Buncombe County, North Carolina

All Hazards Mitigation Plan Update

Revision 2 June 2011

(FINAL DRAFT)

Buncombe County

County-Wide All Hazards Mitigation Plan

What is Hazard Mitigation?

Hazard Mitigation is defined as "sustained action that reduces or eliminates long-term risk to people and property from natural hazards and their effects." (FEMA: National Mitigation Strategy, 1995). This is an ongoing effort to lessen the potential for natural hazards to become disasters as such hazards do not become disasters until they collide with the human, or "built", environment. Through the application of mitigation technologies and practices, Buncombe County can ensure that fewer of its citizens become victims of these disasters. (www.fema.gov/mit/whatmit.htm).

The definition of Hazard Mitigation referenced above differentiates actions that have a long-term impact from those actions that are more closely associated with preparedness for, immediate response to, and short-term recovery from a specific event. This definition intentionally focuses on actions that produce repetitive benefits over time in an effort to encourage a pro-active, rather than reactive, approach to dealing with natural hazards. This also involves the realization that funding spent on mitigation measures will reduce the economic disaster that often accompanies the natural hazard event through destruction of property, loss or interruption of jobs, and closing or disabling businesses. (www.ncem.org/mitigation/page3.html).

Purpose of a Hazard Mitigation Plan

A local Hazard Mitigation Plan establishes the community's commitment to mitigation goals, objectives, policies and programs. By stating the goals and objectives that the jurisdiction hopes to achieve, the plan can help to create an important connection between the public interest and the proposed mitigation strategy. A local Hazard Mitigation Plan also serves as a vehicle to educate the public regarding natural hazards and mitigation practices, thereby increasing public awareness of the risks facing them as residents of the community as well as tools and resources available for reducing those risks. Such a plan, then, serves as a guide for the implementation of goals, objectives, policies, and programs as it also educates the community. The preparation and adoption of a local Hazard Mitigation Plan is also a requirement for receiving many types of mitigation and post-disaster recovery funds. (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

Hazard Mitigation Planning Process

The "Minimum Criteria for Local Hazard Mitigation Plans" established by the North Carolina Division of Emergency Management (NCEM) sets forth the following process for local governments to use in developing their plan:

1. Hazard Identification and Analysis
2. Vulnerability Analysis
3. Community Capability Assessment
4. Analysis of Community Goals
5. Hazard Mitigation Strategy
6. Adoption and Implementation
7. Update and Revision

Each step is discussed in detail in subsequent sections of this document. Buncombe County established a committee of representatives from County and municipal governments to carry out the hazard mitigation planning process. Public involvement was encouraged throughout this process. The following timeline details the development of the Hazard Mitigation Plan for Buncombe County, the City of Asheville, the Towns of Biltmore Forest, Black Mountain, Montreat, Weaverville, and Woodfin. All jurisdictions were included in the original plan and are continuing participants.

Buncombe County's initial Multi-Jurisdiction Hazard Mitigation Plan received FEMA approval pending adoption in October 2004. After all jurisdictions formally adopted the plan FEMA granted final approval in June 2005. FEMA's Hazard Mitigation Plan requirements state that the plan must be updated every five years. A committee of representatives from the county and all municipal jurisdictions was established to carry out the five year update. Each section of the plan was reviewed and revised if needed. The main portion of the plan was reviewed by all committee representatives with County staff making revisions as necessary where discussed. Revisions were shared with municipal representatives. Municipal representatives were responsible for revising their portions of the plan. In some cases municipal representatives met individually with County staff for assistance in revising their sections of the plan. A listing of committee members is located in Appendix A. The following table details the planning process for the initial Hazard Mitigation Plan as well as the Plan Update.

Table 1 Hazard Mitigation Planning Process

DATE	EVENT	DESCRIPTION
2/11/00, 4/12/00, 5/25/00, 6/22/00, 7/2/00	Project Impact Coordinating Committee Meetings	Coordinating Committee forms and begins work. The Coordinating Committee includes representatives from Buncombe County and municipal governments, the public, and the private sector. The concept of Project Impact is introduced. Requirement to develop a Hazard Mitigation Plan is explained. Committee members are encouraged to join Risk Assessment Sub-Committee.
9/18/00	Project Impact portion of Buncombe County web site is up and running	The Project Impact portion of the County's web site provides the public information on Buncombe County's Hazard Mitigation Planning Initiative including meeting dates, times and locations.
9/21/00	Project Impact Coordinator joins Asheville Area Red Cross Hazard Mitigation Committee 9/21/00	The local Red Cross Chapter is developing a Hazard Mitigation Plan for their service area. The Project Impact Coordinator is asked to participate in this process. The Project Impact Coordinator briefs Red Cross committee members on the County's Hazard Mitigation Planning process.
10/9/00	Risk Assessment Sub-Committee forms and begins work	The Risk Assessment Sub-Committee includes representatives from both County and municipal jurisdictions as well as the non-profit sector. Risk and Vulnerability surveys are distributed.
10/26/00	Project Impact Coordinating Committee Meeting	Coordinating Committee is briefed regarding the 10/9 meeting of the Risk Assessment Sub-Committee. Coordinating Committee members are again invited and encouraged to join the sub-committee.
11/20/00	Risk Assessment Sub-Committee Meeting	Risk survey is completed for each jurisdiction. Results are discussed. Vulnerability survey is scheduled to be turned in at the 12/11/00 meeting.
11/11/00	Lowe's Winter Safety Day	Public information event held at Lowe's Home Improvement Warehouse in West Asheville. Information is made available to the public and the media regarding Project Impact and the development of the County's Hazard Mitigation Plan. Information includes date, time and location of next Coordinating Committee and Risk Assessment Sub-committee meetings.
12/11/00	Risk Assessment Sub-Committee Meeting	Vulnerability Survey is completed for each jurisdiction. Results are discussed. The Project Impact Coordinator received a request for

		proposals for internship projects from the Master of Public Administration program at the Institute for Government (UNC-Chapel Hill). The decision is made to submit a proposal for a team of interns to evaluate local ordinances in terms of hazard mitigation techniques (i.e. do local policies support/hinder hazard mitigation?).
12/27/00	Asheville Smoke Hockey Winter Safety Night	Public information event. In addition to winter safety information, information on the development of Buncombe County's Hazard Mitigation Plan is made available to the public. Information includes date, time and location of next Coordinating Committee meeting.
January 2001	Internship proposal accepted. Project Impact Coordinator collects information to be reviewed by the intern team.	In preparation for the intern project the Project Impact Coordinator meets with Risk Assessment Sub-Committee members to gather local ordinances to be reviewed by the intern team.
1/25/01	Project Impact Coordinating Committee Meeting	Coordinating Committee is briefed on the Risk Assessment Sub-Committee meetings of 11/20/00 and 12/11/00 as well as the intern project.
2/12/01	Intern team from the Institute of Government travels to Asheville to begin the evaluation of local ordinances.	Intern team meets with the Project Impact Coordinator, Emergency Services Director, NCEM Planner, and County Planning staff to discuss the Hazard Mitigation Plan and begin review of local ordinances. Intern team tours the County to view past Hazard Mitigation Grant Projects and to view the "lay of the land". Interns are given a list of contacts for each jurisdiction.
February – May 2001	Project Impact Coordinator oversees the intern team as they complete the project.	Project Impact Coordinator acts as liaison between the intern team and other County and municipal representatives. Reviews drafts of project report as they are completed.
2/27/01	Red Cross Mitigation Committee Meeting	Project Impact Coordinator continues to provide assistance to the local Red Cross Chapter as they develop a mitigation plan for their service area. Red Cross committee is updated on the development of the County's Hazard Mitigation Plan.
3/22/01	Project Impact Coordinating Committee Meeting	Coordinating Committee is updated on the status of the intern project and the Hazard Mitigation Plan.
4/23/01	Project Impact Signing Ceremony	Representatives from FEMA and NCEM, the Project Impact Coordinating Committee, Project Impact Partners, County and municipal officials and representatives, members of the public, and the media are invited to celebrate

		as Buncombe County, and the municipalities located therein, formalize their Project Impact Partnership. During the ceremony the Project Impact Coordinator briefs attendees on Buncombe County's Hazard Mitigation Planning Initiative.
5/9/01	Intern team submits their final report to the Project Impact Coordinator.	The intern team submits a report addressing the status of local ordinances in terms of hazard mitigation. Overall local ordinances appear to be in good standing in terms of supporting hazard mitigation.
June 2001	Municipal Jurisdictions are briefed on the intern team's final report.	Project Impact Coordinator discusses interns' report with municipal representatives.
07/19/01	Project Impact Coordinating Committee Meeting	Coordinating Committee is briefed on the intern team's final report and on the status of the County's Hazard Mitigation Plan.
August 2001	Survey of area utility companies	Utility companies providing service in Buncombe County are surveyed to determine if they have disaster response plans in place.
August – September 2001	Project Impact Coordinator gathers additional information	Additional information is gathered in order to write the first draft of the Hazard Mitigation Plan.
9/28/01	Preliminary Draft of HMP	Project Impact Coordinator submits preliminary draft of HMP to County Emergency Services Director and Planning Department for review and comment.
01/15/02	First draft of HMP submitted to NCEM for review/approval	After minor revisions to the preliminary draft, the Project Impact Coordinator submits first completed draft to NCEM for review/approval.
02/07/02	NCEM returns revision requirements	Upon reviewing the first draft of Buncombe County's HMP, NCEM returns comments and revision requirements. Project Impact Coordinator begins work on second draft.
02/20/02	Municipalities notified of revision requirements	Municipalities are notified of review comments from NCEM and that additional information is required from their jurisdictions for preparation of the second draft of the HMP.
March 2002	Data requested from Metropolitan Sewerage District (MSD)	Project Impact Coordinator requests locations of all pump stations and finished floor elevation(s) of the sewage treatment plant.
03/27/02	NFIP Repetitive Loss data requested.	Project Impact Coordinator requests NFIP repetitive lass data from North Carolina's State NFIP representative.
04/15/02	Additional information received from municipalities	Project Impact Coordinator receives all requested information from municipal jurisdictions.

04/30/02	NFIP data received.	Project Impact Coordinator receives repetitive loss information from the NFIP. Begins to locate parcels.
05/15/02	Consultation with County GIS Coordinator	Project Impact Coordinator meets with County GIS Coordinator to discuss current data layers and planned improvements.
5/20/02	Pump Station data received	Project Impact Coordinator receives data from MSD regarding location of pump stations in relation to the 100-yr flood plain. Again requests information on sewerage treatment plant (finished floor elevations).
06/06/02	All repetitive loss parcels located.	Project Impact Coordinator and County and City of Asheville Floodplain Administrators locate all parcels on NFIP repetitive loss list. It is confirmed that one of the parcels listed as being in Buncombe County is actually located in Madison County.
06/20/02	FEMA seminar on Hazard Mitigation Planning Requirements.	Project Impact Coordinator attends HMP session at the Southeastern Disaster Resistant Communities Summit in Charleston, SC. Interim rules are explained.
06/24/02	Data on sewerage treatment plant requested.	Project Impact Coordinator contacts MSD to remind them of the request for the finished floor elevation(s) for the sewerage treatment plant.
08/26/02	Data received from MSD	Project Impact Coordinator receives finished floor elevations for all structures at the sewerage treatment facility. All are above base flood elevation.
08/26/02	Notification from NCEM of FEMA's criteria for Hazard Mitigation Plans	Received notification that NCEM will now use FEMA's criteria for evaluating Hazard Mitigation Plans rather than the prior NCEM Minimum Criteria for Local Hazard Mitigation Plans.
09/05/02	Second Draft of HMP submitted to NCEM	Project Impact Coordinator finalizes second draft of HMP and submits to NCEM for review.
09/24/02	NCEM returns revision requirements	Upon reviewing the second draft of Buncombe County's HMP, NCEM returns comments and revision requirements. Plan was reviewed using FEMA's interim criteria.
October 2002	Revision requirements and FEMA interim criteria reviewed	Project Impact Coordinator reviews the revision requirements against FEMA's interim planning criteria. Decision is made not to submit a third draft until FEMA finalizes the planning criteria.
06/24/2003	Hazard Mitigation Planning workshop	Emergency Management Planner (former Project Impact Coordinator) attends Hazard Mitigation Planning presentation by NCEM Mitigation Branch Staff. FEMA's final planning criteria is presented.

July – Nov. 2003	HMP is revised.	Revisions are made to County and municipal portions of the plan.
11/30/2003	Notice of Public Meeting	Notice of Public Meeting is posted in the Asheville Citizen-Times. The public will have the opportunity to comment on the HMP on Thursday, December 11, 2003.
12/1 – 12/10/03	Third Draft of HMP available for public review.	Third draft of HMP is available for public review in the County as well as municipal jurisdictions.
12/11/03	Public Meeting	Public Meeting is held by Buncombe County and the municipal jurisdictions located therein. Public Comment is taken on the third draft of Buncombe County's HMP.
1/30/2004	Third Draft of HMP submitted to NCEM for review.	Emergency Management Planner finalizes third draft of HMP and submits to NCEM for review.
5/21/2004	NCEM returns revision requirements.	Upon reviewing the third draft of Buncombe County's HMP NCEM returns revision requirements. Plan was reviewed using FEMA's Final Criteria.
8/23/2004	Fourth Draft of HMP submitted to NCEM for review.	Emergency Management Planner finalizes third draft of HMP and submits to NCEM for review.
10/18/2004	FEMA Region IV and NCEM approve Buncombe County's HMP.	FEMA Region IV and NCEM state that Buncombe County's HMP is approved pending adoption by the County and each municipal jurisdiction.
12/16/2004	Notice of Public Hearing	Notice of Public Hearing is published. Public Hearing is scheduled for 01/04/2005. Public comment will be taken on HMP. Public Hearing includes the County and all municipal jurisdictions located therein.
Jan. '05 to Nov. '08	Hazard Mitigation Grant and Hurricane Recovery Act Acquisition Projects	In accordance with Mitigation Strategy 7 Buncombe County applies for, and receives funding, and carries out projects for the acquisition of properties damaged in the 2004 floods.
1/4/2005	Public Hearing	Public Hearing held prior to adoption of Hazard Mitigation Plan.
1/10/2005	Hazard Mitigation Plan Adopted	Town of Black Mountain adopts the Hazard Mitigation Plan.
1/17/2005	Hazard Mitigation Plan Adopted	Town of Weaverville adopts the Hazard Mitigation Plan.
1/18/2005	Hazard Mitigation Plan Adopted	Buncombe County adopts the Hazard Mitigation Plan.
1/25/2005	Hazard Mitigation Plan Adopted	Town of Woodfin adopts the Hazard Mitigation Plan.
2/10/2005	Hazard Mitigation Plan Adopted	Town of Montreat adopts Hazard Mitigation Plan.
3/15/2005	Hazard Mitigation Plan Adopted	Town of Biltmore Forest adopts Hazard Mitigation Plan.

3/22/2005	Hazard Mitigation Plan Adopted	City of Asheville adopts the Hazard Mitigation Plan.
12/11/2007	Campus Emergency Response and Mitigation Planning Seminar	Colleges and Universities within a 100 mile radius of Asheville were invited to attend a seminar on Emergency Response and Mitigation Planning issues for the campus setting. Information was presented on natural and man-made hazards in Western North Carolina, hazard mitigation principals, emergency response issues unique to a campus environment, and emergency preparedness. Buncombe County's Hazard Mitigation Plan was available for review and the upcoming Plan Update Process was discussed. No comments were received.
6/23/2008	Get It Together Buncombe County	Preparedness Seminar held in conjunction with Buncombe County Citizen Corps and Land of Sky Regional Council. Information presented on natural hazards in Buncombe County, Buncombe County's Hazard Mitigation Plan and upcoming Plan Update, and Emergency Preparedness. Attendees included members of the general public as well as representatives from the Retired Senior Volunteers Program, Western Highlands Mental Health Network, Foster Grandparents Program, Buncombe County Juvenile Detention Center, Buncombe County Department of Social Services, Asheville Housing Authority, United Way, Alzheimer's Association, American Red Cross, and YWCA.
6/23/2008	Public Meeting	Public invited to comment on the plan. No comments received.
October 2008	Risk Tool Development	Met with Renaissance Computing Institute (RENCI) at the NC Emergency Management Association Fall Conference to discuss the development of an on-line Risk and Vulnerability Assessment Tool to aid in the update of Buncombe County's Hazard Mitigation Plan
2/16/2009	Risk Tool Development	Met with RENCI to outline data and functions necessary for a usable Risk and Vulnerability Analysis Tool
3/5/2009	Risk Tool Prototype	Reviewed prototype of Risk and Vulnerability Assessment Tool and suggested changes.
3/16/2009	Risk Tool up and running	Functional version of Risk Assessment Tool ready for deployment to Hazard Mitigation Plan Update Committee
3/18/2009	Hazard Mitigation Plan Update Committee Meeting	Met with representatives from Buncombe County and all municipal jurisdictions to demo RENCI's Risk Assessment Tool and discuss the

		requirements for the Hazard Mitigation Plan Update.
4/24/2009	Risk Tool Update	Met with RENCI to review latest version of Risk Assessment Tool. Discussed status of Hazard Mitigation Plan Update.
5/12/2009	Hazard Mitigation Plan Update Committee Meeting	Met with representatives from Buncombe County and all municipal jurisdictions to check status of Hazard Mitigation Plan Update.
5/19/2009	Contingency Planning for Non-Profits & Small Business Seminar	Seminar held in conjunction with Buncombe County Citizen Corps and Land of Sky Regional Council. Focused on Continuity Planning but included information on natural hazards in Buncombe County, Buncombe County's Hazard Mitigation Plan and upcoming Plan Update, and Emergency Preparedness. Invitees included small businesses, non-profits, local collaborating agencies and academia. Attendees included members of the general public and representatives from Mountain Area Community Services, Asheville Area Habitat for Humanity, Asheville Jewish Community Center, YMCA, Central UMC, Groce UMC, and St. Timothy UMC.
6/22/2009	Meeting with City of Asheville	Met with City of Asheville to review updates to their portion of the Hazard Mitigation Plan
6/26/2009	Preparedness Night with the Asheville Tourists	Public Education event held in conjunction with an Asheville Tourists Baseball Game. Information presented on natural hazards in Buncombe County, Buncombe County's Hazard Mitigation Plan and upcoming Plan Update, and Emergency Preparedness.
7/16/2009	Update to Hazard Mitigation Plan	Hazard Mitigation Plan update received from Town of Black Mountain
9/24/2009	Preparedness Blitz	Public Education event held from 5:00am until 7:00pm at area Lowe's Home Improvement Stores. Included media coverage and many live shots throughout the day. Information presented on natural hazards in Buncombe County, Buncombe County's Hazard Mitigation Plan and upcoming Plan Update, and Emergency Preparedness. Locations included Asheville (Tunnel Road), West Asheville, Weaverville, and Arden.
9/28/2009	Update to Hazard Mitigation Plan	Hazard Mitigation Plan update received from City of Asheville.
October 2009	Risk Tool Presentation at NCEMA Conference	Emergency Management Planner presented information on the development and functions of the Risk Tool.
Nov. 2009 - Aug. 2010	Plan Revisions Continue	County and municipalities continue to work on updating the Hazard Mitigation Plan.

Dec 18, 2009	Presidential Disaster Declaration for winter storm	Presidential Disaster Declaration approved for December 18, 2009 winter storm. County and municipalities are collecting damage and expenditure data and administering public assistance funds.
7/9/2010	Update to Hazard Mitigation Plan	Hazard Mitigation Plan update received from Town of Woodfin
8/5/2010	Meeting with Town of Biltmore Forest	Met with Town of Biltmore Forest to discuss updates to their portion of the Hazard Mitigation Plan
8/17/2010	Update to Hazard Mitigation Plan	Hazard Mitigation Plan update received from Town of Biltmore Forest.
8/17/2010	Update to Hazard Mitigation Plan	Hazard Mitigation Plan update received from Town of Weaverville.
8/19/2010	Submitted for NCEM review	Draft of Hazard Mitigation Plan Update and Crosswalk submitted to NCEM for review.
11/9/2010	NCEM review comments and required revisions received	NCEM returns Crosswalk with review comments and required revisions.
11/23/2010	Revisions submitted to NCEM for review	Revisions to the Buncombe County Mitigation Strategies were submitted to NCEM for review.
11/29/2010	Feedback from NCEM	The Buncombe County Mitigation Strategies format was approved by NCEM.
11/30/2010	Revision requirements were communicated to the municipalities	Required Revisions were explained to the Municipal Update Committee representatives via email. Revised Buncombe County Mitigation Strategies were attached as an example.
12/8/2010	Revision to Hazard Mitigation Plan Update	Revisions to Hazard Mitigation Plan Update received from Town of Biltmore Forest.
1/25/2011	Revision to Hazard Mitigation Plan Update	Revisions to Hazard Mitigation Plan Update received from City of Asheville.
2/8/2011	Revision to Hazard Mitigation Plan Update	Revisions to Hazard Mitigation Plan Update received from Town of Montreat.
2/15/2011	Revision to Hazard Mitigation Plan Update	Revisions to Hazard Mitigation Plan Update received from Town of Weaverville.

A listing of Hazard Mitigation Plan Update Committee members is located in Appendix A.

