Hazard Mitigation Plan Five Year Update
for
Mississippi University for Women (MUW)
Columbus, Mississippi
Lowndes County

Original Plan Prepared by Angela L. Jones and the 2015 five year update coordinated by Jim Jones with guidance and assistance by MUW's Disaster Resistant University Planning Team

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A Tradition of Excellence for Women and Men

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Adoption by the Mississippi University for Women

Upon the recommendation of the Mississippi University for Women (MUW) Disaster Resistant University Planning Team and approval by the Federal Emergency Management Agency and the Mississippi Emergency Management Agency, I accept this updated Hazard Mitigation Plan and its content on behalf of Mississippi University for Women. Furthermore, it is my intent that the plan continue to be a functional guidance for the University in order to mitigate the effects that accompany the Stated Hazards.

Jim Borsig, Ph.D.
President

Date 2/29/16

Hazard Mitigation Plan Background

In 2002, the United States Department of Homeland Security's Federal Emergency Management Agency (FEMA) initiated the Disaster Resistant University Program. Administered by Mississippi Emergency Management Agency (MEMA), the DRU Program assists universities and colleges to implement a sustained pre-disaster hazard mitigation program to reduce risk to students, faculty, staff, facilities and research assets. On March 27, 2008, the Mississippi Institutions of Higher Learning, Office of Risk Management, entered into a contract with MEMA to produce hazard mitigation plans on all campuses, with the exception of the University of Mississippi, who already has one. MUW was notified of the DRU award in a letter dated April 4, 2008 from Mississippi Institutions of Higher Learning's Office of Insurance and Risk Management; however the grant, in the amount of $84,600 (95%/5%) was not signed by IHL until October 20, 2008. The contract requires the plan to be completed and approved by MEMA and FEMA no later than March 20, 2010. The MUW Plan was developed and adopted November 2010. On December 9th 2014 MEMA notified MUW that our Hazard Mitigation plan would expire December 5, 2015 and that the plan must be reviewed, updated, and submitted for approval every 5 years.

In January of 2015 MUW applied for financial assistance to review and update the 2010 Hazard Mitigation Plan. On January 29, 2015 MUW was notified pursuant to Hazard Mitigation Grant State Program DR-MHGP-MS-002, funds in the amount of $45,000 were awarded for the hazard mitigation plan review and update with stipulations that $40,000 would be the State cost share and $5000 would be local cost Share.

Hazard Mitigation plan Summary

On April 4, 2008, Mississippi Institutions of Higher Learning notified MUW that the University had been approved for a multi-jurisdiction Disaster Resistant University (DRU) grant as announced by FEMA in the amount of $80,370 (95%/5%). The funding from this grant will finance 95% of the cost of assembling the hazard mitigation project. MUW will provide a matching commitment of $4,230 for a total of 84,600. The goal of the project is to produce and implement a sustained pre-disaster natural hazard mitigation plan for MUW to reduce the overall risk to students, faculty, and staff, surrounding community, facilities and research assets. The ultimate goal is simply a safer university.

The MUW Hazard Mitigation Plan was developed, reviewed and approved by IHL, MEMA and FEMA and Adopted by MUW in November of 2010, thus MUW became qualified for pre-disaster financial assistance to help initiate the mitigation actions outlined in the plan. The original mitigation plan, written by Angela L. Jones, project coordinator, with guidance and assistance of MUW's DRU Planning Team will be reviewed and updated.

Hazard Mitigation Plan 2015 review and update Planning Sessions. The 2015 review was coordinated by Jim Jones, MUW Hazard Mitigation five year plan update Project Coordinator. The review began once the Project was approved by MEMA, by developing a hazard Mitigation Plan review team to participate and provide input into the plan development. The MUW Emergency Managers discussed and approved the review and update planning team on April 24, 2015. The team, listed in table 1 initially met in our first planning session on June 2, 2015. Members of the MUW, Lowndes County, City of Columbus. State of MS, the Institutions of Higher Learning and State of MS were all invited and many attended and participated in the planning session. The second planning session was conducted July 2, 2015, followed by two public hearings to review and comment on the Plan of August 6, 2015 and August 10, 2015. The public was notified and informed of the

plan review update and development by publicity placed on MUW web site, e-mail distributions, and local Media publicity throughout the development process. See the 5 year Plan update supplemental information for participant notifications, attendance roster and sign in sheets located in the plan on pages 122 – 152.

Description of the Planning Process - 44 CFR Parts 201.6(b) and 201.6 (c) (1)

The DRU Planning Team is composed of a cross-section of University staff, representatives from city government, community organizations, Columbus Air Force Base (CAFB), IHL, MEMA and Affiliated FM, Commercial Property Insurance Specialists. The DRU Planning Team has provided guidance and advice in order to complete the plan and will continue to provide communication to ensure continuing mitigation work into the future. The team served as the overall guiding organization for the development of the mitigation plan. All members were allowed direct input into the process of the plan. As each phase of the plan was completed, each member was given a chance to review the plan and offer feedback. The table below lists MUW's DRU Planning Team. As the narrative was being written, the DRU Planning Team was advised of progress via emails as well as at scheduled committee meetings. The DRU Team also provided overall guidance and assistance in the locating data specific to the University. Individual members of the team were involved throughout the planning process and were engaged until its completion.

The mission of the DRU planning team is to identify, review and update potential hazards (natural and man-made), critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

The 2015 update review team. The team listed in Table 1 below was reviewed and updated for the five year plan update of 2015. Where possible the same members as the original Plan were kept, but many players changed out and new members were added for a more comprehensive plan review.

Table 1 - MUW's DRU Planning Team (2015 update)	
Community Members	**Organization**
Cindy Lawrence	Lowndes County Emergency Management, Director
Martin Andrews	Columbus Fire Department, Chief
Sandy Patrick/Patty Tucker	American Red Cross, Directors
Bill Patrick	MEMA Director of Mitigation plans
Tracy Pharr	MEMA, 4th District Coordinator
Carolyn McKinney	MEMA, Mitigation Planner
Glynn Babb	Mississippi IHL Emergency and Safety Officer
MAJs Alan and Cheryl Phillips	Salvation Army, Directors
Joe Higgins	Columbus LINK CEO
Mitch Cockrell	Patriot Rail Corp/GTRA Representative
Michael Byrd	Burlington Santa Fe Representative
Mike Arledge	Sheriff, Lowndes County
Tony Carleton	Police Chief, City of Columbus
Ralph Billingsley	Administrator, Lowndes County
Marcus Rushing	Columbus Light and Water Electric Superintendent
Larry Taylor	Atmos Energy Services Operations Supervisor
Christopher Tarantino	Columbus Air Force Base Disaster Preparedness Officer
MUW Members:	**Department**
Nora Miller	Chair & Sr. VP for Admin./Chief Financial Officer
Dr. Marty Hatton	Associate VP for Academic Affairs
Sherry Honsinger	Police Department, Office Manager
Karen Clay	General Counsel, Attorney
Mary Slater	Police Department, Captain
Dewey Blansett	Facilities Management Director
Rodney Godfrey	Information Technology Services, Director
Melanie Freeman	Human Resources Management Director
James Denney	Sponsored Programs Director
Anika Perkins	Public Affairs Director
Dr. Royal Toy	Faculty Senate President
Quincy Hughes, SA President	Student Government Association President
Andrew Moneymaker	Housing and Residence Life Director
Sirena Cantrell	Dean of Students
Eva Black	Campus Health Center
Tara Sullivan	College of NSLP, Instructor
Irene Pintado	College of EDHS, Chair and Assoc. Professor
Dr. Tom Velek	College of A&S, Professor
Scott Tollison	College of B&PS, Dean
Walter Clay	Mississippi School for Mathematics & Science, Fac. Mgr.
Jim Jones	Project Coordinator/Principal Investigator

Public Involvement

The Mayor and the County Board of Supervisors were made aware of this project via letters dated January 23, 2009, in which they were told they would be updated on its progress. These parties were mailed DRU drafts in July half-way through the project and once again

when the draft was completed. A news released was sent out by MUW Director of Public Affairs Anika Perkins about the planning efforts on March 5, 2009. This release was sent to all of campus as well as all the primary listing of local media outlets – within a 50 mile radius. Another release was sent out on August. 21, 2009, at the half-way mark of the project. An announcement about the project and DRU information sheets were made available at the University's fall convocation on August 10, 2009, in which many public officials attended. A DRU website was also set up to solicit public input as well as keep them informed of the process. It can be found at http://muw.edu/vpfa/dru.html. In addition to this four public hearings were scheduled during the drafting phase to allow the public an opportunity to review the plan prior to adoption. Email blasts were sent to campus list serve; a press release was done and a notice of these public review and comment opportunities was placed in the local newspaper. Any comments received will be reviewed by the DRU planning team and possibly incorporated into the plan as appropriate.

The five year Hazard Mitigation Plan participant review and update notifications were made via University Relations press release of May 25, 2015 and many e-mail notifications to the planning team. A Web site was developed to solicit input for the Plan from the Public. The Mayor and County Board of supervisors were notified by Letter of June 19, 2015 of the Plan review and update. Public Meeting forums were conducted on Thursday, Aug. 6, and Monday, Aug. 10 from 4 p.m. to 6 p.m. in the Claudia A. Limbert Assembly Room in Cochran Hall on the Campus of The W.

University Disasters

Disasters are costly! The following are examples of how natural disasters have cost colleges and universities directly and indirectly in ways of time and research capabilities. In April 1997, the Red River flooded the University of North Dakota forcing the university to close for a month and to relocate critical functions; damages totaled $46 million. California State University sustained damages estimated at $380 million due to the Northridge earthquake in January 1994; and a windstorm on Labor Day of 1998 cost Syracuse University more than $4,000,000 (FEMA, 2003). More recently, in August of 2005, Hurricane Katrina hit Tulane University in Louisiana with a devastating $200 million blow that left the campus closed for the entire fall semester (ABC News: Katrina Wallops Tulane University, 2005).

Mississippi disasters are no exception. The Gulf Coast Research Laboratory, located in Ocean Springs, and a research facility of the University of Southern Mississippi, was virtually destroyed by Hurricane Camille's wind and coastal flooding in 1969. Destroyed structures cost an estimated $1.5 million while destroyed equipment and instrumentation is estimated to have cost another $1 million (Mississippi Academy of Sciences, 2005). In August 2005, Hurricane Katrina again virtually destroyed the Gulf Coast Research Lab leaving behind $115 million in damages to Gulf Park. Classes were closed for six weeks (University of Southern Mississippi, Wikipedia). On September 25, 2005, a tornado spawned by the remnants of Hurricane Rita ripped through the campus of Mississippi State University in Starkville causing significant damage to campus buildings. Officials on the campus provided initial damage estimates of $3 million, including about $2 million in damage to the Life Sciences and Biotechnology Institute. No serious injuries were reported (Chronicle of Higher Education, 2005). The University of Mississippi incurred extensive losses due to the1994 ice storm, a regional event that did extensive damage at the University of Mississippi as well as to all of North Mississippi. While cost damages specifically for the University of Mississippi were not found, NOAA Satellites and Information (February Ice Storm) stated total damage and costs for the state of Mississippi was at nearly $2 billion!

