



# Department of Growth Management

State of Florida

To: Okaloosa County Board of County Commissioners  
From: Elliot Kampert, AICP, Director  
Okaloosa County Comprehensive Plan Committee  
Subject: Status of Plan Implementation  
Date: July 21, 2009

Ordinance 99-27, Amended by 06-61, July 5, 2006, adopted the Okaloosa County's Local Mitigation Strategy Plan.

The Board adopted the Local Mitigation Strategy (LMS) by Ordinance No. 99-27, amended by Ordinance No. 05-39. This amendment was to update the LMS for compliance with the Disaster Mitigation Act of 2000 (DMA2K) as outlined in 44CFR, Part 201. Ordinance 06-61 signed July 5, 2006 represents the final version of the LMS which completes the update and meets the requirements of DMA2K.

For credit under the Community Rating System, this memo must be distributed to the media and be made available to the public. It is being sent to the Northwest Florida Daily News. Copies of this report and the of the LMS plan update are available for review at the Okaloosa County Water & Sewer Administrative Complex, 1804 Lewis Turner Boulevard, 2<sup>nd</sup> Floor, Okaloosa County Department of Growth Management, Fort Walton Beach, Florida, or Okaloosa County Department of Growth Management, 812 James Lee Blvd., Crestview, Florida.

## 1. Background

The Comprehensive Plan Committee was established in 1990 by Barrett Daffin & Carlan, consultants for the 1990 Comprehensive Plan. The purpose was so that the consultants could meet with all local governments as they worked the process of developing the plan. This group then continued on to work as an advisory panel to the Local Mitigation Strategy plan known as the Local Mitigation Strategy Committee.

Okaloosa County is threatened by a number of different types of natural hazards. These hazards endanger the health and safety of the population of the county, jeopardize its economic vitality, and imperil the quality of its environment. Because of the importance of avoiding or minimizing the vulnerabilities to these hazards, the public and private sector interests of Okaloosa County have joined together to create a Local Mitigation Strategy Committee to undertake a comprehensive planning process that has culminated in the publication of the Okaloosa County Local Mitigation Plan

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## 2. Plan Action Items

The Okaloosa County LMS Plan contains the compilation of the proposed mitigation initiatives that are the result of the earlier planning efforts by the LMS Committee. This compilation serves to fulfill the requirements of 44 CFR Parts 201 and 206 Interim Final Rule in accordance with the Disaster Mitigation Act of 2000 (DMA2K).

The compilation is provided in three sub-sections to directly address the four criteria listed in §201.6(c)(3):

- 1) **Local Hazard Mitigation Goals:** As directed in §201.6(c)(3)(i), this subsection shall include...”a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.”
- 2) **Identification and Analysis of Mitigation Actions:** As directed in §201.6(c)(3)(ii), this subsection shall...” identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing building and infrastructure.”
- 3) **Implementation of Mitigation Actions and Multi-jurisdictional Mitigation Actions:** As directed in §201.6(c)(3)(iii), this subsection shall...” include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.” As directed in §201.6(c)(3)(iv) and pertaining to the multi-jurisdictional aspects of this plan (i.e. the inclusion of the County and its municipalities), this subsection shall...”include identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.”

## 3. Goals

The following goals are the broad range vision of what is to be accomplished during the five-year planning period from 2005 through 2010 by the LMS Steering Committee:

- **Goal 1** – *Continually provide mechanisms for local government jurisdictions and the public to accomplish mitigation activities in Okaloosa County.*

Accomplish by:

- Maintain bylaws that define membership and public participation methods.