Overview of Buncombe County

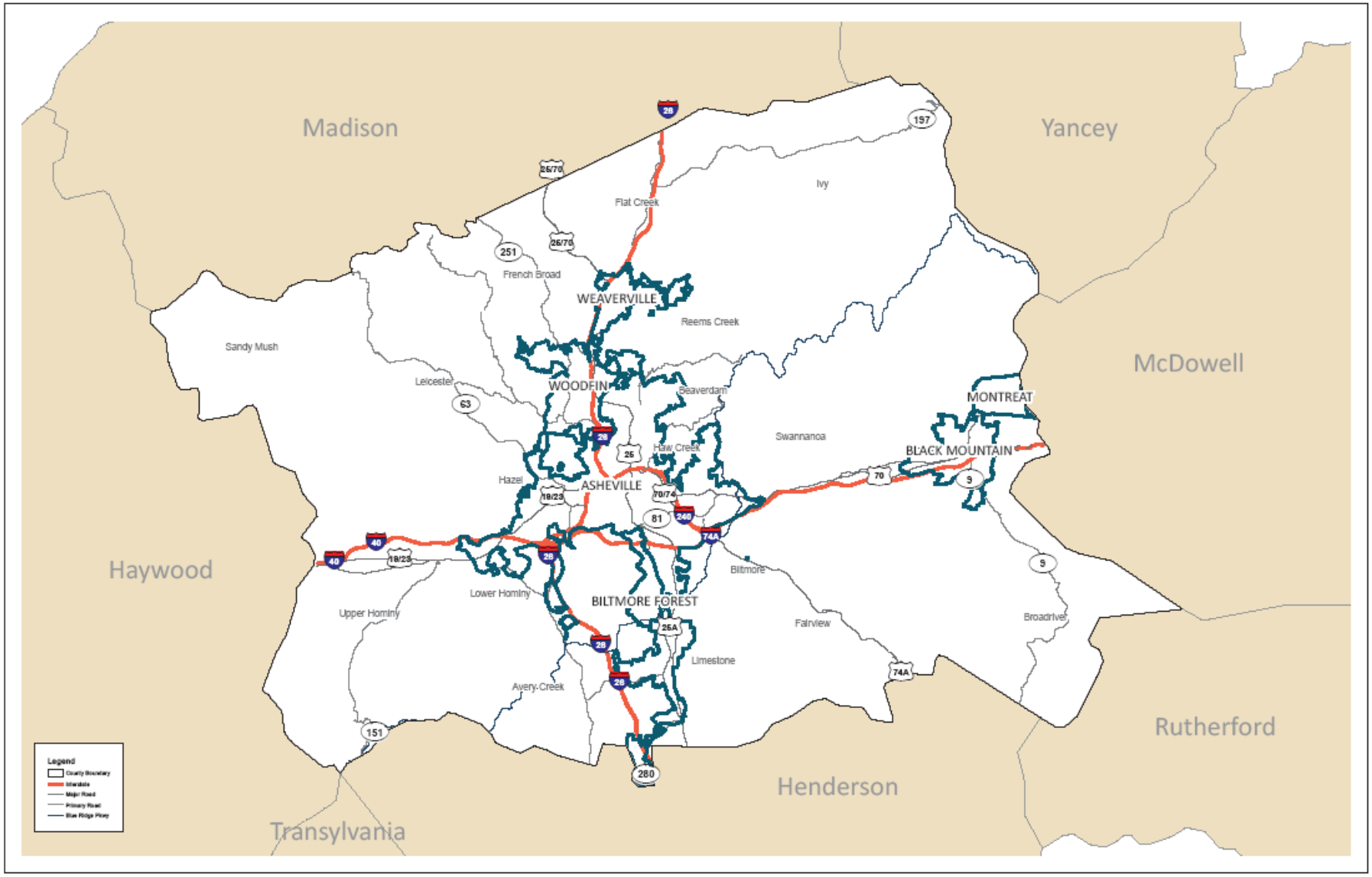
Buncombe County is mainly rural with corridors of residential and commercial development extending out from the urban centers. The county is nestled within the Appalachian Mountains, and is surrounded by state and national forests. There are six municipalities within Buncombe County (population of 227,875 in 2008): Weaverville (3,231 in 2008), Woodfin (5,992 in 2008), Black Mountain (8,597 in 2008), Montreat (714 in 2008), Biltmore Forest (1,548 in 2008), and Asheville (78,313 in 2008) (www.osbm.state.nc.us)[1]. The median age of Buncombe County residents is 38.9 with 21.5% of the County's population under the age of 18 and 15.6% over the age of 65 (www.commerce.state.nc.us).

Asheville is the largest of the municipalities, and is located on a hill overlooking the French Broad River. Weaverville and Woodfin are north of Asheville along US 19/23. Black Mountain and Montreat are east of Asheville, along US-70 and I-40. Biltmore Forest is located south along US-25. The population growth in Buncombe is expected to continue steadily. The projected growth rate through 2010 is 13%. The growth rate for 2010 – 2020 is expected to be 10.7%. The following decade's growth rate (2020 – 2030) is expected to be 8.4%. Buncombe County is expected to have a population of 279,890 by the year 2030 (www.osbm.state.nc.us). The mountains, the Biltmore House Estate, the University of North Carolina at Asheville, and a rapidly growing art community combine to foster a vibrant tourism industry and create a magnet for retirement.

This Hazard Mitigation Plan includes Buncombe County and the six municipal jurisdictions located therein (i.e., the City of Asheville, and the Towns of Biltmore Forest, Black Mountain, Montreat, Weaverville, and Woodfin).

A map of Buncombe County showing the municipal boundaries is on the following page.

[1] Population figures are Certified 2008 Population Estimates. These estimates are derived by taking estimates of municipal population as of July 1, 2008 residing within municipal boundaries as of July 1, 2009. The Certified Population Estimates are used by the North Carolina Departments of Revenue and Transportation in the distribution of state-shared revenues.



Buncombe County Incorporated Areas

Buncombe County, North Carolina

0 1 2 4 6 8 Miles

Produced By: Buncombe County GIS Office, August 2010

There are two public school systems within the County: Asheville City Schools and Buncombe County Schools. The Asheville City Schools system encompasses 6 elementary schools, 2 middle schools (one designated for at-risk students), and 1 high school (www.asheville.k12.nc.us). The Buncombe County Schools system contains 23 elementary schools, 1 intermediate school, 7 middle schools, and 6 high schools. The County system also has ~~two~~ one "Community High School~~s~~" designated for at-risk students in grades 9 through 12 (http://eclipse.co.buncombe.k12.nc.us). The University of North Carolina at Asheville is a part of the 16 campus State University system. Asheville-Buncombe Technical Community College is a part of the State Community College system. There are also three private colleges located within Buncombe County: South College, Montreat College, and Warren Wilson College (www.ashevillechamber.org).

In 2009 Buncombe County had a total work force of 149,750 individuals. Seventy percent of the total work force was employed in one of the following five categories: Leisure and Hospitality (13.8%), Private Education and Health Service (18.4%), Retail (13.4%), Manufacturing (10.8%), or Government (14.3%). The average unemployment rate for Buncombe County for 2009 was 8.5%. This was lower than both the State (10.4%) and national (8.8%) rates (data.bls.gov). The median household income in Buncombe County was $36,666 in 2000. This figure increased to $45,885 in 2009 (www.ers.usda.gov). This is an increase of 25%. The per capita income of Buncombe County residents was $20,384 in 2000. This figure increased in 2009 by 27% to $25,957 (www.ashevillechamber.org).

The climate in Buncombe County is characterized as moderate with an annual average temperature of 55.6 degrees Fahrenheit. Buncombe County's average annual rainfall is 47.07 inches and the average annual snowfall is 13.3 inches. The average elevation above sea level is 2,165 feet (www.ashevillechamber.org). The hazards that threaten the county and municipalities are severe winter storms, utility failure, flooding, drought, hazardous materials, landslides, earthquakes, wildfire, dam failure, and tornadoes. These hazards are discussed in detail in the next section "Hazard Identification and Analysis." In the last twenty years, there have been four disaster declarations for Buncombe County, for winter storms and flooding. In addition to these large-scale disasters, there have been countless localized flooding events, which have been equally serious for community members. The Swannanoa River, the Ivy River, and areas in Hominy, Candler, and Biltmore Village are known for repetitive flooding.

Hazard Identification and Analysis

Hazard identification and Analysis is the first step of the Hazard Mitigation Planning process. By identifying and analyzing the hazards facing their jurisdiction the community is able to determine which specific hazards it should focus its attention and resources on. In conducting the hazard identification and analysis phase of the Hazard Mitigation Plan, Buncombe County utilized the criteria set forth by the North Carolina Division of Emergency Management in *Keeping Natural Hazards from Becoming Disasters: A Basic Workbook for Local Governments* (October 2000):

- **Type –** Different hazards call for different mitigation measures. The preferred approach is to consider all the hazards that threaten the community and focus on those that pose the greatest risk.

- **Likelihood of Occurrence –** Estimate the likelihood of each type of hazard occurring in your area. This estimate should be based on local historical evidence.
  - *Highly Likely:* near 100% probability in the next year.
  - *Likely:* between 10% and 100% probability in the next year, or at least one chance in the next 10 years.
  - *Possible:* between 1% and 10% probability in the next year, or at least one chance in the next 100 years.
  - *Unlikely:* less than 1% probability in the next year, or less than one chance in the next 100 years.

- **Location –** Certain areas, such as floodplains and steep slopes, are more prone to hazards than others. Many of these areas are readily identifiable on maps. Identify the areas that are most vulnerable to each natural hazard and mark whether they cover a small, medium, or large proportion of the community.

- **Impact –** Each community should determine the likely impact from each hazard threat. Impact is a combination of the severity of the event, its magnitude, and the density of human activity in that area affected.

	Magnitude	Severity
Catastrophic	*More than 50%*	Multiple deaths. Complete shutdown of facilities for 30 days or more. More than 50 percent of property is severely damaged.
Critical	25 to 50%	Multiple severe injuries. Complete shutdown of critical facilities for at least 2 weeks. More than 25 percent of property is severely damaged.
Limited	10 to 25%	Some injuries. Complete shutdown of critical facilities for more than one week. More than 10 percent of property is severely damaged.
Negligible	*Less than 10%*	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.

- **Hazard Index –** Some natural hazards have extraordinary impacts, but occur infrequently (for example, severe earthquakes). Other hazards occur annually or several times a decade, but cause less damage (for example, floods). This last column identifies which type of risk each hazard poses for the community. Likelihood is ranked from 1 to 4 with unlikely being a "1" and highly likely being a "4". Location is ranked from 1 to 3 with small location receiving a "1" and large location receiving a "3". Impact is ranked from 1 to 4 with negligible events equating to "1" and catastrophic events equating to "4". High likelihood, high impact hazards should rank as primary objectives.

Table 2 "Hazard Identification and Analysis for Buncombe County" summarizes this process for our community.

Table 2
Hazard Identification and Analysis for Buncombe County

Hazard	**Likelihood of Occurrence** (i.e., highly-4, likely-3, possible-2, unlikely-1)	**Location** (i.e., large-3, medium-2, small-1)	**Impacts** (i.e., catastrophic-4, critical-3, limited-2, negligible-1)	**Hazard Index** (i.e., rank by combining how much impact & how frequently this hazard affects your community)
Severe Winter Storm	Likely (3)	Large (3)	Limited (2)	8
Utility Failure	Possible (2)	Medium (2)	Critical (3)	7
Flooding	Highly (4)	Small (1)	Limited (2)	7
Drought	Likely (3)	Medium (2)	Limited (1)	6
Hazardous Materials	Highly (4)	Small (1)	Negligible (1)	6
Landslide	Highly (4)	Small (1)	Negligible (1)	6
Dam Failure	Possible (2)	Small (1)	Limited (2)	5
Earthquake	Likely (3)	Small (1)	Negligible (1)	5
Wildfire	Likely (3)	Small (1)	Negligible (1)	5
Tornado	Possible (2)	Small (1)	Negligible (1)	4

Buncombe County identified several hazards that threaten our jurisdiction to varying degrees. These hazards were identified through an extensive process that utilized input from Risk Assessment Sub-committee members, State and local data of past events, and the National Climatic Data Center's Storm Events Database. This analysis revealed that the municipal jurisdictions within Buncombe County face the same hazards as the unincorporated areas of the County.[2] Hazard maps are included for the 100-year flood plain, areas above 3,000 feet in elevation (increased vulnerability to winter storms), land stability index, and wildfire. Those are the only hazard areas that we are capable of mapping at this time. As we add additional and/or improved data layers to our GIS database we may be capable of producing additional hazard maps in future additions of this document. For detailed information on weather events from 1990 to April 30, 2011 see Appendix B.

Earthquake

An earthquake is a sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. The forces of plate tectonics have shaped the earth over millions of years as the huge plates that form the earth's surface move slowly over, under, and past each other. Generally this movement is gradual but, at other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free causing the ground to shake. Ground shaking from earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge, destructive ocean waves (tsunamis). Earthquakes strike suddenly, without warning. Earthquakes can occur at any time of the year and at any time of the day or night. (www.fema.gov/diz01/equakes.htm).

Earthquakes have occurred that were centered in Buncombe County in 1916 (Mag. 5.5, MMI VII) and 1957 (Mag. 3.7, MMI VI). There is no record of significant damage for either event. Earthquakes have occurred that were centered in surrounding counties in 1957 (McDowell County – Mag. 4.1, MMI VI), 1957 (Jackson County – Mag. 4.0, MMI VI), 1981 (Henderson County – Mag. 3.5, MMI VI), 2002 (Madison County – Mag. 2.2), 2005 (Madison County – Mag. 3.8), 2007 (Rutherford County – Mag. 2.8), and 2009 (Henderson County – Mag. 2.5). There is no record of significant damage for any of these events. See Appendix C for explanation of the Richter Magnitude Scale. Buncombe County lies within the Eastern Tennessee Seismic Zone which extends from Charleston, SC northwest into eastern Tennessee the curves northeast to central Virginia. This region has the potential to produce an earthquake of significant intensity in the future (NCDEM: Local Hazard Mitigation Planning Manual, November 1998). Geographically the entire county could potentially be affected by earthquakes. Based on past incidents and NCDEM classification, an earthquake having a negligible impact on a small area for Buncombe County is likely to occur. Therefore, earthquake is assigned a hazard index of 5 out of a possible 11.

[2] When the initial Hazard Mitigation Plan was written the Towns of Biltmore Forest and Montreat did not have a mapped Special Flood Hazard Area (100-year Floodplain). Since that time the area has been restudied and our maps have been updated. All municipal jurisdictions now have a mapped Special Flood Hazard Area and participate in the National Flood Insurance Program.

Tornado

A tornado occurs when a rapidly rotating funnel-shaped cloud extending downward from the base of a severe thunderstorm comes into contact with the ground or any objects on the ground. (NOAA Definitions and Preparedness Page – www.nws.noaa.gov/er/okx/Preparedness.html). Since tornadoes strike with little or no warning, once a tornado watch or warning is issued, it is too late to protect your home and belongings (www.fema.gov/projectimpact). Because the mountainous areas of Western North Carolina disrupt the inflow of air near the surface of squall lines and individual thunderstorms, organized thunderstorm activity, and , consequently, tornadic activity, is less in this region than in the eastern part of the state (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

Minor tornadoes occurred in Buncombe County in 1976, 1977, 1993 and 1999. See Appendix B for more information about these events. All past occurrences were F0. For an explanation of the Fujita/Pearson Scale see Appendix C. Geographically the entire county could potentially be affected by tornadoes. Based on past incidents and NCDEM classification, a tornado having a negligible impact on a small area of Buncombe County is a possible occurrence. Therefore, tornadoes are assigned a hazard index of 4 out of a possible 11.

Flood

A flood is the inundation of a normally dry area caused by high flow, or overflow of water in an established watercourse, such as a river, stream, or drainage ditch; or ponding of water at or near the point where the rain fell. This is a duration type event with a slower onset than flash flooding, normally greater than 6 hours. "Flash Flooding" is flooding which follows within a few hours (usually less than 6 hours) of heavy or excessive rainfall, dam or levee failure, or the sudden release of water impounded by an ice jam. (NOAA *Glossary of Hydrologic Terms*).

Buncombe County experienced major flooding in 1916, 1940, 1976, 1977, 1982, and 2004 (2 separate events occurred 10 days apart). See Appendix B for more information about these events. Minor flooding events have occurred almost annually. All past occurrences were characterized as at least 100-year events and likely 500-year events in some areas. Data from the most recent flooding event (2004) indicates a maximum recorded flood depth of 15 feet or less. Based on past events and NCDEM classification, a flood having a limited impact on a small area of Buncombe County is highly likely to occur. Therefore, flooding is assigned a hazard index of 7 out of a possible 11. A map of the 100-year flood plain is included in the section entitled "Vulnerability Analysis".

Severe Winter Storm

Severe Winter Storms can include various combinations of the following factors: snow, sleet, ice, or freezing rain; strong winds; and extreme cold. Accumulations of snow and ice can collapse buildings, bring down power lines, and make travel treacherous. Strong winds can knock down trees and utility poles. Sustained winds of 35 miles per hour combined with snowfall produce blizzard conditions with low visibility (1/4 mile or less), severe drifting, and dangerous wind chills. Prolonged exposure to the extreme cold of winter storms can lead to frostbite or hypothermia and become life-threatening. (NOAA *Winter Storms: The Deceptive Killers – A Guide to Survival*, November 1991).

Severe Winter Storms occurred in 1977, 1993, 1998, and 2009. See Appendix B for more information about these events. The greatest snow depth at any one time during the period of record was 20 inches recorded on

March 13, 1993. However, anecdotal reports indicate depths of 2 to 3 feet in some areas of the county for that event. Minor events causing problems in isolated areas of the County occur almost every year. Snow accumulation tends to be greater in areas above 3,000 feet in elevation. Based on past events and NCDEM classification, a severe winter storm having a limited impact over a large portion of Buncombe County is likely to occur. Therefore, severe winter storms are assigned a hazard index of 8 out of a possible 11. A map indicating areas above 3,000 feet in elevation is included in the section entitled "Vulnerability Analysis".

Landslide

A Landslide is the descent of a mass of earth and rock down a slope. A Landslide may be caused when water from rain and melting snow sinks into the earth on the top of a slope, seeps through cracks and pores in underlying sandstone, and then encounters a layer of slippery material, such as shale or clay, inclined toward the valley. If the support is sufficiently weakened a mass of earth and rock slides down along the well-lubricated layer. Landslides may also be triggered by earthquakes (encarta.msn.com). The steep slopes, fragile soils, and acid producing rock formations of Western North Carolina place Buncombe County at high risk of a landslide. In September 2004 intense rainfall from the remnants of Hurricanes Frances and Ivan triggered at least 400 landslides throughout western North Carolina. Following these events the North Carolina Department of Environment and Natural Resources conducted a field study to document the number, location and extent of previous landslides in Buncombe, Haywood, Henderson, Jackson, Macon, and Watauga Counties. This study revealed 1,253 landslide features throughout Buncombe County (314 landslides and 938 landslide deposit areas). According to a North Carolina Landslide Fact Sheet produced after this study ". . . landslide deposits are where significant volumes of unconsolidated soil and rock fragments have accumulated over time, from several processes such as debris flows, debris slides, and rock falls. Most mapped deposits are likely prehistoric, but have yet to be verified by modern age-dating techniques." According to NCDENR data most recent significant landslide events include: a storm event in November of 1977 that triggered over 60 debris flows in the Bent Creek area; a debris flow in the Starnes Cove community triggered by the remnants of Hurricane Ivan in September of 2004 that destroyed one home, damaged 2 vehicles, destroyed the garage of another home and damaged the road; and a rockslide that caused significant damage to the Broad River Fire Department in July of 2005 during the remnants of Tropical Storm Cindy. The debris deposit volume from the 2004 Starnes Cove event was estimated to be 7,500 to 10,000 cubic yards of earthen material. The volume estimate did not include debris from the damaged and destroyed structures. Volume estimates were not available for the 1977 and 2005 events.

Based on NCDEM classification, a landslide having a negligible impact on a small area of Buncombe County is highly likely to occur. Therefore, landslides are assigned a hazard index of 6 out of a possible 11.

Wildfire

A wildfire is the uncontrolled burning of woodlands, brush, or grasslands. The potential for the threat of wildfire is dependent upon surface fuel characteristics, recent climate conditions, current meteorological conditions and fire behavior. Fall is a particularly dangerous time for wildfire because of the dry vegetation produced by hot dry summers (NCDEM: Local Hazard Mitigation Planning Manual, November 1998). Ignition can be caused by a discarded cigarette butt, improperly extinguished campfire, stray spark, lightening, etc. Once a wildfire threatens a community, it's often too late to protect homes and belongings. In areas that have been burned by wildfires, some houses remain while the neighboring houses are destroyed. These houses are misnamed "miracle houses". These houses often survive, not because of a miracle, but because of

specific steps the owner has taken, in regard to landscaping and location of trees and bushes, for the purpose of creating "defensible space" should a wildfire occur (www.fema.gov/projectimpact).

According to data from the National Climatic Data Center (Appendix) there were no major wildfires in Buncombe County. However, information from the North Carolina Forest Service indicates that wildfires occurred in Buncombe County in 1986 (25 acres), 1999 (500 acres), 2006 (54 acres), 2007 (187 acres), 2008 (287 acres), 2009 (98 acres) and 2010 (34 acres). Based on past incidents and NCDEM classification, a wildfire having a negligible impact on a small area of Buncombe County is likely to occur. Therefore, wildfire is assigned a hazard index of 5 out of a possible 11.

Hazardous Materials

Two major Interstate Highways, I-26 and I-40, pass through Buncombe County. Tanker trucks carrying hazardous materials travel these highways on a continual basis, bringing with them the chance of a hazardous materials incident such as a spill. Many industries in the area also maintain quantities of hazardous materials on hand for use in their daily business. Such use also carries with it the risk of a spill.

A review of events since 1983 reveals multiple hazardous material incidents each year. However, the majority of these events were minor incidents of limited consequence. Based on past events, a hazardous materials incident having a negligible impact on a small area of Buncombe County is highly likely to occur. Therefore, hazardous materials incidents are assigned a hazard index of 6 out of a possible 11.

Utility Failure

Utility failure is an interruption in electrical, telephone, water, or sewer service. Failure of utilities can occur as a consequence of many of the hazard events previously discussed. Utility failure can also happen as a "stand-alone" event due to technical problems within the utility company itself. Outages may be confined to small areas within the County, but there is the potential for widespread utility failure which would constitute a disaster in and of itself.

In 1990 the City of Asheville experienced a total loss of telephone service due to technical problems. This incident left over 45,000 customers without telephone service. In 2004 flooding from the remnants of Hurricane Frances wiped out feeder lines from the North Fork Reservoir shutting down the Asheville Water System for five days. This left 100,000 customers without water. These two events are the only major utility failures of record. Geographically the entire county could potentially be affected by utility failure. Based on past incidents a utility failure having a critical impact over a medium sized area of Buncombe County is possible. Therefore, utility failure is assigned a hazard index of 7 out of a possible 11.

Drought/Heat Wave

A drought may be defined as a condition where and when the water supply is deficient enough for a long enough period of time to damage the growth of vegetation, industrial production, or domestic activities. The National Drought Mitigation Center states that "In the most general sense, drought originates from a deficiency of precipitation over an extended period of time, resulting in a water shortage for some activity, group, or environmental sector." Drought may or may not be accompanied by intense heat. This heat not only exacerbates the drought condition by increasing evaporation, it may also lead to health-related illness such as heat exhaustion or heat stroke or aggravate certain medical conditions.

Buncombe County experienced significant drought conditions five times in the past 80 years. The droughts occurred in the mid-1930s, 1998, 2002, 2007 and 2008 (NOAA). Significant drought events have occurred three times in the past ten years. The drought event in 2007 reached Exceptional status (according to the Palmer Drought Severity Index) on August 21, 2007. For an explanation of the Palmer Drought Severity Index see Appendix C. Geographically the entire county could potentially be affected by drought and/or heat wave. There is the likely occurrence of a drought having a limited impact over a medium size area of Buncombe County. Therefore, drought is assigned a hazard index of 6 out of a possible 11.

Dam Failure

A dam failure occurs when the structure retaining the water fails to function in the manner for which it was designed and constructed. The failure may vary in time from a prolonged deterioration of the structure to an almost instantaneous failure in which the dam gives away completely and without warning. Dam failure may be caused by: overtopping, structure failure (or damage), or seepage. There are many dams in the County that are too small to come under the jurisdiction of the State Dam Safety Law. A dam must be fifteen feet high and be capable of impounding at least ten acre-feet, or be classified as high hazard potential to be regulated. High hazard potential means that human life could be lost if the dam were to fail, major infrastructure would be lost, or significant property damage would be done. This designation in no way implies that the
dam is deficient or likely to fail (NCDENR).

Buncombe County has 32 dams classified as high hazard potential. While these dams are scattered throughout the county the highest level of risk is along the Swannanoa River below the Bee Tree and North Fork Dams. This area extends along US 70 Highway from Swannanoa to Biltmore. In a breech involving the ¾ Probable Maximum Precipitation the maximum flood depth within the inundation area would be 58.5 feet. These dams have the greatest impoundment and, therefore, larger inundation areas. The only dam failure to cause significant damage occurred when the Bear Wallow Dam along Newfound Creek failed on February 22, 1976. The private earthen dam broke at 2:30 am destroying one home and killing a family of 4. It is possible that a dam failure having limited impact over a small area could occur. Therefore, dam failure is assigned a hazard index of 5 out of a possible 11.