MUW Background

MUW is located in Columbus, Mississippi--home to approximately 24,000 people (http://factfinder.census.gov). The campus covers more than 114 acres within the historic district of Central Columbus. Twenty-three of more than 60 buildings are listed on the National Register of Historic Places. Plymouth Bluff Center, located in the heart of the Golden Triangle area of east-central Mississippi, is ten minutes away from historic Columbus and is considered part of the MUW campus. Columbus has a total area of 22.3 sq. mi.

As of Fall 2014, MUW had 2,696 students; 310 full-time employees; and 115 part-time employees. The 2000 census data indicates that Columbus contains 11,183 total housing units whereas the University has a total 60 structures for the entire campus, some are vacant; while others are used for academic, administrative or support services. While MUW structures appear to make up a small percentage, its location in the historic district and proximity to nearby homes and business have to be taken into consideration. Thus, it is safe to say that the occurrence of a hazard on campus could effect a large population concentrated in a small area and that mitigation should be an essential part of the campus' standard operating procedure.

MUW Disasters

Like many other universities, MUW has had its share of disasters. On October 10, 1992, a level 2 tornado struck campus leaving behind badly damaged buildings, particularly those on the historic-front campus including the famous Callaway Hall clock tower. Damages totaled $3 million. On February 16, 2001, straight-line winds tracked through the campus leaving behind over 20 damaged roofs, downed canopies, uprooted trees and $1.3 million in damages. A level 3 tornado hit MUW on November 10, 2002, with damages totaling over $22 million. The tornado completely destroyed the physical education building and left the Art & Design building without a third floor. The campus was closed for a week. On August 29, 2005, Hurricane Katrina caused approximately $28,000 worth of damages to MUW, mainly roof damage. Included in this total were supplies, items and meals needed as MUW's residence halls served as a temporary shelter for over 150 Katrina evacuees.

Risk Assessment - Hazard Identification and Evaluation

Although MUW has an emergency response and preparedness plan, it did not have a hazard mitigation plan until the development of the 2010 Hazard Mitigation Plan. A copy of the current emergency response and preparedness plan was obtained and used in the initial hazard mitigation plan development The plan, along with a FEMA worksheet, were used as starting points to identify potential campus hazards. Because some procedures were already in place, it was decided the plans would be as closely related and mutually supportive as possible. Working closely with the emergency response and preparedness plan allowed for co-mingling that was beneficial to all involved. If a significant change is made to the mitigation plan this will allow the opportunity for required changes to the emergency response plan.

The DRU Planning Team was given an opportunity to review the FEMA hazard worksheet and potential hazards at the kick-off meeting on January 27, 2009 and again on our first meeting to review and update the Plan on June 2015. The updated list of hazards were developed and emailed to the planning team in late June of 2015. . While numerous hazards

listed and reviewed, this updated plan only highlight hazards that are likely to be of concern to the MUW campus and the potential monetary losses that may be associated with the hazards. The listing below in Table 2 includes all hazards considered in the original plan and during this plan review and update. Table 2 also contains a column with an estimate of the likelihood of occurrence. This ranking is relative and was determined by MUW members of the DRU Planning Team. The fourth column ranks the mitigation priority. This ranking is also a relative measure and was also derived from the judgment of the MUW members of the DRU Planning Team; however the entire DRU Planning Team has reviewed the list and input was taken into consideration. The risk/Likelihood of occurrence and mitigation priority of 5 hazards were modified during the review and 5 year plan update based upon current situations and trends. Additionally during the 5 year review and update two new hazards were developed for review and adoption, they are Threat/Violence and Work Place Violence.

Since the risk ranking typically goes hand-in-hand with the likely occurrence, all hazards are ranked as either low, medium or high. A hazard with a low rating (rare occurrence) is expected to have little to no impact upon the university. The hazard poses very minimal health and safety consequences to the campus and is expected to cause little to no property damage. A hazard with a medium rating (slight chance of occurrence) is expected to have a moderate impact upon the university. The hazard poses minor health and safety consequences with minor injuries expected and few to no fatalities. The hazard may cause minor damage and/or destroy some property. A hazard with a high rating (more likely than not) is expected to have a significant impact upon the university. The hazard poses high health and safety consequences with numerous injuries and fatalities possible. The hazard may cause major damage and/or destroy property.

Table 2 – List of Hazards Considered			
Hazard	**Accept Hazard**	**Risk/Likely Occurrence Low, Medium, High**	**Mitigation Priority Low, Medium , High**
Avalanche	No	N/A	N/A
Civil Disturbance	Yes	High	High
Coastal Erosion/Storm	No	N/A	N/A
Computer Crime or Attack	Yes	High	High
Dam Failure	Yes	Low	Low
Disease (Epidemic or otherwise)	Yes	Medium	Medium
Drought	Yes	Low	Low
Earthquake	Yes	Low	Low
Expansive Soils	No	N/A	N/A
Explosive Devices	Yes	Medium	Medium
Explosions	Yes	Medium	Medium
Extreme Heat	Yes	High	Medium
Fire/Arson	Yes	High	Medium
Flooding	Yes	High	High
Hail	Yes	High	Medium
Hazardous Material Incidents/Chemical Spills	Yes	Medium	Medium
Hurricanes and Tropical Storms	Yes	Medium	High
Landslides and Subsidence	No		
Lightning	Yes	High	Medium
Loss of Lifelines (Utilities)	Yes	High	Medium
Nuclear Power Plant Emergency	No	N/A	N/A
Radiological Accident	No	N/A	N/A
Straight-line winds	Yes	High	High
Terrorist Acts	Yes	Low	Medium
Threat/Violence	Yes	High	High
Tornado	Yes	High	High
Transportation Accidents	Yes	Medium	Medium
Tsunami	No	N/A	N/A
Volcano	No	N/A	N/A
Water/Food Contamination	Yes	Low	Low
Workplace Violence	Yes	Medium	Medium
Wildfire	Yes	Low	Low
Windstorm	Yes	High	High
Winter Storm	Yes	High	High

During the hazard identification process it was determined that because of geographic location of MUW, some hazards such as avalanche, coastal erosion/storm, tsunami and volcano were immediately rejected as they pose no threat to the university. Other hazards such as expansive soils, landslides, land subsidence, nuclear power plant, and radiological accident were ruled out because of no or very little occurrence in the past and/or the low likelihood of that hazard happening on campus. Therefore no further discussion of these hazards is needed for this mitigation plan. However, this does not prevent these hazards from being included in future updates if necessary. During this process it was discovered that some hazards were closely related to others and since the mitigation actions would be the same, these hazards could be bundled. Therefore a second, narrowed-down list of hazards was e-mailed to MUW team members for review and input. This would determine the final list that would be emailed to all team members on March 3, 2009.

While MUW is vulnerable to a wide array of natural and man-made disasters, for purposes of this plan we had to keep in mind that we were looking at a historical review of hazards that have occurred on campus as well as those that could happen and cause the greatest amount of destruction and potential loss of life. After receiving feedback from all team members, reviewing news articles, National Oceanic & Atmospheric Administration (NOAA) weather/damage reports, university history (news releases, publications), MEMA disaster declarations and the county mitigation plan, it was decided the following hazards pose the greatest threat to MUW. However, this does not prevent omitted hazards from being included in future updates if necessary. But for the purpose of this plan the hazards profiled are in Table 3 and have been broken divided into 2 categories: natural and man-made which includes accidental and medical. There is no significance to the order of their appearance.

Table 3 - Hazards Profiled	
Natural Hazards	**Risk Rank**
Dam Failure	Low
Drought/Extreme Heat	High
Earthquake	Medium
Flooding	Medium
Hail	High
Hurricanes and Tropical Storms	Medium
Lightning	Medium
Tornado/Straight-line winds/Windstorm	High
Wildfire	Low
Winter Storm	Medium
Man-Made Hazards/Accidental/Medical	
Civil Disturbance	Low
Computer Crime or Attack	High
Disease (Epidemic or otherwise)	Medium
Fire/Arson	Medium
Loss of Lifelines (Utilities)	Medium
Terrorist Acts/Explosive Devices	Medium
Transportation Accidents/ Explosions/HazMat/ Chemical Spills	High
Water/Food Contamination	Medium
Threat/Violence	Medium
Work Place Violence.	low

Profiles of Hazards of Concern to the University

The hazards described below represent those considered to be the greatest concern/threat to MUW. Natural hazards are discussed first, followed by man-made hazards. The intent of this section is to develop characteristics of the hazards that will have the potential to damage structures on campus and/or inflict injuries to the students, faculty, staff or visitors. Many of the hazards discussed below have relied heavily on information produced by the NOAA National Climatic Data Center (NCDC). Supplemental sources include records maintained by MUW, county mitigation plan, newspaper articles, other internet sources, and individuals. These profiles use numerous technical and non-technical information. For easier reference, sources are listed throughout the plan.

NATURAL HAZARDS

Dam Failure

According to the Mississippi Department of Environmental Quality, a dam is defined as "any man-made barrier or obstruction, together with appurtenant works, if any, across a stream or channel, watercourse, or natural drainage area which impounds or diverts water. All structures necessary to impound a single body of water shall be considered a dam." Columbus is located in Lowndes County, which has a total of 47 dams. The dam located closest to MUW is Columbus Lock and Dam, about seven miles from campus.

All regulated dams are divided into one of three hazard classifications, high, significant and low, based on the threat to life and property downstream, should dam failure occur. The hazard classification of a dam may change as residential development or other land use changes occur downstream.

High Hazard – Dam failure may cause loss of life, serious damage to homes, industrial or commercial buildings, important public utilities, main highways or railroads. Dams constructed in existing or proposed residential, commercial or industrial areas will be classified as high hazard dams, unless the applicant presents clear and convincing evidence to the contrary.

Significant Hazard- Dam failure may cause significant damage to main roads, minor railroads, or cause interruption of use or service of relatively important public utilities.

Low Hazard- Dam failure may cause damage to farm buildings (excluding residences), agricultural land, or county or minor roads Columbus Lock and Dam falls into the low hazard category, and is therefore ranked a low hazard for MUW.

Drought/Extreme Heat

A drought is defined as a period of abnormally dry weather sufficiently prolonged for the lack of water to cause serious hydrologic imbalance in the affected area (Glossary of Meteorology 1959). The National Weather Service (NWS) defines it as a period of unusually persistent dry weather that persists long enough to cause serious problems such as crop damage and/or water supply shortages. The severity of the drought depends upon the degree of moisture deficiency, the duration, and the size of the affected area.

The NWS defines drought in four ways:

Meteorological-a measure of departure of precipitation from normal. Due to climatic differences, what might be considered a drought in one location of the country may not be a drought in another location.

Agricultural-refers to a situation where the amount of moisture in the soil no longer meets the needs of a particular crop.

Hydrological-occurs when surface and subsurface water supplies are below normal.

Socioeconomic-refers to the situation that occurs when physical water shortages begin to affect people.

