

5.0 Community Capability Assessment

Requirement 201.6(c)(3): [The risk assessment should include a] mitigation strategy that provides the jurisdictions blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

The Biloxi Hazard Mitigation Planning Committee reviewed the community capability assessment in the 2007 plan and added additional agencies having a coordination/regulatory role with the City. Enhancements were also made to Section 5.2 – Planning and Regulatory Capability to include additional plans, studies, and programs plus the identification of relevant goals.

The purpose of a capability assessment is to provide an additional method of evaluating the potential hazards prone to the City through an inventory and analysis of its existing mitigation capabilities. This type of assessment provides the community with a better understanding of its preparedness levels and capabilities to mitigate natural hazards.

The Committee conducted the community capability assessment in two phases:

- 1) Assess the preparedness of the City's departments along with state and local agencies
- 2) Identify existing policies, programs, plans, ordinances and codes supporting mitigation

5.1 Preparedness of State and Local Agencies

A number of public and private entities are crucial in assessing a community's capability to deal with hazard mitigation, preparedness, response and recovery. The following public entities were identified by the Biloxi Hazard Mitigation Planning Committee as crucial in the assessment and enhancement of a community's capacity to deal with hazards:

- City of Biloxi
 - Biloxi Emergency Management
 - Biloxi Fire Department
 - Biloxi Police Department
 - Biloxi Community Development (Planning & Building Division)
 - Biloxi Public Works
 - Biloxi Public Schools
- Harrison County
 - Harrison County Emergency Management
 - Harrison County Sand Beach Authority
 - Harrison County Sheriff's Department
 - Harrison County School District

- Private/Public Entities
 - Public Utilities (Telephone, Electricity, Natural Gas)
 - American Medical Response (AMR)
 - Coastal Transit Authority (CTA)
 - American Red Cross
- State of Mississippi
 - Mississippi National Guard
 - Mississippi Highway Patrol
 - Mississippi Department of Marine Resources (MDMR)
 - Mississippi Department of Environmental Quality (MDEQ)
 - Mississippi Gaming Commission
 - Mississippi State Department of Health (MSDH)
 - Mississippi Emergency Management Agency (MEMA)
- Federal
 - U.S. Coast Guard
 - Keesler Air Force Base
 - Federal Emergency Management Agency (FEMA)

Provided below is a brief discussion of essential services provided by crucial public and private entities, including an assessment of their capacity and preparedness for responding to the residents and business owners in Biloxi. Some of the capabilities for state and federal agencies provided in this section were obtained from the 2010 State of Mississippi's Standard Hazard Mitigation Plan.

City of Biloxi Departments

Biloxi Emergency Management

The mission of the Biloxi Emergency Management Office is coordinating the City's plans and operations with various components of the emergency management system. Furthermore, the agency works to implement a Comprehensive Emergency Management Plan (CEMP) incorporating all phases of emergency management, including: Mitigation, Preparedness, Response and Recovery.

Implementation Goals:

- Foster a partnership with County, State, and Federal Emergency Management officials to achieve common goals.
- Emphasize implementation of emergency management measures known to be effective.
- Integrate emergency management planning into local policy-making and operational systems.
- Build on the foundation of emergency management plans, systems and capabilities to broaden applicability to the full spectrum of emergencies.

The Biloxi Emergency Management Director maintains the Emergency Operations Center (EOC) and assures the facility is fully operational and functional. When the EOC is activated prior to or during an incident, the Biloxi Emergency Management Director oversees the staffing and operations. A representative is assigned to the Harrison County EOC when the facility is operational and the incident is cross-jurisdictional. The representative at the County EOC will serve as liaison with Biloxi, Harrison County, and other involved entities.

Biloxi Fire Department

The Biloxi Fire Department operates staff from nine fire stations strategically located throughout the community. The Central Fire Station is located at the City's Public Safety Complex on Porter Avenue. Primary communication systems for the Biloxi Fire Department are located adjacent to Fire Station No. 7 on Popp's Ferry Road. The Fire Department is a mainstay in the event of emergency situations. Services provided by the Biloxi Fire Department include:

- Fire Prevention
- Fire Suppression
- Hazardous Materials Response
- Emergency Rescue Response
- Emergency Medical Response

The Biloxi Fire Department is an All-Hazards Organization with a Mississippi Insurance Service Organization (ISO) Class 4 rating. All firefighters are CPR certified - Biloxi Fire Department has over 30 certified EMTs. The Biloxi Fire Department's All Hazards capabilities rank among the best in the State of Mississippi.

Hazardous materials (haz-mat) response is also the responsibility of the Biloxi Fire Department. Generally if a haz-mat incident occurs, the fire department will secure the area, identify chemicals involved and bring in an expert haz-mat team or handle the situation depending on the type of chemicals. Fire Department personnel have the expertise to undertake decontamination measures for firefighters and citizens exposed to hazardous materials. Basic Concepts and Concepts Implementation haz-mat training is mandatory for all firefighters. However, a number of firefighters have completed one or more of the following training programs:

- Basic Concepts
- Concepts Implementation
- Advanced Training
- Haz-Mat Tech I
- Haz-Mat Tech II
- Haz-Mat Incident Management

Thanks to continued funding support from Homeland Security, the City of Biloxi is fortunate to have a wide range of state-of-the-art haz-mat equipment. In addition, Biloxi Fire Department also owns a fire boat equipped with a 1000 gpm pump and foam capabilities, as well as two rescue boats should a water disaster occur.

Biloxi Police Department

While employment fluctuates to some extent, Biloxi has 127 sworn officers, 40 civilian personnel and 25 reserve officers available to execute its duties and responsibilities. The primary police station is located at 170 Porter Avenue. The primary communications center is located on Pops Ferry Road and as an alternate the Emergency Operations Center was relocated to the police station on Porter Avenue.

The Biloxi Police Department has a broad capacity in handling emergency and disaster situations. Each patrol car is fully equipped with crowd control gear to manage civil disorder. The Department has a fully equipped bomb unit with six federally certified bomb technician hazmat specialists and two bomb containment vessels. There is a Special Response Team (SRT) and a fully equipped K-9 Unit with seven dogs trained in bomb, drug, and arson detection, plus body recovery.

The Department has a fully equipped dive/rescue team with five boats. The boats are used in emergency situations and have been used to assist flood victims. In addition, the department has side-scan sonar radar to assist with water search efforts, a large emergency response vehicle, mobile food kitchens which can feed large numbers at a time, and a massive, eight section climate controlled tent.

Biloxi Department of Public Works

The public works staff has three basic areas of responsibility in dealing with disasters, particularly the effects associated with hurricanes when there is advance notice.

In hurricane disasters, public works plays a role in prevention of damage, manning fuel supplies, assessment and repair of damage, debris removal, and restoration of the community's streets, drainage, recreational and other public facilities. The Public Works Department works closely with the City of Biloxi FEMA Coordinator preparing damage assessment reports and costs for federal reimbursement from disaster relief funds.

Upon receipt of notification from Emergency Management and other proper authority, the Public Works Department secures public buildings by boarding up windows and using other measures to protect structures (City Hall, City Hall Annex, Department of Community Development, etc.) from storm damage. During a hurricane, skeleton crews remain available to man underground gasoline and diesel fuel tanks that provide fuel to emergency vehicles. They also remain available to keep wells and lift stations running for as long as possible.

Following a hurricane, the Public Works Department coordinates efforts to restore City facilities. The department conducts an immediate assessment of the degree of damage to public buildings, streets, drainage and other public works. They begin clearing major streets, drainage ways and other facilities, as well as securing contractors for debris removal.

Biloxi Department of Community Development

The City of Biloxi's Department of Community Development has a rather sophisticated urban planning division staffed with professional urban planners and support staff. The planning division has GIS mapping capabilities and is supported by the building code division. This department plays a key role in planning and prevention of hazards, particularly those associated with flood plain management and storm water planning and management.

The planning division is responsible for implementation of the City's 2009 Comprehensive Plan, plus administration of the City's zoning ordinance and subdivision regulations. The planning division is responsible for promulgation and administration of codes and ordinances dealing with land use and land development, including a storm water management ordinance to regulate the design and construction of drainage systems in Biloxi.

The building division is responsible for the enforcement of building, housing, plumbing, electrical, mechanical, gas, and other related codes and ordinances of the City. This division has 10 full time inspectors highly trained in their respective areas of expertise. It is responsible for enforcement of the flood damage prevention ordinance adopted to promote public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas.

Codes and ordinances currently adopted and implemented by the City of Biloxi which focus, at least to some extent, on regulating development in flood hazard areas are listed below:

- Flood Damage Prevention Ordinance
- Zoning Ordinance
- Subdivision Regulations
- Building and Housing Codes
- Standard Excavation and Grading Code

The planning division staff includes a Floodplain Manager and a Community Rating System (CRS) Coordinator who is responsible for working with the requirements of the Insurance Services Office (ISO). In addition to other duties, the CRS Coordinator maintains records and documentation to keep Biloxi's flood insurance rating at the lowest class rating possible, providing property owners in the City with the benefit of lower flood insurance rates.