- Holding regularly scheduled LMS Steering Committee and Working Committee meetings. Steering Committee meetings will be held quarterly at minimum.
  - Forming Working Groups for sub-regions, municipalities, or for specific hazards named in the plan to reduce or eliminate vulnerability.
  - Maintaining a staffing presence to the LMS Steering Committee through contract or through staff hire or appointment.
  - Providing communications to county and municipal contacts and through media outlets to advertise opportunities to attend and participate in mitigation functions, consistent with the Florida Sunshine Law.
  - Holding meetings throughout the County and in various municipalities to encourage local participation.
- **Goal 2** – *Maintain communication between the LMS Steering Committee and key County and Municipal departments to coordinate intra- and inter-departmental mitigation activities among various jurisdictions, and with the public.*

Accomplish by:

- Ensuring all interests of various departments are represented by the appointed staff to the Steering Committee
  - Ensuring all interests are aware of Working Groups and a need to represent their own interests concerning various geographical areas or to address various hazards.
  - Maintaining up-to-date e-mail and postal addresses and phone numbers to ensure communication.
  - Establishing a website on the County's web server that discusses the LMS program.
- **Goal 3** – *Update the LMS plan, as necessary, to identify changes to hazards, vulnerability, goals, initiatives/priorities accomplishments/withdrawal/additions/pending, update of funding sources, current disaster declarations, and adoption of revisions.*

Accomplish by:

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

- Identifying and documenting potentially new hazards, including technological and homeland security issues not otherwise analyzed as a result of DMA2K.
- **Goal 4** – *Assist property owners, residents, businesses, non-profits and others in understanding and knowing of their eligibility for grants, loans and services that may help to mitigate hazards that directly affect their interests.*

Accomplish by:

- Working with existing programs within the County and Municipalities (building inspections, local Community Rating System/National Flood Insurance Program, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.
- Being perceptive of and proactively engage new opportunities to promote mitigation interests.
- Developing a website that conveys updated information about mitigation activities on a continual basis.
- Staying abreast of available funding and service opportunities through participation in meetings, conferences, seminars, and research.
- Maintaining initiatives/priorities and contact persons lists to facilitate rapid notification of assistance availability.
- **Goal 5** – *Reduce or eliminate hazards identified to at risk locations in the County and its municipalities.*

Accomplish by:

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

#### **4. Analysis of Mitigation Actions**

Each of the hazards identified has various ways and methods of mitigation. Chapter 4 of this plan demonstrates that a wide variety of hazards and risks exist throughout the County and in its municipalities. Chapter 5 provides an analysis of the potential for damages to community-wide infrastructure (including public and private sector interests). This section of the Local Mitigation Strategy Plan discusses the types of known mitigating actions that can be taken to reduce or eliminate future losses throughout Okaloosa County. The mitigation actions suggested here are not exclusive, but instead

should be viewed as a means of stimulating thought and creativity towards creating a more disaster-resistant community.

#### **4A. Hurricane/Tropical Storm**

The current LMS planning process was initiated prior to the landfall and subsequent impact of **Hurricane Ivan** on September 15-16, 2004. Okaloosa County was all severely impacted by this Category 3 hurricane. All aspects of Okaloosa County were impacted. Homes, businesses, governmental buildings, schools, roadways, waterways, recreational facilities, and natural amenities were all heavily impacted.

Hurricane Ivan has made it both easy and difficult for this plan to identify means of mitigation against future hurricane impacts. Much of what would have been included in this plan has been previously documented in many ways because of past hurricane strikes. However, no hurricane has created such a massive impact to the area since 1928. In 1928, Okaloosa County had little coastal development. Hurricane Erin (1995) demonstrated the County's vulnerability to winds reaching near 100 MPH (with particular emphasis on loss of energy, road blockage, and debris impact). Hurricane Opal (1995) demonstrated coastal vulnerability due to a massive storm surge. Hurricane Ivan took both of the demonstrations of Erin and Opal and combined these problems into a single, large-scale event.

For the purposes of this section of the LMS Plan, Hurricane Ivan provides a recent insight to what hurricanes can do to the area. Prior to Hurricane Ivan, the LMS Committee would have developed an analysis of impact and potential mitigation actions mostly based upon knowledge obtained from Hurricanes Erin and Opal of 1995, and to a lesser extent earlier storms that had occurred during the past one hundred years. This plan now has a vivid reminder of how both inland and coastal communities are truly vulnerable to major hurricanes (Category 3-5).