Drought conditions are categorized as:

Abnormally Dry --This is the condition of going into drought: short-term dryness slowing planting, growth of crops or pastures. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.

Moderate Drought --Some damage to crops, pastures; streams, reservoirs, or wells low, some water shortages developing or imminent; voluntary water-use restrictions requested.

Severe Drought --Crop or pasture losses likely; water shortages common; water restrictions imposed.

Extreme Drought --Major crop/pasture losses; widespread water shortages or restrictions occur.

Exceptional Drought--This results in exceptional and widespread crop/pasture losses; shortages of water in reservoirs.

Research shows that droughts in Mississippi can be traced back to the 1800s. According to the Encyclopedia of Mississippi History by Dunbar Rowland, there was a severe drought that caused much damage in Mississippi the summer and autumn of 1838. The drought extended to the head waters of the tributaries of the Mississippi river, both east and west, south of 42 degrees of latitude. All the rivers were at an extreme low water mark, and the smaller streams were completely dried up by September 1. The lower Mississippi became so low that only small boats, drawing less than five feet of water, could pass.

More current drought information was found in the county mitigation plan:

Drought of 1940-1944: This drought affected the entire State, and resulted in stream flow deficits ranging from 15 to 25 years in the Southern portion of the State. Stream flow deficits were determined to have recurrence intervals exceeding 50 years in the northern portion of the State.

Drought of 1962-1971: This drought affected the entire State, and resulted in severe drought conditions in a large portion of the State. As with the drought of the 1950's, stream flows receded to minimum discharge levels.

Drought of 1980-1982: For the first time in history the term "heat wave" was used to describe conditions across the State. Record high temperatures were blamed for approximately 135 deaths across the State, and rainfall deficiencies had a devastating effect on crop production.

Drought of 1983: As with the previous drought extreme temperatures covered the State, and resulted in eleven heat related deaths. Fifty-two counties were declared disaster areas due to the extreme drought conditions

Drought of 1995: This drought had an effect on the entire State. It resulted in fifty counties being declared disaster areas due to the extreme drought, heat, and crop conditions.

Drought of 1999: From March 1, 1999, through November 18, 1999, the State experienced extreme drought conditions and excessive heat. The lingering conditions resulted in 81 of Mississippi's 82 counties receiving some form of disaster designation. Hancock County was the only county ineligible for assistance.

Drought of 2000: On September 7, 2000, all 82 counties in the State were designated to receive disaster assistance. This was due to the extreme drought conditions across the State and excessive heat conditions as well.

Drought of 2006: There were five drought events that impacted this county and several others in the State. The severity of these events ranged from moderate to severe conditions. During the month of July the drought condition started as moderate and grew as severe by early September. Later it came down to moderate condition for a few days and rose to the magnitude of severe and extreme by mid October.

Drought of 2007: As in the previous year, this year also had five drought events that impacted this county and several others in the State. The severity of these events ranged from severe

exceptionally drought conditions. Severe drought conditions existed from February through mid-May and grew worse to extreme and exceptional drought magnitude by July.

Bart Freeland, a physical scientist for the US Department of Agriculture, said that the period from March through July 2006 was the second driest for the state since record keeping began in 1895 (Mississippi State University Office of Agricultural Communications, Linda Breazeeale, August 25, 2006)

Current Drought information for Lowndes County was obtained from Palmer Drought severity index on NOAA National centers for Environmental Information webpage.

Drought of 2010. In 2010 September and October, and December is noted as a moderate drought month for most of the state of MS.

Drought of 2011. From Jan 2011 thru August 2011 most of the state of MS is noted in a moderate drought state, with the northern most counties in less drought conditions. Periods of extreme drought is noted in the Delta along the Mississippi River.

There were no noted periods of drought for Lowndes County MS from 2012 – 2015 in the Palmer Drought Severity Index. There were some periods of time when the climate conditions were moist indicating more rain than normal. Because of the history of drought in MS (eleven occurrences in the past 75 years), the writer believes the likelihood of recurrence of a drought condition is High. The extent of the drought condition is unknown and cannot be accurately predicted because the factors that contribute to the condition ate not a known science. Drought is a weather related condition that may be driven by atmospheric conditions which can be driven by natural and manmade events. Drought is a condition that is beyond man's control. However even with a high probability of drought condition existing, unless it is so severe as to cause the city to curtail water use on Campus, it will effect the university very little, if any.

Extreme Heat

FEMA defines a heat wave (extreme heat) as a prolonged period of excessive heat, often combined with excessive humidity. The Weather Channel (weather.com) defines a heat wave as a period of abnormally and uncomfortably hot weather. It could last from several days to several weeks. The Weather Channel uses the following criteria for a heat wave: a minimum of ten states must have 90°F plus temperatures and the temperatures must be at least five degrees above normal in parts of that area for at least two days or more. The NWS in Jackson will initiate alert procedures when the Heat Index is expected to exceed 105 degrees F.

NWS states heat kills by taxing the human body beyond its abilities. In a normal year, about 175 Americans succumb to the demands of summer heat. From 1936 through 1975, NWS estimates nearly 20,000 people were killed in the United States by the effects of heat. The heat wave of 1980 claimed the lives of 1,700 people and caused agricultural damages to reach $20 billion (Wikipedia).

The NOAA's NCDC lists two heat / drought disasters that included the state - in 1986 and 1998. These disasters had associated costs of $2.3 billion and $8.3 billion respectively (http://www.ncdc.noaa.gov/pub/data/special/billion2004.pdf).

Events of extreme heat have been reported in Lowndes County in recent years (LCHMP).
July 23, 2005: A five day "heat wave" occurred across most of the region between July 23rd and 27th. A combination of the actual air temperature and relative humidity values combined to

produce heat index values near 110 degrees each day. Additionally, each of these days had high temperatures ranging from 95 to 99 degrees with overnight lows in the middle 70s. This turned out to be the warmest stretch of weather, this region has seen since July 2001.

August 17, 2005: A "HOT" stretch of weather occurred during the middle to later part of August 2005. This "Heat Wave" covered a large portion of the south and lasted for a period of about 10 days. Each of these days had high temperatures consistently between 95 and 100degrees, with 1 or 2 of these days actually reaching 100 degrees or more. Additionally, overnight lows remained warm with lower and middle 70s recorded. This is the first time since August 2000 where 100 degree temperatures were reached in this area as well as having such an extended period of "HOT" weather.

July 15, 2006: A small "heat wave" gripped the region during the middle of July with high temperature ranging from the upper 90s to around 100 degrees for five days with overnight lows only reaching the middle 70s. The hottest temperatures during this period occurred from the Mississippi Delta, across northern Mississippi and then down to the Jackson Metro and toward Meridian. This area peaked between 100 and 102 degrees for at least two days during the hot five day stretch. An area particularly hard hit was in Leake County just outside Carthage. Here a chicken farmer lost 9,000 laying hens. The chickens died because of oxygen depletion when the air ventilation fans broke. With outside air temperatures at 100 degrees and no ventilation, the birds only have about 30 minutes then the air temperature gets too hot, oxygen is used up and the birds perish. The loss of these 9,000 chickens cost the farmer 76,500 dollars.

August 5, 2007: During the first half of August, a heat wave took hold of the region and brought some of the warmest temperatures since the summer of 2000. This heat wave began around August 5th and lasted until the 16th. Between August 10th and 15th, the entire area reached 100 degrees or higher. Twenty three record highs were also set during this time with one location, Greenwood, tying their all-time highest temperature at 106 degrees. In addition to the plain hot temperatures, humidity levels were quite high as well.

2010 - 2015 temperature. The temperature/heat data below for 2010 – 2015 was obtained from Climate at a glance data from NOAA National Centers for environmental information website.

August Temperatures of 2010 – 2015. Because August is typically the hottest months in Lowndes County, it was chosen to as the month to look at concerning the temperatures/heat data. The average maximum temperature for the month of August from 2010 – 2015 is 91.8 degrees and the average for the month of august averages from 2010 – 2015 was 81 degrees.

Climate at a glance indicates that august temperature are:

Month and Year	MAX Temp	Average Temp
August 2010	94.2	83.8
August 2011	94.8	83.0
August 2012	89.6	79.5
August 2013	90.0	79.7
August 2014	90.7	79.9
August 20154	91.7	80.2
Averages	91.8	81.0

2010 and 2011. Clearly August 2010 and 2011 were the hottest months based upon the data collected and reviewed. The maximum temp and the average temps for 2010 and 2011 exceeded the 2010 – 2015 year averages by 3.9 degrees and 2.8 degrees respectively. By correlation and a review of the drought data one could conclude that 2010 and 2011 were extreme heat years for Mississippi.

Because Columbus is located in a humid, subtropical region characterized by extreme heat in the summer, drought and extreme heat are ranked as high hazards to MUW.

Earthquake

The Center for Earthquake Research and Information (CERI) and the University of Memphis defines an earthquake as the sudden, sometime violent movement of the earth's surface from the release of energy in the earth's crust. In simpler terms earthquakes are the result of movement along faults.

In the U.S., Alaska has more earthquakes per year than the combined total of the rest of the U.S. As many as 4,000 are recorded there every year. In 1811 and 1812 a series of earthquakes near the New Madrid, Missouri area was felt in Mississippi as far south as the Gulf Coast. This series caused the banks of the Mississippi River to cave in as far as Vicksburg, more than 300 miles from the epicentral region (United States Geological Survey USGS). That zone consists of a series of faults that cross the Mississippi and Ohio Rivers, stretching 40 miles wide and 200 miles long, which affects parts of seven states including Mississippi (Mike Womack, Director of MEMA, in WLBT's Earthquakes pose threat to Mississippi, February 1, 2009)

Earthquakes are measured by seismometer/seismographs, instruments that measure and record motions of the ground; Richter Scale (RS) or the Modified Mercalli Intensity Scale which uses Roman Numerals from I to XII to describe different levels.