Biloxi Public Schools

In recognition of the fact that the Biloxi Public Schools are entrusted with the education and care of approximately 6,000 students, the school district is dedicated to maintaining a school environment conducive to teaching and learning by providing a safe environment. To ensure preparation, response and abatement should a crisis develop, a Safe School Council is in place. The Safe School Council is knowledgeable of federal, state and local agencies responsible for emergencies and works in cooperation with the agencies.

The school district prepared and can implement, if necessary, a Crisis Management and Response Plan for initiating basic standards when responding to a crisis. It seeks to lessen the overall impact of a crisis on students, parents, employees, property, equipment and visitors. The district requires principals at each school use the Crisis Management and Response Plan to develop a comprehensive site-specific plan and updated each year. The plan is a comprehensive document that considers the full spectrum of conditions of violent, technological and natural threats.

Many of Biloxi's public schools serve as emergency shelters for the community. While the listing of shelters can change with each emergency, in almost every instance some schools could be used to shelter victims of disaster.

Harrison County

Harrison County Emergency Management

Through Emergency Management, Harrison County and its political subdivisions developed the *Comprehensive Emergency Management Plan (CEMP)*, commonly referred to as the "All Hazard Disaster Plan." The purpose of the plan is to create mutual aid agreements when performing respective emergency functions before, during and after disasters or natural emergencies. Large military installations located in Harrison County, Keesler Air Force Base and Naval Construction Battalion, have their own disaster preparedness plans, however, they cooperate with the Harrison County Emergency Management when a disaster occurs and are included in drills and tests of the disaster response, recovery and mitigation activities. The Harrison County Emergency Management Director serves as a member of the Biloxi Hazard Mitigation Planning Committee.

As a coastal area, the threat of hurricanes is universally recognized as the primary threat to the community. A separate *Standard Operating Procedure for Hurricane Evacuation (SOP)* sets forth a procedure implementing evacuation in the event of hurricanes. The major goal of the SOP is to ensure a coordinated effort will exist and the jurisdictions involved will issue evacuation notification simultaneously and in such a manner as to prevent chaos and confusion among the populace.

Harrison County Emergency Management provides technical support and expertise to monitor and activate flood and disaster warnings. Several computerized models determine hurricane and storm activities. The agency also maintains manual gauges along the rivers in the County and tide level data gauges in several locations along the shoreline. The data recorded by these gauges is transferred to the National Weather Service, who depends on this data to make flood predictions.

Prior to the tragic events at the World Trade Center and the Pentagon on September 11, 2001, the Harrison County Civil Defense Council prepared a Terrorism Counteraction Standard Operating Procedures Manual to aid in protection of life and property in the event of terrorist

activities. In addition, training of emergency services was given and a training exercise conducted.

The promulgation of the Biloxi Hazard Mitigation and Floodplain Management Plan will aid Harrison County Emergency Management in performing its duties and functions. The comprehensive identification and assessment of hazards posing threats to the community is crucial to All Hazard preparedness. As a result of the Plan, the Harrison County Emergency Management Agency is better prepared to address any disaster or emergency situation.

Harrison County Emergency Management serves as the centralized point for all information released to the public concerning disasters, including decisions, suggestions and instructions. The agency is responsible for developing and maintaining a public information and education program. A briefing room is set up at the Harrison County Courthouse providing news releases to mass media representatives thus insuring accurate and consistent information flow. Telephone numbers for the public to obtain official disaster information are also published in telephone books.

Educational brochures and hurricane tracking maps are distributed to the general public and various organizations. Emergency Management routinely participates in Hurricane Fairs; and emergency information is distributed to the media as needed. In addition, television and radio stations maintain a selection of public service announcements related to emergency operations. The local media (radio, print and television) is included in the Emergency Management Agency chain of command to disseminate information about weather systems having the potential to cause flooding, tornado activity and hurricanes. Information includes:

Television and Radio Stations

Residents of the Mississippi Gulf Coast and Harrison County are provided hurricane, flood awareness and other disaster information via local and regional television affiliates. Included are WLOX (ABC/CBS Biloxi/Gulfport), WXXV (FOX/NBC Gulfport/Biloxi), WMAH (PBS Biloxi), WPMI (NBC Mobile), WWL (CBS New Orleans), WKRG (CBS Mobile), WGNO (Independent New Orleans) and WYES (PBS New Orleans). Throughout the year, and especially at the onset of hurricane season, stations air frequent educational programs about hurricane preparedness. Every year, most stations produce at least one documentary feature on the subject which is aired during prime time.

Each year many including, local WLOX Channel 13, designate the first week in June as Hurricane Preparedness Week. Several times daily special programming focuses on hurricanes and the problems presented to the area is shown during the regular newscast. Topics include descriptions of the hazards, safety, property protection, flood insurance and warnings. Near the anniversary of major storms, such as Hurricanes Camille and Katrina both occurring in the month of August, the public awareness campaign is renewed. Channel 13 has the most sophisticated, up to date equipment for forecasting and predicting severe weather, including a pinpoint Doppler Radar System. The Doppler System is particularly important in warning the public when tornadoes and severe thunderstorms threaten. Up to

the minute reporting is provided any time of day or night when the National Weather Service issues severe weather warnings.

Public service announcements produced by the Federal Emergency Management Agency (FEMA) and National Flood Insurance Program (NFIP) air during prime time on virtually every major television network. The announcements stress the importance of flood insurance, even for those who have never flooded or do not live in high-risk areas.

Local radio stations play a vital role in dissemination of information during an emergency, especially during the evacuation process when residents are likely to be on the road attempting to flee or return to the area. When electric power and cable service is interrupted, information broadcast by radio stations at the height of a storm and in the early days after a storm is essential to the community attempting to survive and recover from a major storm. An Emergency Information Network is established in Harrison County and includes a number of local FM and AM radio stations. During an emergency, normal programming is suspended and public service announcements are broadcast until the emergency subsides or is over.

Print News Media

The Sun Herald is the most widely read newspaper in Harrison County. A daily publication, the Sun Herald publishes numerous in-depth feature articles on the subjects of storm preparedness, survival, flooding and recovery before and throughout the hurricane season. At the onset of the hurricane season each year, the paper publishes a booklet insert entitled "Hurricane Survival Guide." The guide addresses the following subjects: preparedness, storm prediction, storm categories, what to do during the hurricane should one strike, whether or not to evacuate, evacuation routes, the history of storms affecting the coast, and how hurricanes form. Also included is a map for tracking hurricanes with instructions for use and suggestions for protection of personal property.

Harrison County Sheriff's Department

The Harrison County Sheriff's Department is responsible for law and order throughout the county and is prepared to respond and assist the City of Biloxi in any type of emergency situation, whether a natural disaster or law enforcement event requiring additional manpower and equipment.

Harrison County Schools

With approximately 1200 students enrolled in the two Harrison County schools located within the City limits, and close to 10,000 students county-wide, the Harrison County School District is dedicated to maintaining a school environment conducive to teaching and learning by providing a safe environment. During times of disaster, the Harrison County School District works closely with Biloxi City Schools and Harrison County Emergency Management to determine which schools will open as pre-storm shelters. Harrison County Schools also assists the City and

County with evacuations by staging school buses to transport residents out of the area if necessary.

Harrison County Sand Beach Authority

The Harrison County Sand Beach Authority develops and implements policies to maintain and preserve the sand beach. In the mid 1980's, the Sand Beach Authority began encouraging dune development on the beach by planting, in test areas, vegetation such as sea oats and other grasses native to shorelines. The goal behind dune development was twofold: (1) to prevent wind-borne sand erosion and (2) to provide sand to replenish the beach when sand is lost to natural littoral drift. The first test dune was planted on the beach in west Long Beach in a Velocity Zone near Pitcher Point.

Over time, that dune has become well established and has pine trees that sprouted voluntarily, and reach more than 20 feet in height. Since planting the first experimental dune, they are now established along most of the length of the sand beach. The dunes are recognized for their potential to mitigate wave action during major and severe storms.

The dunes also provide an added bonus. Wind-borne sand has long been a major public safety problem on coastal U.S. Highway 90. Wind driven sand drifts across the highway and pile up on road surfaces, creating a severe driving hazard. The sand is expensive to remove and, because of highway debris and pollution, is usually not suitable for return to the beach. By trapping wind-borne sand behind the dunes, before it reaches the highway, very little sand accumulates on the highway right-of-way.

