Washington County

Local Mitigation Strategy

January 2016

Prepared by:

Washington County Board of County Commissioners

Local Mitigation Strategy Committee

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Washington County and the five municipalities represented in the updated plan (Caryville, Chipley, Ebro, Vernon, Wausau, and the unincorporated areas) are threatened by a number of natural hazards that could cause costly disasters in neighborhoods, business districts, and rural areas. These hazards have the potential to endanger the health and safety of the population, and jeopardize economic and environmental vitality. Due to the importance of avoiding or minimizing the vulnerabilities to these hazards, the public and private sector interests of Washington County joined together to create a Local Mitigation Strategy (LMS) Committee. This committee undertook a comprehensive, multi-jurisdictional planning process that culminated in the publication of the "Washington County Local Mitigation Strategy." These are the same jurisdictions as stated in the original plans with no changes except for the updating of hazard, vulnerability, and mitigation information. This LMS Plan replaces a plan adopted in 2011 by the six local government jurisdictions of the county.

The LMS Committee has identified the hazards threatening the jurisdictions of Washington County and to estimate the relative risks posed to the community by those hazards. Information has been gathered from a variety of sources, including property appraiser, planning offices, and federal programs. This information has been used by the LMS Committee to assess the vulnerabilities of the facilities and neighborhoods of the county to the impacts of future disasters involving those hazards. This update also recognizes the new growth experienced in the County, although this new growth did not require the LMS to be changed. There has not been any significantly new types of growth experienced in the incorporated, nor unincorporated areas of the County.

Vulnerabilities and impacts on the community were measured and then "mitigation strategies" were developed. Mitigation strategies are designed to identify ways to reduce vulnerability to disasters. The mitigation strategies were assembled in a five-year plan that allows the county and municipalities to co-join these efforts with other local planning and budgeting processes.

In viewing the constant threat of these hazards and many more, their risk, and the extensive vulnerability of the county's infrastructure, businesses, and homes, the Washington County Board of County Commissioners and the City/Town Councils of Caryville, Chipley, Ebro, Vernon and Wausau sanctioned the development of the Washington County LMS.

This document details the work of the Washington County LMS Committee over the past several months to update the planning organization, to undertake the needed technical analyses, and to coordinate the mitigation initiatives that have been proposed by the participating jurisdictions and organizations. Through publication of this local mitigation plan, the committee continues to solicit the involvement of the entire community to make the people, neighborhoods, businesses and institutions of Washington County safer from the impacts of future disasters.

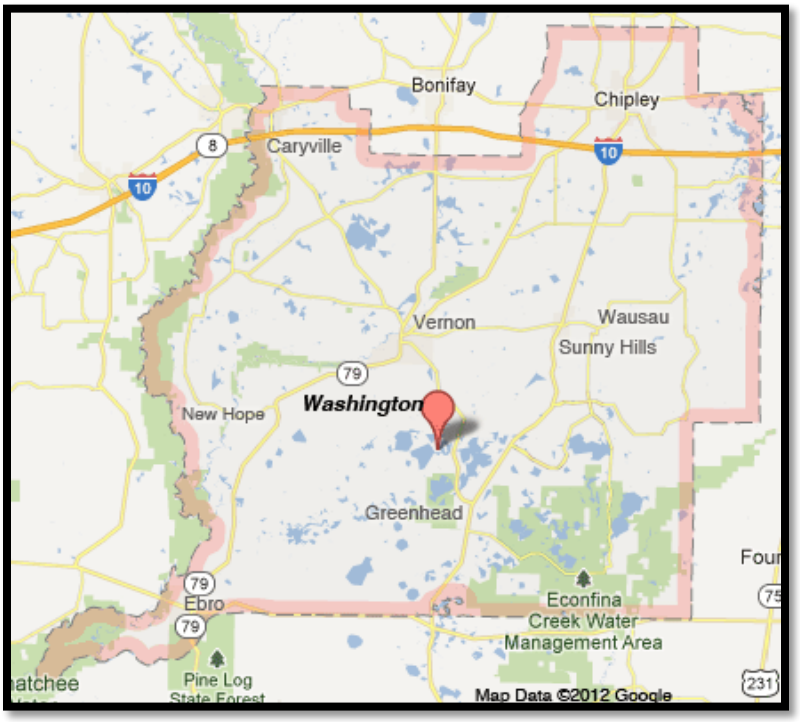
The Washington County Local Mitigation Strategy will expire in July, 2021.

Section 2: Profile of Washington County

2.1 Introduction

Washington County is a rural county located in northwestern Florida that covers approximately 391,040 acres, of which 16,448 acres are fresh water and 374,592 acres are land. The county is located in the center of the Florida Panhandle in Northwest Florida, about 50 miles north of Panama City and midway between Pensacola and Tallahassee. The county extends 41 miles north to south, and 44 miles east to west. The county is bordered on the south by Bay County, on the east by Bay and Jackson counties, and on the west by Holmes and Walton counties. Holmes and Jackson Counties wrap around from the west to the east respectively to form the northern boundary of the county. The Choctawhatchee River flows southward at the extreme western side of the county. There are five incorporated areas, which comprise 5% of the county area: the City of Chipley, the Town of Vernon, the Town of Wausau, the Town of Ebro, and the Town of Caryville. Figure 1 below shows an overview of the county.

Figure 1: Map of Washington County



2.2 Climate

Washington County has attracted, and continues to attract people because of the great natural beauty that abounds in the many springs; spring feed creeks, and the beautiful woodlands in the area. The climate in Washington County is humid subtropical with 53 inches of annual rainfall distributed throughout the year. The average temperature is about 66 degrees

Fahrenheit. The average minimum for January is 37 degrees Fahrenheit and average maximum for July is 92 degrees Fahrenheit.

2.3 Topography

The topography of Washington County is hilly, with elevations ranging from one foot above Mean Sea Level in the swampy area south of the Town of Ebro to over 200 feet above Mean Sea Level near the eastern county border. The entire western boundary is a low river valley and the entirety of the eastern boundary is high plains and hills. The central part of the county tends to show meshed characteristics.

The entire western part of Washington County is within the Choctawhatchee River Drainage Basin. The flood-prone area in Washington County is along the Choctawhatchee River Basin and the low-lying areas along creeks and streams that branch out from the river. Rivers and other streams north of the county, and those within the county, ultimately flow into the Choctawhatchee River. Within the county are several large basins; Holmes Creek is the main tributary. An old karsts landscape, characterized by many swamps, creates poor natural drainage conditions in many locations.

2.4 Transportation

The main roads serving Washington County are I-10, State Roads 77, 79, 20, and US 90. Jackson, Holmes, Walton, and Bay County border the county. The county seat is the City of Chipley. The CSX Railroad System runs through Chipley, which hauls commodities only. The Panama City-Bay County Airport, Northwest Florida Beaches International Airport, and Dothan Municipal Airport provide commercial air service. The Tri-County Airport (Chipley) provides small terminal facilities for light general aviation services.

2.5 Land Use, Population and Growth Trends

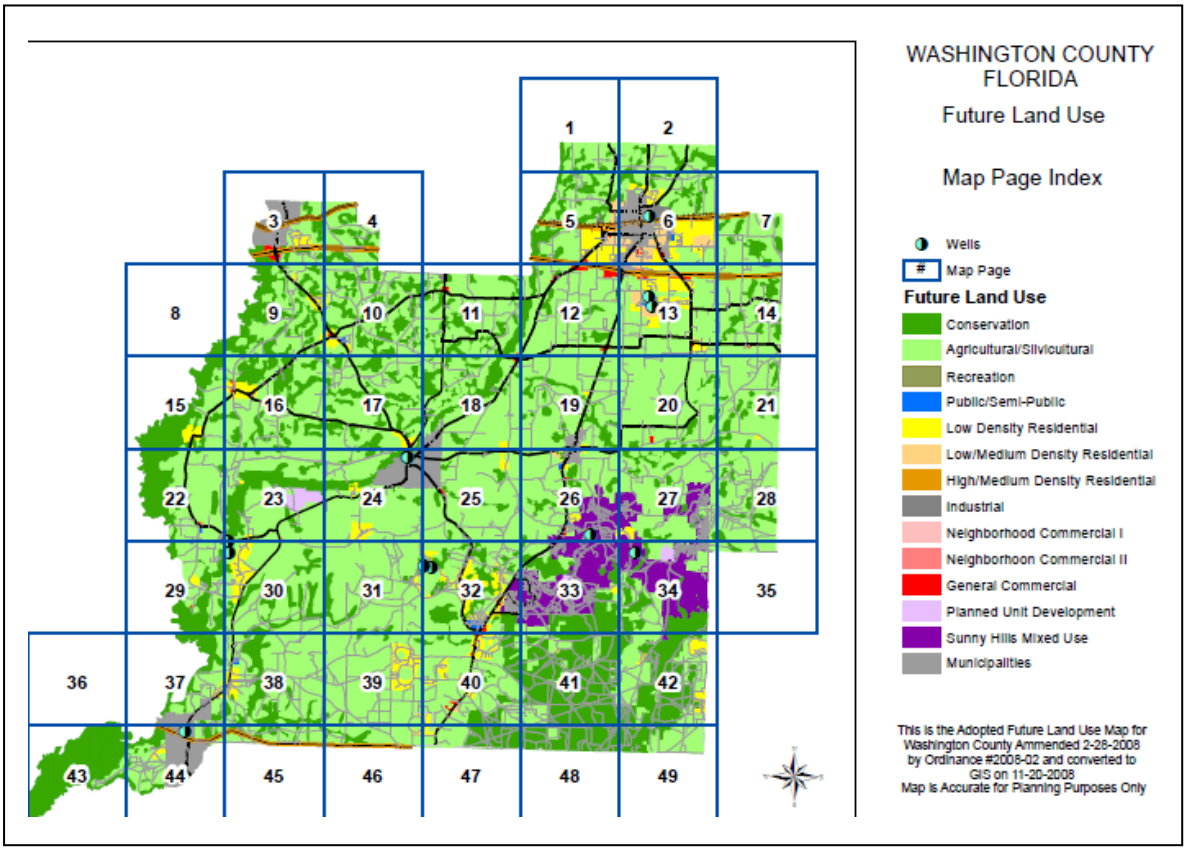
2.5.1 Land Use

According to the Washington County Comprehensive Emergency Management Plan, the total area of Washington County is approximately 580 square miles in size. There are 20 square miles of fresh water and 560 square miles of land. Almost 4% of the county's land area consists of conservation lands (Choctawhatchee River Management Area and Recharge Management Area owned by the Northwest Florida Water Management District.) The county's five municipalities comprise only about 5% of the entire county area. Ninety-five percent of the county is unincorporated. The majority of the land in the county is timberland, under ownership of the State (including the Northwest Florida Water Management District), county and municipal governments, as well as the forest industry, private farmers, corporations and individuals. In addition, agricultural land makes up a large portion of Washington County. The 4% of land in Washington County not considered timberland or agricultural land consists of the municipalities

and residential use, with minimal amounts of commercial and/or industrial land uses outside the towns and city.

The Washington County Future Land Use Plan establishes a framework for future growth in the county. In terms of preventing future hazards, the COMP plan directs that environmentally sensitive areas that provide for ***natural functions,*** which are lands within the 100-year floodplain, conservation areas, and agricultural shall conform to lower densities than other classifications. Non-residential uses such as industrial activities and commercial uses within these areas are restricted. Land uses permitted within these areas are to provide mitigating measures to protect the natural functions of the county's environmentally sensitive areas.

Figure 2: Washington County Future Land Use Map



Source: Washington County Future Land Use Map - https://www.washingtonfl.com/planning/FLUM/NEw%20Flum%20pdf/FLU_MapBook_Index.pdf

According to the *"Florida Property Valuations & Tax Data Book: 2015"* (Florida Department of Revenue) report, the parcels of existing land used within Washington County (including municipalities) are as follows:

Figure 3: Property Parcels by Type - Washington County

Type	Parcels	Type	Parcels
Vacant Residential	28,163	Vacant Industrial	3
Single Family Residential	4,762	Improved industrial	44
Mobile Homes	2,403	Agricultural	4,894
Condominiums	0	Institutional	225
Multi-Family Units	<10 - 64	Government	1,018
Multi-Family Units	>or =10 - 5	Leasehold Interest	0
Cooperatives	0	Miscellaneous	3,154
Retirement Homes	1	Non Ag Acreage	416
Vacant Commercial	584		
Improved Commercial	331	**Total Parcel Count**	**46,067**

Source: http://dor.myflorida.com/dor/property/resources/data.html

2.5.2 Population and Growth Trends

The University of Florida's Bureau of Economic and Business Research in Florida estimates the population of Washington County (unincorporated and incorporated) to be 24,959 (2014) and expected to increase to 26,237 by 2020, or a 5.12% expected growth rate.

Figure 4: Population Data – Washington County

Jurisdiction	Total Pop	Minority	Over 65	Poverty	Per Capita Income	Pop Density sq/mi	Most Common Occupations
Washington County (Uninc)	24,959	5,366	17.3%	22.4%	$17,385	43	Agriculture (20%); Government (8%); Professional (16.6%); Education, health, social service (13.5%)
Caryville	270	105	47	60	$11,346	91	Material Moving Occupations (38%), Construction/extraction (20%); Maintenance/repair (6%); Govt (5%); Farming (5%); Transportation (5%)
Chipley	3,504	1,208	595	784	$15,856	868	Food Preparation (28%); Education (12%); Sales (8%); Personal care and service (8%); law enforcement (6%) Public Administration (6%); Agriculture (5%)
Ebro	248	45	42	56	$15,634	84	Maintenance (16%); Repair (14%); Transportation (14%); Construction (9%); Personal care (5%); Business and finance (4%)
Vernon	680	264	116	152	$12,164	145	Maintenance (25%); Installation (19%); Admin Support (11%); Farming (9%); Public Admin (17%); Transportation (17%); Construction (6%)
Wausau	377	25	64	84	$16,935	333	Public Admin (38%); Retail trade (22%); Construction (19%); Education (5%); Agriculture (0%)

Source: City-Data.com; US Census Quick Facts; University of Florida BEBR Center

The overall magnitude of growth in terms of the actual percentage of new residents added between 2010 and 2014 was .3% as a countywide average. Individual municipalities lost population on the whole during this same period of time.

Population density is concentrated in and surrounding the City of Chipley, with smaller population centers in the other municipalities and in a few unincorporated communities throughout the county. Additional concentration is beginning to occur from suburbanization along SR-77 near the Bay County line, north to the unincorporated community of Greenhead and in the large Deltona development known as Sunny Hills south of Wausau. The rest of the area remains primarily agricultural with parcels divided among the various uses, including commercial, industrial, and state conservation lands.

General growth is being spurred by a number of factors including Northwest Florida Beaches International Airport. This airport is already having a positive impact on home sales and increased property values in Wausau, Ebro and Vernon, as well as the southern half of the county, including the Sunny Hills community. Another growth factor is the four-lane improvements being made to SR-77 and SR-79. This may eventually lead to town and city annexations of unincorporated lands.

Section 3: Overview and Purpose of the Strategy

3.1 Overview of the Local Mitigation Strategy

The Local Mitigation Strategy is the written product of planning efforts undertaken by the Washington County Local Mitigation Strategy (LMS) Committee to mitigate the effects of natural hazards within **Washington County**, the **Town of Caryville**, the **City of Chipley**, the **Town of Ebro**, the **Town of Vernon,** and the **Town of Wausau**. This document includes a detailed description of the following: The Local Mitigation Strategy Committee, its history, participant composition, responsibility for development of the strategy, the need for public input, and the procedures, bylaws, and planning process utilized in the formation of the strategy. The strategy describes the natural hazards that each community within Washington County has the potential to face, as well as historical occurrences of each hazard and the vulnerabilities to them that increase its risk. Based on the hazards analysis for these communities, the strategy includes the LMS Committee's mitigation goals, its procedures for proposing and prioritizing actions to accomplish those goals, and the list of initiatives that the multi-jurisdictional LMS Committee supports for the pursuit of outside funding. In addition, it outlines the Committee's procedures for updating the strategy within the five-year update cycle (2016-2021), as well as methods for inclusion of mitigation elements into or from other community plans. The strategy concludes with the corresponding dates of initial adoption by each participating jurisdiction.

3.2 Participation in the Multi-Jurisdictional Strategy

This plan represents one unified Local Mitigation Strategy developed in cooperation among the incorporated and unincorporated areas of Washington County. Each jurisdiction was asked to participate in the Local Mitigation Strategy planning process and was responsible for serving on

the Steering Committee which, provided information, and assisted in the completion of the deliverables identified in the grant Scope of Work that funded this effort. Specifically, the following communities were members of the planning process, and are included in this plan:

- Washington County (unincorporated)
- City of Caryville
- Town of Chipley
- Town of Ebro
- City of Vernon
- Town of Wausau

Active, ongoing participation by each jurisdiction in the Washington County LMS Committee as defined in the bylaws is a requirement for continued inclusion of the jurisdiction's projects/ initiatives in the Local Mitigation Strategy's "Project Priority List". Thus, limited or non-participation has a detrimental effect on a jurisdiction's opportunity for future mitigation grant funding.

3.3 Purpose of the Local Mitigation Strategy

The Washington County Local Mitigation Strategy is intended by the LMS Committee to serve many purposes. These include the following:

3.3.1 Provide a Methodical, Substantive Approach to Mitigation Planning

A systematic process has been utilized by the Washington County LMS Committee to update the plan. The process relies on soundly based, methodical planning concepts. Vulnerabilities to natural hazard disasters are identified and mitigation initiatives are proposed that allow the county to avoid or minimize those vulnerabilities. Each step in the planning process builds upon the previous. A high level of assurance is developed so that each mitigation initiative proposed by the LMS Committee has a valid basis for both their justification and priority for implementation. One key purpose of this plan is to document the process and to present its results to the community, along with state and federal agencies to justify potential mitigation funding.

3.3.2 Enhance Public Awareness and Understanding

The LMS Committee is interested in finding ways to make the community more aware of natural hazards. Additionally, there is a need to inform the community about the impact mitigation planning can have in the county. The plan identifies the hazards threatening the county and provides an assessment of the relative level of risk they pose. The LMS Committee also provides information and education to the public regarding ways to mitigate disasters. The committee has been active in communicating with the public and engaging interested members of the community in the planning process. This document, and the analyses contained herein, is the principal information resource for this activity.

3.3.3 Create a Decision Tool for Management

The updated Washington County LMS Plan provides information needed by the managers and leaders of local government, business and industry, community associations and other key institutions and organizations. This information will allow these people and entities to take actions to address vulnerabilities to future disasters. It also provides proposals for specific projects and programs that are needed to eliminate or minimize those vulnerabilities. These proposals, called "mitigation strategies" in the plan, have been justified based on their economic benefits using a uniform technical analysis, and prioritized for implementation using ten objective criteria.

3.3.4 Promote Compliance with State and Federal Program Requirements

There are a number of state and federal grant programs, policies, and regulations that encourage or even mandate local government to develop and maintain a comprehensive hazard mitigation plan. This plan is specifically intended to assist participating local governments in complying with these requirements. The plan enables them to quickly respond to state and federal funding opportunities for mitigation-related projects. The plan defines, justifies, and prioritizes mitigation initiatives that have been formulated through a technically valid hazard analysis and vulnerability assessment process. Those interested in applying for grants are better prepared, using this plan, to quickly and more easily develop the necessary grant application materials for seeking state and federal funding.

3.3.5 Enhance Local Policies for Hazard Mitigation Capability

A component of the hazard mitigation planning process is the analysis of the existing policy, program, and regulatory basis for control of growth and development. Essentially, the experiences, data, and facts of emergency planning (pre- and post-disaster) are brought together with day-to-day land use planning policy. Additionally, current mitigation-related policies of local government are compared to emergency planning policies relating to mitigation. This allows for a comparison of the hazards that threaten the jurisdiction and the relative risks they pose to the community.

3.3.6 Assure Multi-Jurisdictional Coordination of Mitigation-Related Programming

A key purpose of the mitigation planning process is to ensure proposals for mitigation initiatives are reviewed and coordinated among the municipalities, the county and the private sector. In this way, there is a high level of confidence that mitigation initiatives proposed by one will be compatible with the interests of others. The multi-jurisdictional aspect of the process reduces the probability of duplication or overlooking a project.

3.3.7 Provide a Flexible Approach to the Planning Process

The LMS Committee is flexible in meeting the analysis and documentation needs of the planning process. The LMS Committee can accept directives from the Board of County Commissioners or City Councils to develop special reports or research. Additionally, citizens, businesses, non-profits, and other parties can request special work be done for their issues. The LMS Committee can then make recommendations to local governments to facilitate action.

Section 4: LMS Committee and Planning Process

The Washington County Local Mitigation Strategy (LMS) Committee was formed to help mitigate the effects of local hazards and disasters. The LMS Committee, through participation by members of each jurisdiction, establishes goals and priorities and identifies methods of reducing (mitigating) the effects of natural hazards throughout Washington County, the City of Chipley, the Town of Caryville, the Town of Ebro, the Town of Vernon, and the Town of Wausau. The LMS Committee focuses on mitigation issues, such as flood damage reduction, improving buildings to withstand hurricanes, examining methods that reduce the potential for wildfire to enter neighborhoods, and other means of reducing the impact of identified natural hazards in the community.

4.1 Representation on the Local Mitigation Strategy Committee

The LMS Committee is comprised of individuals representing municipalities and county departments, as well as fire departments, utility systems, law enforcement, emergency management officials, residents, businesses, non-profit organizations and others who play a vital role in identifying vulnerabilities to natural disasters. Public input is an important necessity in the mitigation planning process and all interested citizens are invited to attend LMS meetings, provide input or comments, and participate in the ongoing Washington County mitigation process.

The following is the current membership of the Washington County LMS Committee. They contributed to the development of this plan directly, through either drafting or commenting on the various stages of document development or by providing information, mitigation projects, suggestions, or other input.

Figure 5: LMS Committee Membership – 2015

Agency	Contact	Email	Phone
BOCC	David Corbin	dcorbin@washingtonfl.com	850-638-6200
Chamber of Commerce	Chris MacBain	chris@washcomall.com	850-638-4157
Chamber of Commerce	Ted Everett, Ex Dir	ted@washcomall.com	850-638-4157

City of Chipley	Dan Miner, Administrator	dminer@cityofchipley.com	850-638-6350
City of Caryville	Henry Chambers, Council Chair		850-548-5571
City of Chipley Public Wks	Ernie Toole, Assistant Dir	etoole@cityofchipley.com	850-636-6346
City of Chipley, Public Works	Chester Campbell, Dir	ccampbell@cityofchipley.com	850-636-6346
City of Vernon	Vic Starling, Mayor	clerk@vernonfl.com	850-535-2444
City of Vernon	Michelle Cook, Town Clerk	clerk@vernonfl.com	850-535-2444
FDOT	Alicia Brininger, Planning Spec	Alicia.bnrininger@dot.myflorida.com	850-415-9550
Town of Ebro	David Evans, Mayor	townofebro@gmail.com	850-535-2842
Town of Wausau	B.J.Philips, Mayor	townofwausau@bellsouth.net	850-638-1781
WC E-911 / GIS Office	Clint Erickson	clinterickson@wcso.us	850-638-6308
WC Emergency Management	Lynne Abel, Director	ldorch@washingtonfl.com	850-638-6203
WC Emergency Management	Connie Welch, EM Coordinator	cwelch@washingtonfl.com	850-638-6203
WC Engineer	Cliff Knauer, Preble-Rish	knauerc@preble-rish.com	850-974-8815
WC Fire Services	Gene Brandow, Coord	gbrandow@washingtonfl.com	850-415-5026
WC Grants Dept	Karen Shaw, Chair	kshaw@washingtonfl.com	850-638-6058
WC Planning Dept	Mike DeRuntz, Vice Chair	mderuntz@washingtonfl.com	850-415-5093
WC Public Schools	Joe Taylor, Superintendent	Joseph.taylor@wcsdschools.com	850-638-6222
WC Public Schools	Mike Park, Bldg Maint/ Transport Director	Mike.park@wcsdschools.com	850-638-6222
WC Public Works	Johnny Evans	Jevans@wco.washingtonfl.com	850-638-6280
WC Public Works	Dallas Carter, Road Supt	Ddcarter1962@icloud.com	850-638-6280
WC Public Works	Debbie Riley, Admin	washcopw@wfeca.net	850-638-6280
FDOH Health	Debora Campbell	Debroa.campbell@flhealth.gov	850-259-9989
Florida Forest Service	Hannah Anderson, Mitigation Specialists	Hannah.anderson@freshfromflorida.com	850-625-6621

4.1.1 The Bylaws of the LMS Committee

The Washington County LMS Committee has adopted bylaws to establish its purpose and responsibility, to create a structure for the organization, and to establish the other fundamental characteristics of the Committee as a community service organization. They are listed in Appendix A.

4.1.2 The LMS Steering Committee

The Steering Committee of the Washington County LMS Committee is the working group that developed the LMS for Washington County. The LMS Steering Committee met regularly at the Washington County Board of County Commissioners Conference Room located at 1331 South Boulevard in Chipley or the Washington County EOC at 2300 Pioneer Road in Wausau to

provide information, prioritize projects, and provide input on the LMS throughout its development. Minutes of meetings are available and can be obtained through the Washington County Planning Department.

4.2 The Planning Process

The Local Mitigation Strategy planning process originally started in 1998. An initial plan was finalized in 1999, which detailed the natural vulnerabilities of Washington County (i.e. tornados, hurricanes, and floods), pinpointed the areas affected by these vulnerabilities, and proposed cost-beneficial solutions (projects) to reduce future losses of life and property in these areas. With the passage of the Disaster Mitigation Act of 2000, work on a new strategy compliant with the federal requirements was begun. This updated document, known as the Washington County Local Mitigation Strategy (LMS), provides the county, local governments and non-profit organizations with guidance as to the best use of available funding based on the LMS's prioritized list of projects.

4.2.1 Public Participation

One of the goals of the updated Local Mitigation Strategy is to encourage participation from the residents of Washington County and its municipalities in the drafting and prior to plan approval phases. The intent was to encourage government and public participation in the planning process and to begin the process of involving the appropriate representatives in the mitigation efforts of Washington County.

Washington County promoted the concept of mitigation and the Local Mitigation Strategy through a variety of methods. Publicity, in the form of press releases, newspaper articles (Appendix D) spread the word about the need for public input. Emails were sent out to all stakeholders advising them of the importance of having a compliant plan and the necessity of participation.

The LMS Committee meetings were held, and continue to be held, open to the public in accordance with Sunshine Laws. Requests for public comment were solicited through press releases during the draft stage and again during a public meeting held for that purpose during the final stage prior to plan approval. Attached in Appendix D are copies of the meeting agendas and minutes.

In addition to public notices for each meeting, an effort was made to involve and invite various stakeholders from within the county and the surrounding region. Neighboring counties, (Bay, Jackson, Holmes, Walton) local and regional agencies, (West Florida Regional Planning Council, Northwest Florida Water Management District), state agencies, (Florida Department of Health in Washington County, Florida Fire Service), businesses, academia, private organizations, and NGO's were invited to attend. An invitation was sent to these key agencies, organizations, and businesses to promote regional and cross-sectional collaboration.

4.2.2 The Committee's Operating Procedures

The Washington County Grants Coordinator, an office of the Board of County Commissioners, is the chair of the LMS Committee. The LMS Committee meetings followed established operating procedures to determine the schedule, identify and update the existing mitigation activities, identify and update the hazards, assess the vulnerabilities, develop initiatives, and compile them into the unified plan. The general technical analysis process is found in the operating procedures below.

4.2.3 Establishing the Planning Schedule

The LMS Committee initially establishes a planning schedule for the upcoming planning period that allows the participants to anticipate their involvement in the technical analyses and evaluations that they will be asked to do. At the outset of the planning period, the Committee defines the goals that the planning process is attempting to achieve, as well as the specific objectives within each goal that did help to focus the planning efforts.