NOTE: Because Buncombe County's risk of Tsunamis is extremely slight, they are not analyzed in this document.

Table 2 "Hazard Identification and Analysis" ranks the events described above by assigning each one a Hazard Index number. The Hazard index number is based on combining the Likelihood of Occurrence, Location, and Potential Impact. The Hazard Index indicates that Buncombe County's major threats come from Severe Winter Storms, Utility Failure, and Flooding.

Vulnerability Analysis

For the purposes of this document, vulnerability to a natural hazard is defined as the extent to which people will experience harm and/or property will be damaged because of a particular hazard. In fact, a hazard area is only a problem when human activities get in the way of the impacts that occur as a matter of course during and after a natural hazard (NCDEM: Local Hazard Mitigation Planning Manual, November 1998). All areas of the county face some level of risk from the aforementioned hazards. The table below indicates the number of structures throughout the unincorporated county and municipal jurisdictions. This table was created using data from the Buncombe County Tax Office on the total number of structures (residential, commercial, or industrial) located in each jurisdiction.

Jurisdiction	Residential	Commercial	Industrial
Buncombe (unincorporated)	61,187	2,190	125
Asheville	29,689	4,712	120
Biltmore Forest	712	30	0
Black Mountain	3,577	402	9
Montreat	645	26	0
Weaverville	1,727	132	12
Woodfin	2,258	284	15

In an effort to conduct a more detailed Vulnerability Analysis, Buncombe County's Emergency Planner worked with staff from the Renaissance Computing Institute's (RENCI) engagement center at the University of North Carolina-Asheville to develop the concept for a multi-hazard risk tool to aid in the update of the Hazard Mitigation Plan. In the previous version of the plan flood damage was the only hazard vulnerability assessed in terms of potential dollar values. RENCI staff sought out existing data sources that would allow additional hazard areas to be overlain with tax parcels and developed a multi-hazard risk tool that produces maps of the areas as well as reports of numbers and values of parcels in the defined hazard areas. Data sources were found for landslides and wildfire. A layer was created to show parcels above 3,000 feet in elevation to identify properties that may be more vulnerable to winter storms. As in the previous version of this plan Flood Insurance Rate Maps were used as the basis for analyzing flood vulnerability. The data source for each hazard is discussed in the subsequent subsections.

Flood Vulnerability

To assess vulnerability to flooding the May 28, 2010 Buncombe County tax parcels were intersected with the floodway as defined by the North Carolina Flood Mapping Program. An SQL query was then used to obtain the parcel count, total acres, and market value, classified by occupancy (vacant/occupied) and parcel type (agricultural, commercial, industrial, residential, and other). Note that "agricultural" includes horticultural and forested lands, and "other" includes parcels classed for community services, parks, public service, and recreation. All parcels that intersect the floodway at any point were tagged as being in the floodway (for parcels consisting of multiple acres this could mean that a parcel is classified at great flood risk when the majority of the land, and any structures, is actually outside the floodway). The same method (subject to the same limitations) was used to determine the number, types and values of parcels in the 100-year floodplain. The data does not take into account base flood elevation or finished floor elevations which are integral to determining potential flood damage. Many structures within the floodplain pre-date Buncombe County's

Flood Damage Prevention Ordinance and initial Flood Insurance Rate Maps and finished floor elevations are not available. Floor elevation data is also required for calculating benefit/cost ratios for potential hazard mitigation grant projects. Adding building footprints and finished floor elevations to Buncombe County's GIS data would yield a more accurate count of vulnerable structures and would be a beneficial use of future funding.

This analysis shows a total of 6,842 parcels (98,529.78 total acres or 24.72% of total Buncombe County acreage) with a total market value of $4,227,333,900 located at least partially within the 100-year floodplain. Of these parcels 4,924 are occupied (total value of $3,942,854,200) and 1,918 are vacant (total value of $284,479,700). Of the aforementioned parcels 2,314 (27,403.16 total acres or 6.88% of total Buncombe County acreage) with a total market value of $1,451,418,000 are also located at least partially within the floodway. The floodway is the channel of a river or other watercourse that carries the deepest, fastest water downstream. Parcels in this area are at the greatest risk of flood damage. Of the floodway parcels 1,658 are occupied (total value of $1,352,533,200) and 656 are vacant (total value of $98,884,800). A table showing the breakdown of parcel type, building values, improvement values, and land values is included in Appendix D.

The most recent Flood Insurance Rate Maps and Flood Insurance Study were adopted on January 6, 2010. The County's Flood Damage Prevention Ordinance was also updated at that time. The changes to the Ordinance include prohibiting new habitable structures in the floodway; requiring elevation certificates to be completed for structures built in the 100-year floodplain; increasing the freeboard requirement to 2'; and strengthening the appeals and protest procedures.

Within the new maps there are over 190 miles of detailed study area; 1160 miles of limited detailed study area; and 817 miles of redelineated streams. The County maps show 10,772 base flood elevations established on a total of 145 FIRM panels. The County's A zones have all become AE, with the exception of Lake Julian. With this update, all waterways mapped in the 100-year floodplain by limited detail study methods have non-encroachment widths that are regulated as floodways, but are not physically shown on the flood maps. Cross section data exists on the map panels, and non-encroachment widths for these cross sections are shown in the Flood Insurance Study.

Winter Storm Vulnerability

To generate this report, the May28, 2010 Buncombe County tax parcels were used as a starting point. ArcGIS from ESRI was used to intersect the parcels with the LIDAR elevation file for Buncombe County. All parcels that contained at least one elevation value of 3000 feet or above were tagged as being in the winter storm hazard area. A SQL query was then used to get the parcel count and total acres, classified by occupancy (vacant/occupied) and parcel type (agricultural, commercial, industrial, residential, and other). Note that 'agricultural' includes horticultural and forested lands, and 'other' includes parcels classed for community services, parks, public service, and recreation.
This report is conservative because it treats an entire parcel at risk if any part of it is over 3000 feet; therefore the parcel count and total acreage are higher than might be the case if other factors were considered. These other factors include locations of buildings on the parcels; expected ice or snow accumulation at various parts of the parcel; and the probability of winter storms affecting the parcel. Furthermore, the elevation cutoff of 3000 feet is not based on any risk analysis but rather is the cutoff value chosen by Buncombe County for finding parcels at risk from winter storms.

This assessment indicated a total of 5,141 parcels (153,677.45 total acres or 38.56% of total Buncombe County acreage) with a total market value of $2,701,084,700 are greater than 3,000 feet in elevation. Of these parcels 1,967 are occupied (total value of $2,148,743,100) and 3,174 are vacant (total value of $552,341,600). A table showing the breakdown of parcel type, building values, improvement values and land values is included in Appendix D.

Landslide Vulnerability

To assess vulnerability for landslides the May 28, 2010 Buncombe County tax parcels were intersected with a land stability index layer created by the State Geologist's Office of NC DENR. This layer is a raster layer with values indicating for a given area whether those forces conducive to brining the land down are less or more than the forces conducive to holding the land up for a hypothetical 125mm rainfall event. All parcels that intersect any of the unstable areas were then identified. Unstable Areas have a 100% probability of instability. An SQL query was then used to get the parcel count, total acres, and market value, classified by occupancy (vacant/occupied) and parcel type (agricultural, commercial, industrial, residential, and other). Note that "agricultural" includes horticultural and forested lands, and "other" includes parcels classed for community services, parks, public service, and recreation.

The field work in the preparation of the land stability index layer was not conducted at the parcel level. However it is our current "best available data". If any part of a parcel intersected the unstable area this analysis classified the entire parcel as unstable. The data shows unstable *areas* of Buncombe County indicating that individual parcels in the indicated areas are potentially at risk of impact from a landslide. Confirming the risk for individual parcels would require more detailed analysis and would be a good use of future mitigation funds. This assessment revealed a potential total of 7,618parcels (214,497.75 total acres or 53.84% of total Buncombe County acreage) with a total tax value of $5,475,920,829 classified as "Unstable Area". Of these parcels 4,054 are occupied (total tax value $4,713,992,079) and 3,564 are vacant (total tax value $761,928,750). A table showing the breakdown of parcel type, building values, improvement values and land values is included in Appendix D.

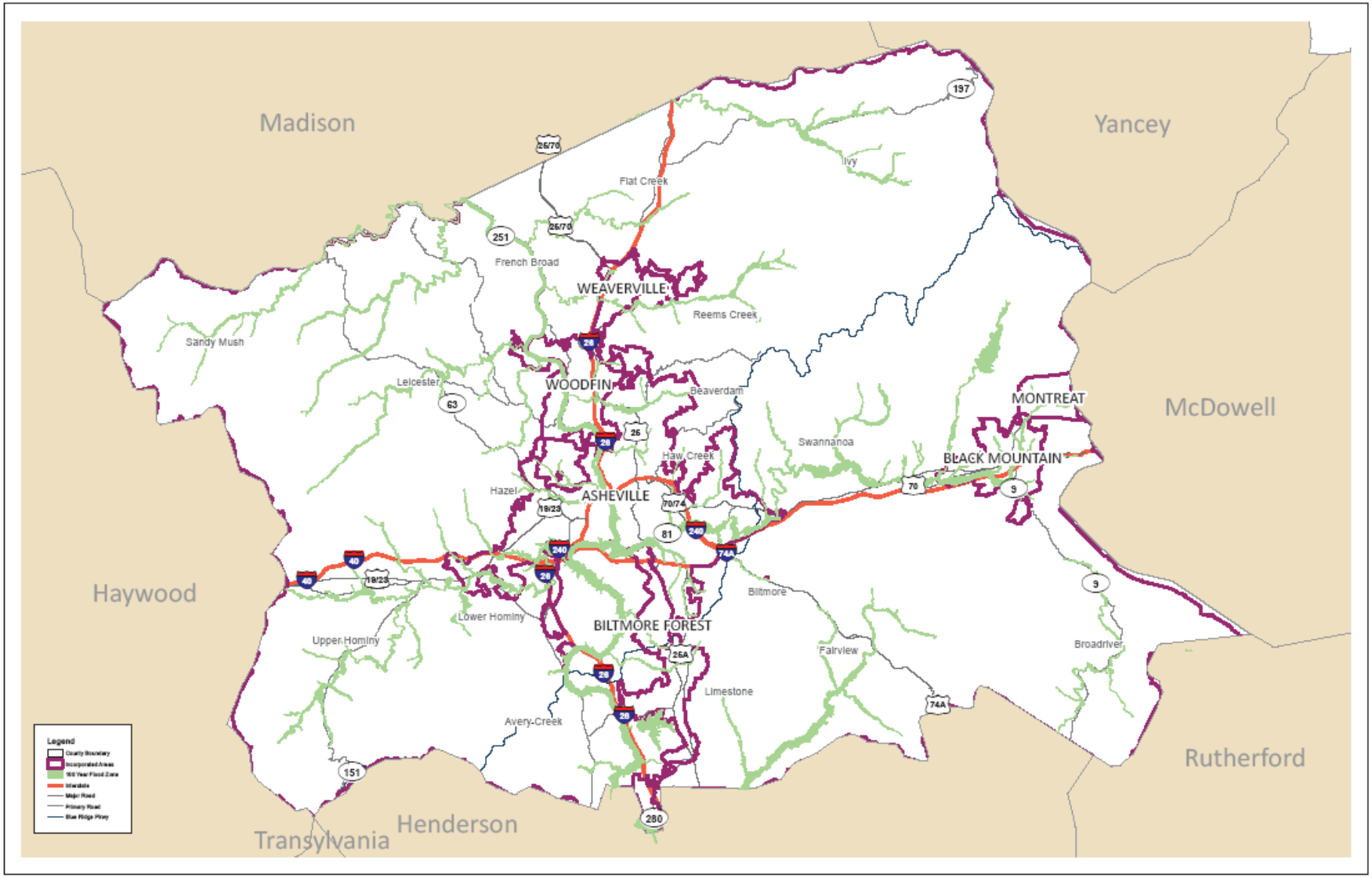
Wildfire Vulnerability

To assess vulnerability to wildfire the May 28, 2010 Buncombe County tax parcels were intersected with a layer of wildfire risk generated by the Southern Group of State Foresters for the Southern Wildfire Risk Assessment Project. This layer called the Level of Concern Index is a raster layer with values ranging from 0 to 100. The index is determined by using the probability of any given acres burning, the expected fire size, the projected rate of fire spread, the expected suppression difficulty (based on fuel type, topography, and soil type), and the presence of important structures (transportation, infrastructures, plantations, and urban interface.). All parcels that intersect any area where the level of concern was 78 of greater were tagged as being in the high wildfire risk area. An SQL query was then used to get the parcel count, total acres, and market value, classified by occupancy (vacant/occupied) and parcel type (agricultural, commercial, industrial, residential, and other). Note that "agricultural" includes horticultural and forested lands, and "other" includes parcels classed for community services, parks, public service, and recreation. This report is conservative because it treats and entire parcel at risk if any part of it intersects the high wildfire risk area; therefore the parcel count and total acreage are higher than might be the case if other factors were considered, such as locations of buildings within the parcel boundaries. Additionally temporal changes have occurred since these data sets were collected in 2006 and some parts of this data may no longer represent present surface conditions. However this is our current "best available data" in terms of assessing potential wildfire risk.

This assessment indicated a total of 7,783 parcels (63,311.3 total acres or 15.89% of total Buncombe County acreage) with a total market value of $1,890,688,300 in the "High Wildfire Risk" classification. Of these parcels 5,960 are occupied (total value of $1,704,230,000) and 1,823 are vacant (total value of $186,458,300). A table showing the breakdown of parcel type, building values, improvement values and land values is included in Appendix D.

In a hazard event these numbers do not represent the total loss potential for these properties. Total Market Value accounts for the value of the property and the structures located therein. Occupied residential properties also have the potential for damage to personal property such as household contents and motor vehicles. Occupied agricultural properties possess the same personal property loss potential as residential properties and also include potential losses in terms of damage to livestock, crops, and equipment. Occupied commercial and industrial parcels may experience great losses in damage to equipment and inventory.

The maps on the following four pages include: the 100-year Flood Plain, Areas Above 3,000 feet in Elevation, General Land Uses, and the Trend Line Growth Alternative (projected development based on current trends). The General Land Uses and the Trend Line Growth Alternative maps were taken from Buncombe County's Comprehensive Land Use Plan Update (2006). The 2006 Comprehensive Land Use Plan is our most accurate source of land use data. Because these two maps are copies taken directly from the Land Use Plan, and not produced from or included in the County's GIS data layers, we are not capable of overlaying the hazard areas on the land use maps.

