997

Gary Rogers - Amherst

REGION 2000

Hazard Identification and Risk Assessment

	Winter Storms (Ice/Snow)	Hazmat (Hurricane)	Drought	Wind (Hurricane/Tornado)	Wildfire	Landslide and Land Subsidence	Terrorism	Earthquake			
Region 2000											
Amherst County	High	High	High	M	M	Low	Low	Low			
Amherst, Town of											
Appomattox County											
Appomattox, Town of											
Pamplin City, Town of											
Bedford City											
Bedford County											
Campbell County											
Altavista, Town of											
Brookneal, Town of											
Lynchburg City											

Hazard Index Ranking

Impact → / Frequency of Occurrence ↓	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 (Highest)	4 (High)	4 (High)	3 (Medium)
Likely	5 (Highest)	4 (High)	3 (Medium)	2 (Low)
Possible	4 (High)	3 (Medium)	2 (Low)	2 (Low)
Unlikely	3 (Medium)	2 (Low)	1 (Lowest)	1 (Lowest)
Highly Unlikely	2 (Low)	1 (Lowest)	1 (Lowest)	1 (Lowest)

Source: FEMA, 1997

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Highly Unlikely	Little to no probability in next 100 years.

Source: FEMA, 1997

Consequences of Impact

Catastrophic	Multiple Deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of property is severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of property is severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life impact, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of property is severely damaged.

Source: FEMA, 1997

Bill Aldrich

REGION 2000

Hazard Identification and Risk Assessment

	Winter Storm (Ice/Snow)	Flood (Hurricane)	Drought	Wind (Hurricane/Tornado)	Wildfire	Earthquake/Land Subsidence	Terrorism	Earthquake
Region 2000	4	4	4	3	3	2	2	2
Amherst County								
Amherst, Town of								
Appomattox County								
Appomattox, Town of								
Pamplin City, Town of								
Bedford City								
Bedford County								
Campbell County								
Altavista, Town of								
Brookneal, Town of								
Lynchburg City	3	3	3	3	2	2	2	2

Hazard Index Ranking

Impact → / Frequency of Occurrence ↓	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 (Highest)	4 (High)	4 (High)	3 (Medium)
Likely	5 (Highest)	4 (High)	3 (Medium)	2 (Low)
Possible	4 (High)	3 (Medium)	2 (Low)	2 (Low)
Unlikely	3 (Medium)	2 (Low)	1 (Lowest)	1 (Lowest)
Highly Unlikely	2 (Low)	1 (Lowest)	1 (Lowest)	1 (Lowest)

Source: FEMA, 1997

The HIRA process will determine all the natural hazards that might affect the area. The hazards will be ranked to determine what hazards are most likely to impact the communities of Region 2000. Just like the 2006 HIRA, hazards that are determined to have significant impact (*ranking of 5 or 4*)will be analyzed in the greatest detail to determine the magnitude of future events and the vulnerability for the community and the critical facilities. Hazards that receive a moderate impact ranking (*ranking of 3*) will be analyzed with available data to determine the risk and vulnerability to the specified hazard. The limited impact hazards (*ranking of 2 or 1*) will be briefly addressed in the plan.

Frequency of Occurrence

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Source: FEMA, 1997

Consequences of Impact

Catastrophic	Multiple Deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of property is severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of property is severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life impact, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of property is severely damaged

Source: FEMA, 1997

Hazard Identification and Risk Assessment

	Mass Storms (Ice/Snow)	Heavy Rainfall	Drought	Wind (Hurricane/Tornado)	Wildfire	Landslide/Land Subsidence	Tornado	Earthquake			
Region 2000											
Amherst County											
Amherst, Town of											
Appomattox County											
Appomattox, Town of											
Pamplin City, Town of											
Bedford City											
Bedford County											
Campbell County											
Altavista, Town of											
Brookneal, Town of											
Lynchburg City											

Hazard Index Ranking

Impact → / Frequency of Occurrence ↓	Catastrophic	Critical	Limited	Negligible
Highly Likely	5 *(Highest)*	4 *(High)*	4 *(High)*	3 *(Medium)*
Likely	5 *(Highest)*	4 *(High)*	3 *(Medium)*	2 *(Low)*
Possible	4 *(High)*	3 *(Medium)*	2 *(Low)*	2 *(Low)*
Unlikely	3 *(Medium)*	2 *(Low)*	1 *(Lowest)*	1 *(Lowest)*
Highly Unlikely	2 *(Low)*	1 *(Lowest)*	1 *(Lowest)*	1 *(Lowest)*

Source: FEMA, 1997

The HIRA process will determine all the natural hazards that might affect the area. The hazards will be ranked to determine what hazards are most likely to impact the communities of Region 2000. Just like the 2006 HIRA, hazards that are determined to have significant impact (*ranking of 5 or 4*)will be analyzed in the greatest detail to determine the magnitude of future events and the vulnerability for the community and the critical facilities. Hazards that receive a moderate impact ranking (*ranking of 3*) will be analyzed with available data to determine the risk and vulnerability to the specified hazard. The limited impact hazards (*ranking of 2 or 1*) will be briefly addressed in the plan.

Frequency of Occurrence

Highly Likely	Near 100 Percent probability in the next year.
Likely	Between 10 and 100 percent probability in the next year, or at least one chance in the next 10 years.
Possible	Between 1 and 10 percent probability in the next year, or at least one chance in the next 100 years.
Unlikely	Less than 1 percent probability iun the next year of less than once chance in the next 100 years.
Highly Unlikely	Little to no probability in next 100 years.

Source: FEMA, 1997

Consequences of Impact

Catastrophic	Multiple Deaths, complete shutdown of facilities for 30 days or more, more than 50 percent of property is severely damaged.
Critical	Multiple severe injuries, complete shutdown of critical facilities for at least 2 weeks, more than 25 percent of property is severely damaged.
Limited	Some injuries, complete shutdown of critical facilities for more than one week, more than 10 percent of property severely damaged.
Negligible	Minor injuries, minimal quality-of-life impact, shutdown of critical facilities and services for 24 hours or less, less than 10 percent of property is severely damaged.

Source: FEMA, 1997

Appendix 5.6
Hurricane Table

Category	Winds (1 min sustained winds in mph, kt, and km/hr)	Summary	People, Livestock, and Pets	Mobile Homes	Frame Homes	Apartments, Shopping Centers, and Industrial Buildings	High-Rise Windows and Glass	Signage, Fences, and Canopies	Trees	Power and Water	Example
1	74-95 mph 64-82 kt 119-153 km/hr	*Very dangerous winds will produce some damage*	People, livestock, and pets struck by flying or falling debris could be injured or killed.	Older (mainly pre-1994 construction) mobile homes could be destroyed, especially if they are not anchored properly as they tend to shift or roll off their foundations. Newer mobile homes that are anchored properly can sustain damage involving the removal of shingle or metal roof coverings, and loss of vinyl siding, as well as damage to carports, sunrooms, or lanais.	Some poorly constructed frame homes can experience major damage, involving loss of the roof covering and damage to gable ends as well as the removal of porch coverings and awnings. Unprotected windows may break if struck by flying debris. Masonry chimneys can be toppled. Well-constructed frame homes could have damage to roof shingles, vinyl siding, soffit panels, and gutters. Failure of aluminum, screened-in, swimming pool enclosures can occur.	Some apartment building and shopping center roof coverings could be partially removed. Industrial buildings can lose roofing and siding especially from windward corners, rakes, and eaves. Failures to overhead doors and unprotected windows will be common.	Windows in high-rise buildings can be broken by flying debris. Falling and broken glass will pose a significant danger even after the storm.	There will be occasional damage to commercial signage, fences, and canopies.	Large branches of trees will snap and shallow rooted trees can be toppled.	Extensive damage to power lines and poles will likely result in power outages that could last a few to several days.	Hurricane Dolly (2008) is an example of a hurricane that brought Category 1 winds and impacts to South Padre Island, Texas.

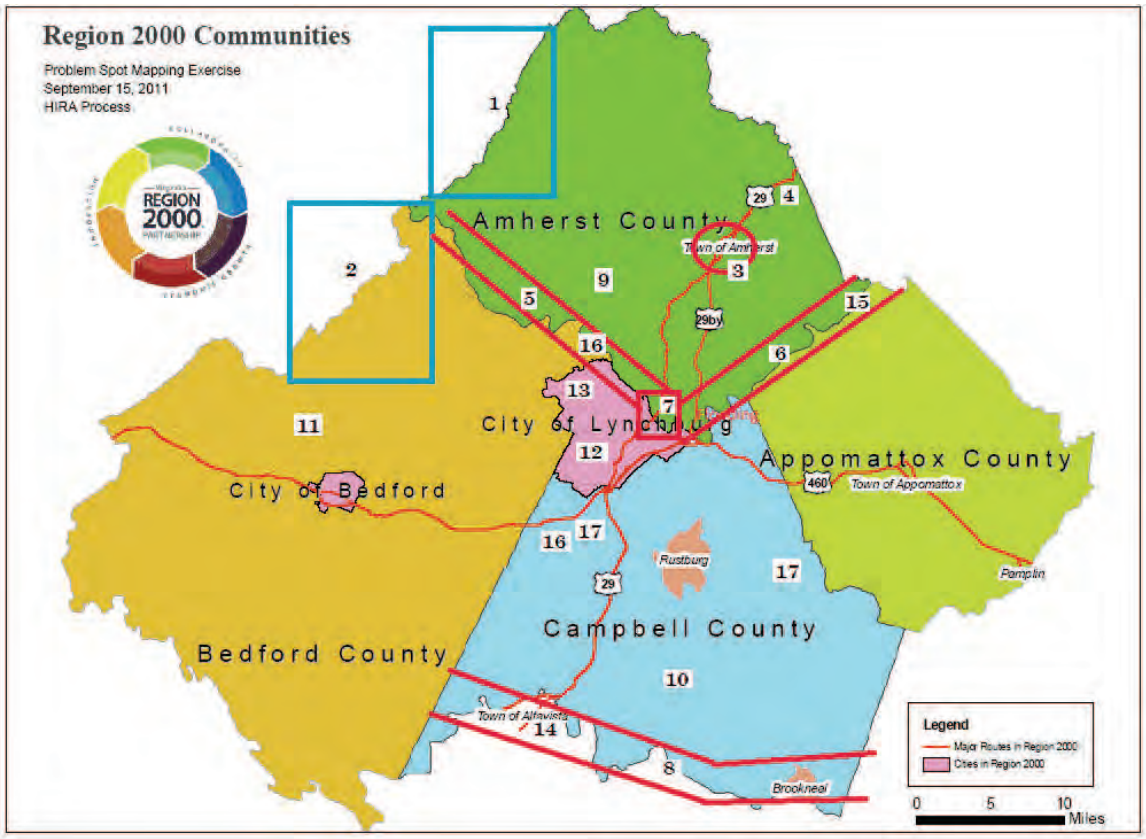
Category	Winds (1 min sustained winds in mph, kt, and km/hr)	Summary	People, Livestock, and Pets	Mobile Homes	Frame Homes	Apartments, Shopping Centers, and Industrial Buildings	High-Rise Windows and Glass	Signage, Fences, and Canopies	Trees	Power and Water	Example
2	96-110 mph 83-95 kt 154-177 km/hr	*Extremely dangerous winds will cause extensive damage*	There is a substantial risk of injury or death to people, livestock, and pets due to flying and falling debris.	Older (mainly pre-1994 construction) mobile homes have a very high chance of being destroyed and the flying debris generated can shred nearby mobile homes. Newer mobile homes can also be destroyed.	Poorly constructed frame homes have a high chance of having their roof structures removed especially if they are not anchored properly. Unprotected windows will have a high probability of being broken by flying debris. Well-constructed frame homes could sustain major roof and siding damage. Failure of aluminum, screened-in, swimming pool enclosures will be common.	There will be a substantial percentage of roof and siding damage to apartment buildings and industrial buildings. Unreinforced masonry walls can collapse.	Windows in high-rise buildings can be broken by flying debris. Falling and broken glass will pose a significant danger even after the storm.	Commercial signage, fences, and canopies will be damaged and often destroyed.	Many shallowly rooted trees will be snapped or uprooted and block numerous roads.	Near-total power loss is expected with outages that could last from several days to weeks. Potable water could become scarce as filtration systems begin to fail.	Hurricane Frances (2004) is an example of a hurricane that brought Category 2 winds and impacts to coastal portions of Port St. Lucie, Florida with Category 1 conditions experienced elsewhere in the city.

Category	Winds (1 min sustained winds in mph, kt, and km/hr)	Summary	People, Livestock, and Pets	Mobile Homes	Frame Homes	Apartments, Shopping Centers, and Industrial Buildings	High-Rise Windows and Glass	Signage, Fences, and Canopies	Trees	Power and Water	Example
3	111-130 mph 96-113 kt 178-209 km/hr	*Devastating damage will occur*	There is a high risk of injury or death to people, livestock, and pets due to flying and falling debris.	Nearly all older (pre-1994) mobile homes will be destroyed. Most newer mobile homes will sustain severe damage with potential for complete roof failure and wall collapse.	Poorly constructed frame homes can be destroyed by the removal of the roof and exterior walls. Unprotected windows will be broken by flying debris. Well-built frame homes can experience major damage involving the removal of roof decking and gable ends.	There will be a high percentage of roof covering and siding damage to apartment buildings and industrial buildings. Isolated structural damage to wood or steel framing can occur. Complete failure of older metal buildings is possible, and older unreinforced masonry buildings can collapse.	Numerous windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm.	Most commercial signage, fences, and canopies will be destroyed.	Many trees will be snapped or uprooted, blocking numerous roads.	Electricity and water will be unavailable for several days to a few weeks after the storm passes.	Hurricane Ivan (2004) is an example of a hurricane that brought Category 3 winds and impacts to coastal portions of Gulf Shores, Alabama with Category 2 conditions experienced elsewhere in this city.

Category	Winds (1 min sustained winds in mph, kt, and km/hr)	Summary	People, Livestock, and Pets	Mobile Homes	Frame Homes	Apartments, Shopping Centers, and Industrial Buildings	High-Rise Windows and Glass	Signage, Fences, and Canopies	Trees	Power and Water	Example
4	131-155 mph 114-135 kt 210-249 km/hr	*Catastrophic damage will occur*	There is a very high risk of injury or death to people, livestock, and pets due to flying and falling debris.	Nearly all older (pre-1994) mobile homes will be destroyed. A high percentage of newer mobile homes also will be destroyed.	Poorly constructed homes can sustain complete collapse of all walls as well as the loss of the roof structure. Well-built homes also can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Extensive damage to roof coverings, windows, and doors will occur. Large amounts of windborne debris will be lofted into the air. Windborne debris damage will break most unprotected windows and penetrate some protected windows.	There will be a high percentage of structural damage to the top floors of apartment buildings. Steel frames in older industrial buildings can collapse. There will be a high percentage of collapse to older unreinforced masonry buildings.	Most windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm.	Nearly all commercial signage, fences, and canopies will be destroyed.	Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas.	Power outages will last for weeks to possibly months. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months.	Hurricane Charley (2004) is an example of a hurricane that brought Category 4 winds and impacts to coastal portions of Punta Gorda, Florida with Category 3 conditions experienced elsewhere in the city.

Category	Winds (1 min sustained winds in mph, kt, and km/hr)	Summary	People, Livestock, and Pets	Mobile Homes	Frame Homes	Apartments, Shopping Centers, and Industrial Buildings	High-Rise Windows and Glass	Signage, Fences, and Canopies	Trees	Power and Water	Example
5	> 155 mph > 135 kt > 249 km/hr	*Catastrophic damage will occur*	People, livestock, and pets are at very high risk of injury or death from flying or falling debris, even if indoors in mobile homes or framed homes.	Almost complete destruction of all mobile homes will occur, regardless of age or construction.	A high percentage of frame homes will be destroyed, with total roof failure and wall collapse. Extensive damage to roof covers, windows, and doors will occur. Large amounts of windborne debris will be lofted into the air. Windborne debris damage will occur to nearly all unprotected windows and many protected windows.	Significant damage to wood roof commercial buildings will occur due to loss of roof sheathing. Complete collapse of many older metal buildings can occur. Most unreinforced masonry walls will fail which can lead to the collapse of the buildings. A high percentage of industrial buildings and low-rise apartment buildings will be destroyed.	Nearly all windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm.	Nearly all commercial signage, fences, and canopies will be destroyed.	Nearly all trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas.	Power outages will last for weeks to possibly months. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months.	Hurricane Andrew (1992) is an example of a hurricane that brought Category 5 winds and impacts to coastal portions of Cutler Ridge, Florida with Category 4 conditions experienced elsewhere in south Miami-Dade County.