4.2.4 Hazard Identification and Risk Estimation

The Committee then identified the natural, technological, and societal hazards that threaten all or portions of the community. Specific geographic areas that are subject to the impacts of the identified hazards are delineated wherever possible. The Committee also uses general information to estimate the relative risk of the various hazards as an additional method to focus their analysis and planning efforts for updating the plan.

4.2.5 Vulnerability Assessment

The first avenue is a methodical, qualitative examination of the vulnerabilities of important facilities, systems, and neighborhoods to the impacts of future disasters. For the participating jurisdictions and organizations, the individuals most familiar with the facility, system, or neighborhood accomplish this through a guided, objective assessment process. The process ranks both the hazards to which the facility, system or neighborhood is most vulnerable, as well as the consequences to the community should it be disrupted or damaged by a disaster. This process typically results in the identification of specific vulnerabilities that can be addressed by specific mitigation initiatives and can be proposed and incorporated into this plan.

The second avenue for assessment of community vulnerabilities involves comparison of the existing policy, program, and regulatory framework promulgated by local jurisdictions to control growth, development, and facility operations in a manner that minimizes vulnerability to future disasters. The Committee members can assess the individual jurisdictions' existing codes, plans, and programs to compare their provisions and requirements against the hazards posing the greatest risk to that community.

4.2.6 Developing Hazard Mitigation Initiatives

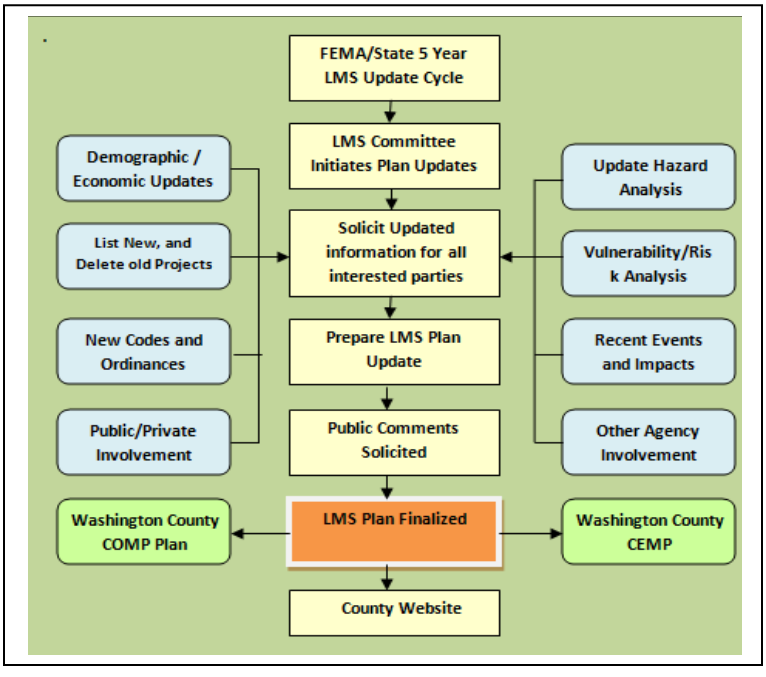
The LMS Committee established a methodical, objective procedure for characterizing and justifying the updated mitigation initiatives proposed by each participating jurisdiction for incorporation into this plan. This procedure involves describing the initiative, relating it to one of the goals and objectives established by the Committee, and justifying its implementation based on its economic benefits and/or protection of public health and safety, as well as valuable or irreplaceable resources. Each proposed mitigation initiative is "prioritized" for implementation in a consistent manner by each participating organization using a set of ten objective criteria.

4.2.7 Incorporating Initiatives into the Local Mitigation Plan

In characterizing a mitigation initiative for incorporation into the Committee's plan, it is important to recognize that the level of analysis conducted by each organization involved has been intentionally designed to be appropriate for this stage in the planning process. That is, it is the interest of the Committee to have a satisfactory level of confidence that a proposed mitigation initiative, when it is implemented, will be cost effective, feasible to implement, acceptable to the community, and technically effective in its purpose.

Each mitigation initiative proposed for incorporation into the plan is formulated and submitted to the Committee for consideration by an agency, organization, business or individual that has the authority or responsibility for its implementation. This avoids the artificiality of proposing updated mitigation initiatives when it is unclear who would implement them and if the authority to do so is actually available.

Figure 6: LMS Planning Process



At the end of the process, a draft of the LMS is prepared for release to the community and the governing bodies of the jurisdictions and organizations that participated in the planning process. Washington County, the City of Chipley, and the Towns of Caryville, Ebro, Vernon and Wausau approves the entirety of this multi-jurisdictional plan, though each is responsible only for its own participation and input into the process as well as projects and initiatives put forth by its jurisdiction. All participants were coordinated with throughout the planning process.

Prior to final plan approval, the general public had opportunities to review and provide comments to the LMS Committee. Throughout the planning process, public and private sector involvement was encouraged. Meetings of the LMS Task Force were held consistently. These meetings were, and continue to be, open to the public and are advertised through notices placed at the County Courthouse and by mass emails. Public meetings were held on August 11, (Plan Update Kick-Off Meeting), August 26, 2015 (data verification and analysis meeting), September 22, 2015 (review of draft document); and October 27, 2015 (review of final document).

At all of the meetings, the general public and committee participants were encouraged to make comments. Finally, at the October 27, 2015 meeting participants conditionally approved the draft updated plan. This meeting was also announced in the local newspaper, through e-mails, and posted in two locations in the County Courthouse. The draft plan is on the Washington County website, and will remain there until replaced with the approved plan, once that happens. The public will be encouraged to read the LMS, and can provide feedback comments at any time.

4.2.8 Implementation of Approved Mitigation Strategies

Once incorporated into the updated Washington County LMS Plan, the agency or organization proposing the initiative becomes responsible for its implementation. This may mean developing a budget for the effort, or making applications to state and federal agencies for financial support for implementation. This is the approach utilized by the updated Washington County LMS Committee because only the jurisdiction or organization itself has the authorities or responsibilities to implement its proposed mitigation initiatives.

4.3 Plan Review and Research

In preparation for the development of this updated mitigation strategy, the following plans were reviewed for mitigation activities the County and its municipalities were engaged in. Each was reviewed to determine its impact on the LMS planning process.

- Washington County Land Development Code
- Washington County Comprehensive Plan
- Municipal COMP Plans (Caryville, Ebro, Chipley, Vernon, Wausau)
- Washington County Comprehensive Emergency Management Plan
- Washington County Critical Facilities List

Information used in the hazards identification, vulnerability assessment and risk analysis sections were updated and collected from a multitude of meteorological, geological, geographical, and hydrological research agencies. These sources include but are not limited to:

- US Geological Survey, Florida State University

- University of Florida Bureau of Economic and Business Research's "EconData.net",
- National Oceanic and Atmospheric Administration, National Climatic Data Center,
- US Census Bureau's 2015 Census Update,
- Florida Department of Revenue's "Property Valuations and Tax Data for 2015",
- State of Florida Hazard Mitigation Plan - 2013

Each of the seven sections of the plan was reviewed for the update process by the LMS Committee during the two meetings (August 26, September 22, 2015). The LMS Committee was asked to come to the meeting prepared to discuss needed changes to the LMS by section.

Section 5: Hazard and Vulnerability Assessment

Washington County has approximately 14,142 residential structures. Over 9.5% are vulnerable to a 100 year flood event, and over 10.1 % to a 500 year flood event. Other hazards pose similar threats. Most of the county is covered by forests, making wildfire in the Wildfire Urban Interface where the majority of Washington County residents live a serious threat. Washington also receives a fair number of thunderstorms that produce hail and lightening on a consistent basis. Washington County also has had several sinkholes open up since 1970. In all, Washington County is highly vulnerable to a host of natural and manmade hazards, as will be explained in this section.

The following general vulnerability data for Washington County and its municipalities comes from the 2013 State of Florida Hazard Mitigation Plan. This provides a summary of the total value of structures in the County, which is used as a base for determining the vulnerability of certain hazards to the residents, and to the infrastructure in the County.

Figure 7: Value of Structures in Washington County ($thousands)

Residential	Commercial	Industrial	Agriculture	Religious	Government	Education	Total
$1,399,231	$168,268	$46,458	$6,005	$41,859	$29,055	$106,960	$1,797,836

Source: 2013 State of Florida Enhanced Hazard Mitigation Plan, Appx C

5.1 Hazard Identification

In addition, primary attention is given to hazards considered reasonably possible to occur in Washington County. These hazards include: Erosion (Riverine); Flooding, Hurricanes/Tropical Storms; Sinkholes; Technological Events (HazMat Spills)'; Terrorism; Thunderstorms; Tornadoes; Wildfire; Winter Storms.

The hazards listed below have been found to have minimal or non-existent impact to Washington County. The hazards that are considered unlikely or impossible in the county will

be briefly analyzed and commented on. These hazards include:

Figure 8: Hazards Not Impacting Washington County

Hazard	Reason for Non-Inclusion
Coastal Storm Surge	Washington County is an inland County and has no coastal areas.
Coastal Erosion	Washington County has no coastline, ergo no coastal erosion issues.
Civil Disturbance	Washington County has never experienced any type of civil disturbance. If a civil disturbance were to occur, it is estimated it would not be a significant event, or cause significant damages.
Dam Failure	Although Washington County does have some impoundment areas, they are small, and their failure would not result in any significant damages. There are no traditional dams located in Washington County.
Drought/Heat Wave	It was the consensus of the LMS Committee that heat waves and droughts have virtually no impact on the County; therefore it is deleted from the list of active hazards.
Earthquake	Washington County is not in a seismic zone. The County has never experienced an earthquake. If one were to occur, it would be of such a small magnitude, that it probably would not cause any damages. Therefore, earthquakes are of no concern to Washington County.
Landslide	Washington County has no areas that could create landslides
Tsunami	Washington County is an inland County and has no coastal areas.
Volcano	Washington County has no volcanoes

There will also be a risk level describing the hazards that will be identified. Each jurisdiction-level hazard data was reviewed individually and a qualitative determination was made regarding the vulnerability of the jurisdiction to the specific hazard. The ranking methodology is incorporated into **Figure 9.**

Figure 9: Hazard Priority Ranking Chart for Washington County

Hazard	Priority						Probability						Magnitude					
	Uninc	Chipley	Cary ville	Ebro.	Vernon	Wau sau	Uninc.	Chipley	Cary ville	Ebro	Vernon	Wau sau	Uninc.	Chipley	Cary ville	Ebro	Vernon	Wau sau
Erosion	M	M	M	M	M	L	H	L	L	L	L	L	M	L	L	L	L	L
Flooding	H	H	H	H	H	H	M	M	M	M	M	L	M	H	H	H	H	H
Hurricanes / Tropical Storms	H	H	H	H	H	H	M	M	M	M	M	M	H	H	H	H	H	H
Sinkholes	M	M	L	L	M	L	M	L	L	M	L	L	L	L	L	L	L	L
Technological Events	H	H	H	M	M	M	M	M	M	L	L	L	L	H	H	H	H	H
Terrorism	L	H	H	M	M	M	L	L	L	L	L	L	H	H	H	H	H	H
Thunderstorms/ Lightning	M	M	M	M	M	M	H	H	H	H	H	H	H	H	H	H	H	H
Tornadoes/High Winds	M	H	M	M	M	M	M	M	M	M	M	M	M	H	H	H	H	H
Wildfire	H	L	L	L	L	L	M	L	L	L	L	L	M	L	L	L	L	L
Winter Storms	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H

Ranking Methodology:

Priority Ranking was defined as follows:
High – Extremely important. High impact to the jurisdiction
Medium – Moderately important. Moderate impact to the jurisdiction
Low – Low importance. Low impact to the jurisdiction
X – No impact. Of no importance to the municipality

Probability was defined as follows:
High – Occurrence at least once every two years
Medium – Occurrence at least once every five years
Low – Occurrence less frequently than every five years
X – Event has never happened and is not expected to occur

Magnitude was defined as follows:
High – The entire jurisdiction is potentially affected by an event
Medium – Most of the jurisdiction is potentially affected by an event
Low – Only a specific area of the jurisdiction is potentially affected
X – Event has never occurred, nor is it expected to occur

5.2 Vulnerability Analysis

Each of the hazards listed in Section 5.3 identify the specific vulnerabilities of each hazard on the community at large. The following figure will help to provide a broad overview of the general vulnerability caused by each of the hazards.

Figure 10: Vulnerability - Washington County

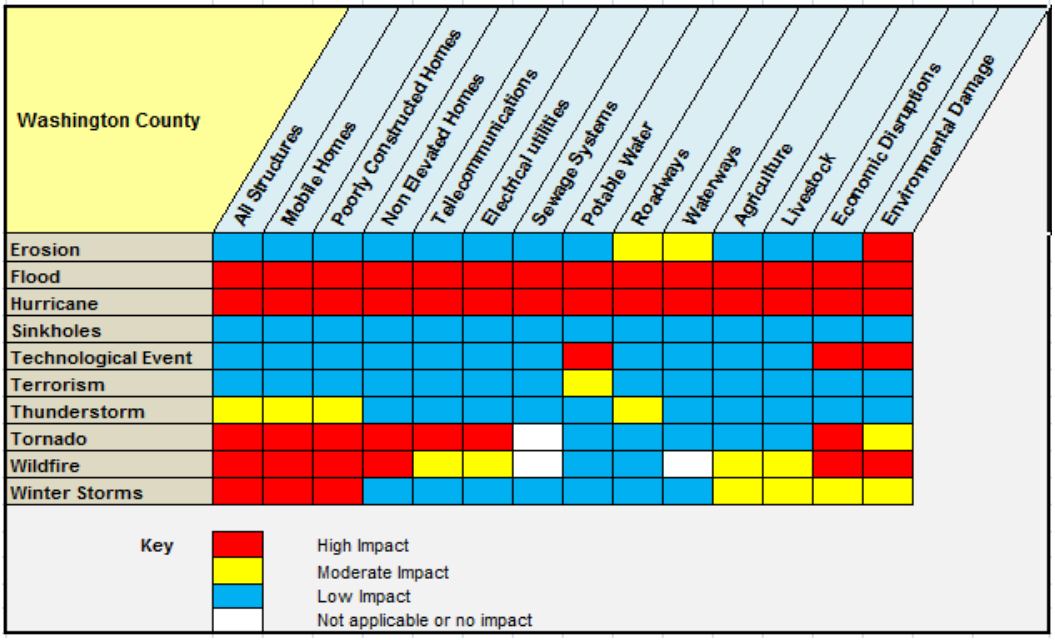
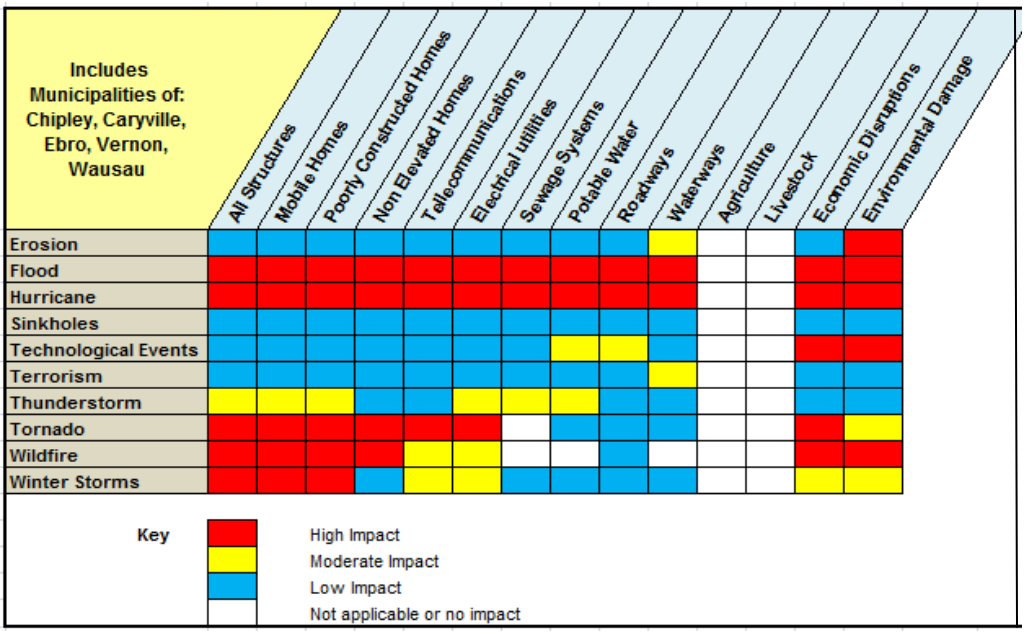


Figure 11: Vulnerability - Municipalities in Washington County



5.3 Hazard Analysis

The hazards identification was derived through persistent research and data collection from a multitude of meteorological, geological, geographical, and hydrological research agencies both in Florida and nationwide. These sources include, but are not limited to, US Geological Survey, Florida State University, University of Florida, National Oceanic and Atmospheric Administration, National Climatic Data Center, Natural Resource Conservation Service, US Department of Agriculture, Federal Emergency Management Agency, US Census, etc. In addition, State and local resources were utilized in the process. Again, these agencies include, but are not limited to, CRS Program officer, Florida Forest Service Northwest Florida Water Management District, Department of Environmental Protection, and local emergency management offices.

5.3.1 Hurricane/Tropical Storm

Hurricanes and tropical storms are low-pressure systems in the tropical and sub-tropical zones with cyclonic surface wind circulation. A hurricane is a tropical storm or cyclone in the Atlantic Basin with winds that have reached an average 1-minute sustained speed of 74 miles per hour or more. Tropical storms have an average 1-minute sustained wind speed between 39 and 73 miles per hour. Hurricane winds blow in a counterclockwise spiral around a relative calm center, known as the eye. The eye is generally 20 to 40 miles wide, and the storm may extend outward, up to 500 miles in diameter. As a hurricane nears land, it can bring with it heavy rains, high winds, tornadoes, and storm surge. The typical rainfall from a hurricane is between 6 to 12 inches. Hurricanes can last for more than two weeks over open waters and can run the entire length of the eastern seaboard. The official hurricane season runs from June 1 through November 30. Intense hurricanes are those hurricanes classified as Category 3 or higher. Hurricanes will normally impact and cover the entire county at one time.

Figure 12: Saffir-Simpson Hurricane Scale

Saffir-Simpson Category	Central Pressure (mb)	Sustained Wind Speed (mph)	Storm Surge (feet)	Relative Potential Destruction
1	980	74-95	3.3-5.7	1
2	965-979	96-110	5.8-8.7	10
3	945-964	111-130	8.8-12.6	50
4	920-944	131-155	12.7-18.4	100
5	<920	>155	>18.4	250

Source: National Oceanic and Atmospheric Administration, www.nhc.noaa.gov

5.3.1.1: Impacts

The impacts from hurricanes and tropical storms include high winds, tornadoes, heavy rain and inland flooding. Any or all of these can cause damage to buildings and infrastructure. They can also result in death or injuries as the result of flooding, collapsing buildings, electrocution from

downed power lines, fires from natural gas line breaks, etc. The following are events impacting Washington County, and the damages they caused. They are indicative of future impacts.

Figure 13: Historical Hurricane Impacts in Washington County and Municipalities

Year	Event	Impacts
1998	Hurricane Earl	Hurricane Earl land fell in Bay County, yet the impacts were felt in Washington County. Throughout Washington County, high winds and inland flooding damaged many roads. There was significant debris caused by Hurricane Earls passage near Washington County, causing countywide power outages for significant periods of time. Inland flooding caused several roadways to be impacted by erosion.
1998	Hurricane George	Torrential rainfall amounts of 12 to 24 inches were common over Southeast Alabama and the Florida Panhandle with 5 to 10 inches over Southwest Georgia and the Big Bend. These rains swelled area rivers, creeks, and streams well above flood stage. This impacted the Towns of Caryville, Chipley, Ebro and Vernon, and most of the unincorporated areas of Washington County. Hurricane George caused serious agricultural losses in Washington County. Washington County was included in the Presidential Disaster Declaration.
2004	Hurricane Ivan	Hurricane Ivan made landfall near Gulf Shores Alabama, yet the impacts were felt in Washington County. Over 7 inches of rainfall caused localized flooding of several homes to be destroyed, and many were impacted across the county. Ivan caused large scale power outages, as debris from high winds downed power lines. Several rivers went to flood stage. Ivan caused over $2M in localized damages in Washington County.
2005	Hurricane Dennis	Dennis made landfall in Gulf Breeze, Fl. Its impacts were felt in Washington County. Washington County experienced wind gusts of over 60mph, causing large amounts of tree debris to result. This blocked roads until it was pushed to the curb. Dennis also caused widespread power outages.
2008	Tropical Storm Fay	TS Fay made several landfalls in Florida, the closets being Carrabelle, Fl. Fay produced record amounts of rainfall in Washington County. Washington County experienced over 15 inches of rainfall. Numerous trees and power lines were down throughout the county. Numerous county roads were closed and several dirt roads were washed out.

Source: NOAA Storm Events Database

The Saffir-Simpson (SS) Hurricane Scale is used to predict as well as classify hurricanes using central pressure, wind speed, and storm surge. This scale is shown below.

5.3.1.2 Historical Events

According to the NOAA, there have been a total of 34 tropical storms or hurricanes passing within 65 miles of Chipley, Florida between 1750 - 2015. Of these 34 events, 9 were considered tropical depressions; 13 were considered tropical storms, 7 were Category 1 hurricanes, 2 were Category 2 hurricanes, and 3 were Category 3 hurricanes. None of the cyclones were classified as Category 4 or 5 hurricanes.

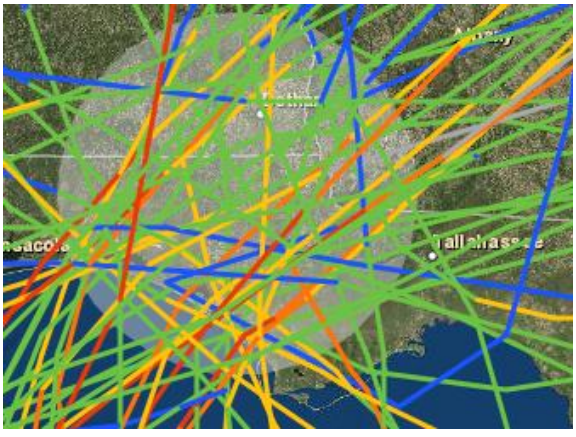


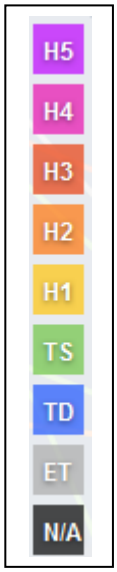
Figure 14: Hurricane Track – 50 Miles Radius

Figure 15 is a historical list of these events with their dates, names, wind speeds, barometric pressures, and categories. Please note that Washington County (including all municipalities) has not been impacted by a hurricane between 2010-2015 (since last LMS Update), but was impacted by Tropical Storm Debbie and Fay. TS Fay passed within 65 miles of the County, but TS Debbie did not, yet the County was still impacted by heavy rainfall.

Figure 15: Historical Tropical Storms Impacting Washington County 1750 - 2015

Year	Month	Day	Storm Name	Wind Speed (mph)	Pressure (mb)	Category
1901	9	9	Not Named	35	Unknown	TS
1903	9	9	Not Named	80	Unknown	H1
1904	10	31	Not Named	35	Unknown	TS
1906	6	9	Not Named	35	Unknown	TS
1907	6	24	Not Named	35	Unknown	TS
1907	9	27	Not Named	35	Unknown	TS
1912	7	12	Not Named	35	Unknown	TS
1914	9	15	Not Named	30	Unknown	TS
1915	9	1	Not Named	80	976	H1
1917	9	20	Not Named	100	949	H3
1928	8	8	Not Named	35	Unknown	TS
1929	9	19	Not Named	30	975	H1
1936	8	20	Not Named	90	964	H2
1937	9	1	Not Named	30	Unknown	TD
1939	8	9	Not Named	75	985	H1
1947	8	10	Not Named	25	Unknown	TD
1953	5	25	Alice	75	985	H1
1953	9	23	Florence	75	985	H1
1956	9	21	Flossy	45	980	TS
1957	9	9	Debbie	35	Unknown	TD
1964	9	8	Dora	100	972	H3
1965	6	11	Not Named	25	1008	TD
1972	6	14	Agnes	45	983	TS
1975	9	23	Eloise	110	958.0	H3
1985	11	16	Kate	85	967	H2
1994	6	30	Alberto	25	1008.0	TD
1994	8	15	Beryl	25	1012.0	TD
1998	9	8	Earl	85	987.0	H1
2000	9	15	Helene	25	1010	TD
2001	8	2	Barry	45	1011	TS
2004	9	9	Frances	25	998	TD
2008	8	15	Fay	35	1009	TS
2009	8	16	Claudette	50	1008	TS

Source: NOAA Storm Events Database



5.3.1.3 Probability

Each year, Colorado State University (CSU) makes predictions on the number of tropical storms, hurricanes, and intense hurricanes that will arise in the Atlantic Basin. Using these predictions, the Tropical Meteorology Research Project at CSU along with the GeoGraphics Laboratory at Bridgewater State College produce probability statistics for individual counties. The data shown in Figure 16 represents the 2015 tropical storm landfall probabilities for different types of tropical cyclones in Washington County as well as the state probabilities (climatology in parentheses) based on actual occurrences. Figure 17 shows the 50 year probabilities.

Figure 16: 2015 1 Year Hurricane Probability

County Name	1 or More Named Storms Making Landfall in the County	1 or More Hurricanes Making Landfall in the County	1 or More Intense Hurricanes Making Landfall in the County	Tropical Storm-Force (>= 40 mph) Wind Gusts in the County	Hurricane-Force (>= 75 mph) Wind Gusts in the County	Intense Hurricane-Force (>= 115 mph) Wind Gusts in the County
Washington	**.9% (2.6%)**	**.4% (1.1%)**	**.1% (1%)**	**8.3% (21.9%)**	**2.2% (6.3%)**	**.6% (1.6%)**

Source: http://landfalldisplay.geolabvirtualmaps.com/

Figure 17: 50 Year Probability - Washington County (including all municipalities)

County Name	1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (>= 40 mph) Wind Gusts	Hurricane-Force (>= 75 mph) Wind Gusts	Intense Hurricane-Force (>= 115 mph) Wind Gusts
Washington	**73.9%**	**43.8%**	**5.9%**	**>99.9%**	**96.5%**	**55.4%**

Source: http://landfalldisplay.geolabvirtualmaps.com/

5.3.1.4 Vulnerability

Washington County is extremely vulnerable to hurricanes for the following reasons and is the cause for its highest concern over all other hazards. Hurricanes produce three major hazards in Washington County including high winds, tornadoes, and flooding. This is why this hazard is profiled in this LMS, and is the cause of greatest concern for its residents.

- 100% of the incorporated and unincorporated residents are vulnerable to hurricane wind impacts often resulting in structural damages.
- 10% of the County is in the 100 year flood plain and highly vulnerable to flooding. Flooding will result in displacing County residents for a period of time; can result in potable water issues, mold infestations, damages to structures.
- A flooding event from any category of hurricane requires the evacuation of the vulnerable population. High water flooding will inundate much of the transportation system, hampering ingress and egress for first responders.
- Much of the County is forested, meaning hurricane winds will cause extensive amounts debris, damaging homes, businesses, and blocking transportation routes. Private property debris removal costs can be extensive.
- Hurricane related losses to property are always high.

The potential impact to structures in Washington County and the municipalities of Caryville, Chipley, Ebro, Vernon and Wausau would be significant as evidenced from the following data from the 2013 State of Florida Hazard Mitigation Plan.