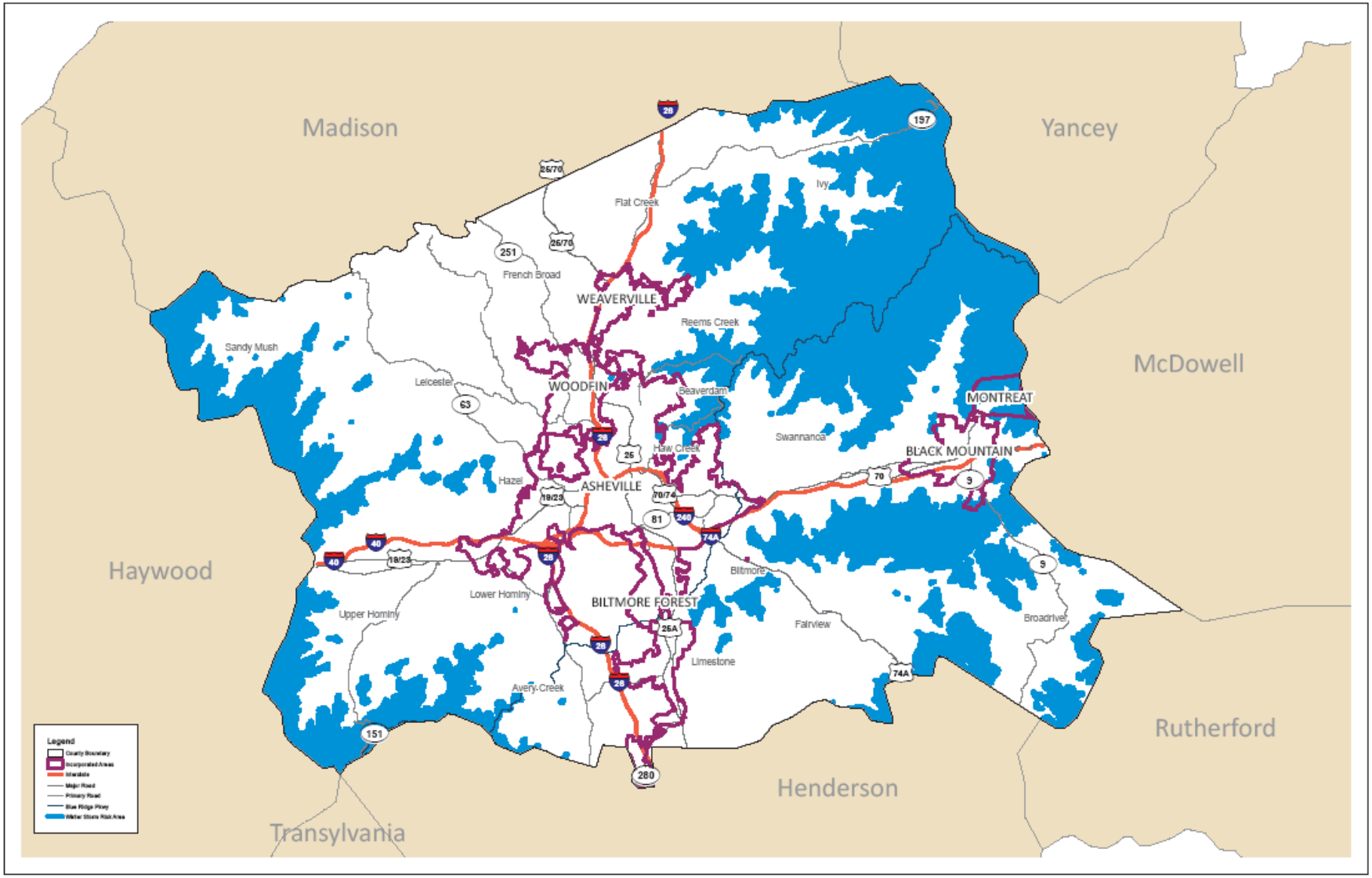


Produced By: Buncombe County GIS Office, August 2010

100 Year Flood Zone

Buncombe County, North Carolina

0 1.25 2.5 5 7.5 10 Miles

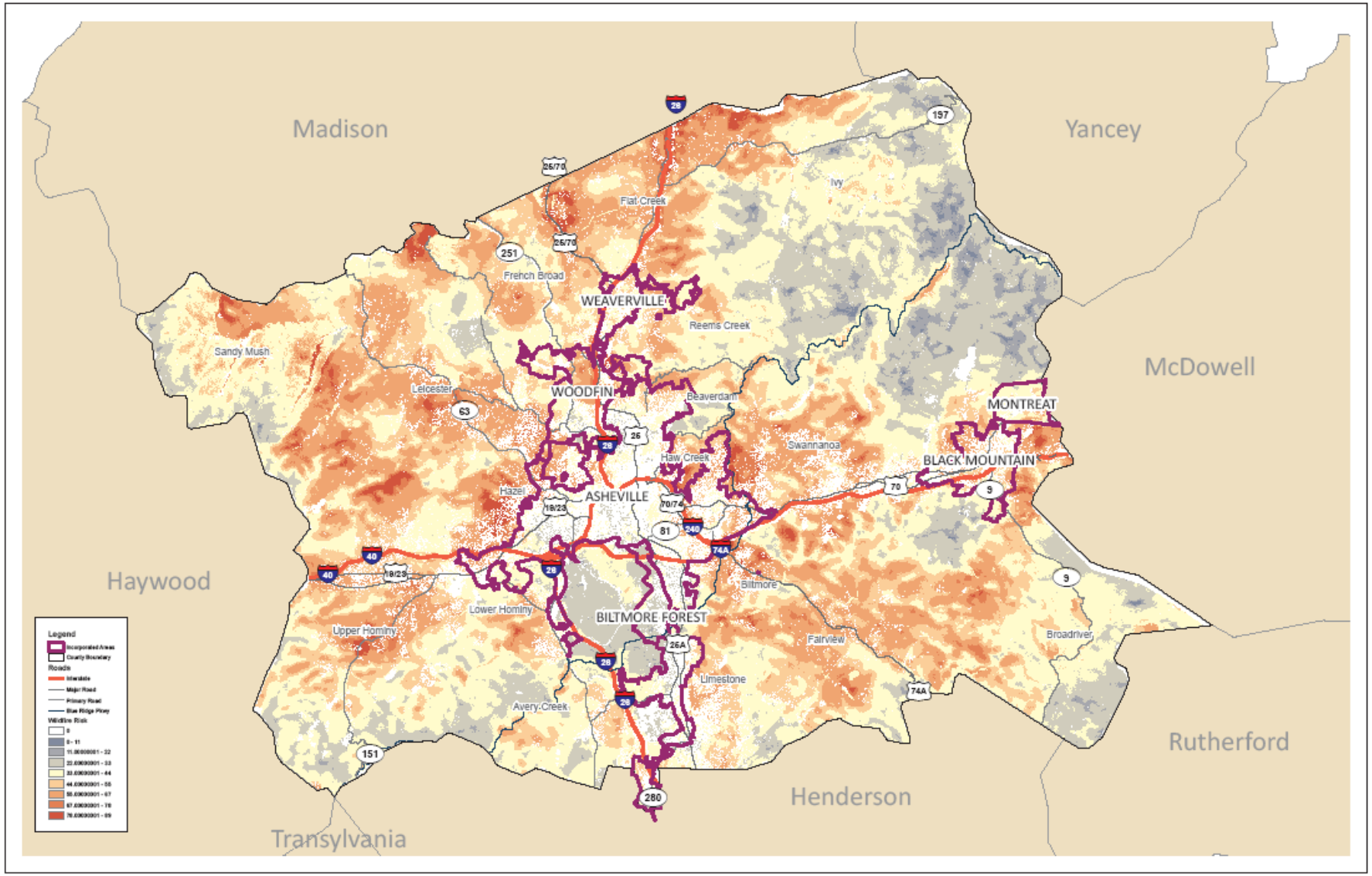


Produced By: Buncombe County GIS Office, August 2010

Winter Storm Risk

Buncombe County, North Carolina

0 1 2 4 6 8 Miles

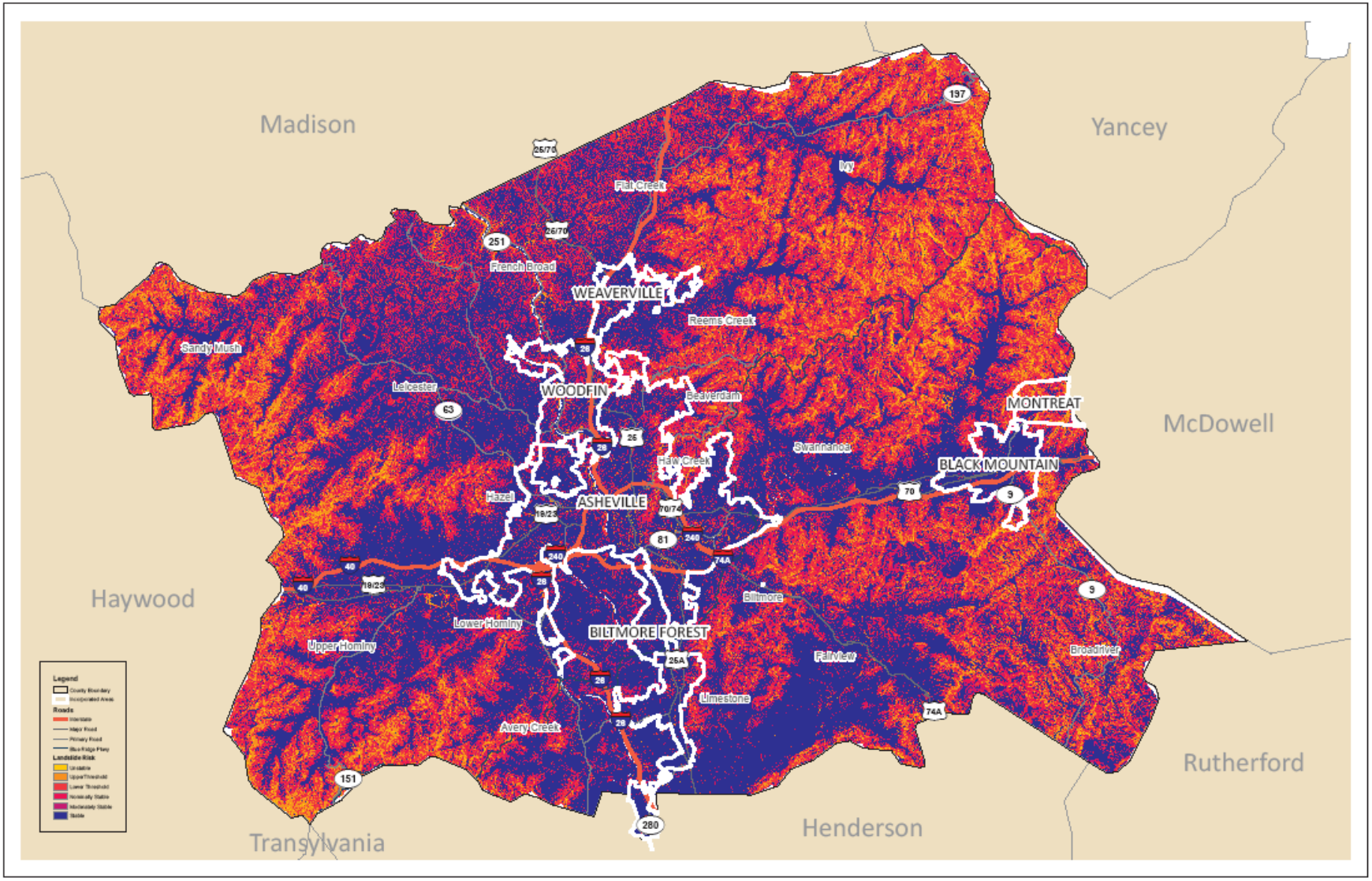


Wildfire Risk

Buncombe County, North Carolina

Produced By: Buncombe County GIS Office, August 2010

0 1.25 2.5 5 7.5 10 Miles

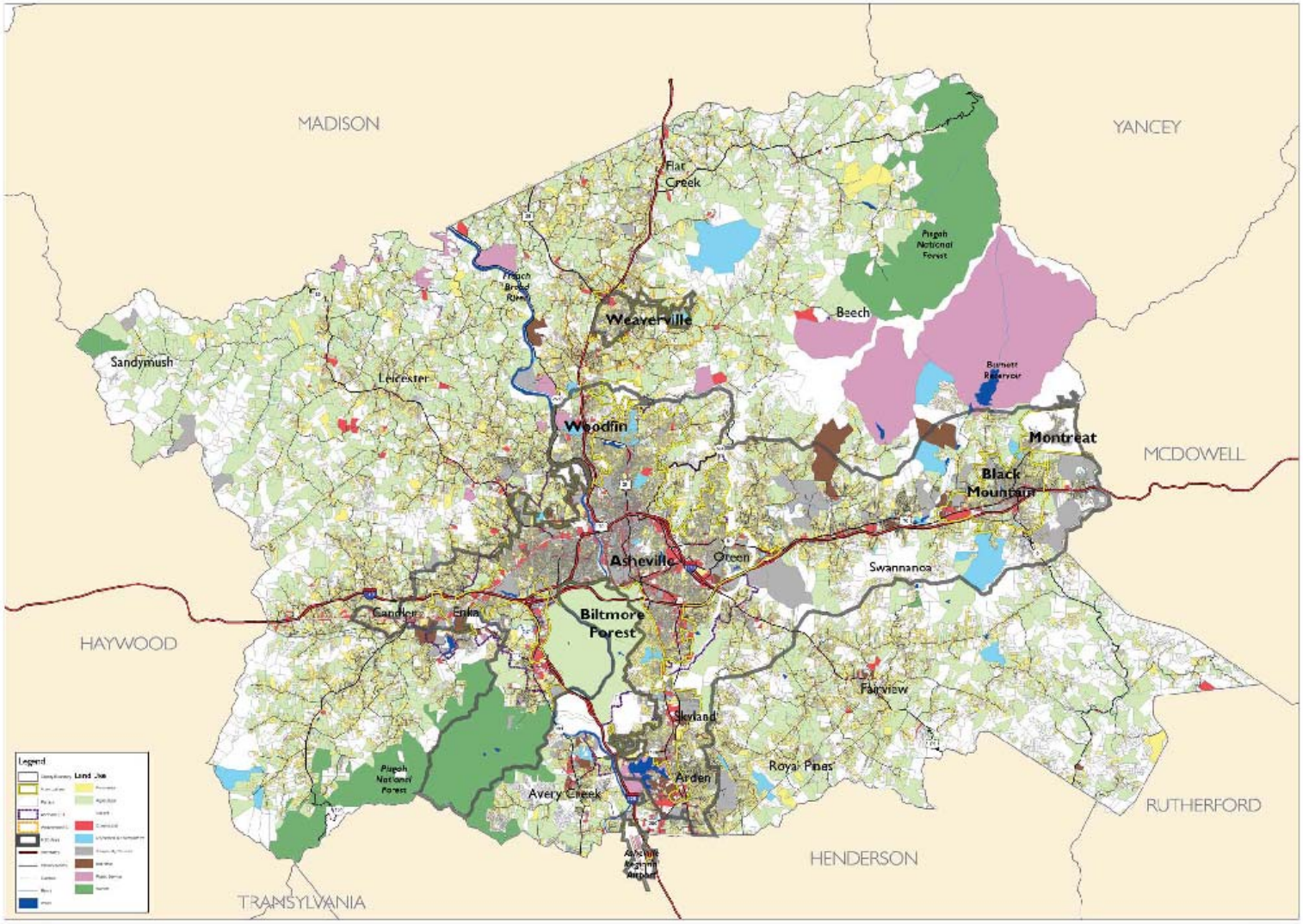


Land Stability

Buncombe County, North Carolina

Produced By: Buncombe County GIS Office, August 2010

0 1.25 2.5 5 7.5 10 Miles



LandDesign.

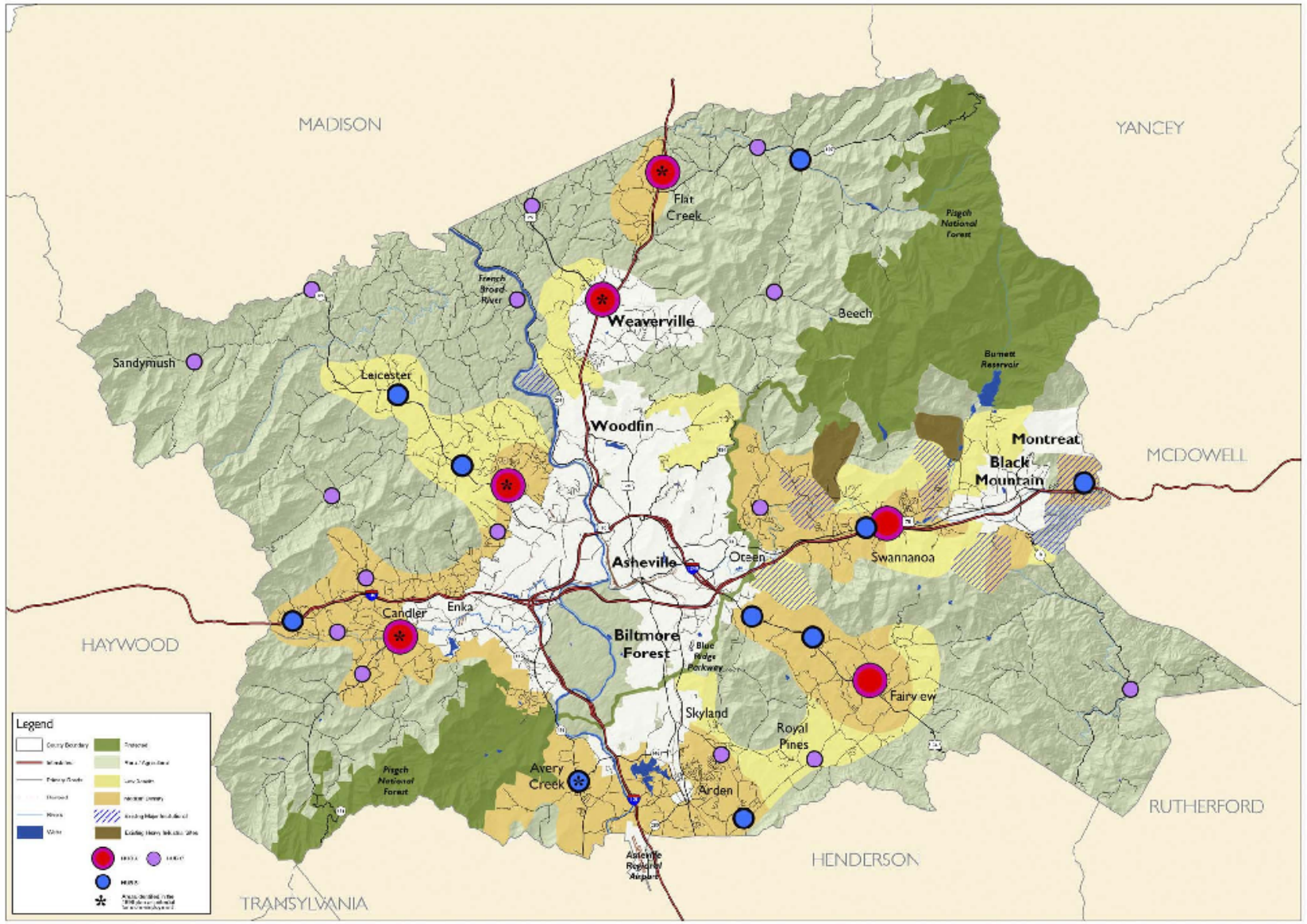
Existing Land Use Map

Comprehensive Land Use Plan Update

Buncombe County, North Carolina

Map 1

map 10



LandDesign.

Proposed Land Use Map

Comprehensive Land Use Plan Update

Buncombe County, North Carolina

As part of this Vulnerability Analysis, critical facilities were identified and mapped (see Appendix E). The Federal Emergency Management Agency (FEMA) defines a critical facility 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 were identified as: daycare centers, fire and police stations, EMS bases, hospitals, schools, electric substations, sewage pump stations, and telephone switch stations.

The maps appear to indicate that many of these facilities are located within hazard areas. There are two reasons for this: 1) the maps are printed in 8 ½ X 11 to fit easily into this document. Printing the maps in a larger size eliminates most of this problem; 2) the data points used in creating this map are based on entire parcels of land. When the symbols identifying the facilities are plotted on the map their placement is based on the center of the parcel and not on the actual location of the structure. This often makes it appear that structures are located within the floodplain when, in reality, they are not. Buncombe County's GIS database is currently under development. As new data layers are created (such as building footprints) more information will be available for inclusion in analyses such as this.

The only facilities found in the floodplain were two pump stations and the treatment plant for Metropolitan Sewerage District. Further investigation revealed that both of the pump stations, as well as the structures comprising the treatment plant, are elevated on fill and are above the 100-year (i.e. base) flood elevation.

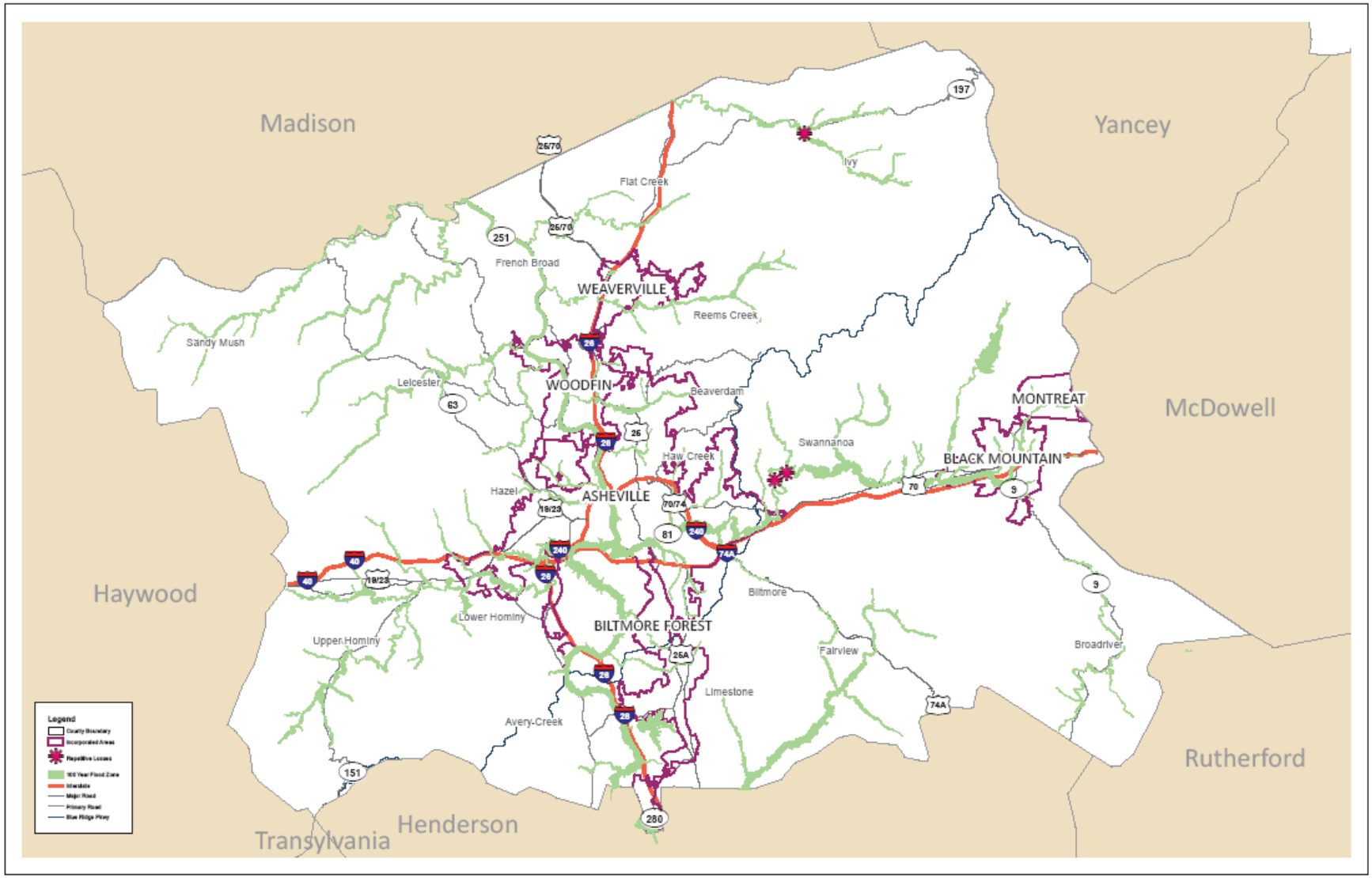
Repetitive Loss Properties

Repetitively damaged structures were also identified and mapped as part of this analysis. The map was created using information from the National Flood Insurance Program (NFIP) repetitive loss list. Properties are placed on this list once there have been two paid insurance claims for $1,000 or more within a ten year period. A total of six properties are shown, four within the County's jurisdiction (all residential), one within the City of Asheville (commercial), and one incorrectly listed. Of the four properties within the County's jurisdiction, one has been acquired by the County through FEMA's Hazard Mitigation Grant Program (HMGP). As per HMGP requirements the structure that was located on this property has been demolished and the property will be held as open space in perpetuity. The remaining three properties within the County have a total value of $653,700. The average value of each property is $217,900. In a disaster event potential losses could be greater because of contents. Between 1994 and 2004 these three properties accounted for eight claims totaling $129,620.62 or an average of $16, 202.58 per claim. These properties will be prioritized for future mitigation funds. Should Hazard Mitigation Grant Program funds become available owners of these properties will be notified of their status on the Repetitive Loss List and asked if they are interested in participating in the acquisition program. The

property that was in the City's jurisdiction had the original structures razed and was filled in to be above base flood elevation prior to the construction of a new structure. The property that is incorrectly listed is near the border of Madison and Buncombe Counties. A review of 911 Street Addressing records shows that the property is located in Madison County.

Based on the criteria noted above for a property to be placed on the NFIP Repetitive Loss List, it is possible for properties to incur repetitive flood damage and not appear on this list. This could occur if the property was not insured through the NFIP or if the property had multiple insurance claims that were under the $1,000 threshold or more than ten years apart. While the County does not maintain records of this type, it is common knowledge that the businesses located on Swannanoa River Road, off of Biltmore Avenue, have experience multiple flooding events. This area is in the City of Asheville's jurisdiction.

The mapped properties, as well as those discussed on Swannanoa River Road could be prioritized for acquisition if Hazard Mitigation Grant Program funds are available to Buncombe County and/or the City of Asheville in the future.



Produced By: Buncombe County GIS Office, August 2010

Repetitive Flood Losses

100 Year Flood Zone

Buncombe County, North Carolina

0 1.25 2.5 5 7.5 10 Miles

Community Capability Assessment

A Community Capability Assessment gages the jurisdiction's current position in relation to hazard mitigation as well as its ability to implement future hazard mitigation measures. This step in the Hazard Mitigation Planning process evaluates current ordinances, programs, policies, and procedures that relate to hazard mitigation in order to determine their strengths and weaknesses. Strengthening existing policies and programs, and/or implementing new ones, requires the examination of the community's legal, institutional, political, fiscal, and technical capabilities (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

In general, local governments possess only that legal authority that is delegated to them by their home state. This principle, known as "Dillon's Rule", applies to all of North Carolina's political subdivisions. North Carolina grants a wide variety of powers to its local jurisdictions. However, local regulations enacted within the parameters of the State's enabling authority must conform to the constitutional framework, both state and federal, within which all acts of government must take place. Examples of such limitations include the Fifth Amendment to the United States Constitution, and its State counterpart, that require private property be taken for public purposes only after payment of just compensation and the Fourteenth Amendment requiring that all governmental activity be undertaken only within the procedural requirements of due process of law (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

All local government powers fall into one or more of the following categories: regulation, acquisition, taxation, and spending. Regulatory powers granted by the State of North Carolina to its localities include general police power, building codes and building inspections, and land use. Land use regulations can be further divided into zoning, floodway regulation, planning, and subdivision regulation (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

Review of Policies, Programs & Ordinances

Through the North Carolina Institute of Government, Buncombe County received a grant that enabled a complete review of our community's ordinances, policies, and programs in terms of their ability to support hazard mitigation. A team of interns from the University of North Carolina at Chapel Hill Masters of Public Affairs program conducted the review in the Spring of 2001.

Table 4, Community Capability Review, lists the ordinances and policies that were reviewed from each jurisdiction in conducting the Community Capability Assessment:

Table 3 Community Capability Review

Jurisdiction	Ordinances, Policies and Programs Reviewed
Buncombe County	• Flood Damage Prevention Ordinance* • Subdivision Ordinance • Soil Erosion & Sedimentation Control Ordinance • Watershed Protection Ordinance • Manufactured Home Parks Ordinance • Zoning Ordinances • Land Use Plan • Budget Fiscal Year 2010 – 2011* • Storm Water Ordinance*
City of Asheville	• Administration Ordinance (City Council, Boards, Commissions, and Committees) • Development Ordinance (Partial Copy – Flood Plain Regulations and Erosion & Sedimentation Control) • Stormwater Management Ordinance • Budget Fiscal Year 2000-2001
Town of Biltmore Forest	• Zoning Ordinance • Budget Fiscal Year 2010-2011* • Subdivision Regulations • Soil Erosion and Sedimentation Control Ordinance • Stormwater Management Ordinance • Flood Damage Prevention Ordinance
Town of Black Mountain	• Subdivision Regulations • Zoning Code • Building Regulations* • Flood Plain Regulations*
Town of Montreat	• Subdivision Ordinance • Zoning Ordinance • Montreat Tomorrow Committee: Report & Recommendations
Town of Weaverville	• Subdivision Ordinance • Zoning Ordinance • Emergency Policies & Procedures (Bomb Threats, Hazardous Materials Incidents, Incident Command, Emergency Action Plan) • Water Emergency Operations Plan & Use Restrictions • Weaverville Code – Chapter 10 Environment – 10-1 Storm, Subsurface Drainage Systems • Weaverville Code – Chapter 8 – Civil Emergencies • Steep Slope Development Ordinance* • Grading Ordinance*
Town of Woodfin	• Land Use Regulations (Zoning Ordinance, Subdivision Regulations, Bylaws of the Planning and Zoning Board of Adjustment, Communications Tower Regulations, Sedimentation Control Regulations) • Land Use Plan • Memorandum from Chief of Police Re: Critical Incident Responses • Budget Fiscal Year 2000-2001

*These documents were reviewed by County/Municipal staff only.

Overall each jurisdiction's policies and plans received a favorable review. The following is an excerpt from the interns' final report:

> In general, we found that many communities had already established effective hazard mitigation policies, especially in regards to flooding, erosion/sedimentation control, and stormwater management. Our concerns were focused on the general intent statements for each document, impervious surfaces, other potential hazards, and consistency between the policies of each municipality.
>
> - Hazard mitigation is a relatively new field and many documents did not mention it as a goal of the community. Some documents included health, general welfare, and safety, but we felt that a more explicit mention of hazard mitigation would be highly effective.
> - Impervious surfaces were another area of concern due to the lack of regulations in many towns, especially when towns had established stormwater management, erosion/sedimentation control, and flooding as important issues that were highly regulated.
> - Although some hazards were mentioned in detail, we were concerned that the potential for other hazards was not addressed. Most notably, landslides and severe winter storms were neglected, despite the moderate to high risk of these events in the Buncombe County area.
> - Consistency both within and between policy documents was problematic when the goals of different documents could often be seen as conflicting. For example, Zoning Ordinances generally existed for the community's health, safety, and general welfare, while Land Use Plans were focused on development. These goals can often be in conflict and it is not clear where the community has truly placed its priorities.
> (Will Alexander, Tanya Conklin, Erin McIntyre, and Jim Wright: Community Capability Assessment, May 2001).

Specific recommendations will be discussed in the section entitled "Mitigation Strategies".

Buncombe County is a chartered county that is governed by a five-member Board of Commissioners. The Board of Commissioners appoints a County Manager. The Board of Commissioners is chosen every four years in partisan elections. The Commissioners set policy, determine budgets for County agencies and set property tax rates for the entire County. The County Manager is the chief administrative officer, and prepares and recommends the annual budget. The County Manager is also responsible for program development and personnel management (Buncombe County Budget Fiscal Year 2002). Table 4 "Forms of Municipal Government in Buncombe County" lists the type of government for each of Buncombe County's six municipalities.