Appendix 5.7
Problem spot mapping exercise



Problem Spot ID	Type of Hazard	Jurisdiction	Description
1	Winter Storm	Amherst County	Lots of black ice on route 130
2	Winter Storm	Bedford County	Houses damaged near Lake and Whitfield Drives
3	Flooding	Town of Amherst	East west road connection (Route 659) gets flooded during heavy rain stroms
4	Flooding	Amherst County	Hurricane Camille Caused severe flooding on the Piney, Pedlar and Buffalo Rivers
5	Flooding	Amherst County	Parts of U.S. 60 closed
6	Flooding	Appomattox County	County Road 608 gets flooded
7	Winter Storm	Lynchburg City	6th Street at Church Street closed; 7th Street at Church Street closed; 7th Street at Polk Street closed; 11th Street at Church Street closed; 11th Street at Madison Street closed; 11th Street at Harrison Street closed; 14th Street at Taylor Street closed
8	Flooding	Town of Altavista	Severe flooding of Lynch Creek caused damage at Shreve Park, YMCA, and two feet of mud was deposited on town streets
9	Flooding	Campbell County	Approximately 5 sturctures are in the mapped FEMA Floodplain, and an additional 5 structures are in close proximity to the Floodplain boundaries
10	Flooding	Campbell County	The historic Marysville Covered Bridge was destroyed by a flood
11	Winter Storm	Beford County	Steep slopes combined with winter storms cause treacherous road conditions
12	Winter Storm	Lynchburg City	Steep slopes combined with winter storms cause treacherous road conditions
13	Lightning storms	Lynchburg City	Trees in road during thunder storm on Boonsboro Road
14	Flooding	Town of Brookneal	Water runs over road when flooding occurs.
15	Flooding	Amherst County	Flooding along James River during heavy rain.
16	Flooding	Campbell County	Timber Lake Dam failed, causing catastrophic flooding of Buffalo Creek
17	Flooding	Campbell County	On U.S. 460, a rescue worker was killed as he attempted to rescue people in stranded cars on the Buffalo Creek bridge, where the water reached five feet over the road surface.

Problem Spot ID	Type of Hazard	Jurisdiction	Description
1	Winter Storm	Amherst County	Lots of black ice on route 130
2	Winter Storm	Bedford County	Houses damaged near Lake and Whitfield Drives
3	Flooding	Town of Amherst	East west road connection (Route 659) gets flooded during heavy rain stroms
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5	Flooding	Amherst County	Parts of U.S. 60 closed
6	Flooding	Appomattox County	County Road 608 gets flooded

Problem Spot ID	Type of Hazard	Jurisdiction	Description
7	Winter Storm	Lynchburg City	6th Street at Church Street closed; 7th Street at Church Street closed; 7th Street at Polk Street closed; 11th Street at Church Street closed; 11th Street at Madison Street closed; 11th Street at Harrison Street closed; 14th Street at Taylor Street closed
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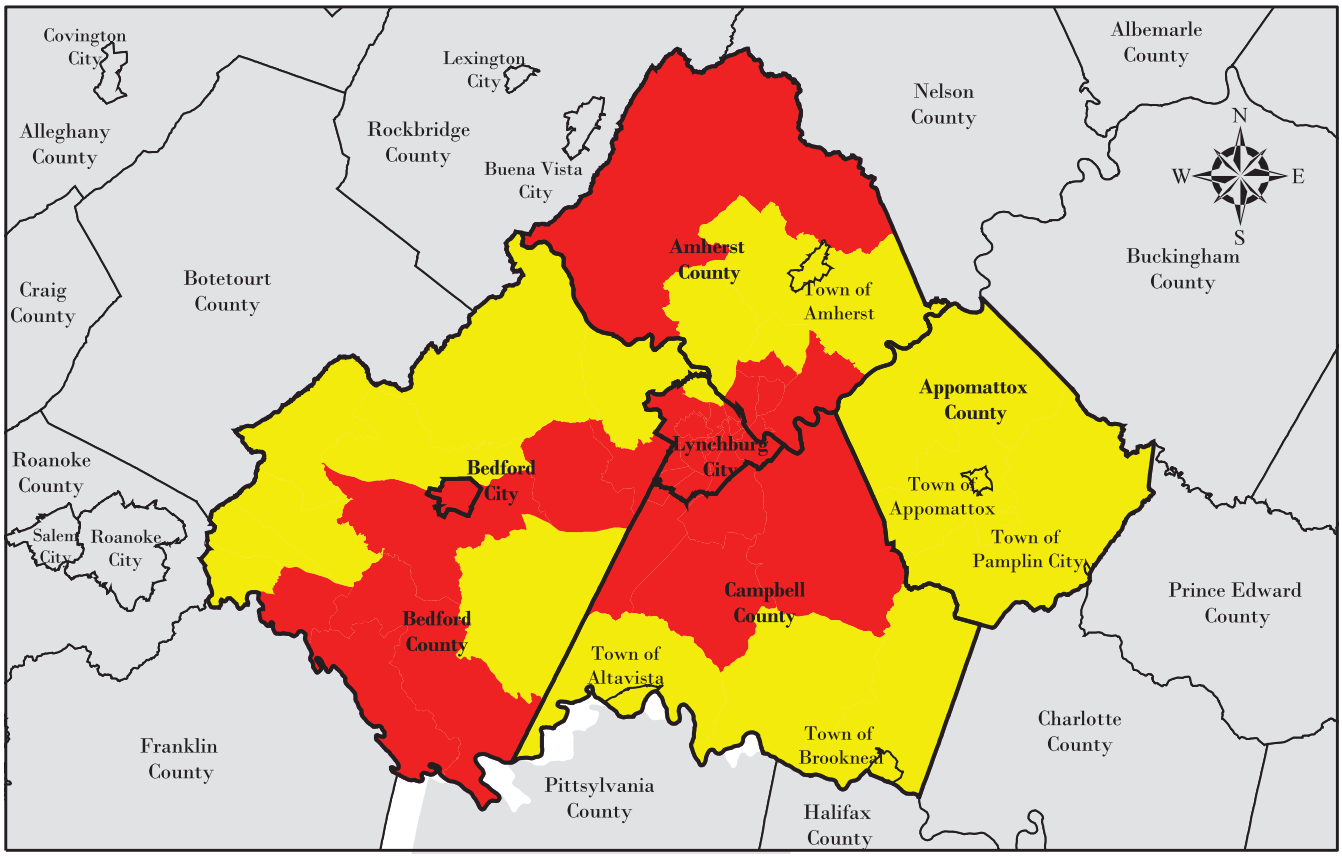
15	Flooding	Amherst County	Flooding along James River during heavy rain.
16	Flooding	Campbell County	Timber Lake Dam failed, causing catastrophic flooding of Buffalo Creek

Problem Spot ID	Type of Hazard	Jurisdiction	Description
17	Flooding	Campbell County	On U.S. 460, a rescue worker was killed as he attempted to rescue people in stranded cars on the Buffalo Creek bridge, where the water reached five feet over the road surface.

Appendix 5.8
Relative Ice Potential Maps

Region 2000 - Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential

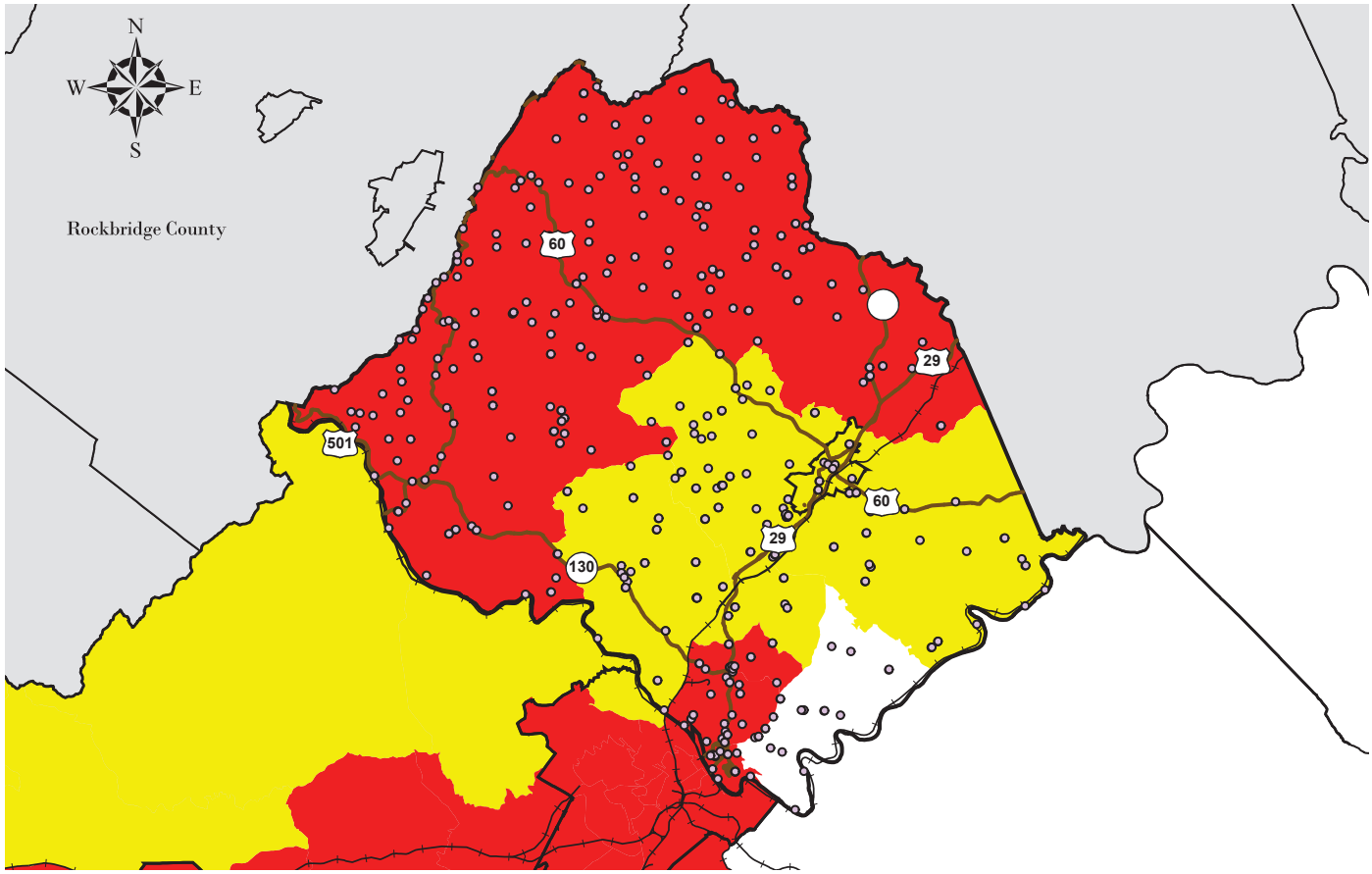
0 4 8 16 Miles

Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: Best available data from 2005

Data Sources: VT CGIT, Region 2000, ESRI, VirginiaView PRISM

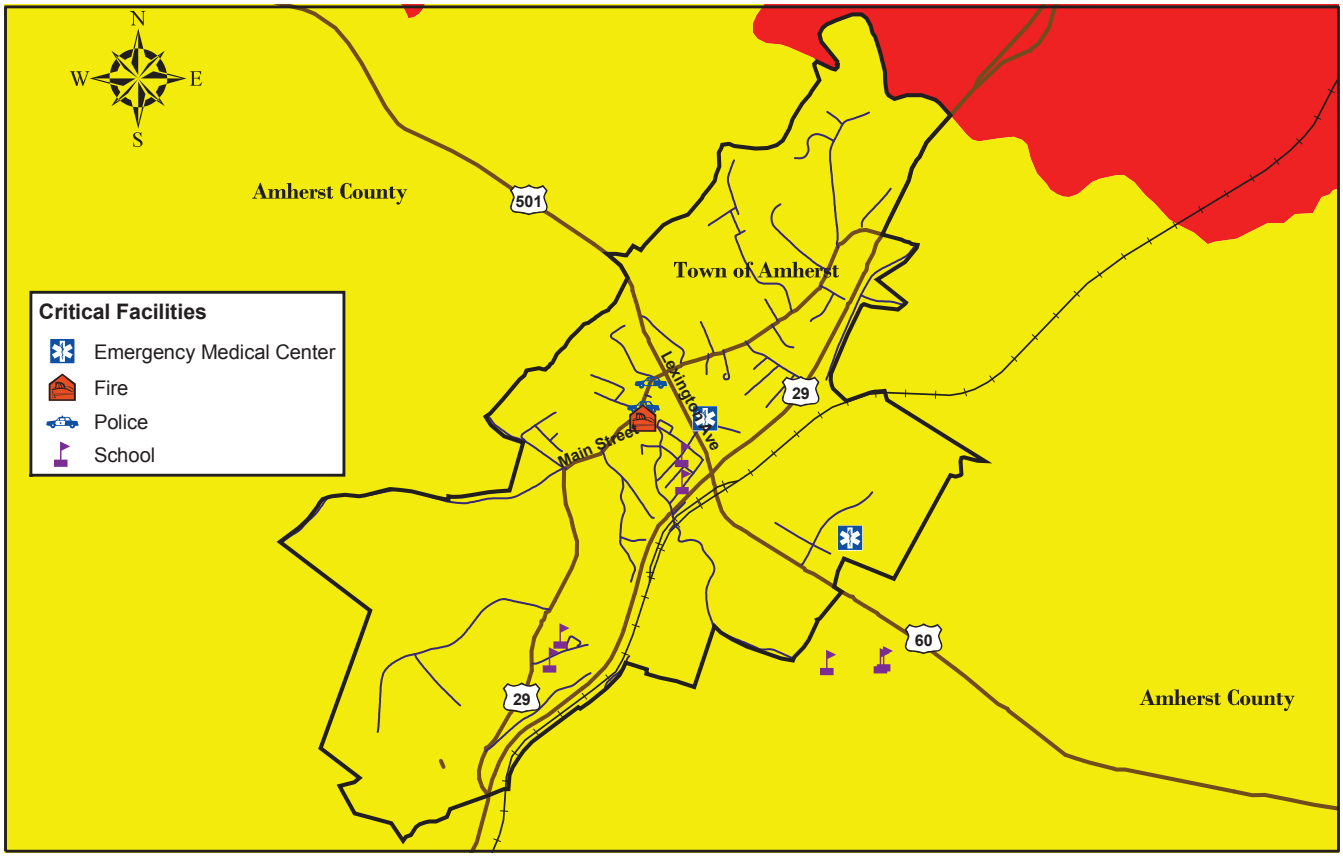
Amherst County - Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads
- Critical Facilities

Town of Amherst - Relative Ice Potential



Ice Potential by Census Block

Medium Potential
High Potential
Roads
Major Highways
Railroads

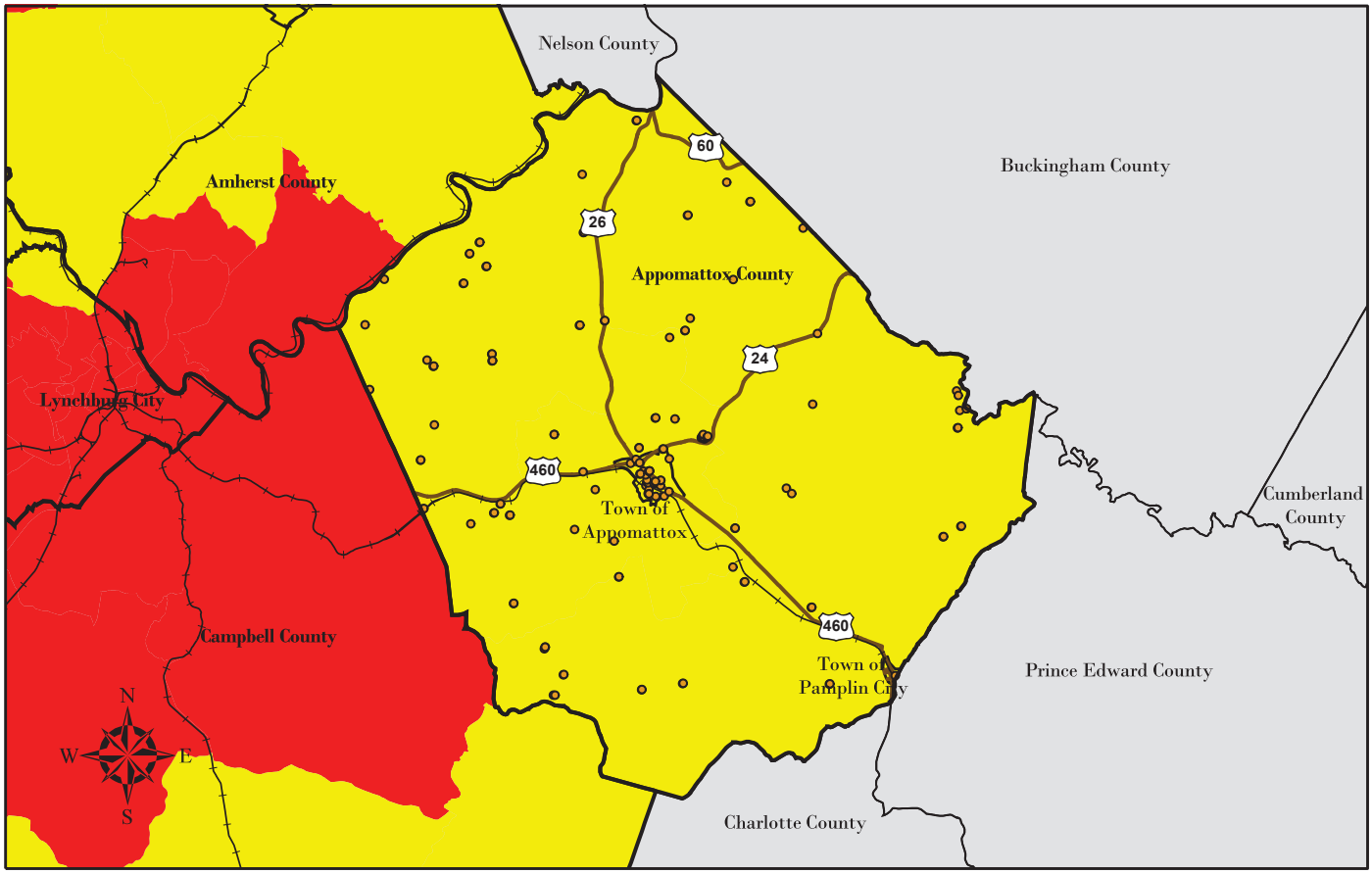
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.125 0.25 0.5 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Appomattox County - Relative IcePotential



