

1.0 INTRODUCTION

The Oconee County Pre-Disaster Mitigation (PDM) Plan was originally approved by the Georgia Emergency Management Agency (GEMA) and the Federal Emergency Management Agency (FEMA) and subsequently adopted by resolution of participating local governments in 2008. The Disaster Mitigation Act of 2000 (DMA2K) established mitigation planning requirements under 44 CFR Part 201. Included in the DMA2K is a requirement that each jurisdiction review, update, and resubmit its PDM plan for approval every five years in order to maintain eligibility for mitigation grant funding [44 CFR §201.6(d)(3)]. Federal hazard mitigation funding assistance programs include the following:

- Hazard Mitigation Grant Program
- Pre-Disaster Mitigation
- Flood Mitigation Assistance
- Severe Repetitive Loss

The 2013 update to the Oconee County Pre-Disaster Mitigation Plan is a cooperative effort between the county and the municipalities of Bishop, Bogart, North High Shoals, and Watkinsville, and is funded through a grant from the FEMA Hazard Mitigation Grant Program. The County and all of its cities were also participants in the original 2008 Pre-Disaster Mitigation Plan process; therefore the participating jurisdictions have not changed. In October 2011, the Oconee County Board of Commissioners requested assistance from the Northeast Georgia Regional Commission (NEGRC) to facilitate the planning process and prepare the plan update for submission to GEMA.

A summary table of updates is included at the beginning of each chapter of this document to highlight changes that have been made to the original 2008 plan.

TABLE 1.1: SUMMARY OF UPDATES TO CHAPTER 1: INTRODUCTION

Section	Update Summary
<i>1.1 Purpose and Need</i>	Text revisions
<i>1.2 Methodology</i>	Changes to committee structure and participants; addition of public questionnaire to planning process; text revisions
<i>1.3 Review/Analysis/Revision Process</i>	New to 2013 update
<i>1.4 Organization of the Plan</i>	Identification of contents of specific chapters; addition of Mitigation Actions Guides for natural and technological hazards; text revisions
<i>1.5 HRV Summary, Goals & Objectives</i>	Text revisions
<i>1.6 Multi-Jurisdictional Considerations</i>	Text revisions
<i>1.7 Adoption, Implementation, Monitoring, & Evaluation Process</i>	Text revisions
<i>1.8 Community Data</i>	2010 Census and 2009 American Community Survey data additions

1.1 PURPOSE AND NEED

Natural and technological (manmade) disasters can occur without warning and may result in damages that extend beyond the initial costs of recovery. Disasters can devastate neighborhoods, the local economy, and infrastructure, posing

significant risks to the health and welfare of residents. The intent of this plan is to provide a set of guidelines for the implementation of hazard mitigation projects with the goal of reducing the losses associated with natural and technological hazards.

1.2 METHODOLOGY

All information contained within this document has been obtained through personal knowledge of the committee members as well as research conducted by committee members and the Northeast Georgia Regional Commission (NEGRC), who facilitated the planning process and compiled all of the data into a single planning document.

The Oconee County Emergency Management Agency (EMA) invited a diverse group of community leaders, local and regional experts, and emergency management staff to participate in the development of the plan. A full planning committee was assembled for the plan update kick-off meeting in November 2011, with a smaller steering committee directly guiding the planning process and providing regular input.

Steering committee members were responsible for working with NEGRC to review and update the list of critical facilities and potential hazards, assess risk and determine potential losses as a result of hazard events, and develop mitigation goals and strategies. The following table lists planning committee participants and their affiliated agencies.

TABLE 1.2: PLANNING COMMITTEE MEMBERSHIP

Committee Member	Affiliated Agency
Final List TBD	Final List TBD

Two public meetings were held for the purposes of soliciting public input on the plan update, one during the drafting stage and the second during the final stage of the planning process prior to submittal of the plan to GEMA. The meetings were intended to inform the public of the process and its implications for disaster mitigation countywide as well as to engage the public in identifying their priorities for disaster mitigation. NEGRC staff and the steering committee also developed a brief questionnaire that was distributed in print and online following the first public hearing in April 2012. The purpose of this questionnaire was to gather information from Oconee County residents on their expectations and concerns during and after hazard events, and a total of 70 responses were received. Refer to Appendix E for further details on the public involvement process.

1.3 REVIEW, ANALYSIS, AND REVISION PROCESS

Chapter One (Introduction to the Planning Process) was revised and updated to reflect a reorganized Steering Committee, and new public participation techniques.

With input from the Steering Committee, NEGRC staff reviewed the text and data included in Chapters Two and Three (Local Hazard, Risk and Vulnerability) and made updates and revisions where necessary. The methodology for completing an assets inventory (see GEMA Worksheet #3 in Appendix A) was developed based on the availability of data for Oconee County. The Tax Assessor provided the numbers and values of structures by type for the entire county. Those land parcels containing a portion of the flood hazard area, or floodplain, were counted to determine the number of structures in the flood area; it was assumed that each land parcel contained one structure. Values for these affected structures were determined by multiplying the total value in the community by the percentage of structures in the hazard area.

The Steering Committee reviewed and revised the mitigation goals, objectives, and action items from the 2008 Plan for each hazard (Chapters Four and Five). While most of the goals and objectives were left unchanged, action items carried over from the 2008 Plan were revised, and several new items were added. The Steering Committee then utilized the Social, Technical, Administrative, Political, Legal, Economic, Environmental (STAPLEE) method to prioritize the action items by hazard. Additional detail on this process is included in section 6.1 of this document.

Chapter Six was updated in cooperation with members of the Steering Committee that will be directly involved in implementing, evaluating, and monitoring the Oconee County Pre-Disaster Mitigation Plan, including representatives from Oconee County Emergency Services and Oconee County Code Enforcement.

1.4 ORGANIZATION OF THE PLAN

Chapter Two of the Plan contains a Hazard, Risk and Vulnerability (HRV) assessment identifying the most prevalent natural hazards that have occurred, and are most likely to occur in Oconee County. Chapter Three identifies and evaluates potential technological hazards. Each of the hazards is profiled based on historic occurrences in the county. The vulnerability of critical facilities is examined for each of the identified hazards to determine an estimate of potential loss and total impact resulting from a hazard event.

Chapters Four and Five present Mitigation Goals, Objectives and Strategies for natural and technological hazards.. Following these sections are Mitigation Actions Guides for natural and technological hazards (Chapters Six and Seven, respectively). These guides have been designed as stand-alone resources to be used for project development and guidance in grant-seeking efforts supporting the implementation of mitigation goals over the next five years.

Chapter Eight outlines roles, responsibilities and a schedule for implementing, evaluating, monitoring, and updating this plan. Upon formal approval by GEMA and prior to submission to FEMA, Oconee County and its municipalities will officially adopt the new plan and begin collaborating on implementation efforts. Chapter Nine summarizes the plan, providing a list of relevant references and additional sources of information.

1.5 HAZARD, RISK, AND VULNERABILITY (HRV) SUMMARY, GOALS AND OBJECTIVES

In order to determine appropriate mitigation actions, a risk assessment was performed identifying the probability of various natural and technical disasters affecting Oconee County. This assessment analyzed historical data relating to disaster occurrences within Oconee County and estimated the probability of future occurrences.

The hazard identification process produced six natural hazards and one technological hazard that may affect Oconee County and its municipalities in the future. Appendix A provides a profile of each of the hazards and the supportive historical data illustrating the probability of future hazard occurrences. For purposes of clarity, the historical hazard event data has been analyzed in order to provide a better understanding of which hazards have the potential to impact the community most significantly. To this end, events that were reported to have caused no injury or loss of life, and no property or crop damage were not included. For a complete listing of all recorded hazard events please see the reference information at the end of Appendix A.

The vulnerability of Oconee County and its municipalities was determined by first updating the list of critical facilities identified in the 2008 Plan. These critical facilities and existing land use were then mapped along with the most current floodplain data. This allowed NEGRC staff and the steering committee to identify structures and neighborhoods potentially exposed to these “mappable” hazards. Additionally, potential financial losses were determined based on an

examination of values of critical facilities as provided by the Oconee County Tax Assessor. This information is discussed in greater detail in Chapter Two and the data is provided in Worksheet #5 in Appendix D.

The HRV assessment informed the development of mitigation goals and objectives for each identified hazard in Oconee County. Under these goals and objectives, NEGRC and the Steering Committee identified implementation actions, including responsible agencies, approximate costs, potential financial resources, and an estimated timeline for completion in the Mitigation Actions Guides that comprise Chapters Six and Seven.

1.6 MULTI-JURISDICTIONAL CONSIDERATIONS

The cities of Bishop, Bogart, North High Shoals and Watkinsville have participated in the 2013 planning process. None of the hazards identified and profiled are limited to specific jurisdictional boundaries (with the exception of flood, which are more likely to occur within the identified floodplain associated with streams and rivers). Therefore, each of the hazards applies equally to Oconee County and its municipalities. Where appropriate, goals, objectives and mitigation actions are tailored specifically to a jurisdiction's need, otherwise the application is considered to be countywide.

1.7 ADOPTION, IMPLEMENTATION, MONITORING, AND EVALUATION PROCESS

Upon final approval from GEMA, Oconee County, Bishop, Bogart, North High Shoals and Watkinsville will formally adopt the plan and will be responsible for coordinating the implementation of the identified mitigation actions. In accordance with DMA2K, Oconee County and its municipalities will review and update its pre-disaster mitigation plan on a five-year interval and address the implementation schedule of the identified mitigation actions annually. In order to ensure that multiple jurisdictions, as well as multiple agencies, are implementing common goals related to disaster mitigation it is important that the recommendations originating from this planning document are incorporated into the county's Comprehensive Plan and Short-Term Work Program and reflect those found in the 2012 Emergency Management Agencies Local Emergency Operations Plan.

1.8 COMMUNITY DATA

Oconee County's total population according to the 2010 U.S. Census was 32,808 which represented a 25% increase from 2000 Census figures. Most of this population growth (63.48%) has occurred in the unincorporated areas of the county.

The 2010 Census showed little change in the racial and ethnic composition of Oconee County. Eighty-eight percent of the population identified themselves as white, down slightly from 90% in 2000. While six percent of the population identified themselves as black in 2000, only five percent did so in 2010. While the percentage of residents identifying as white or black decreased over the ten-year period, the percent of persons of Asian origin increased from 1% to 3%. The population of Oconee County aged between 2000 and 2010. The median age for the county in 2010 increased to 39.1 years of age from 35.2 in 2000. This may result in the need for additional outreach services to ensure the safety of all residents in the event of a natural or technological hazard occurrence.

According to 2009 American Community Survey estimates, the median household income in Oconee County was \$74,630, well above the state (\$47,469). In 2009, approximately 8.4% of Oconee County residents were living below the poverty level.