Table 4 Forms of Municipal Government in Buncombe County

Municipality	Form of Government	Details
City of Asheville	Council-Manager	Mayor – Elected – 4 year term 6 Council Members – Elected – At Large – 4 year Staggered terms – Non-partisan Primary & General Election
Town of Black Mountain	Council-Manager	Mayor – Elected – 2 year term 5 Aldermen – Elected – At Large – 2 year terms – Non-partisan Primary & General Election
Town of Biltmore Forest	Mayor-Council (Town Administrator)	Mayor – Elected – 2 year term 3 Commissioners – Elected – At Large – 2 year terms – Non-partisan Primary & General Election
Town of Montreat	Mayor-Council (Town Administrator)	Mayor – Elected – 4 year term 3 Commissioners – Elected – At Large – 4 year Staggered terms – Non-partisan Primary & General Election
Town of Weaverville	Council-Manager	Mayor – Elected – 4 year term 5 Commissioners – Elected – At Large – 4 year staggered terms – Non-Partisan Primary & General Election
Town of Woodfin	Mayor-Council (Town Administrator)	Mayor – Elected – 2 year term 6 Aldermen – Elected – At Large – 4 year Staggered terms – Non-partisan Primary & General Election

Taken from Forms of Government of North Carolina Cities by David M. Lawrence. Institute of Government, 1998. Some of the original information updated by Buncombe County Board of Elections.

All emergency management operations for Buncombe County are coordinated by the Buncombe County Emergency Management Department. While cities and towns may elect to have their own emergency management agency, all municipalities within Buncombe County have signed an ordinance designating the county agency as the lead agency for emergency management. The regulatory authority for emergency management in Buncombe County is set forth in the Buncombe County Emergency Management ordinance and by North Carolina General Statute 166-A.

Technical & Fiscal Capability

Buncombe County Emergency Management coordinates all resource needs required during a disaster. Emergency Management also maintains emergency plans for various county departments. Damage assessment is also coordinated through the county emergency management office. In the unincorporated areas of the County damage assessment is handled by Emergency Management staff and/or local fire department personnel; municipalities generally conduct damage assessment via their inspection or fire departments. After a serious emergency or disaster operation, Buncombe County Emergency Management forwards all damage reports to state or federal governments for their consideration.

Buncombe County Emergency Management also coordinates such things as shelter openings, emergency feeding of victims after a disaster and evacuation of victims during an emergency or disaster. The County maintains some disaster supplies but generally relies on the Asheville/Mountain Area Red Cross as the designated emergency shelter operator for Buncombe County. Buncombe County Emergency Management also maintains the county Emergency Operations Plan (EOP), the Buncombe County Resource Manual, and other plans as needed. The EOP as an example sets forth functional responsibilities within the various departments to ensure prompt emergency response and delivery of necessary services. The decision to activate the EOP rests with the County Emergency Management Director or designee. The EOP is generally updated every 2 years. The Resource Manual contains an inventory of all County- and municipal-owned emergency equipment, equipment owned by other agencies that can be utilized in the event of a disaster, as well as listings of area vendors and businesses where supplies and equipment can be obtained.

Buncombe County is served by twenty-one fire departments. Table 5 “Buncombe County Fire Departments” lists these departments, whether they are staffed by paid or volunteer personnel or a combination of both, and the level of Emergency Medical Certification of the personnel.

Table 5 Buncombe County Fire Departments

Department	Staffing	EMS Certification (Minimum)
Asheville (also serves Biltmore Forest)	Paid	EMT-Defibrillation
Barnardsville	Paid/Volunteer	EMT-Intermediate
Beaverdam	Paid/Volunteer	EMT-Defibrillation
Black Mountain (also serves Montreat)	Paid/Volunteer	EMT-Intermediate
Broad River	Paid/Volunteer	EMT
Buncombe Rescue	Paid/Volunteer	EMT-Intermediate
Enka-Candler	Paid/Volunteer	EMT-Intermediate
Fairview	Paid/Volunteer	EMT-Defibrillation
French Broad	Paid/Volunteer	EMT-Intermediate
Garren Creek	Paid/Volunteer	EMT-Defibrillation
Jupiter	Paid/Volunteer	EMT-Defibrillation
Leicester	Paid/Volunteer	EMT-Intermediate
Reems Creek	Paid/Volunteer	EMT-Intermediate
Reynolds	Paid/Volunteer	EMT-Defibrillation
Riceville	Paid/Volunteer	EMT-Intermediate
Skyland	Paid/Volunteer	EMT-Intermediate
Swannanoa	Paid/Volunteer	EMT-Defibrillation
Upper Hominy	Paid/Volunteer	EMT-Intermediate
Weaverville	Paid/Volunteer	EMT-Defibrillation
West Buncombe	Paid/Volunteer	EMT-Defibrillation
Woodfin	Paid/Volunteer	EMT-Defibrillation

The Asheville Fire Department is staffed solely by paid personnel. All fire departments within the County are staffed by a combination of both paid and volunteer personnel. All fire departments within the County are staffed by certified Emergency Medical Technicians (EMTs). There are four levels of EMT certification: EMT, EMT-Defibrillation, EMT-Intermediate, and EMT-Paramedic. The Broad River Fire Department is staffed at the EMT level. Ten of the County's twenty-one fire departments are staffed by personnel with a minimum of EMT-Defibrillation certification and the remaining ten departments are staffed with personnel with a minimum of EMT-Intermediate certification.

A map of Buncombe County indicating the fire district boundaries is on the following page.

Produced By: Buncombe County GIS Office, August 2010

Fire Response

Buncombe County, North Carolina

0 1.25 2.5 5 7.5 10 Miles

Table 6 “Utility Companies Serving Buncombe County” lists those companies that provide services within Buncombe County. Whenever multiple companies are listed for the same utility service they are listed in order from largest service area to smallest.

Table 6 Utility Companies Serving Buncombe County

Utility Service	Utility Company
Electricity	• Progress Energy • French Broad Electric Membership Corporation • Duke Power
Major Telephone Carriers	• AT&T • Frontier (formerly Verizon)
Water	• Asheville Water Resources • Weaverville Water Department • Woodfin Sanitary Water and Sewer District (sewer service provided through MSD)
Sewer	• Metropolitan Sewerage District (MSD) • Avery’s Creek Sanitary District
Natural Gas	• Public Service Company of North Carolina

Progress Energy is the primary provider of electrical service in Buncombe County. French Broad Electric Membership Corporation provides electrical service for a small portion of northern Buncombe County. AT&T is the primary telephone service provider in Buncombe County. Verizon provides telephone service in Weaverville and Barnardsville in the northern part of the County. There are also numerous wireless, cable (IP) telephone providers throughout the County. Asheville Water Resources is the largest provider of water service in Buncombe County. The Weaverville Water Department provides water to the Town of Weaverville and the Woodfin Sanitary Water and Sewer District provides service to the Town of Woodfin. The towns of Black Mountain and Montreat also operate water departments. In addition to municipal water service, many residents of Buncombe County are served by private wells and springs. The Metropolitan Sewerage District (MSD) is the largest provider of sewer service in Buncombe County. The Avery’s Creek Sanitary District provides sewer service to a small area of southern Buncombe County. The Avery’s Creek Sanitary District owns and maintains the sewer lines in their district but they rely on MSD for sewage treatment. In addition many residents of Buncombe County have septic systems as opposed to municipal sewer service.

All of the utility companies serving Buncombe County were contacted to determine if they have emergency and disaster response protocols in place. All utility companies,

except Avery's Creek Sanitary District, have such policies and procedures in place. Avery's Creek Sanitary District has a contractor on standby for line repairs but does not have a formal emergency/disaster response plan.

Buncombe County has allocated significant resources to emergency management in terms of equipment, personnel and training. The utility companies serving our area have allocated resources (i.e. staff time) to develop emergency and disaster response protocols. Buncombe County has also demonstrated its ability to leverage additional funds. Examples of such funding include: FEMA's Hazard Mitigation Grant Program which funded the acquisition and demolition of structures located in the floodplain; FEMA's Project Impact grant which helped to fund the development of this plan; Department of Justice grants for terrorism preparedness; and local fire departments have received contributions from various private funding sources.

Analysis of Community Goals

Goals are statements of conditions that are desired to be achieved at sometime in the future. Goals are usually descriptive rather than quantified statements and should be expressed in general terms. A goal is not a tool for achieving something else. Goals should not be negative observations about the community but should be structured as positive statements that are attainable (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

Reducing risks posed by natural disasters to people and property is the primary goal in hazard mitigation planning. However, goals are best structured when they represent a cross-section of public interests. When hazard mitigation goals are written in this way, it illustrates the ways in which mitigation is intermingled with other public concerns. For example, the goals of a hazard mitigation plan may support such interests as creating open space, preserving natural areas, improving water quality, or sustaining farmland. (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

The stated goals of Buncombe County, and the municipalities located therein, were reviewed for their relevance to hazard mitigation. The following goal statements were taken from the Fiscal Year 2010 Budget Documents of Buncombe County and its incorporated jurisdictions because of their relevance to hazard mitigation:

Table 7 Community Goals

Jurisdiction	Goals
Buncombe County	• Improve water quality through pollutant source reduction and public education (Environmental). • Balance the need for additional economic and population growth opportunities with environmental stewardship through well-planned infrastructure expansion (Economic and Physical Development). • Preserve the Mountains including steep slopes and ridges setting clear balanced standards (Growth & Development). • Encourage a thoughtful process of land subdivision and development, considering the importance of preserving open space and the relationship between adjacent developments (Growth & Development). • Ensure preservation of open space (Growth & Development). • Facilitate safe and responsible land-use development in a timely manner (Planning & Development). • Provide profitable, environmentally sustainable agricultural systems (Cooperative Extension). • Protect, conserve and enhance the natural resources of Buncombe County (Cooperative Extension). • Provide a comprehensive environmental awareness program (Soil & Water Conservation).
City of Asheville	• Reduce fire loss through effective delivery of fire code enforcement services (Asheville Fire Department). • Provide efficient and timely maintenance and repair of water mains, service lines, valves, and fire hydrants throughout the water system (Water Resources Fund). • Develop geographic information system (GIS) databases for Powell Bill maps, street classifications, traffic operations, stormwater projects, sidewalk amenities, and overall work-order related services (Public Works). • Complete street resurfacing, sidewalk, storm drainage, and special assessment projects as scheduled and budgeted (Public Works). • Administer and enforce soil erosion and stormwater ordinances, plan review delegation, and all pertinent permitting processes in accordance with all applicable local, State, and Federal requirements (Engineering). • Encourage sustainable development and promote redevelopment (Planning & Development). • Ensure the continued safety and integrity of existing housing stock through inspection of existing residential housing units in accordance with the Asheville Minimum Housing Code (Building Safety).

City of Asheville (cont'd)	• Provide consistent code enforcement across the department and educate contractors and designers on code changes and issues (Building Safety).
Town of Biltmore Forest	• Continue to provide an excellent level of fire protection and a high level of police protection. • Facilitate safe and responsible land-use development in a timely manner (Planning and Development). • Provide efficient and timely maintenance and repair of water mains, service lines, valves and fire hydrants throughout the water system. • Complete street resurfacing and storm drainage, at a high level, as scheduled and budgeted. • Administer and enforce Soil Erosion and Stormwater Ordinance through Buncombe County. • Continue the enforcement of the State Building Code by Buncombe County. • Administer and enforce the Stormwater Management Ordinance through Buncombe County. • The administration of the Flood Damage Prevention Ordinance by the Town Administrator.
Town of Black Mountain	• Revise/Update twenty-year water facilities plan (Governing Board & Water Operations). Continue system improvements, and updates of system with new developments. • Regular updates of Safety Manual (Administration). • Provide 95% of the required and requested code enforcement and public education activities (Fire Department). • Increase the training hours for paid and volunteer staff (Fire Department). • Coordinate with Public Works to maintain needed fire flows and proper hydrant distribution in areas of new development (Fire Department). • Expand GIS capabilities to include applications for other departments; i.e. water meter locations, storm drainage, fire hydrants (Planning & Development). • Timely Code enforcement of building, planning and zoning regulations. (Planning Department). • Enforce federally mandated Storm Water regulations. (Planning & Development). • Continue to investigate and explore alternative water sources – provide report outlining viable alternatives (Public Works). • Regularly scheduled (Bi-Weekly, Special Events, and Holidays) landscape maintenance to those areas not maintained by others (Street Department).

Town of Black Moutain (cont'd)	• Provide for clean streets by ensuring that they are swept on a weekly basis during high traffic months (Street Department). • Update Water System Mapping to GIS Format (to include locations of water meters, lines, and hydrants) (Water Operations). • Allocation for purchase of water to cover potential decline in well production capability (Water Operations). Formalize agreements with the Town of Asheville and the Town of Montreat.
Town of Montreat	Did not submit data for this analysis.
Town of Weaverville	• Continue funding for the replacement of drainage system structures (pipes, catch basins, inlets, etc.) that have been identified in the Inventory of Storm Drainage Structures as being in need of immediate replacement (Street Department – Powell Bill). • Complete the replacement of storm drainage structures that are part of the Storm Drainage Grant Program in accordance with available funding (Street Department – Powell Bill). • Continue all routine maintenance activities of the Department (Street Department – Powell Bill). • Continue fire prevention programs for the month of October (National Fire Prevention Month) and the entire year (Fire Department). • Host fire prevention classes at the fire station and community meetings throughout the year (Fire Department).
Town of Woodfin	• Support the initiatives outlined in the Land Use Plan including a) establishing a transitional zoning district, b) improving housing quality and appearance at the mobile home parks, c) complete preparations for and enactment of the new Federal Storm Water Regulations, d) develop a river front development plan as part of a revised community master plan which is currently being reviewed and e) study and evaluate the best use of land near our interstate accesses (Planning and Zoning Department).

In addition to these goal statements, some jurisdictions' Mission Statements, or the Mission Statements of select departments within a jurisdiction, also related to hazard mitigation (Table 8):

Table 8 Mission Statements

Jurisdiction	Mission Statement(s)
Buncombe County	• We promote a healthy, safe, well-educated, and thriving community with a sustainable quality of life. We provide effective and efficient government our citizens can trust. We deliver needed service through a responsive work force committed to excellence, integrity, and teamwork (Buncombe County Government). • To preserve and enhance the quality of life of our citizens in the most efficient and effective manner possible (Emergency Services).
City of Asheville	• The mission of the Asheville Fire Department is to protect lives, health, and property in Asheville from the outcomes of fire, medical, structural and environmental emergencies through education, prevention, mitigation and control (Fire Department). • The mission of the Asheville Building Safety Department is to protect lives, health, and property in Asheville, and to support economic development by providing building and development permitting services and enforcing the North Carolina's State Building Code, Asheville's Minimum Housing code, and related environmental codes (Building Safety).
Town of Biltmore Forest	• The mission of the Police and Public Works Departments is to continue a high level of service. • Through the fire contract with the city of Asheville, an excellent level of service is expected in order to protect lives, health and property in Biltmore Forest. • Provide efficient and timely maintenance of the water system and street maintenance • Facilitate safe and responsible land-use development in a timely manner. • Continue using Buncombe County to provide the enforcement of the Soil Erosion and Sedimentation Ordinance, the Storm Water Management Ordinance and the State Building Codes. • The Flood Damage Prevention Ordinance will be administered by the Town Administrator.
Town of Black Mountain	• The Town Government of Black Mountain strives to provide quality services to protect the health, safety and welfare of its citizens; to exercise stewardship over its resources; and to promote a high quality of life, support economic prosperity, cultivate community and honor its heritage and culture (Governing Board).

Town of Black Mountain (cont'd)	• To provide through the efforts of proper pre-planning, management of resources and fiscal control, a level of professional fire and rescue services equal to the growth of our town, therefore sustaining the best possible Department of Insurance Rating for the commercial and residential property owners in the community (Fire Department). • Provide for the health, safety and welfare of the people of Black Mountain by assuring fair application of all applicable federal, state and local laws regulating land use, building construction and code compliance. To provide guidance to the Board of Aldermen that enhances the quality of life and character of the Town of Black Mountain for all residents (Planning & Development). • To provide and preserve the infrastructure of the Town; to enhance and improve the aesthetic beauty throughout the Town (Street Department). • To Provide and preserve the infrastructure of the Town by maintaining roads, streets, bridges, sidewalks, etc. in order to promote safe travel and safe conduct (Street Department – Powell Bill). • To provide to the Town of Black Mountain a continuous supply of high quality water at a reasonable cost (Water Operations).
Town of Montreat	Did not furnish data for this analysis
Town of Weaverville	See Section XVII "Town of Weaverville"
Town of Woodfin	• The Street Department provides street services to the residents of Woodfin. The Street Department is responsible for storm water management, road repair and resurfacing, mowing and right-of-way maintenance (Street Department). • The Planning and Zoning board serves as an advisory board to the Board of Aldermen. The Planning and Zoning board supervises the preparation of special studies, land use policies, and drafts of ordinances and recommends any revisions to the Alderman. The Board also oversees the compliance of the zoning ordinance, flood zone regulations, housing and subdivision regulations and serves as a board of appeals.

While these goals do not spell out hazard mitigation verbatim, they do incorporate mitigation concepts and represent the cross-section of public interest that the North Carolina Division of Emergency Management recommends be included in writing hazard mitigation goals. Improved water quality, effective application of technology in public safety, environmental stewardship, maintenance of storm drainage systems, code enforcement, sustainable development, fire prevention programs, and the other goals specified above all combine to produce governments that are dedicated to the health, safety, and quality of life of their citizens. No goals were found to hinder hazard mitigation and there was no need to modify existing goals.

Hazard Mitigation Strategy

Mitigation strategies should be developed on a case by case basis for each locality to reflect local conditions, needs, and desires. During our hazard mitigation planning process a comprehensive variety of mitigation strategies were examined. The North Carolina Division of Emergency Management's *Tools and Techniques: Putting a Hazard Mitigation Plan to Work*, along with sample mitigation strategies from other jurisdictions, provided the basis for this analysis. Mitigation strategies were identified and then prioritized according the following criteria:

- Cost-benefit review
- Results of Hazard Identification and Analysis
- Results of Vulnerability Assessment
- Results of Community Capability Assessment
- Effectiveness in meeting hazard mitigation goals and comprehensive plan goals.

Cost-benefits review was given special emphasis, in light of its possible use in environmental reviews for HMGP, FMA, and other federal hazard mitigation projects. The mitigation strategies are listed in priority order. See Table 8 "Hazard Mitigation Actions" (page 132) for a listing of mitigation actions that correspond with the identified strategies.

1. Incorporate hazard mitigation into the planning process of each jurisdiction.

As previously stated, the goals and principles of hazard mitigation often cut across many aspects of the public interest. Because of this, many of the policies and procedures reviewed during the "Community Capability Assessment" were already positive steps toward hazard mitigation. The next step is to make a *conscious* effort to integrate hazard mitigation into the planning process of each jurisdiction. In order to educate the Administration and Planning Departments of each jurisdiction about the importance of hazard mitigation, a representative from one of those two departments from each jurisdiction will serve on a committee to review the completed draft of the Hazard Mitigation Plan prior to its adoption. This committee will also include the County's Director of Emergency Management and the Emergency Management Planner. This group of people will then evolve into the Hazard Mitigation Plan Evaluation and Revision Committee to be discussed later in the section "Updates and Revisions". Additionally, each jurisdiction will be provided with resources discussing hazard mitigation concepts such as the North Carolina Division of Emergency Management's Tools & Techniques: Putting a Hazard Mitigation Plan to Work (October, 1999) and Keeping Natural Hazards From Becoming Disasters: A Basic Workbook for Local Governments (May, 2000). The Emergency Management Planner will be responsible for coordinating this committee. The committee will be formed and functional prior to January 1, 2005.

Status – On-going

Upon receipt of FEMA approval each jurisdiction independently adopted the Buncombe County Hazard Mitigation Plan. Buncombe County has clearly demonstrated the strategy of incorporating hazard mitigation into planning processes as evidenced in updates to Hazard Mitigation Strategies 2 and 3 (immediately following). Additionally, in May 2005, most departments within the County completed a Disaster Readiness Survey in conjunction with the development of the Buncombe County Continuity of Operations Plan. Included within this survey is information as to the storage of data; a list of alternate personnel who could be responsible for critical functions and processes; identification of alternate facilities; and contact information for personnel and critical vendors.

While we have made great strides in implementing this strategy (as evidenced by updates to Strategies 2 and 3) Buncombe County will continue to integrate hazard mitigation into its planning processes. This will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

2. Evaluate and strengthen existing ordinances as needed.

The evaluation of policies and ordinances for the "Community Capability" section of this document provide valuable information about Buncombe County's existing mitigation planning. In addition, valuable information was identified about the existing mitigation planning efforts and any incorporation other jurisdiction's have completed. However, local conditions are constantly changing due to increased development, changes in technology, changes in local mitigation capabilities, or natural disaster events. It is because of these ever changing conditions that evaluation must be an ongoing process. Therefore, the initial "Community Capability Assessment" should be viewed as a starting point rather than an end result. Because these conditions do not change at regular intervals, it is difficult to establish a timeline dictating how often ordinances and policies should be reviewed. The phrase "as needed" should be interpreted as "anytime the community experiences a significant change in conditions" such as rapid development or technological change. Appropriate times for evaluation also occur when local officials notice the effects of a pattern of slower, but steady, changes over time. Finally, the best window of opportunity for policy evaluation may come following a natural disaster event. This is when the policies' effectiveness can discerned.

Status – On-going

During the drafting period of its original Hazard Mitigation plan Buncombe County implemented revisions to its Manufactured Home Park Ordinance. The changes to the Manufactured Home Park Ordinance included strengthening the requirements for road design and construction. Such requirements are intended to improve emergency vehicle access to the County's manufactured home parks. Responsibility for this element falls to staff of the Emergency Management and Planning Departments as needs emerge.

In recent years, Buncombe County has made revisions to its Subdivision ordinance~~s~~. The changes to the Subdivision Ordinance included strengthening the requirements for erosion control and for road construction and turn-around spaces. The erosion control requirements help to prevent hazards such as land and rock slides and ensure site stability. Requirements for road design and construction help to provide adequate access for emergerency vehicles. In 2005 requirements were added to require geotechnical reports, soils maps, and compaction testing for roads. Hillside developments on 25% or greater slope are increasingly restricted with the 2006 changes. Density is decreased and lot sizes are increased; density allowances are no longer made for public sewer access. Limitations on maximum impervious and disturbed surfaces are added which apply to individual lots with 25% or greater slope within hillside subdivisions. In 2007 changes were made which require that builders on lots subject to the maximum impervious and disturbed areas submit a scaled site plan showing the areas of disturbance and impervious cover. Provisions were included to allow and encourage cluster development in hillside subdivisions.