The Mississippi Gulf Coast is also protected from storms by a series of barrier islands. The islands mitigate the wave action of storm surges before the waves enter the Mississippi Sound. Once in the Sound, the shallow water dissipates wave action by preventing waves from regaining energy. The manmade beach, dunes, seawall and Highway 90 further dissipate the energy associated with storm surges.

Public/Private Entities

Public Utilities

The City of Biloxi receives electricity and natural gas service from the following suppliers who are regulated by the Mississippi Public Service Commission and are members of the Mississippi 811 System for locating underground lines.

<u>Electricity:</u>	Mississippi Power	<u>Natural Gas:</u>	CenterPoint Energy
	Coastal Electric Power Association		

Telephone and cellular services are provided by numerous carriers throughout the City. Propane gas is also available as an alternative fuel through Ferrell Gas and AmeriGas.

All public utility companies have disaster response plans and are responsible for their distribution system and facilities, ensuring services are restored as quickly as possible after a disaster occurs. In addition, educational information is provided on their web sites about storm preparedness and prevention tips for residents and business owners.

American Medical Response (AMR)

AMR is a private ambulance company licensed by the Mississippi State Department of Health, Division of Emergency Medical Services. They provide basic and advanced life support to the citizens of Harrison County, including the areas serviced by the Biloxi Fire Department. The Biloxi Fire Department has resources available to supplement and enhance the system of emergency medical services in Biloxi. AMR is the Emergency Medical Services (EMS) Authority for Harrison County. As the County's EMS authority, AMR provides a liaison to Harrison County EOC for coordinating county medical needs during a disaster.

The Biloxi Fire Department and AMR have an agreement of mutual aid clearly outlining the duties and responsibilities of each entity in connection with emergency medical services. AMR provides EMS training to Biloxi firefighters as needed and within its established authority.

As Mississippi's largest provider of EMS, AMR has regional and national resources available to mitigate large scale disasters occurring in Biloxi. In addition, AMR has a mobile command post with extensive communication resources that can be deployed to Biloxi for use in any disaster situation.

American Red Cross

The American Red Cross is the only disaster relief agency chartered by the United States Congress to carry out disaster relief operations. The agency plays a key role in creating and preparing a fully trained volunteer base of people to assist in disaster relief. Preparedness for a disaster on the local level is vital because the local chapter is responsible for conducting the operation for the first 72 hours after a disaster.

The American Red Cross plays a crucial role in coordination and management of emergency shelters. The agency has a liaison stationed at the Harrison County Emergency Operations Center during disasters.

Within 24 hours after a disaster, American Red Cross damage assessment teams conduct a preliminary damage assessment. A preliminary drive-by overview assessment includes the extent and severity of area damage. . The preliminary damage assessment determines staffing, equipment needs, and, the number and location of shelters needed. Disaster relief operation teams request the preliminary assessment data be provided to state and national headquarters, so post-disaster staffing can be determined and assigned from the national level.

The American Red Cross determines the type and magnitude of services required for families needing assistance. . Detailed damage assessment determines the need for family services.

This damage assessment is completed using street sheets and a street by street drive-by survey. The survey is a structure by structure determination of severity of damage, using a rating of “0” for structures receiving no damage, “1” structures receiving minor damage, “2” structures receiving major damage and “3” structures destroyed

The American Red Cross provides damage assessment reports to service center disaster relief personnel who will interact with people in need of relief. The number and location of service centers is determined after the detailed assessment is finalized. Service centers remain open until most of the cases are closed.

The American Red Cross also assists families in getting back to normal through recovery mechanisms of the agency.

Coastal Transit Authority (CTA)

CTA is a non-profit provider of public transportation for the three coastal counties of Mississippi. It is an independently managed public utility governed by a Board of Commissioners. It is the designated recipient of State and Federal funding for urban transportation on the Mississippi Gulf Coast.

CTA has a mutual aid agreement with Harrison County to assist the Gulf Coast area, including Biloxi, with the evacuation of residents and visitors due to an impending disaster. Residents can pre-register for hurricane evacuation services at the CTA web site or at one of their transit facilities. Applications are also accepted for transportation services for persons with physical disabilities and senior citizens.

State Agencies

Mississippi Emergency Management Agency (MEMA)

Authority for mitigation: Miss. Code 1972, Annotated. 33-15-7 Et. Seq.

The Office of Mitigation is responsible for coordinating disaster loss reduction programs, initiatives, and policies throughout the State of Mississippi. Disaster loss reduction measures are achieved through disaster reduction programs, initiatives, and policies through the development of State and local Hazard Mitigation plans and the implementation of strategies identified in the plans.

The Office of Mitigation administers the Hazard Mitigation Grant Program, the National Flood Insurance Program’s Community Assistance Program and Map Modernization Program, the Flood Mitigation Assistance Program, the Pre-Disaster Mitigation Program, and the Severe Repetitive Loss Program. Floodplain Management, Grants and Planning Staff are assigned to all nine districts in the state. Mitigation Bureau Staff is extensively trained in Benefit Cost Analysis, Grants Management, National Flood Insurance Program, Plan review, CAV, CAC, environmental, project application review, HAZUS and NEMIS Entry.

The Mitigation Grants Management Bureau administers hazard mitigation grants to state and local governments. These grants include mitigation planning, drainage projects, acquisition of high-risk flood structures, retrofitting critical facilities, warning systems, safe rooms, storm shelters, and other cost-effective measures identified in the state and local government's Hazard Mitigation Plan. The Mitigation Grants Management Bureau developed a web site, www.MitigationMS.org, allowing local governments and eligible applicants to submit applications online.

The Floodplain Management Bureau manages the National Flood Insurance Program's Community Assistance Program for the 276 participating communities. Bureau staff provides compliance visits, workshops, and technical assistance to local communities. The Map Modernization Program is a joint Federal-State venture providing funding and technical assistance to local communities seeking updated flood maps to better plan and regulate development in identified special flood hazard areas.

The Mitigation Planning Bureau maintains and updates the State of Mississippi Standard Mitigation Plan, which documents statewide hazard risk and the capability to mitigate the risk. The Planning Bureau also works with other state agencies, regional planning authorities and local governments developing mitigation plans and strategies. State funding capabilities for hazard mitigation projects is the policy of the State of Mississippi to provide technical assistance, and administer federally funded mitigation programs.

Mississippi Department of Archives And History (MDAH)

The authority for mitigation is Miss. Code 1972, Annotated. 39-5-1

This agency has custody of and maintains care of all state records and materials pertaining to the history of Mississippi. It administers the State Records Management Program and aids mitigation by supplying information on the frequency and severity of past disasters, including the effectiveness of recovery efforts. It also supplies historical information on sites of proposed mitigation projects. Archives and History is a first response agency and is responsible for retrieving and stabilizing record recovery for government offices after a disaster. According to Federal Section 106 Review – Archives and History is required to make comments on debris removal on any project involving federal funding.

Mississippi Department Of Environmental Quality (MDEQ)

Authority for mitigation: Miss. Code 1972, Annotated. 49-2-9 Et. Seq.

The Department of Environmental Quality promulgates rules and regulations; receives and expends state and federal funds; conducts studies on alternate uses of natural resources; and responds to threatening incidents. It aids mitigation by protecting the state's natural resources and regulating their use. The Dam Safety Division is housed in the agency. MDEQ and MEMA serve as State Technical Partners in the Map Modernization Program and are active participants in the Mississippi Digital Earth Model and Remote Sensing Initiative.

MDEQ, in collaboration with MDA, is administering the use of HUD CDBG funds designated for the development and enhancement of new water, wastewater and storm water infrastructure on the Gulf Coast. Key in the development of the Master Plan for this program was providing infrastructure in areas less likely to be impacted by storms. Additionally, MDEQ expanded its ability to respond and collaborate with our state and federal partners during natural disaster related impacts such as debris disposal management, hazardous material management and wastewater treatment system recovery.

Mississippi Department Of Marine Resources (MDMR)

Authority for Mitigation: Miss Code 1972, Annotated. 49-15-11 (1972)

This agency aids hazard mitigation through (1) buyout programs, (2) preservation, creation, restoration, and enhancement activities, (3) education and outreach programs, and (4) our Mississippi Coastal Preserves Program. The agency partners with federal and state agencies, environmental organizations, and the private sector to identify susceptible, repetitive-loss properties and move them into public ownership through donation, purchase, or other means. These partnerships facilitate preservation, creation, restoration, and enhancement programs. DMRs current plan, which was endorsed by former Governor Barbour, is to preserve, create, restore, or enhance over 15,000 acres of coastal marsh, wetlands, or forests, double the footprint of Deer Island, and restore our offshore barrier islands (Petit Bois, Horn, Ship, and Cat Islands) to their pre-Camille footprint and functionality. Educational and outreach programs are conducted through partnerships with local academic institutions, additional state and federal agencies, and the private sector.