Figure 18: Vulnerability of Structures to Hurricanes (Including all Municipalities)

County	Return Period	Residential	Commercial	Medical	Industrial	Agriculture	Education	Gov't
Washington	*Number of Structures Affected by Category 2 Hurricane Winds*							
	50	9,470	134	172	32	2,570	8	72
	100	4,672	466	80	72	1,010	26	66
	Value of Structures – Category 2 Hurricane Winds ($million)							
	50	$1,297.71	$42.09	$150.08	$28.27	$482.63	$25.22	$73.40
	100	$873.47	$322.56	$117.13	$70.11	$208.08	$114.88	$155.49

When reviewing the Florida Department of Revenue Just Value by Property Type for Washington County, and applying a potential loss coefficient to these values generates large loss numbers. A large-scale hurricane can impact 20% - 40% of the property values. Based on the numbers in Figure 19 below, this could equate to significant losses for Washington County.

The following are excerpts for the DOR database for Washington County and all municipalities on 2015 adjusted property values by category.

Figure 19: FDOR Just Value by Property Type – 2015 Washington County

Vacant Residential	Single Family Residential	Mobile Homes	Multi Family < 10	Multi Family > 10
$105,894,075	$356,389,006	$91,633,364	$7,460,118	$1,499,568
Industrial	**Agricultural**	**Institutional**	**Government**	**Total Real Property Value**
$19,805,714	$436,938,942	$44,625,562	$83,780,757	$1,239,082,175

Source: http://dor.myflorida.com/dor/property/resources/data.html

5.3.1.5 Extent

Based on historical events and the probability of occurrences, Washington County, and the City of Chipley, and Towns of Caryville, Ebro, Vernon, and Wausau could expect to receive a Category 1 event, with winds of 75 mph and substantial amounts of rainfall (between 5-10 inches over lifetime of the event). This would occur, on average, once every 3.5 years.

5.3.2 Flooding

The Southeast's humid subtropical climate lends itself to very rainy periods including rains from tropical systems, air mass thunderstorms, and frontal systems. Flooding is a common occurrence each year in Washington County and is the primary emergency concern. Flooding has a number of different factors that increase the amount to which it is affected from the amount of time it rains to the location of homes and buildings. In the case of Washington County, the river flow and height factor are seen as the most important.

Flooding refers to the general or temporary condition of partial or complete inundation of normally dry land areas with surface water from any source. Floodplains are defined as any land areas susceptible to water inundation from any source. Flooding is a natural aspect of the earth's hydrologic cycle but it is because of their frequency; floods are the most destructive category of natural hazards in the United States.

In Washington County, the primary concern for flooding is along the Choctawhatchee River, Holmes Creek, and associated tributaries, sloughs, river oxbow lakes, sinkhole/sand hill lakes and isolated swamps (locally called "bays."). The county has a substantial portion of land located within the floodplain and considered environmentally sensitive. In total, approximately 88,170 acres of the county are subject to flooding (22.5%). Caryville has 1,498 acres of floodplain land, Ebro (405 acres), Vernon (854 acres), Wausau (274 acres) and Chipley (233 acres) accordingly.

Additional flood-prone areas of the county include portions of the City of Chipley near various drainage system ditches and former wetlands (now dredged and filled), some residences and locations along Holmes Creek, especially near Vernon and New Hope near the Holmes Creek Campsites subdivision, some residences along River Road near the Choctawhatchee River, and locations along wetlands, streams, or sinkhole lakes. Periods of heavy rains, hurricane-induced rains, urban run-off, ground saturation levels, river stages, and flooding in neighboring counties all contribute to an ever present flooding hazard in Washington County. It is particularly vulnerable to substantial flooding from tropical rains/hurricanes since the county serves as the valley for numerous sinkhole lakes, Econfina Creek, Holmes Creek and the Choctawhatchee River basin.

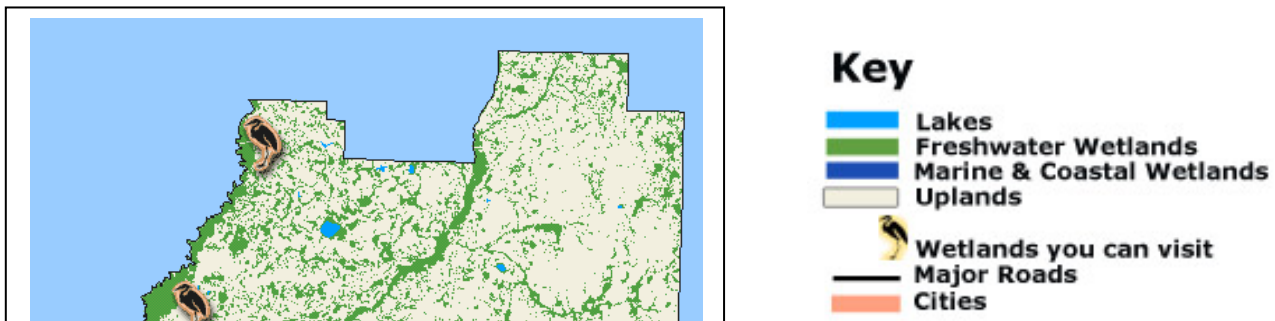
5.3.2.1 Impact

Impacts from flooding In Washington County has resulted in the loss of life and damages to personal property, crops, businesses, utilities, and transportation infrastructure. Additional losses and economic hardships have occurred when supplies or supply routes are damaged or destroyed. Washington County has hundreds of miles of dirt roads, all of which are vulnerable to over wash and serious erosion caused by flooding. In every flooding event in Washington County, drinking water supplied by private wells has been temporarily compromised resulting in a boil water notice from the Washington County Health Department. Additionally, several critical facilities have been impacted, to include chemical and waste storage facilities,

wastewater treatment facilities, and solid waste disposal sites. These events resulted in a hazard to public health. Flood waters in Washington County also result in a serious issue of mold. Given the warm climate Washington County experiences often, mold can become a life threatening issue, and an expense issue. Residents have had furniture, drywall, insulation, air conditioning ducts removed because of mold spores that become a serious health issue. Flood inundated roadways have resulted in extensive paved, and dirt road repairs. In addition, the critical facilities listed in Appendix B are susceptible to flooding. Because of their close proximity to rivers and creeks, Caryville, Chipley, Ebro and Vernon have experienced flooding in homes and businesses on many occasions.

As can be seen in Figure 20, Washington County has a significant area of wetlands that are normally susceptible to flooding.

Figure 20: Washington County Wetlands



Source: http://soils.ifas.ufl.edu/wetlandextension/counties/washington.htm

More than any other natural or human-caused catastrophe, flooding has plagued Washington County's citizens, emergency operations, and mitigation efforts throughout the history of the community. Due to the fact that much of the inhabited area in the county is in the floodplain the severity and intensity of the flooding has the capability of being extremely high. The highest known flood occurrence was in 1929 when the Choctawhatchee River rose 6 feet over the one hundred-year flood elevation. This is seen as the highest and most intense event that could happen, although most floods occurring would not be this high.

5.3.2.2 Historical Events

Serious flooding has occurred in 1928, 1929, 1960, 1975, 1990, 1994, 1998, 2002, 2005, 2008, 2009, 2013, and 2014.

The 1994 Tropical Storm Alberto caused great devastation to homes, public buildings, and residences near the Choctawhatchee and other rivers in Washington County, especially in the Caryville and River Road areas. Interstate 10 was closed for a period of time because of damage to the bridges over the Choctawhatchee River. Hundreds of residents were displaced from homes, only to return to total devastation. Even homes built to the "100-year base flood elevation standards" received water. Unincorporated communities heavily impacted by the July 1994 flooding included Millers Ferry, Shell Landing and CR 284, along with parts of Vernon, Yankee Town, and the Town of Caryville and Ebro.

In 2004, Hurricane Frances produced several inches of rainfall in a short amount of time, causing many roads to wash out, and damaged to some paved roads. The Choctawhatchee River flooded some low lying areas, impacting much of Caryville and Ebro.

In 2009, Tropical depression Fay caused major flooding along the Choctawhatchee River, which closed roads along the Walton/Washington County line between Ebro and Bruce to the Choctawhatchee Bay. Several homes were flooded. The river crested at 20.5 feet.

In 2013 significant flooding occurred across Washington County due to prolonged periods of moderate to heavy rainfall. Four day rainfall totals of 8-12 inches were estimated across the County between February 22-26. The emergency manager estimated over $1.3 million in damages across the county, mainly due to road repair. At least 27 separate road closures were reported.

In 2014, a strong long wave trough was centered over the mid Mississippi Valley extending south to the Gulf coast with several short waves rotating around it. During the April 29-30 time period, strong super cells developed along the Gulf coast and trained across the area, producing extremely heavy rainfall rates and amounts on top of what had already been a very wet month with additional rainfall amounts of 6 to 10 inches common across the area. This led to serious flooding across portions of the Florida panhandle with several million dollars in damage reported, mainly to roads. However, several structures were also impacted by flood waters, especially in Walton and Washington County, and a FEMA disaster declaration was obtained across the area. Major flooding occurred across Washington County at the end of the month due to a combination of very heavy rainfall and already saturated conditions. Many roads in the county sustained damage with damage estimated at $2,155,731

5.3.2.3 Probability

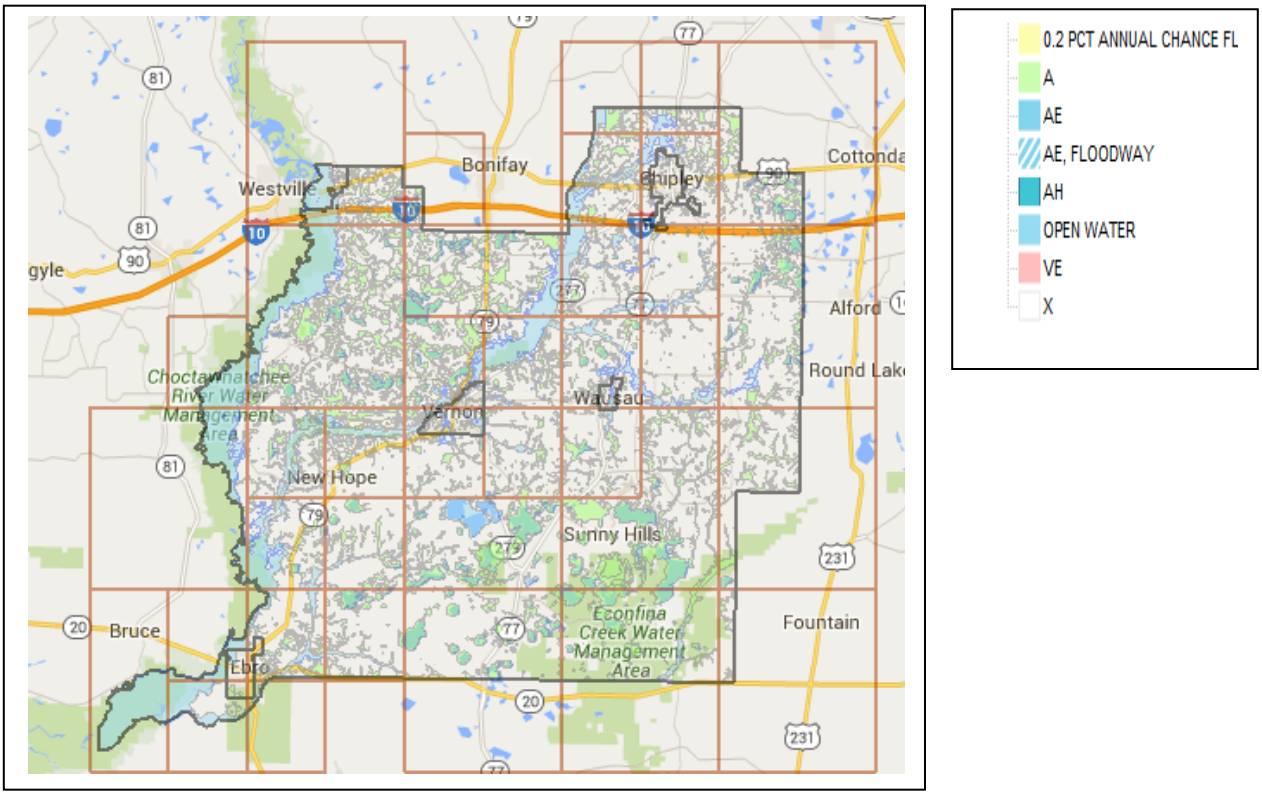
The probability of flooding occurring in Washington County in the future is extremely high due the history of the event occurring. The State Enhanced Hazard Mitigation Strategy ranked

Washington County at a "High Hazard" risk for flooding. The county experiences some degree of flooding at least once per year and this is projected to continue. On average, more serious 100 year flood events occur once every 10 years. Based on their close proximity to the Choctawhatchee River, both Caryville and Ebro will experience flooding more frequently, as will Chipley and Vernon, who are next to Holmes Creek.

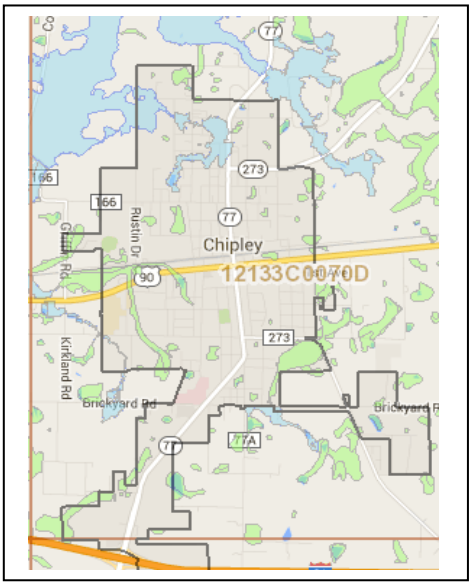
5.3.2.4 Vulnerability

Much of the land areas in Washington County are subject to flooding, given the right circumstances. The following Flood Insurance Risk Maps display the extreme vulnerability to flooding Washington County has. These maps were recently updated, and are maintained by the Northwest Florida WMD at: *http://portal.nwfwmdfloodmaps.com/map.aspx?cty=washington.*

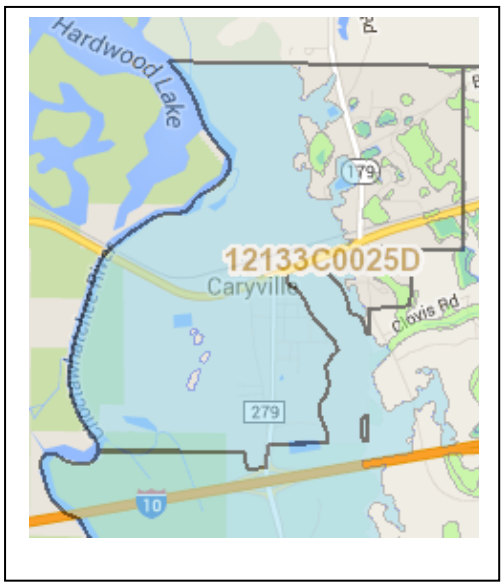
Figure 21: FEMA FIRM Zones, Washington County and Municipalities



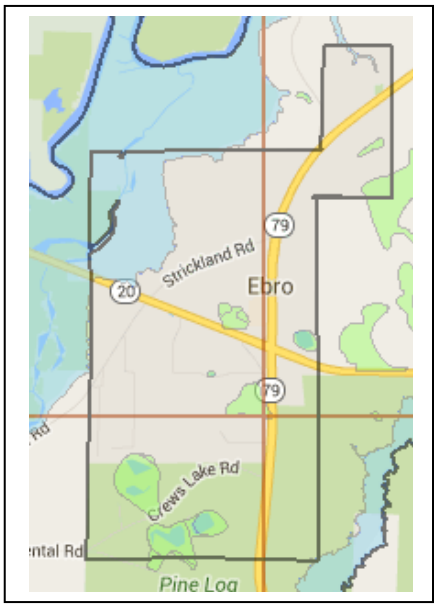
WASHINGTON COUNTY



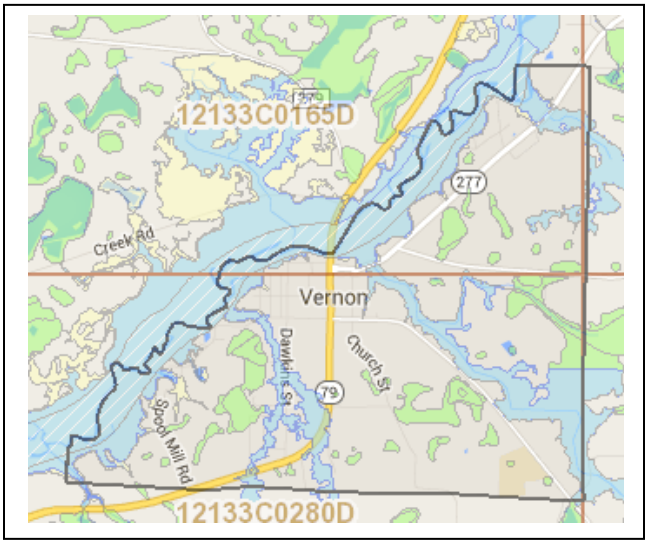
CHIPLEY



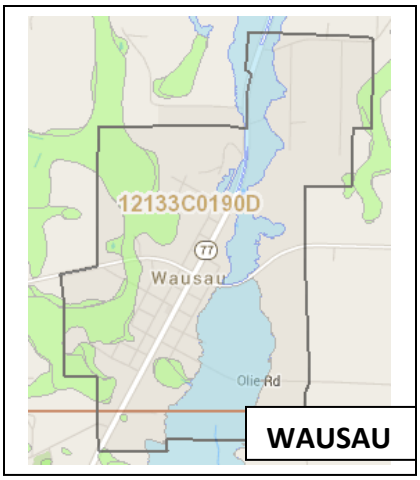
CARYVILLE



EBRO



VERNON



WAUSAU

Each of the municipalities are located near a body of water that is normally in the 100 year flood zone. As development pressure increases, it can be expected that more people will chose to reside in these hazardous areas. Each municipality has enacted set back requirements and enacted base flood elevation standards that will mitigate this encroachment of people and structures into the flood zones.

To better understand the zone designation on each map, the

following explanation of the flood zone designations are given. These are relatively new definitions of the flood zones. They correspond to the following Figure.

Figure 22: FEMA FIRM Map Zone Designations

A	Area with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30 yr mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
AE	Area with a 1% chance of flooding and a 26% chance of flooding over the life of a 30 yr mortgage. In most instances, base flood elevations derived from analyses are shown at selected intervals within these zones.
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30 yr mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
AO	River or stream flood hazard areas and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30 year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30 yr mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
X	Area that is determined to be outside the 100- and 500-year floodplains

Issues involving municipal flooding include the following excerpts from the Washington County COMP Plan:

Caryville - Caryville flooding results from excessive rainfall events occurring within the Choctawhatchee River basin. Nearly 80 percent of the municipality is prone to flooding according to FEMA Flood Insurance Rate Maps. Historical data shows Caryville has experienced frequent flooding from the river and that there is high chance of reoccurrence.

Chipley - Flooding in Chipley results from excessive rainfall events occurring within the city or in environs closely surrounding the city. No major river flows through the community. Approximately 233 acres (10 percent of the total land) in the city are subject to flooding. These areas occur mostly around the small, intermittent streams in the city. Most are not developed, as the soils are not suitable for construction in this location. Some watercourses in the floodplains are channeled to facilitate drainage to nearby creeks after rainfall. Some form of flooding occurs at least once per year in Chipley. Chipley is vulnerable to flooding in areas where swamps are present or were historically present prior to development. Additional flood-prone areas include portions of the City of Chipley near various drainage system ditches. Additionally, urban runoff can increase the likelihood of flooding in locations not otherwise prone to flooding. Stormwater runoff and water runoff from homes, streets, and commercial districts

Ebro - Flooding within Ebro is the result of excessive rainfall events occurring within the town or in environs closely surrounding the town. The floodplain of the Choctawhatchee River also

covers one quarter of a square mile of the northwest corner of Ebro. The floodplain of Pine Log Creek flows through Pine Log State Forest and the northern boundary line of the forest form the southern boundary of the town. Ebro is vulnerable to flooding in areas where swamps or sinkholes are present or were historically present before development. Additionally, urban runoff can increase the likelihood of flooding in locations not otherwise prone to flooding.

Vernon - Flooding in Vernon is the result of excessive rainfall events occurring within the town or in environs closely surrounding the town. Vernon is also vulnerable to flooding due to its close proximity of Holmes Creek. The floodplain and floodway of Holmes Creek covers the entire northern boundary of the town. Smaller tributaries to Holmes Creek are also located within the town. Homes west of the downtown area and along Spool Mill Road, Lazy Bone Drive, and other side streets are vulnerable.

Wausau - Flooding in Wausau is caused by excessive rainfall events occurring within the town or in environs closely surrounding the town. No major river flows through the community. Reedy Creek is the largest water body (flowing from south to north just east of SR 77). Wausau is vulnerable to flooding resulting from the presence of Reedy Creek and another tributary of Hard Labor Creek to the west of SR 77. Structures vulnerable to flooding are generally located too close to these two creek systems.

The figure below demonstrated how vulnerable Washington County is to flooding events. Over 22.5% of the values of all residential structures in the County/Municipalities are vulnerable to losses from a 100 year flooding event or hurricane storm surge. This is highly significant.

Figure 23: Structures Located in the Floodplain - Washington County

Floodplain	Residential	Commercial	Medical	Industrial	Agric	Education	Government
100	198	20	10	2	686	0	16
500	38	0	0	0	22	0	0

Source: State Enhanced Hazard Mitigation Plan, Appendix C, pg c.13

Figure 24: Value of Structures in the Floodplain - Washington County *($Millions)*

Floodplain	Residential	Commercial	Medical	Industrial	Agric	Education	Government
100	$188,210.81	$5,120.22	$11,226.05	$2,515.39	$131,682.45	$0.00	$9,670.01
500	$4,451.41	$0.00	$0.00	$0.00	$4,790.94	$0.00	$0.00

Source: State Enhanced Hazard Mitigation Plan, Appendix C, c.18

5.3.2.5 Extent of Flooding

Washington County is predominately flat, highly susceptible to sheet flooding. Historically, hurricane induced up to 20 inches of rainfall, causing riverine and sheet flooding throughout the County. Flooding from non-hurricane weather events, such as a stalled cold front, can also produce up to 20 inches of rainfall, resulting in several feet of standing water in low-lying areas, inundating both roadways and flooding homes and businesses. In addition, flooding caused by another state (i.e. Alabama) can cause the Choctawhatchee River and Holmes Creek to flood. Therefore, given the above, Washington County can expect a flooding event that can produce

up to 20 inches of rainfall in a short period of time, which will cause the two major rivers to flood, and cause inland sheet flooding.

5.3.3 Soil Erosion

Soil erosion is the removal of material from the surface soil. The most common forces causing soil erosion are wind and water. Rain can dislodge soil particles and the resulting water flow can carry the soil down slopes. Erosion risks are high when rainstorms are frequent, intense, or of long duration. Additionally, winds can also dislodge soil particles and transport them elsewhere. Periods of drought increase the risk of erosion by wind.

Such erosion, left unchecked, can damage drainage ditches, fill storm water retention ponds with sediment, and cause erosion into property, including roadways and buildings. Most erosion of this nature occurs in some agricultural areas of the county (the northern one-half of the county), and along unpaved roadways in hilly areas. On agricultural lands, erosion can transport soil additives, such as fertilizers and pesticides from agricultural lands and affect the quality of waterways. In addition, erosion can be costly to farming operations and reduce crop production due to loss of nutrient-rich topsoil.

Washington County has some small hills. The County elevations ranging from one foot above MSL in the swampy area south of the Town of Ebro to over 200 feet above MSL near the eastern county border. A low river valley comprises the entire western boundary. The entirety of the eastern boundary is high plains and hills and the central part of the county shows meshed characteristics. Since numerous sloping areas exist within Washington County, soil erosion due on sloping soil, combined with direct water erosion near rivers and stream and rainfall amounts of approximately 50-60 inches a rain per year combines to increase Washington County's risk of soil erosion by water.

5.3.3.1 Impact

The most consequential impacts from soil erosion occur during flooding events, when the more than 750 miles of dirt roads which crisscross the entire County can be significantly impacted. Eroded soil ends up in water conveyance ditches, which must be removed in order to restore water flow. In past events, Washington County has had to remove thousands of cubic yards of sediments from swales and ditches, and reshape the dirt roads because of soil erosion.

5.3.3.2 Historical Events

Major soil erosion occurred during the following events, based on the copious amounts of rainfall. Several of these events produced up to 20 inches of rainfall in short periods of time. Riverine and localized flooding occurred during these events. All these events caused significant dirt road washouts and bank erosion. The roads had to be reshaped, ditch sediments removed, all at a significant cost to Washington County and the municipalities of Caryville, Chipley, Ebro, Vernon and Wausau.

Figure 25: Soil Erosion Events in Washington County

Date	Event	Pressure
11.16.1985	Hurricane Kate	967
6.30.1994	Hurricane Alberto	1008.0
8.15.1994	Hurricane Beryl	1012.0
9.8.1998	Hurricane Earl	987.0
9.15.2000	Hurricane Helene	1010
8.2.2001	Hurricane Barry	1011
9.9.2004	Hurricane Frances	998
8.15.2008	Tropical Storm Fay	1009
8.16.2009	Tropical Storm Claudette	1008
2.22-26.2013	Extreme Weather	unk
4.29-30.2014	Extreme Weather	unk

5.3.3.3 Probability

There are over 750 miles of dirt roads in Washington County; each is subject to erosion to some degree. Overall, the community has a high probability of encountering soil erosion, with a high probability of recurrence. The probability of erosion is very much dependant on characteristics of the soil itself. Out of the 107 identified soil types in Washington County, Thirty-four percent (34%) possess characteristics of "Highly Erodible (HE)" or "Potentially Highly Erodible (PHE)" soil types (see Figure 26 below). Given that most of the problems caused by erosion are from dirt road erosion, and the flooding probability for a 100 yr flood event in Washington County and its municipalities is once every 10 years, then the probability of soil erosion on a scale that impacts the county is equal to once every 10 years.

Figure 26: Highly Erodible Soils in Washington County

Soil Type in Washington County, Florida	Total Acreage	% Total Land Area
Potentially Highly Erodible	93,133	21.9%
Highly Erodible	59,220	12.1%
Totals	**152,353**	**34%**

Source: Washington County Soil Survey, Natural Resource Conservation Service

5.3.3.4 Vulnerability

Washington is very vulnerable to soil erosion. Consider the following:

- Overall, 34% of the community is comprised of "highly erodible" soil composition, with a high chance of reoccurrence. Virtually all of this land is agricultural in nature, and does not pose a serious threat to any structures in Washington County.

- There are over 750 miles of erodible dirt roads in Washington County that require extensive erosion repairs after flood events.
- Washington County experiences a flooding event once every 3.5 years on average, and a 100 yr event once every 10 years, exposing the County to serious roadway erosion concerns.
- Without a Presidential Disaster Declaration, the County is left with the full costs of road repairs to erosion problems, which can have a substantial impact on the county budget.
- Eroded dirt roads hamper first responders, therefore jeopardizing the safety of Washington County citizens to all hazards.

5.3.3.5 Extent

According to the Natural Resources Conservation Service (NRCS) Average Annual Soil Erosion by Water and Wind on croplands and conservation lands, erosion due to water in Washington County, including municipalities, can be estimated at 3-5 tons/acre per year primarily located in the western river valley and the northern half of the county. Also, given the County's vulnerability to flooding events, it can expect to have damaged dirt roads due to erosion on a consistent basis.

5.3.4 Sinkholes

A sinkhole is created when rainwater containing weak acids (derived from carbon dioxide and organic material) seeps down through cracks in the limestone. The acid slowly dissolves away the limestone, creating caverns. Occasionally, the surface over a cavern will collapse; and a sinkhole is formed.