Ice Potential by Census Block

- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads
- Critical Facilities

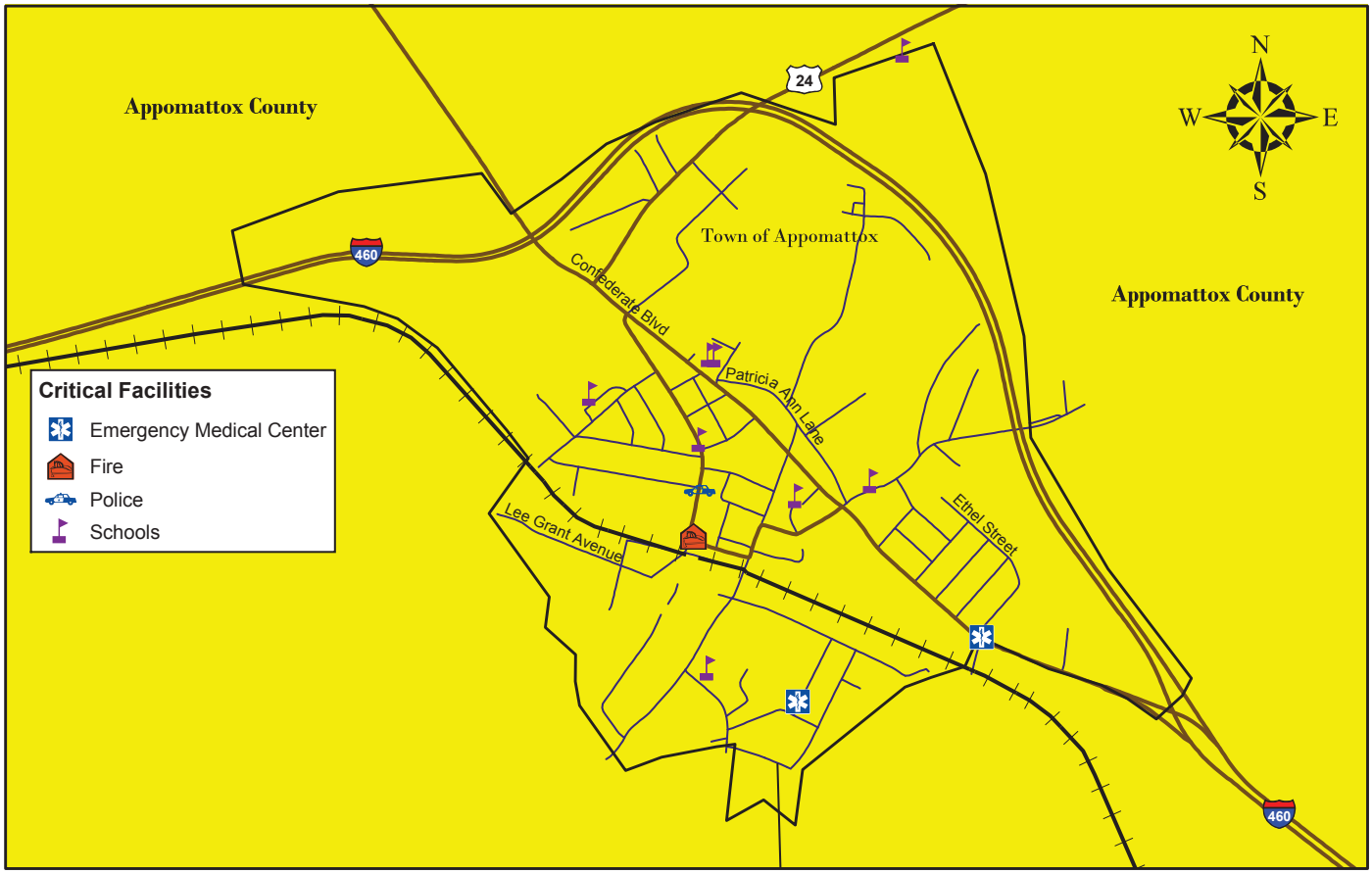
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 1.25 2.5 5 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Appomattox - Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads

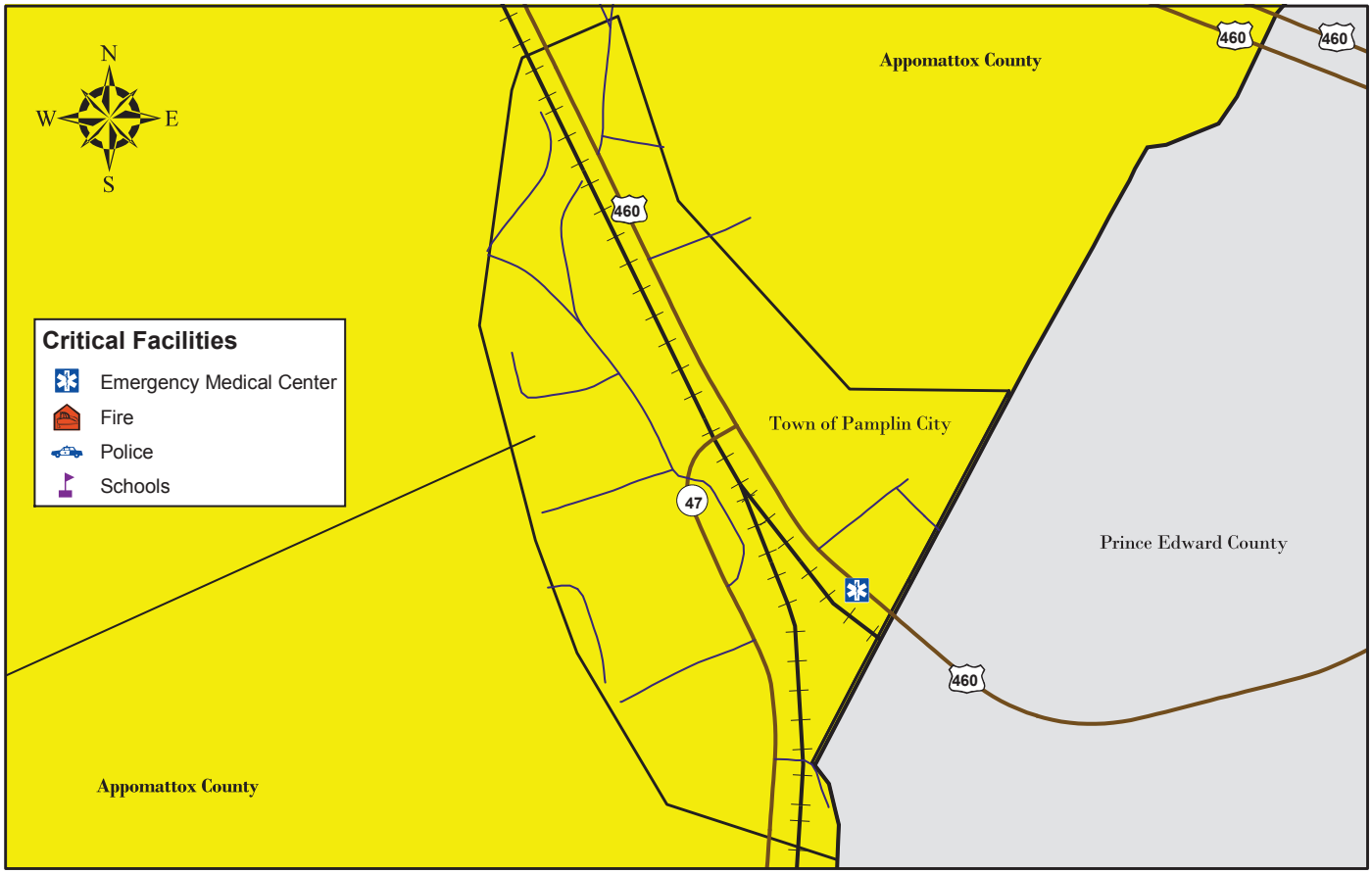
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.1 0.2 0.4 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Pamplin- Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads

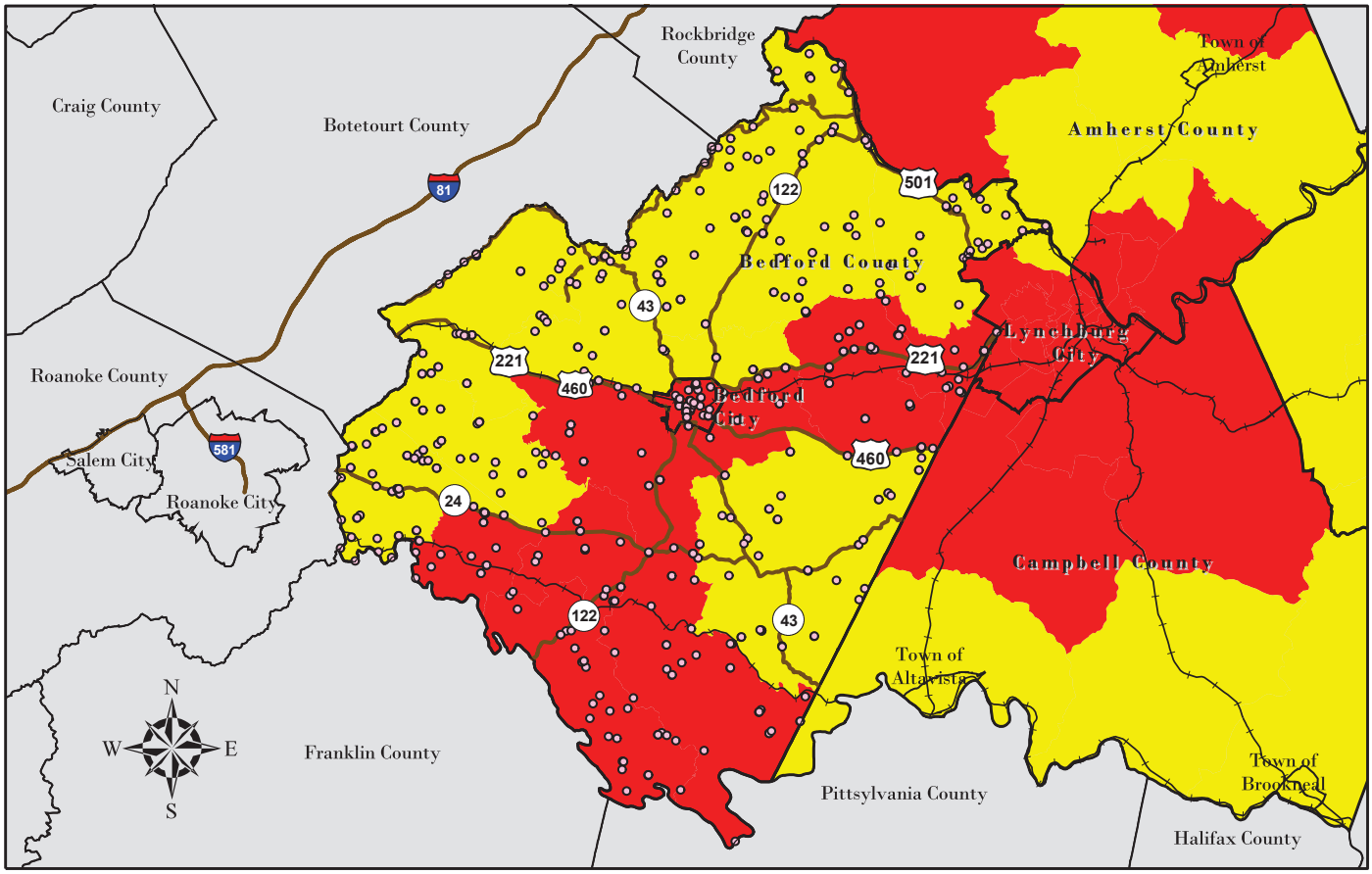
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.04 0.08 0.16 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Bedford County - Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads
- Critical Facilities

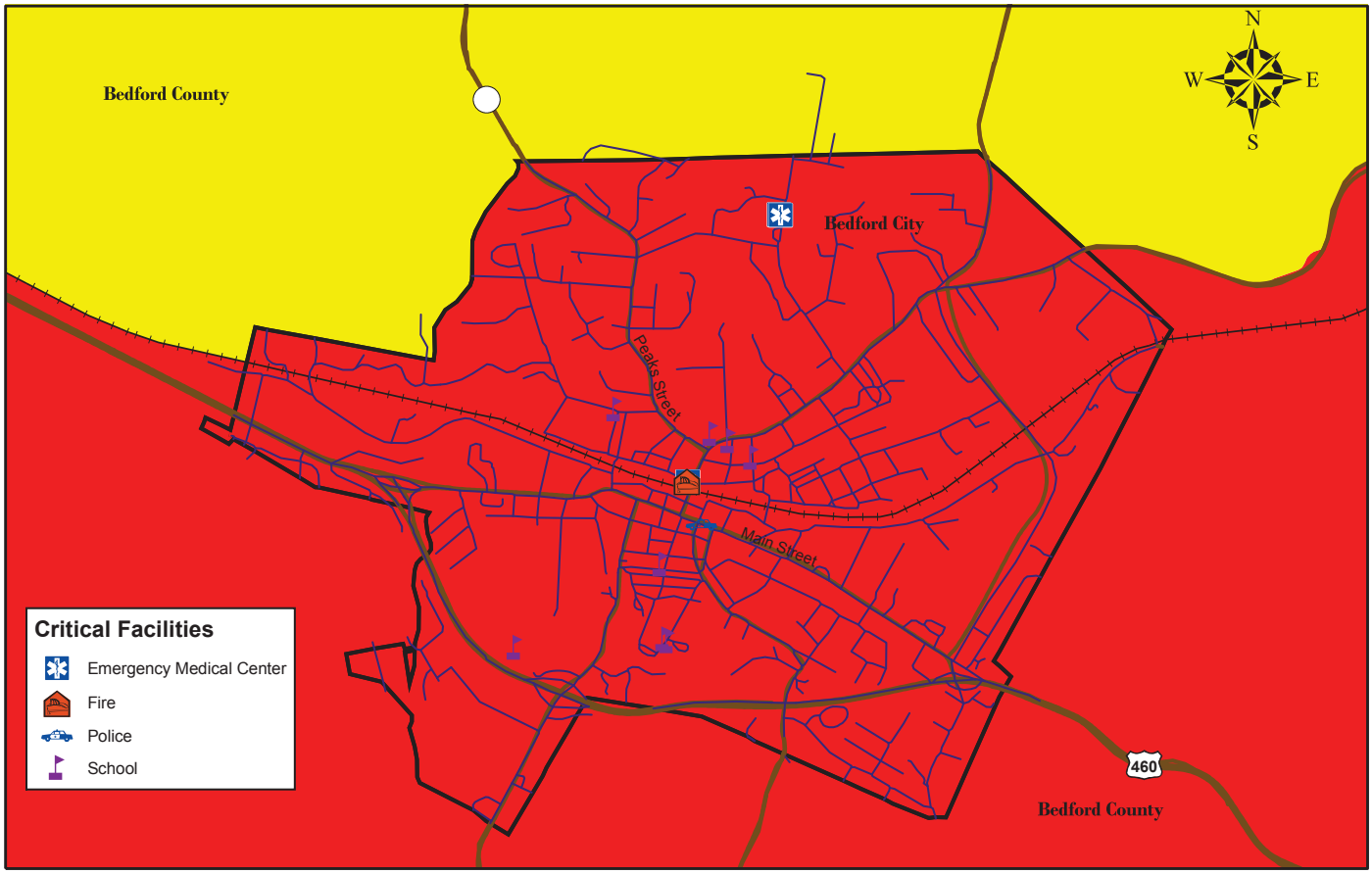
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 1.5 3 6 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, FEMA FIRMs