More detailed information on the demographics of Oconee County as well as the municipalities of Bishop, Bogart, North High Shoals and Watkinsville can be found in Appendix B.

2.0 NATURAL HAZARD, RISK, AND VULNERABILITY

The steering committee was responsible for reviewing and updating the list of hazards likely to affect Oconee County. The goal was to utilize local knowledge, experience, and expertise to determine whether the hazards identified and profiled in the 2008 Plan were still relevant to Oconee County. As a result of this process, the steering committee retained all hazards from the previous plan.

TABLE 2.1: SUMMARY OF UPDATES TO CHAPTER 2: LOCAL NATURAL HAZARD, RISK, AND VULNERABILITY

Hazard Type	Section	Update Summary
Severe Thunderstorms	2.1.1 Hazard Identification	Text revision; addition of Tornadoes to hazard section
	2.1.2 Hazard Profile	Text revisions; addition of Tornadoes to hazard section; updated relevant data for hazard frequency
	2.1.3 Assets Exposed to Hazard	Text revisions
	2.1.4 Estimate of Potential Losses	Updated relevant data for mobile/manufactured homes; added text to address Fujita scale for tornadoes
	2.1.5 Land Use & Development Trends	Added information on relevant zoning regulations for mobile/manufactured homes
	2.1.6 Multi-Jurisdictional Concerns	No changes
	2.1.7 Hazard Effects Summary	Text revisions
Drought	2.2.1 Hazard Identification	Text revisions
	2.2.2 Hazard Profile	Text revisions; updated relevant data for hazard frequency
	2.2.3 Assets Exposed to Hazard	Text revisions
	2.2.4 Estimate of Potential Losses	Text revisions; updated relevant data
	2.2.5 Land Use & Development Trends	Text revisions
	2.2.6 Multi-Jurisdictional Concerns	No Changes
	2.2.7 Hazard Effects Summary	Text revisions
Wildfire	2.3.1 Hazard Identification	Updated section to account for recently created Oconee County Community Wildfire Protection Plan
	2.3.2 Hazard Profile	Text revisions incorporating Oconee County CWPP
	2.3.3 Assets Exposed to Hazard	Text revisions incorporating Oconee County CWPP
	2.3.4 Estimate of Potential Losses	Text revisions incorporating Oconee County CWPP
	2.3.5 Land Use & Development Trends	Text revisions incorporating Oconee County CWPP
	2.3.6 Multi-Jurisdictional Concerns	No Changes
	2.3.7 Hazard Summary	Text revisions incorporating Oconee County CWPP
Winter Storms	2.4.1 Hazard Identification	Text revisions
	2.4.2 Hazard Profile	Text revisions; updated relevant data for hazard occurrences and frequency
	2.4.3 Assets Exposed to Hazard	Text revisions
	2.4.4 Estimate of Potential Losses	Text revisions; updated relevant data
	2.4.5 Land Use & Development Trends	Text revisions; updated relevant data
	2.4.6 Multi-Jurisdictional Concerns	No changes
	2.4.7 Hazard Summary	Text revisions
Floods	2.5.1 Hazard Identification	Text revisions

2.5.2 Hazard Profile	Updated text to account for 2009 FIS
2.5.3 Assets Exposed to Hazard	Updated text to account for 2009 FIS
2.5.4 Estimate of Potential Losses	Updated text to account for 2009 FIS
2.5.5 Land Use & Development Trends	Updated text to account for 2009 FIS
2.5.6 Multi-Jurisdictional Concerns	No Changes
2.5.7 Hazard Summary	Updated text to account for 2009 FIS

2.1 SEVERE THUNDERSTORMS (INCLUDES THUNDERSTORMS, LIGHTNING, HAIL, TORNADO)

2.1.1 HAZARD IDENTIFICATION

Thunderstorms can bring heavy rains, strong winds, hail, lightning and tornados depending on the weather conditions. All of these events have been classified together as a Severe Thunderstorms, which pose the greatest threat to the population, property, and resources of Oconee County. These events are described below, and additional information on thunderstorms and tornados is accessible via FEMA’s Ready.gov website at the “Be Informed” tab.¹

Additional hazards associated with Severe Thunderstorms include Flooding and Wildfires; these hazard types will be described in subsequent sections of this Chapter.

Thunderstorm

A thunderstorm is formed from a combination of moisture, rapidly rising warm air, and a force capable of lifting air such as a warm or cold front, a sea breeze, or a mountain. The rising air forms a low-pressure zone underneath the forming thunderstorm, which can serve as a warning sign. All thunderstorms contain lightning. Thunderstorms may occur singly, in clusters, or in lines, making it possible for several thunderstorms to affect a single location over the course of a few hours. Some of the most severe weather occurs when a single thunderstorm affects one location for an extended time.²

HAIL

Hail is produced by many strong thunderstorms. Hail can be smaller than a pea or as large as a softball and can be very destructive to crops and property.

LIGHTNING

Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lightning appears as a “bolt”. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches a temperature approaching 50,000 degrees Fahrenheit in a split second. Rapid heating and cooling of air near the lightning causes thunder.³

TORNADO

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm (or sometimes as a result of a hurricane) when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. The damage from a tornado is a result of high-velocity winds and wind-blown debris.⁴

2.1.2 HAZARD PROFILE

Thunderstorms can essentially occur at any time of the year and can be found throughout the country. However, they are more common in the central and southern states and severe thunderstorms (with the potential for hail and tornados) are more prevalent between the months of March and August.

1 Retrieved on February 8, 2012, from the Ready.gov website at: <http://www.ready.gov/tornadoes>

2 Additional information about thunderstorms is accessible from the Ready.gov: www.ready.gov/thunderstorms-lightning

3 Additional information about lightning is accessible from the Ready.gov website at: <http://www.ready.gov/thunderstorms-lightning>.

4 Additional information about tornadoes is accessible from the Ready.gov website at <http://www.ready.gov/tornadoes>

The National Climatic Data Center (NCDC) organizes climate data related to thunderstorms into several possible categories: gusty winds, hail, heavy rain, high winds, lightning, thunderstorm winds, and tornado. Of these, the most frequently recorded events since 1950 are thunderstorm winds and lightning (77 occurrences).. Since the 2008 Plan, there have been 7 occurrences of thunderstorm winds and lightning and one tornado event.

The National Weather Service issues a severe thunderstorm watch when conditions are likely to generate damaging winds in excess of 58 mph, or hail in excess of three-fourths of an inch. Straight-line winds in excess of 100 mph are responsible for the majority of thunderstorm damage. According to the United States Wind Zone map, Oconee County is located in Zone III, indicating the possibility of 200 mph design wind speeds.⁵ This designation places Oconee County at risk for category F3 (158-206 mph) tornados as measured by the Fujita Tornado Measurement Scale, which may result in severe damage to buildings, property, and trees.

Since 1950, severe thunderstorm events have resulted in a total of approximately \$40.9 million in property damages, greater than \$400,000 in crop damages, 36 personal injuries, and 1 death in Oconee County. Based on historic frequency, Oconee County might expect a reported hail event every 3.4 years, a thunderstorm event every 0.66 years, and a tornado event every 5.55 years- For additional information on severe thunderstorm events, see GEMA Worksheet #1 and the Worksheet #1 addenda in Appendix D.

2.1.3 ASSETS EXPOSED TO HAZARD

There is no methodology to predict where a thunderstorm event is going to occur, and therefore the entire county is vulnerable. Additionally, all identified critical facilities are susceptible to damages.

2.1.4 ESTIMATE OF POTENTIAL LOSSES

Historically, Oconee County has not experienced a tornado above an F1 on the Fujita scale. Tornados ranging from F0 to F1 have resulted in up to \$212,000 in property damage per occurrence. Since Oconee County lies in a wind zone associated with F3 tornados, it is possible that future events could result in more serious and widespread damages⁶. All public and private facilities were determined to be at risk of damage from severe thunderstorms.

2.1.5 LAND USE AND DEVELOPMENT TRENDS

Most land use and development trends will not inform the strategies identified to mitigate the possible effects of severe thunderstorms and associated hazards, as the entire county is at equal risk for these types of events. The number of mobile or manufactured homes in Oconee County has remained relatively unchanged since the last Pre-Disaster Mitigation Plan was adopted, with a decrease from 1,056 in 2008 to 1,001 in 2013. This trend is expected to continue for the foreseeable future. However, residents of mobile and manufactured homes throughout the county are still at greater risk from thunderstorm and tornado events. These structures are susceptible to severe damage and possible destruction from strong thunderstorm winds and tornados. Oconee County manufactured and mobile home regulations require that all manufactured homes be anchored according the State Building Code and the Federal Manufactured Housing Construction and Safety Standards Act. Oconee County also requires that manufactured homes be placed on an appropriate foundation, and skirted with finished masonry at least 4 inches thick.

2.1.6 MULTI-JURISDICTIONAL CONCERNS

All of Oconee County is vulnerable to the effects of severe thunderstorms. All mitigation goals, objectives and strategies are applicable to the entire county and each city.

⁵ Retrieved on January 29, 2013, from the FEMA website at <http://www.fema.gov/graphics/library/wmap.gif>

⁶ Retrieved on January 29, 2013, from the FEMA website at <http://www.fema.gov/graphics/library/wmap.gif>

2.1.7 HAZARD EFFECTS SUMMARY

Based on the quantifiable data, thunderstorms present the most prevalent disaster in Oconee County and have generated the largest financial losses in property and crop damages, exceeding \$126 million. As the risk for thunderstorms is equal throughout the county, most mitigation strategies will need to address the community as a whole. An exception to this might be the areas with concentrations of mobile homes.

2.2 DROUGHT

2.2.1 HAZARD IDENTIFICATION

Drought cannot be characterized as a single event, but rather a prolonged period without sufficient precipitation. The Georgia Automated Environmental Monitoring Network website defines drought as “a period of insufficient rainfall for normal plant growth, which begins when soil moisture is so diminished that vegetation roots cannot absorb enough water to replace that lost by transpiration.”⁷

According to the 2003 Georgia Drought Management Plan, Oconee County is located in Climate Division 2. For this Climate Division, the Georgia Environmental Protection Division (EPD) monitors the following indicators for drought triggers, or specific values. If any one of the indicators reaches or passes a trigger value for two consecutive months, a preliminary evaluation is conducted to determine the appropriate response.

- Standard Precipitation Index: This figure compares precipitation levels during the last three, six, and twelve months with historical figures to determine net loss or increase.
- Reservoir Levels: Water level is measured in the Lake Lanier and Lake Alatoona.
- Streamflow: Annual and monthly discharge levels are monitored and compared with historical figures along the Etowah River at Canton and the Chestatee River near Dahlonega.