In 2006 Buncombe County updated its Comprehensive Land Use Plan. The study made specific recommendations regarding rapidly urbanizing areas, environmentally sensitive portions of the County, and a number of strategies for future planning. Significantly, the study recommended County-wide zoning with traditional type zoning within the MSD sewer service area, setting forth permitted, conditional and prohibited uses by zoning district, as well as dimensional requirements for building placement, height, and lot sizes; and outside this area enforcing an Open Use district where there are conditional use requirements and approval for certain land uses. Another recommendation was to concentrate development in existing and emerging commercial centers (shown on the Proposed Land Use Map on page 32 as "hubs") preserving surrounding areas in a relatively rural state or developed at lower densities. This minimizes demand for infrastructure and services across a broad geographical area. The intended outcome is reduced development pressure in areas not well suited for development. The 2006 Land Use Plan Update states that the proposed hubs are located away from steep slopes and floodplains, parcels in the farmland preservation program and conservation easements. The County enacted county-wide zoning in 2007, and in 2009, the Court of Appeals made a ruling which overturned zoning in those areas of the County outside the Limestone and Beaverdam districts. The Board of Commissioners enacted a new

county-wide zoning ordinance in December 2009. The Ordinance was not challenged in Court and has been active for over six months.

The Erosion Control ordinance for Buncombe County was revised in 2006 to require a Stormwater permit prior to issuing a Land Disturbing permit; increased the review fee to $400/acre; and added requirements for fill and cut slopes so that fill slopes can be no steeper than 2:1, and cut slopes no steeper than 1.5:1, at a maximum of 20 feet in height.

The Storm Water Management ordinance was enacted in 2006. Buncombe County's ordinance meets state requirements for water quality, while also providing a level of protection for property owners adjacent to development against an increase in storm water runoff in rate and volume. The ordinance applies to all land disturbing activity of one acre or greater, and to commercial activity on a parcel one acre or greater in size.

While we have made great strides in implementing this strategy Buncombe County will continue to evaluate and strengthen existing ordinances as needed. This will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

3. Ensure enforcement of ordinances.

Developing sound, strong ordinances is only the beginning. These policies are only effective if they are consistently enforced. A tracking system related to performance measures has been developed to ensure consistency in enforcement. This system includes data on the number of plans accepted and rejected and the number of warning and citations issued. This process has been established and is functioning.

Status – Process development and implementation – Complete. Enforcement - On-going.

In 2003 the County began using a permitting software system, Tidemark Advantage. All County development permits are tracked through this system including the following: Building Permits and Inspections; Erosion Control; Storm Water; Floodplain Management; Septic and Well; Zoning; Subdivision; and Ivy Watershed. Each discipline can issue permits based on the status of other required permits through this communicative tracking software program. Freezes and holds on projects can be placed, and individual task lists can be generated for each case.

In 2009, Buncombe County instituted a bi-weekly Technical Review Committee. Committee members include the following: Planning Director, Fire Marshal, Erosion Control officer, Storm Water engineer, Building Permits and Inspections Director, Floodplain ordinance administrator, Subdivision ordinance administrator, and Zoning Staff. The committee primarily meets to review subdivision plans, in regard to their individual discipline, prior to the submittal to the Planning Board. In addition, proposed

changes to various land development ordinances are discussed, and members update one another on the project's status.

Again we have made great strides in implementing this strategy. However ensuring enforcement of ordinances is an on-going process (unlike a structural mitigation project that has definite beginning and end points). This will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

4. Educate the public regarding hazard mitigation.

Though there are many measures that local governments can take to protect the health and safety of their citizens, property owners also have a responsibility to protect their homes, families, and businesses. Local governments can assist in this task by making hazard mitigation information available to the public.

A portion of the Buncombe County web site includes detailed information on hazard mitigation. The County has also supplied hazard mitigation information for airing on the Buncombe County cable television channel. The Buncombe County Emergency Services Office participates in various public education events multiple times per year. Examples include: Severe Weather Awareness Week, Emergency Preparedness Month, Fire Prevention Week and other times as requested. Hazard Mitigation information is included in these presentations. Various Emergency Services Staff are involved in these activities depending on the specific topic.

As part of Planning and Development staff responsibility in enforcing land development ordinances, various groups are targeted for disseminating information. Over the past few years, information has been shared to the Homebuilders Association; Women in Construction group; Engineers Association; Mobile Home Association; local school groups; and others. Staff at the Soil and Water Conservation District work with property owners and local farmers every day on stream protection and restoration issues, informing them on site about various methods to reduce their impact on water quality as well as stream channel and flow changes.

Status – On-going

Public Education is a continual process. It is not possible to design a single public education campaign offered over a specified time period and consider this strategy completed. The population of Buncombe County is ever changing. As people move in and out, residents' age, businesses close and new ones open the needs and composition of communities change. Therefore this will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

5. Address the issues of storm water management and impervious surfaces.

Storm water management programs can be an important step in flood and erosion control. As development occurs, natural ground cover is replaced with impervious surfaces such as streets, parking lots, and buildings. The result is an increase in surface runoff which carries pollutants to bodies of water. When a storm event occurs, heavy concentrations of pollutants may result along with flooding of streets and waterways. "Storm water" is surface flow water from precipitation that accumulates in and flows through natural and/or man-made storage and conveyance systems during and immediately following a storm event. As storm water travels, it carries pollutants to rivers, lakes, wetlands, and ground waters, impacting water quality. Poor management of storm water can lead to impaired water bodies, degraded animal habitats, polluted drinking water, increased flooding, and hydrologic changes to streams, lakes, wetlands and rivers. (Information derived from "Designing and Implementing an Effective Storm Water Management Program", American Public Works Association, under U.S. Environmental Protection Agency agreement, 1998).

Through the Clean Water Act of 1972, increased accountability for protecting water quality was placed on pollutant dischargers. The Act required states to survey their waters and determine an appropriate use for each, and then set specific water quality criteria for various pollutants to protect those uses. The Clean Water Act also introduced the National Pollutant Discharge Elimination System (NPDES). The NPDES program requires anyone discharging a pollutant from a point source into waters to obtain a NPDES permit.

The Clean Water Act focus was on industrial and municipal wastewater, or point source pollution. Storm water runoff is non-point source pollution. New regulations from the Environmental Protection Agency include adding storm water discharges under the NPDES program. These regulations are referred to as the EPAs "Phase II Regulations." These new requirements are the second phase of an EPA mandate to control storm water. The first phase affected larger cities in North Carolina. The second phase requires smaller municipalities, including all six within Buncombe County (Asheville, Biltmore Forest, Black Mountain, Montreat, Weaverville, and Woodfin), to implement storm water management plans. It also requires some counties, including Buncombe, to face certain requirements, as well.

The EPA Phase II Regulations were announced in December 1999 and require states to implement storm water management methods by March 2003. North Carolina's Department of Environment and Natural Resources (DENR) is charged with implementing the federal requirements in the state. The Division of Water Quality in DENR is leading the effort. There is still some question as to whether or not counties, since they typically do not own or operate the municipal storm sewer systems, are going to be charged with carrying out the six required components of the Phase II regulations.

The six required components are:

Public involvement/participation
Public education and awareness programs
Detection and elimination of illicit connections to the municipal separate storm sewer systems (MS4s)
Management of post-construction storm water runoff
Construction site storm water runoff controls
Pollution prevention/good housekeeping for municipal operations (public facilities)

Status – Adoption of ordinance and development of Sotrmwater Management Program – Complete. Refining Stormwater Management Program and enforcement of regualtions – On-going.

The Storm water Management ordinance in Buncombe County was enacted in 2006. The ordinance meets state requirements for water quality, while also providing a level of protection for property owners adjacent to development against an increase in storm water runoff in rate and volume. The ordinance applies to all land disturbing activity of one acre or greater, and to commercial activity on a parcel one acre or more. Buncombe County hired and engineer and a storm water technician to review plans, issue permits, inspect sites, and to enforce all requirements of this ordinance.

In the coming years Buncombe County will continue to evaluate and refine its Storm water Management Program. Addressing the issues of Storm water management and impervious surfaces will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

6. Continue participation in the National Flood Insurance Program and investigate participation in the NFIP's Community Ratings System.

Buncombe County formally adopted the newest FEMA floodplain maps on the effective date, January 6, 2010. During this process, the County also adopted its revised Flood Damage Prevention Ordinance, based on the state's model ordinance and approved by the NC Division of Emergency Management- Floodplain Mapping Section. The changes to the Ordinance include prohibiting new habitable structures in the floodway; requiring elevation certificates to be completed for structures built in the 100-year floodplain; increasing the freeboard requirement to 2'; and strengthening the appeals and protest procedures.

Each of the municipalities participates in the National Flood Insurance Program. Buncombe County administrates the Flood Damage Prevention Ordinances for the Towns of Weaverville and Woodfin. The City of Asheville, and Towns of Black Mountain and Biltmore Forest administrate their ordinances individually.

Flood Damage Prevention Ordinance administrators in most jurisdictions within the County are Certified Floodplain Managers (CFM) and must earn continuing education credits annually to maintain their certification. This continued effort helps to ensure that our administrators are knowledgeable about changes in regulations and that our Ordinances are administered in compliance with NFIP regulations.

The National Flood Insurance Program's (NFIP) Community Rating System (CRS) was implemented in 1990 as a program for recognizing and encouraging community flood plain management activities that exceed the minimum NFIP standards. Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance (www.fema.gov/nfip/crs.htm). The CRS requirements are revised every three years.

Status – CRS participation – Deferred. Wording of Strategy – Updated (In the original plan this strategy referenced only investigation of CRS requirements and not continued participation in the NFIP).

Due to the remapping process that occurred following the floods of September 2004 and the procedures and timeline that were necessary for the adoption of the updated Flood Insurance Rate Maps, participation in the Community Ratings System was deferred for future consideration. Buncombe County will pursue CRS participation during the upcoming five year planning cycle.

7. Continue to carry out the hazard mitigation planning process and seek funding for emerging needs.

The identification and development of these mitigation strategies should not be viewed as a conclusion but as one step in a cyclical process. This Hazard Mitigation Plan is a document that will continue to evolve as changes occur in Buncombe County. Procedures for the monitoring, evaluation, update, and revision of this plan are set forth in the final two sections of this document. In addition to the steps enumerated therein, the continuation of the hazard mitigation planning process also includes seeking out funding sources for emerging needs. The preparation of this plan has revealed the need for improved or additional GIS data layers (specifically projected growth and building footprints) as well as a method for determining the potential dollar losses for government properties and for future development. Funding for updating staff training and certification, as well as equipment, is also a perpetual need in our current world of rapidly changing technology. Future areas of need could also include additional funds for the purchase of repetitive loss structures and/or other structures within the floodplain, funding for finished floor elevation studies of uninsured floodplain structures to facilitate cost/benefit analysis of potential acquisition projects, and the purchase of handheld GPS units to aid in the enforcement of the Erosion Control and Flood Damage

Prevention Ordinances. Responsibility for this element falls to staff of the Emergency Management and Planning Departments as needs emerge.

Status – On-going

As a direct result of the 2004 floods produced by the remnants of Tropical Storm Frances and Hurricane Ivan, Buncombe County used Hazard Mitigation Grant Program and North Carolina Hurricane Recovery Act funding to purchase 17 floodplain properties (15.56 acres) primarily in Candler and Swannanoa. HMGP and HRA funding required the demolition and removal of all structures and impervious surfaces. Funding conditions further required that deed restrictions be placed on each parcel to ensure that the properties are maintained as open space for perpetuity.

This is another on-going strategy for the upcoming five hear Hazard Mitigation planning cycle. Current funding needs are noted in red in the first paragraph of this section. Additional needs will be recorded as they emerge.

Adoption and Implementation

Buncombe County's Multi-Jurisdiction hazard Mitigation Plan received FEMA approval pending adoption in October 2004. Each jurisdiction formally adopted the plan according to their standard procedures. Such procedures include providing notice of a public hearing in the local newspaper, having the document available for review by the public, holding the public hearing, and adopting the plan at the governing body's next meeting following the public hearing. Adoption resolutions from each jurisdiction are located in Appendix F. The five year Plan Update is being submitted for approval pending adoption. Adopting the Plan Update prior to its approval could result in multiple adoption proceedings if, upon review by NCEM or FEMA, revisions to the update are necessary. Submitting the update for "approval pending adoption" prevents each jurisdiction from having to conduct adoption proceedings multiple times.

Monitoring and Evaluation

Monitoring and evaluation are the ongoing processes of compiling information on the outcomes resulting from implementation of the hazard mitigation plan. This facilitates the identification of revisions needed to respond to changes in regional and local conditions. Local conditions are constantly changing. Local mitigation plans must also change in response to changes brought about through increased development, changes in technology, and changes in local mitigation capability. There is also a valuable window of opportunity for evaluating the Hazard Mitigation Plan following a natural disaster event. Effective monitoring and evaluation will also provide information on local compliance with state and federal mandates (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

Buncombe County's Emergency Management Planner, along with the Hazard Mitigation Plan Evaluation and Revision Committee described in the following section of this document, will evaluate the plan based on the following criteria:

Do the goals and objectives address current and expected conditions?
Has the nature or magnitude or risks changed?
Are the current resources appropriate for implementing the plan?
Are there implementation problems, such as technical, political, legal or coordination issues with other agencies?
Have the outcomes occurred as expected?
Did the agencies and other partners participate in the plan and planning process as proposed?

During the Plan Update hazard events for the past five years were reviewed and incorporated into the Hazard Identification and Risk Analysis. Mitigation Strategies were implemented, evaluated, and revised, if necessary, as they were carried out. See prior sections for individual mitigation strategies for details of evaluation.

Plan Review, Updates and Revisions

Due to unforeseen contingencies and changing times and conditions, "Update and Revision" is a necessary part of the hazard mitigation planning process. Updates address changes that have taken place in the local area since the plan was created and adopted. Such changes may include additional development, implementation of mitigation efforts, the occurrence of a natural disaster, or changes to state or federal regulations and requirements (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

While "Monitoring and Evaluation" are ongoing processes, "Update and Revision" should occur at regularly scheduled intervals. Plan Review will occur annually as well as part of a "debriefing" following the occurrence of a disaster event. A Hazard Mitigation Plan Evaluation and Revision Committee should be established to include the County Director of Emergency Management, the Emergency Management Planner, and a representative from either the Administration or Planning Department from the County and each incorporated jurisdiction. This committee will review the Hazard Mitigation Plan a minimum of one time per year or more often if changing conditions so dictate.

FEMA planning criteria state that the plan must undergo Update and Revision every five years. The Hazard Mitigation Plan Evaluation and Revision committee will formally update and revise the plan a minimum of once every five years. These committee meetings will be open to the public and public participation in the update and revision of the Hazard Mitigation Plan will be encouraged.

Technical and Fiscal Capability Assessments

and

Mitigation Strategies for Municipal Jurisdictions within Buncombe County

City of Asheville Hazard Identification & Analysis

The City of Asheville concurs with Buncombe County's Hazard Identification & Analysis described previously in this document.

City of Asheville Technical & Fiscal Capability

The City of Asheville Fire Department coordinates all resource needs required during a disaster through Buncombe County Emergency Management. The City of Asheville maintains a Comprehensive Emergency Management Plan for the City of Asheville that dovetails and is part of Buncombe County's plan. Damage assessment is coordinated through the Fire and Building Safety Departments. Fire, Building Safety, Engineering, and Finance Departments will forward all damage reports to Buncombe County Emergency Management. The reports are forwarded as a spreadsheet that Buncombe County Emergency Management can use to collect the data needed for a County declaration of emergency or to request a state or federal declaration of emergency for assistance.

Asheville Parks and Recreation coordinates with the Fire Department shelter openings and emergency feeding of victims after a disaster. The City's plan is coordinated with Buncombe County Emergency Management. The Fire Department coordinates evacuation of victims during an emergency. The City of Asheville maintains some disaster supplies but relies on the Asheville/Mountain Area Red Cross. The Comprehensive Emergency Management Plan for the City of Asheville is updated annually and exercised annually. The Emergency Plan sets forth functional responsibilities within the various departments to ensure prompt emergency response and delivery of necessary services. The decision to activate the Emergency Plan is a tiered process beginning with the responsible department and finally with the City Manager and Mayor. A list of resources available from within the differing City Departments that would be available in the event of a disaster is maintained and updated annually. This list is kept as a resource manual for the City of Asheville in the Comprehensive Emergency Management Plan for the City of Asheville as Annex I

The City of Asheville Fire Department is a career department staffed entirely with paid personnel. The Department has three shifts commanded by a Division Chief. The City is divided into two battalions with a Battalion Chief assigned to each battalion on all three shifts. Most department personnel are certified as Firefighter II, Hazardous Materials Operations, and Rescue Technician ~~I~~. In addition, the department maintains a minimum number of personnel on each shift certified and trained as Aquatic Rescue Technician, Hazardous Materials Technician, Hazardous Materials Specialist, Confined Space, High Angle, Fire and Life Safety Educator, Fire Officer, Driver Operator, and other specialized fire and rescue certifications and training. Many of the Emergency Response Branch personnel are Fire Inspection Level I certified while the Fire Marshal Division personnel, Division Chiefs, Assistant Chiefs, and Fire Chief are encouraged to maintain a Fire

Inspection III certificate. All personnel must be Emergency Medical Technician – certified by North Carolina Office of Emergency Medical Service. The department has 237 certified personnel for response.

The Asheville Fire and Rescue Department provides services to the Town of Biltmore Forest and Asheville Suburban Fire District through contracts with the Town of Biltmore Forest and Buncombe County, respectively.

City of Asheville Hazard Mitigation Strategy

Mitigation strategies should be developed on a case-by-case basis for each locality to reflect local conditions, needs, and desires. Based on identification of the most significant hazards facing City of Asheville and its incorporated jurisdictions, along with vulnerability and capability assessments, the following mitigation strategies are suggested:

1. Incorporate hazard mitigation into the planning process of each jurisdiction.

As previously stated, the goals and principles of hazard mitigation often cut across many aspects of the public interest. Because of this, many of the policies and procedures reviewed during the "Community Capability Assessment" already have positive steps toward hazard mitigation. The next step is to make a *conscious* effort to integrate hazard mitigation into the planning process of each jurisdiction. In order to educate the Administration, Engineering, Fire, Building Safety and Planning Departments of each jurisdiction about the importance of hazard mitigation, a representative from one of those five departments from each jurisdiction will serve on a committee to review the completed draft of the Hazard Mitigation Plan prior to its adoption. This committee will also include the County's Director of Emergency Management and Emergency Management Planner. This group of people will then evolve into the Hazard Mitigation Plan Evaluation and Revision Committee to be discussed later in the section "Updates and Revisions". Additionally, each jurisdiction will be provided with resources discussing hazard mitigation concepts such as the North Carolina Division of Emergency Management's Tools & Techniques: Putting a Hazard Mitigation Plan to Work (October, 1999) and Keeping Natural Hazards From Becoming Disasters: A Basic Workbook for Local Governments (May, 2000). These publications are on file with the Emergency Management Division for reference.

The Stormwater Services Manager is responsible for representing the City of Asheville's Public Works Department. Assistant Fire Chief or their designee is responsible for representing the City of Asheville's Fire Department. This has already been implemented.

Status – On-going

The City of Asheville in Buncombe County will continue to integrate hazard mitigation in to its planning processes. This will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

2. Evaluate and strengthen existing ordinances as needed.

The evaluation of policies and ordinances for the "Community Capability" section of this document provided valuable information on City of Asheville's position in terms of existing mitigation planning. However, local conditions are constantly changing due to increased development, changes in technology, changes in local mitigation capabilities, or natural disaster events. It is because of these ever changing conditions that evaluation must be an ongoing process. Therefore, the initial "Community Capability Assessment" should be viewed as a starting point rather than an end result. Because these conditions do not change at regular intervals, it is difficult to establish a timeline dictating how often ordinances and policies should be reviewed. The phrase "as needed" should be interpreted as "anytime the community experiences a significant change in conditions" such as rapid development or technological change. Appropriate times for evaluation also occur when local officials notice the effects of a pattern of slower, but steady, changes over time. Finally, the best window of opportunity for policy evaluation may come following a natural disaster event. This is when you can truly discern the policies' effectiveness.

For example, City of Asheville recently revised its Flood hazard ordinance. The changes to the Flood hazard ordinance included strengthening requirements in the unnumbered "A" zones. Such requirements are intended to improve safety when building structures in the areas identified as zone "A" on the FEMA FIRM maps. This ordinance was adopted by City Council on March 12, 2002. A copy of the ordinance is located in Appendix F at the end of this document.

Also, the International Building Codes and Fire Code were adopted by North Carolina and the City of Asheville for new construction. The International Building Code has an appendix on flood regulations but it has to be adopted by each municipality to be able to enforce this section. Since the City of Asheville's Engineering Department has the responsibility to enforce the Flood Ordinance which is located in the Unified Development Ordinance it was not necessary to adopt the IBC at this time.

The Director of Public Works is responsible for representing the City of Asheville's Public Works Department. The Fire Chief is responsible for representing the City of Asheville's Fire Department. The Chief Code Enforcement Officer is responsible for representing the Building Safety Department. The Planning Director will be responsible for the Planning Department. This has already been implemented and we are reporting data about and revisions of enforcement of ordinances.

Status – On-going

The City of Asheville has adopted the International Building Codes and Fire Codes as approved by the State of North Carolina. The City is working on steep slope ordinances along with flood control ordinances and the storm water ordinance. The erosion control requirements help to prevent hazards such as land and rock slides and ensure site stability.

While we have made great strides in implementing this strategy the City of Asheville will continue to evaluate and strengthen existing ordinances as needed. This will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

3. Ensure enforcement of ordinances.

Developing sound, strong ordinances is only the beginning. These policies are only effective if they are consistently enforced. A tracking system has been developed in the City of Asheville to ensure that the ordinances are being enforced consistently. The City of Asheville will moved all development department personnel who review and inspect new construction into the Public Works building at 161 South Charlotte Street on September 1, 2009. This will allow all plans to be reviewed for code and ordinance consistency benefiting the customer and assuring compatibility of the ordinances with appropriate codes.

Status – Process development and implementation – Complete. Enforcement - On-going.

The City of Asheville Technical Review Committee. Committee members include the following: Planning, Fire Marshal, Erosion Control officer, Stormwater engineer, Building Permits and Inspections, Floodplain ordinance administrator, and Zoning Staff. The committee primarily meets to review plans, in regard to their individual discipline, prior to the submittal to the Zoning Board. In addition, proposed changes to various land development ordinances are discussed, and members update on another on project's status.

This information is tracked in the City of Asheville Development Services Center comprehensive computer database using the HTE NavLine system for approvals and denials. Agencies have to approve a project before a construction permit is issued. Denial of a project requires changes by the developer to meet City ordinances without special approval by the City Council.

We have made great strides in implementing this strategy. However ensuring enforcement of ordinances is an on-going process. This will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

4. Educate the public regarding hazard mitigation.

Though there are many measures that local governments can take to protect the health and safety of their citizens, property owners also have a responsibility to protect their homes, families, and businesses. Local governments can assist in this task by making hazard mitigation information available to the public.

Buncombe County maintains a portion of the web site that includes detailed information on hazard mitigation. The County has also supplied hazard mitigation information for airing on the County's Government Access cable television channel. The City of Asheville jurisdiction is within the County and has its own web site and could include similar information on this site or include a link to the County's site. The City of Asheville currently maintains a local government information television channel available to the cable television channel along with the City of Asheville maintained web site to get information to the citizens.

The Public Relations Person will be responsible for this item. The City of Asheville is reporting data about this.

Status – On-going

The City of Asheville is a part of Buncombe County. The City does multiple education outreach programs on changes to the City ordinances and enforcement. We use multiple strategies such as television, radio PSA announcements, print publications such as the local newspaper, the City operated television channel on cable TV, and open meetings with citizen input to get the information to the members of the community.