Table 4 - Ritcher Scale

Magnitude	Earthquake Effects
Less than 3.5	Generally not felt, but recorded
3.5-5.4	Often felt, but rarely causes damage
Under 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions
6.1-6.9	Can be destructive in areas up to about 100 kilometers across where people live
7.0-7.9	Major earthquake. Can cause serious damage over larger areas
8 or greater	Great earthquake. Can cause serious damage in areas several hundred kilometers across

Table 5 - Modified Mercalli Intensity Scale

I.	People do not feel any Earth movement.
II.	A few people might notice movement if they are at rest and/or on the upper floors of tall buildings.
III.	Many people indoors feel movement. Hanging objects swing back and forth. People outdoors might not realize that an earthquake is occurring.
IV.	Most people indoors feel movement. Hanging objects swing. Dishes, windows, and doors rattle. The earthquake feels like a heavy truck hitting the walls. A few people outdoors may feel movement. Parked cars rock.
	Almost everyone feels movement. Sleeping people are awakened. Doors swing open or close. Dishes are broken. Pictures on the wall move. Small objects move or are

V.	turned over. Trees might shake. Liquids might spill out of open containers.
VI.	Everyone feels movement. People have trouble walking. Objects fall from shelves. Pictures fall off walls. Furniture moves. Plaster in walls might crack. Trees and bushes shake. Damage is slight in poorly built buildings. No structural damage.
VII.	People have difficulty standing. Drivers feel their cars shaking. Some furniture breaks. Loose bricks fall from buildings. Damage is slight to moderate in well-built buildings; considerable in poorly built buildings.
VIII.	Drivers have trouble steering. Houses that are not bolted down might shift on their foundations. Tall structures such as towers and chimneys might twist and fall. Well-built buildings suffer slight damage. Poorly built structures suffer severe damage. Tree branches break. Hillsides might crack if the ground is wet. Water levels in wells might change.
IX.	Well-built buildings suffer considerable damage. Houses that are not bolted down move off their foundations. Some underground pipes are broken. The ground cracks. Reservoirs suffer serious damage.
X.	Most buildings and their foundations are destroyed. Some bridges are destroyed. Dams are seriously damaged. Large landslides occur. Water is thrown on the banks of canals, rivers, lakes. The ground cracks in large areas. Railroad tracks are bent slightly.
XI.	Most buildings collapse. Some bridges are destroyed. Large cracks appear in the ground. Underground pipelines are destroyed. Railroad tracks are badly bent.
XII.	Almost everything is destroyed. Objects are thrown into the air. The ground moves in waves or ripples. Large amounts of rock may move.

Source: Nevada Seismological Lab

While Mississippi is not typically associated with earthquakes, there is historical record of earthquake epicenters (the ground surface location directly above where the earthquake originated in the subsurface) in 24 of Mississippi's counties including Mississippi Gulf Coast (Charles T. Swann, Mississippi Mineral Resources Institute, Summary of the Investigation of the May 10, 2008, Belden MS Earthquake Pontotoc, Lee and Union Counties Mississippi). Swann further states the perception is that the New Madrid Seismic Zone (NMSZ) is the only source of earthquake hazard in Mississippi and this is not totally true because Mississippi has a number of faults that are not associated with the NMSZ as local faults may have movement histories that are not tied to the same processes that govern NMSZ faults. Another consideration is that damage from an earthquake is often linked to the distance from the epicenter – the closer the epicenter, the greater the shaking and potential damage to surface structures.

Mike Womack, MEMA Director, stated in a WLBT February 2009 interview (Earthquakes pose threat to Mississippi) that the northern part of the state is at a much greater risk and that scientists estimate there is a 25 to 40 percent chance of a moderate earthquake which means around a 6 on the scale in the next 50 years. He added "a six is gonna cause quite a bit of damage, we think, to utilities, such as water and sewer and gas pipe lines; damage in a home, but not to the extent that most structures would fall apart."

The earliest and strongest earthquake reported within Mississippi was on December 16, 1931, in Charleston. According to the USGS, the walls and foundation of the agricultural high school cracked and several chimneys were thrown down. At Belzoni, plaster fell and several chimneys were damaged. The shock was felt over a 65, 0000 square mile area including the northern two-thirds of Mississippi.

Another earthquake that was strongly felt happened on February 1, 1955, along the Mississippi Gulf Coast. In Gulfport, houses shook, windows rattled and rumblings were heard. In June 1967, two earthquakes happened about 18 miles northeast of Greenville. The first on June 4 measured a 3.8 on the RS and was felt over 25,000 square miles – affecting the Northwest quadrant of the state and parts of Arkansas, Louisiana and Tennessee. The second earthquake, which happened on June 29, occurred in the same region measuring a 3.4 on the RS. Shock was felt to limited parts of Bolivar, Sunflower and Washington Counties. March 29, 1972, marked the date of another earthquake felt in the state. This shock, centered in the New Madrid region, was felt in the state at Hillhouse, Mineral Wells and Pleasant Grove. (Abridged from Earthquake Information Bulletin, Volume 6, Number 1, March- April 1974, by Carl A. von Hake).

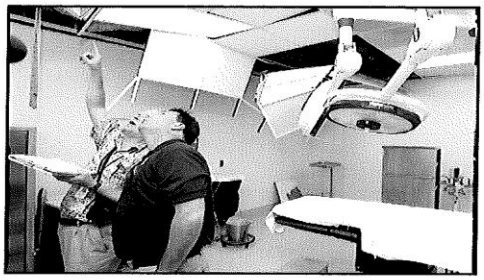
The most recent state earthquake information was recorded in northern Mississippi on May 10, 2008, by components of the Advanced National Seismic System (ANSS) at 12:52 p.m. The epicenter of the event was fixed at latitude 34.350 N, longitude 88.830 W, which is less than a mile south of the town of Sherman, Mississippi in Pontotoc County. The earthquake's magnitude was determined to be 3.1 on the duration magnitude scale. No damage was reported; however it was felt over a rather large area. Accounts of the earthquake referred to the event as centered in or near Belden, Mississippi (Lee County) but the instrumentally determined epicenter was near Sherman. (Charles T. Swann, Mississippi Mineral Resources Institute, Summary of the Investigation of the May 10, 2008, Belden MS Earthquake Pontotoc, Lee and Union Counties Mississippi).

The White River Fault Zone (WRFZ) is another source of earthquake hazard. This zone extends 280 km from near Newport, Arkansas on the northwest end to near Grenada, Mississippi on the southeast end. In Panola County, Mississippi, the Mississippi River bluff line for 20 km has the same N 40 W orientation as the overall WRFZ. This zone is generally represented as about 15 km wide. In the past 25 years some 15 earthquakes have been recorded within or closely adjacent to the WRFZ, most in the range of magnitude 1 to 3. The December 1931 magnitude 5 earthquake near Charleston was the largest earthquake in the state and located within the WRFZ (Seismicity in the White River Fault Zone, Mississippi and Arkansas, Terry Panhorst and Charles Swann).

The county mitigation plan states that our county is in line with this fault zone. Based on the Mercalli Intensity Scale, Lowndes County is expected to experience an intensity level of V from a magnitude 8 earthquake occurring along the NMSZ. In addition to this, according to the Mid-America Earthquake Center, the line quadrant of the state that is labeled as critical counties ends at Monroe County, which is about 15 miles north of MUW, making this a medium-ranked hazard to MUW.

Mississippi Impacts

- 45,000 buildings
- No hospitals in northern MS functional day after earthquake
- 5,000 breaks in 50,000 of natural gas pipeline
- 20,000 people displaced and 5,000 seek temporary shelter
- 4,000 casualties and 200 fatalities
- Total direct economic losses of



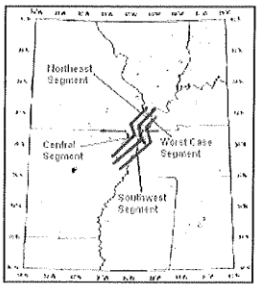
Hospital Functionality – Day 1

Mid-America Earthquake Center

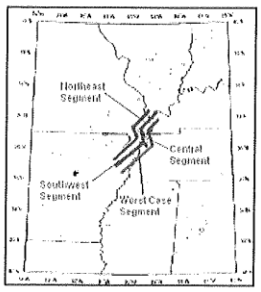
Summary of Results

State	No. Damaged Buildings	No. Damaged Bridges	Displaced Population	Casualties	Total Direct Economic Loss
Kentucky	80,000	200	78,000	10,000	$45 billion
Mississippi	45,000	75	20,000	4,000	$10 billion
Missouri	85,000	1,300	122,000	15,000	$40 billion
Tennessee	175,000	1000	260,000	60,000	$60 billion

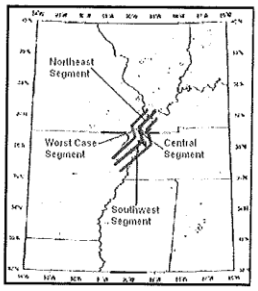
Kentucky



Mississippi



Missouri



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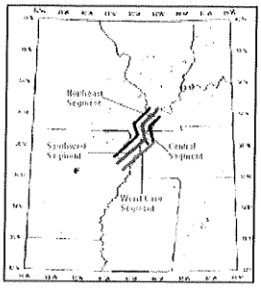
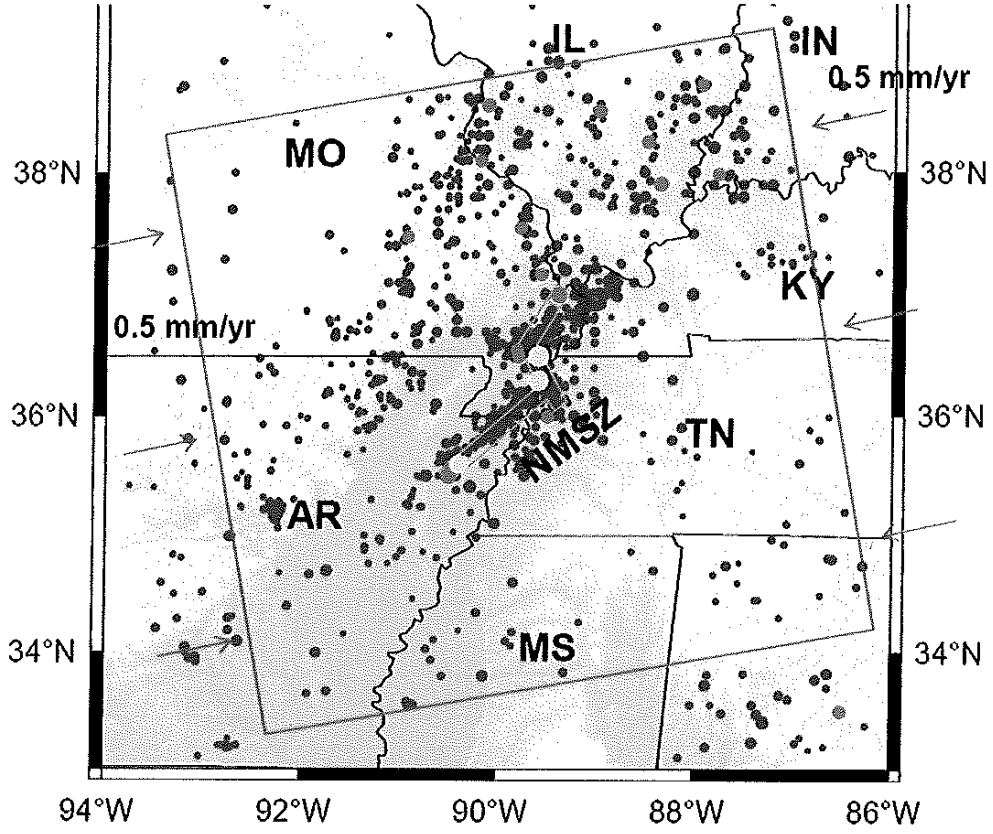


Mid-America Earthquake Center



(above): Earthquake epicenters in the NMSZ and surrounding regions projected onto a topographic base map. Modern earthquake data (for events M>2 since 1974, dark blue dots) are from the NEIC and CERI Catalog (1974-2003);
pre-1974 and historic earthquake data (M>5, red dots) are from Stover and Coffman [1993].
Yellow dots: large 1811-1812 events [Stover and Coffman, 1993].