A drought event is not considered to be over until all of the indicators for the Climate Division are at an acceptable stress level for at least four consecutive months.⁸

In addition to the Georgia Drought Management Plan, the Upper Oconee Basin Water Authority Drought Contingency Plan⁹ includes several indicators, including:

- Standard Precipitation Index
- Reservoir Level: Water level is measured in Bear Creek Reservoir.
- Palmer Hydrologic Drought Index (PDHI): Long-term drought index that quantifies hydrological effects such as reservoir levels and groundwater levels. The PHDI is a long-term indicator that responds slowly to changing conditions.¹⁰
- Streamflow: Flow measured in the Middle Oconee River as indicated by the Arcade USGS gage.
- Long-Range Predictions: Predictions for climate and rainfall as given by the National Weather Service

This plan includes four drought levels, the thresholds of which are found in Appendix A.

Another hazard often associated with Drought is Wildfires, which will be described in subsequent sections of this Chapter.

2.2.2 HAZARD PROFILE

⁷ Retrieved on January 29, 2013 from the Georgia Automated Environmental Monitoring Network website at <http://www.georgiaweather.net/>

⁸ Retrieved on January 29, 2013 from the Department of Community Affairs Planning & Quality Growth website at <http://www.georgiaplanning.com/watertoolkit/Documents/WaterConservationDroughtManagement/DroughtMgtPlanFinal03.pdf>

⁹ http://www.bearcreekwtp.com/images/drought_contingency_plan.pdf

¹⁰ <http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/palmer.html>

Due to the lengthy nature of a drought event, the adverse impacts can affect a community for extended periods of time. The severity of impacts increases as the drought event is prolonged, and many may still be felt long after the drought is declared over.

Drought conditions are typically associated with the dry summer months, but they may persist throughout the winter months as well. Over the past 61 years there have been 17 occurrences of drought conditions in Oconee County recorded by the NCDC, as illustrated in the Worksheet #1 Addendum in Appendix D. All of the recorded events occurred between 1999 and 2004, reflecting a period of statewide drought-like conditions.

Based on the historic frequency recorded by the NCDC, Oconee County can expect a drought event approximately every three years. However, the multiple variables involved in declaring a drought event challenge the accuracy of this estimation. As of January 31, 2013 the northeastern portion of Oconee County was identified in the Moderate Drought (D1) category by the National Drought Mitigation Center's U.S. Drought Monitor; the southeastern portion of the county was identified in both the Severe Drought (D2) and the Extreme Drought (D3) categories.¹¹

2.2.3 ASSETS EXPOSED TO HAZARD

Droughts typically do not affect critical facility structures directly. Instead, droughts have the most significant impact on the agricultural community and the residential population, particularly those that utilize groundwater wells.

2.2.4 ESTIMATE OF POTENTIAL LOSSES

Drought events are going to generate the largest impact on crop and livestock farmers countywide. Yields of crops have been documented at a total loss during the worst drought seasons. Hay, forages, and peaches are the most prevalent crops grown in Oconee County with an annual farm-gate value of approximately \$2.7 million.¹² The most directly identified loss is illustrated in the reduced yields of row crops, but these impacts generate spin-off effects in the livestock industry.

Decreased yields of hay and silage reduce the amount of feed available for the livestock population, which has a number of ramifications that are often prolonged beyond the drought event. Cattle may have difficulty maintaining their weight during a drought event due to unproductive pastureland and they may also have difficulty breeding. In addition to creating an obvious burden on the animal population, drought events may result in reduced economic viability of cattle farming and poultry production.

2.2.5 LAND USE AND DEVELOPMENT TRENDS

Oconee County's population grew by 25% between the 2000 and 2010 U.S. Censuses. This growth continues a trend since 1970, with the county growing by an average of 40% per decennial census, placing a major increase in demand for residential and commercial water supplies. The high demand from new development coupled with the demands from agricultural uses prolonged drought conditions would continue to present a risk to the local economy.

Agriculture remains a primary industry, especially in the more southern areas of the County. The overall use of land for agriculture has diminished, making way for residential, commercial, and industrial uses, which are typically less affected by droughts.

2.2.6 MULTI-JURISDICTIONAL CONCERNS

¹¹ Retrieved on January 31, 2013 from the National Drought Mitigation Center's U.S. Drought Monitor website at <http://droughtmonitor.unl.edu>

¹² Retrieved January 29, 2013 from: <http://www.georgiastats.uga.edu/crossection.html>

The effects of prolonged drought conditions are felt countywide. Although agricultural production typically occurs outside municipal boundaries, a decrease in the sector's economic productivity will have an effect on the entire county. Therefore, it is important that five jurisdictions cooperate on the implementation of drought mitigation strategies to assist the agricultural community withstand drought conditions.

2.2.7 HAZARD SUMMARY

It is often difficult to assess the impacts of drought because the negative effects are distributed over a prolonged period of time. Drought may have effects on residential and commercial water supplies, but the most immediate impacts are felt in the agricultural industry and the increased risk of wildfires.

2.3 WILDFIRES

2.3.1 HAZARD IDENTIFICATION

Wildfires (or wildland fires) present threats to people and property living or recreating near undeveloped wilderness areas. Drought and dry weather conditions contribute to an increased potential for wildfires.

Wildfires are classified under three different types:

1. **Surface Fire:** Burns rapidly at a low intensity
2. **Ground Fire:** Most infrequent, characterized by intense blazes destroying all vegetation and organic matter
3. **Crown Fire:** Generally resulting from ground fires, occurs in upper sections of trees¹³

The most dangerous conditions are extended periods of drought (typically during the summer months) and high winds (typically during late winter and early spring). Drought conditions create an adverse environment for containing fires because of the dry condition of the forest on a regional scale. Additionally, high gusting winds facilitate the spread of wildfires throughout a much larger region.

2.3.2 HAZARD PROFILE

There are no recorded wildfire events in the NCDC database, but the Georgia Forestry Commission has recorded the number and location of wildfires in Oconee County between 2000 and 2010. During that time period there were 130 reported wildfires countywide, resulting in an average of 13 wildfires per year. According to the 2010 Oconee County Community Wildfire Protection Plan (CWPP), developed by the Georgia Forestry Commission, the leading cause (46%) of wildfires over the past 10 years is debris burning.¹⁴ The wild land fire risk assessments conducted in 2011 by the Oconee County Fire Department and the Georgia Forestry Commission returned an average score of 98, placing Oconee County in the "moderate risk" hazard range. The risk assessment instrument used to evaluate wildfire hazards to Oconee County's WUI was the Hazard and Wildfire Risk Assessment Checklist. The instrument takes into consideration accessibility, vegetation (based on fuel models), roofing assembly, building construction, and availability of fire protection resources, placement of gas and electric utilities, and additional rating factors.¹⁵

2.3.3 ASSETS EXPOSED TO HAZARD

All of Oconee County is potentially vulnerable to wildfires, either large blazes affecting expansive tracts of forestland or multiple small fires damaging individual lots. Both are potentially extremely dangerous and may

¹³ Retrieved on February 5, 2013 from a report on the U.S. Fire Administration website, entitled, "Wildland Fires: A Historical Perspective" at <http://www.usfa.dhs.gov/downloads/pdf/statistics/v1i3-508.pdf>.

¹⁴ Georgia Forestry Commission (2012). "Community Wildfire Protection Plan: An Action Plan for Wildfire Mitigation and Conservation of Natural Resources, Oconee County, Georgia," p. 4.

¹⁵ Georgia Forestry Commission (2012). "Community Wildfire Protection Plan: An Action Plan for Wildfire Mitigation and Conservation of Natural Resources, Oconee County, Georgia," p. 8-9

escalate quickly depending on the prevailing weather conditions. The current Georgia Forestry Commission Community Wildfire Protection Plan does not include a map of wildfire occurrences.

2.3.4 ESTIMATE OF POTENTIAL LOSSES

The woodland fire risk assessments conducted in 2011 by the Oconee County Fire Department and the Georgia Forestry Commission in the development of the 2012 CWPP, returned an average score of 98, placing Oconee County in the “moderate risk” hazard range. The risk assessment instrument used to evaluate wildfire hazards to Oconee County’s WUI was the Hazard and Wildfire Risk Assessment Checklist. The instrument takes into consideration accessibility, vegetation (based on fuel models), roofing assembly, building construction, and availability of fire protection resources, placement of gas and electric utilities, and additional rating factors.¹⁶

2.3.5 LAND USE AND DEVELOPMENT TRENDS

Development in Oconee County has often been seen in areas that may be referred to as the wildland urban interface (WUI). WUIs are defined as areas “where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.”¹⁷ Oconee County is predominantly comprised of two of the three main categories of WUI, as follows:

1. Boundary: Classic type of WUI, with a clearly-defined boundary between suburban and rural areas
2. Intermix: Structures, such as rural homes, are scattered in wildland (undeveloped) areas.¹⁸

The Oconee County CWPP includes maps depicting WUI areas. Development in these areas presents challenges to fire safety personnel as a result of inadequate water supply, longer response times for emergency services, inadequate access, and distance between structures simultaneously impacted by wildfire occurrences.¹⁹

Identified land use and development factors from the woodland fire risk assessments conducted in 2011 by the Oconee County Fire Department and the Georgia Forestry Commission contributing to Oconee County’s designation in the “moderate risk: category include:

- Dead end roads with inadequate turn-arounds
- Narrow roads without drivable shoulders
- Long, narrow, and poorly labeled driveways
- Limited street signs and homes not clearly addressed
- Thick, highly flammable vegetation surrounding many homes
- Minimal defensible space around structures
- Homes with wooden siding and roofs with heavy accumulations of vegetative debris
- No pressurized or non-pressurized water systems available
- Above ground utilities
- Large, adjacent areas of forest or wildlands
- Heavy fuel buildups in adjacent wildlands
- Undeveloped lots comprising half the total lots in many rural communities.
- High occurrence of wildfires in the several locations
- Distance from fire stations
- Lack of homeowner or community organizations

16 Georgia Forestry Commission (2012). “Community Wildfire Protection Plan: An Action Plan for Wildfire Mitigation and Conservation of Natural Resources, Oconee County, Georgia,” p. 8-9

17 Retrieved on January 29, 2013 from a report on the U.S. Fire Administration website, entitled, “Fires in the Wildland/Urban Interface” at <http://www.usfa.dhs.gov/downloads/pdf/statistics/v2i16-508.pdf>.

18 Georgia Forestry Commission (2012). “Community Wildfire Protection Plan: An Action Plan for Wildfire Mitigation and Conservation of Natural Resources, Oconee County, Georgia,” p. 9.