According to the University of Florida's IFAS Extension, causes contributing to sinkhole collapse include periods of prolonged drought, or pumping activities, which can reduce water within the void. Periods of drought or pumping activities can result in low water levels in the supporting limestone, which can subsequently lose buoyancy and water pressure and collapse. In addition, the reverse is also a factor. Additional water influx, such as that which occurs during heavy rains, can increase the pressure on the supporting limestone and add pressure to weak joints and cracks and result in collapse.

Washington County is located within a karsts physiographic and geological district known as the Marianna Lowlands. A variety of karsts environments can be found in the county. Most apparent karsts features include limestone outcrops as seen on some creek bluffs of the Econfina River and at Falling Water State Recreation Area, and a large number of lakes and isolated drainage basins that are formed by sinkholes. The Floridian Aquifer floods most of the sinkholes, thus causing lakes. There are three distinct sinkhole districts in the county, according to the Florida Geological Survey. According to the survey, the first district encompassing Northeast Washington County is located in an area of "bare or thinly covered limestone."

Sinkholes are “few, generally shallow, and broad, and develop gradually. Solution sinkholes dominate in this area.”

The second district includes Extreme southwest and extreme southeast Washington County, near Sand Hill Lakes, which is located in areas of “cover” or overburden on top of limestone more than 200 feet thick. This cover consists of cohesive sediments inter layered with discontinuous carbonate beds. Sinkholes are very few, but several large-diameters, deep sinkholes occur. Cover-collapse sinkholes dominate.

The remainder of the county is in a geological district in which sinkholes occur where cover is 30 to 200 feet thick. It consists of mainly cohesive clayey sediments of low permeability. Sinkholes are most numerous, of varying size, and develop abruptly. Cover-collapse sinkholes dominate.

Maps, aerial photography, or a drive through the county will quickly reveal the karsts nature of the area. There are several sinkhole lakes, especially in the central portions of the county.

5.3.4.1 Impact

The impacts of sinkholes in Washington County include “swallowing” buildings and property as well as compromise below ground infrastructure, causing minor to total damage, depending on the sinkhole’s size and depth. Specific to Washington County, sinkholes have caused minor damage to residential homes and nearby structures (sheds, garages, barns). The County has expended funds to fill in sinkholes that have occurred on public lands that only posed a community threat or hazard. If the sinkhole has not caused a public hazard, then they are left alone. Sinkholes have impacted a few government facilities resulting in the need for them to be shored up or moved.

5.3.5.2 Historical Events

Figure 27: Sinkhole and Swales in Washington County

Sinkholes in Washington County							
	EVENT DATE	Location	COUNTY	SINK LNGTH	SINK WIDTH	SINK DEPTH	SINK SLOPE
1	6/15/1971	Vernon	Washington	20	30	20	
2	9/05/1982	Vernon	Washington	20	20	30	
3	8/29/2001	uninc	Washington	10	10	5	
4	1/22/2005	uninc	Washington	8	6	7.5	90

Swales in Washington County							
	Name	LONGDD	LATDD	COUNTY	SINK LNGTH	SINK WIDTH	SINK DEPTH
1	Line Sink - Parish	30.61338	-85.54374	Washington	80	50	
2	Sloan Swallet	30.70874	-85.53273	Washington			

Swales in Washington County							
	Name	LONGDD	LATDD	COUNTY	SINK LNGTH	SINK WIDTH	SINK DEPTH
3	Fussel Swallet	30.71348	-85.54256	Washington	56	55	
4	Falling Waters	30.72508	-85.53056	Washington	20	30	30
5	Lime Rock Sink	30.70815	-85.49635	Washington	50	50	10
6	Norris Swallet	30.7078	-85.4968	Washington			3.5
7	Davis Swallet	30.7564	-85.4993	Washington	30	50	5
8	Lime Wall Sink	30.74793	-85.51829	Washington		67	
9	Joey Swallet	30.74863	-85.51341	Washington	100	200	

Note: A Swale is a depression in the soil caused by subsidence.
Source: http://ca.dep.state.fl.us/mapdirect/?focus=fgssinkholes

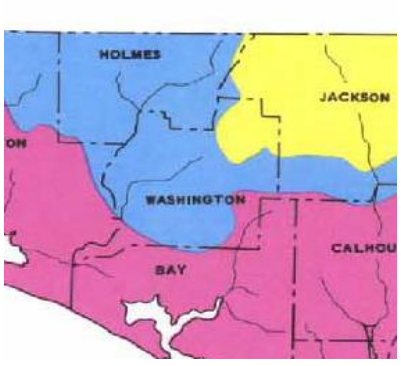
5.3.4.3 Probability

The probability of a sinkhole occurring in Washington County is relatively low, given that there have only been 4 sinkholes to open up since 1970, and the probability of damages is low, based on the lack of significant damages reported to date for any event. This equates to a new sinkhole opening up every 15 years, but this is highly contingent on rainfall amounts causing flooding, which can lead to increased sinkhole activity.

5.3.4.4 Vulnerability

The following map from the Department of the Interior, Geological Survey, shows that Washington County and its five municipalities have 3 distinct vulnerability zones for sinkholes.

Figure 28: Sinkhole Vulnerability Zones



Region of exposed or thinly covered carbonate rocks. Broad, shallow solution sinkholes dominate, with less common collapse sinkholes in areas with thicker overburden sediments.

Region of cohesive, low permeability clayey sediments 30 to 200 feet thick. Abruptly forming collapse sinkholes dominate. The size of these sinkholes depend on the thickness and bearing properties of the overburden sediments.

Region of deeply buried carbonate rocks. Sinkholes are uncommon, but rare deep collapse types and small subsidence sinkholes formed in shallow shell beds or carbonate lenses are possible

Source: http://www.dep.state.fl.us/geology/publications/sinkholetype3.pdf

The Town of Caryville is in the blue zone; Chipley is in the yellow zone, Ebro is in the pink zone, Vernon is in the blue zone, and Wausau is in the blue zone. Each municipality has reported either a sinkhole or a swale depression in close proximity to the city/town limits.

5.3.4.5 Extent

The extent of damage from sinkhole formation varies depending on its proximity to structures or roadways. In general, sinkhole formation may affect land only or it may affect structures or roadways above, either through collapse or risk of collapse. If the sinkhole is large enough and takes in a large amount of property it could cause a great amount of economic loss for the citizens or the community. It may also serve to decrease property values of nearby structures. As seen in the figure below, sinkholes in Washington County and its municipalities could reach a large diameter and depth. According to the FDEP database, the worst sinkholes that can be expected could be large diameter, deep sinkhole that could cause damage to properties and human life located on the site. The largest and most extreme case that is probable in Washington County is similar to the Falling Waters Sink in Chipley. It is 20ft wide and 100ft deep. The more common type of sinkhole the county will encounter is 10'x 10' and 5' deep.

5.3.5 Tornados

Every year, Washington County experiences severe thunderstorms that occasionally result in tornadoes. A tornado is a violent rotating column of wind characterized by a twisting funnel extending from a cloud. Tornadoes are usually spawned by thunderstorms and are produced when cool air overrides a layer of warm, moist air, forcing it to rise rapidly. Damages are the result of high winds as well as the wind-blown debris. Tornado season in the U.S. is generally from March through August, but tornadoes can happen in any month of the year. Tornados occur more frequently between the hours of 3 and 7 pm. The can occur in any location throughout the County and municipalities.

5.3.5.1 Impacts

The impacts from tornadoes include damage to buildings and infrastructure due to high winds and flying debris. Deaths and injuries can result from collapsing buildings, flying debris, and downed power lines. Figure 29 displays the historical impacts caused by selected tornadoes in Washington County.

Figure 29: Impacts from Tornadoes - Washington County

Year	Event	Impacts
1993	F1	High winds and a tornado that touched down several times along a five mile path damaged several homes, a church, several barns and boats, overturned a parked 35,000 pound tractor trailer, and uprooted many large trees. Damage was estimated at $250K.
2000	F1	A F1 tornado struck the south and east edge of Porter Lake. Two mobile homes were destroyed and a pleasure boat capsized. Numerous utility sheds and decks were destroyed. There small boats were blown into a nearby wooded area. Resulted in $750K in damages.

Year	Event	Impacts
2001	F2	An F2 tornado touched down in the Sunny Hills subdivision near Gin Lake in southeast Washington County, and raced northeast into southwest Jackson County. The tornado struck the Country Oaks, Buckhorn Creek, and Highview Acres communities. The hardest hit area was Highview Acres where 20 homes were damaged or destroyed. One man was killed when his mobile home was destroyed. 21 people were injured. Hundreds of trees were uprooted and debris scattered over several miles along the tornado's path. Numerous downed power lines affected 4,500 customers. This event resulted in $1.5 M in damages.
2004	F1	An F1 tornado touched down at Gilberts Mill Road. Caused minor damage to several homes, and downed trees and power lines.

Source: NOAA Storm Events Database

Tornado intensity is measured by the Enhanced Fujita Scale for Tornadoes, provided below.

Figure 30: Enhanced Fujita Scale for Tornadoes

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

5.3.5.2 Historical Events

Figure 31 shows the previous tornadoes that have touched down in Washington County as of 2015 by the NOAA Storm Events Database (1955-2015):

Figure 31: Tornadoes in Washington County 1950 - 2015

DATE	TIME	DEAD	INJURED	DAMAGES ($K)	FUJITA SCALE
Apr 30, 1963	0630	0	0	25.0	F2
Dec 10, 1967	0700	0	0	35.0	F2
Jan 15, 1971	1105	0	0	2.5	F0
Jan 12, 1975	1015	0	12	25.0	F1
Sep 23, 1975	0830	0	0	25.0	F1
Mar 21, 1976	0620	0	0	25.0	F0
Oct 31, 1985	1030	0	0	25.0	F0
Jan 15 1987	0402	0	3	80.0	F1
Nov 08, 1989	0430	0	0	250.0	F0
Dec 12, 1989	1015	0	0	25.0	F1
Jan 23, 1992	0110	0	0	250.0	F0

DATE	TIME	DEAD	INJURED	DAMAGES ($K)	FUJITA SCALE
Apr 26, 1993	0530	0	0	500.0	F1
Jun 25, 1994	0730	0	0	5.0	F0
Nov 11, 1995	0932	0	0	20.0	F1
Feb 13, 2000	21:18	0	0	1.05M	F1
Mar 16, 2001	0345	1	21	1.5M	F2
Oct 13, 2001	0110	0	0	300.0	F1
Feb 16, 2003	0530	0	0	100.0	F0
Sep 15, 2004	0737	0	0	50.0	F0
		1	**36**	**$4,858M**	

Source: NOAA Climate Data Center Online
http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms

5.3.5.3 Probability

According to the historical record maintained by the National Climatic Data Center, Washington County has a very low probability of ever receiving an F3 – F5 tornado event. None have ever occurred in the County. The county does have a relatively moderate risk of receiving an F0 – F2 event (one every 3.2 years). This is the same for the municipalities of Caryville, Chipley, Ebro, Vernon, and Wausau.

5.3.5.4 Vulnerability

Tornadoes have occurred in Washington County; therefore the County is vulnerable to their impacts and must be planned for. Tornadoes are dangerous in that they produce very high, concentrated winds that will destroy most things in its pathway. Although historically Washington County has not had a tornado any larger than a F2, they have resulted in 1 death and 21 injuries, and over $4,868,000 in property damages. Therefore, the LMS Committee considers tornadoes a threat that must be taken seriously. 100% of all residents and structures are vulnerable to tornadoes.

For Washington County, the following factors add to the overall vulnerability of the County to tornadoes:

- According to the Washington County Comprehensive Emergency Management Plan, approximately 45 % of the county lives in mobile homes. This equates to over 5,260 mobile homes and 10,520 residents. Mobile homes are historically more vulnerable to tornadic winds than brick and mortar homes.
- According to the NOAA, Florida ranks first in the number of tornadoes per square mile in the nation. Although the majority of these events are EF0's, they can still cause wind related damages to all structures and personal injuries.
- Over 60% of Washington County is heavily wooded. Many of the resident population lives in the wildfire urban interface, meaning they live in highly wooded areas. Tornadoes cause wind related damages to trees, ergo over 60% of all residents in Washington County are vulnerable to wind driven debris damage caused by tornadoes.

- Washington County has a large land area located in 100 year flood zone. This means virtually no one has basements or sellers for protection when a tornado warning is given. This makes the population extremely vulnerable based on lack of a safe shelter spaces to evacuate to.

The following Figure shows the number of homes vulnerable to a Category 2 hurricane, which would be the similar vulnerability for a F-2 tornado.

Figure 32: Structures Vulnerable to Tornados - Washington County

County	Return Period	Residential	Commercial	Medical	Industrial	Agriculture	Education	Gov't
Washington	*Number of Structures Affected by Category 2 Hurricane Winds*							
	50	9,470	134	172	32	2,570	8	72
	100	4,672	466	80	72	1,010	26	66
	Value of Structures – Category 2 Hurricane Winds ($million)							
	50	$1,297.71	$42.09	$150.08	$28.27	$482.63	$25.22	$73.40
	100	$873.47	$322.56	$117.13	$70.11	$208.08	$114.88	$155.49

Source: 2013 Florida Hazard Mitigation Plan

5.3.5.5 Extent

The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing (such as the trailer homes located throughout Washington County), poorly constructed or substandard housing, or apartment complexes are especially susceptible to damage from a tornado. Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds and apartment complexes and low rent projects because of their size and densities. The largest tornado that could be expected in Washington County based on previous occurrences would be an F2, although a larger one has a possibility of occurring. The average tornado expected for the county would be a F1 tornado of no more than 1,000 feet in duration. A tornado would cause significantly more damage if it went through the municipalities of Caryville, Chipley, Ebro, Vernon or Wausau.

5.3.6 Thunderstorms (High Winds and Hail)

A thunderstorm, also known as an electrical storm, a lightning storm, thundershower or simply a storm is a form of weather characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder. The meteorologically-assigned cloud type associated with the thunderstorm is the cumulonimbus. Thunderstorms are usually accompanied by strong winds, heavy rain and sometimes snow, sleet, hail, or no precipitation at all. Those which cause hail to fall are known as hailstorms.

Thunderstorms are often associated with strong winds and lightening. Both are common place in Washington County, yet historically, neither has caused any significant damages. The

National Severe Storms Laboratory of the National Weather Service classifies a thunderstorm as severe when it contains one or more of the following phenomena:

- Hail 3/4" or greater
- Winds gusting in excess of 50 knots (57.5 mph)
- A tornado

Similar to the location of the tornados in the county, thunderstorms, lightning, high winds, and hail all have no reason for striking any one part of the county more than the other. All jurisdictions in the county are equally prone to disasters from these hazards. Florida in general has a high number of thunderstorms and lighting on a year to year basis. A leading cause of the high frequency of thunderstorm and lightning activity in Washington County is its geographic position. During summer days, thunderstorms form inland from the Gulf of Mexico due to daytime heating and an active sea breeze front. The sea breeze front often aligns itself in south Washington County, thus the higher rate of thunderstorms and lightning strikes. Passage of cold fronts in the fall, winter, and spring can also lead to thunderstorms and lightning as cold continental air collides or pushes out humid maritime air preceding the front.

5.3.6.1 Impact

Impacts from hail and thunderstorm wind events include damage to buildings, infrastructure, and agricultural crops from lightning, hailstones, and high winds. Deaths and injuries can result from lightning strikes and hailstones, as well as from flying debris. The following is a sample of the types of impacts thunderstorms have had in Washington County:

Figure 33: Thunderstorm Impacts in Washington County

Date	Thunderstorm Impacts
3.27.2009	A line of strong thunderstorms produced numerous reports of damaging winds and a few weak tornadoes across Washington County. There was structural damage to the Washington County Correctional Institute on Sam Mitchell Drive. Damages estimated at $50K
4.4.2011	A potent squall line of severe thunderstorms raced eastward across the entire SE USA from the morning of April 4 thru the afternoon of April 5, 2011. Trees were blown down in Chipley and across the county. The monetary damage figure provided estimate was $10K.
7.23.2013	Scattered to numerous showers and thunderstorms occurred during July 21-23 with some storms becoming severe and knocking several trees down. A barn was destroyed on Rolland Road. Estimated damages were $20K.
6.23.15	Scattered summertime convection developed during the afternoon hours with a few storms becoming severe. Power lines were blown down in the vicinity of Douglas Ferry road and Wilderness Road in Washington County.

5.3.6.2 Historical Events

The following Figure displays the number to thunderstorms that have occurred in Washington County between 1963 – 2015. There were 62 total thunderstorms that produced damages of

nearly $400,000.00. For a complete list of all thunderstorms, please refer to: http://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=12%2CFLORIDA

Figure 34: Thunderstorm History for Washington County 1963-2015

Location	Date	Time	Mag	Death	Injury	Pty Dam
WASHINGTON CO.	4/30/1963	6:30	0 kts.	0	0	0.00K
WASHINGTON CO.	5/23/1979	12:15	0 kts.	0	0	0.00K
WASHINGTON CO.	4/8/1980	8:55	0 kts.	0	0	0.00K
WASHINGTON CO.	11/20/1983	3:45	0 kts.	0	0	0.00K
WASHINGTON CO.	12/28/1983	2:00	0 kts.	0	0	0.00K
WASHINGTON CO.	7/21/1986	16:20	0 kts.	0	0	0.00K
WASHINGTON CO.	12/28/1988	10:51	60 kts.	0	0	0.00K
WASHINGTON CO.	6/16/1989	13:00	65 kts.	0	0	0.00K
WASHINGTON CO.	8/26/1989	17:00	50 kts.	0	0	0.00K
WASHINGTON CO.	5/21/1990	16:00	0 kts.	0	0	0.00K
WASHINGTON CO.	9/9/1990	14:45	0 kts.	0	0	0.00K
WASHINGTON CO.	12/3/1990	11:15	0 kts.	0	0	0.00K
Vernon	7/25/1994	15:00	0 kts.	0	0	50.00K
Orange Hill	7/16/1995	17:30	0 kts.	0	0	0.00K
Chipley	7/18/1995	15:50	0 kts.	0	0	15.00K
CHIPLEY	3/25/1996	11:00	0 kts.	0	0	0.00K
NE PORTION	7/1/1998	17:05	0 kts.	0	0	5.00K
COUNTYWIDE	1/2/1999	15:40	0 kts.	0	0	30.00K
COUNTYWIDE	1/23/1999	6:45	0 kts.	0	0	10.00K
VERNON	7/16/2000	15:15	0 kts.	0	0	10.00K
CHIPLEY	12/16/2000	13:25	0 kts.	0	0	5.00K
GREENHEAD	7/20/2002	18:30	0 kts.	0	0	2.00K
COUNTYWIDE	12/24/2002	7:55	50 kts	0	0	10.00K
EBRO	7/17/2003	16:50	50 kts.	0	0	3.00K
CARYVILLE	4/29/2004	21:35	55 kts.	0	0	5.00K
COUNTYWIDE	11/24/2004	11:00	55 kts.	0	0	25.00K
CHIPLEY	3/26/2005	19:30	60 kts.	0	0	5.00K
COUNTYWIDE	5/10/2006	22:03	55 kts.	0	0	2.00K
VERNON	7/29/2006	15:50	50 kts.	0	0	0.25K
VERNON	11/15/2006	15:10	60 kts.	0	0	3.00K
CHIPLEY	7/20/2007	20:26	50 kts.	0	0	0.00K
VERNON	8/23/2007	8:00	55 kts.	0	0	2.00K
VERNON	6/29/2008	15:05	55 kts.	0	0	6.00K
GREENHEAD	3/27/2009	7:06	55 kts.	0	0	50.00K
VERNON	4/2/2009	15:49	55 kts.	0	0	0.00K
VERNON	7/2/2009	13:30	50 kts.	0	0	25.00K

Location	Date	Time	Mag	Death	Injury	Pty Dam
FIVE POINTS	5/29/2010	11:56	50 kts.	0	0	0.00K
CHIPLEY	4/4/2011	23:32	55 kts.	0	0	17.00K
CHIPLEY	9/5/2011	13:28	55 kts.	0	0	5.00K
CARYVILLE	9/5/2011	16:10	50 kts.	0	0	1.00K
EBRO	3/3/2012	8:04	50 kts.	0	0	2.00K
VERNON	5/6/2012	15:07	50 kts.	0	0	3.00K
COUNTYWIDE	6/14/2012	15:25	50 kts.	0	0	3.00K
VERNON	7/3/2012	12:55	50 kts.	0	0	2.00K
CHIPLEY	12/17/2012	11:42	50 kts.	0	0	2.00K
WAUSAU	1/30/2013	15:50	50 kts.	0	0	4.00K
CHIPLEY	1/30/2013	15:50	50 kts.	0	0	4.00K
SUNNY HILLS	4/11/2013	21:16	50 kts.	0	0	0.50K
VERNON	6/29/2013	0:35	50 kts.	0	0	2.00K
EBRO	6/29/2013	1:49	50 kts.	0	0	2.00K
VERNON	7/23/2013	17:24	50 kts.	0	0	1.00K
COUNTYWIDE	7/23/2013	17:36	50 kts.	0	0	26.00K
CARYVILLE	1/11/2014	10:25	55 kts.	0	0	3.00K
BROCK CROSSROAD	2/21/2014	5:30	50 kts.	0	0	1.00K
SYLVANIA	4/30/2014	0:20	50 kts.	0	0	13.00K
BRADFORD	5/27/2014	15:05	55 kts.	0	0	3.00K
WAUSAU	10/14/2014	5:55	50 kts.	0	0	1.00K
ORANGE HILL	11/17/2014	8:15	50 kts.	0	0	3.00K
GREENHEAD	11/23/2014	12:35	50 kts.	0	0	3.00K
CHIPLEY	4/19/2015	8:20	50 kts.	0	0	3.00K
CARYVILLE	4/25/2015	16:00	50 kts.	0	0	0.00K
CRYSTAL LAKE	6/22/2015	13:30	50 kts.	0	0	5.00K
HINSONS CROSSROADS	6/23/2015	18:03	50 kts.	0	0	3.00K
				Total		$397.25K

The following Figure displays the number of thunderstorm events that caused hail to occur. Most commonly associated with a severe thunderstorm, hail can average in size in Washington County from .75 inches to 1.75 inches in diameter. Historically, hail has not produced significant damages to county infrastructure or crops. Hail normally results in automobile damages reported to private auto insurance companies. A large hail event can damage many vehicles, and cause significant amount of damages to private property.

Figure 35: Hail Events in Washington County

Location	Date	Time	Type	Mag	Dth	Inj	Prpty D	Crop D
WASHINGTON CO.	09/09/1990	14:05	Hail	0.75 in.	0	0	0.00K	0.00K
VERNON	02/19/1996	20:25	Hail	1.00 in.	0	0	0.00K	0.00K
CARYVILLE	04/15/1996	01:00	Hail	0.75 in.	0	0	0.00K	0.00K
VERNON	11/01/1997	15:45	Hail	0.75 in.	0	0	0.00K	0.00K
CHIPLEY	11/01/1997	18:20	Hail	0.88 in.	0	0	0.00K	0.00K
GREENHEAD	04/24/2000	09:20	Hail	0.88 in.	0	0	0.00K	0.00K
VERNON	08/25/2000	16:56	Hail	0.75 in.	0	0	0.00K	0.00K
WAUSAU	08/25/2000	16:56	Hail	0.75 in.	0	0	0.00K	0.00K
VERNON	03/15/2001	04:40	Hail	1.00 in.	0	0	0.00K	0.00K
GREENHEAD	07/17/2003	16:40	Hail	0.88 in.	0	0	0.00K	0.00K
FIVE PTS	03/22/2005	09:00	Hail	0.75 in.	0	0	0.00K	0.00K
CHIPLEY	03/26/2005	20:00	Hail	1.75 in.	0	0	0.00K	0.00K
GILBERTS MILL	05/07/2006	14:01	Hail	0.75 in.	0	0	0.00K	0.00K
FIVE PTS	07/19/2006	17:14	Hail	1.00 in.	0	0	0.00K	0.00K
CHIPLEY	08/19/2007	14:50	Hail	0.75 in.	0	0	0.00K	0.00K
CHIPLEY	02/22/2008	11:40	Hail	0.75 in.	0	0	0.00K	0.00K
SUNNY HILLS	04/13/2009	11:32	Hail	0.75 in.	0	0	0.00K	0.00K
CARYVILLE	07/02/2009	13:30	Hail	0.88 in.	0	0	0.00K	0.00K
				Totals:	0	0	0.00K	0.00K

5.3.6.3 Probability

According to the 2013 State of Florida Hazard Mitigation Plan, Washington County will probably receive between 3.5 – 9.5 thunderstorms a year that cause some type of damages. Some of these thunderstorms will produce lightening, and/ or hail. Historically, there have been 62 thunderstorm events since 1960, which averages approximately two events per year of any significant consequence. Yet, the potential is there for many more to occur, causing limited amounts of damage.

5.3.6.4 Vulnerability

Washington County and its municipalities include thunderstorms as a potential hazard because of their frequency, and potential to cause damage to property, and threaten lives. Although historically, thunderstorms have not caused any significant damages to structures, nor caused any deaths in Washington County, the threat still remains based on each storm's potential. Figure 36 identifies the vulnerability of structures to thunderstorms and hail within the thunderstorms. In addition, Washington County considers thunderstorms a serious threat based on the following facts:

- Thunderstorms frequently occur in Washington County. On average, the County will experience six severe thunderstorms a year that cause moderate damages. During the summer months, the County can experience daily thunderstorms that include high winds and lightning.
- Washington County has a large outdoor recreational population. This means Washington County can have many recreational activities ongoing exposing people to wind, rain, lightning and hail.
- Many of all residents in Washington County live in close proximity to forested lands. Thunderstorm winds will often cause tree damage to improved property, structures, and people.

The following data roughly estimates the potential threat of damage from thunderstorms and hail. The threat is defined in terms of the chances that a thunderstorm or lightning will cause economic damage or a loss over $500. Washington County is at a medium to high risk for thunderstorm and/or hail damage.

100% of the population and all of the structures in Washington County, Caryville, Chipley, Ebro, Vernon and Wausau are all vulnerable to thunderstorms and hail. The following Figure display this.

Figure 36: Structures at Risk from Hail and Thunderstorm, Washington County ($M)

County	Annual Events	Residential	Commercial	Medical.	Industrial	Agr.	Educational	Gov./Inst.
Washington	3.5-9.5	14,142	600	252	104	3,580	34	138
Value of Structures ($M)		$2,171.17	$364.65	$267.20	$98.39	$690.71	140.10	$228.90

Source: 2013 State of Florida Mitigation Plan, Appx C, pg C.99

5.3.6.5 Extent

Thunderstorms can produce damaging hail and high winds. The extent of high winds is similar to that of a F0 to F1 tornado or Category 1 hurricane. Washington County can expect thunderstorms of this magnitude throughout the County in the future. The most severe winds caused by a thunderstorm event in Washington County is recorded at speeds of 65 knots, however an event with wind speeds averaging 50 knots is more likely to occur. When hail

occurs, it will on average be .75 inches in diameter. The entire County can expect to receive both thunderstorms and hail events in the future.

5.3.7 Winter Storms

Winter storms can include freezing rain, sleet, and ice, which can produce a variety of extremely hazardous conditions. Vehicle accidents are likely to increase during such storms due to slippery roadways and reduced visibility. Ice on roadways can also be a serious problem. Freezing rain in combination with wind, can contribute to fallen trees and branches, and downed power and communications lines. Damages are likely to be similar to that seen in a severe thunderstorm.