Public Education is a continual process. It is not possible to design a single public education campaign offered over a specified time period and consider this strategy completed. The population of the City of Asheville is ever changing. As people move in and out, residents age, businesses close and new ones open the needs and composition of communities change. Therefore this will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

5. Address the issues of storm water management and impervious surfaces.

By implementing a storm water management programs, flooding can be reduced, offsite sedimentation can be prevented by requiring adequate erosion control measures and the storm water measures can reduce pollutants from entering streams. As development occurs, natural ground cover is replaced with impervious surfaces such as streets, parking lots, and buildings. The result is an increase in surface runoff which carries pollutants to bodies of water. When a storm event occurs, concentrations of pollutants may result along with flooding of streets and waterways. "Storm water" is surface flow water from precipitation that accumulates in and flows through natural

and/or man-made storage and conveyance systems during and immediately following a storm event. As storm water travels, it carries pollutants to rivers, lakes, wetlands, and ground waters, impacting water quality. Poor management of storm water can lead to impaired water bodies, degraded animal habitats, polluted drinking water, increased flooding, and hydrologic changes to streams, lakes, wetlands and rivers. (Information derived from "Designing and Implementing an Effective Storm Water Management Program", American Public Works Association, under U.S. Environmental Protection Agency agreement, 1998).

Through the Clean Water Act of 1972, increased accountability for protecting water quality was placed on pollutant dischargers. The Act required states to survey their waters and determine an appropriate use for each, and then set specific water quality criteria for various pollutants to protect those uses. The Clean Water Act also introduced the National Pollutant Discharge Elimination System (NPDES). The NPDES program requires anyone discharging a pollutant from a point source into waters to obtain a NPDES permit. These must be obtained from the Division of Water Quality.

The Clean Water Act focus was on industrial and municipal wastewater, or point source pollution. Stormwater runoff is non-point source pollution. New regulations from the Environmental Protection Agency include adding stormwater discharges under the NPDES program. These regulations are referred to as the EPA's "Phase II Regulations." The City of Asheville became a NPDES Phase II program in July 1, 2005. These new requirements are the second phase of an EPA mandate to control stormwater. The first phase affected larger cities in North Carolina. The second phase requires smaller municipalities, including all six within Buncombe County (Asheville, Biltmore Forest, Black Mountain, Montreat, Weaverville, and Woodfin), to implement stormwater management plans. It also requires some counties, including Buncombe, to face certain requirements, as well.

The EPA Phase II Regulations were announced in December 1999 and require states to implement storm water management methods by March 2003. North Carolina's Department of Environment and Natural Resources (DENR) **is** charged with implementing the federal requirements in the state. The Division of Water Quality in DENR is leading the effort. There is still some question as to whether or not counties, since they typically do not own or operate the municipal storm sewer systems, are going to be charged with carrying out the six required components of the Phase II regulations.

The six required components are:

- Public involvement/participation
- Public education and awareness programs
- Detection and elimination of illicit connections to the municipal separate storm sewer systems (MS4s)
- Management of post-construction storm water runoff
- Construction site storm water runoff controls
- Pollution prevention/good housekeeping for municipal operations (public facilities)

The City of Asheville voluntarily has had a Stormwater management program since July 1, 1994. On July 1, 2009, the City was delegated as a Stormwater Phase II program under the NPDES program. The City of Asheville adopted the stormwater ordinance on August 21, 2007, which requires both quality and quantity components of stormwater control for development. The State sent comments to municipalities in late October for their review and comments. The City of Asheville (NCS000435) made a few comments and submitted them back to the state within the specified time frame. The permit shall become effective January 1, 2004 unless otherwise instructed.

The Director of Public Works will be responsible for this item.

Status – Phase II Update of ordinance and Sotrmwater Management Program – Complete. Refining Stormwater Management Program and enforcement of regualtions – On-going.

The Stormwater Management Phase II ordinance in the City of Asheville was upgraded July 1, 2009. The ordinance meets state requirements for water quality, while also providing a level of protection for property owners adjacent to development against an increase in stormwater runoff in rate and volume. The City of Asheville has a stormwater technician to review plans, issue permits, inspect sites, and to enforce all requirements of this ordinance.

Addressing the issues of Stormwater management and impervious surfaces will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

6. Once Hazard Mitigation Plan is adopted, investigate participation in the National Flood Insurance Program's Community Ratings System.

The National Flood Insurance Program's (NFIP) Community Rating System (CRS) was implemented in 1990 as a program for recognizing and encouraging community flood plain management activities that exceed the minimum NFIP standards. Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance (www.fema.gov/nfip/crs.htm). The CRS requirements are revised every three years. There will be new CRS criteria in place for 2002. The new criteria may include giving CRS credit for multi-hazard mitigation planning. This activity will be coordinated through the City's flood hazard program. The City of Asheville will be working with the CRS representatives to have the City introduced into this program as soon as possible. The Public Relations Person will be responsible for this item.

Status- On-going.

The City of Asheville participates in the National Flood Insurance Program.

This continued effort helps to ensure that our administrators are knowledgeable about changes in regulations, and that our Ordinances are administered in compliance with NFIP regulations.

7. Continue to carryout the hazard mitigation planning process and seek funding for emerging needs.

The identification and development of these mitigation strategies should not be viewed as a conclusion but as one step in a cyclical process. This Hazard Mitigation Plan is a document that will continue to evolve as changes occur in City of Asheville. Procedures for the monitoring, evaluation, update, and revision of this plan are set forth in the final two sections of this document. In addition to the steps enumerated therein, the continuation of the hazard mitigation planning process also includes seeking out funding sources for emerging needs. Funding for updating staff training and certification, as well as equipment, is also a perpetual need in our current world of rapidly changing technology. Future areas of need could also include additional funds for the purchase of repetitive loss structures and/or other structures within the floodplain, funding for elevation studies of Zone A flood plain properties, and the purchase of handheld GPS units to aid in the enforcement of the Erosion Control and Flood Damage Prevention Ordinances.

For Part 7, various persons will be responsible since they are responsible for continuing to update their portion of the ordinances that apply to the City of Asheville. The Public Works Director is responsible for representing the City of Asheville's Public Works

Department. The Fire Chief is responsible for representing the City of Asheville's Fire Department. The Chief Code Enforcement Officer is responsible for representing the Building Safety Department. The Planning Director will be responsible for the Planning Department. This has already been implemented and we would be reporting data as revised.

Status- On-going

The 2004 floods produced by the remnants of Tropical Storm Frances and Hurricane Ivan, the City of Asheville through Buncombe County used Hazard Mitigation Grant Program and North Carolina Hurricane Recovery Act funding to purchase floodplain properties along the Swannanoa River. HMGP and HRA funding required the demolition and removal of all structures and impervious surfaces. Funding conditions further required that deed restrictions be placed on each parcel to ensure that the properties are maintained as open space for perpetuity. This work has been completed

This is another on-going strategy for the upcoming five year Hazard Mitigation Planning cycle.

Adoption and Implementation

The Hazard Mitigation Plan Review Committee, as described in Hazard Mitigation Strategy 1, will review a completed draft of the plan and recommend any needed revisions. The draft of the County's Hazard Mitigation Plan will then be submitted to the North Carolina Division of Emergency Management Mitigation Branch for approval. If NCDEM mandates changes the Review Committee will meet in order to implement NCDEM recommendations. Once NCDEM has approved a draft of the plan each jurisdiction will be asked to adopt the plan according to their standard procedures. Such procedures include providing notice of a public hearing in the local newspaper, having the document available for review by the public, holding the public hearing, and adopting the plan at the governing body's next meeting following the public hearing.

Monitoring and Evaluation

Monitoring and evaluation are the ongoing processes of compiling information on the outcomes resulting from implementation of the hazard mitigation plan. This facilitates the identification of revisions needed to respond to changes in regional and local conditions. Local conditions are constantly changing. Local mitigation plans must also change in response to changes brought about through increased development, changes in technology, and changes in local mitigation capability. There is also a valuable window of opportunity for evaluating the Hazard Mitigation Plan following a natural disaster event. Effective monitoring and evaluation will also provide information on local compliance with state and federal mandates (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

Updates and Revisions

Due to unforeseen contingencies and changing times and conditions, "Update and Revision" is a necessary part of the hazard mitigation planning process. Updates address changes that have taken place in the local area since the plan was created and adopted. Such changes may include additional development, implementation of mitigation efforts, the occurrence of a natural disaster, or changes to state or federal regulations and requirements (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

While "Monitoring and Evaluation" are ongoing processes, "Update and Revision" should occur at regularly scheduled intervals, at least every five years, and as part of a "debriefing" following the occurrence of a disaster event. (Note: The city of Asheville partnering with Buncombe County and Black Mountain is currently developing a flood risk management plan for the Swannanoa River Watershed) A Hazard Mitigation Plan Evaluation and Revision Committee should be established to include the County Director of Emergency Management, the Emergency Management Planner, and a representative from either the Administration or Planning Department from the County and each incorporated jurisdiction. This committee will review and update the Hazard Mitigation Plan a minimum of one time per year or more often if changing conditions so dictate. New flood plan maps were adopted January of 2010.

Town of Biltmore Forest Technical & Fiscal Capability

Biltmore Forest is an incorporated Town governed by a Mayor and three-member Board of Commissioners. The Board of Commissioners appoints a Town Administrator. The Mayor and Board of Commissioners are chosen every two years in non-partisan elections. The Commissioners set policy, determine the Town budget and set property tax rates. The Town Administrator, with the assistance of the Staff and Board, prepares and recommends the annual budget. The Town Administrator is also responsible for program development and personnel management.

The Town of Biltmore Forest is served by the Biltmore Forest Police Department (BFPD). BFPD personnel would be the first responders in the event of a disaster. The BFPD is staffed by 9 full time paid officers with 2 officers serving each 12-hour shift.
Fire Protection is provided via contract with the Asheville Fire Department and emergency medical service (EMS) is provided by Buncombe County.

Although the Town of Biltmore Forest maintains its own Emergency Preparedness Plan, Buncombe County Emergency Management coordinates all resource needs required during a disaster.

The Town generally relies on the Asheville/Mountain Area Red Cross as the designated emergency shelter operator for Buncombe County. The Town maintains the Town's Emergency Preparedness Plan and other plans as needed. The decision to activate the Emergency Preparedness Plan rests with the Town Administrator, Director of Public Works or designee. The Emergency Preparedness Plan is generally updated every 2 years. .

Utility Service is provided by:

Electricity	Progress Energy
Telephone	AT&T
Water	Regional Water Authority of Asheville
Sewer	Metropolitan Sewerage District
Natural Gas	Public Service Company of North Carolina

In addition a small number of residents of Biltmore forest have wells and septic systems as opposed to water service from the Regional Water authority and municipal sewer service.

Town of Biltmore Forest Hazard Mitigation Strategy

1. Incorporate hazard mitigation into the planning process of each jurisdiction.

As previously stated, the goals and principles of hazard mitigation often cut across many aspects of the public interest. Because of this, many of the policies and procedures reviewed during the "Community Capability Assessment" were already positive steps toward hazard mitigation. The next step is to make a *conscious* effort to integrate hazard mitigation into the planning process of each jurisdiction. In order to educate the Administration and Planning Departments of each jurisdiction about the importance of hazard mitigation, a representative from one of those two departments from each jurisdiction will serve on a committee to review the completed draft of the Hazard Mitigation Plan prior to its adoption. This committee will also include the County's Director of Emergency Management and the Emergency Management Planner. This group of people will then evolve into the Hazard Mitigation Plan Evaluation and Revision Committee to be discussed later in the section "Updates and Revisions". Additionally, each jurisdiction will be provided with resources discussing hazard mitigation concepts such as the North Carolina Division of Emergency Management's Tools & Techniques: Putting a Hazard Mitigation Plan to Work (October, 1999) and Keeping Natural Hazards From Becoming Disasters: A Basic Workbook for Local Governments (May, 2000). The Emergency Management Planner will be responsible for coordinating this committee. The committee will be formed and functional prior to January 1, 2005. The Assistant to the Town Administrator will serve on this committee for the Town of Biltmore Forest.

Status- On-going

Upon receipt of FEMA approval, the Town independently adopted the Buncombe County Hazard Mitigation Plan. The Town updates strategy of incorporating hazard mitigation into its planning processes as evidenced in updates to the Hazard Mitigation Strategy.

While we have made strides in implementing this strategy, the Town will continue to integrate hazard mitigation into its planning processes. This will be an on-going strategy for the next five year Hazard Mitigation Planning Cycle.

2. Evaluate and strengthen existing ordinances as needed.

The evaluation of policies and ordinances for the "Community Capability" section of this document provided valuable information on Biltmore Forest and its incorporated jurisdictions' position in terms of existing mitigation planning. However, local conditions are constantly changing due to increased development, changes in technology, changes in local mitigation capabilities, or natural disaster events. It is because of these ever changing conditions that evaluation must be an ongoing process. Therefore, the initial "Community Capability Assessment" should be viewed as a starting point rather than an

end result. Because these conditions do not change at regular intervals, it is difficult to establish a timeline dictating how often ordinances and policies should be reviewed. The phrase "as needed" should be interpreted as "anytime the community experiences a significant change in conditions" such as rapid development or technological change. Appropriate times for evaluation also occur when local officials notice the effects of a pattern of slower, but steady, changes over time. Finally, the best window of opportunity for policy evaluation may come following a natural disaster event. This is when you can truly discern the policies' effectiveness. Since January 2005, two significant ordinances have been adopted. These are the Stormwater Management Ordinance and the Flood Damage Prevention Ordinance. The Stormwater Prevention Ordinance was presented to the Biltmore Forest Board of Commissioners on May 8, 2007 and adopted at that meeting. The Flood Damage Prevention Ordinance was presented to the Biltmore Forest Board of Commissioners on November 10, 2009 and adopted at that meeting.

While we have made significant strides in implementing this strategy, the Town will continue to evaluate and strengthen existing ordinances as needed. This will be an ongoing strategy for the next five year Hazard Mitigation Planning Cycle.

3. Ensure enforcement of ordinances.

Developing sound, strong ordinances is only the beginning. These policies are only effective if they are consistently enforced. A tracking system should be developed to ensure consistency in enforcement. Such a system should include data on the number of plans accepted and rejected and the number of warning and citations issued. Biltmore Forest designates the Biltmore Forest Zoning Administrator to be responsible for enforcing ordinances. All designees should report this information to the Emergency Management Planner (or other County designee) on a yearly basis. This process has been established and is functioning.

Status - On-going

Again we have made significant strides in implementing this strategy. Ensuring enforcement of ordinances is an on-going process (unlike a structural mitigation project that has definite beginning and end points). The strategy is to be on-going for the next five year Hazard Mitigation Planning Cycle.

4. Educate the public regarding hazard mitigation.

Though there are many measures that local governments can take to protect the health and safety of their citizens, property owners also have a responsibility to protect their homes, families, and businesses. Local governments can assist in this task by making hazard mitigation information available to the public. The Town Administrator and the Assistant to the Town Administrator will be responsible for educating the public through newsletters, special alerts and other means as necessary. In addition, the Ordinances, enforced by the Town of Biltmore Forest and Buncombe County will be placed on the Town's website.

Status – On –going

We find that Public Education is a continual process and it is not possible to design a single public education campaign over a specified period and consider this strategy completed. The population of Biltmore Forest is ever changing. As people move in and out, residents' age, businesses close and new ones open, the needs and composition of communities change. Thus there will be an on-going strategy for the next five year Hazard Mitigation Planning Cycle.

5. Address the issues of stormwater management and impervious surfaces.

Storm water management programs can be an important step in flood and erosion control. As development occurs, natural ground cover is replaced with impervious surfaces such as streets, parking lots, and buildings. The result is an increase in surface runoff which carries pollutants to bodies of water. When a storm event occurs, heavy concentrations of pollutants may result along with flooding of streets and waterways. "Storm water" is surface flow water from precipitation that accumulates in and flows through natural and/or man-made storage and conveyance systems during and immediately following a storm event. As storm water travels, it carries pollutants to rivers, lakes, wetlands, and ground waters, impacting water quality. Poor management of storm water can lead to impaired water bodies, degraded animal habitats, polluted drinking water, increased flooding, and hydrologic changes to streams, lakes, wetlands and rivers. (Information derived from "Designing and Implementing an Effective Storm Water Management Program", American Public Works Association, under U.S. Environmental Protection Agency agreement, 1998).
Through the Clean Water Act of 1972, increased accountability for protecting water quality was placed on pollutant dischargers. The Act required states to survey their waters and determine an appropriate use for each, and then set specific water quality criteria for various pollutants to protect those uses. The Clean Water Act also introduced the National Pollutant Discharge Elimination System (NPDES). The NPDES program requires anyone discharging a pollutant from a point source into waters to obtain a NPDES permit.

The Clean Water Act focus was on industrial and municipal wastewater, or point source pollution. Stormwater runoff is non-point source pollution. New regulations from the Environmental Protection Agency include adding stormwater discharges under the NPDES program. These regulations are referred to as the EPA's "Phase II Regulations." These new requirements are the second phase of an EPA mandate to control stormwater. The first phase affected larger cities in North Carolina. The second phase requires smaller municipalities, including all six within Buncombe County (Asheville, Biltmore Forest, Black Mountain, Montreat, Weaverville, and Woodfin), to implement stormwater management plans. It also requires some counties, including Buncombe, to face certain requirements, as well.

The EPA Phase II Regulations were announced in December 1999 and require states to implement storm water management methods by March 2003. North Carolina's Department of Environment and Natural Resources (DENR) is charged with implementing the federal requirements in the state. The Division of Water Quality in DENR is leading the effort. There is still some question as to whether or not counties, since they typically do not own or operate the municipal storm sewer systems, are going to be charged with carrying out the six required components of the Phase II regulations.

The six required components are:

- Public involvement/participation
- Public education and awareness programs
- Detection and elimination of illicit connections to the municipal separate storm sewer systems (MS4s)
- Management of post-construction storm water runoff
- Construction site storm water runoff controls
- Pollution prevention/good housekeeping for municipal operations (public facilities)

Over the next two-year period, stormwater management best practices will be identified, and a storm water management program will be developed. Land-of-Sky Regional Council has established a Regional Stormwater Planning Committee including representatives from Buncombe County Erosion Control, Emergency Management, and Planning Departments as well as representatives from all municipal jurisdictions within the county. This committee also includes personnel from neighboring counties within the French Broad River watershed. The outcome of this planning process will be a regional stormwater management plan for the French Broad River watershed. As stated, the stormwater management must plan must be developed by March of 2003. The Director of Public Works shall be responsible for developing a stormwater management plan for the Town of Biltmore Forest.

Status – Adoption of ordinance and development of Sotrmwater Management Program – Complete. Refining Stormwater Management Program and enforcement of regualtions – On-going.

In the coming years, Biltmore Forest will continue to evaluate and refine its Stormwater Management Program and issues of Stormwater Management and impervious surfaces will be an on-going strategy for the next five year Hazard Mitigation Planning Cycle.

6. Continue to carryout the hazard mitigation planning process and seek funding for emerging needs.

The identification and development of these mitigation strategies should not be viewed as a conclusion but as one step in a cyclical process. This Hazard Mitigation Plan is a document that will continue to evolve as changes occur in Biltmore Forest. Procedures for the monitoring, evaluation, update, and revision of this plan are set forth in the final two sections of this document. In addition to the steps enumerated therein, the continuation of the hazard mitigation planning process also includes seeking out funding sources for emerging needs. Funding for updating staff training and certification, as well as equipment, is also a perpetual need in our current world of rapidly changing technology. Responsibility for this element falls to the Director of Public Works and Administration as needs emerge.

Status – On-going

This is another on-going strategy for the upcoming five year Hazard Mitigation Planning Cycle. Funding needs are to be noted as they emerge.

Adoption and Implementation

The Hazard Mitigation Plan Review Committee, as described in Hazard Mitigation Strategy 1, will review a completed draft of the plan and recommend any needed revisions. The draft of the Biltmore Forest Hazard Mitigation Plan will then be submitted to the North Carolina Division of Emergency Management Mitigation Branch for approval. If NCDEM mandates changes the Review Committee will meet in order to implement NCDEM recommendations. Once NCDEM and FEMA have approved a draft of the plan Biltmore Forest will adopt the plan according to standard procedures. Such procedures include providing notice of a public hearing in the local newspaper, having the document available for review by the public, holding the public hearing, and adopting the plan at the governing body's next meeting following the public hearing.

Monitoring and Evaluation

Monitoring and evaluation are the ongoing processes of compiling information on the outcomes resulting from implementation of the hazard mitigation plan. This facilitates the identification of revisions needed to respond to changes in regional and local conditions. Local conditions are constantly changing. Local mitigation plans must also change in response to changes brought about through increased development, changes in technology, and changes in local mitigation capability. There is also a valuable window of opportunity for evaluating the Hazard Mitigation Plan following a natural disaster event. Effective monitoring and evaluation will also provide information on local compliance with state and federal mandates (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

Review, Updates and Revisions

Due to unforeseen contingencies and changing times and conditions, "Update and Revision" is a necessary part of the hazard mitigation planning process. Updates address changes that have taken place in the local area since the plan was created and adopted. Such changes may include additional development, implementation of mitigation efforts, the occurrence of a natural disaster, or changes to state of federal regulations and requirements (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

While "Monitoring and Evaluation" are ongoing processes, "Update and Revision" should occur at regularly scheduled intervals. Plan Review will occur annually as well as part of a "debriefing" following the occurrence of a disaster event. A Hazard Mitigation Plan Evaluation and Revision Committee should be established to include the Town Administrator, Assistant to the Town Administrator, Director of Public Works and Chief of Police. This committee will review the Hazard Mitigation Plan a minimum of one time per year or more often if changing conditions so dictate.

FEMA planning criteria state that the plan must undergo Update and Revision every five years. The Hazard Mitigation Plan Evaluations and Revision committee will formally update and revise the plan a minimum of once every five years. These committee meetings will be open to the public and public participation in the update and revision of the Hazard Mitigation Plan will be encouraged.

Overview of Black Mountain

The Town of Black Mountain is located in the eastern portion of Buncombe County within the Swannanoa River Valley at an approximate elevation of 2,400 feet. Incorporated in 1893, the Town has now grown to a population of 7,923.

Black Mountain was originally known as Grey Eagle and later named for the range of mountains that border the Town to the north. At the time of incorporation, the Town of Black Mountain had become a major pathway for westbound immigrants, commercial trade, and the mountain railroad. This strategic location helped establish Black Mountain as one of the most prosperous and picturesque communities in the country.

Hazard Identification and Vulnerability Analysis

The Town of Black Mountain concurs with Buncombe County's identification of hazards in our community.

During the process of identifying hazards, the Town of Black Mountain chose to consider the intensity of the hazard rather than the size and location of the hazard. This was done primarily because of the relatively small size of Black Mountain (4,734 acres or 6.83 square miles) as compared with Buncombe County.

The National Environmental Mapping and Analysis Center (NEMAC)/Renaissance Computing Institute (RENCI) at UNCA assisted with the identification of the following hazards and valuations of parcels within the Town of Black Mountain's Jurisdiction. In addition to the information found in the hazard identification and analysis for Buncombe County, Black Mountain has compiled further information directly relating to certain hazards in our community.

Winter Storms – In March of 1993 the Town experienced a major winter storm event that was nicknamed the "Storm of the Century." This storm shut down the town for several days and resulted in approximately 491 emergency calls for service and was estimated to have caused over $500,000 of property damage in Black Mountain alone. Minor winter storm events occur almost every year.