19 Ibid., p. 15.

The National Fire Protection Association (NFPA) is responsible for developing and updating standards for fire protection. Relevant land use and development issues are addressed in *NFPA 1141: Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*.²⁰ Three general approaches should be taken for development in the WUI: 1) design developments to be defensible against wildfires, 2) design fire-resistant landscapes and structures, and 3) incorporate fuel reduction treatments to reduce vegetative hazards.²¹

2.3.6 MULTI-JURISDICTIONAL CONCERNS

Though the majority of heavily wooded areas are located outside of the municipal jurisdictions, a small fire burning uncontained within either of the cities may create more damage because of the increased density of development. It is imperative that all three jurisdictions work closely with the Georgia Forestry Commission to continue their joint efforts in combating wildfires countywide.

2.3.7 HAZARD SUMMARY

It is difficult to estimate the losses as a result of wildfires because the extent of damages depends solely on the severity of the fire and the types of structures and/or property that are impacted. To guide wildfire mitigation efforts, the 2012 Oconee County CWPP identified several priorities in the following categories: Community Wildland Fuel Reduction, Community Wildland Fire Response, and Education and Outreach. Mitigation actions will vary, as wildfires may be classified as both a natural and a technological, or manmade, hazard.

2.4 WINTER STORMS

2.4.1 HAZARD IDENTIFICATION

Winter storms include snow, freezing rain, sleet, freezing temperatures, or a combination thereof²². The most prevalent occurrences of winter storms in Oconee County are accumulations of ice as the result of freezing rain and temperatures dropping below the freezing point. Ice storms, in particular, can generate extensive damage to trees and power lines as well as create unsafe driving conditions.

2.4.2 HAZARD PROFILE

The severity and characteristics of winter storms vary greatly, but all winter storms are capable of causing extensive damages. Temperatures in Oconee County rarely reach the extreme cold experienced in northern climates, but freezing temperatures accompanied by high winds can produce a wind chill factor that may be dangerous if overexposed.

Winter storms in Oconee County are most prevalent during the months of December through February. Southern winter storms are usually the result of northern cold fronts moving southward which typically affords the local EMA and general population ample time to prepare for adverse conditions.

Over the past 61 years there have been 43 occurrences of winter storms in Oconee County recorded by the NCDC, detailed in Hazard Frequency Table located in Appendix A. The worst recorded event was a winter storm that occurred in January of 2000 and caused approximately \$1.3 million in damages. Based on the historic frequency recorded by the NCDC, the county can expect a winter storm event every 1.42 years.

2.4.3 ASSETS EXPOSED TO HAZARD

There is no methodology to predict where a winter storm event is going to occur, and therefore the entire county is vulnerable. Additionally, winter storms generally affect very large areas. All identified critical facilities are susceptible to damages caused by winter storms.

20 This document is available for purchase through the NFPA website at http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=1141&cookie_test=1.

21 Department of Landscape Architecture, Mississippi State University. *Wildfire Planning Strategies for Community Design: A Guide for Southeastern Developers and Planners*, p. 31. Retrieved on August 17, 2011 from http://www.lalc.msstate.edu/research/wildfire/Wildfire_Planning_Strategies.pdf.

22 Additional information about winter storms is accessible from the FEMA website at <http://www.fema.gov/hazard/winter/index.shtm>.

2.4.4 ESTIMATE OF POTENTIAL LOSSES

All Critical Facilities were determined to be at risk of damage from Winter Storms. Additionally, crops throughout the County are susceptible to losses.

Damages from winter storms are typically caused by an accumulation of ice on trees, limbs, or power lines that can result in loss of power and property damage. Winter weather also creates adverse road conditions that pose an increased risk to motorists. The accident rate can be much higher during winter storm events, particularly to a resident population that is not accustomed to driving under these conditions. The accumulation of snow or ice beyond the typical winter weather months can result in crop losses and have a devastating impact on the agricultural industry.

The 43 winter storms recorded by the NCDRC resulted in a reported loss of \$4,136,955 in property and crop damage.

2.4.5 LAND USE AND DEVELOPMENT TRENDS

Most land use and development trends will not inform the strategies identified to mitigate the possible effects of winter storms, as the entire county is at equal risk for these types of hazard events.

2.4.6 MULTI-JURISDICTIONAL CONCERNS

All of Oconee County is vulnerable to the effects of winter storms. All mitigation goals, objectives and strategies are applicable to each jurisdiction.

2.4.7 HAZARD SUMMARY

Based on frequency and reported damage, winter storms pose a significant threat to Oconee County. Winter storms have the potential to immobilize the entire county. Extended periods of power outages due to down power lines pose a risk to residents who primarily heat their homes with electricity. Roads that are blocked or covered in ice may delay any needed assistance as well as put motorist at risk. As the risk for winter storms is equal throughout the county, most mitigation strategies will need to address the community as a whole.

2.5 FLOODS

2.5.1 HAZARD IDENTIFICATION

A flood is a partial or complete inundation of water on normally dry areas. The causes of flooding include severe thunderstorms, tropical cyclones, seasonal rains, run-off from snow or ice, and other weather-related conditions.²³ The severity of flooding is also a function of environmental variables such as topography, previous ground saturation, soil types, and native vegetative cover, urbanization, and drainage patterns.

Flash flooding is characterized by rapid accumulation or runoff of surface waters. Flash flooding impacts smaller rivers, creeks, and streams and can occur when the soil becomes oversaturated or when excess volumes of water collect on impervious surfaces.

2.5.2 HAZARD PROFILE

Flooding in Oconee County is most commonly associated with severe thunderstorms that typically generate during the Atlantic hurricane season, which runs from June to November. However, due to the southeastern climate, flooding may occur year-round due to the potential for prolonged periods of precipitation during any month.

During the past 61 years, there have been 6 flood events in Oconee County recorded by the NCDRC, detailed in Hazard Frequency Table located in Appendix A.

²³ Additional information about thunderstorms is accessible from the FEMA website at: <http://www.fema.gov/hazard/flood/index.shtml>

Based on the historic frequency recorded by the NCDRC, the county can expect a flood event every 10.17 years. However, as illustrated by the level of activity during particular years, the number of occurrences is directly related to the severity of the storm season.

2.5.3 ASSETS EXPOSED TO HAZARD

In September 2009, FEMA completed a Flood Insurance Study (FIS) for Oconee County which included creation of Digital Flood Insurance Rate Maps (FIRM) for Oconee County and its incorporated areas. The FIS identified principal flood problems in Oconee County as low-lying areas adjacent to Barber Creek, Calls Creek and the Oconee River that are subject to periodic flooding which accompanies major storm events.²⁴ The Oconee County FIRM delineates specific flood insurance risk zones that correspond with 1-percent-annual-chance floodplains (also known as the 100-year floodplain) and 0.2-percent-annual-chance floodplains (also known as the 500-year floodplain) as well as areas outside of these floodplain zones.

Approximately 6.98% percent of Oconee County is covered by either 100-year or 500-year floodplains. Based on an evaluation of the location of critical facilities, there are no critical facilities located within flood hazard areas. However, the county has a number of roadways that traverse streams within flood prone areas, which have the potential to be damaged during prolonged rainstorms.

2.5.4 ESTIMATE OF POTENTIAL LOSSES

The potential losses from flooding are difficult to determine due to the variable intensity of rainfall associated with each storm event. The largest direct potential loss in the county is related to the repeated damage of the local road network. Additionally, because of the large amount of agriculturally productive land, there is a possibility that extreme flood damage could have a major adverse impact on agricultural production. The result of the 6 flood events recorded by the NCDRC is a reported loss of \$ \$333,853 in property and crop damage.

One (1) repetitive loss property has been identified in Oconee County. Repetitive loss properties are defined as a National Flood Insurance Program (NFIP) insured property or structure that has had at least two paid flood losses of more than \$1,000 each in any 10-year period since 1978.²⁵

2.5.5 LAND USE AND DEVELOPMENT TRENDS

Oconee County has experienced a mix of both rural and suburban development. Increased development throughout the County may cause an increased risk of flooding. Not only can new development in areas already prone to flooding result in potential losses, but development of impervious surfaces and urban infrastructure elsewhere in the County may result in increased risks. The construction of new roads, parking lots, roof-tops, and other impervious surfaces typically increases surface runoff volumes beyond pre-development levels, thereby creating a greater risk of flooding downstream in the watershed and potentially enlarging floodplains.

Oconee County, Watkinsville, Bishop, Bogart and North High Shoals participate in the National Flood Insurance Program and all with the exception of Bishop currently have FEMA approved flood hazard identification maps. Additionally, all construction is required to meet the standards set forth by the Georgia State Minimum Standard Codes (Uniform Code Act) and the International Building Code. Minimum standards established by these codes provide reasonable protection for persons and property within structures that comply with the regulations for most natural hazards.

2.5.6 MULTI-JURISDICTIONAL CONCERNS

24 Retrieved on February 12, 2013, from the Georgia Floodplain Mapping Program website at <http://www.georgiadfirm.com/status/oconee/13219CV000A.pdf>

25 Retrieved on February 12, 2013 from the FEMA website at <http://www.fema.gov/business/nfip/19def2.shtm>

Each of the jurisdictions is subject to the potential damages caused by floods, although those areas lying within the defined flood hazard boundary, as illustrated in Appendix A, are subject to increased vulnerability to flood hazards.

2.5.7 HAZARD SUMMARY

The occurrences of flood events in Oconee County are typically correlated with the occurrences of severe thunderstorms that carry excessive amounts of rainfall. As indicated in the flood hazard boundary map in Appendix A, each of the jurisdictions has varying levels of vulnerability to flooding.

3.0 TECHNOLOGICAL HAZARD, RISK, AND VULNERABILITY

HAZARD	SECTION	UPDATE
Hazardous Material Releases	3.1.1 Hazard Identification	Text revisions
	3.1.2 Hazard Profile	Text revisions; updated information
	3.1.3 Assets Exposed to Hazard	Text revisions, updated information
	3.1.4 Estimate of Potential Losses	Text revisions
	3.1.5 Land Use & Development Trends	Text revisions
	3.1.6 Multi-Jurisdictional Concerns	Text revisions
	3.1.7 Hazard Effects Summary	Text revisions

Table 1: Overview of Updates to Chapter 3: Technological Hazard, Risk, and Vulnerability

3.1 HAZARDOUS MATERIAL RELEASES

3.1.1 Hazard Identification

Hazardous materials are chemical substances which if released or misused can pose a threat to the environment and the health and welfare of the population. These products are used in industry, agriculture, medicine, research, and consumer goods. They can take the form of explosives, flammable and combustible substances, poisons, and radioactive materials. The release of these substances into the environment is most often a result of transportation accidents or because of chemical spills in industrial areas.