Flood

MEMA defines a flood as any general or temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters; the unusually and rapid accumulation or runoff of surface waters from any source. Flooding is a natural and inevitable occurrence. Floods occur seasonally with general or torrential rains associated with tropical storms that later drain into river basins and fill them with an abundance of water. Rivers, lakes and other water bodies have always overflowed their normal beds to inundate nearby land. The land adjacent to these bodies of water is called the floodplain. There are generally four types of flooding – River Flooding, Flash Flooding, Coastal (Tidal) Flooding, and Drainage Flooding.

Floods are typically identified by the Flood Insurance Studies (FIS) and their accompanying Flood Insurance Rate Maps (FIRM). They provide a means to identify the probability of future

flooding. Another means of prediction is the examination of past events as this establishes a probability of reoccurring floods.

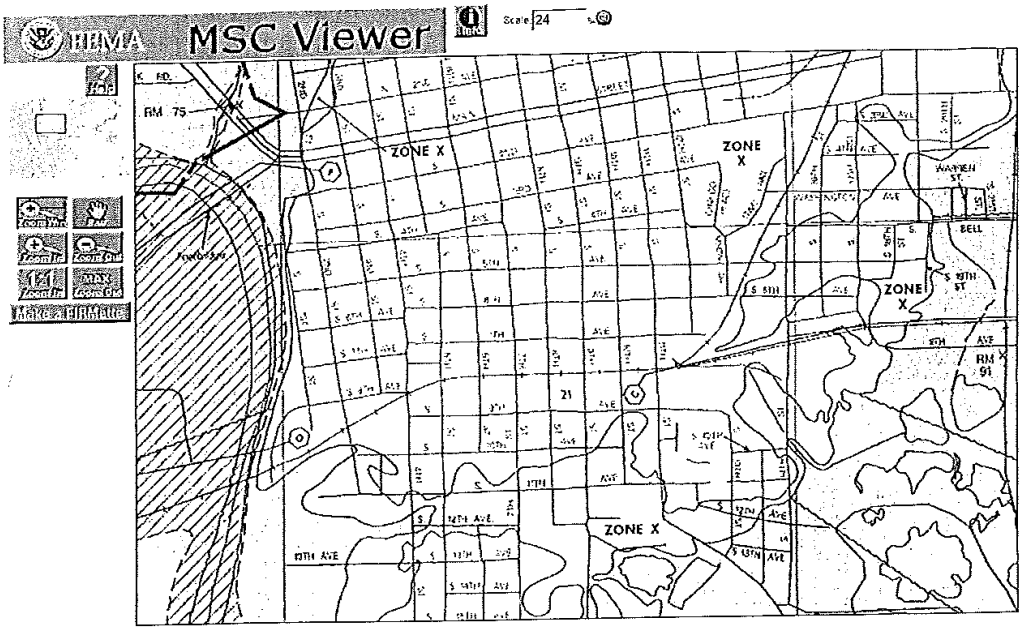
Flood season in Mississippi is considered to primarily occur between the months of November through June, while the months of March and April are considered to be the months of greatest flood frequency. The flood of record within the state is the flood that occurred on the Mississippi River in 1927. This flood left a disastrous impact upon the entire 1,250,000 mile river drainage. At that time the flood caused 246 deaths, left 650,000 people homeless and caused $284.1 million in property damages. The flood of 1973, the most severe since 1927, resulted in damages over $117 million. (Floods on the Lower Mississippi: An Historical Economic Overview, Paul S. Trotter, G. Alan Johnson, Robert Ricks, David R. Smith, NWSFO, New Orleans/Baton Rouge, Louisiana; Donnel Woods, WSO/COE, Vicksburg, Mississippi).

According to the FIRM, MUW is located in Zone X, which is defined as other flood areas, areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage area less than 1 square mile. According to MEMA's Flood Hazard and Repetitive Loss Risk Properties by Planning and Development District Area, Table 3.3.17, Lowndes County has no state buildings in a flood plain. Therefore there is no need for MUW to participate in the National Insurance Flood Program (NFIP).

According to Tommy Alexander, a retired physical plant employee who started at MUW in 1977, flooding was a major problem on campus. He stated that stopped up ditches and drains, not necessarily a big rain, would cause flooding. Therefore just about every time it rained, there was flooding on campus. He recalled how water got into the basements of Magnolia Dorm (now demolished) and the old Laundry Building (located on south campus, a very low-lying area) as well as the Art & Design building and Fant Library (both centrally located on campus). In addition to these buildings, water would also get in the basement of Welty Hall (located on front campus) even after the renovation in 1991. University records indicate that in 1993 and in 1999 water was waist deep in certain places on south campus. Many cars were unable to make it through the flood waters. (Meh Lady Yearbook, 1993, Volume 84 and Meh Lady Yearbook 2000, Volume 90).

Since these instances, a storm and drainage project has been initiated and has ceased flooding on campus. This is evident from two recent flood events in Columbus. On January 6, 2009, when nearly six inches of rain fell in Lowndes County, MUW had no flooding. On February 27, 2009, more than five inches of rain was dumped on Lowndes County causing major flooding in some areas, yet again, MUW experienced no flooding. Alexander said if we didn't get any flooding from these two events, we probably won't.

2008 - 2015 drainage and flooding. During the period from the original development of this hazard mitigation plan to the 2015 hazard mitigation plan review update, MUW completed a Streets and Drainage Improvement Project. This project addressed and corrected campus wide drainage and structure flooding problem areas. There has been no recurrence of structure flooding due to drainage since the project implementation. The Facilities Manager confirms that during a severe flash flood LLC lane near Mary Wilson home, MUW drive near Hooper science, and 5th Avenue near MUW Drive will retain runoff water for a short time as it drains. Additionally MUW has corrected several sidewalk areas and storm drainage grate repairs which have also contributed to the improved campus drainage thereby eliminating the flooding of our structures and reducing the drainage problems to a manageable level. However, the university continues to ranks this hazard as a medium risk based on past occurrences.



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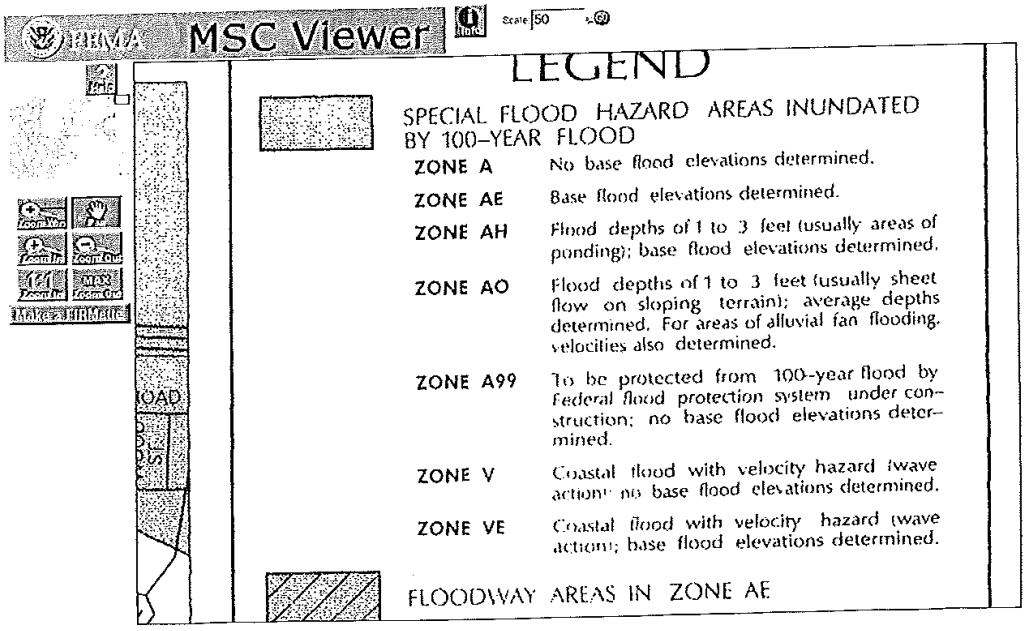
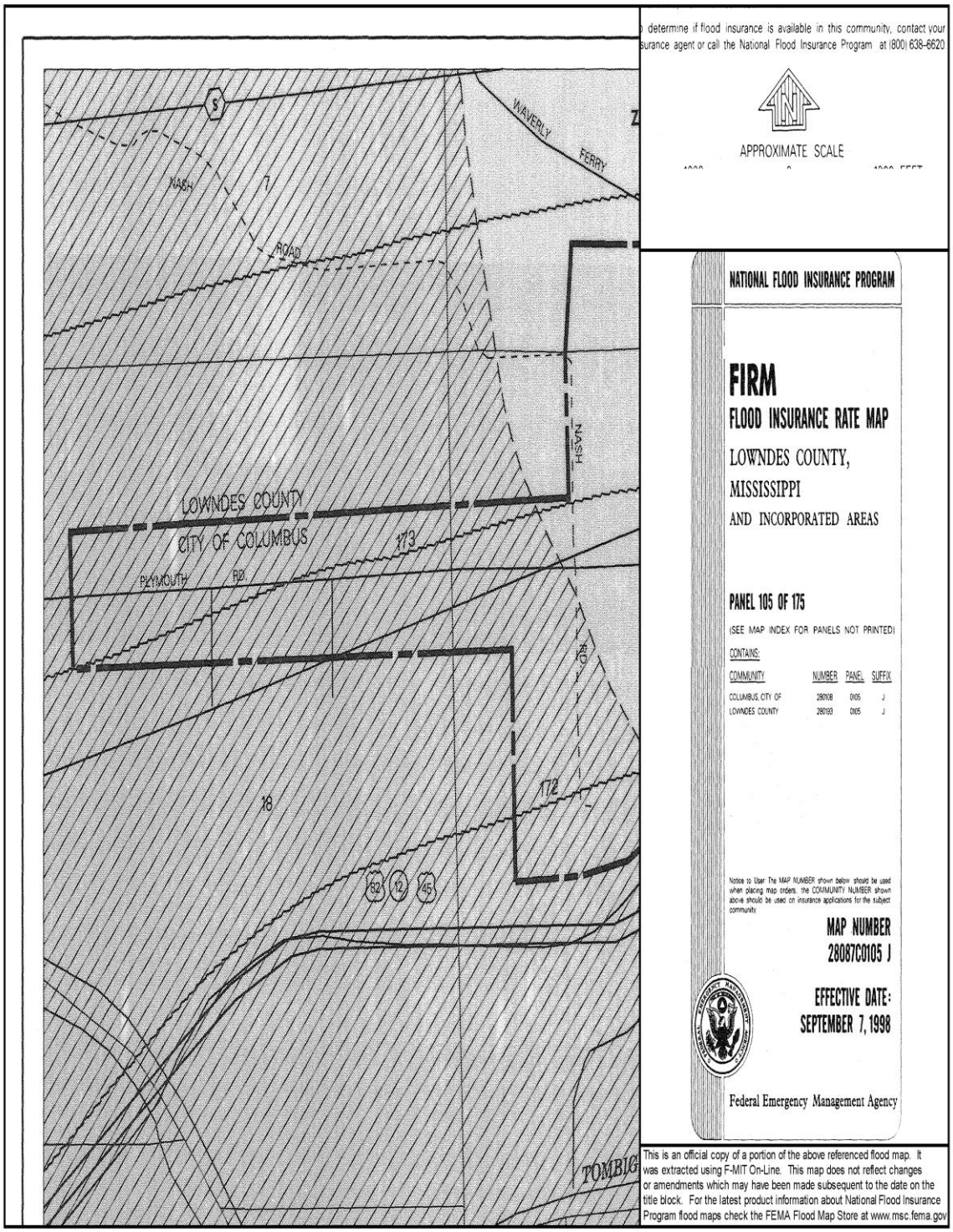




FIRM Map of Lowndes County

Hail

The Weather Channel (weather.com) defines hail as precipitation that originates in convective clouds, such as cumulonimbus, in the form of balls or irregular pieces of ice, which comes in different shapes and sizes. Hail is considered to have a diameter of 5 millimeter or more; smaller

bits of ice are classified as ice pellets, snow pellets, or graupel. Individual lumps are called hailstones. It is reported as "GR" in an observation and on the METAR. Small hail and/or snow pellets is reported as "GS" in an observation and on the METAR.