Parcel Count for Winter Storms for Black Mountain - Parcels >= 3000 ft Elevation
DRAFT - Do not use numbers for any official capacity.

Agricultural	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	1	0.02	56.54	1.51
Vacant	0	0.00	0.00	0.00
Total	1	0.02	56.54	1.51
Commercial	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	0	0.00	0.00	0.00
Vacant	0	0.00	0.00	0.00
Total	0	0.00	0.00	0.00
Industrial	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	0	0.00	0.00	0.00
Vacant	0	0.00	0.00	0.00
Total	0	0.00	0.00	0.00
Residential	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	7	0.15	11.10	0.30
Vacant	82	1.78	67.65	1.81
Total	89	1.93	78.75	2.11
Other	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	1	0.02	2.00	0.05
Vacant	12	0.26	118.70	3.18
Total	13	0.28	120.70	3.23
Total	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	9	0.20	69.64	1.86
Vacant	94	2.04	186.35	4.99
Total	103	2.23	255.99	6.85

Parcel Value for Winter Storms for Black Mountain - Parcels >= 3000 ft Elevation

Agricultural	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$284,700.00	$223,100.00	$60,200.00	$1,400.00
Vacant	$0.00	$0.00	$0.00	$0.00
Total	$284,700.00	$223,100.00	$60,200.00	$1,400.00
Commercial	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$0.00	$0.00	$0.00	$0.00
Vacant	$0.00	$0.00	$0.00	$0.00
Total	$0.00	$0.00	$0.00	$0.00
Industrial	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$0.00	$0.00	$0.00	$0.00
Vacant	$0.00	$0.00	$0.00	$0.00
Total	$0.00	$0.00	$0.00	$0.00
Residential	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$4,001,800.00	$765,300.00	$3,231,900.00	$4,600.00
Vacant	$21,464,400.00	$21,464,400.00	$0.00	$0.00
Total	$25,466,200.00	$22,229,700.00	$3,231,900.00	$4,600.00
Other	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$11,000.00	$11,000.00	$0.00	$0.00
Vacant	$4,336,400.00	$4,336,400.00	$0.00	$0.00
Total	$4,347,400.00	$4,347,400.00	$0.00	$0.00
Total	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$4,297,500.00	$999,400.00	$3,292,100.00	$6,000.00
Vacant	$25,800,800.00	$25,800,800.00	$0.00	$0.00
Total	$30,098,300.00	$26,800,200.00	$3,292,100.00	$6,000.00

Flooding – Black Mountain has experienced minor flooding events almost every year. Major flooding occurred most recently in 2004.

Parcel Count for Floods for Black Mountain - Parcels in Floodway

Agricultural	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	0	0.00	0.00	0.00
Vacant	0	0.00	0.00	0.00
Total	0	0.00	0.00	0.00
Commercial	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	30	0.65	207.58	5.56
Vacant	10	0.22	53.78	1.44
Total	40	0.87	261.36	7.00
Industrial	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	4	0.09	78.34	2.10
Vacant	0	0.00	0.00	0.00
Total	4	0.09	78.34	2.10
Residential	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	73	1.58	100.39	2.69
Vacant	26	0.56	52.72	1.41
Total	99	2.15	153.11	4.10
Other	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	18	0.39	283.00	7.58
Vacant	5	0.11	2.95	0.08
Total	23	0.50	285.95	7.66
Total	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	125	2.71	669.31	17.92
Vacant	41	0.89	109.45	2.93
Total	166	3.60	778.76	20.85

Parcel Value for Floods for Black Mountain - Parcels in 500 Year Floodplain

Agricultural	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$0.00	$0.00	$0.00	$0.00
Vacant	$0.00	$0.00	$0.00	$0.00
Total	$0.00	$0.00	$0.00	$0.00
Commercial	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$73,643,000.00	$19,765,700.00	$51,592,700.00	$2,284,600.00
Vacant	$5,109,500.00	$5,109,500.00	$0.00	$0.00
Total	$78,752,500.00	$24,875,200.00	$51,592,700.00	$2,284,600.00
Industrial	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$4,816,500.00	$1,451,200.00	$3,345,400.00	$19,900.00
Vacant	$0.00	$0.00	$0.00	$0.00
Total	$4,816,500.00	$1,451,200.00	$3,345,400.00	$19,900.00
Residential	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$42,954,400.00	$12,367,400.00	$30,042,700.00	$544,300.00
Vacant	$4,572,600.00	$4,542,900.00	$0.00	$29,700.00
Total	$47,527,000.00	$16,910,300.00	$30,042,700.00	$574,000.00
Other	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$59,420,200.00	$10,523,200.00	$45,984,700.00	$2,912,300.00
Vacant	$1,550,800.00	$1,548,700.00	$0.00	$2,100.00
Total	$60,971,000.00	$12,071,900.00	$45,984,700.00	$2,914,400.00
Total	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$180,834,100.00	$44,107,500.00	$130,965,500.00	$5,761,100.00
Vacant	$11,232,900.00	$11,201,100.00	$0.00	$31,800.00
Total	$192,067,000.00	$55,308,600.00	$130,965,500.00	$5,792,900.00

Wildfire – In April of 1993, a furnace seized and exploded inside a house in Montreat. The resulting fire spread to the mountainside and in its aftermath left three houses completely destroyed, three others damaged and burned over 600 acres. Total property loss exceeded $700,000.

Parcel Count for Wildfire for Black Mountain - Parcels in High Wildfire Risk

Agricultural	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	0	0.00	0.00	0.00
Vacant	0	0.00	0.00	0.00
Total	0	0.00	0.00	0.00
Commercial	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	0	0.00	0.00	0.00
Vacant	0	0.00	0.00	0.00
Total	0	0.00	0.00	0.00
Industrial	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	0	0.00	0.00	0.00
Vacant	0	0.00	0.00	0.00
Total	0	0.00	0.00	0.00
Residential	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	33	0.72	29.22	0.78
Vacant	17	0.37	14.45	0.39
Total	50	1.08	43.67	1.17
Other	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	7	0.15	13.56	0.36
Vacant	2	0.04	43.62	1.17
Total	9	0.20	57.18	1.53
Total	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	40	0.87	42.78	1.15
Vacant	19	0.41	58.07	1.55
Total	59	1.28	100.85	2.70

Parcel Value for Wildfire for Black Mountain Parcels in >= Medium Risk

Agricultural	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$284,700.00	$223,100.00	$60,200.00	$1,400.00
Vacant	$134,300.00	$134,300.00	$0.00	$0.00
Total	$419,000.00	$357,400.00	$60,200.00	$1,400.00
Commercial	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$123,649,500.00	$30,324,900.00	$90,537,500.00	$2,787,100.00
Vacant	$7,717,100.00	$7,708,500.00	$0.00	$8,600.00
Total	$131,366,600.00	$38,033,400.00	$90,537,500.00	$2,795,700.00
Industrial	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$5,779,900.00	$1,576,400.00	$4,183,600.00	$19,900.00
Vacant	$0.00	$0.00	$0.00	$0.00
Total	$5,779,900.00	$1,576,400.00	$4,183,600.00	$19,900.00
Residential	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$427,248,900.00	$109,039,500.00	$315,757,600.00	$2,451,800.00
Vacant	$90,075,300.00	$89,785,100.00	$174,500.00	$115,700.00
Total	$517,324,200.00	$198,824,600.00	$315,932,100.00	$2,567,500.00
Other	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$75,820,900.00	$13,625,500.00	$59,247,200.00	$2,948,200.00
Vacant	$15,978,700.00	$15,930,700.00	$45,900.00	$2,100.00
Total	$91,799,600.00	$29,556,200.00	$59,293,100.00	$2,950,300.00
Total	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$632,783,900.00	$154,789,400.00	$469,786,100.00	$8,208,400.00
Vacant	$113,905,400.00	$113,558,600.00	$220,400.00	$126,400.00
Total	$746,689,300.00	$268,348,000.00	$470,006,500.00	$8,334,800.00

Landslides - The US Geological Survey just completed an analysis of landslide hazards for Buncombe County. This study and relative maps are available on the County website. The potential hazards for slides within Black Mountain includes are on the following chart:

Parcel Count for Landslides for Black Mountain - Parcels in Unstable Area

Agricultural	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	1	0.02	56.54	1.51
Vacant	0	0.00	0.00	0.00
Total	1	0.02	56.54	1.51
Commercial	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	3	0.07	2.59	0.07
Vacant	1	0.02	1.91	0.05
Total	4	0.09	4.50	0.12
Industrial	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	1	0.02	17.04	0.46
Vacant	0	0.00	0.00	0.00
Total	1	0.02	17.04	0.46
Residential	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	42	0.91	133.17	3.57
Vacant	43	0.93	55.38	1.48
Total	85	1.84	188.55	5.05
Other	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	3	0.07	20.70	0.55
Vacant	15	0.33	140.78	3.77
Total	18	0.39	161.48	4.32
Total	Parcels	% Total Parcels	Acres	% Total Acres
Occupied	50	1.08	230.04	6.16
Vacant	59	1.28	198.07	5.30
Total	109	2.36	428.11	11.46

Parcel Value for Landslides for Black Mountain - Parcels in Unstable Area

Agricultural	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$284,700.00	$223,100.00	$60,200.00	$1,400.00
Vacant	$0.00	$0.00	$0.00	$0.00
Total	$284,700.00	$223,100.00	$60,200.00	$1,400.00
Commercial	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$3,387,300.00	$969,000.00	$2,411,700.00	$6,600.00
Vacant	$175,000.00	$175,000.00	$0.00	$0.00
Total	$3,562,300.00	$1,144,000.00	$2,411,700.00	$6,600.00
Industrial	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$1,395,400.00	$394,000.00	$1,001,000.00	$400.00
Vacant	$0.00	$0.00	$0.00	$0.00
Total	$1,395,400.00	$394,000.00	$1,001,000.00	$400.00
Residential	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$15,210,300.00	$3,382,600.00	$11,792,600.00	$35,100.00
Vacant	$9,270,000.00	$9,270,000.00	$0.00	$0.00
Total	$24,480,300.00	$12,652,600.00	$11,792,600.00	$35,100.00
Other	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$450,300.00	$450,300.00	$0.00	$0.00
Vacant	$6,776,300.00	$6,776,300.00	$0.00	$0.00
Total	$7,226,600.00	$7,226,600.00	$0.00	$0.00
Total	Total Market Value	Land Value	Building Value	Improved Value
Occupied	$20,728,000.00	$5,419,000.00	$15,265,500.00	$43,500.00
Vacant	$16,221,300.00	$16,221,300.00	$0.00	$0.00
Total	$36,949,300.00	$21,640,300.00	$15,265,500.00	$43,500.00

The Town of Black Mountain concurs with Buncombe County's vulnerability analysis and desires to protect its critical facilities: fire/ems/police stations, schools, town wells, utility and phone stations. The Town also will continue to work with the County to update floodplain maps and pursue flood hazard mitigation strategies as well as to work with land use planning regulations to minimize hazard risk.

Town of Black Mountain Hazard Mitigation Strategy

Based on identification of the most significant hazards facing Black Mountain, along with vulnerability and capability assessments, the following mitigation strategies are suggested:

Mitigation Goal #1
Incorporate hazard mitigation into the Black Mountain planning process.

The Town will also continue to work with the County's Director of Emergency Management and to serve on a coordinating committee, as well as to develop and maintain its GIS database to use in mapping our streets, sidewalks, water system, stormwater system, fire hydrants, and floodplains. The Town will also consider hazard mitigation in all plan review and infrastructure planning into the future.

Status – On – going

While we have made great strides in implementing this strategy (as evidenced by updates to Strategies 2 and 3) Town of Black Mountain will continue to intergrate hazard mitigation in to its planning processes. This will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

Objective:
Incorporate hazard mitigation into the Black Mountain planning process by continuing to Integrate HM planning into development plan review processes within the Planning and Development Department.

Mitigation Goal #2
Evaluate and strengthen existing ordinances as needed.

The Town has updated all of its Land Use Ordinances (including building regulations, subdivision ordinances and zoning regulations) to be consistent with the 2005 NCGS updates to authorizing statutes and to better incorporate HM and public safety needs into land use policies. These are slated for adoption in FY09-10.

Status – On – going

While we have made great strides in implementing this strategy The Town of Black Mountain will continue to evaluate and strengthen existing ordinances as needed. This will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

Mitigation Goal #3
Ensure enforcement of ordinances.

Developing sound, strong ordinances is only the beginning. These policies are only effective if they are consistently enforced. The Town has implemented a procedure for the enforcement and monitoring of its ordinances and provides monthly reports to our board of Aldermen.

Status On-going

We have made great strides in implementing this strategy. However ensuring enforcement of ordinances is an on-going process. (unlike a structural mitigation project that has definite beginning and end points). This will be an on-going strategy of the next five year Hazard Mitigation Planning cycle.

Objective 3.1
Ensure consistency in zoning and building inspections enforcement and

3.1.4 Continue to enforce the International Building Code.
Involve local emergency staff and HM principles in development and permitting review.

Mitigation Goal #4
Educate the public regarding hazard mitigation.

Though there are many measures that local governments can take to protect the health and safety of their citizens, property owners also have a responsibility to protect their homes, families, and businesses. Local governments can assist in this task by making hazard mitigation information available to the public. The Building and Zoning Planning and Development Department will educate contractors, developers and designers on code changes and new development issues. The Town will also continue with and expand the fire prevention programs in the fire department to reduce fire losses within in the Town and the East Buncombe Fire District.

Objective 4.1
Educate the public about hazards prevalent to the area.

4.1.1 Educate contractors, developers and designers on code changes and new development issues.
4.1.2 Provide new homebuilders with information on quality redevelopment and safe housing development. The information is most efficiently dispersed at the Building Inspections Department and other community owned, public facilities in Town.

Objective 4.2
Publicize the documents associated with emergency response and mitigation.

4.2.1 Manually disperse and have a website posting which provides information about relevant emergency response actions the public can take.
4.2.2 Manually disperse and have a website posting which provides information about relevant emergency response and preparedness actions the public can take.
4.2.3 Manually disperse and have a website posting which provides information about Buncombe County's Project Impact and the County's Hazard Mitigation Plan and relevant mitigation measures the public can take.

Objective 4.3
Maintain and publicize a current action plan for emergency response.

4.3.1 Continue to update the Town of Black Mountain Emergency Response Ordinance on an annual basis including relevant positions and contact information changes.

Status On-going

Public Education is a continual process. It is not possible to design a single public education campaign offered over a specified time period and consider this strategy completed. This population of The Town of Black Mountain is ever changing. As people move in and out, residents age, businesses close and new ones open the needs and composition of communities change. Therefore this will be an on-going strategy of the next five year Hazard Mitigation Planning cycle.

Mitigation Goal #5
Address the issues of stormwater management and impervious surfaces.

Storm water management programs can be an important step in flood and erosion control. As development occurs, natural ground cover is replaced with impervious surfaces such as streets, parking lots, and buildings.

The Town just completed a Stormwater Management Plan with assistance from the Clean Water Management Trust Fund. This plan includes a CIP for stormwater infrastructure improvements, flood mitigation, stream and lake protection, and improvements to storm flow through our natural drainages. The Town has also adopted a Phase II Stormwater Management Plan and maintains a current NPDES permit with the State.

Objective 5.1

Establish Continue to implement Best Management Practices and Measurable Goals for each of the six required components for the Black Mountain Stormwater Plan.

- Public involvement/participation
- Public education and awareness programs
- Detection and elimination of illicit connections to the municipal separate storm sewer systems (MS4s)
- Management of post-construction storm water runoff
- Construction site storm water runoff controls
- Pollution prevention/good housekeeping for municipal operations (public facilities)

Status – Adoption of ordinance and development of Sotrmwater Management Program – Complete. Refining Stormwater Management Program and enforcement of regualtions – On-going.

In the coming years The Town of Black Mountain will continue to evaluate and refine its Stormwater Management Pogram. Addressing the issues of Stormwater management and impervious surfaces will be an on-going strategy for the next five year Hazard Mitigation Planning cycle.

Mitigation Goal #6
Once Hazard Mitigation Plan is adopted, investigate participation in the National Flood Insurance Program's Community Ratings System.

The Town participates in The National Flood Insurance Program's (NFIP). The Town will continue to enforce flood hazard prevention regulations that meet the guidelines of the Federal and State NFIP program.

Objective 6.1

Investigate participation in the National Flood Insurance Programs Community Ratings System.

6.1.1 Coordinate this activity through the County's Project Impact Coordinator/Emergency Management Planner and the Floodplain Management Administrator for the Town.

Status – deferred

Due to the remapping process that occurred following the floods of September 2004 and the procedures and timeline that were necessary of the adoption of the updated Flood Insurance Rate Maps participation in the Community Ratings System was deferred for future consideration. The Town of Black Mountain will pursue this strategy during the next five year Hazard Mitigation Planning cycle.

Mitigation Goal #7
Continue to carryout the hazard mitigation planning process and seek funding for emerging needs.

Objective 7.1
Town is participating in regional work to mitigate flooding through Senate Bill 7 funding. Town will implement strategies and seek funding for flood mitigation.

Objective 7.2
Record all structures within the floodplain, as well as, areas of repetitive losses due to flooding.

7.2.1 Record and maintain all tax parcel information and floodplain locations in a GIS system in order to build the Towns capability to identify areas needing future mitigation.

Objective 7.3
Improve the Town's capability to identify areas needing future mitigation.

7.3.1 Develop a database that identifies each property that has received damage due to hazards identified within this mitigation plan. The database should also include a tax identification number of the property, a description of the property damage, the value of the damage, and links to photographs of the damage. Developing this database will allow the Town to easily identify properties at high risk of damage from certain hazards as well as properties, which receive repetitive damage from multiple hazards.

Status – On – going

This is another on-going strategy for the upcoming five year Hazard Mitigation Planning cycle. Current funding needs are noted in red in the first paragraph of this section. Assitional needs will be recorded as they emerge.

Adoption and Implementation

The draft of the Buncombe County Hazard Mitigation Plan will be submitted to the North Carolina Division of Emergency Management Mitigation Branch for approval. If NCDEM mandates changes the Review Committee will meet in order to implement NCDEM recommendations. Once NCDEM has approved a draft of the plan each jurisdiction will be asked to adopt the plan according to their standard procedures. Such procedures include providing notice of a public hearing in the local newspaper, having the document available for review by the public, holding the public hearing, and adopting the plan at the governing body's next meeting following the public hearing.

Monitoring and Evaluation

Monitoring and evaluation are the ongoing processes of compiling information on the outcomes resulting from implementation of the hazard mitigation plan. This facilitates the identification of revisions needed to respond to changes in regional and local conditions. Local conditions are constantly changing. Local mitigation plans must also change in response to changes brought about through increased development, changes in technology, and changes in local mitigation capability. There is also a valuable window of opportunity for evaluating the Hazard Mitigation Plan following a natural disaster event. Effective monitoring and evaluation will also provide information on local compliance with state and federal mandates (NCDEM: Local Hazard Mitigation Planning Manual, November 1998).

Updates and Revisions

The Town will work with the county to update and revise the plan as needed.

Goals/Objectives		Implementation Measures		Type of Strategy	New, Continuation or Amendment	Target Completion Date	Responsible Party/Org.
1. Incorporate hazard mitigation into the Black Mountain planning process.							
1.1	Incorporate hazard mitigation into the Black Mountain planning process.	1.1.1	Review all development proposals for their hazard mitigation impacts and opportunities.	Preventative	Continuation	Ongoing	Planning Director

Goals/Objectives		Implementation Measures		Type of Strategy	New, Continuation or Amendment	Target Completion Date	Responsible Party/Org.
2. Evaluate and strengthen existing ordinances as needed.							
2.1	Strengthen existing ordinances as needed.	2.1.1	Update the zoning ordinance to reflect mitigation planning and safety factors.	Preventative	Continuation	September 2009	Board of Alderman
		2.1.2	Develop a mechanism that will ensure review of appropriate policies and procedures following a natural disaster event.	Preventative	Continuation	Continuation	Town Mgr. Fire Chief Police Chief

Goals/Objectives		Implementation Measures		Type of Strategy	New, Continuation or Amendment	Target Completion Date	Responsible Party/Org.
3. Ensure enforcement of ordinances							
3.1	Ensure consistency in zoning and building inspections enforcement.	3.1.1	Develop a checklist in our zoning and building inspections department to ensure consistency in zoning enforcement and to prevent omissions in the evaluation of projects.	Preventative	Continuation	Ongoing	Planning Director
		3.1.2	Develop a tracking system in the building inspections department to record the number of plans accepted and rejected and the number of warning and citations issued.	Preventative	Continuation	Ongoing	Planning Director
		3.1.3	Report results of inspection/enforcement measures to the Project Impact Coordinator/ Emergency Mgt. Planner on a semi-annual basis.	Public Information	New Policy	January 1, 2005 and continuous	Building Inspector
		3.1.4	Continue to enforce the International Building Code.	Preventative Property Protection	Continued Policy	Continuous	Building Inspector

Goals/Objectives		Implementation Measures		Type of Strategy	New, Continuation or Amendment	Target Completion Date	Responsible Party/Org.
4. Educate the public regarding hazard mitigation.							
4.1	Educate the public about hazards prevalent to the area.	4.1.1	Educate contractors, developers, and designers on code changes and new development issues.	Public Information	Continued Policy	Continuous	Building Inspector/ Zoning Administrator
		4.1.2	Provide new homebuilders with information on quality redevelopment and safe housing development.	Public Information	Continuation	Ongoing	Building Inspector/ Zoning Administrator
4.2	Publicize the documents associated with emergency response and mitigation.	4.2.1	Manually disperse and have a website posting which provides information about relevant emergency response actions the public can take.	Public Information	Continuation	Ongoing	Fire Prevention Officer
4.3	Maintain and publicize a current action plan for emergency response.	4.3.1	Continue to update the Town's Emergency Response Ordinance on an annual basis including relevant positions and contact information changes.	Preventative	Continued Policy	January 1, 2005 and continuous	Town Mgr. Fire Chief Police Chief

Goals/Objectives		Implementation Measures	Type of Strategy	New, Continuation or Amendment	Target Completion Date	Responsible Party/Org.
5. Address the issues of stormwater management and impervious surfaces.						
5.0	Establish Best Management Practices and Measurable Goals for each of the six required components for the Black Mountain Stormwater Plan.					

Goals/Objectives		Implementation Measures		Type of Strategy	New, Continuation or Amendment	Target Completion Date	Responsible Party/Org.
6. Once Hazard Mitigation Plan is adopted, investigate participation in the National Flood Insurance Program's Community Ratings System.							
6.1	Adopt revised floodplain maps when available from the NC Flood Plain Mapping Program.	6.1.1	Coordinate this activity through the County's Project Impact Coordinator/Emergency Management Planner and the Floodplain Management Administrator for the Town.	Preventative	Continuation	Draft maps available August 2009	Floodplain Administrator

Goals/Objectives		Implementation Measures		Type of Strategy	New, Continuation or Amendment	Target Completion Date	Responsible Party/Org.
7. **Continue to carry out the hazard mitigation planning process and seek funding for emerging needs.**							
7.3	Improve the Town's capability to identify areas needing future mitigation.	7.3.1	Participate with the City and County on a regional watershed study.	Preventative Property Protection	New Project	January 1, 2007	Planning Director