3.1.2 Hazard Profile

Oconee County has seen numerous hazardous materials spills in its history, as highways and railways pass through the County, increasing the probability of transportation-related spills. Transportation-related hazardous material releases carry the potential for the greatest exposure to risk and also are impossible to predict because they typically involve an accident of some kind. There have been 20 reported hazardous material releases in Oconee County between 2000 and 2012, as recorded by the Georgia Department of Natural Resources (DNR) Emergency Response Team (see GEMA Worksheet #1 Addendum in Appendix D). The majority of these incidents are the result of individuals, businesses, or utility departments (knowingly or unknowingly) releasing hazardous materials in waterways.

Based on the historic frequency recorded by the DNR the county can expect a hazardous material release event every 0.60 years. As the DNR only records reported events through its complaint tracking system, this figure may misrepresent the actual number of individual releases.

3.1.3 Assets Exposed to Hazard

There are currently two sites in Oconee County listed on the DNR Hazardous Site Inventory (HSI), last updated in July 2012. This listing provides an inventory of sites where there has been a known or suspected release of a regulated substance above a reportable quantity and which have yet to show they meet state clean-up standards.

ID#	SITE NAME	LOCATION	PRIORITY
10048	American Linen Supply Company (former)	1081 Experiment Station Road	Class V
10206	Murrow Brothers Delinting Waste	3361 Macon Highway	Class II

Table 2: Oconee County H.S.I Listings

The clean-up standards establish levels for regulated substances that are protective of human health and the environment under specific conditions. The sites listed on the HSI are separated into five classes, which are described as follows:

- **CLASS I:** Sites that have resulted in known human exposure to regulated substances, that have sources of continuing releases, or that are causing serious environmental problems are designated on the HSI as Class I sites. These sites will be EPD's highest priority for corrective action. Persons responsible for these sites are required to perform corrective action and put a notice in the deed to their property. If a responsible party fails to perform corrective action as required, EPD may use the state hazardous waste trust fund to clean up the site and then recover the cost of the cleanup from the responsible party later.
- **CLASS II:** For many sites listed on the HSI, further evaluation of the site must be done before EPD can decide whether corrective action is needed. These are known as Class II sites. Persons responsible for Class II sites are given an opportunity to voluntarily investigate and clean up their site and report their findings to EPD. The site is either removed from the HSI or reclassified as Class I, III, or IV based on whether it meets the clean-up standards. While classified as Class II, sites are not designated as needing corrective action, so property owners do not immediately have to place notices on deeds and other property records. If a responsible party at a Class II site fails to do the required investigation, the site priority can be upgraded to Class I.
- **CLASS III:** Sites designated on the HSI as Class III sites are those that cannot meet residential clean-up standards but do meet alternative clean-up standards. These sites are designated as needing corrective action and the property owners are required to make the same deed notices as apply to Class I sites. These sites may require continued monitoring to make sure they continue to meet the appropriate standards. They will also require further corrective action before they can be used for residential purposes. Class III sites that meet the non-residential standards will be removed from the HSI once the property owner has filed a deed notice. Land use is restricted, and the responsible party must provide long term monitoring and maintenance of the site.
- **CLASS IV:** These are sites where corrective action is already being conducted or has been completed under other federal or state authority. These sites are presumed to be in compliance with clean-up standards. They are designated as needing corrective action, remain on the HSI, and the property owner is required to file deed notices. If it is ever determined that the corrective action at a Class IV site does not protect human health or the environment, then the site may be re-designated from Class IV to Class I. If it can be certified that the site meets one of the other clean-up standards, it can be reclassified and may be removed from the HSI.
- **CLASS V:** These are sites that have a known release that requires corrective action and are not in compliance with any of the risk reduction standards of *Rule 391-3-19-.07*, but corrective action is being performed in compliance with a corrective action plan approved by the Director which will bring the site into compliance with the risk reduction standards.

The biggest threat to Oconee County is the potential for a hazardous material release resulting from a train derailment or other transportation-related accident. Hazardous materials spills often occur in locations where these materials are stored but, more frequently, along transportation routes they travel. Transportation associated releases account for most of the waterway contamination related to this category of study.

While not as frequent as transportation related spills, fixed facility releases are also possible in Oconee County. There are several sites within the County where significant quantities of hazardous materials are used or stored.

Hazardous material releases can also pose a threat to the portions of the population that utilize wells for drinking water supplies and to waterways throughout the County.

3.1.4 Estimate of Potential Losses

There is little available data to quantify damage caused by hazardous materials. Most of the reported damage is environmental, where spills affected water resources. These potential losses are also difficult to estimate. The PDM Planning Committee determined that the greatest potential losses will occur on or near roadways, based on previous occurrences. The county's critical facilities that lie near these identified transportation routes represent the greatest threat of loss from hazardous materials.

It is extremely difficult to anticipate the long-term effects of hazards for which no long-term historical data is readily available for study. The unpredictable nature of hazardous material releases makes it impossible to accurately estimate the specific time, conditions, amount, and concentration of many of the materials that pass through our community daily. These variables make estimating future damages extremely difficult. Because of the existence of so many variables, it is important for the community to continue to monitor, learn about, and train to respond to these incidents.

3.1.5 Land Use and Development Trends

Oconee County currently has no land use and development trends relative to hazardous materials spills. The standard industrial and commercial zoning districts within the County and municipalities that have adopted them segregate uses that could pose a threat to the health, safety, and welfare of the population.

3.1.6 Multi-Jurisdictional Concerns

Oconee County, including the municipalities, is vulnerable to the impact of hazardous materials release. While the County is possibly more vulnerable to fixed facility releases due to the higher number of manufacturing facilities in the unincorporated areas of the County, there is shared vulnerability county-wide to transportation related releases due to the existence of highways and railways throughout. The City of Watkinsville may arguably have a higher vulnerability to fixed facility releases than do Bishop, Bogart and North High Shoals in view of the concentration of fuel stations and propane and natural gas retailers in Watkinsville. For purposes of mitigation planning, however, all areas of the county are considered to be vulnerable to both fixed facility and hazardous materials release.

3.1.7 Hazard Summary

Although the possibility for a major release or other accident seems remote, the potential for serious effects must be considered. Spills can occur at points of operation but greater potential damage, both to property and people, exist as these materials move through the county. As the PDM Planning Committee identified roads, bridges, and rail lines where hazardous materials travel, mitigation actions are identified that reduce potential losses resulting from hazardous materials. In general, an increase in partnership and communication between facilities that store and use potentially hazardous materials and local emergency management personnel will help to reduce the likelihood of a release and allow a timely and appropriate response should one occur in the future.

4.0 NATURAL HAZARD MITIGATION GOALS AND OBJECTIVES

HAZARD:	SECTION:	UPDATE:
Severe Thunderstorms	4.1.1 Community Mitigation Goals	Text changes; Addition of Tornados
	4.1.2 Identification & Analysis of Range of Mitigation Options	Text changes; Addition of Tornados
	4.1.3 Mitigation Strategy and Recommendations	Multiple changes/revisions
Drought	4.2.1 Community Mitigation Goals	Text changes; Separation of Drought & Wildfire
	4.2.2 Identification & Analysis of Range of Mitigation Options	Text changes; Separation of Drought & Wildfire
	4.2.3 Mitigation Strategy and Recommendations	Multiple changes/revisions
Wildfire	4.3.1 Community Mitigation Goals	Text changes; Separation of Drought & Wildfire
	4.3.2 Identification & Analysis of Range of Mitigation Options	Text changes; Separation of Drought & Wildfire
	4.3.3 Mitigation Strategy and Recommendations	Multiple changes/revisions
Winter Storms	4.4.1 Community Mitigation Goals	Text changes
	4.4.2 Identification & Analysis of Range of Mitigation Options	Text changes
	4.4.3 Mitigation Strategy and Recommendations	Multiple changes/revisions
Floods	4.5.1 Community Mitigation Goals	Text changes
	4.5.2 Identification & Analysis of Range of Mitigation Options	Text changes; update with NFIP participation
	4.5.3 Mitigation Strategy and Recommendations	Multiple changes/revisions
All Hazards	4.6 Mitigation Strategy and Recommendations	Multiple changes/revisions

Table 3: Overview of Updates to Chapter 4: Local Natural Hazard Mitigation Goals and Objectives

4.1 SEVERE THUNDERSTORMS

4.1.1 Community Mitigation Goals

Severe Thunderstorms, which include hail, lightning and tornados, pose the most serious threat to Oconee County and its residents based on the historic frequency of events discussed in Chapter 2. Thunderstorms are also the most difficult hazard to predict, making the identification of appropriate and effective mitigation strategies difficult. The highest priority for the county is increasing public awareness prior to the development of a severe thunderstorm event.

4.1.2 Identification and Analysis of Range of Mitigation Options

Thunderstorms require both structural and non-structural mitigation strategies due to the widespread impacts these events may have. The most important mitigation strategy relates to public awareness, particularly for vulnerable populations. To this end, several mitigation actions relating to public education, engagement, and notification relating to all potential hazards in Oconee County have been identified. However, there are also mitigation opportunities to increase structural resistance to severe thunderstorms.

Mitigation options relating to new buildings and infrastructure have been targeted toward ensuring that new manufactured and mobile homes are reinforced to maintain their structural resistance to the effects of severe thunderstorms. Mitigation options relating to existing buildings and infrastructure address the vulnerability of critical facilities to lightning strikes and the reinforcements required for existing manufactured and mobile homes to reduce their vulnerability to severe thunderstorms.

4.1.3 Mitigation Strategy and Recommendations

The goals, objectives, and action steps for severe thunderstorms from the 2007 plan were evaluated by Steering Committee members. The goals and objectives were updated to improve clarity, and each "Action

Step” was categorized as completed, in progress, cancelled, or postponed (see Appendix D for this document). With the 2007 plan’s “in progress” and “postponed” Action Steps as a starting point, the committee formulated a new list of mitigation Action Items. Updated mitigation action steps for severe thunderstorms are coded “ST.”