MDMR focuses on environmental conservation, principles and practices of smart growth and smart code, sustainable development, and sound environmental stewardship. The Coastal Preserves Program is a partnership with the MS Secretary of State and the MS Legislature through which parcels of land are identified as complimentary to increased environmental protection and conservation. These parcels are acquired through purchase, donation, or other means; and funds are provided to manage and enhance these properties.

The Marine Patrol Branch of the Department of Marine Resources is an agency of the State of Mississippi with offices in the Dr. Eldon Bolton State Office Building on Bayview Avenue and offices and boat facilities on Oak Street in east Biloxi. Marine patrol officers enforce fisheries laws, assist and support U.S. Customs, the U.S. Coast Guard and the U.S. Fish and Wildlife Service. Additionally, the Marine Patrol Branch responds to requests from the Mississippi Department of Environmental Quality to check hazardous material spills along with the U.S. Coast Guard. Typically, MDMR evaluates incidences and contacts the Coast Guard when necessary and appropriate. The agency also responds to emergency situations on boats and has limited firefighting capabilities. During hurricanes the marine patrol oversees and coordinates evacuation of vessels from the gulf into protected areas of the bay.

Mississippi Department Of Public Safety (DPS)

Authority for mitigation: Miss. Code 1972, Annotated. 45-1-1 Et. Seq.

The Department of Public Safety (DPS) aids mitigation by enforcing traffic laws and regulations on Mississippi highways and roads. It issues and renews driver's licenses, furnishes qualified personnel to aid in investigations, and provides assistance to communities during emergencies and disasters.

In the event of a haz-mat incident on a state or federal highway, the highway patrol will respond, contact other local authorities, secure the area and reroute traffic accordingly. The Highway Patrol responds to incidents regularly; and has tried and tested response operations in place.

In the event of hurricanes, the highway patrol places all Troop K units on alert, cancels all leave and stands ready to patrol federal and state highways before, during and after a hurricane ensuring traffic remains open. The patrol assists disabled vehicles and people on highways in need.

This department also houses the Office of Homeland Security. The Mississippi Office of Homeland Security provides funding to state and local agencies. This funding is used to purchase preparedness equipment, provide training and certification to first responders, develop plans and standard operating guidelines for agencies and response teams, and exercise and evaluate these response plans.

DPS also works with MDOT and Louisiana State Police during emergencies providing logistical and security support consistent with contraflow operations on our Interstates. DPS has the capability to feed and fully support our first responders when deployed to a disaster area. DPS added an additional helicopter designated to assist in search and rescue operations as well as having heavy lift capability.

Mississippi Department Of Wildlife, Fisheries, And Parks

Authority for mitigation: Miss. Code 1972, Annotated. 49-4-1 Et. Seq.

The Department of Wildlife, Fisheries and Parks aids in hazard mitigation through its conservation and protection of wildlife and marine habitats.

Mississippi Insurance Department (MID)

Authority for mitigation: Miss. Code 1972, Annotated. 83-1-1 Et. Seq.

The Insurance Department executes all laws relative to insurance companies, corporations, associations, and their agents and adjusters. It aids mitigation by licensing and regulating manufacturers and dealers of mobile homes; enforcing the LP gas inspection program; and administering the Standard Fire Code. The State Fire Marshal's office is located in the Department of Insurance.

Mississippi Department Of Transportation (MDOT)

Authority for mitigation: Miss. Code 1972, Annotated. 65-1-13.

The following is a brief description of the Mississippi Department of Transportation's (MDOT) on-going hazard mitigation capabilities.

- Construction, reconstruction and maintenance of transportation facilities vital to evacuation, response, and re-entry. This includes, but is not limited to, seismic retrofitting of bridges, the upgrading of traffic control devices after destruction, construction of transportation facilities to avoid flood prone areas whenever possible, and other precautionary design work – including wetlands mitigation – which reduces risk before, during and after an emergency.
- Education and communication outreach programs including information provided to the general public concerning contraflow, pet evacuation, and general preparedness.
- Training for all levels of MDOT response personnel for a wide range of natural and man-made hazards.
- In-house emergency coordination staff is MDOT's ESF-1 representative at the State Emergency Operations Center.
- Maintenance and regular updating of a Comprehensive Emergency Transportation Response Plan.
- Emergency preparedness for a 72-hour window of self-sufficiency after a disaster. This is accomplished through improvements made to emergency supplies, storage facilities, acquiring sufficient fuel reserves, as well as housing, food and water for transportation emergency workers.
- Improvements in communication capabilities by purchasing additional satellite radio units to serve as redundant communications backup. In addition, a mobile communications platform and a command/control center may be deployed.
- Evaluation of standard operating procedures in all areas, specifically within procurement, enabling the agency to function more efficiently and quickly in the purchase of emergency supplies.
- Provision of remote traffic sensing, to aid in traffic management during evacuations and re-entries.
- Development of partnerships with various state, federal and/or local agencies to save lives and reduce future losses. These include:
 - The GIS Coordinating Council in the developing the Mississippi Digital Earth Mapping Initiative.
 - Key emergency response agencies to aid in providing fuel. These agencies include the Mississippi Emergency Management Agency, Mississippi Departments of Health, and Wildlife, Fisheries and Parks.

- Acquiring travel trailers to provide housing accommodations for transportation emergency workers during extended events.
- Placement of three Mobilization Centers in northwest Mississippi to provide command/control and serve as a base of operations to support earthquake emergency response activities.

Mississippi Authority for Educational Television (d/b/a Mississippi Public Broadcasting)

Authority for mitigation: Miss. Code 1972, Annotated. 37-63-1 Et. Seq.

Mississippi Public Broadcasting (MPB) is a public service agency, providing the citizens of the state with educational, public service and informative programming. MPB aids mitigation by serving as the primary source for statewide emergency information plus utilizing its network of radio and television transmitters and towers. MPB supports MEMA with technical and production staff and broadcast equipment offering video and audio to outside news organizations from MEMA's Press Room, plus aids in the operation of the Joint Information Center. The Mississippi Department of Transportation, in partnership with MPB, identifies MPB FM frequencies on evacuation route signs. When a mandatory evacuation is ordered, MPB provides updates every 15 minutes via its statewide radio network. In the event of a state of emergency, MPB Radio I broadcasts crucial information as long as a need exists.

Mississippi State Department Of Health (MSDH)

Authority for Mitigation: Miss. Code 1972, Annotated. 41-3-15 (1972).

MSDH provides protection to the public against threats to health and safety because of unsanitary conditions relating to food, drinking water, sewage, unnecessary exposure to radiation, unhealthy and unsafe conditions in health care facilities, childcare facilities, and the workplace. The agency also helps identify threats to potable water supply caused by natural hazards.

Mississippi National Guard (MSNG)

The National Guard is prepared to help local government with manpower, equipment and expertise upon receipt of authorization from the Governor of the State of Mississippi or the President of the United States. In rare instances when life, limb or eyesight is at risk, the National Guard can assist without authorization from the Governor. Before responding, however, every effort must be made to contact the Mississippi National Guard Emergency Operations Center.

The Operations Plan for Military Support to Civil Authorities dated August 2000 governs the Mississippi National Guard's activities in response to requests for assistance received from civil authorities within the State of Mississippi. The Plan is applicable to all elements of the Mississippi National Guard, including Army, Air and the Mississippi State Guard when operating as a non-federalized National Guard entity.

The types of disasters to which the National Guard typically responds are listed below:

- Earthquakes
- Floods
- Winter Storms
- Hurricanes
- Weapons of Mass Destruction/Terrorism
- Civil Disturbances
- Search & Rescue
- Tornadoes
- Wild Fire Support
- Nuclear (Chemical Accident and Incident)
- Emergency Shelters
- Correctional Facility Support

The resources of the National Guard are available to Biloxi, upon receipt of a request from Harrison County Emergency Management and upon authorization from the Mississippi Emergency Management Agency.

The National Guard armory at Hiller Park serves as an operations center in the event of a disaster.

Mississippi Gaming Commission (MGC)

During the hurricane season, a designated MGC agent monitors and tracks all developing storms. This agent maintains contact with the Harrison and Hancock County Emergency Management Directors.

In case of EOC activation, a representative of the MGC sits as a member of the Harrison County EOC. In this capacity, the MGC functions as a coordinator. MGC passes information to and receives information from the MGC agents at the respective casinos plus provides the Executive Director in Jackson with periodic reports.

If required, the MGC issues an emergency closure order under the provisions of the Mississippi Gaming Control Act.

After landfall, the MGC coordinates with municipal, county, and state agencies determining a safe time for casino reopening. When deemed safe, the MGC grants permission for casino reopening. The MGC team reports to the casino to monitor the opening process.