Since cold fronts generally come from the northeast and temperatures are colder further north, the parts of Washington County are more in danger of being hurt by winter weather. However, because of the relatively small area the county makes up, all jurisdictions are at the same threat level. According to the National Weather Service, the average low in Washington County is 37 degrees in January, therefore it must be determined that the temperatures must be below this point sometime during the year. Therefore, freezing throughout the county would become a concern. A winter storm can occur anywhere in the County and its municipalities.

5.3.7.1 Impact and Historical Event

The expected extent of any winter freeze/storm in Washington County is historically limited to cold snaps with sub-freezing weather, lasting for one to two days. The impacts on Washington County would be compromised safety on roadways (freezing water), ill effects on the elderly population with limited mobility and means for heating their dwellings, and increased demand on the electrical grid which may result in brown or blackouts.

Figure 37: Winter Storm Events and Impacts

Date	Historical Events and Winter Storm Impacts
3/12/93	A massive cold front moved across the entire Southeastern United states causing record amounts of snow and ice conditions. It was called the 93 Super Storm, and the Great Blizzard of 1993. In Florida, it was called the No Name Storm. In Washington County, cold wind and sub freezing temperatures made for hazardous conditions on roadways. Parts of I-10 froze, and shelters had to be opened for stranded motorists. Wind speeds reached up to 75 mph resulting in widespread power outages. The road conditions were dangerous based on sleet and icing conditions.
1/28/14	A severe winter storm in the entire Florida Panhandle area produced a mix of wintery mix of precipitation to the entire area. Several roads were closed, including a large stretch of Interstate 10 passing through Washington County. Most bridges in Washington County experienced ice. The County experienced freezing rain and a sleet mix, impacting roadways and bridges. Temperatures in Washington County were at or near the freezing point most of the day, which is a very rare event.

Source: NOAA Storm Events Database – Winter Storm

5.3.7.3 Probability

There is a distinct probability that winter weather will again impact the central panhandle region of Florida in the future. Every winter, this possibility has to be considered and appropriate preparations made for traffic conditions and potential power outages. However, the chance of a seriously damaging winter season is not high when compared with the rest of the country. With this in mind, the probability of a significant winter storm is considered low by the LMS Committee.

5.3.7.4 Vulnerability

Washington County has limited vulnerability to moderate freezes every one to two years and severe freezes possibly once every 15 to 20 years. The climate in the Florida Panhandle is mild compared to the remainder of the nation to the north and winter storms of this nature are very rare. During the winter, Florida has approximately double the amount of hours of sunlight that the states to the north have, resulting in milder temperatures, so winter storms and freezes are not a serious threat. However, should a prolonged freeze occur any time between January and March, there is potential risk to human life due to exposure to the weather and, more importantly, automobile accidents due to freezing road conditions.

The overall vulnerability in Washington County due to winter storms and freezing conditions can be characterized into the following general categories:

Human health issues: In severe conditions, many Floridians will be unprepared for extreme cold. Being a state near the tropics, warm and hot temperatures are the norm. Therefore, most residents focus on cooling and air-conditioning investments rather than heating. Some residents will not have sufficient heat and could be exposed to the extreme cold and suffer the consequences. Other residents will cause themselves injury, or worse, using dangerous electric and propane heaters or even open fires. At least once per year Washington County opens a small shelter, or puts one on standby, to assist citizens without proper heating capabilities.

Elderly population: The impacts on the residents of Washington County are estimates based on the number of elderly, which are by far the most vulnerable population to winter storms and freezing conditions. There are 4,318 residents in Washington County over the age of 65 who could be susceptible to the long term effects of a winter storm or sustained freezing temperatures.

Property: Property impacts from a winter storm are normally minimal. They would include agricultural and livestock issues due to exposure. Much of Washington County's economy is based on agriculture and livestock, so extreme cold conditions will severely impact this sector. Prolonged periods of cold will result in losses to crops and animals that will endanger the businesses of many small and medium sized farms.

Municipalities of Chipley, Caryville, Ebro, Vernon, and Wausau – Vulnerability: The likelihood of winter weather affecting the five municipalities is exactly the same as it is for the rest of the

unincorporated county. Based on the overall vulnerability for the county, the municipalities do differ in the lack of agriculture and commercial livestock. The municipalities will be most vulnerable to transportation and traffic issues due to the greater number of roads and the higher and denser population. Also, the larger number of people will increase the probability of injuries, illnesses or deaths related to the cold.

5.3.7.5 Extent

The extent of damage resulting from a winter storm depends on conditions such as temperature, duration of sustained cold temperatures, and amount of precipitation. Winter storms occur nearly every year, however, they are usually mild with minimal damage (damaged pipes and vegetation). Impacts to existing and future structures are minimal and primarily associated with frozen pipes and falling trees. However, the extent of damage can increase as precipitation increases or temperature decreases

Source: http://ab.weather.com/weather/wxclimatology/monthly/graph/32428

Figure 38 shows the extent of weather extremes for Washington County. Using the Chipley reporting station, the following data identifies the extent of temperature extremes for all of Washington County.

Figure 38: Temperature Extremes - Washington County

The worst case scenario in Washington County is temperatures reaching near 0^{0}. The coldest recorded temperature in Washington County has been 2^{0} and snow has incurred resulting in loss of crops and power. The reliance on heaters during the winter months greatly lessens the vulnerability to winter weather, but increases the risk of structural fires and carbon

monoxide poisoning. Also, a severe winter storm would mean freezing and with no means of salting roadways or removing ice, emergency response would be severely hindered. Electrical service in many areas would likely be interrupted or absent due to power line glazing and falling tree limbs. Also, the ability of municipalities to provide natural gas could be hampered by the large-scale demand throughout the Southeast for the product. Additionally, the need for shelter would be great in order to keep people warm and safe.

5.3.8 Wildfire

Wildfires are of great concern in Washington County. An average of 30+ grass or woods fires occurs in any given year in Washington County. Lightning, escaped authorized burns, etc., causes many of the fires. Other wildfires in the county are human-induced fires. This includes purposely caused fire (arson) or accidental causes (escaping trash fires, cigarettes, sparks from passing railcars, motor vehicle fires on roadsides that spread to woodlands, or house fires that expand to wild lands).

Although not the only identifying characteristic to identify wildfire-vulnerable areas, those locations with "Lakeland Fine Sand" (as shown in agricultural soil guides for the county) generally have fire dependent plant species growing in them. The Sunny Hills subdivision and surrounding environs, constructed in sand hills where natural vegetation is conditioned to burn and regenerate, is of particular concern. One of Washington County's critical facilities, a major correctional facility, is located in this sand hill region. In addition, severe drought can create conditions favorable to swamp-land fires.

All forestland, open areas, and rural interfaces of the county and municipalities are vulnerable to wildfires which includes all the jurisdictions of the county. According to the Florida Forest Service, approximately 85% to 90% of the land in the county is open forestland and most locations outside of the floodplains and swamplands consist of natural vegetation historically related to the Longleaf Pine or upland Southeastern forests (a fire dependent ecology). These lands are particularly vulnerable during periods of drought..

5.3.8.1 Impact

Impacts from wildfires in Washington County include the destruction of buildings and infrastructure as well as smoke and water damage to buildings. In Washington County, wildfires have resulted in the loss of several homes, especially those located in the wildland urban interface areas. They have also caused utility pole destruction, disrupting electrical and telephone service until the poles could be replaced. The smoke from wildfires has resulted in several hospitalizations of elderly residents who are on respirators, or have diminished lung capacities from asthma, COPD, or other respiratory ailments. The smoke has also, at times, caused the closing of major roadways because of extremely poor visibility. Fire and smoke inhalation can cause deaths and injuries. Entire ecosystems can be altered in the short and

medium term. Agricultural crops and livestock can be destroyed or damaged. Populations may need to be evacuated for periods of time when a fire is not fully contained. .

5.3.8.2 Historical Events

According to the Florida Department of Forestry's "Significant Fires in Florida" list, although numerous small grass fires have occurred, no significant wildfires have taken place in Washington County or the surrounding municipalities between the years 1990 to 2015. A summary of past occurrences follows:

Figure 39: Acres Burned in Washington County 2011-2015

	Acres Burned					
Reasons	**2011**	**2012**	**2013**	**2014**	**2015***	**Totals**
Total Number of Events	56	15	10	13	19	113
Campfire	4	0	0	4.5	.3	8.3
Children	0	7	0			7
Debris Burn- Authorized Broadcast	91	0	33	38	41	203
Debris Burn – Authorized Piles	13	5.3	0	0	.3	18.6
Debris Burn – Non Authorized	16.2	25	8	4.1	62	115.3
Equipment Caused	13.2	45	20.5	0	0	78.7
Incendiary	3.1	2	0	.4	10.3	15.7
Lightning	72	0	0	0	0	72
Misc Breakouts	167	0	0	0	0	167
Misc Electric Fence	0	8	0	0	0	8
Misc Power lines	3.4	9.7	0	0	0	13.1
Misc Other	33	0	0	0	0	33
Unknown	7	22	.5	13.7	.1	43.3
Total	**420.7**	**124**	**61.8**	**62.5**	**114**	**826.3**

* Thru 8.1.15

Source: Florida Forest Service Reporting System - http://tlhfor013.doacs.state.fl.us/PublicReports/FiresBySTR.aspx

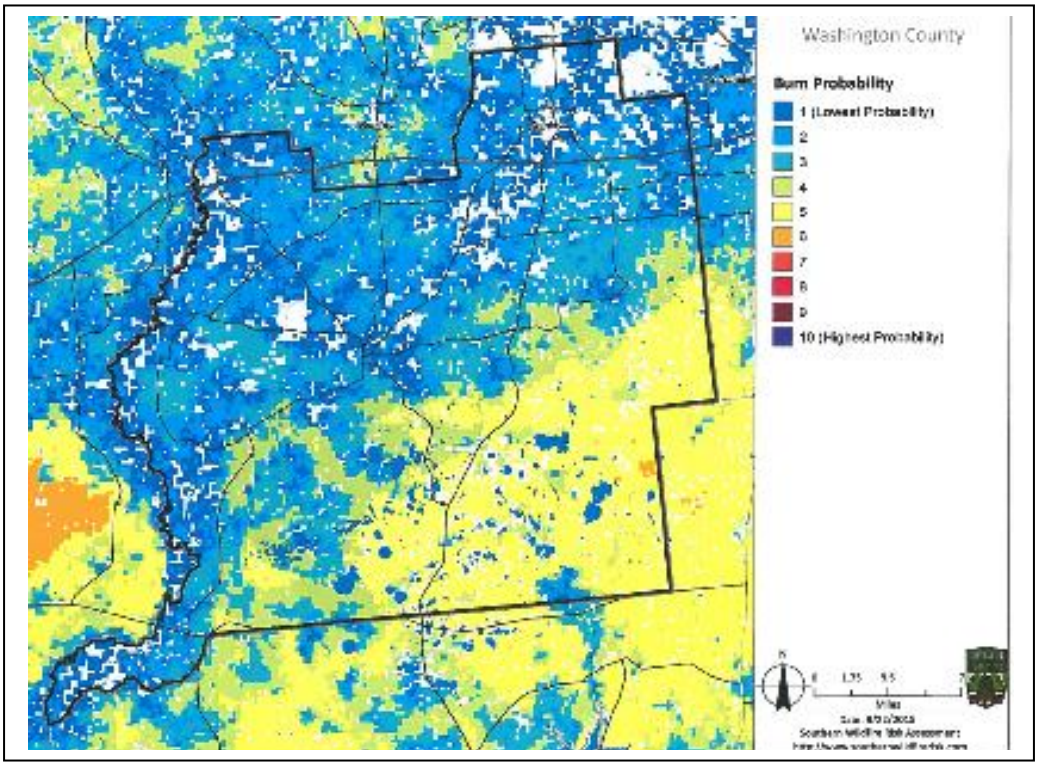
5.3.8.3 Probability

In Washington County, wildfires can be expected to occur in the forested areas of the County on a consistent basis. The Figure below displays the annual probability of a wire occurrence.

Washington County, through the Florida Forest Service, does adhere to a schedule of prescribed burning in an attempt to reduce fuel loads in these locations. Based on historical evidence, Washington County can expect to receive an average of up to 30 fire events a year. The majority of these would be less than an acre.

The following Figure comes from the Southeastern Wildfire Risk Assessment Summary Report for Washington County. It is a general probability map for Washington County and its municipalities on how likely it is to experience a fire in a given location per year.

Figure 40: Burn Probability - Washington County



Source: Southern Wildfire Risk Assessment Summary Report – Washington County 2015

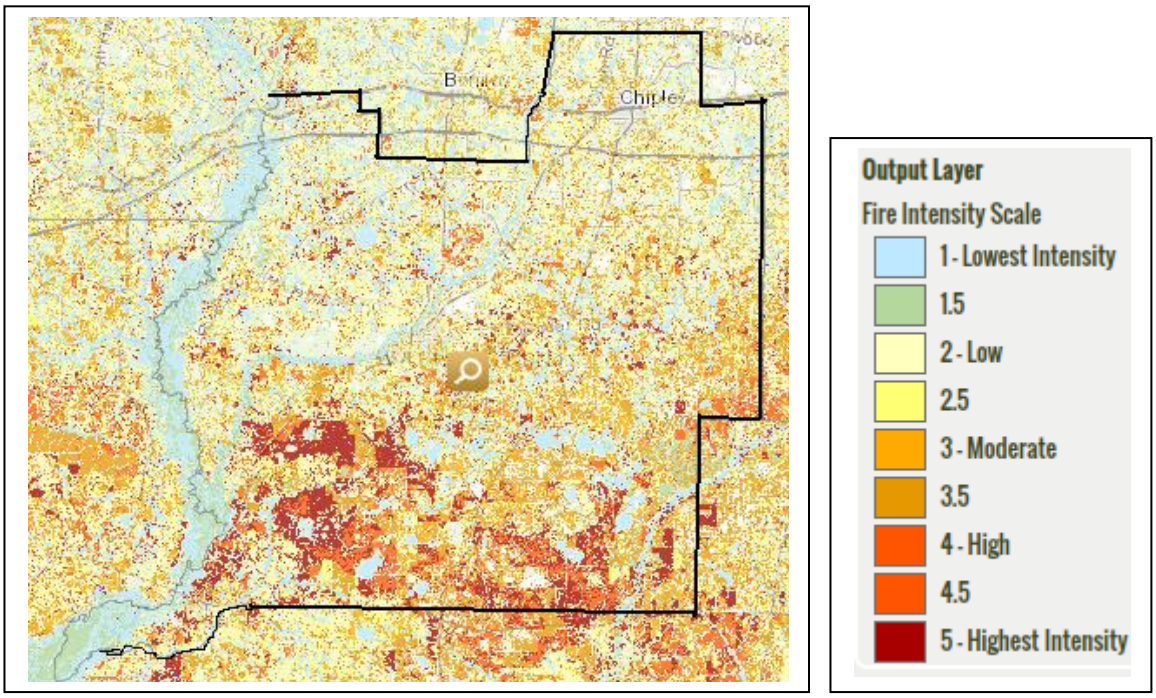
5.3.8.4 Vulnerability

Figure 40 and 41 identifies the location of these areas, and provides the vulnerability of their occurrence based on available fuel sources. The Fire Intensity Scale identifies how much fuel is available for burning on an average year, and displays the intensity of the fire event based on this available fuel. The Wildland Urban Interface Map displays the vulnerability of the county to the impacts of wildfire on the residents of Washington County. Taken together, these two maps clearly identify how vulnerable Washington County is to wildfire. Also, consider the following:

- As noted earlier, over 85% of Washington County is wooded areas, making it highly vulnerable to wildfire.
- The majority of residents in Washington County live in, or near wooded areas. Given the number of historical wildfire events to occur in the County, everyone is vulnerable to the threat of a fast approaching wildfire.
- Washington County, nor its municipalities, have a robust firefighting capacity equal to the threat. If a wildfire occurs, Washington County must rely on the resources of the Florida Forest Service, or assistance from neighboring counties. These resources are not guaranteed available every time they may be needed.
- All of Washington County's critical facilities are vulnerable to wildfire.

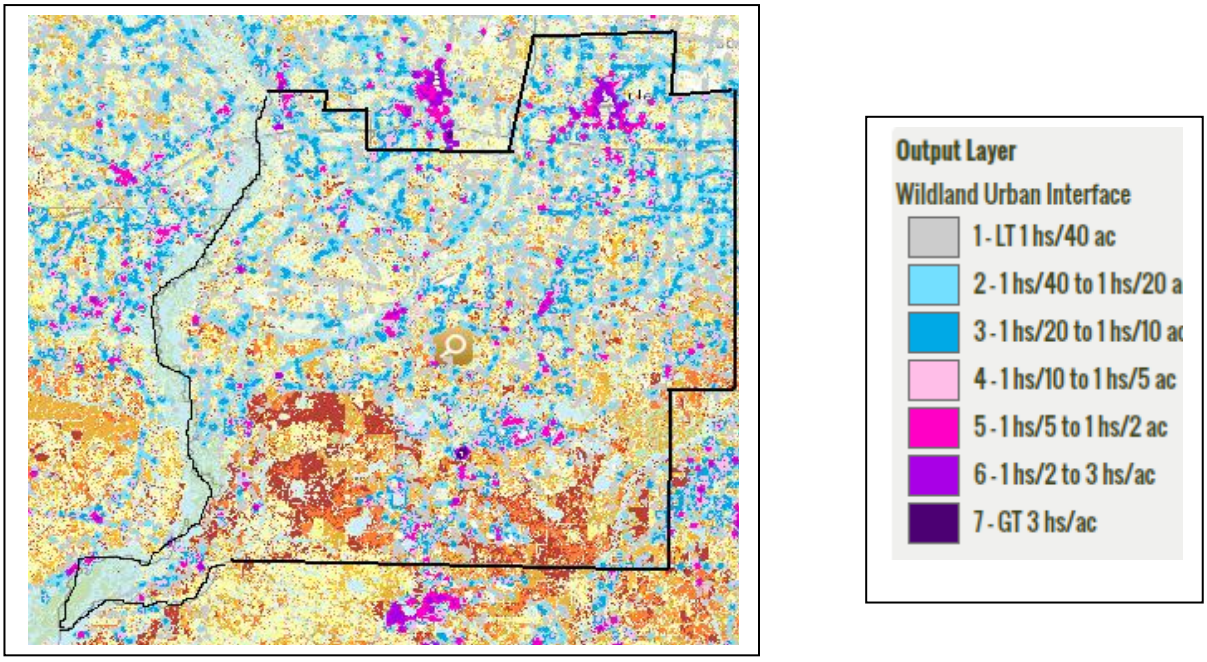
- Only the City of Chipley has a firefighting capacity. The communities of Caryville, Ebro, Vernon, and Wausau are all serviced by Volunteer Fire Departments, which are dependent on the availability of the volunteer firefighters to be available to fight fire.

Figure 41: Washington County Fire Intensity Scale



Source: http://www.southernwildfirerisk.com/map/index/public

Figure 42: Washington County Wildland Urban Interface



Source: http://www.southernwildfirerisk.com/map/index/public

In addition, the State of Florida Enhanced Hazard Mitigation Plan provides the following data concerning the Florida Forest Service Levels of Concern for wildfires.

Figure 43: Levels of Concern - Wildfire Washington County

Level of Concern	Single Family Residential	Multi Family Residential	Mobile Homes	Agriculture	Commercial	Instit./Gov't	Industrial
1	442 ($39.02)	24 ($0.56M)	310 ($13.98M)	541 ($64.28)	5 ($158.99)	2 ($27.16M))	2 ($0.08M)
2	411 ($34.37M)	16 ($0.64M)	277 ($12.00M)	337 ($86.53M)	12 ($1.56M)	3 ($9.03M)	3 ($0.21M)
3	1358 ($114.57M)	88 ($3.28M)	937 ($40.88M)	633 ($165.14M)	121 ($14.71M)	28 ($36.86M)	28 ($0.51M)
4	113 ($11.27M)	3 ($0.07M)	127 ($6.01M)	32 ($8.58M)	12 ($1.28M)	2 ($2.84M)	2 ($6.90M)
5	37 ($3.13M)	1 ($0.01M)	56 ($2.55M)	15 ($3.85M)	3 ($0.33M)	2 ($1.59M)	2 ($1.26M)
6	34 ($2.46M)	3 ($0.04M)	31 ($1.48M)	3 ($1.47M)	1 ($0.02M)	1 ($0.22M)	1 ($0.06M)
7	11 ($0.74M)	2 ($0.02M)	10 ($0.55M)	2 ($0.59M)	0 ($0.00M)	0 ($0.06M)	0 ($0.00)
8	1 ($0.03M)	0 ($0.00M)	2 ($0.15)	0 ($0.00M)	0 ($0.00M)	0 ($0.00)	0 ($0.00)

Source: 2013 State of Florida Enhanced Hazard Mitigation Plan

5.3.8.5 Extent

Washington County can expect to have an average of 20 localized wildfire events every year, with the average size being approximately 7.3 acres. Given the extent of the forested lands in Washington County and the wildland urban interface, residential homes can expect to be threatened.

5.3.9 Technological Hazards

Hazardous materials are chemical substances, which if released or misused can pose a threat to the environment and human health. These chemicals are used in industry, agriculture, medicine, research, and consumer goods. Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation accidents or because of chemical accidents in plants. Impacts include contamination of land, injuries to people who are involved in an accident, evacuation of contaminated areas for lengths of time which can impact businesses, residents, and more. Spills on roadways can cause traffic diversions until the spill is cleaned up. Oil spills in the Gulf can disrupt the local economy and pose environmental damages. The location of a hazardous materials spill will normally be centered around one of Washington County's roadways, I-10, US-90 or the CSX railroad.

Hazardous materials coordination is the responsibility of the county's Emergency Management Department along with local facilities that use or store hazardous materials. Hazardous chemicals are transported into and through the county on a daily basis. Over-the-road and CSX rail transportation is the most common method in the county. In Washington County, the most frequently transported chemicals over the roads are petroleum-related products including gasoline, diesel, fuel oil and LP gas. These are transported over I-10 primarily. CSX transports a wide array of hazardous materials through Washington County in very large quantities.

In addition to the hazard created by the routine transportation of chemicals through the county, a hazard also exists from facilities storing large quantities of Extremely Hazardous Substances (EHS) at their facilities. There are a number of facilities in the county that store EHS chemicals above the minimum threshold planning quantity. Many of these facilities store chlorine gas, which is used for water treatment and purification. It is important to note that a variety of safety and security precautions in place at facilities storing these chemicals greatly reduces the potential for a significant release to occur. The following Figure provides specific information regarding each of these facilities.

Figure 44: Section 302 Extremely Hazardous Substance Facility Summary

Facility Name	EHS Chemical	City
AT&T	Sulfuric Acid	Chipley
BellSouth	Sulfuric Acid	Chipley
Florida Gas Transmission Company	Pressurized LP gas	Caryville
Lewis Bear – EBRO	Chlorine	Ebro
MCI - Chipley	Sulfuric Acid	Chipley
NW Florida Reception Center	Chlorine	Chipley
Town of Vernon Waste Water Treatment Plant	Chlorine	Vernon
Westpoint Home – Chipley Plant	Sulfuric Acid	Chipley

5.3.9.1 Impacts

Impacts from hazardous material spillages include human deaths and injuries due to inhalation or exposure to the chemicals, destruction and/or long-term contamination of the ecosystems at the spill site, and the long-term disposal of hazardous and contaminated materials from the spill site. Spills can also decrease property values for an extended period of time and decrease property tax revenues. In Washington County, the impacts from hazardous material spills in the County have been relatively minor. Figure 44 identifies all past hazardous materials spills. For the most part, they are small petroleum based spills, resulting in the need to clean up the spill. The cost of the spill cleanup is borne by the entity spilling the hazardous material. No evacuations have occurred in Washington County resulting in a hazardous materials spill.

5.3.9.2 Historical Events

The following list is all the hazardous materials spills that occurred in Washington County and reported to the FDEM State Watch Office between 2012 – 2015. None of these events were a significant cause for concern.

Figure 45: Hazardous Materials Incidents in Washington County 2011 - 2015

Incident Occurred	Incident Type	Chemicals Involved	Facility Name Scene Description	City
2012	No reported incidents			
11.3.13	Aerial agricultural spraying	Unknown pesticide used for field application	Field pesticide spraying causing the death of fish in nearby pond	Near Chipley
6.30.14	Unknown chemical sheen on water body	Unknown substance	Orange pink substance in Porter Lake causing fish, animal and vegetation kill	Near Chipley, Porter Lake
9.07.14	Natural gas leak with fire from above ground pipeline	Natural gas	Natural gas release caused a fire near NW Fla Recreational Center	Near Chipley
9.09.14	Illegal dumping of oil and paint on private property	Discarded oil and paint	Private property owner illegally dumping oil and paint on ground	Chipley
2015	No reported incidents as of 10.15.15			

Source: Florida Division of Emergency Management State Watch Office

5.3.9.3 Probability

During this reporting period, there have been no 302 chemical releases in Washington County. The hazardous materials spills that have occurred are typically small and contained very quickly. The County recognizes it historically averages 2 hazardous materials incidents a year of some nature. This makes the probability of a hazardous materials spill impacting residents moderate. Yet the magnitude of these events is relatively small. The probability of an incident occurring in Caryville, Chipley, Ebro, Vernon and Wausau is much higher than in the unincorporated parts of the County because each town is serviced by a significant roadway that transports hazardous materials. Chipley and Caryville have proximity to US 90, I-10 and the CSX railroad, heightening their vulnerability. Ebro (SR 79), Vernon (SR 79), and Wausau (SR 77) all have major state routes transecting their municipalities which transport hazardous materials.

5.3.9.4 Vulnerability

The vulnerability of Washington County and the municipalities of Caryville, Chipley, Ebro, Vernon and Wausau to a hazardous materials spill depends on your location. When you consider the following, the vulnerability of each community is better understood.

- Virtually all of the schools in Washington County are in close proximity to the railroad, or a major roadway. This places all of the students attending school at any given time susceptible to a hazardous materials spill, especially one that generates a spill.
- The CSX railroad transgresses Washington County through the towns of Chipley (most populated city), and Caryville. CSX has experienced two recent major accidents in which hazardous materials were spilled, requiring significant clean ups. The one in Escambia County caused a perimeter evacuation for several days.
- As with the schools, all of the congregate care facilities in Washington County are in close proximity to a major roadway, or the railroad. This makes for a serious situation, given hazmat spills are always no-noticed events, requiring immediate protective measures. This is more difficult to accomplish with those in congregate care facilities.
- Many residents are near farm lands that are treated with a variety of chemicals to control pests and weeds. The wind can cause a plume that can impact waterways and habitats close by.

Washington County has conducted several large scale exercises simulating a hazardous materials spill, the latest being a freight car on the railroad carrying unknown hazardous materials. Washington County Emergency Management continues to prepare for hazardous materials spills through training and education and exercises.

5.3.9.5 Extent

Given the very limited number of hazardous materials spills that have occurred in Washington County, it could be expected that the most likely hazardous materials spills would be a petroleum spill of less than 10 gallons caused by a petroleum carrier. Yet the potential exists for much larger events, given the railroad, interstate, and major arterial roadways that enter and exit Washington County.

5.3.10 Terrorism

Under the Homeland Security Act of 2002, terrorism is defined as an activity that involves an act dangerous to human life or potentially destructive to critical infrastructure or key resources and is a violation of the criminal laws of the United States or any State in which it occurs and is intended to intimidate or coerce the civilian population or influence a government or affect the conduct of a government by mass destruction, assassination or kidnapping. A terrorist event can occur anywhere in the County or its municipalities, but will most likely be centered around one of the Critical Facilities located throughout the County.

5.3.10.1 Impacts

There have been no terrorist-related impacts in Washington County because there have been no terrorists events to date. The County has expended funds to prepare for such events, yet most of this funding has been through federal resources in the form of grants. If a terrorist

event were to occur in Washington Count, the impacts could include damage to critical infrastructure, death, injuries, community trauma, and more, depending on the target of the terrorists. It could occur anywhere in Washington County.