SEVERE THUNDERSTORMS & TORNADO						
Goal: Mitigate the impacts of severe thunderstorms on public safety, structures, and critical facilities throughout Oconee County and its municipalities						
Objective 1: Reduce the risks to life and property associated with severe thunderstorms, hail, lightning and tornados in Oconee County and its Municipalities through educating the public on potential impacts and increasing public awareness of emergency preparations and procedures						
Objective 2: Provide means for advanced public notification through multiple outlets in the event of severe thunderstorms and ensure public awareness of notification systems						
Objective 3: Improve preparedness and response measures to mitigate potential structural damage from severe thunderstorms						

SEVERE THUNDERSTORMS & TORNADO						
ID	ACTION ITEM DESCRIPTION	PRIORITY	TIMEFRAME	ESTIMATED COST	FUNDING SOURCE	RESPONSIBLE PARTY
ST1	Educate the public about the benefits of smoke detectors in attics and encourage installation	3	2013	Minimal; Staff Time	N/A	Fire Rescue
ST2	Have city and county personnel take weather spotter classes and encourage residents to participate through PSAs and website	2	2014; Every two years	Staff Time	N/A	NOAA, Oconee County and City Government Staff
ST3	Acquire and install new tornado warning sirens as funding allows and explore potential funding opportunities	3	Ongoing as funding allows	\$25,000/siren	SPLOST, grants, BOC, BOE, general fund	BOC, BOE, EMA, DOD
ST4	Explore new technology for notification, including smart phone and reverse 911 systems	3	2013 and Ongoing	Staff Time	General budget; SPLOST for notification systems	EMA
ST5	Identify and implement new ways to educate public about notification systems available, including social media, websites, and marketing campaigns	3	2018	\$1,000-2,000/year	General Fund	EMA

ST6	Explore working with marketing consultant on education and mitigation awareness campaign	3	Yearly consultation	Varies	General Fund	EMA, County Administrator
ST7	Pursue grants for weather radio distribution	3	2014-2015	Staff Time	Grants	EMA
ST8	Assess the vulnerability of key critical facilities to lightning strikes and seek funding for lightning rods at critical facilities as needed	3	Ongoing	\$1,000-5,000 each	General fund	County Facilities, EMA
ST9	Continue to implement notification plans for recalling necessary personnel in case of severe thunderstorms	2	Ongoing	Staff Time	N/A	EMA, Sherriff's Department

4.1.4 Special Multi-Jurisdictional Strategy and Considerations

Severe thunderstorm and tornado events can occur throughout the county and all areas are equally vulnerable.

4.1.5 Local Public Information and Awareness Strategy

A primary mitigation strategy involves the county's ability to notify its residents of severe thunderstorm and tornado occurrences because of the rapid development of storm events. It is also imperative that part of the mitigation strategy involves educating the public on preparedness to increase the safety of the population.

4.1.6 Action Steps Revisions

Appendix D includes a Report of Accomplishments table, which indicates which Action Steps from the 2007 plan were completed, postponed, in progress, or cancelled. Several of these "in progress" or "postponed" Action Steps were used as a starting point for the Action Items in this plan update. However, all of these Action Steps were revised and updated for increased clarity, readability, and usability.

Unchanged Action Steps: There were no unchanged Action Steps from the 2007 plan.

New Action Steps: All Action Items in this plan update are new, although several are based on Action Steps from the 2007 plan.

4.2 DROUGHT

4.2.1 Community Mitigation Goals

The Committee determined that while Droughts and Wildfire were considered as a single hazard in the 2007 plan, the mitigation goals and strategies were sufficiently distinct to warrant separate consideration in this plan update.

As discussed in Chapter 2, droughts are prolonged events that affect the agricultural community and public and private water supplies. In addition to actions supporting livestock production during drought occurrences, the Committee identified regulatory and resource-sharing action steps. Some actions relating to public education, engagement, and notification overlap with other hazards and are included in section 4.6.

4.2.2 Identification and Analysis of Range of Mitigation Options

The Committee considered the potential effects of drought and considered potential mitigation options. These options involve primarily non-structural mitigation in preventing any potential losses by providing information to the public. It is possible that some structural options could be identified at a later date as drought effects are monitored and as the County continues to grow. Additionally, potential new sources of water were discussed.

Oconee County has adopted a water conservation ordinance and imposes watering restrictions during periods of drought. New construction within the county conforms to existing building codes and no special codes relating to drought are limited to xeriscaping guidelines.

Droughts may also greatly affect crop and livestock production. The committee considered mitigation options aimed at lessening the effects of drought on the local agricultural economy.

4.2.3 Mitigation Strategy and Recommendations

The goals, objectives, and action steps for drought from the 2007 plan were evaluated by Steering Committee members. The goals and objectives were updated to improve clarity, and each "Action Step" was categorized as completed, in progress, cancelled, or postponed (see Appendix D for this document). With the 2007 plan's "in progress" and "postponed" Action Steps as a starting point, the committee formulated a new list of mitigation Action Items. Updated mitigation action steps for drought are coded with "D."

DROUGHT						
Goal: Minimize the impact of droughts on the local population, agriculture, economy, and water supply.						
Objective 1: Educate the public on water conservation and the potential impacts of prolonged droughts.						
Objective 2: Assist the community in developing mitigation strategies minimizing the impacts of droughts on the County's crops, livestock, water supply, and economy.						

DROUGHT						
ID	ACTION ITEM DESCRIPTION	PRIORITY	TIMEFRAME	ESTIMATED COST	FUNDING SOURCE	RESPONSIBLE PARTY
D1	Continue to educate the public on drought levels and conservation measures through a variety of avenues including websites, water bills, mailings, phone, schools	1	Ongoing	Staff Time, \$1,000-2,000/year	Enterprise Fund	Intern program, consultant, Utilities
D2	Explore opportunities for additional water sources, primarily wells, including Charity Lane well restoration	3	2013, ongoing	\$200,000-300,000/year	SPLOST, Enterprise Fund	Utility Department
D3	Promote federal, state, and local incentive and grant programs, such as the Environmental Quality Incentive Program (EQIP), to offset the effects of drought on the agricultural community and economy.	1	Ongoing	Staff Time	N/A	USDA, FSA, Extension Services
D4	Continue to monitor Hard Labor Creek stream restoration project	1	2013-2020	Staff Time	N/A	Corps of Engineers, Contractor, Hard Labor Creek Management Board

4.2.4 Special Multi-Jurisdictional Strategy and Considerations

Though prolonged drought affects the entire county, the majority of the impacts are felt within the agricultural community.

4.2.5 Local Public Information and Awareness Strategy

The primary mitigation strategy involves increased public education and awareness to reduce the inefficient use of water by individual households. Key action steps relating to public information and awareness that apply to all hazards (“AH”) are described in detail in section 4.6.

4.2.6 Action Steps Revisions

Completed Action Steps, Unchanged Action Steps, and Deleted and/or Revised Action Steps

The 2007 plan included no Action Steps for droughts. All Action Items in the plan update are new.

4.3 WILDFIRE

4.3.1 Community Mitigation Goals

The Committee determined that while Droughts and Wildfire were considered as a single hazard in the 2007 plan, the mitigation goals and strategies were sufficiently distinct to warrant separate consideration in this plan update.

Although wildfires are categorized as randomly occurring events, they are often with the result of dry weather associated with weather-influenced seasonal conditions. However, this is not always the pattern. Weather is the major factor for influencing wildfires regardless of drought conditions. They are also often a result of human carelessness as caused by the burning of debris. However, other causes include machine use, lightning, children, campfires, smoking, and arson.

The highest mitigation priority is to maintain a cooperative relationship among municipalities, fire departments, and the Georgia Forestry Commission to ensure that the County can minimize the potential damage to lives, property, natural resources, and the economy.

4.3.2 Identification and Analysis of Range of Mitigation Options

Uncontrolled wildfires can have devastating impacts on natural resources, property, and structures. Mitigation measures relating to structural impacts are largely related to fire protection services and increased training for local firefighters. Non-structural strategies are related to public education and awareness to increase fire prevention.

Water plays a major role in the county’s ability to combat wildfires. Similarly to policies related to drought mitigation, the County’s water service districts designed to accommodate new growth in the county to ensure adequate access to water. This includes adequate fire protection service to new residential and commercial developments.

Wildfires pose a threat to community character areas near developed areas, including the County’s incorporated areas.

Even though there are no specific mitigation strategies for new buildings or infrastructure, it is recommended to use Firewise strategies for structural and home protection.

Mitigation options relating to existing buildings and infrastructure are targeted towards the increased training of all firefighters reducing the vulnerability of land, life, and property countywide.

4.3.3 Mitigation Strategy and Recommendations

The 2007 plan did not include any goals, objectives or action steps for wildfires. Steering Committee members discussed the County and cities' mitigation strategies and decided to base its recommendation on the 2011 Oconee County Community Wildfire Protection Plan (CWPP).

WILDFIRE						
Goal: Reduce the potential for damage to the general population and personal and public property resulting from the impacts of wildfires.						
Objective 1: Protect lives, property, the environment, and the economy in Oconee County through continued implementation of the Wildfire Protection Plan						
Mitigation Action Items						
ID	ACTION ITEM DESCRIPTION	PRIORITY	TIMEFRAME	ESTIMATED COST	FUNDING SOURCE	RESPONSIBLE PARTY
WF1	Continue to enforce state-mandated burn bans and educate the public on safe, legal burning and the consequences of illegal burns	1	Ongoing	Staff Time	N/A	EMA, Oconee County Fire Rescue, Code Enforcement, GFC
WF2	Continue to promote wildfire education and awareness in elementary schools	1	Yearly	Staff Time	N/A	Oconee Fire Rescue

4.3.4 Special Multi-Jurisdictional Strategy and Considerations

There are no discernible patterns in the location of wildfires throughout the county, and therefore each jurisdiction is equally susceptible.

4.3.5 Local Public Information and Awareness Strategy

The primary mitigation strategy involves increased public education and awareness to increase individual responsibility in preventing unnecessary wildfires. Key action steps relating to public information and awareness that apply to all hazards ("AH") are described in detail in section 4.7.

4.3.6 Action Steps Revisions

Completed, Unchanged, and Deleted and/or Revised Action Steps

The 2007 plan included no Action Steps for wildfires. All Action Items in the plan update are new.

4.4 WINTER STORMS

4.4.1 Community Mitigation Goals

Although winter storms do not occur as frequently as in northern climates, they can still have an adverse impact on Oconee County. As discussed in Chapter 2, winter storms may bring about accumulated ice on roads, trees, and power lines that create dangerous conditions and cause structural damage. While there is little that can be done to mitigate the accumulation of ice, increasing public education and awareness regarding safety procedures during winter storm events is the highest priority in reducing the population's vulnerability.

4.4.2 Identification and Analysis of Range of Mitigation Options

The majority of damage related to winter storm events is structural in nature, resulting from fallen tree limbs. Though structural damage is the most prevalent form, it is the most difficult to mitigate. Local power companies have a power line right-of-way (ROW) cutting strategy in place, and the County has an ordinance prohibiting planting trees in rights-of-way or utility easements. The primary focus for reducing the county's vulnerability is to increase public awareness, particularly related to the dangers associated with driving during winter storm conditions. Mitigation actions relating to public education, engagement, and notification pertaining to all potential hazards in Oconee County have been identified, and are located in section 4.6 of this document.

There are few other policies, regulations, ordinances or land use trends that relate directly to the mitigation of winter storm events. With this in mind, the mitigation strategies formulated by the committee are focused on awareness and adequate preparation. Many winter storm-related mitigation measures also apply to various other hazards, and are included in section 4.7.