Federal Agencies

Federal Emergency Management Agency (FEMA)

As of October 8, 2011, FEMA had 7,474 employees across the country – at Headquarters, the ten regional offices, the National Emergency Training Center, Center for Domestic Preparedness/Noble Training Center and other locations. These employees function as a part of a team including federal partners, state, tribal and local officials, the private sector, non-profits and faith-based groups.

On March 1, 2003, FEMA became part of the U.S. Department of Homeland Security (DHS). Their primary mission is to reduce the loss of life and property, protect the Nation from all hazards, including natural disasters, acts of terrorism, and other man-made disasters, and by leading and supporting the Nation in a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation.

FEMA Region IV serves Mississippi and the southeastern states of Alabama, Florida, Georgia, Kentucky, North Carolina, South Carolina and Tennessee. The Regional Office is located in Atlanta, Ga., and the Federal Regional Center is located in Thomasville, Georgia. Region IV currently has Recovery Offices in Florida and Mississippi.

Region IV has a skilled workforce to support citizens. First responders work together to build, sustain and improve capabilities to prevent, prepare for, protect against, respond to, recover from, and mitigate all hazards. Regional teams work hand-in-hand with federal, state, tribal, local and private sector partners to meet the needs of its state emergency management agencies.

Region IV's natural risks include hurricanes, tornadoes, flooding, droughts, ice storms, earthquakes, wildfires, and tropical storms. Six of eight states are hurricane-prone, therefore, Federal Coordinating Officers are pre-designated to plan for hurricane response issues and work closely with the state emergency management agencies.

Because Region IV houses both nuclear power facilities and chemical weapon stockpiles, there is an increased risk for a manmade disaster. Currently, there are 17 nuclear power facilities and applications for nine new sites. Those facilities supply 29 percent of the nation's electrical power output, and the addition of the new sites will increase that capacity by 51 percent. There are two chemical weapons stockpiles within Region IV.

U.S. Coast Guard (USCG)

The U.S. Coast Guard Marine Safety Office located in Mobile, Alabama regulates events requiring safety or security on navigable waterways and tributaries on the Gulf Coast and in Biloxi. This agency is on call with local authorities when incidents on waterways require response. The USCG issues notices to mariners to insure safety on the waterways.

Its Environmental Response Branch responds to hazardous material spills on navigable waterways and tributaries. In the event of a spill, the USCG serves as the on-scene federal coordinator and coordinates activities with local port authorities to assist during hurricane disasters.

Keesler Air Force Base *HOLD FOR KAFB APPROVAL-FOUO*

[REDACTED]

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5.2 Planning and Regulatory Capability

Requirement 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

The planning and regulatory capability section describes the preparation of plans, studies, and effective implementation strategy through ordinances, policies and programs. The commitment of the community to guide and manage growth, development, and redevelopment is often demonstrated through the preparation and use of these documents. In addition to emergency response and mitigation planning, other types of planning initiatives present significant opportunities to integrate comprehensive hazard mitigation principles and practices into the local decision-making process. Implementation of plans is achieved through capital improvement projects, ordinances and land development.

The City's Hazard Mitigation/Floodplain Management Plan will be a link for future updates of plans and ordinances outlined within this section. This is accomplished by providing a copy of the approved plan to each City department and each consultant who is contracted by the City to assist with the development and/or update of relevant plans and studies.

Summary of Existing Plans, Ordinances and Programs

Table 5.1 provides a summary of relevant local and regional plans, ordinances and programs in place or under development. A checkmark indicates the given item is currently in place and implemented or is being developed for future implementation. As these are updated, the City's Hazard Mitigation Plan will be consulted so goals and strategies identified are integrated where applicable.

Mitigation actions that promote public education/awareness, compliance of the City's regulations/ordinances, and transportation/structural projects noted in the Comprehensive Plan are identified in Chapter Six to integrate the programs, policies and planning initiatives as listed in Table 5.1.

**Table No. 5.1
Applicable Plans, Ordinances and Programs**

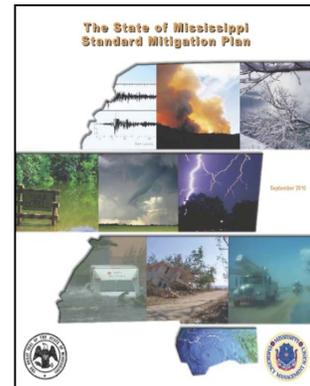
Plan Category/Name	City of Biloxi	Harrison County*	Regional/ State
Emergency Management			
Hazard Mitigation Plan	✓	✓	✓
Comprehensive Emergency Management Plan (CEMP)	✓		
Disaster Plan for the Evacuation of Casino Vessels	✓		
Evacuation Plan	✓		✓
General Plans			
Comprehensive Plan, 2009	✓	✓	
Local Codes and Regulations			
Land Development Ordinance: (Zoning, Subdivision and other development Regulations)	✓		
Zoning Ordinance		✓	
Subdivision Ordinance		✓	
Building & Fire Codes	✓	✓	
Landscaping Ordinance	✓		
Tree Protection Ordinance	✓	✓	
Floodplain Management	✓	✓	
Storm Water Management	✓	✓	
National Flood Insurance Program	✓	✓	
NFIP Community Rating System	✓	✓	
Other Plans and Programs			
Wildfire Protection Plan		✓	
Long-Range Transportation Plan			✓
Coastal Resource Management Plan (CRMP)			✓
Coastal Retrofit Program			✓
<i>*Certain county plans and codes are relevant to the City of Biloxi in terms of standards in future annexation areas. Flooding, wildfire and emergency management plans affect larger areas than the specific governmental entity.</i>			

Emergency Management

Mitigation is recognized as one of four primary phases of emergency management. The other three phases include preparedness, response and recovery. The hazard mitigation plan represents a community's blueprint for reducing the impact of hazards on people and the built environment. The essential elements of a hazard mitigation plan include risk assessment, capability assessment and mitigation strategy. The City of Biloxi adopted Hazard Mitigation in 2006. The current update will bring the City into compliance with the required five year schedule.

State of Mississippi Standard Hazard Mitigation Plan, 2010

Developed by the Mississippi Emergency Management Agency, the State Hazard Mitigation Plan outlines risks, mitigation capabilities, strategies and actions on a state-wide level and is updated every three years. The state plan is updated every two years and is currently being updated. The Biloxi plan will add to revisions of the state plan ensuring their mitigation needs are addressed in future planning initiatives.



Comprehensive Emergency Management Plan (CEMP)

The CEMP provides a framework in which the City of Biloxi and its political subdivisions can plan and perform their respective emergency functions before, during, and after disasters or a national emergency.

Harrison County Evacuation Plan

Evacuation routes were established by Harrison County in cooperation with adjacent counties and the state. The maps are published on the internet and through various agencies.

City of Biloxi Disaster Plan for the Evacuation of Casino Vessels

Before May 1st of each year, casinos are required to furnish a current disaster plan to the City, the Harrison County Civil Defense Department, and any other designated government agency. The disaster plan must be updated if any of the following occur: changes in management, changes to the casino vessel, addition of casino vessels, or if the evacuation site is changed. The updated plan must be in a form designated by the Harrison County Civil Defense Director and the City plus contain the following information:

- Site location; mooring; an engineering analysis for tide rise, wind resistance and wind load
- A drawing of vessel(s), with locations of emergency exits, fire stations, fire extinguishers, and life rings annotated
- On-board emergency power capability, fuel, and fuel storage capability

- Evacuation plan
- Plans and procedures to prepare and transport the vessel(s) to safe harbor
- Contact information to essential management personnel at the Harrison County Civil Defense Department and to contractors for managing the emergency with proposed communication procedures.

General Plans

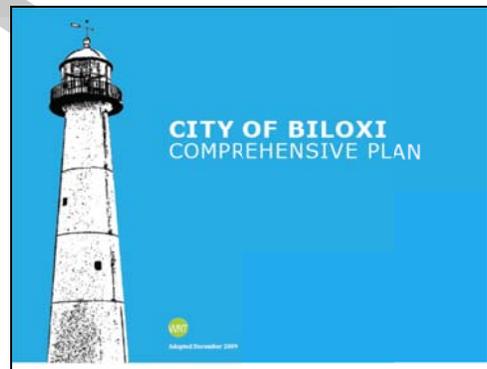
General or Comprehensive Plans are so called because they are long-range plans that include the entire geographical area of the county or municipality and all elements of the built environment. The following elements are required by state statute in Comprehensive Plans: Goals and Objectives, Land Use, Transportation and Community Facilities (including housing). There are common themes in Hazard Mitigation Plans and Comprehensive Plans including appropriate use of land in relation to natural barriers such as flood areas; protection of natural and historic resources; and adequate transportation, community facilities and infrastructure. Comprehensive plans are implemented through capital improvement projects, local ordinances, and private development.