Bedford City - Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

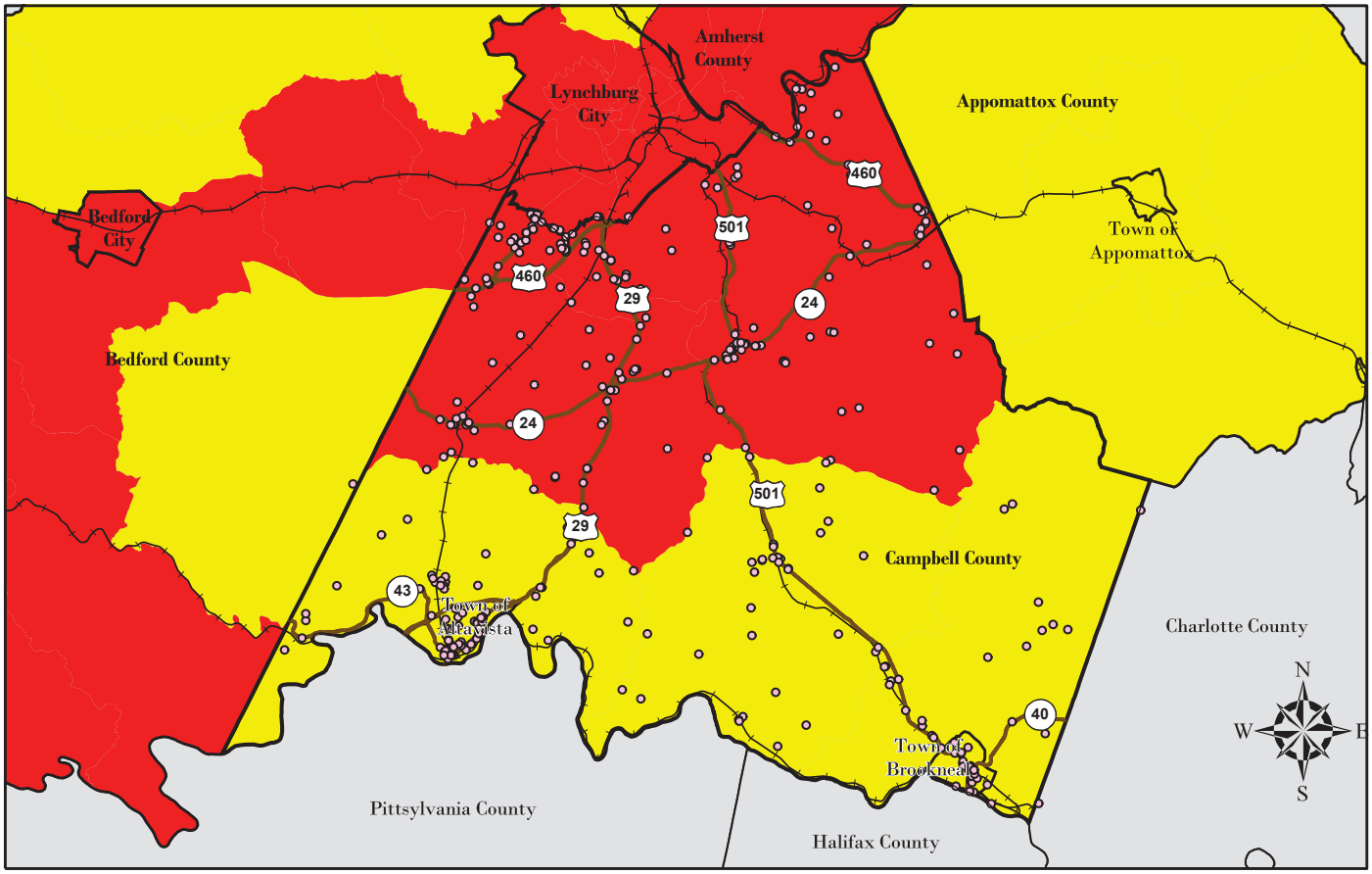
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.15 0.3 0.6 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Campbell County - Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads
- Critical Facilities

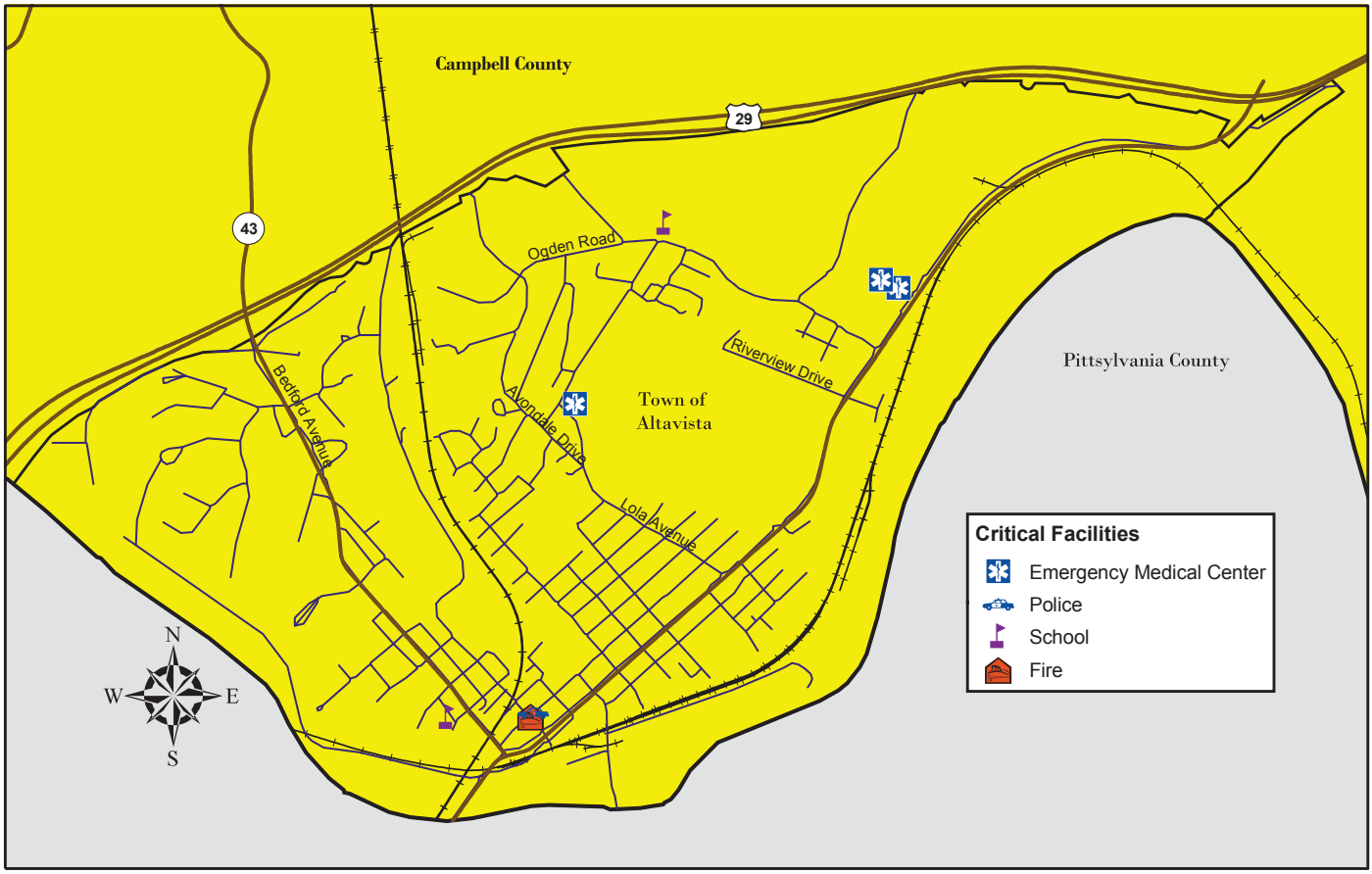
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 1.25 2.5 5 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Altavista- Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

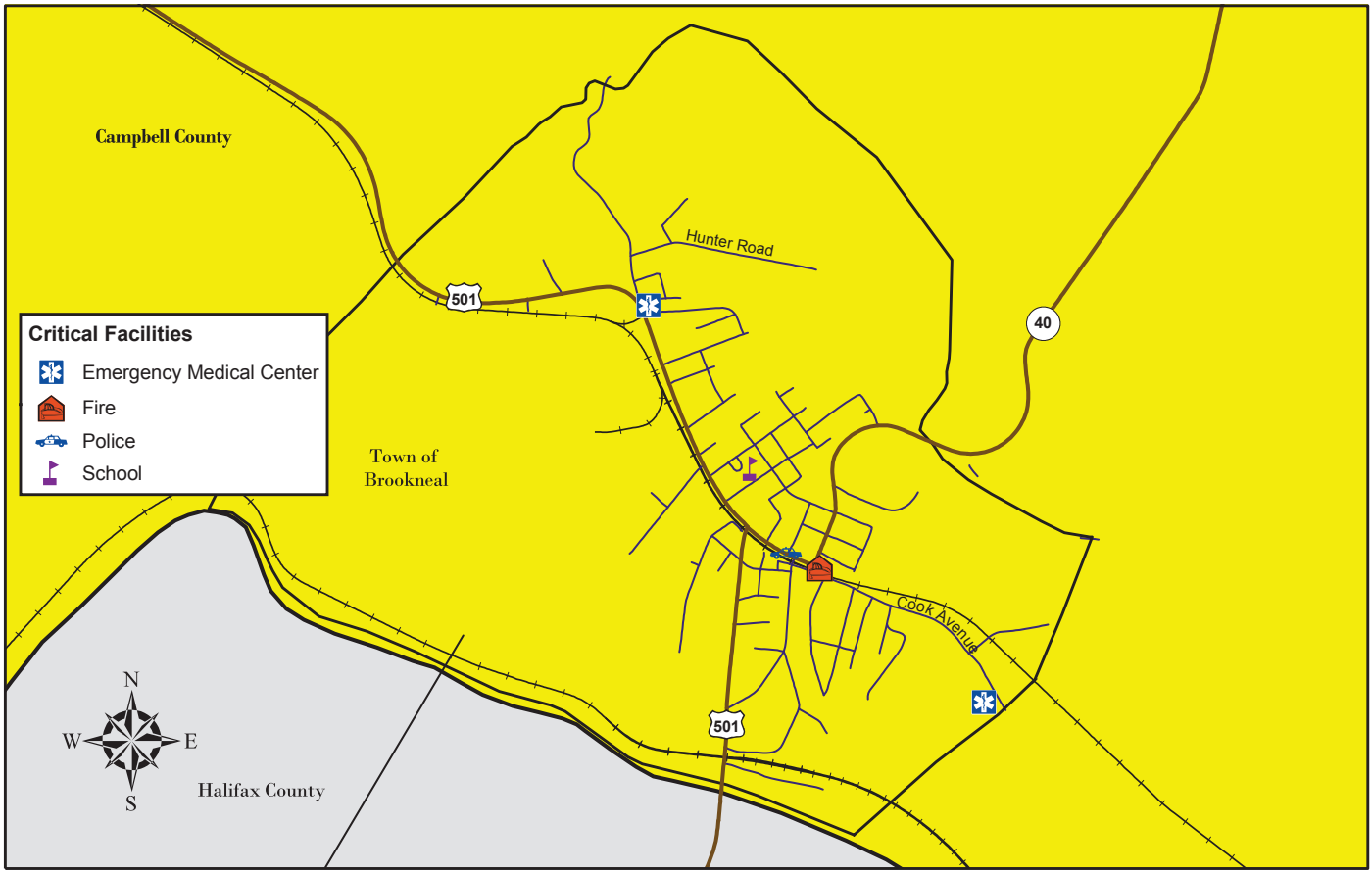
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.125 0.25 0.5 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Brookneal- Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads

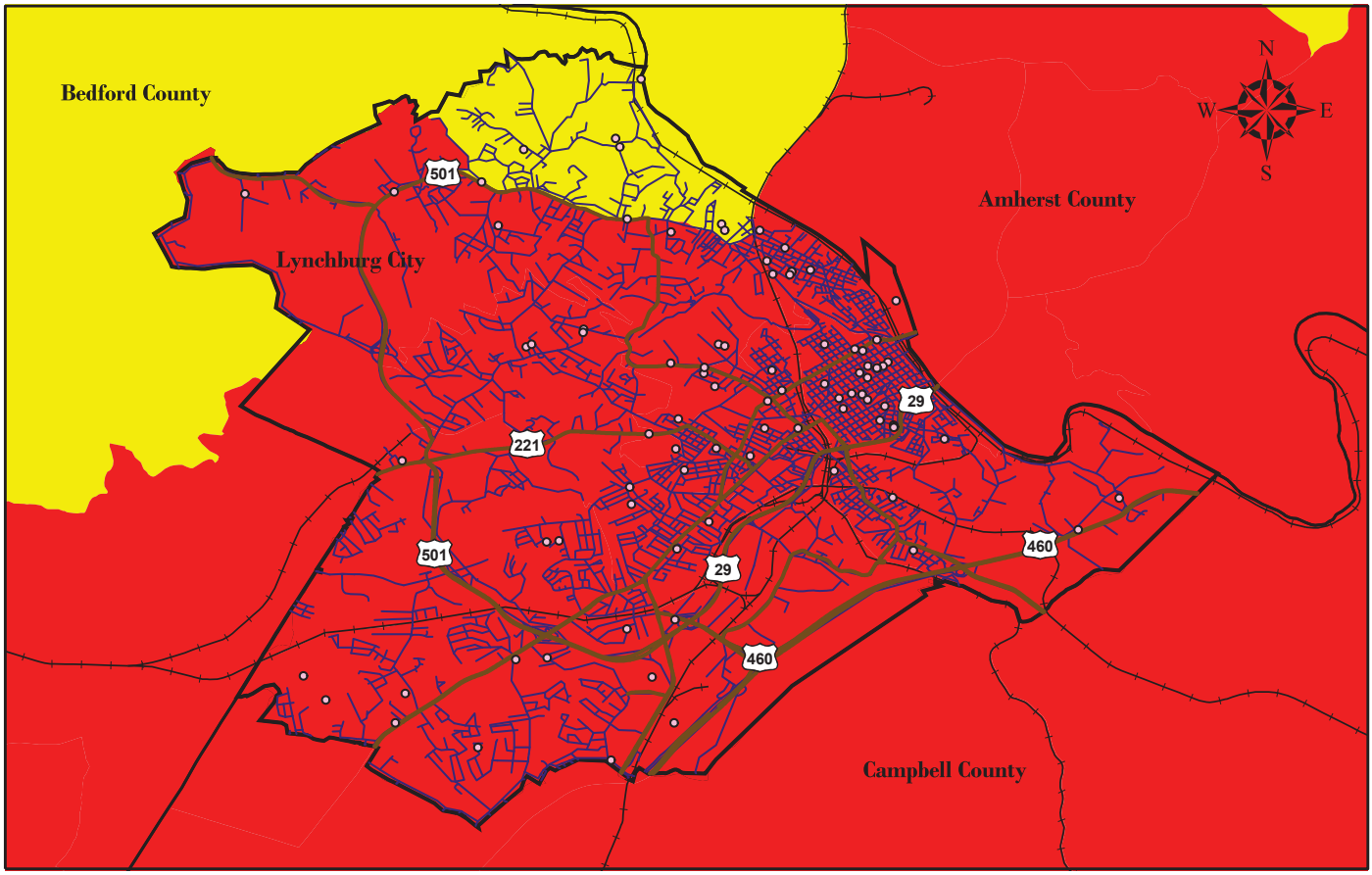
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.1 0.2 0.4 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

City of Lynchburg - Relative Ice Potential



Ice Potential by Census Block

- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads
- Critical Facilities

Map prepared by Virginia Tech
Center for Geospatial Information Technology

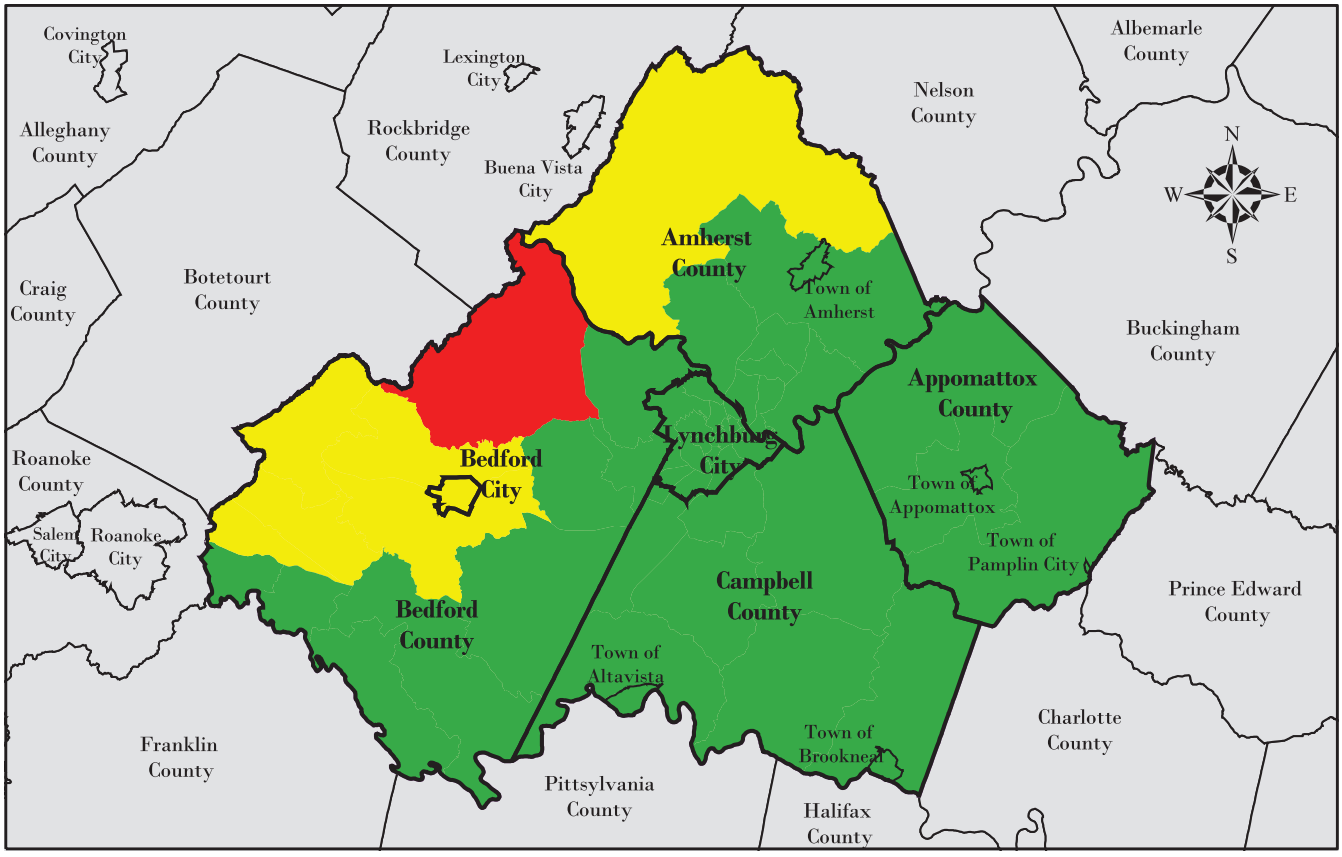
Date: September 2005

0 0.45 0.9 1.8 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Appendix 5.9
Relative Snow Potential Maps