5.3.10.2 Historical Events

There have been no terrorist attacks within Washington County. There have been several events statewide that could have originated in Washington County, or any other rural county. Washington County sponsors several annual festivals and holiday celebrations. The potential for a terrorist event is possible.

5.3.10.3 Probability

Given the rural nature of Washington County, and given it is not a major tourist mecca, the probability of a terrorist attack occurring in Washington County is extremely low.

5.3.10.4 Vulnerability

Washington County has a list of critical facilities that if disrupted, could have a large impact on the County. They are listed in *Appendix C.* The water purification systems that use hazardous materials for the purification process is of some concern.

5.3.10.5 Extent

The LMS Committee believes that an attack on the water system in Washington County would have the most impact. The water delivery system is on the list of critical facilities. A compromised water delivery system could impact hundreds of residents before it was identified.

Section 6: Local Mitigation Strategies

6.1 Mitigation Strategy Update

Washington County faces a number of different hazards in a wide variety of locations throughout its borders. The LMS Committee assessed these hazards and the mitigation strategies of the previous LMS and updated the project's level of completion as well as implemented new ideas to help make the community less vulnerable to natural and man-made disasters. Over the process of several meetings, the LMS Committee comprised and listed a number of mitigation projects that will be discussed later in this section. These projects were then ordered in terms of the context of cost, responsible entity, implementation time, funding, and areas affected. This order will be known as the "priority list" and is located in this section as well, and shall demonstrate the county's stance on which objective should completed first.

6.2 2016 LMS Project Update

The LMS Committee determined that this is one of the most important parts of the Local Mitigation Plan as this is where actual work was to be done to help Washington County. The first step the committee accomplished was determining if projects of the old plan were completed and which were funded as of August 2015. This way, they could have an accurate understanding of where the projects were in regard to completion. The next step in the updating process was to brainstorm new ideas and foreseeable problems that may need to be addressed throughout the county, both structural and non-structural. There was then a benefit/cost review assessing the priority of completion of each project.

6.3 Local Hazard Mitigation Goals

The following goals are the broad range vision of what is to be accomplished during the five-year planning period from 2016 through 2021 by the LMS Steering Committee:

Goal 1 *– Continually provide mechanisms for local government jurisdictions and the public to reduce and avoid long term vulnerability to identified hazards in Washington County.*

Accomplish by:

- Continue to provide outreach activities and information on all hazards and ways to mitigate their impacts.
- Holding regularly scheduled LMS Steering Committee and Working Committee meetings. Steering Committee meetings will be held quarterly at minimum.
- Forming Working Groups for sub-regions, municipalities, or for specific hazards named in the plan to reduce or eliminate vulnerability.
- Providing communications to county and municipal contacts and through media outlets to advertise opportunities to attend and participate in mitigation functions, consistent with the Florida Sunshine Law.

- Holding meetings throughout the county and in various municipalities to encourage local participation.

Goal 2 *– Maintain communication between the LMS Steering Committee and key County and municipal departments to coordinate intra- and inter-departmental mitigation activities among various jurisdictions, and with the public.*

Accomplish by:

- Ensuring all interests of various departments are represented by the appointed staff to the Steering Committee
- Ensuring all interested parties are aware of Working Groups and a need to represent their own interests concerning various geographical areas or to address various hazards.
- Maintaining up-to-date e-mail and postal addresses and phone numbers to ensure communication.

Goal 3 *– Monitor and Update the LMS plan, as necessary, to identify changes to hazards, vulnerabilities, goals, initiatives, priorities, funding sources, disaster declarations, and adoption of revisions.*

Accomplish by:

- Having the Steering Committee direct staff to update plan sections, tables, maps, etc., based upon current activities, trends, or issues.
- Providing LMS staff feedback that provides localized information that is current.
- Continually reviewing the plan and comparing it to other planning requirements (emergency management plans, comprehensive land use plans) that contain mitigation provisions or may otherwise help to assert or hinder mitigation initiatives.
- Notifying staff to the committee regarding issues that arise that may need their consideration or to solicit opinion.

Goal 4 *– Assist property owners, residents, businesses, non-profits and others in understanding and knowing of their eligibility for grants, loans and services that may help to mitigate hazards that directly affect their interests.*

Accomplish by:

- Working with existing programs within the county and municipalities (building inspections, local National Flood Insurance Program, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.
- Being perceptive of and proactively engaging new opportunities to promote mitigation interests.
- Developing a website that conveys updated information about mitigation activities on a continual basis.
- Staying abreast of available funding and service opportunities through participation in meetings, conferences, seminars, and research.

- Maintaining initiatives/priorities and contact persons lists to facilitate rapid notification of assistance availability.

Goal 5 *– Reduce or eliminate hazards identified to at risk locations in the county and its municipalities.*

Accomplish by:

- Targeting mitigation efforts and activities towards areas where hazards exist.
- Working with agencies, professionals, and the public to develop the best solutions for identified hazards.
- Examining and implementing appropriate technologies to identify, model, or otherwise simulate risks and zones of risk and incorporating these into the LMS plan.

6.4 National Flood Insurance Program

Washington County is vulnerable to flooding in a number of different areas. To help lessen the economic loss associated with flooding, Washington County and its municipalities participate in the Nation Flood Insurance Program (NFIP). Communities that participate in FEMA's NFIP have the ability to buy flood insurance which is designed to provide an alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. Participation in the NFIP requires an agreement between communities and the federal government that stipulates if a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, then the federal government will make flood insurance available within the community. Washington County has reviewed the benefits, identified, analyzed, and prioritized actions related to this program and each jurisdiction determined that continued participation and compliance is the best solution and will continue into the future. However, no community in Washington County has previously or is currently participating in the Community Rating Survey (CRS).

6.4.1 NFIP Loss Statistics

Washington County and the cities of Caryville, Chipley, Ebro, and Vernon participate in the NFIP. The following Figure represents data from the National Flood Insurance Program (NFIP) pertinent to Washington County. As can be seen, the amount of flood losses has not been large when averaged over the 37 years of records.

As 2015, there were 9 repetitive loss properties in Washington County, according to FEMA records. Figure 47 provides a general overview of the type of repetitive loss properties located in each of the Map Sections identified on the map. Each year, the owners of these residences receive correspondence outlining their situation, and proposed mitigation measures that can be taken.

Figure 46: NFIP/CRS Statistics for Washington County

NFIP/CRS STATISTICS: 1/1/78 - 7/31/15								
Name	NFIP Policies in Force	NFIP Participant (Y/N)	CRS Participant (Y/N)	Total Losses	Closed Losses	Open Losses	CWOP* Losses	Total Payments
Caryville Town of	3	Y	N	55	51	0	4	$810,317.37
Chipley, City of	22	Y	N	9	5	0	4	$68,220.32
Ebro, Town of	1	Y	N	0	0	0	0	0
Vernon, City of	10	Y	N	13	11	0	2	$165,161.22
Wausau, Town of	1	Y	N	0	0	0	0	0
Washington County	109	Y	N	53	46	0	7	$527,527.63
Totals	146			130	103	0	17	$1,571,227.54

*Closed Without Payment Losses

Source: http://bsa.nfipstat.fema.gov/reports/1040.htm#12; http://bsa.nfipstat.fema.gov/reports/1011.htm#FLT

Figure 47: Repetitive Loss Statistics for Washington County

Facility Type	# of Properties	Location
Residential	**4**	Caryville
Residential	**2**	Chipley
Residential	**3**	Uninc Washington County
Total	**9**	

Source: Washington County Planning Department

Washington County and its municipalities will continue to comply with the NFIP. The following efforts identify efforts to ensure compliance:

1. Incorporate NFIP provisions into the Washington County Land Development Regulations/ Comprehensive Plan, Future Land Use Map, and Zoning Regulations
2. Require freeboard requirements for new construction, or reconstruction if required by the 50% rule.
3. Enforce Flood zone "A" height requirements and free board.
4. Provide flood information at community events.
5. Require non-designated floodway setback requirements.
6. Require agricultural and silviculture interests to require permits for uses in the 100 year floodplain.
7. Prohibit industrial uses, high intensity agricultural uses within the 100-year floodplain of the Choctawhatchee River and Holmes Creek.
8. Adopt new model code companion floodplain management ordinances.

The new FIRMs have been completed, and can be downloaded electronically from the Northwest Florida Water Management District's website. They host the new FIRMs under a cooperative agreement between the State of Florida and FEMA. New technology during map mod has made the maps more accurate.

The unincorporated area of Washington County joined the program through an emergency entry on 9/29/1975. The regular entry date and the date of the first FIRM was on 6/17/1991.

6.4.1.1 City of Chipley

The City of Chipley first came into compliance with the NFIP program through an emergency entry as well, but on January 16th 1975. It did not become a regular participant until January 1st 1987. The city has a total of 22 policies in force. There have been only 5 claims in the city and have paid out a total of $68,220.

6.4.1.2 Town of Caryville

The Town of Caryville was also an emergency entry, but in July of 1975. It was not until 2/4/1988 that the town became a regular participant in the program. There are a total of 3 policies in force. There have been a staggering 51 claims in the town to total losses paid of $810,317. This is an extremely high number in relation to the amount of insured value in the town.

6.4.1.3 City of Vernon

The City of Vernon became an emergency member of the program just three days before the unincorporated area of Washington County, with an entry date of 9/26/1975. It was not until 1/1/1987 that this city became a regular member of NFIP and has continued in its participation to this day as the rest of the jurisdictions in the county have. There are a total of 10 policies in force. There have been 11paid claims in the city for a total loss paid value of $165,161.22.

6.4.1.4 Town of Ebro

The Town of Ebro was one of two jurisdictions in Washington County that was not an emergency entry into the program. It was, however, the second to last to enter at an entry date of 3/19/2006. Ebro has only 1 policy in force at a value of $299,600 and has never had a claim that had to be paid.

6.4.1.5 Town of Wausau

The Town of Wausau was the last jurisdiction in Washington County to participate regularly in NFIP. Similar to Ebro, it was not entered through an emergency disaster. It was not until March 30, 1998 that the town was officially participating and brought the entire county into compliance. Also similar to Ebro, it has a single policy in force of an insured value of $6,600 and has never had a claim filed.

6.5 Mitigation Projects

Identification of mitigation projects for the updated Washington County LMS was created to reduce the impact of each of the hazards described. Each of these hazards is seen as a threat to future and existing structures and infrastructures and has been addressed individually with a number of different strategies. The jurisdictions' different vulnerabilities were addressed as

well and individual projects for each jurisdiction have been created to deal with each of these dangers. To date, a number of mitigation strategies have been completed in Washington County and a number of those are listed below.

1. New County EOC was built in Wausau
2. Drainage Improvements 4th St. and South Blvd. to Hwy 90 – Johnson pond was built
3. Special Needs Shelter was built at RMS
4. NWFCH Retrofitting/Hardening
5. EOC used to mail informational flyers to every citizen of Washington County
6. Quail Blvd. Drainage for Improved Access for Fire Dept.
7. Bridge Replacements: Falling Water Road, River Road, etc.
8. Harris Property has been purchased and the house has been removed
9. The Northwest Florida Water Management District owns a substantial portion of the major sinkhole district of the Sand Hill Lakes region in southeast Washington County. As a part of protection of the aquifer recharge area for Econfina Creek (Bay County's drinking water source), the Water Management District has purchased 19,920 acres of this area. This is in addition to the 3,968 acres mentioned under ownership along the Econfina River in the County. These lands are to remain undeveloped in perpetuity. This serves to reduce the vulnerability of future structures to sinkholes.

From hardening and retrofitting buildings to replacing entire bridges, these completed projects demonstrate the county's continued commitment to reducing its vulnerability through mitigation. Some of the projects on the last LMS mitigation strategy list were removed due to either a lack, or denial, of funding or because the community felt that these projects were no longer a priority. A list of these completed and deleted items is found in Appendix G.

However, some of the projects that have yet to be funded (or lost funding, but the county still feels are a priority) are still on the list and will be worked on in the future such as the drainage project in Vernon. These projects are listed on the current mitigation priority list and labeled as deferred. A method of prioritizing and indentifying the mitigation projects will be described in the next section of implementation of the mitigation projects. There was a proposal form that the committee representatives would fill out for their jurisdiction or stakeholder's initiative that brought about the idea of the project and helped prioritize it.

6.5.1 Project Scoring

An action plan will describe how those actions will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

In order to prioritize the identified mitigation initiatives, the Washington County Local Mitigation Strategy Steering Committee has developed a point-based system to judge the

merits of a project and assign it a priority score. The criteria by which the priority score is obtained are outlined in the sections below.

The top ranking of a project does not necessarily mean that it will be approved and implemented "first". Funding sources, availability, and their rules and guidelines determine what might be funded. Those items at the top of the list eligible for a given source of funds to accomplish a mitigation initiative are to be accomplished first, according to the principles of the LMS Steering Committee.

6.5.2 Prioritization Criteria - STAPLEE

The Washington County LMS Committee used the STAPLEE methodology to rank the mitigation projects. There are seven categories in the STAPLEE criteria, and 23 criterions. Each of the 23 criterions is given a weighted score between 0-10, with 0 meaning not beneficial or unproductive, to 10 meaning very beneficial or excellent. It provides for the basis for a benefit/cost analysis as well.

A very basic description of the STAPLEE methodology is provided below. The scoring sheet of the County mitigation projects follows on the next sheet.

Social – Is the mitigation strategy socially acceptable?

Technical – Is the proposed action technically feasible, cost effective, and does it provide the appropriate level of protection?

Administrative – Does the community have the capability to implement the action and is the lead agency capable of carrying out oversight of the project?

Political – Is the mitigation action politically acceptable?

Legal – Does the community have the authority to implement the proposed action?

Economic – Do the economic base, projected growth, and opportunity costs justify the mitigation project?

- Benefit cost-analysis is a mathematical method for comparing costs to the benefits to the community of a mitigation action
- If the benefits are greater than the costs, the project is cost-effective
- Comparing the ratios of benefits to costs for several mitigation projects helps to identify those that offer the greatest value for the community's money spent.
- Benefit-cost analysis gives decision-makers an understandable way to explain and defend their decisions

- For many grant programs, FEMA and the State will use benefit-cost analysis to determine whether a project is eligible
- The community can save time and energy by limiting planning activities to projects that will be more likely to receive funding.

Environmental – Does the proposed action meet statutory considerations and public desire for sustainable and environmentally healthy communities?

6.5.3 Implementation and Administration of Initiatives

Mitigation Initiatives/projects are to be undertaken and remain under the control and responsibility of the entity receiving funds to implement the initiative, in most cases the project sponsor. The timeframe for completion is determined wholly by the constraints of the funding source utilized for the project/initiative. The project sponsor is also responsible for keeping the LMS Committee informed of major actions on the initiative to include, that funding has been acquired for the initiative, and that the initiative/project had been started, completed, or withdrawn.

6.5.4 Initiatives/ Priorities List for Washington County

The "Initiatives/Priorities list" for Washington County, the City of Chipley and the Towns of Caryville, Ebro, Wausau, and Vernon is listed as an appendix at the end of this document. This list contains specifically identified potential projects and efforts identified by these local government jurisdictions and by the LMS Steering Committee that would be sanctioned as a mitigation project if approved by funding agencies or to demonstrate consistency with the goals of the Committee. **NOTE:** Parties responsible for applying for, or otherwise acquiring funding for, a potential mitigation project should clearly understand that federal mitigation dollars (such as the Hazard Mitigation Grant Program or HMGP, and the Pre-Disaster Mitigation grant program, or PDM – both provided by FEMA) are awarded *only* when an appropriate application is made for a given project *and* it appears on the current LMS "Initiatives/Priorities List". Applications naming projects that are not approved to be on the Initiatives/Priorities List for the County will not be funded by FEMA.

Section 7: Plan Maintenance

7.1 Monitoring the Plan

It is the responsibility of those on the LMS Steering Committee to monitor the updated plan and ensure that it continues to meet the needs of their communities. Staff to the LMS Committee will assist in this endeavor by keeping the members aware of new planning requirements that are set forward by the State of Florida. If the Steering Committee finds that the updated plan needs to be changed to better reflect goals and priorities, it is to make

recommendations to staff during the LMS Committee meetings so that these revisions can be taken into account during the next plan update.

7.2 Updates to the Plan

Washington County Emergency Management and the LMS Steering Committee are designated to monitor and evaluate the LMS. The LMS Committee is the group responsible for the development and implementation of the Local Mitigation Strategy. The Committee, at a minimum, will continue to include representation from 1) various agencies of county government, 2) all participating jurisdictions within the county, and 3) interested private organizations, civic organizations, homeowners associations, water management districts, regional planning councils, and/or non-profit organizations. The Working Group will 1) designate a Chairperson and Vice-Chairperson, 2) develop and revise the LMS as necessary, 3) coordinate mitigation activities within the county, and 4) set an order of priority for local mitigation projects. The plan will be constantly monitored and evaluated annually or after any significant disaster causing property loss, evacuation for a number of citizens, etc or a Level I emergency. A Level I emergency is defined as any extraordinary occurrence of such magnitude that all county and city departments and resources must be utilized or where a combination of county and city departments and outside agencies have been mobilized to handle the situation. The plan is also monitored at each LMS Working Group meeting by getting the updated status of each active project.

Within the five-year cycle (2016-2021) that corresponds to the goals set forth by the LMS Committee, the LMS Committee will reconvene a minimum of once annually in order to review the plan. The annual review process of the LMS will include the following steps:

1. At the one year anniversary of the approved LMS, a meeting will be called of the LMS Steering Committee. The LMS Steering Committee will be asked to review the LMS online and come prepared to discuss any required changes needing to be made. The notice of this meeting will be publicized to invite the general public as well to solicit their participation.

2. At that meeting, the LMS Chair will review each section of the LMS to determine if anyone has any suggested changes they want incorporated into the plan.

3. If comments are received, the LMS Working group will consider the changes, and make the necessary changes to the LMS, and repost it on the web. A report of the proceedings will be prepared.

The update will also address changes to the hazard assessment, the proposed project priority list, the critical facilities list, and the repetitive loss list, and revisions to any maps. A formal update will be conducted every five years in accordance with 44 CFR 201.6(d)3 which states that plans must be reviewed, revised if appropriate, and resubmitted for approval within five years in order to continue to be eligible for HMGP project grant funding. For these five-year updates, the Washington County Emergency Management will also serve as the lead agency assisted by the LMS Steering Committee.

Prioritization Procedures and Mitigation Initiatives (Project List) can be revised by the Steering Committee during regularly scheduled quarterly meetings held at the Washington County Emergency Operations Center (EOC).

7.3 Incorporating the LMS into Other Planning Mechanisms

There are a number of plans in Washington County that incorporate some part of mitigation throughout them, to include the Washington County Comprehensive Plan (includes Caryville, Ebro, Vernon and Wausau), and the City of Chipley COMP. This can be accomplished in several ways, one of which is through ordinance adopted by the local government; another is through specific requests made by the LMS Committee to the Planning Departments of Washington County and Chipley for consideration of inclusion of specific elements into their plan. Likewise, petitioners may contact staff at the Washington County EOC or the LMS Chairman to request consideration to incorporate elements of other plans into this strategy.

Prior to revisions to the municipal or county COMP Plans, Floodplain Management Plan, or any new municipal or county code or ordinance, the 2016 LMS will be referenced to ensure the proposed action is compliant with City and County mitigation strategies, to the extent applicable. This will be managed by Washington County Emergency Management, and the Washington County Building Departments. Each of the adopting municipal jurisdictions will also manage the integration of the LMS into appropriate municipal plans.

Since 2010, the LMS risk assessment was used as a basis to update the Washington County Comprehensive Emergency Management Plan (2014). The information contained in the LMS was also used to assist in the updating of the Washington County Logistics Plan, Debris Management Plan, Continuity of Operations Plan, Long Term Recovery Plan, and the Washington County Disaster Housing Plan.

7.4 Continued Public Involvement

The Washington County LMS Committee has strived in the past and now in the present to represent the public as well as possible. This will be continued into the future with a number of different methods for the public to get a chance to give input. First the LMS Plan will be located in an electronic form on the Washington County website (www.**washingtonfl**.com/), and in hard copies at the Emergency Management office in Wausau, as well as the Planning office in Chipley. This will give the public a chance to read what has been incorporated in the updated LMS Plan so they have knowledge of what additional information they can provide to help in the future. Along with the access to the plan, the public will be given a chance to speak at the annual LMS Committee public meetings that will be held during the mitigation educational week located on the mitigation priorities list. The public meetings will be advertized in the same method as the updating process meeting, located on the website and in the county newspaper. This will give everyone in the county an opportunity to come and speak. In addition to these planned events, Washington County citizens will be able to voice their opinion at educational

booths during other county events such as the Watermelon Festival, Possum Festival, and any other large gatherings the county may hold.

Appendix A: Bylaws of the Washington County LMS Committee

ARTICLE I. PURPOSES OF THE LMS COMMITTEE

The purpose of the Washington County Local Mitigation Strategy (LMS) LMS Committee is to plan for a decrease in the vulnerability of the citizens, governments, businesses and institutions of Washington County to the future human, economic and environmental costs of natural, technological, and societal disasters. The LMS Committee will develop, monitor, implement, and maintain a comprehensive multi-jurisdictional plan for hazard mitigation that will be intended to accomplish this purpose and to promote a sustainable and disaster-resistant community.

ARTICLE II. MEMBERSHIP

Membership in the LMS Committee is open to all jurisdictions, organizations and individuals supporting its purposes. Membership is accomplished through the completion of a Member Information Form. The Member Information Form should be submitted to the LMS Committee Chair for a signature of acknowledgement. The Chair shall submit all Member Information Forms to the LMS Support Planner for processing into the LMS Committee Membership Database. Steering Committee alternate members shall also be required to submit a Member Information Form.

ARTICLE III. ORGANIZATIONAL STRUCTURE

The organizational structure of the LMS Committee shall consist of three permanent components: a Steering Committee, a Working Committee, and a support planner. Temporary subcommittees may be formed as deemed necessary by the Chair of the Steering Committee.

A. The Steering Committee

The LMS Committee shall be guided by a decision-making and voting body called the Steering Committee. The make-up of the Steering Committee shall be well conceived and well balanced with representatives from the following:

- At least one appointed representative and one designated alternate from the government of Washington County and each participating incorporated municipality

- At least one representative and one alternate from voluntary participating organizations and associations representing key business, industry, community interest groups and others as listed in 9G-22.004 FAC

• Other individuals and their designated volunteer alternates as deemed appropriate by the Steering Committee to ensure well-balanced representation on the Steering Committee.

Ideally, Steering Committee members should have authority or responsibility for implementing proposed mitigation initiatives when resources to do become available.

The Steering Committee shall be the central core decision-making and voting component of the LMS Committee. Members of the Steering Committee may also serve in the broader Working Group component of the LMS Committee. Each Steering Committee member shall have one vote on formal motions made by the LMS Committee.

The Steering Committee will provide a formal and stable core to the LMS Committee. Steering Committee members will serve as the official representative and spokesperson for the organization regarding the activities and decisions of the LMS Committee. The roles and responsibilities of the Steering Committee members are described in Article V.

To maintain good standing, members of the Steering Committee must not have more than two unexcused absences from meetings during the course of a year.

> Excused Absence Defined: An absence may be excused if the member's alternate attends in his/her place. If the member's alternate cannot attend in the member's place, the Chairperson may excuse the member's absence if the member notifies the Chairperson prior to the meeting that family sickness or death or other unavoidable and critical work or family conflict will not permit attendance at the specified meeting.

Criteria for Member Alternates: Each member of the Steering Committee may designate one alternate to assist them in fulfilling their roles and responsibilities on the Steering Committee and the LMS Committee as a whole. The alternate member may have one vote only when the primary member is absent. To maintain a well-balanced membership, the designated alternate should represent the same entity as the primary member. Alternate members of individual citizens shall also be individual citizens and not represent any other entity. A Steering Committee member cannot serve as an alternate member for another member.

Based on long-standing Steering Committee status prior to the establishment of these Bylaws, representatives from the following departments/organizations will serve as members of the initial Steering Committee under these Bylaws. Additional Steering Committee members will be added as the LMS Committee as a whole grows in membership and as representation is needed to maintain a well-conceived and well-balanced Steering Committee.

Washington County LMS Committee June 2010		
	(Working Committee and the Steering Committee combined)	**Steering Committee** (core voting group of the LMS Committee)
1	Washington County	Washington County
2	City of Chipley	City of Chipley
3	Town of Wausau	Town of Wausau
4	Town of Ebro	Town of Ebro
5	Town of Vernon	Town of Vernon
6	County Planning Department	County Planning Department
7	County Commission	County Commission
8	County Building Department	County Building Department
9	County Emergency Management	County Emergency Management
10	Chamber of Commerce	Chamber of Commerce
11	County Grants Office	County Grants Office
12	County School Board	County School Board
13	County Road Department	County Road Department
14	County Public Works Department	County Public Works Department
15	County Engineer	County Engineer
16	Washington County Fire Assoc.	Washington County Fire Assoc.
17	Any other interested entities	

B. The Working Committee

The Working Committee component of the LMS Committee shall have Planning and Public Information roles and responsibilities. Membership in and/or participation on the LMS Working Committee are open to all interested jurisdictions, organizations and individuals.

Membership of the Working Committee shall include representatives from departments of local governments and other entities as specified in 9G-22.004(2) (a) (b) (c) FAC. These entities include representatives from various agencies of county [and municipal] government, which may include, but not be limited to, planning and zoning, roads, public works, and emergency management. In addition, representatives may include persons from interested private organizations, civic organizations, trade and commercial support groups, property owners associations, Native American Tribes or authorized tribal organizations, water management districts, regional planning councils, independent special districts and non-profit organizations. Members of the Steering Committee that represent the 9G-22 entities may also be considered in meeting the 9G-22 FAC requirements.

The Working Committee may, as an option, form two sub-committees to more equitably distribute the planning and public information roles and responsibilities described in Article V.

Temporary subcommittees may be established at any time for special purposes by the chair of the Steering Committee, and their membership designated at that time.

C. Planning Support Staff

The West Florida Regional Planning Council, as designated by the Board of County Commissioners, will serve as the program LMS support planner or planning staff for the LMS Committee, and assist in the facilitation, coordination and support of the LMS Committee's activities. Roles and responsibilities of the LMS support planner are described in Article V.

ARTICLE IV. LMS COMMITTEE OFFICERS

Any member in good standing of the Steering Committee is eligible for election as an officer. The LMS Committee will have a chair, vice-chair and a secretary. The chair and vice-chair shall be elected by a majority vote of a quorum of the Steering Committee members. Each officer will serve a term of one year, and be eligible for re-election for an unlimited number of terms.

The chair of the LMS Committee will preside at each meeting of the LMS Committee as well as establish temporary subcommittees and assign personnel to them. The vice chair will fulfill the duties and responsibilities of the chair in his or her absence. The secretary will assist in the important task of meeting documentation by taking meeting notes at each LMS Committee meeting.

Duties and Responsibilities of the LMS Committee Officers will include, but shall not be limited to:

The LMS Committee Chair shall:

- Conduct the LMS Committee Meetings as outlined in the agenda and according to Robert's Rules of Order when necessary.
- Assist the LMS Support Planner in setting meeting agendas.
- Pre-approve meeting minutes prior to distribution to the LMS Committee and others.
- Maintain a LMS Committee file of all documentation (letters, plans, state and federal handouts/documents, etc.) received while in office and transfer the file to the next elected chairperson.
- Establish formation of temporary sub-committees and assign members to serve
- Distribute minutes, meeting notices, and general LMS Committee outreach
- Oversee the Planning Component of the LMS Committee Roles and Responsibilities

The LMS Committee Vice-Chair shall:
Fulfill the roles and responsibilities of the chairperson in his/her absence.
Oversee the Public Information component of the LMS Committee Roles and Responsibilities

The LMS Committee Secretary shall:

- Take meeting notes at all LMS meetings and provide the notes to the LMS Support Planner for use in preparation of the formal meeting minutes.