Hail is often associated with thunderstorms and is not an uncommon occurrence during summer thunderstorms. Although hail seldom causes death, it can cause extensive property damage-- most often causing damage to roofs, vehicles, and can cause extensive damage to trees. The NOAA records a Lowndes County hail event in April of 2006 that resulted in $100,000 worth of property damage. The event began five miles southwest of Caledonia and ended four miles southeast of Caledonia. It was described as a super cell thunderstorm that developed between CAFB and Caledonia and produced a swath of quarter to hen-egg sized hail. A hail event in April 2001 caused $25,000 worth of property damage in Columbus when golf ball sized hail damaged roofs and cars just west of the city. Another hail event in April of 2001 in New Hope resulted in $8,000 worth of property damage when golf ball sized hail damaged homes and cars.

While MUW has no evidence of property damage specifically caused by hail up and thru the date of this 2015 review and update, it is ranked as a high risk hazard because it is associated with thunderstorms which occur often in Columbus.

Note: Thunderstorms were not selected as a hazard because the effects of thunderstorms (hail, lightning, flooding, etc.) are addressed in other categories.

Hurricanes/Tropical Storms

FEMA defines hurricane as a type of tropical cyclone, the generic term for a low pressure system that generally forms in the tropics. A typical cyclone is accompanied by thunderstorms, and in the Northern Hemisphere, a counterclockwise circulation of winds near the earth's surface. Hurricanes are typically considered coastal hazards, but these large storms move inland generating large amounts of rainfall and may spawn tornados and damaging straight-line winds. A storm surge is the onshore rush of sea or lake water caused by high winds associated with a land-falling cyclone and secondarily by the low pressure of the storm.

Columbus is located 250 miles north of the Gulf of Mexico and is not very susceptible to hurricanes. Only eight hurricanes have struck the Mississippi coast since 1895. The major concerns regarding hurricanes at MUW are the winds, tornados and large rainfall amounts which makes homes, businesses, universities, vulnerable. Natural resources are vulnerable to hurricanes – fallen trees become a target for infestation from insects and water quality may be affected due to unwanted debris and vegetation blown in.

Hurricanes are categorized by the Saffir/Simpson Hurricane Scale found in Table 6.

CAT	Table 6 – Saffir/Simpson Hurricane Scale Winds & Effects	Surge
1	74-95 mph (64-82 kt)	4-5 ft
	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.	
2	96-110 mph (83-95 kt)	6-8 ft
	Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings.	
3	111-130 mph (96-113 kt)	9-12 ft
	Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain may be flooded well inland.	
4	131-155 mph (114-135 kt)	13-18 ft
	More extensive curtain wall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.	
5	155 mph+ (135+ kt)	18 ft +
	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.	

The Saffir-Simpson Scale is a five-category wind speed / storm surge classification scale used to classify Atlantic hurricane intensities. The Saffir-Simpson values range from Category 1 to Category 5. The strongest SUSTAINED hurricane wind speeds correspond to a strong F3 (Severe Tornado) or possibly a weak F4 (Devastating Tornado) value. Whereas the highest wind gusts in Category 5 hurricanes correspond to moderate F4 tornado values, F5 tornado wind speeds are not reached in hurricanes.
Source: Louisiana Homeland Security and Emergency Preparedness

Hurricane Camille, August 17, 1969, was the strongest storm to ever enter the U.S. mainland on record, with winds up to 190 mph and a 25 -foot storm surge. Although the damage in all of

southern Mississippi was appalling, within about ½ mile from the ocean, most of the structures seemed to have just vanished, including plumbing systems. According to Major Hurricanes to enter the Gulf Coast, 1900 - 2007 by Michael A. Grammatico, the best estimates on the death toll is 255 people and 8,900 injured; some were never found. More than 14,000 housing units were damaged while 6,000 were totally destroyed. The total damage from Camille, a category 5 hurricane, was $4.2 billion (in 1969 dollars).

On September 16, 2004, Hurricane Ivan made landfall near Gulf Shores, Alabama as an upper category 3 hurricane. A large portion of eastern Mississippi was affected – thousands of trees and hundreds of power lines were blown down. Downed trees accounted for several hundred homes, mobile homes, and businesses to be damaged or destroyed. The strongest winds reported occurred in Newton, Lauderdale and Oktibbeha counties. Oktibbeha County is about 20 miles from MUW. Total damage from Ivan was estimated at $200 million.

Tropical Storm Arlene made landfall near Alabama/Florida state line on June 11, 2005. The western periphery of the tropical storm affected far eastern Mississippi and brought gusty winds and heavy rains, three to five inches, to that portion of the state. Peak wind gusts were reported up to 40 mph and the combination of wet soils allowed for a few hundred trees to get blown down or uprooted. Some trees fell on power lines while others caused damage to homes. The total property damage was estimated at almost $450,000.

The hurricane in which effects were felt on the MUW campus happened on August 29, 2005. Hurricane Katrina which is likely to go down as the worst and costliest natural disaster in the U.S. history as the devastation was not only confined to the coastal region, but widespread and significant damage occurred well inland. This storm began as a tropical depression 12 on August 23; upgraded to a tropical storm on August 24 and became a Category 1 hurricane on August 25. During the early hours on August 28, Katrina underwent rapid intensification and be became a Category 5 hurricane, by that afternoon she had reached her maximum intensity, sustaining winds up to 175 mph. Katrina remained a hurricane as it crossed Interstate 20 near Newton, Mississippi. She was downgraded to a tropical storm around 6 p.m. on August 29. The center of the storm passed near neighboring Starkville and West Point before exiting the region around 10:45 on August 29. Katrina was responsible for 10 tornados and 15 direct fatalities across inland Mississippi and 19 indirect. Crop damages as well as property damage for the state totaled $7.4 billion.

According to Wikipeida, at least 1,836 people lost their lives in the actual hurricane and in the subsequent floods, making it the deadliest U.S. hurricane since the 1928 Okeechobee Hurricane. The storm is estimated to have been responsible for $81.2 billion (2005 U.S. dollars) in damage, making it the costliest tropical cyclone in U.S. history.

MUW received minor damages from the effects of Hurricane Katrina -- approximately $28,000. This was mainly roof damage; however debris removal and clean up is included. Also included are supplies, items and meals needed as MUW's residence halls served as a temporary shelter for over 150 Katrina evacuees for over two months. Due to minor damages in the past, MUW ranks this hazard as medium.

There has been no hurricane recurrence at MUW since Katrina up to the 2015 plan review and update. The probability of future Hurricane related damages to MUW is low, considering that the Mississippi University for women are located inland (near 250 miles inland) and only two instances of storms produced by hurricanes in the past 120 years have come near Lowndes county and only one has had a damaging impact to the Mississippi

University for women, the effects of which were minimal. The extent of future damages related to storms caused by hurricanes or hurricanes is also considered minimal (near zero) considering our history of damaging effects ($28000) of hurricanes and storms that that reach MUW. The Probability of recurrence of Hurricanes/Tropical Storm is unlikely, as we have not had any significant event in the past 100 years.

Lightning

NAOO defines lightning as generally, any and all of the various forms of visible electrical discharge produced by thunderstorms. However, according to National Geographic, lightning is not confined to thunderstorms. It's been seen in volcanic eruptions, extremely intense forest fires, surface nuclear detonations, heavy snowstorms, and in large hurricanes.

The National Lightning Safety Institute (NLSI) states Mississippi had 14 deaths due to lightning and is ranked 19th in the U.S. in number of lightning deaths from 1990 to 2003. NCDC records show that between June of 1994 and August of 2006, 13 people died and 31 were injured due to lightning in Mississippi. Recreation is the activity most people are involved in when struck by lightning. Thunderstorms are common in Mississippi, with the majority of them occurring between April and October. Lightning damage is not uncommon and the lightning hazard is present during every thunderstorm event. The damage posed by the hazard includes physical damage to buildings, electrical shock to persons in the vicinity of a lightning strike; lightning can cause fires and nonstructural damage to equipment due to the electrical surge generated by the lightning bolt. A lightning strike will, for example, only damage one building leaving adjacent structures unscathed. It is a myth that lightning never strikes in the same place twice. Lightning will strike in more than one place about a third of the time (NASA, Lighting Really Does Strike More Than Twice, and January 14, 2003).

Although no records indicate that lightning has caused any damage on campus, NOAA records show lightning has caused some damage in Columbus. On July 22, 2008, lightning struck a power pole causing $1,000 worth of damage. Lightning caused $60,000 worth of damage on November 14, 2007, when it struck a house and caused a fire. Estimated damages of $60,000 were reported on July 20, 2007, when lightning caused damages to two homes. Lighting struck a house on May 9, 2006 causing a fire, significant roof and attic damage costing $120,000. On July 15, 2006 a fatality was reported in Columbus due to lightning. Lightning struck a man while going outside to lower the windows on some vehicles; it struck a pecan tree and then traveled to a clothes lined near where the man was walking. He was in a coma for a week before passing away.

While we find no records to indicate a recent lightning strike of a person in Lowndes County, a close call did occur on campus during the review period between 2010 and 2015. The previous housing director reported that lightning struck a pole close to her while she was exiting the campus gas refueling station. While she was not directly hit, the pole split, knocking power off to that side of campus temporarily. Lightning continues to be retained a medium hazard due to the large number of thunderstorms in Columbus. It ishighly likely (near 100%) probability that lighting will occur in Columbus, MS and on the campus of the Mississippi University for Women every year during the many weather related storms that are prevalent in the South which produce lightning. We have had no experience with any damages to the Campus as a result of Lightning and consider the extent of future damages to be minimal.