The following are the primary methods of mitigation that could reduce the impacts of hurricane impacts to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Building Construction and Flooding** – Ensure all future buildings are constructed to Florida Building Code standards and are built above the established base flood elevations, or BFE's, whether for zones impacted by moving water (velocity or "V" zones or floodways on Flood Insurance Rate Maps or FIRMS) or by rising water (such as "A" and "B" zones on FIRMS).
- **Flood Mapping** – Ensure that maps accurately reflect the amount of surge, wave and flood action that can occur during a major hurricane.
- **Flood Category Mapping** – Ensure that various types of flooding documented by a variety of sources (storm surge due to being wind driven,

fetches within bays and sounds, riverine flooding, and low area/basin flooding) are all documented and that the public are aware of the existence of such mapping services and products for planning purposes.

- **Coastal Bridge and Highway Construction** – Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected.
- **Building Construction and Wind** – Ensure that all new buildings and permitted rehabilitations/additions are secure in terms of wind resistance and shuttering per mandates of the Florida Building Code.
- **Existing Building Mitigation in Flood-Prone Locations** – Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to surge and flooding.
- **Availability of Public Sheltering** – Ensure adequate and safe public shelters are available in all locations in the County to prevent or reduce post-disaster homelessness, including adequate electrical supplies for cooking and to maintain sanitary conditions.
- **Structural Soundness of Existing Local Government Centers** – Promote and support funding that allows for buildings to remain functional before, during and after a hurricane event in order to support the function of Okaloosa County Emergency Management’s mandates under Chapter 252 Florida Statutes. This includes support of the formation of municipal emergency operations centers and protection of both municipal and county infrastructure named in the County’s or a municipal Comprehensive Emergency Management Plan and its Emergency Support Functions (including first response entities and their supporting buildings).
- **Communications** - Ensure mitigation activities are wind and electrical-failure resistant to allow for 24/7 communications during the first 72 hours following a disaster. Communications can include radio, television, telephone, Internet, and all other means of communications systems.
- **Heavy Equipment** – Ensure adequate equipment exists to remove debris, clear roads, perform search and rescue functions, and otherwise respond and recover from hurricane impacts.
- **Public Agency Purchase of Undeveloped High Risk Flood/Surge Areas** – Promote the continued purchase of lands that are at high risk of flooding, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate.
- **Public Awareness** – Promote public awareness of hurricane hazards and ways that private structure owners and landowners can mitigate using governmental or private sector investment. Additionally, ensure that the business community is aware of the consequences of not mitigating businesses for hurricane impacts.

#### **4B. Flooding**

As identified in Chapter 4, flooding can be experienced during abnormally high rainstorm events as well as during hurricanes and tropical storm. Concentration to identify and analyze methods of mitigation for flooding will be similar to recommendations that address flooding in Section 6.3.A., however this section also attempts to identify other areas that are specific to riverine, isolated basins, and dam safety.

The following are the primary methods of mitigation that could reduce the impacts of flooding impacts to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Building Construction and Flooding** – Ensure all future buildings are constructed to Florida Building Code standards and are built above the established base flood elevations, or BFE's, whether for zones impacted by moving water (velocity or "V" zones or floodways on Flood Insurance Rate Maps or FIRMS) or by rising water (such as "A" and "B" zones on FIRMS).
- **Flood Mapping** – Ensure that maps accurately reflect the amount of surge, wave and flood action that can occur during a major hurricane.
- **Flood Category Mapping** – Ensure that various types of flooding documented by a variety of sources (storm surge due to being wind driven, fetches within bays and sounds, riverine flooding, and low area/basin flooding) are all documented and that the public are aware of the existence of such mapping services and products for planning purposes.
- **Bridge and Highway Construction** – Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected.
- **Existing Building Mitigation in Flood-Prone Locations** – Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to surge and flooding.
- **Critical Public Buildings Away From Floodplains and Flood-Prone Areas** – Ensure that all public buildings that serve first response and critical emergency/public needs, including record/data collection and communication centers/infrastructure, are located outside of flood zones or flood-prone areas.
- **NFIP and Community Rating System** – Support efforts to gain approval and/or to maintain status as CRS communities in all municipalities and the County.
- **Land Development Code** – Include design standards that require detention and retention of stormwater runoff during critical design-hour storm events.