ARTICLE V. RESPONSIBILITIES

A. Steering Committee

The Steering Committee will be responsible for oversight and coordination of all actions and decisions by the LMS Committee, and is solely responsible for formal actions in the name of the LMS Committee, including the release of reports, development of resolutions, issuance of position papers, and similar activities. The Steering Committee makes task assignments to the Working Committee, coordinates their work, and takes action on their recommendations.

Other roles and responsibilities may include but not be limited to:

- Approve the mitigation initiatives for incorporation into the plan, the priority of those initiatives, and the removal or termination of initiatives.
- Set guidelines for the total mitigation planning effort.
- Serve as the official body to represent the overall planning process.
- Serve as the official liaison of the LMS Committee to the community.
- Present the plan to communities and the local elected bodies.

B. Working Committee

The Working Committee shall have two categories of responsibilities—planning and public information. These responsibilities are described below:

Planning – The Planning responsibilities include undertaking and coordinating the actual technical analysis and planning activities fundamental to the development of an LMS plan. Activities will include identifying, analyzing, and monitoring the hazards threatening Washington County and the vulnerabilities of the community to those hazards, as well as assisting in the definition of actions, policies, or programs to mitigate the impacts of those hazards; defining structural and non-structural actions needed to decrease the human, economic and environmental impacts of disasters, and preparing for consideration and action by the Steering Committee a strategy for implementation of those initiatives in both the pre- and post-disaster time frame; defining the general financial vulnerability of the community to the impacts of disasters; assisting with identification, characterization, and prioritization of initiatives to minimize vulnerabilities; and identifying potential funding sources for all priority mitigation initiatives identified in the mitigation strategy developed by the LMS Committee. In addition, planning responsibilities include assessing the communities' policies, regulations, and programs and making subsequent recommendations to enhance or strengthen the mitigation components of those planning documents (known as capabilities assessment). Planning responsibilities shall include any other planning activity required by CFR 44 Part 201, 9G-22 FAC or any other federal and state mitigation requirements.

Public Information – Public Information responsibilities include those specified in CFR 44 Part 201, 9G-22 FAC or any other federal and state mitigation requirements. These responsibilities include, but are not limited to, securing public input and comment on the efforts of the LMS Committee; informing the public about the activities of the LMS Committee; conducting public information and education programs regarding hazard mitigation and informing the community about the vulnerability to future disasters and effective hazard mitigation actions; conducting surveys to gather information on community needs and attitudes; assisting with the conduct of public meetings; providing a venue to receive comments from the public who cannot attend public meetings, and preparing the community for issuance of the LMS plan and promoting public acceptance of the strategy developed by the LMS Committee.

Temporary Subcommittees - The responsibilities of temporary subcommittees will be defined at the time they are established by the chair of the Steering Committee.

Public Information – to secure public input and comment on the efforts of the LMS Committee; to inform the public about the activities of the LMS Committee; to conduct public information and education programs regarding hazard mitigation; to assist with the conduct of public hearings; and, to promote public acceptance of the strategy developed by the LMS Committee.

The responsibilities of temporary subcommittees will be defined at the time they are established by the chair of the Steering Committee.

C. Planning Support Staff

The general and primary responsibility of the LMS Support Planner is to coordinate and facilitate the LMS Committee's development of the initial DMA2K Section 322 hazard mitigation plan and the subsequent continual maintenance, monitoring, evaluation, and update of the plan on an annual and five-year planning schedule as required by 9G-22 FAC, FEMA criteria in CFR 44 Part 201 and any other subsequent State and Federal requirements.

Roles and responsibilities that support the general and primary responsibility stated above include, but are not limited to, the following:

- Serve as initial point of contact for all matters relating to mitigation planning and implementation and when appropriate confer with the chair and/or vice chair, the authority specified in Article VI, or other member(s) of the task.

- Document the planning process in the mitigation plan as required by FEMA criteria in CFR 44 Part 201 and any other subsequent State and Federal requirements.

- Obtain and utilize technical assistance and/or training support from the State and FEMA or other agencies as needed by the LMS support planner and/or the LMS Committee.

- Provide training as needed to equip LMS Committee members in satisfactorily completing planning tasks.

- Read, interpret, and keep current on State and Federal mitigation planning requirements and accordingly guide the planning activities of the LMS Committee as necessary to ensure the community's eligibility for State and Federal mitigation and disaster funding remains in good standing.

- Work with the LMS Committee to collect, compile, organize, and analyze needed information for plan development. Prepare the LMS Plan as a document.

- Coordinate with the County's website staff in the posting of meeting documentation, agendas, and other items to promote public information, participation, and feedback. Maintain public review documentation.

- Attend State and Federal workshops on behalf of the LMS Committee.

- Provide logistical and administrative support to the LMS Committee.

ARTICLE VI. AUTHORIZED COUNTY POINT OF CONTACT

The Emergency Management Director shall be the LMS Committee's designated county point of contact, which is empowered by the County Board of County Commissioners to accept and disburse funds, enter into contracts, hire staff, and take such other actions as necessary in support of, or for the benefit of, the LMS Committee.

ARTICLE VII. ACTIONS BY THE LMS COMMITTEE

A. Authority for Actions

Only the Steering Committee has the authority to take final actions in the name of the LMS Committee. Actions by the Working Committee and its subcommittees or LMS support planner/staff are not considered as final until affirmed by action of the Steering Committee.

B. Meetings, Voting and Quorum

Meetings of the LMS Committee will be conducted in accord with Robert's Rules of Order, if and when deemed necessary by chair of the meeting.

Regular meetings of the full LMS Committee will be scheduled at least two times per year with a minimum of 7 days' notice. The different component groups of the LMS Committee may conduct additional and separate meetings as needed to complete tasks.

All final actions and decisions made in the name of the LMS Committee will be by affirmative vote of a quorum of the Steering Committee. A quorum shall consist of a minimum of four of the members of the Steering Committee in good standing at the time of the vote. Each member of the Steering Committee will have one vote. (See voting requirements for alternates in Article III, A) Voting by proxy, written or otherwise, is not permitted.

C. Public Meetings

When required by statute or the policies of Washington County, or when deemed necessary by the Steering Committee, a public meeting regarding actions under consideration for implementation by the LMS Committee will be held.

The LMS Committee shall hold a minimum of one advertised public meetings during the preparation of the LMS Plan as required by FEMA Region IV Minimum Standards of Acceptability and CFR 44 Part 201.

D. Documentation of Actions

All meetings and other forms of action by the LMS Committee will be documented and made available for inspection by the public at one or more of the following county locations: the county's website and/or link to consultant's website, and/or the Emergency Management's office or other central location. Documentation may include minutes, handouts, and sign-in sheets. In addition, the consultant/LMS Support Planner will maintain public review documentation.

ARTICLE VIII. ADOPTION OF AND AMENDMENTS TO THE BYLAWS

The Bylaws of the LMS Committee may be adopted and/or amended by a two-thirds majority vote of the members in good standing of the Steering Committee. All proposed changes to the bylaws will be provided to each member of the Steering Committee not less than ten days prior to such a vote. Voting can be accomplished at a regularly scheduled meeting, a special meeting, or via electronically utilizing email or fax so that a written confirmation of the vote can be generated.

ARTICLE IX. DISSOLUTION OF THE LMS COMMITTEE

The LMS Committee may be dissolved by affirmative vote of 100% of the members in good standing of the Steering Committee at the time of the vote, by order of a court of competent jurisdiction, and/or by instruction of the Washington County governing body. Voting can be accomplished at a regularly scheduled meeting, a special meeting, or via electronically utilizing email or fax so that a written confirmation of the vote can be generated. At the time of dissolution, all remaining documents, records, equipment and supplies belonging to the LMS Committee will be transferred to Washington County position specified as the LMS Committee's Point of Authority in Article VI for disposition.

Appendix B: Critical Facilities

Washington County, Florida Critical Facilities:	Coordinates:
Caryville Town Hall 4436 Old Spanish Trail Caryville, FL 32427	30.773 / -85.873
Caryville Water Treatment Facility 4320 Old Bonifay Rd. Caryville, FL 32427	30.784 / -85.802
Chipley City Hall 1442 Jackson Ave. Chipley, FL 32428	30.777 /- 85.552
Chipley EMS 818 3rd St. Chipley, FL 32428	30.770 / -85.542
Chipley High School 1545 Brickyard Rd. Chipley, FL 32428 *(General Population Shelter)*	30.764 / -85.557
Chipley Water Treatment Plant 692 Rustin Dr. Chipley, FL 32428	30.780 / -85.550
Ebro Town Hall 6629 Dogtrack Rd. Ebro, FL 32437	30.441 / -85.873
Florida Dept. of Transportation 1074 Highway 90 Chipley, FL 32428	30.780 / -85.526
Florida Gas Transmission Co. 2508 River Rd. Caryville, FL 32427	30.677 / -85.842
Gulf Power 1195 Jackson Ave. Chipley, FL 32428	30.779 / -85.533
Kate M. Smith Elementary School 750 Sinclair St. Chipley, FL 32428	30.776 / -85.546
NW Florida Community Hospital 1360 Brickyard Rd. Chipley, FL 32428	30.764 / -85.612
Roulhac Middle School 1535 Brickyard Rd. Chipley, FL 32428*(General & PSN Shelter)*	30.764 / -85.556
Sunny Hills Sewer Treatment Plant 3808 Gables Blvd. Chipley, FL 32428	30.544 / -85.598
Sunny Hills Water Treatment Plant 3810 Gables Blvd. Chipley, FL 32428	30.544 / -85.598
Vernon City Hall 2808 Yellow Jacket Dr. Vernon, FL 32462	30.625 / -85.714
Vernon Elementary School 3665 Roche Ave. Vernon, FL 32462	30.626 / -85.706
Vernon EMS Station 3199 Moss Hill Rd. Vernon, FL 32462	30.611 / -85.693
Vernon High School 3232 Moss Hill Rd. Vernon, FL 32462 *(General Population Shelter)*	30.608 / -85.691
Vernon Middle School 3190 Moss Hill Rd. Vernon, FL 32462 *(General Population Shelter)*	30.610 / -85.695
Vernon Water Treatment Plant 2964 Dawkins St. Vernon, FL 32462	30.616 / -85.717
Walmart Super Center 1621 Main St. Chipley, FL 32428	30.752 / -85.547

Washington County Admin Offices 1331 South Blvd. Chipley, FL 323428	30.772 / -85.543
Washington Co. Ag. Center 1424 Jackson Ave. Chipley, FL 32428	30.777 / -85.551
Washington Co. Convalescent Ctr. 879 Usery Rd. Chipley, FL 32428	30.766 / -85.544
Washington Co. Court House 1293 Jackson Ave. Chipley, FL 32428	30.778 / -85.541
Washington Co. Health Unit 1338 South Blvd. Chipley, FL 32428	30.772 / -85.554
Washington Co. Jail 1100 Brickyard Rd. Chipley, FL 32428	30.764 / -85.522
Washington Co. Public Works 2215 Mudhill Rd. Chipley, FL 32428	30.613 / -85.612
Washington Co. Sheriff's Office 1293 Jackson Ave. Chipley, FL 32428	30.778 / -85.541
Washington County Correctional Institute 4455 Sam Mitchell Dr. Chipley, FL 32428	30.517 / -85.659
Washington County EOC 2300 Pioneer Rd. Chipley, FL 32428	30.632 / -85.597
Washington/Holmes Technical Center 757 Hoyt St. Chipley, FL 32428	30.775 / -85.553
Wausau Town Hall 1607 Second Ave. Wausau, FL 32463	30.629 / -85.588
Wausau Water Treatment Facility 2660 Jefferson St. Wausau, FL 32463	30.635 / -85.587

Appendix C: Agendas, Notes, Minutes from LMS Meetings

NOTE: The Washington County LMS Committee has met many times between 2011 and 2015. The schedule of meetings is provided below. Agendas, minutes, and sign in sheets for these meetings are maintained by Washington County Emergency Management. Only the agenda and meeting minutes involving the 2015 update of this plan are included on the following pages.

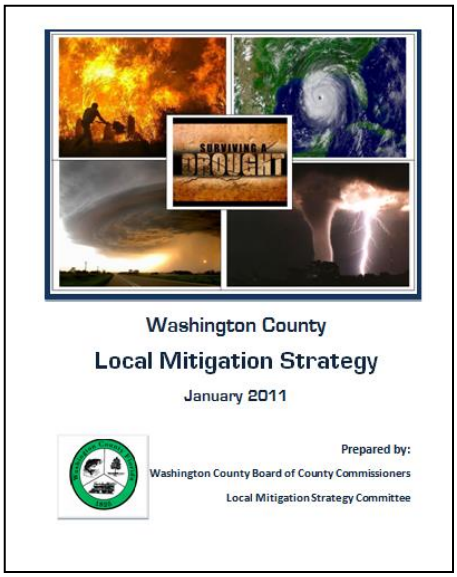
Meeting Schedule
November 1, 2011
January 17, 2012
February 29, 2012
September 26, 2012
August 15, 2013
May 19, 2014
June 20, 2014
July 25, 2014
September 10, 2014
October 16, 2014
August 11, 2015
August 26, 2015
September 22, 2015
October 27, 2015

Washington County LMS Committee Workshop

Board of County Commissioners Conference Room
County Government Building
1331 South Blvd, Chipley
August 11, 2015
10:00 am – 11:30 am

AGENDA

- Opening Remarks
- Validate Washington County LMS Committee Members –[Attachment 1]
- Review Update Schedule and Due Dates [Attachment 2]
- Review Hazards and Vulnerabilities [Attachment 3]
- New Hazards Matrix to be filled out by Committee [Attachment 4]
- Review Current Goals – Edit/Change [Attachment 5]
- Update LMS Project List [Attachment 6]
- Review Process to Prioritize Projects [Attachment 7]



Washington County Local Mitigation Strategy Update

August 11, 2015 Kick Off Meeting

Minutes

The Washington County Local Mitigation Committee came to order at 10:00 CST in the Board of County Commissioners Conference Room in Chipley on August 11, 2015. In attendance were:

- Mike DeRuntz, Vice Chairman – WC Planning Dept
- Lynne Abel, WC Emergency Management
- Connie Welch, WC Emergency Management
- David Corbin, BOCC - County Administrator
- Karen Shaw, BOCC
- Renae Rountree, Washington County Public Library
- Kathy Foster, Reporter/Citizen: fosterfollynews.com
- Margret Riley, Town of Wausau
- Clint Erickson, WC 911 Mapping
- Johnny Evans, WC Public Works
- Dallas Carter, WC Public Works
- Debora Campbell, WC Health Department
- Frank Koutnik, DSI, LLC

Chairman DeRuntz opened the meeting by welcoming all in attendance. He explained the purpose and need to update the Washington County LMS (LMS). Ms. Abel also explained the timing of the grant funds being used for the update. The funds will terminate on December 31, 2015, so the LMS has to be completed by that time. Although the plan is not technically due for an update until July 2016, the funds allocated to pay for the updating process must be expended by the end of this year.

Next, Mr. DeRuntz asked to see if anyone would like to chair the Committee. He has been the Chair and asked to see if anyone was interested. Ms. Shaw, Grants Coordinator, offered to chair the Committee. A vote was taken, and Ms. Shaw was unanimously approved. She will chair future meetings of the LMS Committee.

Mr. DeRuntz then asked Frank Koutnik (Disaster Strategies and Ideas Group) to facilitate the remaining part of the meeting given he will be doing the actual work to update the LMS.

Working from the handouts provided by email, Mr. Koutnik began by explaining the purpose of the future meeting of the Committee in order to complete this update process. Mr. Koutnik assured the Committee that the Washington LMS will be completed well before December. His goal is to have the LMS completed by early November so the State has time to review it, and Mr. Koutnik will have time to make the necessary corrections, if needed prior to the end of the grant.

Mr. Koutnik then explained the need to develop a new hazards matrix for the LMS. He offered an example of one to use, and expressed his willingness to make the first attempt at filling it out. The Committee agreed. It was also noted that the City of Chipley needed to be added to the matrix. The Committee will review the completed matrix at the next meeting.

Mr. Koutnik then explained the importance of having the LMS actually reflect the significant threats to Washington County, in light of the desire of the County to seek accreditation through the Emergency Management Accreditation Program (EMAP). Mr. Koutnik cautioned the group not to have extraneous hazards in the LMS, given they will require extra work during the EMAP process. Based on that, the LMS Committee then went through each hazard and determined those that truly impact Washington County, and those that do not, and reduced the number of hazards to be addressed in the LMS.

Mr. Koutnik then asked the Committee if anyone had any comments or issues with the LMS goals and objectives as they are currently presented in the LMS. No one had any issues with them, and it was suggested the LMS not change any of the goals or objectives.

Next, the LMS Committee began the process of updating all of the projects currently listed in the LMS. Ms. Able provided a 2014 updated version of the project list, with the current status. Mr. Koutnik worked with this list, and further sought more input on the status of every project.

It was noted that many projects could not be discuss because there was no one at the meeting to represent many of the projects, to include the Cities of Chipley, Ebro, and Caryville.

A motion was made by Mr. Corbin to limit the total number of LMS projects to no more than 30, and that each municipality would be limited to no more than 5 projects. After a general discussion on this, a motion was made and seconded, and this passed. Ms. Able was directed to make contact with those who had projects on the list that they limit the number of submissions, and they had to be present at the August 25th meeting to discuss them or the LMS Committee would consider either deleting them, or putting them on hold. Ms. Abel said she would make the necessary contacts and pass along this information.

The general discussion of project prioritization took place, but this will be brought up again at the next LMS meeting given the number of projects that could not be discussed for lack of representation.

The meeting adjourned at 11:30 CST, and the next meeting was set for August 25, 2015 at the same location and time.

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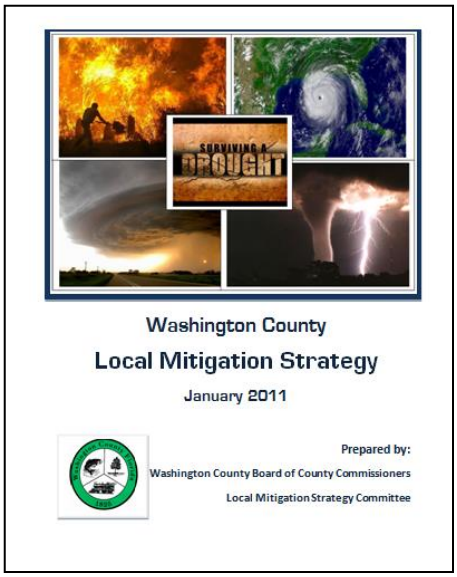
Washington County LMS Committee Workshop

Board of County Commissioners Conference Room
County Government Building
1331 South Blvd, Chipley
August 25, 2015
10:00 am – 11:30 am

AGENDA

- Opening Remarks - Introductions
- Review minutes from 8.11.15 Kick-Off Meeting [Attachment 1]
- Review Hazards Matrix [Attachment 2]
- Discuss project prioritization process and methodology [Attachment 3]
- Update from Municipalities on LMS Projects [Attachment 4]



Washington County LMS Committee Meeting

Board of County Commissioners Conference Room
County Government Building
1331 South Blvd, Chipley, Fl
August 26, 2015

Meeting Minutes

The second meeting of the Washington County LMS Committee for the 2015 LMS Plan Update began at the County Government Building in Chipley on August 26, 2015 at 10:00. Those in attendance included:

Name	Representing	Email
Karen Shaw, Chair	WCBOCC-Grants	kshaw@washingtonfl.com
Johnny Evans	WC Public Works	jevans@wco.washingtonfl.com
Clint Erickson	WC 911	Clinterickson@weso.us
Mike DeRuntz	WC Planning	mderuntz@washingtonfl.com
Connie Welch	WC Emergency Mgmt	cwelch@washingtonfl.com
Lynne Abel	WC Emergency Mgmt	ldorch@washingtonfl.com
Ernie Toole	City of Chipley - PW	etoole@cityofchipley.com
Chester Campbell	City of Chipley - PW	ccampbell@cityofchipley.com
Dallas Carter	City of Wausau	
Kathy Foster	FosterFollyNews.com, Citizen	kathymfoster@bellsouth.net
Cliff Knauer	Preble-Rish Inc	Knauerc@preble-rish.com
Frank Koutnik	DSI, LLC	frank@dsideas.com

The meeting began at 10:00am with opening comments from Lynne Abel, Washington County Emergency Management and Karen Shaw, Chair. Ms. Shaw explained the purpose of the meeting, and asked Frank Koutnik, DSI LLC to facilitate the meeting.

Mr. Koutnik began by asking the Committee for comments on the minutes from the August 11, 2015 LMS Update Kick-Off Meeting. Several corrections to the spelling of names listed from the August 11th meeting were offered. Mr. Koutnik asked that the LMS Committee approve the minutes, which was motioned and seconded and unanimously approved.

Next, Mr. Koutnik asked the Committee to review the hazard priority matrix ranking chart. At the direction of the Committee at the August 11th meeting, Mr. Koutnik brought a completed matrix to this meeting for review and discussion by the Committee. Many changes were made to the matrix by changing some of the priority, probability and/or magnitude rankings. Most of the changes saw the ranking got up from low to medium; or from medium to high. Mr. Koutnik

took note of all the recommended changes, and will make the corrections to the matrix for the final LMS Update.

The next topic took most of the remainder of the meeting time to discuss. Based on a motion made and passed at the August 11th LMS Committee Meeting, each municipality and the County were to limit the number of project submitted and/or updated on the LMS project list to no more than five apiece. Also, it was decided at the August 11th meeting, that if a municipality did not reply to inquires or show up at this meeting, that the Committee would delete or de-prioritize their list of projects. This impacted the City of Vernon, and the City of Ebro. The City of Vernon had communicated their willingness to stay engaged with the LMS process, but there was no communication from the City of Ebro, nor were they represented at this meeting. The City of Vernon had communicated they were going to be present at this meeting, but unforeseen circumstances prevented their attendance.

Therefore, based on a motion, a second, and a unanimous vote of the Committee, all of the City of Ebro's projects were deleted from this list, and the 14 projects on the list from the City of Vernon were combined and reduced to five projects. It was also noted that if the City of Ebro re-engages with the LMS planning process, that their projects could be added back to the LMS Project List. The City of Wausau and Chipley were in attendance and gave thorough explanations of their projects. Likewise, the City of Chipley combined many of their projects and deleted several in order to reduce their project list to five.

Mr. Koutnik went through every project on this list as was done at the August 11th meeting to be sure the current status of each project was captured correctly. After several changes were made to the status lines, the list of projects was finalized. One new project was added by the City of Chipley to mitigate the flooding that occurs on Joe Neel Road by relocating the ditches and repaving. This project has already been given Hazard Mitigation Grant Program funding, and is underway. Also, the County added a project to capture high water marks from recent flooding, and another to determine the base flood elevations of structures in the 100 yr flood zone. Both projects can help mitigate future problems with flooding in Washington County.

Lastly, Mr. Koutnik asked the committee to determine which prioritization process they wanted to use in ranking the projects this time. Last time, an internal process was used. Mr. Koutnik recommended the Committee consider using the federally approved "STAPLEE" method. This method ranks each project with 23 criteria, each worth 10 points. The numerical result begets the ranking. The Committee decided to use the STAPLEE method.

Mr. Koutnik turned the meeting back over to the Chair in order to set the next meeting date. It was decided to be October 2, 2015. (*In subsequent discussions with Lynne Abel, Emergency Management/Public Safety Director, the meeting has been rescheduled at the same time and place for September 22, 2015 to avert a conflict with the BOCC meeting.*

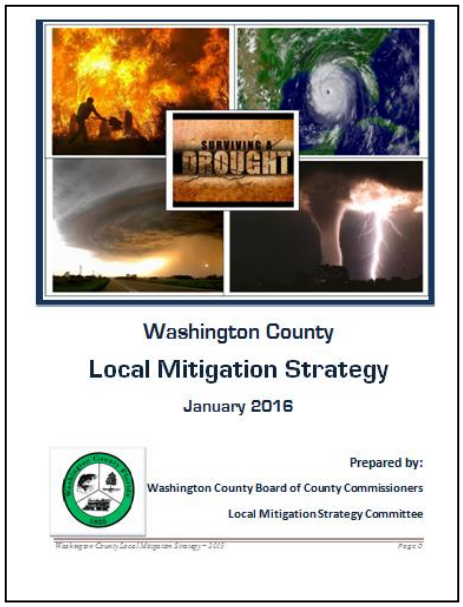
The meeting adjourned at 11:30 CST.

Washington County LMS Committee Workshop

Board of County Commissioners Conference Room
County Government Building
1331 South Blvd, Chipley
September 22, 2015
10:00 am – 11:30 am

AGENDA

- Opening Remarks - Introductions
- Approval of August 26, 2015 Meeting Minutes [Attached]
- Overview of Draft 2015 LMS Update
- Review of Project List
- Review of Priority Project Rankings
- Next Steps



Washington County LMS Committee Workshop

Board of County Commissioners Conference Room
County Government Building
1331 South Blvd, Chipley
September 22, 2015
10:00 am – 11:30 am

Meeting Minutes

The third meeting of the Washington County Local Mitigation Strategy (LMS) Committee directed toward the update of the 2011 LMS convened on September 22, 2015 at 10:00CST at the Board of County Commissioners Conference Room, County Government Building in Chipley. In attendance were:

Name	Agency	Email
Connie Welch	WC Emergency Management	cwelch@washingtonfl.com
Lynne Abel	WC Emergency Management	ldorch@washingtonfl.com
Hannah Anderson	Florida Forest Service	Hannah.Anderson@freshfromflorida.com
Debora Campbell, MS	FDOH – Washington County	Debroa.campbell@flhealth.gov
Mike DeRuntz	WC Planning Dept	Mderuntz@washingtonfl.com
Gene Brandow	WC Fire Services	gbrandow@washingtonfl.com
Karen Shaw	BOCC Grants - Chair	kshaw@washingtonfl.com
Chester Campbell	City of Chipley Public Works	CCampbell@cityofchipley.com
Wanda Stafford	FDEM	Wanda.stafford@em.myflorida.com
Johnny Evans	WC Public Works	jevans@washingtonfl.com
Margret Riley	Town of Wausau	townofwausau@bellsouth.net
Dallas Carter	WC Public Works	Ddcarter1962@icloud.com
David Corbin	BOCC - Coordinator	dcorbin@washingtonfl.com
Frank Koutnik	DSI, LLC	frankkoutnik@hotmail.com

Ms. Karen Shaw, Chair began the meeting at 10:00 by welcoming everyone to the meeting. For the benefit of one new attendee, Ms. Shaw asked that everyone go around the room and introduce themselves.

Ms. Shaw then asked if everyone had a chance to read the minutes from the August 26, 2015 meeting, and if anyone had any comments or corrections to offer. Mr. Koutnik explained that the minutes reflected the LMS Committees recommendation that those municipalities who choose not to participate in meetings or correspondence with the LMS Committee have their projects temporarily deleted until such time as they re-engage with the LMS process. This involves the Town of Ebro, and their lack of participation, and the elimination of their projects from the LMS Committee Project List. A motion was made and seconded, and the minutes were approved.

Next, Mr. Koutnik directed the Committee to the updated draft of the 2016 LMS. He explained that this version of the LMS was about 95% completed. He explained that there was still information needed from the State Watch Office concerning hazardous materials spills in Washington County, as well as specific COMP Plan issues from the five municipalities of the County on mitigation initiatives. These have to be identified for the LMS update.