Tornado/Straight-line winds/Wind

Tornado

The word "tornado" comes from the Latin *tonare*, meaning "to thunder." The Spanish developed the word into *tornear*, to turn or twist. These are good descriptions of tornadoes, which are formed by rotating or twisting air. This is why they are also called twisters or cyclones. A tornado is a powerful column of winds spiraling around a center of low atmospheric pressure. It looks like a large black funnel hanging down from a storm cloud. The narrow end will move over the earth, whipping back and forth like a tail. (Forces of Nature: ThinkQuest 2000)

The swath of damage can be over one mile wide and 50 miles long. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

The winds inside a twister can spin around at speeds up to 500 miles an hour, but usually travels at roughly 300 miles an hour. This makes the tornado the most dangerous storm known to mankind. Because of the earth's unique weather system, twisters rotate counterclockwise in the Northern Hemisphere and move eastward. They rotate clockwise in the Southern Hemisphere. Tornadoes also often come with hailstorms.

A tornado can form very quickly, sometimes in a minute or less. It can travel across the ground at high speeds, then just as suddenly vanish. They can kill in a matter of seconds. Every year, about $500 million worth in damage is done by twisters in the U.S. Most tornadoes last less than twenty minutes and travel less than 15 miles. However, super storms sometimes occur, traveling over 100 miles before they are exhausted. Although they don't occur very often, they are responsible for 20% of all tornado casualties. (Forces of Nature: ThinkQuest 2000)

Unlike hurricanes, which produce wind speeds of similar values over relatively widespread areas (when compared to tornadoes), the maximum winds in tornadoes are often confined to extremely small areas, and vary tremendously over very short distances, even within the funnel itself. The tales of complete destruction of one house next to one that is totally undamaged are true and well documented. In 1971, Dr. T. Theodore Fujita of the University of Chicago devised a six-category scale to classify U.S. tornadoes into six intensity categories, named F0-F5. These categories are based upon the estimated maximum winds occurring within the funnel.

The U.S. NWS has updated the Fujita Scale of tornado intensity to a new Enhanced Fujita Scale or Enhanced F scale. The new Enhanced Fujita Scale continues to use F0-F5 ratings (shown below) but is based on an additional calculations of wind and damage. It was implemented in the U.S. on February 1, 2007.

Table 7 – Fujita Scale

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135

3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

IMPORTANT NOTE ABOUT ENHANCED F-SCALE WINDS: *The Enhanced F-scale still is a set of wind estimates (not measurements) based on damage. Its uses three-second gusts estimated at the point of damage based on a judgment of 8 levels of damage to the 28 indicators listed below. These estimates vary with height and exposure.* ***Important****: The 3 second gust is not the same wind as in standard surface observations. Standard measurements are taken by weather stations in open exposures, using a directly measured, and "one minute mile" speed.*

Tornadoes having been causing devastation, property damage and fatalities in Mississippi for many years. According to a listing of the U.S. Worst Tornadoes, a tornado on April 25, 1880 killed 23 people and left 72 injured and swept away 20 homes in the northwest half of Macon in Noxubee County, which is about 30 miles from Columbus. On April 20, 1920, a tornado caused 22 fatalities in Aberdeen in nearby Monroe County. On April 5, 1936, a tornado devastated the northern half of Tupelo as 216 people were killed and 700 injured (www.**tornado**project.com/alltorns/mstorn.htm*)*. A New York Times articled date April 17, 1921 stated a tornado was responsible for five deaths in Steens, a small town about 10 miles from Columbus. This tornado event swept through five states- Texas, Mississippi, Arkansas, Alabama and Georgia-- leaving 75 people dead.

Compared with other states, Mississippi ranks number 12 for frequency of Tornadoes, 2 for number of deaths, 2 for injuries and 16 for cost of damages. When we compare these statistics to other states by the frequency per square mile, Mississippi ranks number 8 for the frequency of tornadoes, number 2 for fatalities, number 3 for injuries per area and number 14 for costs per area, based on data from 1950 – 1995. (www.disastercenter.com/miss/**tornado**.html).

In 1970 Mississippi had a population of 2,216,994 and between 1950 and 1995 had 1,084 tornadoes. This ranks the state number 12 in tornadoes by state. The population in 1970 divided by the number of tornadoes equals 2,045. This ranks Mississippi number 10 in the ratio of tornadoes to population. Mississippi had 387 fatalities between 1950 and 1995. Compared to other states it ranked 2. The risk of death in any one year is 1 in 257,790. This ranks Mississippi as number 1 for the risk of death by tornado. Between 1950 and 1995 the state had 5,349 injuries involving tornadoes. This ranks the state number 2 among the states for injury. The risk of injury in any one year is one in 18,651. When we divide the population by the number of injuries, the state ranks number 1. The total cost of tornadoes between 1950 and 1995 was over $542 million. This ranks the state number 16. The cost per person for tornadoes, in the state per year, is $ 5.44. This ranks the state number 10 in costs for tornadoes per person. www.disastercenter.com/miss/**tornado**.html.

NOAA records indicate 27 tornadoes have been reported in Lowndes County from September 1, 1950 until November 30, 2008, additionally seven tornadoes have occurred since 2008 to Jan 3, 2015. The most recent tornado was an ES0 and occurred Jan 3, 2015 in Caledonia, about 15 miles from MUW. There was minimal damage and no deaths or injuries reported. In 2014 Lowndes County had 5 tornado occurrences, 3 EF1s and 2 EF2s, on April 28, 2014, 4 separate tornadoes crossed Lowndes County, one which came across the city of Columbus, where the MUW is located, fortunately, there were no deaths in Lowndes County (Winston county was less fortunate, with at least 14 deaths reported), but property damage in Lowndes County was extensive, state wide a reported $17M in damages occurred due to tornadoes on April 28, 2014. In Lowndes County, more than 500 residents were displaced seeking aid in two shelters, one in Columbus, and one in new hope.

On January 10, 2008 in Caledonia, about 15 miles from Columbus. The event began three miles east of Kolola Springs and ended six miles northeast of Caledonia This tornado set its sights on the center of town and tornado schools. The tornado started by damaging a home and shed along with some trees and power pole damage. Next, a shed was damaged and a combine harvester that was in the shed was thrown into some trees. After moving through a wooded area, the tornado moved into a neighborhood with new, well-built homes. Around 8 homes were damaged in this neighborhood, with around five of them being severely damaged. Roofs were ripped off, walls collapsed, and a few were even moved off their foundations. The tornado moved through another wooded area and emerged into the Caledonia school complex. It was here that the tornado reached its maximum intensity causing significant damage to the entire school campus including two overturned school buses. The tornado then left the school complex and moved across the south side of Caledonia damaging homes**.** The tornado moved along the road for several miles. Along this part of the path, numerous single family homes were severely damaged. The roofs were ripped off and the walls were collapsed on several homes. Numerous hard wood trees were snapped, several of which fell on cars and homes. A horse stable was completely destroyed and a high tension medal truss tower was snapped. Further along the road, several mobile homes were completely destroyed. The tornado then entered another wooded area causing some tree damage and then weakened before crossing the state line into Lamar County, Alabama. The total path length in Lowndes County was 8.7 miles with an EF3 Enhanced Fujita Scale rating. The total path length for the entire tornado, including each county, was 13.2 miles. The school complex was occupied by over 2,100 students and faculty at the time of the tornado. Yet, the tornado warning lead time of 41 minutes allowed the school to place students at the best possible locations. No injuries or fatalities occurred at the school. Also, a day care center with 15 children and faculty was severely damaged, but all had taken cover in an underground storm shelter, so there were no injuries at that location either. In total, there were 15 injuries of which only three were considered serious. The three serious injuries occurred in the mobile home that was ripped apart with the body moving downwind and the frame in the opposite direction. This tornado had no effect on the MUW campus, but other ones did!

On November 10, 2002, a level 3 tornado formed in Lowndes County, about three miles southeast of Artesia. It moved 22 miles across the county, resulting in numerous injuries but no loss of life. This event hit MUW with damages totaling over $22 million. The tornado completely destroyed the physical education building and left the Art & Design building without a third floor leaving the university with a complete loss of two academic buildings. Twenty-six of 60 buildings were damaged and the campus was closed for a week. Additional damages included uprooted trees, downed power lines, downed fences, imploded windows, water damage, etc., there was no loss of life or injuries requiring medical attention and the cafeteria didn't miss serving a single meal to students, faculty, staff and volunteers on campus.

The Nov. 10, 2002 tornado left the Art & Design Building without a third floor.

The Physical Education & Assembly Building (PEAB) was totally destroyed by the tornado on Nov. 10, 2002.

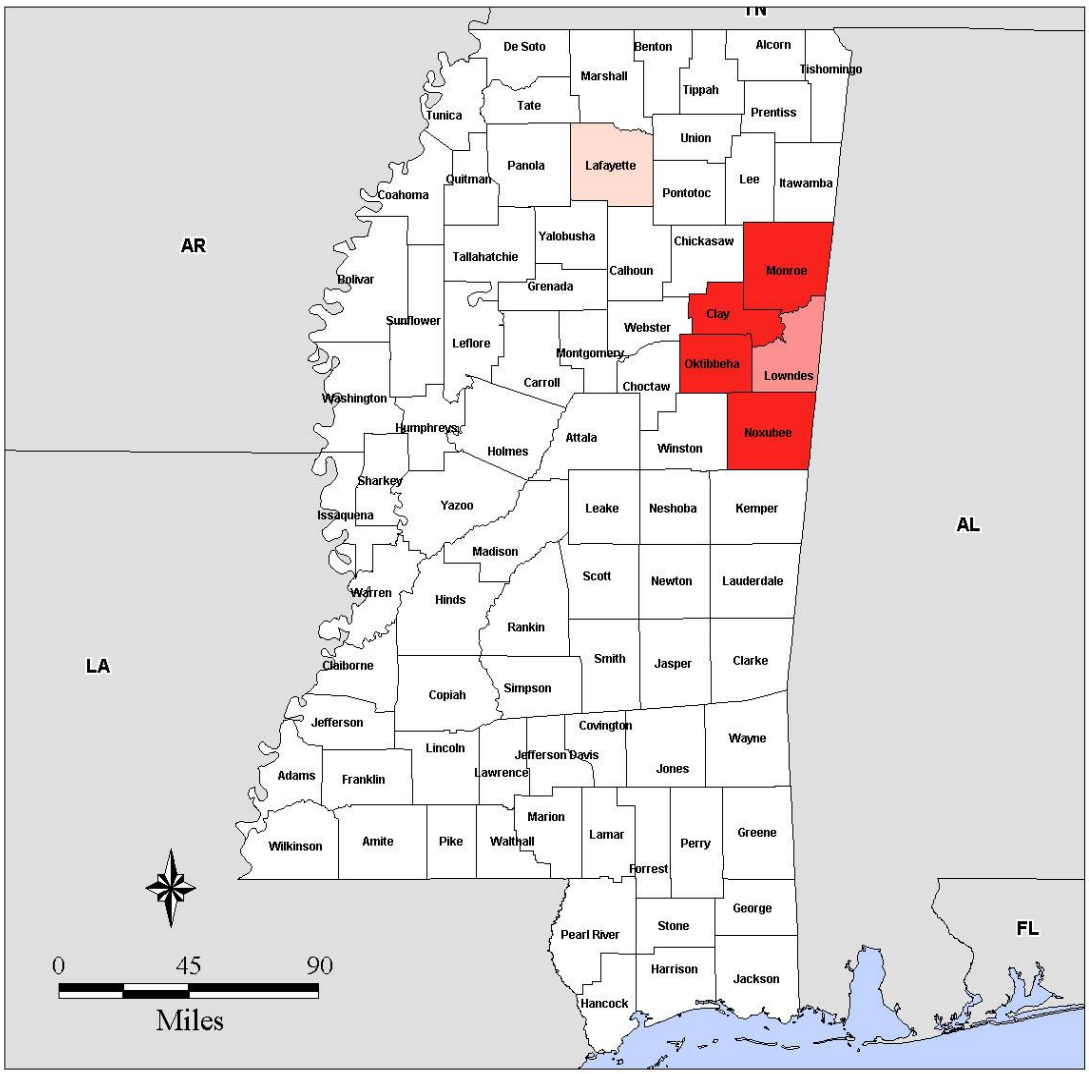
Various pictures of the devastation caused by the Nov. 10, 2002 tornado.