- **Agricultural Flood Damage Prevention** – Support efforts of the Institute of Food and Agricultural Services (IFAS/County Cooperative Extension Service) and the Natural Resources Conservation Services (NRCS) as it relates to reduction and mitigation of flood hazards to crops and silvicultural operations.
- **Dam Safety** – Support efforts that document hazards and risks associated with structural and earthen dams and upkeep. Support efforts that create partnerships with property owners that promote the overall goal of community-wide and stream valley safety.

#### 4C. Land Erosion

As identified in Chapter 4, land erosion can occur quickly, particularly during rainstorm events such as hurricanes and tropical storms, and it can occur almost imperceptibly over longer periods of time during typical weather conditions. Once in motion, land erosion can be difficult to control. Both vegetative cover and structural controls are necessary to gain control of erosion. Even where no development is present, natural forces can erode vegetation and land away where high amounts of energy (i.e. waves and water) are present.

Since Hurricane Ivan, coastal erosion has emerged as a serious concern for coastal areas. This not only includes properties directly on the Gulf of Mexico, but also those on bays and sounds (due to high water and surge).

Additionally, soil erosion due to runoff, construction, agricultural/silvicultural operations, and along roadways slowly but surely creates sedimentation problems, gullies, and rills that can become problematic over time.

The following are the primary methods of mitigation that could reduce the impacts of land erosion impacts to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Vegetative Control** – Support efforts that protect natural plant systems, human plantings, special tilling methods and technologies, and other forms of vegetative erosion control.
- **Structural Control** – Support of mitigation efforts that allow public and private sector entities to gain control of problem erosion locations, gullies and rills that reduce unnatural sedimentation accumulation and cutting into natural hillsides and land, and to control coastal erosion where seawalls are necessary.
- **Construction and Infrastructure** – Support mitigation efforts that would allow for construction and infrastructure development to eliminate an existing erosion problem or to eliminate creation of such a problem.

- **Coastal Human-Induced Erosion** – Lend support to mitigation efforts that help to eliminate or reduce coastal erosion due to boat/ship wake issues, while weighing the interests of the boating public.

#### **4D. Sinkholes**

Sinkholes are generally not experienced in Okaloosa County. What is often called sinkholes are often sewer, storm drain, or water line failures underground that cause a human-created collapse.

The following are the primary methods of mitigation that could reduce the impacts of land erosion impacts to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Sinkhole Risk Assessment** – The LMS Committee supports research of the possibilities of natural sinkhole occurrence where a reasonable and realistic risk to the public is discovered and said research is considered vital towards local knowledge and understanding of the geology of the area.

#### **4E. Expansive Soils**

With only 1.6% of the County's soils at risk of being expansive against foundations and roadways (and with the majority of those soils being located in salt marshes which are already publicly owned), and with no records of such soils causing problems for buildings in the County and its municipalities, there is little that can be done to further mitigate construction in these areas.

The following are the primary methods of mitigation that could reduce the impacts of expansive soil impacts to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Expansive Soil Risk Assessment** – The LMS Committee supports research of the possibilities of expansive soil situations outside of locations already owned by public entities (such as the Northwest Florida Water Management District) where a reasonable and realistic risk to the public is discovered and said research is considered vital towards local knowledge and understanding of the soils of the area.