There are no immediate threats to any community character area as a result of winter storms.

There are no specific mitigation strategies for new buildings or infrastructure.

Mitigation options relating to existing buildings and infrastructure are targeted towards ensuring that emergency power sources are adequate, operational, and efficient at all critical facilities.

4.4.3 Mitigation Strategy and Recommendations

The goals, objectives, and action steps for winter storms from the 2007 plan were evaluated by Steering Committee members. The goals and objectives were updated to improve clarity, and each "Action Step" was categorized as completed, in progress, cancelled, or postponed (see Appendix D for this document). With the 2007 plan's "in progress" and "postponed" Action Steps as a starting point, the committee formulated a new list of mitigation Action Items. Updated mitigation action steps for winter storms are coded with "WS."

WINTER STORMS	
Goal: Minimize the impacts of winter storms on public safety, structures, and critical facilities throughout the County.	
Objective 1: Educate the public and government staff on potential impacts of winter storms and increase public awareness of emergency preparations and procedures	
Objective 2: Improve preparedness and response measures to mitigate potential damage from winter storms.	

WINTER STORMS						
ID	ACTION ITEM DESCRIPTION	PRIORITY	TIMEFRAME	ESTIMATED COST	FUNDING SOURCE	RESPONSIBLE PARTY
WS1	Continue to educate the public on the hazards posed by winter storms through a variety of avenues including websites, water bills, mailings, phone, schools	3	Ongoing	Staff Time, \$1,000-2,000/year	Enterprise Fund	EMA, Intern program, consultant, utilities
WS2	Ensure adequate winter storm response supplies, including fuel and salt	2	Ongoing	Fuel cost varies; \$5,000/year for salt	General Fund	Public Works

4.4.4 Special Multi-Jurisdictional Strategy and Considerations

Winter storms affect all of Oconee County and mitigation strategies are applicable to the entire County and all municipalities.

4.4.5 Local Public Information and Awareness Strategy

The primary mitigation strategy involves increased public education and awareness to reduce the potential for personal injury resulting from vehicular crashes. The nature of winter storms (typically predictable events with weather conditions building throughout the day) allows a greater timeframe to generate public warnings, and notification is not as critical as during rapidly occurring events, such as tornados.

Key action steps relating to public information and awareness that apply to all hazards (“AH”) are described in detail in section 4.6.

4.4.6 Action Steps Revisions

Completed Action Steps: All Action Steps identified in the 2007 plan were not fully completed due to their ongoing nature. The Steering Committee modified the language of these action items to be more organized and measurable where possible.

Unchanged Action Steps: There were no unchanged action steps from the 2007 plan.

New Action Steps: All action steps from the 2007 plan will carry over to this update with revised wording.

4.5 FLOODS

4.5.1 Community Mitigation Goals

Flooding has occurred in Oconee County and is typically associated with severe thunderstorms during the Atlantic hurricane season (June–November). The majority of flood damage is limited to facilities within the floodplains of streams and rivers. Oconee County remains a mix of suburban and rural areas, with limited concentrations of urbanized areas containing high percentages of impervious surfaces. The highest priority in the county is mitigating flood damage to roadways lying within the flood hazard boundary.

4.5.2 Identification and Analysis of Range of Mitigation Options

The major implications resulting from flood events relates to structural damages. It is important that the county and each of the cities continue to monitor development adjacent to flood-prone areas (as indicated on floodplain maps) to minimize the impacts of flooding.

Oconee County and the cities of Bogart, Watkinsville, Bishop, and North High Shoals currently participate in the National Flood Insurance Program (NFIP). All municipalities are aware of the county’s compliance with NFIP standards as addressed under the Oconee County Comprehensive Plan, which is supported by all municipalities within the county. There are no immediate threats to any community character area as a result of flooding.

Mitigation options relating to new buildings and infrastructure are targeted toward the enforcement of ordinances directing all new construction and development away from identified flood hazard areas.

Mitigation options relating to existing buildings and infrastructure are targeted towards monitoring and recording flood conditions and taking actions to reduce recurring flood damage to facilities (specifically roadways) located within identified hazard areas.

4.5.3 Mitigation Strategy and Recommendations

The goals, objectives, and action steps for flooding from the 2007 plan were evaluated by Steering Committee members. The goals and objectives were updated to improve clarity, and each “Action Step” was categorized as completed, in progress, cancelled, or postponed (see Appendix D for this document). With the 2007 plan’s “in progress” and “postponed” Action Steps as a starting point, the committee formulated a new list of mitigation Action Items. Updated mitigation action steps for flooding are coded “FL.”

FLOOD
Goal: Reduce the impact of floods throughout the County through floodplain management and mitigation strategies
Objective 1: Minimize damage to lives and property resulting from floods through policy and mitigation efforts
Objective 2: Pursue policies that work toward protecting new development from the adverse effects of flooding

FLOOD						
ID#	ACTION ITEM DESCRIPTION	PRIORITY	TIMEFRAME	ESTIMATED COST	FUNDING SOURCE	RESPONSIBLE PARTY
FL1	Inspect and review flood prevention measures at wastewater treatment facilities to determine if improvements are required to prevent future flood damage	1	Ongoing	Staff Time	N/A	Utility Department
FL2	Continue to inventory culverts on county-maintained roads and add to GIS database	2	Ongoing	Staff Time	N/A	Public Works, GIS
FL3	Monitor flood-prone Barber Creek basin from Barber Creek Road to Highway 78	2	Ongoing	Staff Time	N/A	Planning, Code Enforcement, Public Works
FL4	Continue compliance with NFIP criteria	1	Ongoing	Staff Time	N/A	Planning, Code Enforcement
FL5	Pursue floodplain management certification for planning and building inspection personnel	1	2013-2015	\$2,000/person (one-time expense)	General Fund	Planning, Code Enforcement

4.5.4 Special Multi-Jurisdictional Strategy and Considerations

Flood events are typically constrained by the delineation of flood hazard boundaries; however those boundaries can expand based on the intensity of the flood event. Watkinsville, North High Shoals, and unincorporated Oconee County all contain flood-prone areas, with the majority of potential damage falling in unincorporated areas.

4.5.5 Local Public Information and Awareness Strategy

In order to increase public awareness of the risks associated with flood events it is important that the jurisdictional maps illustrating the flood hazard boundaries be publicized and on display in public areas to allow the population to develop a better understanding of the risks associated with construction in flood-prone areas.

The nature of floods (typically slow-building events) allows a greater timeframe to generate public warnings, and notification is not as critical as during rapidly occurring events, such as tornados.

4.5.6 Action Steps Revisions

Completed Action Steps: All Action Steps from the 2007 plan were determined to be “ongoing” and were used as the basis for the plan update’s Action Items.

Unchanged Action Steps: There were no unchanged action steps from the 2007 plan.

Deleted and/or Revised Action Steps:

All Action Steps identified in the 2007 plan were not fully completed due to their ongoing nature. The Steering Committee modified the language of these action items to be more organized and measurable where possible.

4.6 ALL HAZARDS

The following Action Items apply to of the hazards found in sections 4.1-4.5.

ALL HAZARDS						
PROJECT #	ACTION ITEM DESCRIPTION	PRIORITY	TIMEFRAME	ESTIMATED COST	FUNDING SOURCE	RESPONSIBLE PARTY
AH1	Inventory backup power at Department of Human Resources/American Red Cross-approved shelters	2	2014 and ongoing	Staff Time	N/A	Red Cross
AH2	Provide adequate information to the public about approved shelter locations through a variety of channels	2	Ongoing	Staff Time	N/A	County EMA, Red Cross
AH3	Keep Red Cross emergency shelter plan up-to-date and accurate	2	Ongoing	Staff Time	N/A	Red Cross
AH4	Develop a plan for pet-friendly shelters and ensure that the public is aware of shelters’ pet policies	3	2014-2015	Staff Time	N/A	Extension Office, Red Cross
AH5	Continue to participate in cross-training exercises among fire departments	1	Ongoing	Staff Time	N/A	Fire and Rescue
AH6	Educate the public about disaster preparedness and response through weather safety media articles, publications, and public service radio announcements	1	Ongoing	Staff Time, \$1,000-2,000/year	General Fund	EMA

5.0 LOCAL TECHNOLOGICAL HAZARD MITIGATION GOALS AND OBJECTIVES

HAZARD TYPE	SECTION	UPDATE SUMMARY
Hazardous Material Releases	5.1.1 Community Mitigation Goals	Text Revisions
	5.1.2 Identification & Analysis of Range of Mitigation Options	Text Revisions
	5.1.3 Mitigation Strategy and Recommendations	Multiple changes/revisions
	5.1.4 Special Multi-Jurisdictional Strategy and Considerations	Text Revisions
	5.1.5 Local Public Information and Awareness Strategy	Text Revisions
	5.1.6 Action Steps Revisions	Text Revisions

Table 4 : Overview of Updates to Chapter 5: Local Technological Hazard Mitigation Goals & Objectives

5.0 LOCAL TECHNOLOGICAL HAZARD MITIGATION GOALS AND OBJECTIVES

HAZARD TYPE	SECTION	UPDATE SUMMARY
Hazardous Material Releases	5.1.1 Community Mitigation Goals	Text Revisions
	5.1.2 Identification & Analysis of Range of Mitigation Options	Text Revisions
	5.1.3 Mitigation Strategy and Recommendations	Multiple changes/revisions
	5.1.4 Special Multi-Jurisdictional Strategy and Considerations	Text Revisions
	5.1.5 Local Public Information and Awareness Strategy	Text Revisions
	5.1.6 Action Steps Revisions	Text Revisions

Table 5 : Overview of Updates to Chapter 5: Local Technological Hazard Mitigation Goals & Objectives

5.1 HAZARDOUS MATERIAL RELEASES

5.1.1 Community Mitigation Goals

Hazardous material releases are difficult to predict because those producing the greatest damages are typically associated with transportation accidents (tractor trailers overturning or train derailment). Because of the location of major transportation corridors (both road and rail) intersecting the county and in proximity to key critical facilities, the highest priority is to develop an assessment of the county's vulnerability to hazardous material releases.

The PDM Planning Committee considered mitigation of the effects of a hazardous material releases (the most significant technological hazard that may affect the county) and attempted to identify possible measures to address training and awareness concerns with a focus toward prevention of incidence and protection of the environment.

5.1.2 Identification and Analysis of Range of Mitigation Options

In addressing mitigation for hazardous materials, both structural and non-structural actions were considered, and ultimately no structural projects were deemed feasible over the five-year life of the plan update.