Region 2000 - Relative Snowfall Risk



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

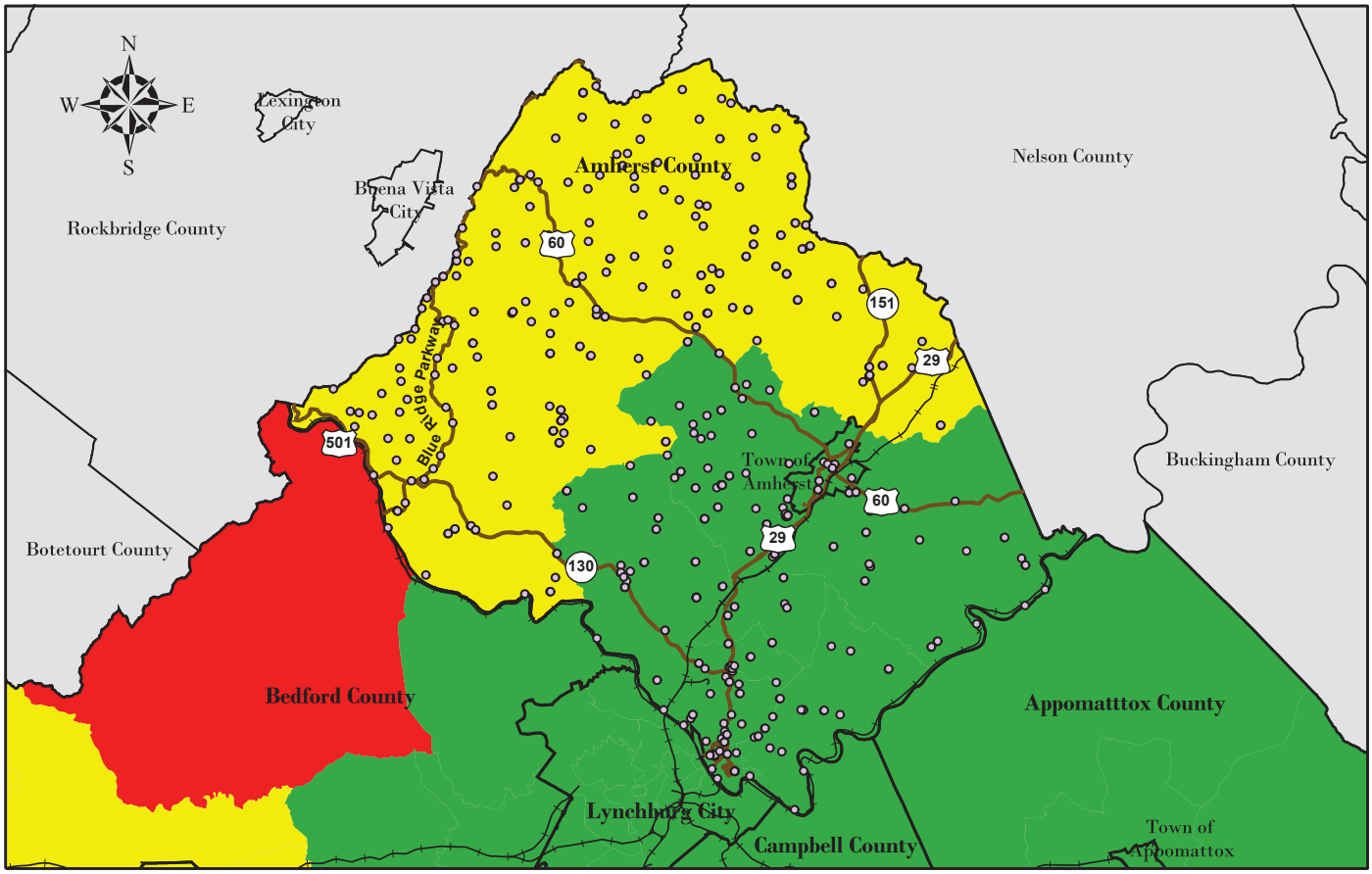
0 4 8 16 Miles

Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

Data Sources: VT CGIT, Region 2000, ESRI, VirginiaView PRISM

Amherst County - Relative Snow Potential



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

- Critical Facilities

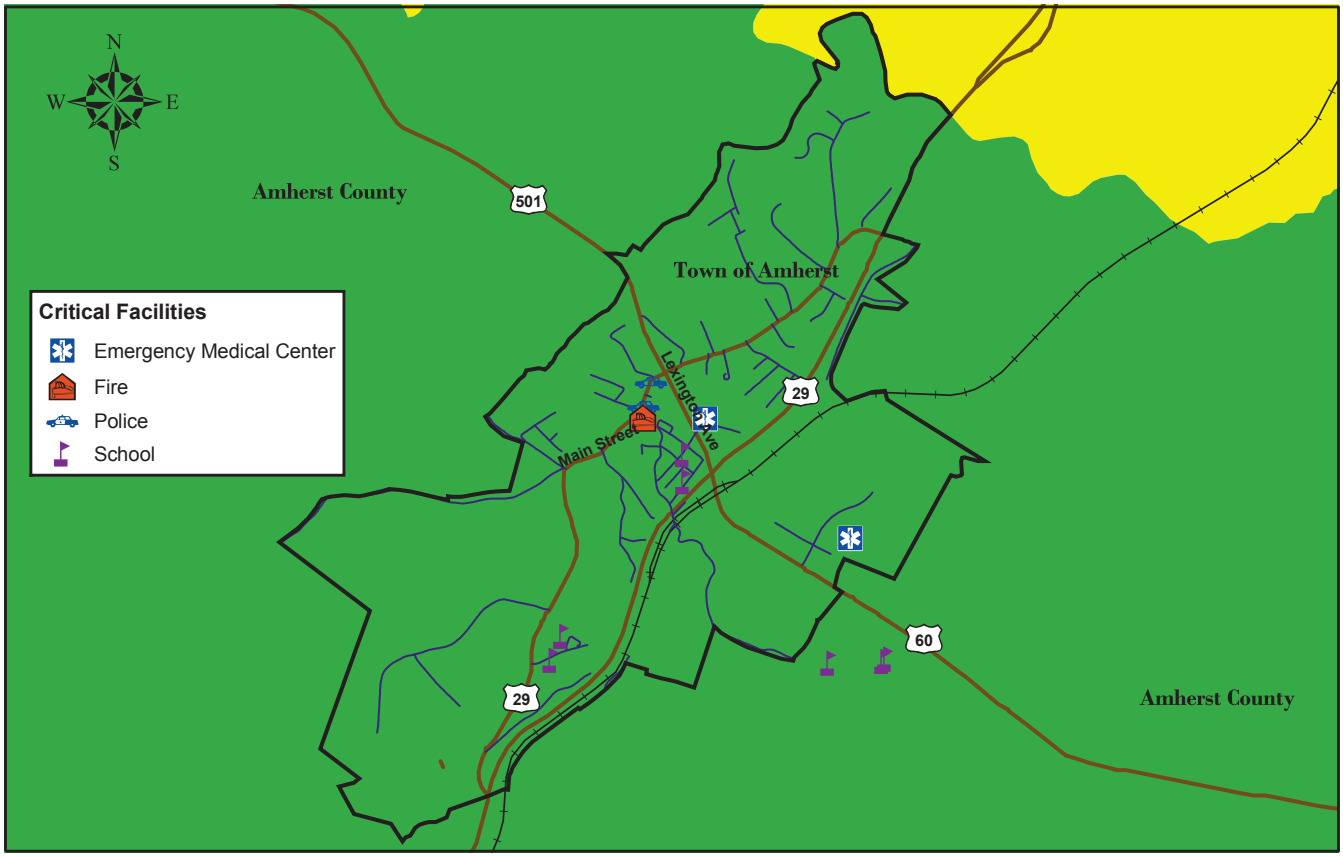
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 1.5 3 6 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Amherst - Relative Snowfall Potential



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

Roads

Major Highways

Railroads

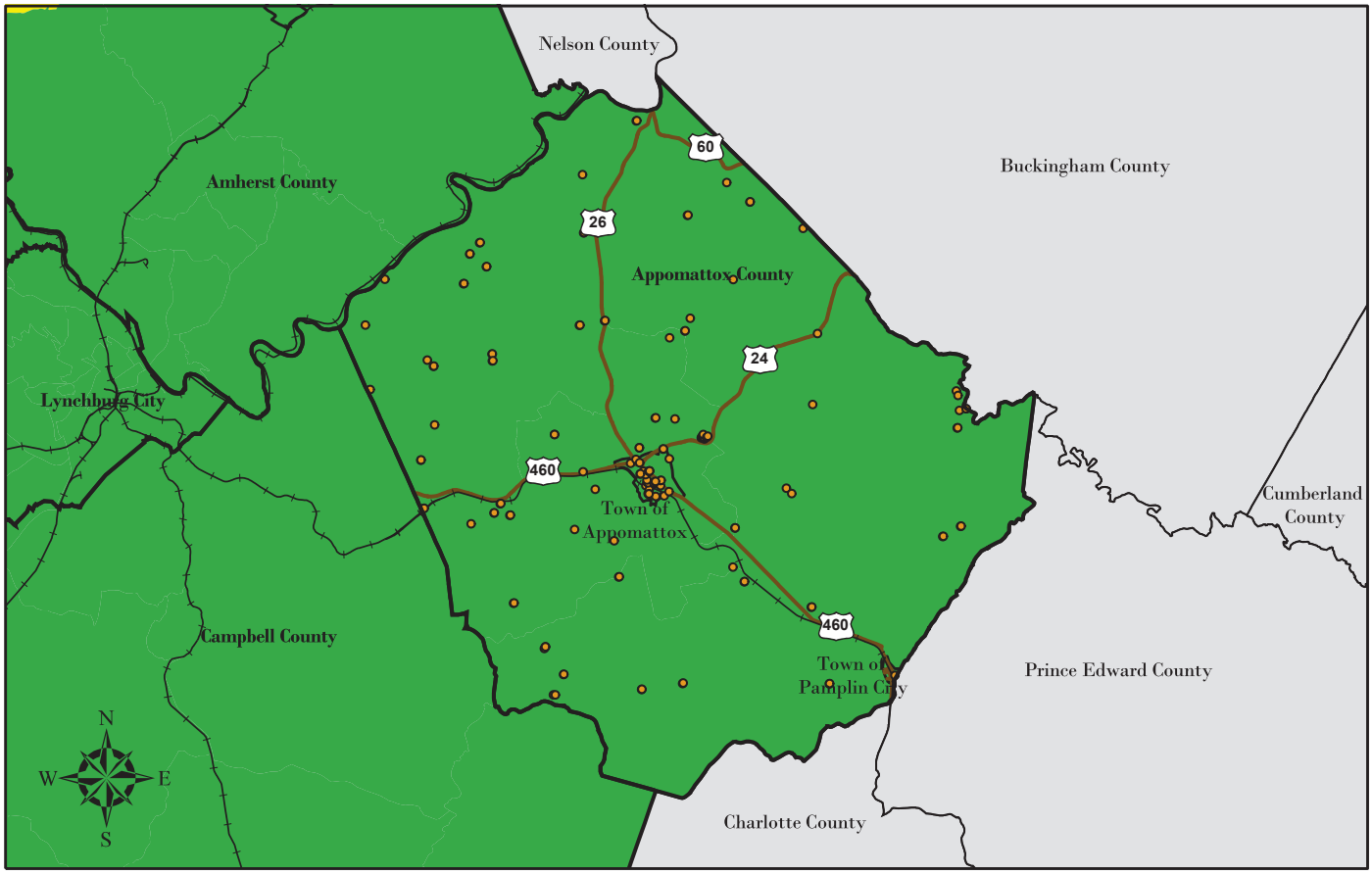
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.125 0.25 0.5 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Appomattox County - Relative Snowfall Potential



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads
- Critical Facilities

Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 1.25 2.5 5 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Appomattox - Relative Snow Potential

Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads

Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.1 0.2 0.4 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Pamplin- Relative Snow Potential

Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential
- Roads
- Major Highways
- Railroads

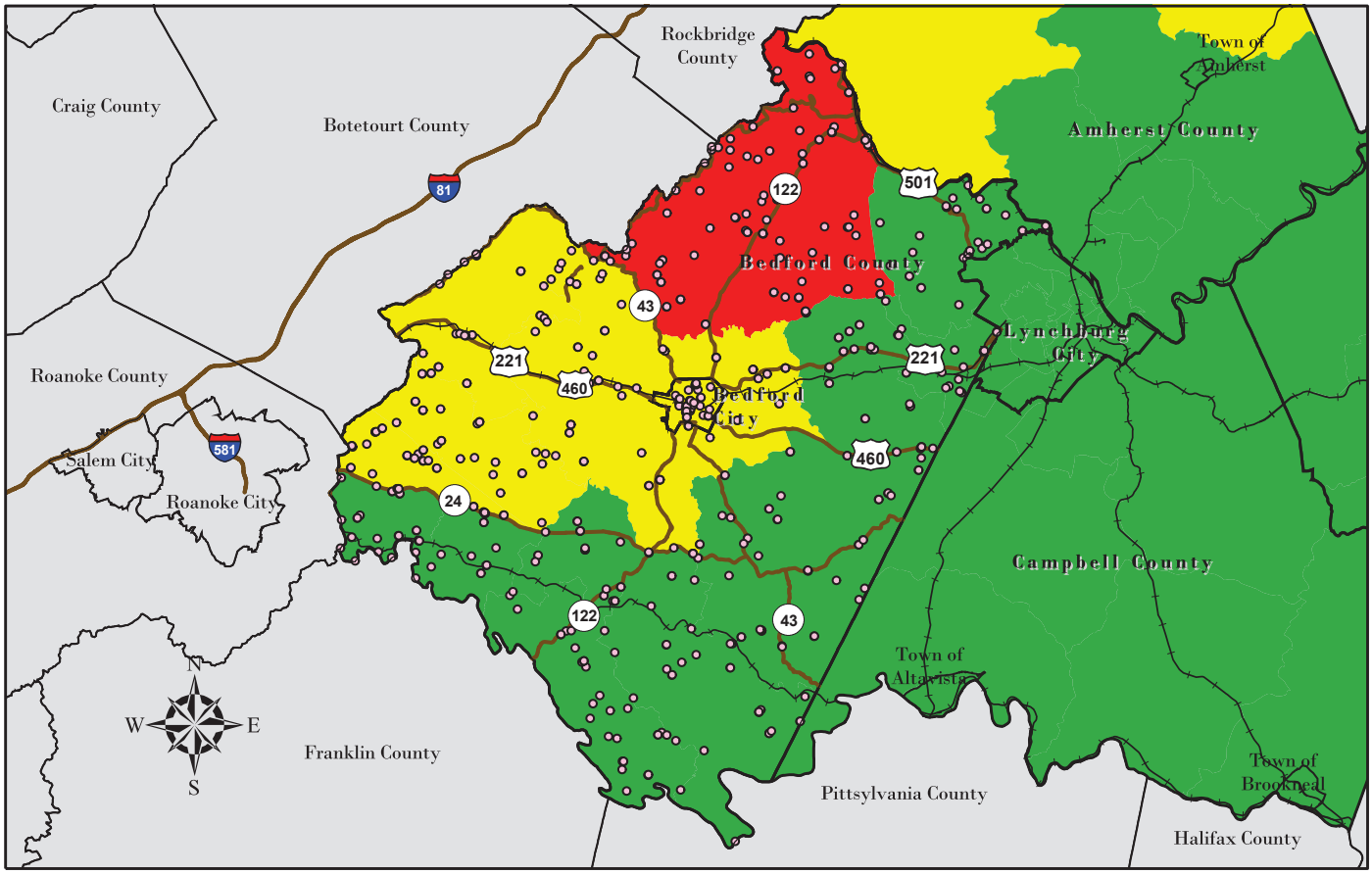
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.04 0.08 0.16 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Bedford County - Relative Snow Potential