#### **4F. Tornadoes and Waterspouts**

Because of the unpredictable nature of this weather feature, mitigation against tornadoes and waterspouts throughout Okaloosa County is difficult at best. Unlike locations of the United States where underground shelters might be recommended on a routine basis, the

ability to achieve a reasonable benefit-cost ratio with such actions is questionable throughout the County. Additionally, it is unlikely that underground shelters would even be feasible in many locations due to high water tables (one of the reasons that few buildings in the County have basements).

Fortunately, many of the same building codes and standards that are required for high wind protection in hurricanes lend considerable protection in most tornadoes and waterspouts. The likely best type of mitigation would be warning and communication systems, and protection within a building already meeting the Florida Building Code.

The following are the primary methods of mitigation that could reduce the impacts of tornado and waterspout impacts to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Communications and Warning Systems** – Ensure the public can be informed of pending conditions that would produce a tornado or waterspout, or otherwise warn the public that such an event was pending. Support mitigation activities that improve emergency management sponsored systems that coordinate such efforts with the County's and Municipal Warning System through its 911 program.
- **Public Education** – Support mitigation activities that help to educate the public about the dangers of tornadoes and waterspouts in the area and describe how to take protective actions in various situations. Such activities should be supported and coordinated with the County Emergency Management office.

#### **4G. Severe Thunderstorms and Lightning**

This common natural hazard and threat deserves attention, especially in terms of lightning and the risk it poses to structures and electrically sensitive equipment. There are many mitigation activities that can take place throughout any community that reduces the threat of electrical surges and discharges of lightning. Aside from the risk of equipment being struck, there is an ever-present risk of people being hit by lightning (especially given the amount of outdoor recreation --- such as golfing, boating, fishing, hunting, bicycling, swimming, or poolside --- occurring throughout the County and municipalities during warm weather months or during frontal passage when thunderstorms are most common).

Damaging winds and hail are generally mitigated through building codes that are already in place due to the overall risk of hurricanes in the area. It is difficult to mitigate personal property and livestock against hail unless said property can be immediately placed indoors (without risk of being struck by lightning while in the process of doing so).

The following are the primary methods of mitigation that could reduce the impacts of severe thunderstorms and lightning to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Communications and Warning Systems** – Ensure the public can be informed of pending conditions that would produce a severe thunderstorm, or otherwise warn the public that such an event was pending. Support mitigation activities that improve emergency management sponsored systems that coordinate such efforts with the County's and Municipal Warning System through its 911 program.
- **Public Education** – Support mitigation activities that help to educate the public about the dangers of severe thunderstorms and especially lightning in the area and describe how to take protective actions in various situations. Such activities should be supported and coordinated with the County Emergency Management office.
- **Secure Electronic and Electrically-Sensitive Systems** – Ensure that mitigation activities are supported that reduce the risk of loss of electronic equipment and structures due to lightning strike and electrical surge.

#### **4H. Winter Storms**

Because of infrequency, it is difficult to mitigate the impacts of winter storms in Okaloosa County and its municipalities. There is little infrastructure in place to combat what may be the greatest winter risk... an ice storm with accompanying glaze. The most credible worst case scenario would be massive loss of the local and regional electric utility grid, the inability to keep buildings warm, and hardship in performing rescues on segments of the public most vulnerable to cold (such as the elderly, very young, and those who are ill). Much of the recovery effort would rest in the hands of private sector electrical service providers. The County and its municipalities have no salt spreaders, and only road graders are available that might be used to scrape snow or ice (and they have no chains or winter tires). The erratic occurrence of such events simply does not justify large or perhaps any public expenditure for equipment to remove winter precipitation, or extensive building codes to deal with such issues.

Back-up heating sources and availability of electrical generators are possible mitigative measures for some critical facilities. Back-up heating will usually consist of portable kerosene heaters or fireplaces. Natural gas and propane heating systems are good, but if an electrical blower is part of an overall heating system, without a generator there will be no ability to heat such facilities.