Mr. Koutnik walked those in attendance through each section of the updated LMS, explaining what had been updated. He explained the impact of the National Flood Insurance Program's Flood Insurance Rate Maps (FIRMs) on the County, and the role the NW Florida Water Management District plays in the FIRM development and implementation. Mr. Koutnik said in other locations, the new FIRM maps placed a lot of people in flood zones that were not in a flood zone prior to the updates, and has caused a lot of issues, especially with coastal counties.

Mr. Koutnik then asked the Committee if it thought the County would ever pursue joining the Community Rating System (CRS), which could provide a premium discount for everyone who has a policy in the County. The reason why Mr. Koutnik asked this question is that he must complete the FDEM LMS Crosswalk, which requires that all the LMS criteria be met and identified in the LMS. There are also many criteria concerning the CRS, ergo why it was necessary to propose the question to the Committee. The Committee said it was something that could be pursued in the future, and for Mr. Koutnik to fill in all the CRS criteria on the Crosswalk, just in case the opportunity comes along for the County to get involved with the CRS process.

Lastly, Mr. Koutnik asked the Committee to review the LMS project list. He explained all the major changes made to the list, including the combination of several projects to reduce the sheer number of projects. The list went from 43 down to 24 projects. Mr. Koutnik also explained the STAPLEE ranking criteria used to rank each project. The Committee concurred with both the project list, and their ranking of the projects.

Finally, Ms. Shaw asked if the Committee wanted to meet again. At the suggestion of Mr. Corbin, County Coordinator, it was agreed that the Committee would meet one more time, and again invite all the non-participating municipalities to attend. The next meeting was scheduled for October 27, 2015.

The meeting was adjourned at 11:15 CST.

Appendix D: Adoption Notices

Washington County

City of Chipley

Town of Caryville

Town of Ebro

Town of Vernon

Town of Wausau

Appendix E: Mitigation Project List

Washington County Mitigation Initiatives Priority List

KEY CATEGORIES	
Project kept as is without changes	
Project kept, with changes	
Project completed	
Project deleted as it is no longer viable	

Key: Hazards: *H=Hurricanes; F=Flooding; DF=Dam Failure; SE=Soil Erosion; SH=Sinkhole; T=Tornado; TH=Thunderstorms; WS=Winter Storm; WF=Wildfire; D=Drought/Heat Wave*

Key: Funding Source: *EMPG – Emergency Management Performance Grant; EMPA – Emergency Management Assistance Trust Fund; HMGP – Hazard Mitigation Grant Program; PDM – Pre-Disaster Mitigation Program; FMA – Flood Mitigation Assistance; CDBG – Community Development Block Grant; LCO-Local Capital Outlay*

Priority	Responsible Agency	Hazard Addressed	Impact New Or Existing Infrastructure	Project Description	Estimated Cost and Funding Source		Time Frame
1	Washington County Emergency Management	All Hazards	N, E	All Hazards Mitigation Education – Public Outreach Program for Washington County, including all municipalities	$10,000	EMPA, HMGP, LCO	Ongoing
2015 Status: This is an ongoing project. WC EM provides all hazards information at various yearly venues.. Additional funding will allow similar efforts in the future.							
2	WC BOCC	H, DF, TH, WS,	N, E	Develop a countywide stormwater management plan. Improve existing and new countywide Drainage Program – Develop stormwater management plan	$500,000	EMPA, FMA, PDM, LCO	2019
2015 Status: Continued pursuit of information and funding. Applied for Restore funding. Had discussions with NWFWMD about project and funding							
3	Washington County Emergency Management	WF	N, E	Create Fire Wise Communities in all municipalities and the County	$5,000	EMPA, HMGP, LCO	Ongoing
2015 Status: Working with Florida Forest Service to create Firewise Communities. Pursing opportunities and venues to educate residents about Firewise							
4	Fla Forest Service in WC	WF	N, E	Construction of fire lanes in wildfire high risk areas. Will mitigate natural and manmade causes of wildfires	$20,000	HMPG, EMPA	1 year
2015 Status: This project was added at the conclusion of the September 22, 2015 LMS Committee meeting at suggestion of FFS Mitigation Specialists							
5	Fla Forest Service in WC	WF	N, E	Wildfire Fuel Reduction – Prescribed burning in targeted areas to reduce wildfire fuel.	$4,500	HMPG, EMPA	1 year
2015 Status: This project was added at the conclusion of the September 22, 2015 LMS Committee meeting at suggestion of FFS Mitigation Specialists							
6	Fla Forest Service in WC	WF	N, E	Wildfire Fuel Reduction – Public Education. Wildfire fuel reduction programs – public education element. Prepare AV materials to educate residents .	$1,000	HMPG, EMPA	1 year
2015 Status: This project was added at the conclusion of the September 22, 2015 LMS Committee meeting at suggestion of FFS Mitigation Specialists							

Priority	Responsible Agency	Hazard Addressed	Impact New Or Existing Infrastructure	Project Description	Estimated Cost and Funding Source		Time Frame
7	Chipley Public Works	H, F, DF, T, TH, WS, WF	E	Drainage Improvements At 5TH Street and South Blvd	$175,000	CDBG, HMGP, FMA, PDM	2019
2015 Status: Project added in 2014. City has obtained property for retention pond. Applied for DOT TAP funding to move forward. HMGP funding has been pursued. ***CHIPLEY #1***							
8	WC Public Works		N, E	Relocate ditches along Joe Neel Road. Install new culverts to improve water conveyance capacity.	$60,000	CDBG, HMGP, FMA, PDM	2018
2015 Status: New project added on 8.26.15 by Washington County Public Works.							
9	WC Public Safety	WF	E	Installation of new dry fire hydrants for fire suppression throughout the county facilities	$415,000	CDBG, HMGP	2020
2015 Status: Continuing to explore feasibility for this project. Remains a viable project.							
10	Wausau Town Council	H, F, DF, SH, T, TH, WS, WF, D	N	Mitigate New Fire/EMS Facility & install Generator – Critical Infrastructure Improvement	300,000	HMGP, LCO CDBG, PDM	2019
2015 Status: City is seeking funds through CDBG to build the facility. Still a viable project.							
11	Chipley Public Works	H,F, DF, T, TH, WS, WF	E	Drainage improvements at Old Bonifay Road and 5th St, and at Peach Street. Involves drainage improvement studies.	$222,000	CDBG, HMGP, FMA, PDM	2019
2015 Status: Project added in 2014. HMGP funds being pursued. Also applied for a FDOT SCOPE funding. Viable project. ***CHIPLEY #2.*** This is a combination of two projects from the 2015 Project List.							
12	WC and Chipley PW	H,F, DF, T, TH, WS, WF	E	Drainage improvements Peach, Brown, Wynn, Page, Farmer and 1st streets.	$431,000	CDBG, HMGP, FMA, PDM	2019
2015 Status: Pursuing funding for this project. Viable project. Will mitigate significant flooding issues for the City.							
13	Chipley Public Works	H, DF, TH, WS,	E	Drainage Improvements at 4th St. & South Blvd. to Hwy 90. Growth of 1st Baptist Church facilities creates a larger issue	$222,000	CDBG, HMGP, FMA, PDM	2019
2015 Status: HMGP funds being pursued. Viable project ***CHIPLEY #3***							
14	WC Public Works	H, F, DF, SH, T, TH, WS, WF, D	E	Drainage Improvements at Williams Rd.	$396,000	CDBG, PDM HMGP, FMA,	2019
2015 Status: HMGP funds being pursued. ***CHIPLEY #4***							
15	Chipley Public Works	H, F, DF, T, T, TH, WS, WF	E	Drainage Improvements at Old Chipley High School, and at 4th St. & Watts Ave	$138,000	CDBG, HMGP, FMA, PDM	2019
2015 Status: Viable project. City is pursuing funding. This is a combination of two projects from the 2015 Project List.							
16	Chipley Public Works	H, F, DF, T, T, TH, WS, WF	E	Drainage Improvements at Bennett Dr. & Campbellton Rd; and at Old Bonifay Rd & Bennett Drive. Funding has been secured for this project .	$380,000	CDBG, HMGP, FMA,	2017
2015 Status: Pursing funding. Viable project. This is a combination of two projects from the 2015 Project List.							

Priority	Responsible Agency	Hazard Addressed	Impact New Or Existing Infrastructure	Project Description	Estimated Cost and Funding Source		Time Frame
17	Chipley Public Works	H, F, DF, T, T, TH, WS, WF	E	Gilbert Acres Drainage Project	$26,000	CDBG, HMGP, FMA,	2019
2015 Status: pursuing funding options. Viable project							
18	Wausau City Council	H, F, DF, T, T, TH, WS, WF	E	Street paving improvements to improve evacuation	$1M	CDBG	2019
2015 Status: City has received $438K in Small County Outreach Project funds to initiate project.							
19	WC Public Works	Flooding and road washout	E	Gainer Rd – relocate ditches and concrete them (flumes). Scope of project changed from 2015 list.	$660,000	HMGP	2019
2015 Status: HMGP funds being pursued. ***COUNTY #1.*** Working with Soil and Conservation District for funds – turned down							
20	WC Public Works	Flooding and road washout	E	Rufus Rd, -pave 1.5 mi and concrete ditches	$450,000	HMGP	2019
2015 Status: HMGP funds being pursued. ***COUNTY #3***							
21	WC Public Works	Flooding and road washout	E	Olie Rd. – pave 1.3 mile and concrete ditches	$460,000	HMGP	2019
2015 Status: HMGP funds being pursued. ***COUNTY #2***							
22	Emergency Management	Flooding	N, E	Placement of base flood elevation markers at areas subject to flooding throughout the County.	$20,000	HMGP, FMA, PDM	2020
2015 Status: This was added on 8.26.15 at the WC LMS Committee meeting.							
23	Emergency Management	Flooding	All	Calculate the 100 Year A-zone elevations for lakes, streams, and bays throughout Washington County.	$50,000	HMGP, FMA, PDM	2020
2015 Status: This was added on 8.26.15 at the WC LMS Committee meeting.							
24	City of Vernon	F	N,E	Sanitary Sewer Improvements [Global match project]	$2,365,500	SRF	2015
2015 Status: Ongoing project. Some work has been completed. Additional funding sought							
25	City of Vernon	Flooding	N, E	Upsize the following to increase capacity: Spoolmill Road box Culvert; Sasser St culvert; Dawkins St. culvert by waste water treatment plant; Cook St.; Ferris Street; Pinecrest Street; Dawkins St. culvert by the church; Pompey St.; Church St. culvert (B/W SR 279 & SR 277; Dawkins St cross culvert behind City Hall; Dalton St culvert to increase capacity (B/W Yohn & McFatter culverts – B/W Sasser & Cook.	$2.14M	HMGP	2020
2015 Status: HMGP funds being pursued. This project is a combination of several individual projects from the 2015 Project List.							
26	City of Vernon	Flooding	E	Elevate waste water treatment plant influent lift station and controls	$56,250	HMGP	2019
2015 Status: Placed on list May 2014.							
27	City of Vernon	H, F, DF, SH, T, TH, WS, WF, D	E	Upgrade Vernon Fire Station to Shelter Standards	$23,000	HMGP, CDBG, LCO	2019
2015 Status: HMGP funds being pursued.							

2015 DELETED PROJECTS							
13	Washington County Grants Dept	H, F, TH, WS,	N, E	Housing Rehab. - Acquisition/Relocation/Replacement for Washington County and all Municipalities	$2,000,000	FMA, PDM, HMGP	
2015 Status: LMS Committee deleted this project based on it is no longer a viable project							
17	Chipley Public Works	H, DF, TH, WS,	N, E	Harold Square Drainage (For City of Chipley)	$97,000	HMGP, FMA, CDBG, LCO	2019
2015 Project Status: City of Chipley deleted this project. No longer viable.							
23	Ebro Town Council	All Hazards	E	Retrofit current City Hall to Shelter Standards (generator & shutters)	$150,000	HMGP, LCO	
2015 Status: No participation or representation on the LMS Committee							
24	Ebro Town Council	D. WF	E	Improve water well and distribution system for Ebro	$1,200,00	CDBG, HMGP, LCO	
2015 Status: No participation or representation on the LMS Committee							
25	Ebro Town Council	H, F, DF, SH, T, TH, WS, WF, D	E	New City Hall/General Population Shelter	$1,200,000	HMGP, PDM, LCO	
2015 Status: No participation or representation on the LMS Committee							
26	Ebro Town Council	H, F, DF, SH, T, TH, WS, WF, D	N	Mitigate New EMS Station – Critical Infrastructure Improvement	$700,000	CDBG, LCO, HMGP, PDM	
2015 Status: No participation or representation on the LMS Committee							
23	Ebro Town Council	All Hazards	E	Retrofit current City Hall to Shelter Standards (generator & shutters)	$150,000	HMGP, LCO	
2015 Status: No participation or representation on the LMS Committee							

2015 COMPLETED PROJECTS							
8	WC Public Works	H, F, DF, SH, T, TH, WS, WF,	E	CR Bridge replacement mitigation	$850,000	HMGP, PDM, CDBG	Completed
2015 Status: This project has been completed							

Appendix F: Project Ranking List

STAPLEE Criteria		S (Social)		T (Technical)			A (Adminis'tive)			P (Political)			L (Legal)			E (Economic)				E (Environmental)					Total Score
Considerations (0-10 Ranking) → / Prioritized Projects # ↓		Community Acceptance	Effects on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HazMat/ Waste Sites	Consistent with Community Envir. goals	Consistent with Federal Laws	
2015 Rank	Project	SCOPE 0-10 (0 is lowest, 10 is highest in each block below)																							Total Score
1	All hazards Public Outreach mitigation project	10	10	10	8	7	5	5	10	10	10	10	10	10	10	10	10	8	8	10	0	10	10	10	201
2	Countywide stormwater study & drainage improvements	10	10	10	8	7	5	5	10	10	10	10	10	10	10	10	5	8	5	10	5	10	10	10	198
3	Create Firewise Communities in all cities and county	10	8	10	8	7	5	1	8	10	10	8	10	10	10	10	10	8	7	10	5	10	10	10	196
4	Wildfire Fuel Reduction – Construct fire lanes	10	8	10	8	7	5	1	8	10	10	8	10	10	10	10	10	8	7	10	5	10	10	10	196
5	Wildfire Fuel Reduction – Prescribed burn	10	8	10	8	7	5	1	8	10	10	8	10	10	10	10	10	8	7	10	5	10	10	10	196
6	Wildfire Fuel Reduction – Public Information Campaign	10	8	10	8	7	5	1	8	10	10	8	10	10	10	10	10	8	7	10	5	10	10	10	196
7	Drainage Improvement at 5th St and South Blvd	10	3	10	10	5	5	3	8	10	10	8	10	10	10	9	5	9	5	10	5	10	10	10	195
8	Relocate ditches along Joe Neel Rd. Install new culverts	10	8	10	10	7	5	3	8	10	10	10	10	10	10	9	5	9	5	10	5	10	10	10	194
9	Installation of new dry fire hydrants for fire suppression	10	8	10	10	5	5	3	8	10	10	10	10	10	10	10	5	6	5	10	5	10	10	10	190
10	Mitigate Fire/EMS facility and install generator.	10	8	10	10	5	5	3	8	10	10	10	10	10	10	10	5	6	5	10	5	10	10	10	189
11	Drainage improvements at Old Bonifay Rd and 5th, Peach St	10	6	10	10	7	5	3	8	10	10	8	10	10	10	9	5	9	5	10	5	10	10	10	187
12	Drainage improvements at Peach, Brown, Wynn, Page, Farmer and 1st St	10	8	10	8	7	5	3	8	8	9	9	10	10	8	10	5	7	5	8	7	6	10	10	181

STAPLEE Criteria		S (Social)		T (Technical)			A Adminis'tive			P (Political)			L (Legal)			E (Economic)				E (Environmental)					Total Score
Considerations (0-10 Ranking) → / Prioritized Projects # ↓		Community Acceptance	Effects on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HazMat/ Waste Sites	Consistent with Community Envir. goals	Consistent with Federal Laws	
13	Drainage improvements at 4th & South Blvd to Hwy 90	10	8	10	8	7	5	3	8	8	9	9	10	10	8	10	5	7	5	8	7	6	10	10	181
14	Drainage Improvement at Williams Rd	10	8	10	8	7	5	3	8	8	9	9	10	10	8	10	5	7	5	8	7	6	10	10	181
15	Drainage Imprvmts at 4th St/ Watts Ave and Old Chipley HS	10	8	10	8	7	5	3	8	8	9	9	10	10	8	10	5	6	5	8	7	6	10	10	180
16	Drainage Impvmnts at Bennett Dr & Campbellton Rd and Old Bonifay Rd and Bennett Dr	10	8	10	8	7	5	3	8	8	9	9	10	10	8	10	4	5	5	8	7	6	10	10	178
17	Gilbert Acres drainage project	10	8	10	8	7	5	3	8	8	9	9	10	10	8	10	4	5	5	8	7	6	10	10	178
18	Street paving improvements to improve evacuation routes	10	10	10	10	5	5	1	4	9	8	10	7	10	10	10	2	9	5	7	5	10	10	10	177
19	Gainer Rd – relocate ditches and create flumes	9	8	10	10	7	5	5	4	9	10	10	10	10	10	10	2	5	3	6	5	10	10	8	176
20	Rufus Rd – pave 1.5 mile and install concrete ditches	9	8	10	10	7	5	5	4	9	10	10	10	10	10	10	2	5	4	6	5	10	10	7	176
21	Olie Rd – pave 1.3 mile and concrete ditches.	9	8	10	10	7	5	5	4	9	10	10	10	10	10	10	3	5	3	6	5	10	10	7	176
22	Placement of base flood elevation markers.	5	7	8	8	7	4	5	5	8	10	7	10	10	7	10	8	8	5	10	5	8	10	10	175
23	Calculate 100 yr A zone elevations in areas subject to flooding	5	7	8	8	7	4	5	5	8	10	7	10	10	7	10	8	8	5	10	5	8	10	10	175
24	Sanitary sewer improvements	10	10	8	10	5	3	1	4	8	5	5	10	10	7	10	5	5	5	10	10	10	10	10	171
25	Upsize culverts in Vernon	10	10	10	10	5	3	1	5	8	4	4	10	10	7	10	1	7	3	10	8	10	10	10	166
26	Elevate waste water treatment plant lift station and controls	10	10	10	10	5	3	1	5	8	4	4	10	10	7	10	7	5	3	10	8	5	10	10	165
27	Upgrade Veron Fire Station to shelter standards.	10	10	10	10	5	5	3	5	8	4	4	10	10	7	10	7	5	3	5	8	5	10	10	164
25																									

Appendix G: Current Mitigation Measures in Other Codes in Washington County (Includes Caryville, Ebro, Vernon, Wausau) and City of Chipley

I. Washington County (Includes Caryville, Ebro, Vernon, Wausau)

The following are excerpts from the **Washington County Land Development Code**, which was developed to include the unincorporated parts of Washington County, and the incorporated towns of Caryville, Ebro, Vernon and Wausau. Revised versions of the above were adopted by the:

City of Caryville - October 10, 2006
Town of Wausau - October 12, 2006
Town of Vernon - October 23, 2006
Town of Ebro - November 14, 2006
Washington County - December 21, 2006

It demonstrates clear mitigation provisions in the land use regulations.

1.02.01 Objectives

C. Secure safety from flood water, mud slides, hurricanes, blowing dust, geologic hazards, fire, building collapse, vehicular traffic, noise, odors, pollutants and other dangers to health;

D. Protect public from exposure to unsafe or unpalatable domestic water supplies, and from risks and annoyance from inadequate liquid waste disposal systems;

2.02.03 Allowable Uses Within Each Land Use District

E. Conservation

2.a.(2) The following permanent natural vegetative buffers (above the observed normal waterline) shall be maintained.
- 100 feet from Choctawhatchee River
- 75 feet from Econfina Creek, Holmes Creek, and Pine Log Creek.

A minimum of 50% natural vegetative cover shall be undisturbed in these buffer areas.

4.01.00 Flood Protection

The resource protection standards as well as the design standards which are intended to promote the public health, safety, and general welfare and to minimize the public and private losses due to flood conditions are contained in Washington County Ordinance Number 91-4 as amended.

4.07.00 Recycling Plan and Hazardous Wastes

The disposal of hazardous wastes into the public sewer system, canals and ditches, wetlands, Storm water facilities, onsite sewage disposal systems, unlined landfills and, other unsafe areas shall be prohibited.

4.07.02 Handling, Generation and Storage of Hazardous Wastes

Any development where hazardous wastes will be handled, generated, stored, transferred or sold shall employ the best available facilities and procedures for the prevention, containment, recovery, and mitigation of spillage of fuel and toxic substances.

4.09.00 MINING/MINERAL EXTRACTION AND LANDFILL USES

4.09.02 Criteria for Proposed Mining/Mineral Extraction and/or Landfill Type Activities

F. Flood Prone Areas. Mining activities shall not be allowed in areas subject to flooding or within designated flood zones.

5.09.00 FLOOD PLAINS

The design and development standards which are intended to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions are contained in The Washington County Floodplain Management Ordinance.

6.01.04 Preliminary Plat Specifications and Materials for Review

D. 22. Location of streams, lakes, swamps and land subject to flooding as determined from past history of flooding. Special flood hazard areas shall be shown where the proposed subdivision or any part thereof is in an area subject to 100 year flooding. Flood hazard Boundary Maps (FHBM) or Flood Insurance Rate Maps (FIRM) for Washington County will be used to determine the 100 year flood hazard areas. The delineation of these 100 year flood hazard areas should be placed on the Preliminary Plat. A note should be included on the plat indicating the Community Panel Number(s) of the FHBM or FIRM from which the data was derived and a notation of the flood zone(s) in which the subdivision is located. Base flood elevations shall also be shown.

6.07.06 Improvements in Flood Hazard Zone

A. Building Site Improvements

1. No subdivision or part thereof shall be approved if proposed subdivision levees, fills, structures or other features will individually or collectively significantly increase flood flows, heights or damages

2. Building sites for residences, motels, resorts or other dwelling or accommodation uses shall not be permitted in the Regulatory Flood way. Sites for these uses may be permitted outside the Flood way if the sites are elevated or filled to a height at least three (3) feet above the elevation of the base flood (i.e. equal to the flood protection level) or if other provisions are made for elevating or adapting structures to achieve the same result. Required fill areas must extend ten (10) feet beyond the limits of intended structures and, if the subdivision is not to be sewered, must include areas for onsite waste disposal.

3. Cemeteries shall not be permitted in any area subject to flooding at any time.

4. The following standards apply to watercourses in the Flood Hazard Zone for which no base flood data or regulatory Flood way have been provided.

    a. No encroachments, including fill material or structures shall be located within a distance of the stream bank equal to five times the width of the stream at the top of the bank, or 50 feet from the top of each bank, whichever is greater, unless a registered professional engineer or land surveyor demonstrates and certifies that the encroachments will not result in any increase in flood levels in a base flood.

    b. New construction of or substantial improvements to structures shall be elevated or flood proofed to minimize risks of flooding reasonably to be expected based on the best available data.

5. If the Planning Commission determines that only part of a proposed plat can be safely developed, it shall limit development to that part and shall require that development proceed consistent with this determination.

6. When the subdivider does not intend to develop the plat himself, and the review agency determines that additional use controls are required to insure safe development, it may require the subdivider to impose appropriate deed restrictions on the land. Such deed restrictions shall be inserted in every deed and noted on the face of the final recorded plat.

B. Drainage Facilities. Storm drainage facilities shall be designed to store and convey the flow surface waters without damage to persons or property. The system shall insure drainage at all points along streets, and provide positive drainage away from buildings and onsite waste disposal sites. Plans shall be subject to approval by the Planning Commission. The Planning Commission may require a primarily underground system to accommodate frequent floods and a secondary surface system to accommodate less frequent floods. Drainage plans shall be consistent with local and regional drainage plans, as well as with Washington County Ordinance 91-4.

C. Roads. The finished elevation of proposed streets shall be no less than two (2) feet above the regulatory flood protection elevation. The Planning Commission may require, where necessary, profiles and elevations of streets to determine compliance with this requirement. Drainage openings shall be sufficient to discharge flood flows without unduly increasing flood heights. The design of roads in a Flood Hazard Zone shall be consistent with Washington County Ordinance 91-4.

D. Sanitary Sewer Facilities.

1. The Planning Commission may prohibit installation of sewage disposal facilities requiring soil absorption systems where such systems will not function due to high ground water, flooding, or unsuitable soil characteristics. The subdivider shall note on the face of the plat and in any deed or conveyance that soil absorption fields are prohibited in designated areas.

2. The developer must prescribe adequate methods for waste disposal. If a sanitary sewer system is located on or near the proposed subdivision, the developer shall provide sewage facilities to connect to this system where practical.

E. Water Facilities. All water systems, including individual wells located in flood prone areas whether public or private, shall be flood proofed to a point at or above the flood protection elevation. If there is an existing public water supply system on or near the subdivision, the Planning Commission may require the subdivider to convert to this system

F. Erosion and Sediment Control Measures. Section 5.06.00 and 5.07.00 of Article Five of this Code provides specific criteria which must be adhered to with regard to erosion and sediment control.

8.02.03 Special Provisions Where Variance is Sought to Requirements to Flood Damage Prevention Regulations

A. Conditions for Modification. The local governing body may permit modifications in the minimum standards of design under the following conditions:

4. There is no substantial increase in flood hazard or flood damage potential, as certified by a registered Florida professional engineer;

B. Additional Finding. In addition to the findings required by Section 8.02.02(B), the local governing body shall find that the requested variance will not result in an increase in the elevation of the Base Flood, additional threats to public safety, additional public expense, the creation of nuisances, fraud or victimization of the public, or conflicts with other local ordinances.

C. Considerations. Before granting a variance, the local governing body shall consider:

2. The danger to life and property from flooding or erosion.

3. The potential of the proposed facility and its contents to cause flood damage and the effect of that damage on the owner and the public.

5. The availability of alternative locations, not subject to flooding and erosion, for the proposed use.

7. The relationship of the proposed use to the Washington County Comprehensive Plan and the flood plain management program for the area.

8. Safe vehicular access to the property in times of flood.

9. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and effects of wave action, if applicable, at the site.

10. The costs of providing governmental services during and after floods including maintenance and repair of public utilities and facilities.

D. Flowage Easement. No variance that would increase the potential for flood damage on other property shall be granted unless flowage easements have been obtained from the owners of all affected properties.

E. Notification. All variances to the flood protection regulations shall:
   1. Specify the difference between the flood protection elevation and the elevation to which the structure is to be built.

   2. State that the variance will result in increased premium rates for flood insurance up to amounts as high as $25.00 for $100.00 of insurance coverage.

   3. State that construction below the Official 100-year Flood Elevations increases risks to life and property.

II. City of Chipley

The following are excerpts from the City of Chipley's COMP Plan.

Policy 3.2.4: Coordinate with Washington County to provide for the disposal or transfer of hazardous materials within the City.

Policy 3.2.5: Coordinate with the Florida Department of Environmental Protection to have all required hazardous materials/contaminant storage/containment permits issued before building permits are issues.

Policy 5.1: The ability to achieve maximum densities and intensities permitted on a given parcel of land will be based upon the suitability of local topography and soils for the proposed development and the FEMA designated flood zones. Construction in areas identified by Flood Insurance Rate Maps, or Flood Boundary Maps as flood prone shall be build above established flood elevation for that location. New Development will be r3quired to locate on land above flood elevations if such higher land is available in the parcel.

2.5 Conservation Element

Policy 1.3: Develop and maintain a list and map showing businesses that use or store hazardous wastes in the city and coordinate with Washington County, the US EPA, FDEP and WFRPC in their monitoring efforts for the use, storage, transfer and disposal of these hazardous wastes.

Policy 4.1: The City shall identify areas that may be considered environmentally sensitive. Environmentally sensitive lands shall be defined as property having one or more of the following characteristics; functioning wetlands, FEMA designated flood zones….