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

- Critical Facilities

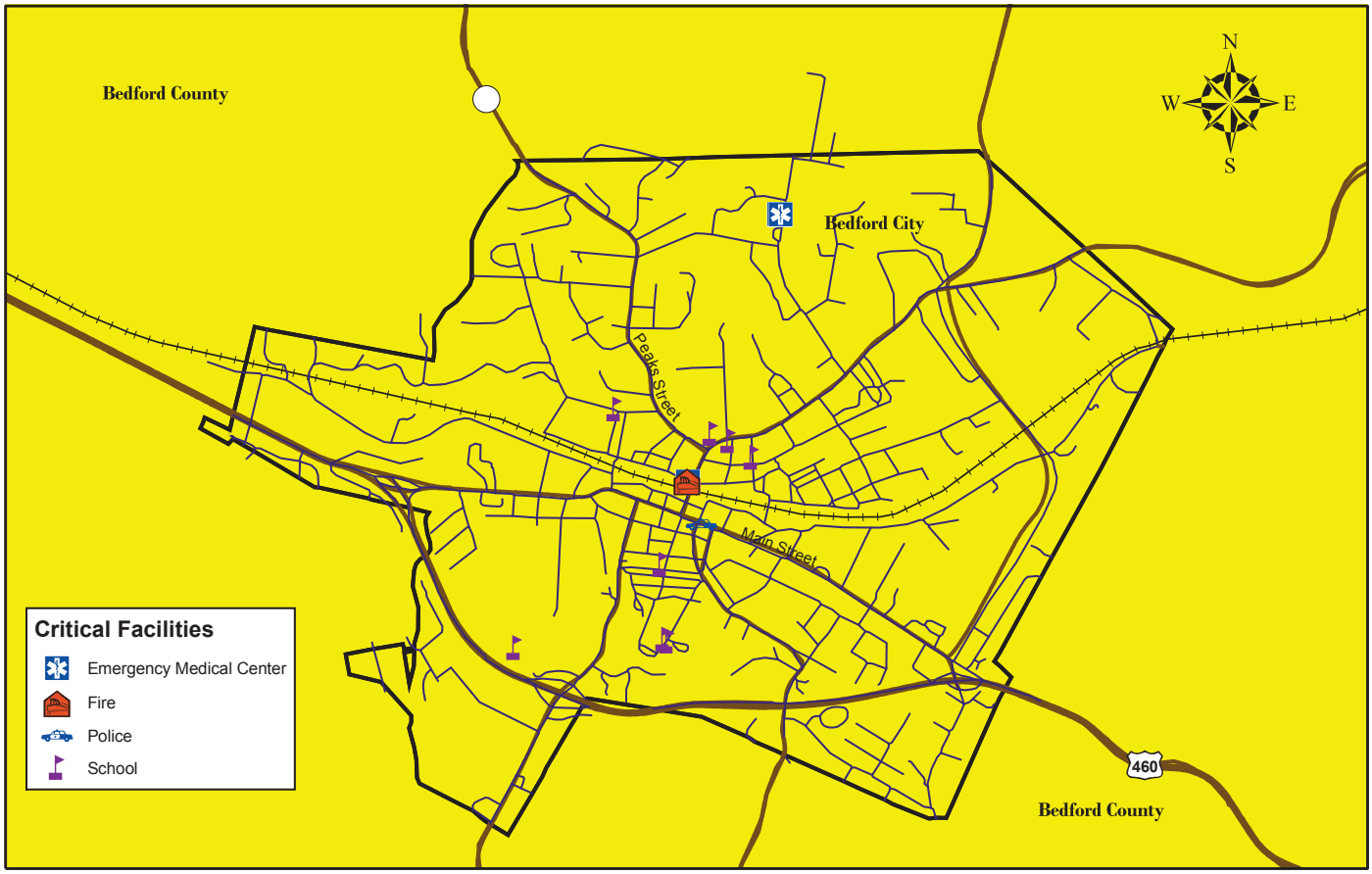
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 1.5 3 6 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Bedford City - Relative Snow Potential



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

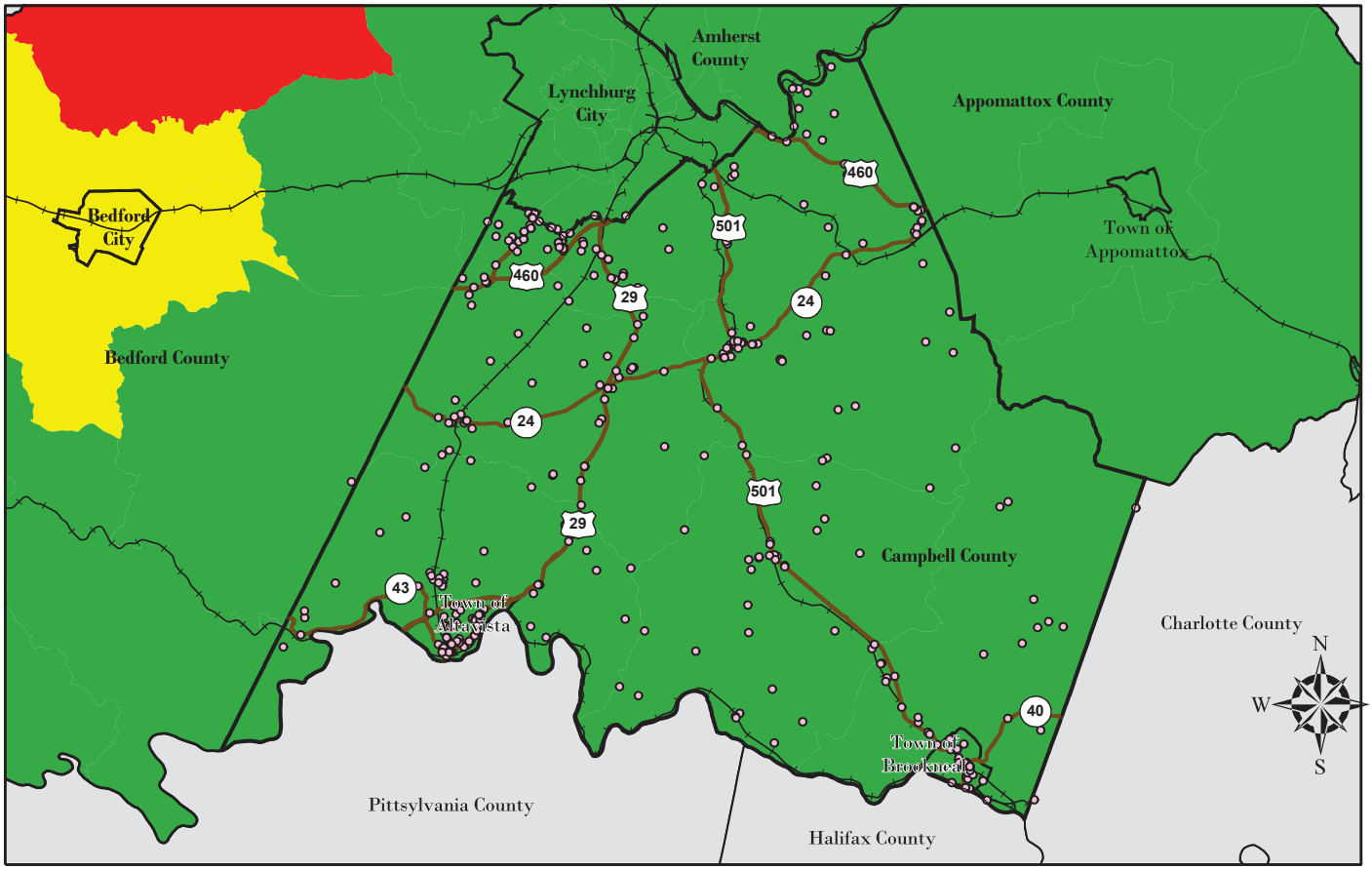
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.15 0.3 0.6 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Campbell County - Relative Snow Potential



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

- Critical Facilities

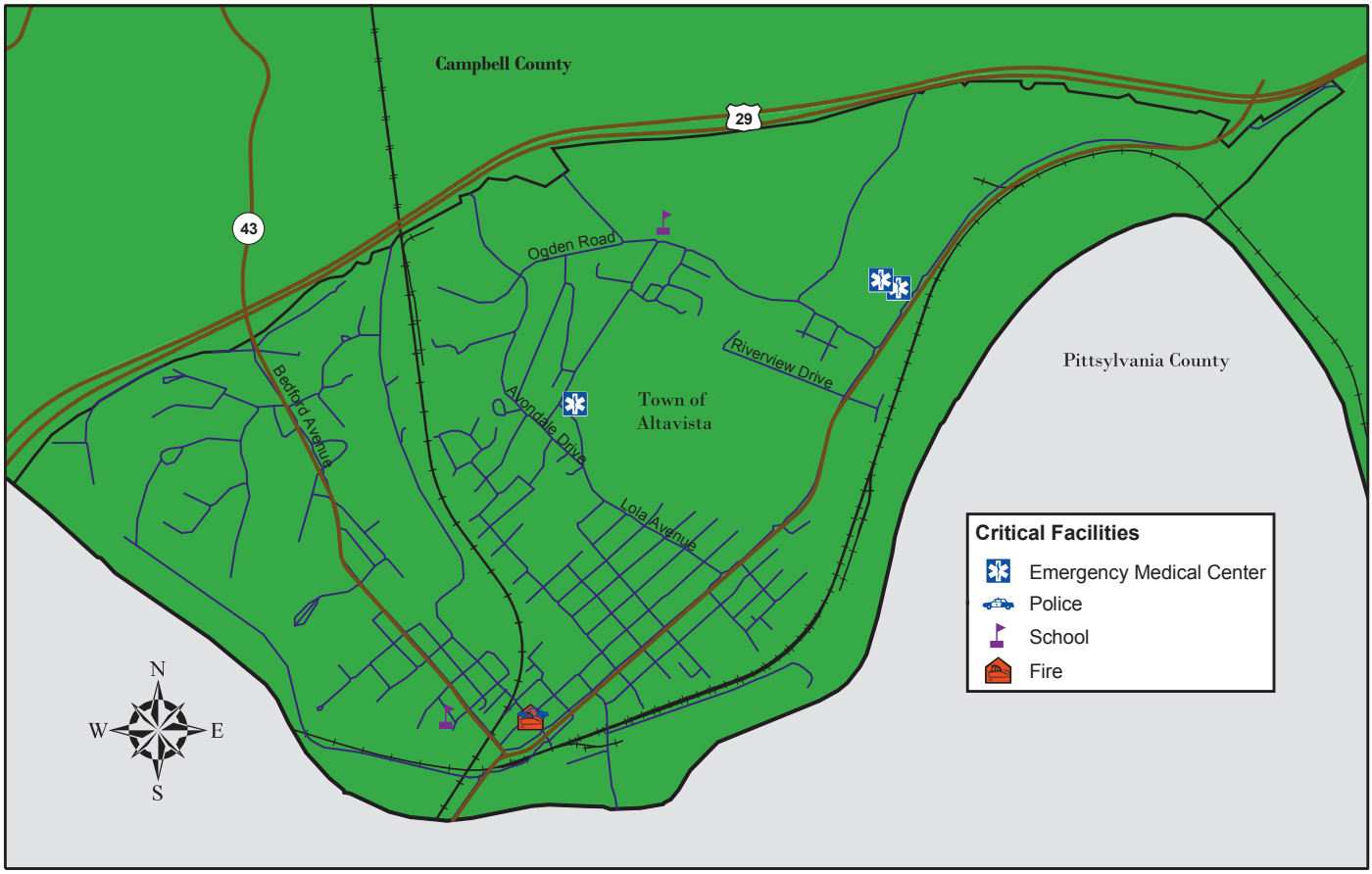
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 1.25 2.5 5 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Altavista- Relative Snow Potential



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.125 0.25 0.5 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Town of Brookneal- Relative Snow Potential

Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

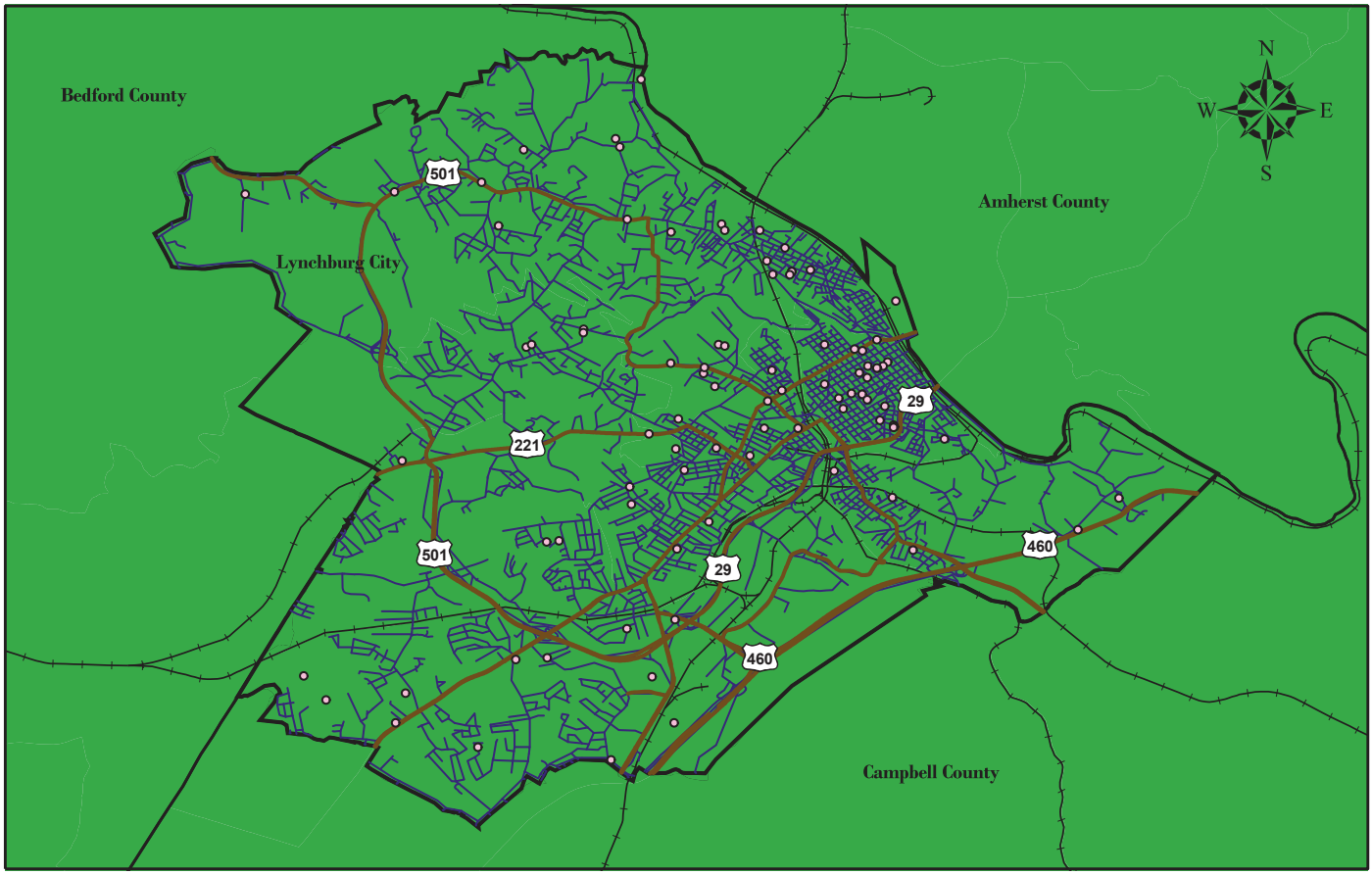
Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.1 0.2 0.4 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

City of Lynchburg - Relative Snow Potential



Snow Potential by Census Block

- Low Potential
- Medium Potential
- High Potential

- Roads
- Major Highways
- Railroads

- Critical Facilities

Map prepared by Virginia Tech
Center for Geospatial Information Technology

Date: September 2005

0 0.45 0.9 1.8 Miles

Data Sources: VT CGIT, ESRI, Region 2000, VDOT, VirginiaView

Appendix 5.10
September 15, 2011
Meeting Minutes

Introduction

- Project Management team signed in:

Name	Jurisdiction	Email Adress
Gary Roakes	Amherst County	gmroakes@countyofamherst.com
Kelvin Brown	Amherst, Town of	kelvin.brown@amherstva.gov
Johnnie Roark	Appomattox County	johnnie.roark@appomattoxcountyva.gov
Roxanne Paulette	Appomattox, Town of	rpaulette@appomattoxva.gov
Bob Mitchell	Pamplin City, Town of	townofpamplin@aol.com
Tracy Fairchild	Campbell County	tmfairchild@co.campbell.va.us
Bill Aldridge	Lynchburg City	william.aldrich@lynchburgva.gov
Todd Styles	Volunteer Firefighter	volunteerfire@aol.com
Philipp Gabathuler	Region 2000	pgabathuler@region2000.org
Bob White	Region 2000	bwhite@region2000.org
Debbie Messmer	VDEM	debbie.messmer@vdem.virginia.org

- Project management team went around and made introductions and what they hoped to get out of the HIRA process.
- Handouts passed out
  - Agenda
  - HIRA Worksheet
  - HIRA Powerpoint slides
  - FEMA's Hazard Mitigation Basics Handout

- Purpose and History of the Mitigation Plan
  - Philipp Gabathuler provided a brief overview on what was covered during the first project management team meeting.

- Planning Process, Timeline and Grant Funding
  - Philipp Gabathuler briefly discussed the timeline.
  - Attendees agreed on the timetable and that it was reasonable.