More realistically, the most common winter disaster in the area is a frozen pipe and sometimes subsequent flooding of the interior of a house or business. This can generally be mitigated by heating strips or by wrapping pipes with insulation, all commonly available products in local hardware and department stores. In a worst-case situation, a pipe may need to be relocated to a warmer part of a structure.

Agricultural interests are probably the most prepared segment of the County's population and business community for cold weather. Sensitive crops and animals are often supplied with heat that mitigates the cold. Spraying of water and forming ice on some trees can insulate them from cold air damage. Animals can be brought into barns or in some cases have jackets placed on them. Most bear the cold well because the severity of cold in the area is simply incomparable to winter conditions hundreds of miles north of the County.

Public education about the risk of winter storms may be the most appropriate type of mitigation activity that can be provided and supported by the LMS Committee.

The following are the primary methods of mitigation that could reduce the impacts of winter storms to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Public Education** – Support mitigation activities that help to educate the public about the infrequent but possible risk of winter storms in the area.
- **Shelter Evaluation** – Ensure mitigation activities for shelters include an assessment of the availability of heating systems that could function in the event of an ice storm in the County, including the ability to generate electricity.
- **Public Building Preparedness** – Support mitigation activities that reduce or eliminate vulnerability to freezing (such as those that protect water pipes) or provide secondary heating or electrical systems for first responder or other vital emergency management functions.
- **Communications** – Ensure mitigation activities within communications systems to ensure capabilities to communicate during and following a winter storm (particularly relating to electrical systems).

#### **4I. Heat Waves and Drought**

The primary challenges to the County during a heat wave and drought is to ensure electrical service is maintained to run air conditioners, that adequate private sector air conditioning services are available to serve public and private buildings, and that water is available. In a drought, the challenge may simply be to monitor water supplies, to provide water as an emergency resource for critical situations, and to restrict use by the public, as appropriate.

Although not as critical as freezing conditions and the need for warmth and heating, air conditioning can be a critical need for some segments of the populations (elderly, very young, ill). Limited public sheltering might be necessary in extreme conditions, and the ability to provide cool air for those in need would be critical. This could point to the need for generators for a shelter that might be used in a heat wave.

Drain on the overall electrical system due to high demand might also impact emergency operations, especially as it relates to pumping water and communications. Again, electrical generators may be a key mitigation mechanism.

Agricultural interests are also at risk. With crops, there is little that can be done other than irrigate. Livestock and poultry must be watered (and drought can lead to a lack of feed supplies).

Public education about the hazards of heat and need to stay cool hydrated, and at a pace of work that is sensible is a routine mitigation activity because of the warm climate. Most individuals living in the area are accustomed to living in a hot summer climate.

The following are the primary methods of mitigation that could reduce the impacts of severe heat and drought to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Public Education** – Support mitigation activities that help to educate the public about the infrequent but possible risk of winter storms in the area.
- **Shelter Evaluation** – Ensure mitigation activities for shelters include an assessment of the availability of heating systems that could function in the event of an ice storm in the County.
- **Public Building Preparedness** – Support mitigation activities that reduce or eliminate vulnerability to freezing (such as those that protect water pipes) or provide secondary heating or electrical systems for first responder or other vital emergency management functions.
- **Communications** – Ensure mitigation activities within communications systems to ensure capabilities to communicate during and following a winter storm (particularly relating to electrical systems).
- **Agricultural Interests** - Support mitigative measures (with the advice of IFAS and the NRCS) that would identify public measures that would help agricultural, forestry, and aquacultural interests in the County.

#### **4J. Wildfire**

Perhaps the second greatest natural hazard risk in the County (behind hurricanes) is wildfire. A dry weather pattern (even beginning a few days following a rain event when low humidity is achieved) can create a hazard that may threaten timberlands, grasslands, and developed areas. The natural vegetative ecology is fire dependant. Because of the interwoven pattern of development, vacant lots, timberlands, state forests, military reservations, national park areas, and pastures... and added to that the number of sources that can cause fires (catalytic converters, garbage burning, arson, campfires, lightning, etc.), the risk of wildfire the County and its municipalities is extraordinarily high during the right weather conditions.