Occurrences of hazardous material releases have the potential to occur with greater frequency on or near roads, rail lines and bridges, making collaboration and communication with both the public and entities that store and transport hazardous materials a high priority.

There are no policies, regulations, ordinances or land use trends that relate to the mitigation of hazardous material releases.

There are no immediate threats to any community character area as a result of hazardous material releases.

There are no specific mitigation strategies for new buildings or infrastructure.

There are no specific mitigation strategies for existing buildings or infrastructure outside of emergency response facilities.

5.1.3 Mitigation Strategy and Recommendations

The goal, objectives, and action steps for winter storms from the 2007 plan were re-evaluated by Steering Committee members. The goal and objectives were revised for increased clarity, applicability, and organization. The Steering Committee completed a report on mitigation actions identified in the previous plan (see Appendix D for this document), and revised these as necessary. Updated mitigation action steps for Hazardous Material Releases are coded with “HMR.”

HAZARDOUS MATERIAL RELEASES						
Goal 1: Mitigate the potential loss of life and property resulting from the release of hazardous materials.						
Objective 1: Ensure proper training of city and county response personnel for hazardous material releases						
Goal 2: To reduce the negative impacts of hazardous materials releases on lives, property and the environment.						
Objective 2: Ensure that warning and communication systems are able to meet the needs of response personnel and the public.						

HAZARDOUS MATERIAL RELEASES						
ID	ACTION ITEM DESCRIPTION	PRIORITY	TIMEFRAME	ESTIMATED COST	FUNDING SOURCE	RESPONSIBLE PARTY
HMR1	Develop procedures for issuance of public safety announcements detailing location and procedures to follow	1	Ongoing)	N/A	N/A	SO/EMA
HMR2	Develop an evacuation plan for locations with high concentrations of people	1	Ongoing	N/A	N/A	EMA
HMR3	Initiate an interoperability communication network with all agencies departments in the county and with surrounding county agencies/departments:	1	Ongoing	Already in place	N/A	EMA

HMR4	Train all county and city public service personnel to Hazardous Material Awareness level	1	Ongoing	N/A	N/A	SO/Fire/EMA
HMR5	Implement a warning system for the county and cities that through towers and sirens can alert residents and play a voice detailing the magnitude and path of an impending storm or hazardous incident	3	2018 and ongoing	\$250,000.	SPLOST	EMA
HMR6	Provide for all necessary equipment and technology required to implement Emnet at full potential	3	2016 and ongoing	To be determined	General Fund	EMA

5.1.4 Special Multi-Jurisdictional Strategy and Considerations

There are no special multi-jurisdictional requirements necessary for hazardous material releases. A potential event is most likely to occur near transportation lines, but is nevertheless possible in any jurisdiction.

5.1.5 Local Public Information and Awareness Strategy

The PDM Committee recommends utilizing the local media and emergency response agencies in a coordinated effort to provide Public Service Announcements, make available persons to publicly address the dangers associated with hazardous materials release, and any applicable preventative measures, and also to provide contact information to facilitate communication with the public.

5.1.6 Action Steps Revisions

Completed Action Steps: The majority of Action Steps identified in the 2007 plan were completed, and none were cancelled. Several Action Steps were postponed or in progress, and were carried over to the plan update.

New Action Steps: All Action Items in the plan update have been carried over from the 2007 plan.

6.0 EXECUTING THE PLAN

SECTION	UPDATE SUMMARY
6.1 Implementation Action Plan	Text revisions; new mitigation action prioritization process described
6.2 Evaluation, Monitoring, Updating	Text revisions
6.3 Multi-Jurisdictional Strategy and Considerations	No changes
6.4 Plan Update and Maintenance	Text Revisions

Table 6: Overview of Updates to Chapter 6: Executing the Plan

6.1 IMPLEMENTATION ACTION PLAN

The Oconee County Emergency Management Agency served as the primary local contact during the development of the Oconee County Pre-Disaster Mitigation Plan Update. The Northeast Georgia Regional Commission (NEGRC) assisted by facilitating the planning process and assembling the relevant information into the planning document. Upon review and approval by the Georgia Emergency Management Agency (GEMA), all participating jurisdictions will formally adopt the planning document by resolution.

Under the direction of the Oconee County Board of Commissioners, the Director of the Oconee County Emergency Management Agency (EMA) assumes responsibility for the maintenance of the plan and for coordinating the pursuit of implementation strategies set forth within the document. Following a timeframe of no more than five years (2013-2017), the EMA Director will convene a planning committee to update and revise the planning document as well as the mitigation strategies per FEMA standards.

It is imperative that the EMA monitors the progress of the plan and the implementation of the identified strategies to ensure that pre-disaster mitigation efforts are maximized throughout the county.

Mitigation strategies within this document were revised, developed and prioritized by the steering committee. NEGRC facilitated a quantitative prioritization process using the STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) method. For every identified mitigation action the steering committee was charged with assigning a rating under each STAPLEE component with a “+” for favorable, a “-“ for less favorable, and “N/A” for not applicable. These symbols were then assigned numerical values as follows: “+” = 1, “-“ = -1, and “N/A” = 0. NEGRC staff calculated the scores for each mitigation action and presented them to the steering committee. Input was obtained by steering committee members then qualitatively reviewed and revised the numerical prioritization, where necessary.

Upon adoption of the 2013 PDM Plan Update, Oconee County and all municipalities should incorporate its Pre-Disaster Mitigation Plan into its next Short Term Work Program Update and future Comprehensive Plan updates to create a more cohesive planning document.

Through the revision of the Short Term Work Program the Pre-Disaster Mitigation (PDM) Plan should be distributed to county and municipal agencies as well as made available at the Short Term Work Program public meetings to inform county residents and staff of the PDM plan’s strategies. Additionally, the PDM planning committee should be consulted in the Comprehensive Plan participation process to ensure that the PDM plan is adequately incorporated into the Comprehensive Plan update.

6.2 EVALUATION, MONITORING, UPDATING

The Oconee County Pre-disaster Mitigation Plan will be updated throughout the five-year cycle from 2013-2017. The organizational framework of PDM Planning Committee will be used to solicit input from

representative county and municipal departments. These departments and their staff are knowledgeable about PDM Planning and can assist in monitoring plan implementation. The overall responsibility for coordinating this process will be the Director of the Oconee County Emergency Management Agency.

The Oconee County EMA Director will schedule any required meetings to facilitate the review process. The extent and level of participation of these meetings will be based on the prior year's mitigation activities as determined by the EMA Director. Involvement will include the County and all municipalities. The results of these planning meetings will be recorded and any required changes or amendments to the plan reported to GEMA by Oconee County Emergency Management Agency.

It is anticipated that regular updates will be made to the GEMA On-line Tool. These updates will include amendments and additions to existing critical facilities. In some cases, information on selected sites was unavailable during the plan's preparation; new information will be added as it becomes available. Additional "points" or critical facilities will be added that exist as secondary structures within governmental facilities. Dollar valuations of critical facilities will be updated as new assessments occur to provide an accurate estimate of potential losses. The Oconee County Emergency Management Agency will oversee these updates through their access to the GEMA On-line Tool.

6.3 MULTI-JURISDICTIONAL STRATEGY AND CONSIDERATIONS

All goals, objectives and strategies set forth in this planning document are relevant to Oconee County as well as the cities of Watkinsville, Bogart, Bishop, and North High Shoals unless specifically stated otherwise. Each of the jurisdictions participated in the planning process and has authorized the Oconee County EMA to act on its behalf with regards to disaster mitigation as set forth in the Service Delivery Strategy.

6.4 PLAN UPDATE AND MAINTENANCE

During the PDM Planning process, public involvement and participation was invited. The purpose of this involvement was to inform and educate the public about PDM and receive specific information about hazard events, critical facilities, and mitigating any potential losses. In updating the PDM Plan, public involvement will be solicited through public notification. Any required or special meetings will be scheduled as required and at the discretion of the Oconee County EMA in coordination with the Oconee County Manager's Office. The Oconee County EMA will facilitate updates to the PDM Plan on a regular basis that involve administrative tasks as well as updates to the GEMA On-line Tool. More specifically, new and updated data will be added to the critical facilities list as they change. All these updates will cover all jurisdictions.

7.0 CONCLUSION

SECTION	UPDATE SUMMARY
7.1 Conclusion Summary	Text revisions
7.2 References	Revised to reflect updated references

Table 7: Overview of Updates to Chapter 7: Conclusion

7.1 CONCLUSION SUMMARY

The planning process has provided Oconee County officials, emergency personnel, staff and the general public with a greater understanding of the county’s vulnerability to natural and technological hazards. This process has allowed the county to develop mitigation measures to minimize the adverse impacts resulting from hazard events.

As the community moves forward in implementing the identified mitigation strategies, periodic reviews will be conducted to assess the continued relevance of the established goals and objectives and define new projects worthy of funding. Although the implementation of mitigation measures may require the expenditure of funds in some cases, it has been proven throughout the nation and the world that dollars spent on hazard mitigation can ultimately save the local government over the long-term by minimizing the community’s vulnerability to negative impacts of natural and technological hazards by protecting people and property. Therefore, it is important that the pre-disaster mitigation planning process retain strong political and public support ensuring that the identified implementation strategies can be pursued.

The information contained in the Oconee County PDM Plan is intended to function as a tool for planning for implementation of future mitigation actions. It represents the involvement and contributions of numerous key governmental departments and their representatives. As the county continues to grow and develop, this plan’s information will be updated to address these changes and accommodate additional local needs. This PDM Plan will essentially become a ‘living document,’ used on a daily basis and adjusted with changes in the community.

7.2 REFERENCES

DOCUMENTS/PUBLICATIONS

- Federal Emergency Management Agency (FEMA) Local Multi-Hazard Mitigation Planning Guidance (2008)
- FEMA Multi-Jurisdictional Pre-Disaster Mitigation Plan Update Guidance Template (2009)
- FEMA State and Local Mitigation Planning How-To Guide (2007)
- 2011 State of Georgia Hazard Mitigation Strategy
- 2009 Oconee County Comprehensive Plan

WEBSITES

- Federal Emergency Management Agency: www.ready.gov
- Georgia Emergency Management Agency: www.gema.state.ga.us

- Georgia Department of Natural Resources: www.dnr.state.ga.us/dnr/environ
 - Office of Hazardous Materials Safety: hazmat.dot.gov/index.html
 - National Climatic Data Center: www.ncdc.noaa.gov/oa/ncdc.html
 - Oconee County: www.Oconeecountygov.com (Contains links to municipality's websites and contact information)
 - Georgia Forestry Commission: www.gfc.state.ga.us
 - Federal Emergency Management Agency (FEMA): www.fema.gov
 - Georgia Department of Community Affairs: www.dca.state.ga.us
- State of Georgia Government: www.georgia.gov

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