Funding for long range planning efforts was made available to local municipalities and counties located in the lower six counties along the Mississippi Gulf Coast after Hurricane Katrina.

Comprehensive Plan, 2009

The City of Biloxi adopted their most recent Comprehensive Plan in December of 2009. Pursuant to state statute, the plan includes all required elements, plus an assessment of historic and cultural resources, economic development, downtown revitalization strategy, regional planning context, and neighborhood improvement strategies.

The Comprehensive Plan and its component parts set forth goals and objectives clearly supportive of mitigation planning. Several goals and implementation objectives are itemized in the following material.



Chapter 1: Introduction

1.4 The Big Issue

The Comprehensive Plan acknowledges past storms like Camille and Katrina irrevocably changed the face of Biloxi. Although tremendous progress was made since 2005, an overarching concern of citizens during the planning process was the City's preservation, restoration and strengthening of Biloxi's natural, cultural and historic heritage. The plan identifies key issues directly related to hazard mitigation and are itemized below:

1. Storm Vulnerability: How can Biloxi reduce its vulnerability to future storms through nonstructural and structural protection measures?
2. Rebuilding the Peninsula: How can areas of West Biloxi and East Biloxi impacted by Katrina be redeveloped to retain character, reinforce community, and resist future storm damage?
3. Managing Growth North of the Bay: How can a sustainable cost effective development pattern served by public infrastructure and public services be created as Biloxi grows to the north away from its traditional core on the Peninsula?

Chapter 2: Vision Statement

The Vision Statement of the Comprehensive Plan states that creating a prosperous, resilient City for the 21st century is, in part, based on a healthy environment that supports quality of life, sustains the economy, and protects against storm damage and flooding.

Chapter 3: Land Use Element

The land use chapter acknowledges conservation of environmental resources like wetlands, aquatic ecosystems, floodplain, and indigenous tree cover provide important benefits such as natural storm water management. Conservation of these resources is necessary to ensure a resilient and sustainable land use pattern for the future, particularly given scientific evidence that sea levels rise and warming ocean temperatures are likely to result in increasing occurrences of severe storms. The Land Use Goal contains language to “protect sensitive environmental resources and reduce storm vulnerability.

Objective 3-10 is to “Maintain critical environmental resource areas as open space.”

Action 3-1-1: Enact conservation cluster subdivision provisions in the LDO to protect sensitive environmental resources, reduce storm vulnerability and maximize hazard resiliency.

Action 3-30-2: Enact common open space set-aside standards for new development in the LDO designed to protect floodplains, wetlands, riparian areas, and other environmentally sensitive resource areas.

Objective 3-11 is to “Maintain undeveloped flood prone areas as open space and incorporate measures to increase resiliency in existing and new development.”

Action 3-11-1: Implement the FEMA Based Flood Elevation maps and new regulations to reduce vulnerability to flooding and storm damage.

Action 3-11-2: Modify nonconformity regulations to allow expansion or reconstruction of nonconforming structures located in designated floodplain areas in exchange for significant structural improvements to reduce vulnerability to flooding and storm damage.

Actions 3-11-3: Enact LDO provisions and incentives to minimize building footprints, maximize open space and otherwise encourage more resilient design and construction within areas subject to flooding and storm damage.

Action 3-11-4: Enact LDO provisions and pursue other strategies to facilitate productive use of open land in flood prone areas, such as urban agriculture, community events, and recreation.

Specific recommendations for residential development in Section 3.3 reiterates this goal by stating that reducing vulnerability to major storm events should be the highest priority in Special Hazard Areas (the Velocity Zone and 100-Year Floodplain). Creative uses of open space and vacant land including wetland restoration, community-based recreation, eco-tourism, community gardens, and urban agriculture are suggested. The Future Land Use Map includes a Special Hazard Area Overlay district showing the Velocity Zone and 100-Year Floodplain.

Chapter 4: Transportation Element

Key issues cited in the Transportation Chapter include:

- Evacuation capacity of the Biloxi Peninsula is restricted by the capacity and limited number of bridge connections to the north and east and roadway connections to the west. East-West connections are limited by waterways and federal land restrictions (Keesler Air Force Base)
- The limited number of connections to the peninsula due a lack of direct north-south connections between I-10 and Highway 90.

Objective 4-1 is to “Provide a roadway network with adequate east-west and north-south connections to move people safely to, through and out of Biloxi.”

Major corridors in the City, including Interstate 10, Interstate 110, US Highway 90, Pass Road, Popp’s Ferry Road, provide access vital to the economy, as well as to public health, safety, and welfare through emergency evacuation needs. The ability to safely evacuate the Biloxi Peninsular during storm is limited by the capacity of the three bridges accessing the peninsula from the north and east and the roadways connecting to the west. Major corridors, like Popp’s Ferry Road, are also addressed individually..

“The City has placed a high priority on improving Popp’s Ferry Road capacity as a critical connector from the peninsula to Cedar Lake Road and I-10 in North Biloxi. Improvement projects have been implemented in stages over the last 10 years, including widening of the segment between Cedar Lake Road and Riverview Drive to a five-lane roadway and the segment from Riverview Drive to the Back Bay bridge to a three-lane roadway. Further improvements are under development. De-sign plans have been developed for widening Popp’s Ferry Road to a five-lane roadway from Cedar Lake Road east to the D’Iberville city limits. An Environmental Study is underway to evaluate widening Popp’s Ferry Road from Riverview Drive south to Pass Road. In addition, the City is evaluating an extension of Popp’s Ferry Road south of the CSX Railroad to connect with Highway 90 by crossing the Coliseum property.”

Chapter 6: Community Facilities and Services Element

Portions of this chapter are directly related to hazard mitigation and state the major focus of emergency preparedness in Biloxi is to reduce hazards and prepare the City for future storm and flood risks. According to the plan, the City distributes a hurricane preparedness guide, provides flood and storm warnings, and, based on the severity of storm threats, requires partial or complete evacuations of the City.. The Comprehensive Plan states Biloxi's recently updated Hazard Mitigation/Floodplain Management Plan presents a comprehensive framework to address future storms and regional disasters.

Other plans cited include Biloxi's Storm Water Pollution Prevention Plan and Storm Water Management Plan. The City's Engineering Department and Development Review Committee administer the two plans.

Objective 6-1: "Provide effective police, fire, and emergency services and coverage for existing and future development."

Action 6-1-1: Develop capital improvement plans for police, fire, emergency service community facilities, and set targets for acceptable levels of service standards.

Action 6-1-2: Reserve future fire and emergency facility sites in Woolmarket to serve growing population centers.

Action 6-1-4: Continue to implement the City's Hazard Mitigation Plan/Floodplain Management Plan goals, objectives, and actions to improve emergency management capabilities for existing and future populations.

Chapter 7: Housing Element

Objective 7-4: "Reduce the vulnerability of housing to storm damage through measures such as structural protection, rebuilding to standards designed to minimize damage to individual buildings, and relocation of housing outside of flood prone areas.:"

Action 7-4-1: Limit residential development in special hazard areas (as opposed to reconstruction of existing homes). Require appropriate flood proofing measures for all construction to withstand high velocity winds.

Action 7-4-2: Increase code enforcement to maintain the quality of existing housing stock in Biloxi.

Action 7-4-3: Provide incentives to homeowners and property investors to flood proof existing residences and make other safety improvements.

Action 7-4-4: Direct new housing in East Biloxi out of special hazard areas and promote additional housing in Downtown Biloxi.

The plan acknowledges public health, safety, and welfare require housing be constructed to storm resistant standards including elevation of the first floor above the base flood elevation. It recommends new housing be located outside of designated flood risk areas whenever possible.

Construction within flood prone areas should be focused in compact developments that maximize collective flood protection through structural and nonstructural measures.

Local Codes, Ordinances and Regulations

Land Development Ordinance (LDO)

The purpose of the Land Development Ordinance (LDO) is to promote the public health, safety, and general welfare of the citizens and landowners of Biloxi, and to implement the goals, objectives, and policies of the Biloxi Comprehensive Plan including other city-adopted plans addressing the City's growth and development. The City recently adopted a Land Development Ordinance which became effective November 9, 2010. The code is subsequently updated as needed. The LDO consolidates zoning, subdivision regulations and other development standards into one document. Regulations include minimum standards for:

- Use of land by zoning district.
- Intensity and Dimensional Standards (Minimum lot area, width and depth, structure height and required setbacks, FAR, maximum impervious surfaces per lot).
- Development Standards (Access and circulation including connectivity of streets and cross access of parking areas; off-street parking and loading; landscaping for commercial and multi-family developments; tree protection and vegetated buffers; environment protection regulations; sustainable development incentives; and signs)
- Infrastructure requirements for new subdivisions such as streets, sanitary sewer, storm water facilities and other utilities.
- Administration and enforcement procedures for as-built drawings and inspections, including land platting processes and provisions..