- HIRA re-evaluation
  - Project management team agreed that the same HIRA rankings could be used for each jurisdiction.
  - Project management team agreed that HIRA rankings were still viable from the original 2006 plan.
  - Project management team agreed that earthquakes should be evaluated in the plan update given the recent 5.8 magnitude earthquake in Mineral, VA
  - Review current hazards and identify any new hazards since the 2006 plan was created
  - Project management team discussed the terrorism hazard and agreed it should remain in the plan even though it isn't a natural hazard.
  - Problem spot mapping was discussed and project management team gave input on where specific hazards were most prevalent in their jurisdictions.

- HIRA worksheet was reviewed and filled out by the project management team.
- Wrap up discussion. Next meeting date was scheduled and confirmed.

Appendix 5.11
September 15, 2011
Meeting Agenda

Agenda
Region 2000 Hazard Mitigation Plan
Meeting #2: HIRA

September 15th, 2011
12-1:30
Region 2000 Conference Room
Bank of the James Office Building
828 Main Street
Lynchburg, VA 24504

1) **Lunch**

2) Welcome and Introductions

3) Today's Agenda and Plan Purpose Review

4) Presentation on Results of Risk Assessment from 2006 Plan/VDEM Plan

   a. Hazard Profiles
   b. Vulnerability Assessment
   c. Summary of Key Issues
   d. Call for community critical facilities data

5) Formation of new HIRA ranking system

6) Planning for Public Involvement

7) Next Steps

Section VI

Appendix

Mitigation Goals and Strategies

Appomattox County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-6	Money for Wildfire Mitigation	Ongoing	Low	Low	As funding becomes available	Wildfire	Emergency services	1-6	Virginia Department of Forestry
	Publicize the VDOF's Money for Mitigation Program and use existing wildfire maps to prioritize areas in the Region. Financial assistance to reduce fire hazards has been established at VDOF. The program provides 50/50 cost share funds to reduce wildfire fuels. Citizen's groups and homeowner's associations are eligible applicants. This action attempts to provide education to potential beneficiaries of the Money for Mitigation program.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Low	Low	As funding becomes available	Flood	Emergency services	2-3	VA DCR, FEMA/VDEM
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communities.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-3	Evaluate and establish adequate drainage systems	Ongoing	Low	Low	As funding becomes available	Flood	Emergency services	4-3	To be determined
	Assess methods of remediating water contamination in a timely manner by improving water treatment and distribution procedures and evaluating hazardous materials that can be deposited into drainage systems.								
4-7	Monitoring and Maintain areas near right of ways	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	4-7	VDOT, VDOF, Utility Companies, Existing Budgets
	Monitor the locatino of old, weak, or dying trees within the region that are near homes, public facilities, and other critical facilities and cut down any that are vulnerable to falling down during wind events.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								

Appomattox County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Town of Appomattox Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-6	Money for Wildfire Mitigation	Ongoing	Low	Low	As funding becomes available	Wildfire	Emergency services	1-6	Virginia Department of Forestry, Existing budgets
	Publicize the VDOF's Money for Mitigation Program and use existing wildfire maps to prioritize areas in the Region. Financial assistance to reduce fire hazards has been established at VDOF. The program provides 50/50 cost share funds to reduce wildfire fuels. Citizen's groups and homeowner's associations are eligible applicants. This action attempt to provide education to potential beneficiaries of the Money for Mitigation program.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Low	Low	As funding becomes available	Flood	Emergency services	2-3	To be determined
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communties.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-3	Evaluate and establish adequate drainage systems	Ongoing	Low	Low	As funding becomes available	Flood	Emergency services	4-3	To be determined
	Assess methods of remediating water contamination in a timely manner by improving water treatment and distribution procedures and evaluating hazardous materials that can be deposited into drainage systems.								
4-7	Monitoring and Maintain areas near right of ways	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	4-7	VDOT, VDOF, Utility Companies, Existing Budgets
	Monitor the location of old, weak, or dying trees within the region that are near homes, public facilities, and other critical facilities and cut down any that are vulnerable to falling down during wind events.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								

Town of Appomattox Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Amherst County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education: Develop programs for educating citizens within the rgion about prevalent weather-related hazards to increase their awareness, preparation, and plan of action during the events. This can be done in coordination with the National Weather Service or VDEM officials. Some examples include:	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-4	Drought Mitigation- Education on alleviating conditions	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	1-4	County planning budgets
	Organize workshops on special drought-related topics to help alleviate drought conditions. Potential topics to consider: water restrictions, agricultural permits. This action will be completed by each jurisdiction, independent of the other jurisdictions in the "Communities Involved".								
1-5	Dry Hydrant Installation - Location Optimization	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	1-5	VDOF grants, local communities, property owners, local fire departments
	(See Dry Hydrant Installation Hazard Mitigation Plan for details about dry hydrants.) This program would be used to disseminate information on dry hydrant installation and their benefits. The program would focus on the education of those that are determined to be the most able to benefit from dry hydrants, such as those living in woodland communities. These people could be determined by studies dedicated to the determination of areas most susceptible to wildfire damage, including consideration of distance to the nearest water source, and travel time to the nearest fire station. Each jurisdiction will do independent scoping projects.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Medium	Medium	As funding becomes available	Flood	Emergency services	2-3	VA DCR, FEMA/VDEM
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communities.								
3-3	Drought Mitigation - Voluntary reestrictions	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	3-3	Virginia Department of Forestry, Existing budgets
	Negotiate with irrigators to gain voluntary restrictions on irrigation in areas where domestic wells are likely to be affected, or suspend water use permits in watersheds with low water levels.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-3	Evaluate and establish adequate drainage systems	Ongoing	Medium	Medium	As funding becomes available	Flood	Emergency services	4-3	Existing budgets
	Assess methods of remediating water contamination in a timely manner by improving water treatment and distribution procedures and evaluating hazardous materials that can be deposited into drainage systems.								
4-4	Drought Mitigation- Agriculture Watering Locations	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	4-4	USDA Grants
	List watering locations for local livestock, as well as establishing water hauling programs for livestock.								

Amherst County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
4-6	Optimizing Dry Hyrant Installation	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	4-6	VDOF grants, local communities, property owners, local fire departments
	In rural areas where there are no water lines, dry hydrants provide a water source for fire trucks. Placing one dry hydrant for every 3 square miles of land would likely allow a fire truck to fill up their tank with no more than 6 minutes travel time to a fire, assuming a 35 mph driving speed. A water body of at least the size of two football fields and at least 3 feet deep is needed. Hydrants are relatively inexpensive and easy to maintain. (Dry hydrants would be concentrated in those areas deemed most vulnerable to wildfire.)								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								
	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not limited to: • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Town of Amherst Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-4	Drought Mitigation- Education on alleviating conditions	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	1-4	County planning budgets
	Organize workshops on special drought-related topics to help alleviate drought conditions. Potential topics to consider: water restrictions, agricultural permits. This action will be completed by each jurisdiction, independent of the other jurisdictions in the "Communities Involved".								
1-5	Dry Hydrant Installation - Location Optimization	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	1-5	VDOF grants, local communities, property owners, local fire departments
	(See Dry Hydrant Installation Hazard Mitigation Plan for details about dry hydrants.) This program would be used to disseminate information on dry hydrant installation and their benefits. The program would focus on the education of those that are determined to be the most able to benefit from dry hydrants, such as those living in woodland communities. These people could be determined by studies dedicated to the determination of areas most susceptible to wildfire damage, including consideration of distance to the nearest water source, and travel time to the nearest fire station. Each jurisdiction will do independent scoping projects.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Medium	Medium	As funding becomes available	Flood	Emergency services	2-3	VA DCR, FEMA/VDEM
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communities.								
3-3	Drought Mitigation - Voluntary restrictions	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	3-3	Virginia Department of Forestry, Existing budgets
	Negotiate with irrigators to gain voluntary restrictions on irrigation in areas where domestic wells are likely to be affected, or suspend water use permits in watersheds with low water levels.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-3	Evaluate and establish adequate drainage systems	Ongoing	Medium	Medium	As funding becomes available	Flood	Emergency services	4-3	Existing budgets
	Assess methods of remediating water contamination in a timely manner by improving water treatment and distribution procedures and evaluating hazardous materials that can be deposited into drainage systems.								
4-4	Drought Mitigation- Agriculture Watering Locations	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	4-4	USDA Grants
	Drought mitigation in the agriculture sector would require listing watering locations for local livestock, as well as establishing water hauling programs for livestock. For crops, issue emergency irrigation permits for using state waters for irrigation.								
4-6	Optimizing Dry Hyrant Installation	Ongoing	Low	Low	As funding becomes available	Drought	Emergency services	4-6	VDOF grants, local communities, property owners, local fire departments

Town of Amherst Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
	In rural areas where there are no water lines, dry hydrants provide a water source for fire trucks. Placing one dry hydrant for every 3 square miles of land would likely allow a fire truck to fill up their tank with no more than 6 minutes travel time to a fire, assuming a 35 mph driving speed. A water body of at least the size of two football fields and at least 3 feet deep is needed. Hydrants are relatively inexpensive and easy to maintain. (Dry hydrants would be concentrated in those areas deemed most vulnerable to wildfire.)								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								
	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Campbell County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-2	National Weather Service Storm Ready Program Application	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	1-2	To be determined
	Storm Ready is a National Weather Service (NWS) run program available for participating counties and communities to prepare and assist clients with communication and safety skills needed to save lieve and property before and during weather related disasters. The program works closely with community leaders and emergency managers to strengthen local safety programs, planning, education, and awareness. Actions for this component of the Storm Ready process would be to bring county and community officials and emergency managers together to inform them about the program and discuss the advantages of becoming "Storm Ready." This will also involve brainstorming ways to improve weather related hazard education and increase public awareness of the events.								
1-3	Weather Alert Radio System	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-3	NWS
	The National Weather Service provides a weather forecast and warning radio system called the "Weather Alert Radio System." This action would provide weather alert radios to schools and other critical public facilities within the region for warning, education, and awareness purposes. This would involve coordinating with the National Weather Service to establish partnerships to provide weather radio access to these special facilities and then contacting the facility representatives to let them know that this weather alert system is available.								
1-4	Drought Mitigation- Education on alleviating conditions	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-4	County planning budgets
	Organize workshops on special drought-related topics to help alleviate drought conditions. Potential topics to consider: water restrictions, agricultural permits. This action will be completed by each jurisdiction, independent of the other jurisdictions in the "Communities Involved".								
1-5	Dry Hydrant Installation - Location Optimization	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-5	VDOF grants, local communities, property owners, local fire departments
	(See Dry Hydrant Installation Hazard Mitigation Plan for details about dry hydrants.) This program would be used to disseminate information on dry hydrant installation and their benefits. The program would focus on the education of those that are determined to be the most able to benefit from dry hydrants, such as those living in woodland communities. These people could be determined by studies dedicated to the determination of areas most susceptible to wildfire damage, including consideration of distance to the nearest water source, and travel time to the nearest fire station. Each jurisdiction will do independent scoping projects.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	2-3	VA DCR, FEMA and VDEM
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communities.								
2-4	Undergrowth Cleaning/Prescribed Burns-VDOF & local collaboration	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	2-4	Virginia Department of Forestry; Existing Budgets
	The combined resources and knowledge of local fire departments and the Virginia Department of Forestry (VDOF) could be used as the two work together on prescribed burns. VDOF's experience and knowledge of prescribed burns would work in conjunction with the local departments' knowledge of the area, and allow a system of prescribed burns to be enacted. In addition, the local fire department would be charged with managing all data involved; including the specific details of each burn.								
3-1	National Weather Service Storm Ready Operations Plan	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	3-1	NWS; NOAA; Existing Budgets
	There are population-based guidelines that a county or community must meet before it can be considered "Storm Ready," which are listed here: http://www.stormready.noaa.gov/guideline_chart.htm. Actions for this mitigation strategy include evaluating the current status of each locality that should be in the program to determine which guidelines are already met and develop ways of enhancing policies and resources available to the locality to reach all other necessary requirements and begin the Storm Ready application process. This action also involves developing a formal hazardous weather operation plan for each locality.								
3-4	Undergrowth Cleaning/Prescribed Burns	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	3-4	Virginia Department of Forestry; Existing Budgets

Bedford County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-3	National Weather Service Storm Ready Program Application	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	1-3	To be determined
	Storm Ready is a National Weather Service (NWS) run program available for participating counties and communities to prepare and assist clients with communication and safety skills needed to save lieve and property before and during weather related disasters. The program works closely with community leaders and emergency managers to strengthen local safety programs, planning, education, and awareness. Actions for this component of the Storm Ready process would be to bring county and community officials and emergency managers together to inform them about the program and discuss the advantages of becoming "Storm Ready." This will also involve brainstorming ways to improve weather related hazard education and increase public awareness of the events.								
1-5	Dry Hydrant Installation - Location Optimization	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-5	VDOF grants, local communities, property owners, local fire departments
	(See Dry Hydrant Installation Hazard Mitigation Plan for details about dry hydrants.) This program would be used to disseminate information on dry hydrant installation and their benefits. The program would focus on the education of those that are determined to be the most able to benefit from dry hydrants, such as those living in woodland communities. These people could be determined by studies dedicated to the determination of areas most susceptible to wildfire damage, including consideration of distance to the nearest water source, and travel time to the nearest fire station. Each jurisdiction will do independent scoping projects.								
2-2	National Weather Service Storm Ready Data Collection	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	2-2	NOAA; NWS; Existing Budgets
	To become a part of the Storm Ready network, a community must have the capability to monitor meteorological and hydrometeorological data and warn their citizens of imminent weather related hazards. This includes: warning reception devices such as the NOAA Weather Radio, Emergency Management Weather INformation Network Receiver, access to weather Radar data, instrumentation to monitor local weather and hydrologic conditions, and warning media outlets (Radio, Television). This action will look into ways of attaining the required data and information outlets and the resources that need to be utilitized or developed to facilitate these monitoring and communiciation processes. This action will also involve collecting and analyzing necessary information to develop and administer a formal hazardous weather operation plan.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	2-3	VA DCR; FEMA/VDEM
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communities.								
2-4	Undergrowth Cleaning/Prescribed Burns-VDOF & local collaboration	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	2-4	Virginia Department of Forestry; Existing Budgets
	The combined resources and knowledge of local fire departments and the Virginia Department of Forestry (VDOF) could be used as the two work together on prescribed burns. VDOF's experience and knowledge of prescribed burns would work in conjunction with the local departments' knowledge of the area, and allow a system of prescribed burns to be enacted. In addition, the local fire department would be charged with managing all data involved; including the specific details of each burn.								
3-2	Building Code Enforcement	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	3-2	Existing budgets
	Enforce the current or revised building code within each community by evaluating structures within a community that may not be in compliance with the code.								
3-4	Undergrowth Cleaning/Prescribed Burns	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	3-4	Virginia Department of Forestry; Existing Budgets
	Routine cleaning of underbrush and dead trees eliminates a major fuel source for wildfires. Carefully planned burns can clean a forest at ground level while leaving the trees themselves unharmed. In addition, in the case of a wildfire, undergrowth and dead vegetation burn much hotter than living vegetation. Local fire departments would likely control the burns, with planning assistance from local or state forestry agencies, such as VDOF.								