Hurricanes (such as Ivan in 2004) can add leaves and wood to existing fuel on the forest floor. Debris can also ignite, spreading fires into locations that can quickly impact houses.

The LMS Steering Committee believes wildfire is as serious a threat as hurricanes to all areas of the County and its municipalities. Although damage is unlikely to be as widespread as a hurricane, it is possible that tens of thousands of residents and business could be impacted under the right conditions. Whole counties in other portions of Florida have had to evacuate due to massive fires, and similar conditions in Okaloosa County could cause similar sized evacuations and disaster conditions.

The primary focus of mitigation activities should be public awareness and education, cooperative efforts and partnership building with the Florida Division of Forestry, and support of all of the County and municipal fire departments and their supporting agencies. There should be close correlation between planning activities and how development interfaces with rural, fire prone lands. The Division of Forestry has an excellent system of mapping the most fire prone locations that can be used by the County and its municipalities for planning and mitigation purposes. This interaction can assist in understanding the needs of local fire departments and water systems to assist in suppressing wildland fires.

The following are the primary methods of mitigation that could reduce the impacts of wildfire to Okaloosa County and its municipalities and are supported by the LMS Steering Committee:

- **Public Education** - Support the activities of local fire departments and the Florida Division of Forestry in promoting “FireWise” programs, local inspections, and enforcement activities to reduce or eliminate wildfire risk.
- **Planning and Development** – Support activities that integrate wildfire mitigation techniques with design and review processes of subdivision plats to reduce risks to new communities through cooperative efforts between land planning offices, fire departments and the Florida Division of Forestry.
- **Mapping and Updates** – Support activities that newly document or update maps, aerial photography, or other remote sensing imagery that shows degrees of risk (Levels of Concern) for wildfire and utilize such data to focus mitigation activities against wildfire.
- **Fire Department Response Systems and Capabilities** – Ensure that fire stations and their supporting equipment and personnel are adequate in terms of size, modernization, communications, in order to respond to situations by mitigating situations that are below acceptable standards to fight wildfires throughout the County and to provide mutual aid support in neighboring jurisdictions or counties.
- **Water Supplies** – As appropriate, support public and private mitigation efforts to provide fire hydrants to locations at risk along the urban/rural interface where water systems exist to provide such services.

#### **4K. Other Hazards**

**Earthquake:** Earthquakes have been felt in recent years in the Jay (Santa Rosa County) area. These quakes have been centered about 15 miles northwest of Jay in Alabama along the Pollard Graben (a regional “stable” fault system). Although there is no specific documentation, oil extraction activities in the area may be the cause of the earthquakes.

At this time, the LMS Steering Committee is not supporting mitigation activities for earthquakes due to the infrequency, the small magnitude, and overall low risk of earthquakes to the County. This may be reconsidered should researchers (such as those from the U.S. Geological Survey) determine the risk is greater than what has been previously thought.

**Avalanche:** There is no risk of avalanche in the County. The LMS Steering Committee will not support mitigation activities for this hazard.

**Land Subsidence:** There is no risk of land subsidence in the County. The LMS Steering Committee will not support mitigation activities for this hazard unless documentation is provided that it is becoming an issue at some location within the County.

**Landslide:** Since there is virtually no risk of a landslide in the County, the LMS Steering Committee will not support mitigation activities for this hazard.

**Tsunami:** Due to the 2004 tsunamis in Southeast Asia, there is widespread concern in the United States about tsunami risk. Chapter 4 of this plan documents the tsunami risk for Okaloosa County. Unless studies released by U.S. Government or other sources demonstrate that the County is at much greater risk than previous thought, the LMS Steering Committee will not support mitigation activities for this hazard.

**Volcano:** There is no risk of volcanic activity in the County. The LMS Steering Committee will not support mitigation activities for this hazard.