Principal Goals of the LDO

Specific goals of the ordinance directly pertaining to hazard mitigation are itemized below:

- Maintain and stabilize the value of buildings and land.
- Reduce the vulnerability of developments and residents to storms, flooding, and other natural hazards.
- Ensure the provision of adequate open space between uses for light, air, and fire safety.
- Better manage or lessen traffic congestion and its accompanying hazards.
- Prevent the overcrowding of land and avoid undue concentrations of population.
- Support the efficient, orderly, and cost-effective provisions of needed transportation, water supply, sewerage, schools, parks, public utilities, and other public facilities and services.
- Foster convenient, compatible, and efficient relationships among land uses.

- Protect and conserve water resources (e.g., Mississippi Sound, estuaries, rivers, streams, wetlands) and their functions (e.g., flood control, fisheries, recreation).

Specific Standards for Storm Water Drainage and Other Infrastructure

Storm water facilities in new development areas must be designed to serve the entire drainage area of the development site and all post-construction discharge outfall must be approved. The City may, at its option, elect to participate in the cost of any storm water management system required to serve a drainage basin greater than the development site.

A system of water and sewer mains of approved size and location must be connected to the City's systems. If City systems are not available, the developer must install water and sanitary sewer infrastructure for future tie-in to the City's systems.

Several provision requirements are specific to emergency services: two entrances in subdivisions of 50 or more houses; minimum turning radius for emergency vehicles; minimum street widths; placement of fire hydrants; fire protection for piers, docks and wharfs; lot accessibility; and additional specific requirements for waterfront property.

Specific Standards for Landscaping and Tree Protection

The LDO requires landscaping on commercial, industrial and multi-family sites. Credit is given for existing vegetation retained and protected during construction. Protection of certain types of trees, including the tree canopy area, is mandatory.

Vegetated buffers are required between certain uses to mitigate noise or other types of disturbances. Incentives are given for implementation of sustainable development principles, such as reduction of impervious surfaces. These standards enhance the ability of the City to prevent excessive runoff from alteration of existing ground cover.

Building and Fire Codes

The purpose of building codes is to provide minimum standards for safeguarding life, health, property and public welfare by controlling the design, construction, quality of materials, use, occupancy, location and maintenance of all buildings, structures and certain equipment. The City Building Code Official reviews and approves building plans, makes subsequent inspections, and issues a Certificate of Occupancy upon satisfactory completion of construction.

The City of Biloxi has adopted the following building and fire codes:

- International Residential Code, 2006 edition, together with Appendix A, Appendix B, Appendix C, Appendix D and Appendix E, as published by the International Code Council, Incorporated.
- The National Electrical Code, 2011, as published by the National Fire Protection Association

- The International Plumbing Code, 2006, as published by the International Code Council and International Private Sewage Disposal Code, 2006 edition
- The ICC 600, 2008, Hurricane Resistant Code

Specific Standards of Building and Fire Codes

The Fire Code for the City of Biloxi provides minimum standards for design of all buildings. Buildings for use by the public have additional standards including use of fire-resistant building materials, fire extinguishers, sprinklers for certain size and types of buildings, spacing between buildings and adequate access and egress routes.

The Fire Code also regulates potential hazards associated with fire, explosion and hazardous materials. The Code establishes a fire prevention official position to enforce the code governing, among other things, storage of explosives or blasting agents, storage of flammable liquids, designation of routes for vehicles transporting explosives or blasting agents, and routes for transporting hazardous materials.

Flood Damage Prevention Management

The National Flood Insurance Program (NFIP) is a federal program enabling property owners and renters to purchase flood insurance. It is based on an agreement between communities and the federal government whereby a community adopts and enforces certain floodplain regulations so the federal government will make flood insurance available in that community.

Communities have an opportunity to participate in the Community Rating System (CRS) which helps measure flood management capability. The CRS is an incentive-based program that encourages pre-defined flood mitigation activities going beyond the minimum requirements of the NFIP. The City of Biloxi participates in this program with a designated CRS Coordinator documenting the procedures and activities outlined in the CRS Coordinator Manual to improve the City's rankings. Chapter 6 Section 6.1 provides more details regarding the City's strategies for this program.

Principal Goals of Biloxi Flood Damage Prevention Ordinance

The objectives of Biloxi's adopted flood damage prevention ordinance are clearly consistent with the principal goal of the Biloxi Hazard Mitigation/Floodplain Management Plan. Several general purposes related to hazard mitigation are itemized below:

- Protect human life and health.
- Minimize expenditure of public money for costly flood control projects.
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.
- Minimize prolonged business interruptions.

- Minimize damage to water and gas mains, electric, telephone lines, sewer lines, streets and bridges, plus other public facilities and utilities located in floodplains. Help maintain a stable tax base by providing sound use and development of flood prone areas minimizing future flood blight areas.
- Ensure potential home buyers are notified property is in a flood area.

Community Rating System Participation

By fact, the City of Biloxi is a participant in the National Flood Insurance Program and the Community Rating System illustrates the City's commitment to flood hazard mitigation. The CRS program encourages cities to go beyond the minimum requirements of the flood insurance program and rewards communities implementing various flood mitigation measures by reducing flood insurance rates to constituents. Biloxi's current CRS rating is 5.

Specific Standards of the Flood Damage Prevention Management Ordinance

In conjunction with the ordinance, the City of Biloxi participates in the NFIP program and adopted post-Hurricane Katrina Flood Insurance Maps (FIRMs) that govern development in flood zones. In certain flood areas/zones, construction and substantial improvements to buildings are required to have the lowest floor, including basement, at a minimum of one foot above the base flood elevation. Other requirements include anchoring manufactured homes and accessory buildings.

Storm Water Management Ordinance

Storm water management seeks to limit non-source pollution of streams, rivers, aquifers and other water bodies by managing water run-off resulting from rain or other types of precipitation. The Storm Water Management Ordinance helps prevent flash flooding, erosion of soil and siltation in gutters, streams and waterways.

- The City regulates storm water facilities for new development as part of their Land Development Ordinance and enforces the regulations through site plan reviews and platting of subdivisions.
- The City adopted a Storm Water Management Ordinance and enforces the provisions through site plan reviews and the platting of subdivisions.

Principal Goals of Storm water Management Ordinance

The general purpose and intent of the ordinance is to protect and safeguard the public health, safety, and general welfare of the citizens and landowners of Biloxi with the establishment of minimum storm water management requirements and flood damage prevention controls. The intent is more specifically to establish procedures for maintaining an orderly pattern of land use and development to:

- Reduce the vulnerability of residents and development to storms, flooding, and other natural hazards.

- Assure maintenance of water quality standards through better managed storm water runoff, reduced discharge of pollutants, elimination of illicit discharges, and erosion and sediment control.
- Protect and conserve the water resources (e.g., Mississippi Sound, estuaries, rivers, streams, wetlands) and their functions (e.g., flood control, fisheries, recreation).
- Maintain and stabilize the value of land and public and private improvements.
- Provide the City of Biloxi with the authority to manage storm water runoff nonconformance and illicit discharges and establish enforcement actions for those persons or entities found to be in noncompliance or refuse to allow access to their facilities.
- Establish legal authority to conduct all inspection, surveillance, monitoring and enforcement procedures necessary to ensure compliance with the ordinance.

Specific Standards of the Storm Water Management Ordinance

Storm water management includes provisions for the best management practices (BMPs) required prior to disturbance of land cover, during construction and for permanent facilities adequately managing storm water on site. A Storm Water Pollution Prevention Plan conforming to the regulations of MDEQ must be submitted at the time of site plan approval or prior to construction, demolition or land disturbance.

Excavation and Grading Code

The City adopted the Standard Excavation and Grading Code, 1975 edition, published by the Southern Building Code Congress International, Inc., as the excavation and grading code standards of the city.

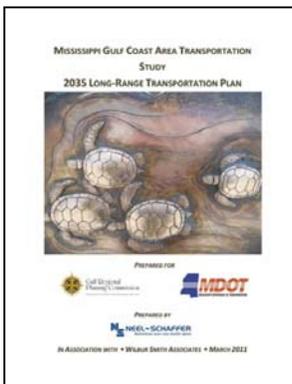
Principal Goals of the Standard Excavation & Grading Code

The Standard Excavation and Grading Code of the Southern Building Code is consistent with efforts of the Hazard Mitigation/Floodplain Management Plan to prevent hazards as a result of excavation or grading. The purpose of the Code is “to safeguard life, limb, property and the public welfare by regulating grading on private property.” Excavations or grading having a potentially adverse effect on adjoining properties or drainage channels are regulated by the code which provides design and construction standards. Plans and specifications must be submitted to the building official and a permit obtained prior to excavating or grading.