Bedford County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-4	Drought Mitigation- Agriculture Watering Locations	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	4-4	USDA Grants
	List watering locations for local livestock, as well as establishing water hauling programs for livestock.								
4-5	Drought Mitigation-Techniques	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	4-5	Existing budgets, FEMA
	Promote drought relief techniques such as stockpile pumps, pipes, water filter, and other equipment, establish water hauling programs for llivestock, list livestock watering locations, and establish a hay hotline.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								
	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements								

Bedford County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
	• Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

City of Bedford Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-4	Drought Mitigation- Education on alleviating conditions	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	1-4	County Planning budgets
	Organize workshops on special drought-related topics to help alleviate drought conditions. Potential topics to consider: water restrictions, agricultural permits. This action will be completed by each jurisdiction, independent of the other jurisdictions in the "Communities Involved".								
3-3	Drought Mitigation - Voluntary reestrictions	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	3-3	Virginia Department of Forestry, Existing budgets
	Negotiate with irrigators to gain voluntary restrictions on irrigation in areas where domestic wells are likely to be affected, or suspend water use permits in watersheds with low water levels.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-2	Utility Line Protection	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Governing bodies, Utility Companies, Zoning	4-2	To be determined
	Bury powerlines to prevent outages from downed trees, etc.								
4-7	Monitoring and maintain areas near Right of Ways	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	4-7	VDOT, VDOF, Utility Companies, Existing Budgets
	Monitor the location of old, weak, or dying trees within the region that are near homes, public facilities, and other critical facilities and cut down any that are vulnerable to falling down during wind events.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								

City of Bedford Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Campbell County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
	Routine cleaning of underbrush and dead trees eliminates a major fuel source for wildfires. Carefully planned burns can clean a forest at ground level while leaving the trees themselves unharmed. In addition, in the case of a wildfire, undergrowth and dead vegetation burn much hotter than living vegetation. Local fire departments would likely control the burns, with planning assistance from local or state forestry agencies, such as VDOF.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget; VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP), CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-6	Optimizing Dry Hydrant Installation	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	4-6	VDOF grants, local communities, property owners, local fire departments
	In rural areas where there are no water lines, dry hydrants provide a water source for fire trucks. Placing one dry hydrant for every 3 square miles of land would likely allow a fire truck to fill up their tank with no more than 6 minutes travel time to a fire, assuming a 35 mph driving speed. A water body of at least the size of two football fields and at least 3 feet deep is needed. Hydrants are relatively inexpensive and easy to maintain. (Dry hydrants would be concentrated in those areas deemed most vulnerable to wildfire.)								
4-7	Monitoring and Maintain areas near right of ways	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	4-7	VDOT; VDOF; Utility Companies, Existing Budgets
	Monitor the location of old, weak, or dying trees within the region that are near homes, public facilities, and other critical facilities and cut down any that are vulnerable to falling down during wind events.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								
	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties								

Campbell County Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
	• Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Town of Altavista Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-4	Drought Mitigation- Education on alleviating conditions	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-4	County planning budgets
	Organize workshops on special drought-related topics to help alleviate drought conditions. Potential topics to consider: water restrictions, agricultural permits. This action will be completed by each jurisdiction, independent of the other jurisdictions in the "Communities Involved".								
1-7	Training on the importance of maintaining Right of Ways	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-7	Existing budgets
	Coordinate with VDOT and utility companies to sponsor educational programs on the importance of maintaining utilities and right of ways.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	2-3	VA DCR, FEMA and VDEM
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communities.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-3	Evaluate and establish adequate drainage systems	Ongoing	High	High	As funding becomes available	Flood	Emergency services	4-3	To be determined
	Assess methods of remediating water contamination in a timely manner by improving water treatment and distribution procedures and evaluating hazardous materials that can be deposited into drainage systems.								
4-7	Monitoring and Maintain areas near right of ways	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	4-7	VDOT, VDOF, Utility Companies, Existing Budgets
	Monitor the location of old, weak, or dying trees within the region that are near homes, public facilities, and other critical facilities and cut down any								
4-8	VDOT Coordination with Maintaining Right of Ways	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	4-8	To be determined
	Coordinate with VDOT and utility companies to maintain existing infrastructure, development of new infrastructure and maintenance of right of ways.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								

	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not limited • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Town of Brookneal Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-4	Drought Mitigation- Education on alleviating conditions	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-4	County planning budgets
	Organize workshops on special drought-related topics to help alleviate drought conditions. Potential topics to consider: water restrictions, agricultural permits. This action will be completed by each jurisdiction, independent of the other jurisdictions in the "Communities Involved".								
1-7	Training on the importance of maintaining Right of Ways	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-7	Existing budgets
	Coordinate with VDOT and utility companies to sponsor educational programs on the improtance of maintaining utilities and right of ways.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	2-3	VA DCR, FEMA/VDEM
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communities.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-7	Monitoring and Maintain areas near right of ways	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	4-7	VDOT, VDOF, Utility Companies, Existing Budgets
	Monitor the location of old, weak, or dying trees within the region that are near homes, public facilities, and other critical facilities and cut down any that are vulnerable to falling down during wind events.								
4-8	VDOT Coordination with Maintaining Right of Ways	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	4-8	To be determined
	Coordinate with VDOT and utility companies to maintain existing infrastructure, development of new infrastrcuture and maintenance of right of ways.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								

	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Town of Pamplin City Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-6	Money for Wildfire Mitigation	Ongoing	Low	Low	As funding becomes available	Wildfire	Emergency services	1-6	Virginia Department of Forestry, Existing budgets
	Publicize the VDOF's Mondy for Mitigation Program and use existing wildfire maps to prioritize areas in the Region. Financial assistance to reduce fire hazards that has been established at VDOF. The program provides 50/50 cost share funds to reduce wildfire fuels. Citizen's groups and homeowner's associations are eligible applicants. This action attempts to provide education to potential beneficiaries of the Money for Mitigation program.								
2-3	Floodplain Updates and Assessment of What's At Risk	Ongoing	Low	Low	As funding becomes available	Flood	Emergency services	2-3	To be determined
	Monitor and update floodplain maps for the region. Delineation within the region, and assess the number of homes and critical structures that reside within the floodplain boundaries. Determine areas of concern within each of the communties.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	Medium	Medium	As funding becomes available	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-2	Utility Line Protection	Ongoing	Low	Low	As funding becomes available	All Hazards	Public works	4-2	To be determined
	Bury powerlines to prevent outages from downed trees, etc.								
4-3	Evaluate and establish adequate drainage systems	Ongoing	Low	Low	As funding becomes available	Flood	Emergency services	4-3	To be determined
	Assess methods of remediating water contamination in a timely manner by improving water treatment and distribution procedures and evaluating hazardous materials that can be deposited into drainage systems.								
4-7	Monitoring and Maintain areas near right of ways	Ongoing	Low	Low	As funding becomes available	All Hazards	Emergency services	4-7	VDOT, VDOF, Utility Companies, Existing Budgets
	Monitor the location of old, weak, or dying trees within the region that are near homes, public facilities, and other critical facilities and cut down any that are vulnerable to falling down during wind events.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								

	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

City of Lynchburg Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
1-1	Weather Related Hazards Education	Ongoing	High	High	ongoing	All Hazards	Emergency services	1-1	Local Community Training Budgets, VDEM and FEMA Planning Funds (PDM/HMGP) Staff Time and Exisiting Budgets
	Overall educational coordination effort with insurance companies to inform citizens on what hazards a given policy covers.								
	Winter Weather: Driving Safety								
	Flood: Target flood prone properties for acquisition/demo; acquisition/relocation; flood proffoing, floodplain awareness, driving safety								
	Drought: Conservation Strategies, Water Use, Crop and Livestock Management								
	Wildfire: Preventing wildfires, living in woodland communities.								
	Wind: Building Codes, wind-proofing, tree and property management								
1-2	National Weather Service Storm Ready Program Application	Ongoing	High	High	Completed	All Hazards	Emergency services	1-2	To be determined
	Storm Ready is a National Weather Service (NWS) run program available for participating counties and communities to prepare and assist clients with communication and safety skills needed to save lieve and property before and during weather related disasters. The program works closely with community leaders and emergency managers to strengthen local safety programs, planning, education, and awareness. Actions for this component of the Storm Ready process would be to bring county and community officials and emergency managers together to inform them about the program and discuss the advantages of becoming "Storm Ready." This will also involve brainstorming ways to improve weather related hazard education and increase public awareness of the events.								
1-3	Weather Alert Radio System	Ongoing	High	High	As funding becomes available	All Hazards	Emergency services	1-3	To be determined
	The National Weather Service provides a weather forecast and warning radio system called the "Weather Alert Radio System." This action would provide weather alert radios to schools and other critical public facilities within the region for warning, education, and awareness purposes. This would involve coordinating with the National Weather Service to establish partnerships to provide weather radio access to these special facilities and then contacting the facility representatives to let them know that this weather alert system is available.								
1-7	Training on the importance of maintaining Right of Ways	Ongoing	Low	N/A	Removed.	All Hazards	Emergency services	1-7	Existing budgets
	Coordinate with VDOT and utility companies to sponsor educational programs on the improtance of maintaining utilities and right of ways.								
2-1	Monitor Road Cleanup Following Hazard Events	Ongoing	Low	Low	ongoing	All Hazards	Public works	2-1	Federal Transportation Grants, Existing budgets
	Monitor the effectiveness of road cleanup procedures in counties and communities to ensure that primary and secondary roads are cleared in an efficient and timely manner.								
2-2	National Weather Service Storm Ready Data Collection	Ongoing	High	Medium	ongoing	All Hazards	Emergency services	2-2	NOAA; NWS, Existing Budgets
	To become a part of the Storm Ready network, a community must have the capability to monitor meteorological and hydrometeorological data and warn their citizens of imminent weather related hazards. This includes: warning reception devices such as the NOAA Weather Radio, Emergency Management Weather INformation Network Receiver, access to weather Radar data, instrumentation to monitor local weather and hydrologic conditions, and warning media outlets (Radio, Television). This action will look into ways of attaining the required data and information outlets and the resources that need to be utilitized or developed to facilitate these monitoring and communiciation processes. This action will also involve collecting and analyzing necessary information to develop and administer a formal hazardous weather operation plan.								
3-1	National Weather Service Storm Ready Operations Plan	Ongoing	High	High	Completed	All Hazards	Emergency services	3-1	NOAA; NWS, Existing Budgets
	There are population-based guidelines that a county or community must meet before it can be considered "Storm Ready," which are listed here: http://www.stormready.noaa.gov/guideline_chart.htm. Actions for this mitigation strategy include evaluating the current status of each locality that should be in the program to determine which guidelines are already met and develop ways of enhancing policies and resources available to the locality to reach all other necessary requirements and begin the Storm Ready application process. This action also involves developing a formal hazardous weather operation plan for each locality.								
3-3	Drought Mitigation - Voluntary reestrictions	Ongoing	Low	N/A	Removed.	All Hazards	Emergency services	3-3	Virginia Department of Forestry; Existing Budgets
	Negotiate with irrigators to gain voluntary restrictions on irrigation in areas where domestic wells are likely to be affected, or suspend water use permits in watersheds with low water levels.								
3-5	Integrating Human Caused Hazards into EOPs	Ongoing	Medium	Medium	Completed	All Hazards	Emergency services	3-5	Community EOP Update Budget, VDEM and FEMA Planning Funding (PDM, HMGP)
	FEMA uses the term "Human-caused hazards" to address those hazards that are primarily due to the actions of people. This includes hazards of a chemical, biological, radiological, and explosive nature. Local community EOPs address these hazards at different levels. This proposed mitigation action would evaluate current EOPs for Region 2000 and determine if coverage of human-caused hazards is adequate or needs expansion.								

City of Lynchburg Proposed Mitigation Actions

Strategy ID Number	Strategy Description	Status	Priority 2006	Priority 2013	Timeline	Hazard to be Mitigated	Lead Agency	Category (s)	Potential funding sources
4-1	Maintaining Critical Facilities during Power Disruptions	Ongoing	Medium	Medium	ongoing	All Hazards	Emergency services	4-1	VDEM and FEMA Planning Funds (PDM/HMGP) CIP Budgets
	During disasters, communities need the assurance that their critical facilities are able to stay in operation. Making buildings ready to receive generators and installing generators would allow critical facilities--i.e. water treatment facilities, hospitals, etc.--to maintain their operational status.								
4-3	Evaluate and establish adequate drainage systems	Ongoing	Medium	Medium	Ongoing	All Hazards	Public works	4-3	To be determined
	Assess methods of remediating water contamination in a timely manner by improving water treatment and distribution procedures and evaluating hazardous materials that can be deposited into drainage systems.								
4-7	Monitoring and Maintain areas near right of ways	Ongoing	Low	Low	Ongoing	All Hazards	Public works	4-7	VDOT, VDOF, Utility Companies, Existing Budgets
	Monitor the location of old, weak, or dying trees within the region that are near homes, public facilities, and other critical facilities and cut down any that are vulnerable to falling down during wind events.								
5-1	NFIP Participation and Education	Ongoing	High	High	As funding becomes available	Flood	Emergency services	5-1	Existing budgets
	Floodplain identification and Mapping: This item could include maintenance of publicly accessible copy of effective FIRM (flood insurance rate map) maps and FIS (flood insurance study), adopting the most current DFIRM or FIRM and FIS, Support of local requests for map updates, sharing with FEMA any new technical or scientific data that could result in map revisions within 6 months of creation or identification of new data, assisting with local floodplain determinations, and maintaining a record of approved Letters of Map Change.								
	Floodplain managements: Adopt a compliant floodplain management ordinance that at a minimim regulates the following: Adopt a compliant floodplain management ordinance that at a minimum regulates the following: • Issue permits for all proposed development in the SFHA • Obtain, review and utilize any Base Flood Elevation and floodway data, and require BFE data for subdivision proposals and other development proposals larger than 50 lots or 5 acres • Identify measures to keep all new and substantially improved construction reasonably safe from flooding to or above the Base Flood Elevation, including anchoring, using flood resistant materials, designing or locating utilities and service facilities to prevent water damage • Document and maintain records of elevation data that document lowest floor elevation for new or substantially improved structures. o Enforce the ordinance by monitoring compliance and taking remedial action to correct violations o Consider adoption of activities that extend beyond the minimum requirements, including those identified for participation in the Community Rating System, freeboard, prohibition of production or storage of chemicals in SFHA, prohibition of certain types of structures such as: hospitals, nursing homes, jails, prohibition of certain types of residential housing such as manufactured homes, and finally floodplain ordinances that prohibit any new residential or non-residential structures in the SFHA.								
	Flood Insurance: Educate community members about the availability and value of flood insurance, inform community property owners about changes to the DFIRM/FIRM that would impact their insurance rates, provide general assistance to community members relating to insurance issues.								
5-2	Communities will support implementation of structural and non structural mitigation activities to reduce exposure to natural and man-made hazards.	Ongoing	High	High	As funding becomes available	Flood, Thunderstorms	Emergency services	5-2	Existing budgets
	Strategy: Mitigation projects that will result in protection of public or private property from natural hazards. Eligible projects include, but are not • Acquisition of hazard prone properties • Elevation of flood prone structures • Minor structural flood control projects • Relocation of structures from hazard prone areas • Retrofitting of existing buildings and facilities • Retrofitting of existing buildings and facilities for shelters • Infrastructure protection measures • Storm water management improvements • Advanced warning systems and hazard gauging systems (weather radios, reverse-911,stream gauges, I-flows) • Targeted hazard education • Wastewater and storm water management improvements • Wildfire Mitigation Projects								

Appendix 6.1
November 3, 2011
Meeting Agenda

Agenda
Region 2000 Hazard Mitigation Plan Update Process
Meeting #3: Mitigation Goals and Strategies

November 3, 2011
11:30-2:00

Region 2000 Partnership Offices
828 Main Street, 12th Floor
Lynchburg, VA 24504

1) Welcome and Introductions (11:30-11:45)

2) Today's Agenda and Plan Purpose Review (11:45-12:00)

   LUNCH is served

3) Identification of Mitigation Actions (12:15-12:45)

4) Prioritization of Mitigation Actions (12:45-1:15)

5) Plan Implementation and Maintenance (1:15-1:30)

6) Mitigation Action Implementation Worksheets and Next Steps (1:30-2:00)

Appendix 6.2
November 3, 2011
Meeting Minutes

Hazard Mitigation Goals and Strategies Meeting
November 3, 2011
Region 2000 Partnership Offices
828 Main St. 12th Floor
Lynchburg, VA 24504

Meeting minutes

Project management team signed in

Name	Jurisdiction
Kelvin Brown	Amherst, Town of
Freddie Godsey	Appomattox County
Roxanne Paulette	Appomattox, Town of
Seth Mowles	Bedford County
Tracy Fairchild	Campbell County
Dan Witt	Altavista, Town of
Mike Crews	Brookneal, Town of
Bill Aldridge	Lynchburg City
Philipp Gabathuler	Region 2000
Robbie Coates	VDEM

- Welcome and Introductions / Opening Remarks
- Mitigation action worksheet was handed out.
- Robbie Coates thanked everyone for attending the meeting
- Project management team went around and introduced themselves and what they hoped to get out of the meeting.

- Review Planning Process

Subject Matter Expert, Deepa Srinivasan, provided a review on the plan revision process

- Basic Elements of Hazard Mitigation were reviewed by the VDEM representative, Robbie Coates.
- Definition : sustained action taken to reduce or eliminate long-term risk to people and property from hazards

Short Description on the History of Hazard Mitigation given by Robbie Coates

- Plan establishes eligibility for grant funding (ie. Pre-Disaster Mitigation Funding, Hazard Mitigation Grant Program Funding)

Review plan goals and objectives
Project management team agreed that the goals from the 2006 plan were still viable.

- Review Table of Content of the plan

Conclusion and thanks

Section VIII

Appendix

References

Appendix 8.1

References

Flooding – DFIRM / National Flood Hazard Layer – FEMA Map Service Center

Advanced Hydrological Prediction Center –river gauges and historical crests
www.weather.gov/ahps2/crests.php

USGS Water – watersheds – http://water.usgs.gov

VIPER – Virginia Interoperability Picture for Emergency Response
https://cop.vdem.virginia.gov/viper_secure?Default.aspx# - displays example of river gauges vs floodplain overlays

Road Center Line Data – http://gisdata.virginia.gov – VGIN Hosted Downloads – VGIN Road Centerline (RCL), state police, VSP Offices, VDH Hospitals. NHD – hydrology layer, 2002 VBMP TINs – elevation data set with pretty good resolution.

Office of Licensures and Certification – VDH – Health Clinics

http://gismaps.virginia/gov/contacts - primary points of contact for GIS data for each county

http://www.vita.virginia.gov/isp - Click Geospatial Events and Activities, Local Government – lists all counties and whether or not they have a GIS page and their links

address points – vgin is working with 911 or gis, if county doesn't have gis, they would still have 911 address points from their CAD systems (all but 6 counties statewide have this) – shape file – in my flood zones, show me where I have address points within the flood zones.

Wildfire

Risk Assessment Maps – http://www.dof.virginia.gov/gis - click DATA AVAILABLE

Tornado, Hail, Wind

http://www.spc.noaa.gov/gis/svrgis

Hurricane Tracks - historical

http://csc-s-maps-g.csc.noaa.gov/hurricanes/ - NOAA Coastal Service Center

Earthquake – need to get link for shapefiles for fault zones

Extreme Temperatures –

http://www.vdem.state.va.us/newsroom/history/winter.cfm

Winter Weather –

http://www7.ncdc.noaa.gov/IPS/coop - individual COOP station data