5.3 Other Plans and Programs

Harrison County Wildfire Protection Plan, 2007

In late 2006, the Mississippi Forestry Commission and The Nature Conservancy commissioned the preparation of wildfire protection plans for a fifteen-county south Mississippi region. The plan addressed changes to the Wildland-Urban Interface (WUI) brought about by Hurricane Katrina plus increased development in many parts of the region. The Plan includes several components: Geographic Information System (GIS) produced maps, County Risk Assessment, Mitigation Projects List, Structure Ignitability Recommendations and an Action Plan and Assessment Strategy.



Long-Range Transportation Plan (Metropolitan Planning Organization)

Long-range planning for major transportation routes in urbanized areas with a population greater than 50,000 is required by federal statute. The Gulf Regional Planning Commission coordinates the preparation of this plan for the Gulfport-Biloxi and the Pascagoula-Moss Point urbanized areas.

Coastal Resource Management Plan (CRMP)

The mission of Comprehensive Resource Management Plan (CRMP) is to develop a plan to sustain Mississippi's coastal resources and to provide for a healthy economy in the coastal area.

The overall objective of the Office of Coastal Management and Planning is to build the capacity of state and local governments to manage and protect coastal wetlands and marine resources in Mississippi. This objective is accomplished through coordinating agency efforts, developing the necessary partnerships between public and private entities, and integrating wetland protection and management into the lifestyle of the coastal community.

There are four programs within the Office of Coastal Management and Planning. The first is a planning assistance program providing the 11 coastal cities and six coastal counties with planning needs for their regions. The second is a smart growth program. This program is designed to provide the six-county region with education on smart growth. The program began

with the Storm Water Toolbox. The third program is the Mississippi Gulf Coast National Heritage Area (NHA). The mission of the Mississippi Gulf Coast NHA is to continue growth of the economy using natural resources, heritage, recreational, and historical assets in the six-county region. The fourth program is the Coastal Impact Assistance Program (CIAP). Grants from CIAP total \$120 million for the six coastal counties of Mississippi.

Mississippi Hurricane Evacuation Plan

The Mississippi Department of Transportation (MDOT) developed hurricane evacuation plans including provisions for contra-flow of traffic lanes during evacuation procedures. MDOT works with the states of Louisiana and Alabama to coordinate this plan.



Coastal Retrofit Program

The Coastal Retrofit Program is a \$27 million grant project funded by FEMA to help homeowners strengthen their homes against wind damage. Projects may include installation of roof retrofits in the attic and opening retrofits around windows and doors, as well as other techniques determined to be beneficial. Wind engineering analysis helps determine the type of retrofitting needed for each home.



MEMA manages a Hazard Mitigation Grant Program which funds up to 90 percent of the cost of a standard retrofit package for grants to homeowners residing in Mississippi's three coastal counties of Hancock, Harrison and Jackson and minimally meet the following qualifications:

- Owner-occupied single family structure.
- Current homestead exemption.
- Homes meet or exceed FEMA's required Benefit Cost Analysis ratio.
- Homes are site built and mounted on a secure foundation.

Climate Change Adaption Study

The City of Biloxi was awarded a planning grant from the Mississippi Alabama Sea Grant Consortium (MASGC) in 2011 to incorporate climate adaptation information in its 2012 Hazard Mitigation Plan and develop recommendations addressing local risks identified in climate-change projections. The plan will address nonstructural methods to reduce damage and will be used in addition to those currently in force in the City's Land Use, Storm water Management and Flood Damage Prevention Ordinances.

With a large amount of its land mass abutting significant-sized water bodies, the City has a high level of vulnerability to projected climate-change impacts. Projections for more frequent and

more severe storms will also increase flooding risks created by sea level rise. Scientists' projections for sea level rise and increased storm intensity (higher wind speeds, more rainfall; increased height and strength of storm surges) call for consideration of a proactive approach to climate-change adaptation.

The Climate Change Adaption Study Project Committee includes the City's Floodplain Manager, CRS Coordinator and City Engineer and is chaired by Milton Houseman, who also chairs Biloxi's Hazard Mitigation Plan Committee.

The Project Committee is focusing on accomplishing four objectives:

- Improving the understanding of city officials, employees and the community about local and regional climate-change issues; and beginning the process of identifying Biloxi's method to minimize damage to both the manmade and natural environments;
- Identifying climate adaptation recommendations to be considered for inclusion in Biloxi's 2012 Hazard Mitigation Plan and in other plans, policies and codes;
- Educating the public about the benefit(s) of requiring one foot of freeboard above sea level, in anticipation of projected sea level rise, increased storm surge and more frequent upland flood events; and
- Identifying ways the City can cope with increased flooding, in terms of planning future storm water improvements and/or retrofitting existing storm water management BMPs by promoting use of rain gardens, pervious paving material, etc.

Educational outreach to city officials, staff and the community about local climate-change issues will help facilitate consensus on updating public regulations and policies to minimize detrimental impacts on Biloxi stakeholders in the short- and long-term.

One committee recommendation is that additional Biloxi sites be added to the Sea-Level Rise Visualization Map developed by the NOAA Coastal Services Center and the U.S. Geological Survey pilot project. Available online at <http://www.gom.usgs.gov/slr/index.html>, the map allows residents to "see" potential flooding scenarios by using adjustable sea level rise levels, marsh locations, related vulnerability information, and flood frequency. This type of visualization tool may help some residents understand the increased weather risks resulting from what seems to be a nominal rise in sea level.

The planning project is anticipated to be complete by May 2013 and a summary of results will be posted on the City's website at <http://www.biloxi.ms.us>.

5.4 Warning Systems, Public Outreach and Information Systems

Effective pre-event public warning systems and outreach is of utmost importance in hazard mitigation planning. The ability to maintain current up-to-date data on the location and type of structures is also vital. The City of Biloxi has numerous methods for each area and they are itemized in Table 5.2 followed by a brief discussion.

Table No. 5.2 Warning Systems, Public Outreach Programs and Information Systems	
Warning Systems	
Sirens	✓
NOAA Weather Radio Reception	✓
Reverse 911	✓
Public Outreach Programs	
C-Host	✓
Storm Smart Network	✓
Local Outreach Programs	✓
Information Systems	
GIS Data	✓
Building Footprint	✓
Hazard Data	✓
Assessor Data with land use data	✓

Public Warning Systems

Residents of the City of Biloxi are notified of imminent hazards in a variety of ways. Dependent upon the type of situation sirens, NOAA Weather Radio Reception, Cable Over-ride, Reverse 911 and other methods may be utilized.

Coastal Hazard Outreach Strategy Team (C-HOST)

The C-HOST regional outreach team, established in 2008, helps educate residents about flood hazards, flood insurance, flood protection measures, and the NFIP.

The Team consists of Building Officials, Certified Floodplain Managers, NFIP CRS Coordinators, Planning & Zoning Officials and others who serve the CRS communities of Bay St Louis, Biloxi, D'Iberville, Gautier, Gulfport, Harrison County, Long Beach, Ocean Springs,

Pascagoula, Pass Christian, and Waveland. It is supported by FEMA, MEMA, and the Insurance Services Office (ISO). Local residents, business people and other stakeholders are also a part of the team.

C-HOST Goals are as follows:

- Goal 1: Make the public aware of the flood threat to which communities may be susceptible.
- Goal 2: Educate local officials of the importance of making the public aware of flood threats and other hazards.
- Goal 4: Provide a level of consistency in the public messages disseminated from the various public entities. ..
- Goal 5: Provide for the most comprehensive coverage for public outreach using the most cost effective means, including the pooling of resources and seeking of private sector sponsors.
- Goal 6: Promote the public awareness of the DFIRMS to the community.

Through dissemination of information and working together, the team seeks to ultimately improve the overall rating in the CRS program for each community represented.

StormSmart Coasts Network

The StormSmart Coasts Network is a web resource dedicated to helping decision makers in coastal communities address the challenges of storms, flooding, sea level rise, and climate change. In addition to the website, a network of state and local sites provide tools and collaborative efforts to interacting coastal decision makers

The StormSmart Coasts began with NOAA Coastal Services Center Coastal Management Fellowship in the Massachusetts Office of Coastal Zone Management. National Sponsors include FEMA and EPA. The Gulf of Mexico Alliance is a regional sponsor.

Local Outreach Programs

In addition to disseminating information through organized networks and local officials, staff works daily providing information to residents through internet, day-to-day interaction and as a part of community meetings.

Information Systems

In order to maintain accurate data bases and maps for local decision makers and the public, Geographic Information Systems (GIS) are maintained by the City which is accessible online through a geo-portal. Zoning and DFIRM maps are also provided online in pdf format. The City's mapping department categorizes land use, building footprints, property owners and tax assessor data.