At Peyton Hall

Debris Clean up at PEAB

At Mary Wilson Home

FEMA-1443-DR, Mississippi
Disaster Declaration as of 11/22/2002



Location Map

Legend

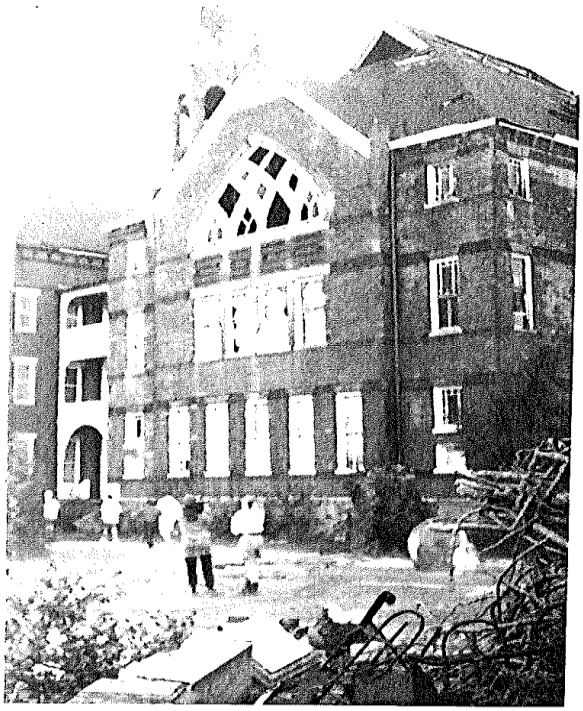
Designated Counties
(All counties are eligible for Hazard Mitigation)

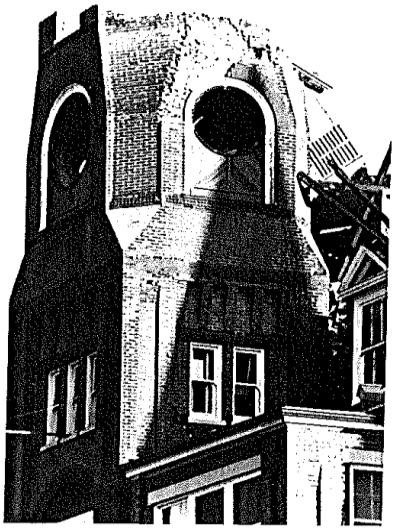
Individual Assistance	(4)
Individual and Public Assistance	(1)
Public Assistance	(1)

ITS Mapping and Analysis Center
Washington, DC
11/22/2002 -- 16:55:57 EST

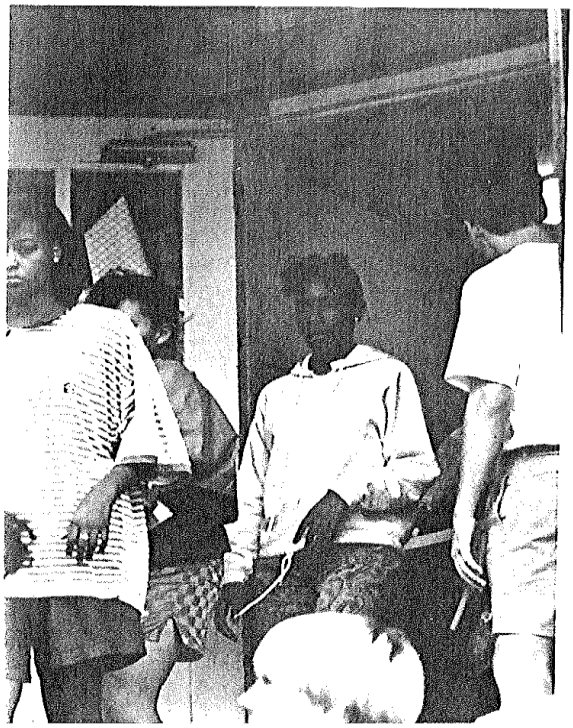
dr1443dec.wor

About ten years prior to this event, the campus felt the sting of another tornado. On October 10, 1992, a level 2 tornado came through and left behind damages estimating over $3 million. University resources state the front campus looked like the aftermath of a war. Power lines were down and students had to wade through several inches of water. Damage was sustained to most of the historic front campus buildings including the famous Callaway Hall Clock Tower as well as the Old Maid's Gate. The cost to repair the clock tower was $318,000. The majority of the damage to back campus was uprooted trees and imploded windows. The freshmen residents of Callaway Hall were moved to back campus after Callaway Hall was deemed unsafe. There were no major injuries. (Pictures below from Meh Lady Yearbook, 1993, Volume 84)





The symbol of our school, the Callaway Clock Tower, was heavily damaged during what some consider, the tornado that ravaged MUW and Columbus.



The majority of damage to back campus and the underclassmen dorms was uprooted trees and sidewalks, hail and imploded windows. Luckily, injuries were minimal.

W students bonded together, as only they can, and helped the freshmen move to back campus after Callaway Hall was deemed unsafe.

Straight-line winds/Wind

NOAA defines straight-line winds as generally any wind that is not associated with rotation, used mainly to differentiate them from tornadic winds. Meteorologist Jeff Haby says straight-line wind is wind that comes out of a thunderstorm. If these winds meet or exceed 58 miles per hours then the storm is classified as severe by the NWS. These winds are produced by the downward momentum in the downdraft region of a thunderstorm. An environment conducive to strong straight-line wind is one in which the updrafts and thus downdrafts are strong, the air is dry in the middle troposphere and the storm has a fast forward motion (weatherprediction.com). Wikipedia defines wind as the flow of air or other gases that compose an atmosphere (including, but not limited to, the Earth's). In short terms-wind is air molecules in motion.

Straight line damaging winds are common in Mississippi any time of the year. High winds can do just as much, if not more, damage than a tornado. These storms can knock down trees and cause damage to structures. While damaging wind reports tend to increase during the spring months and peak during the summer months in Mississippi, they can occur any time of year, including the fall and winter. The Jackson, MS National Weather Swervice indicated that a straight line wind event occurred in mid October 2012 when 80 to 90 mph wind gusts went through Greenville, knocking down trees and causing building damage. On November 18, 2003, a squall line moved across the region and caused widespread wind damage as well. High winds and straightline winds are associated with storms, and the strength of which is determined by the characteristics of the storm and climate conditions at the time.

NOAA records indicate 177 thunderstorms and high wind events have been reported in Lowndes County from September 1, 1950 until November 30, 2008. The wind event that comes to mind happened on February 16, 2001, when a major storm moved eastward across much of the northern half of Lowndes County. The storm caused extensive damage across the county including: $500,000 in damage to the East Mississippi Community College in Mayhew, $1 million to Columbus public schools, and over $1 million in damages to the MUW campus. Damage reports indicated 17 houses and 21 mobile homes were destroyed, 512 houses and 16 mobile homes sustained major damage, and 1,732 houses and 110 mobile homes received minor damage. There were two apartment units that were destroyed, six units had major damage, and 63 apartment units sustained minor damage. The Columbus-Lowndes Recreational authority estimated $200,000 in damage to city and county parks. Many buildings also had roof and sign damage. One business located in the corner of a strip mall shopping center had a wall collapse after the winds lifted up the roof. Despite the widespread damage in the county, no serious injuries were reported.

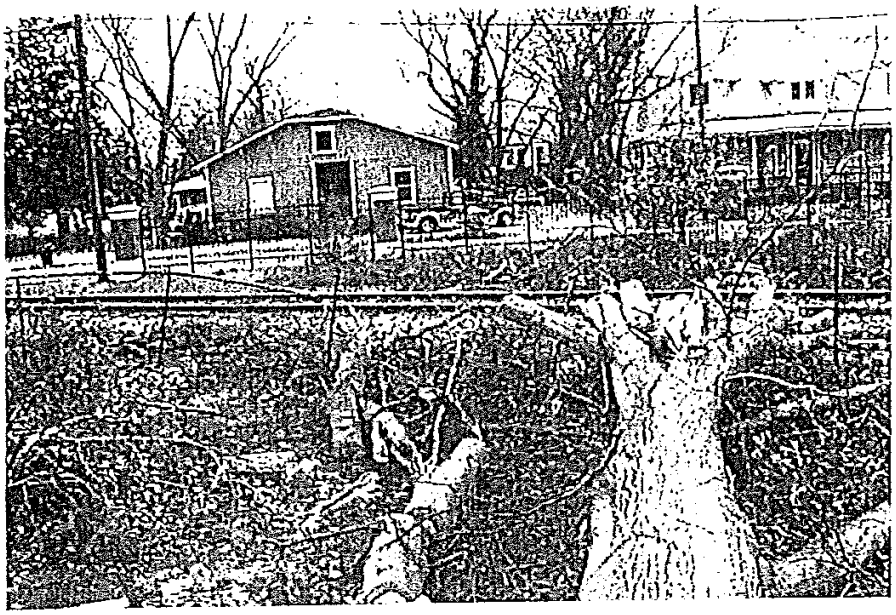
The sudden and violent storm that lasted approximately 20 minutes and caused major damage to both the city and the university. The storm carried tornado-like winds estimated to be in excess of 100 mph; it was later decided the storm consisted of straight-line winds caused by the highly unusual confluence of two vastly different weather fronts. The nature of the storm accounted for the fact there was virtually no warning given to the community. While MUW was hosting a regional student journalism conference at the time, no fatalities or injuries resulted from the storm. However there was devastating property damage throughout the area with many homes and businesses destroyed. MUW suffered significant damage, especially to roofs and trees, but no buildings were structurally damaged.

Over 20 buildings suffered significant roof damage. There were 41 large, older trees completely uprooted on campus as well as Plymouth Bluff Environmental Center seven miles away. Additional damage included fallen trees, destroyed fences, snapped power lines, etc. Damages totaled $1.3 million. (MUW records Storm 2001)

A prediction of the likelihood of a tornado/straight-line winds tracking across the MUW campus would be difficult as tornado tracks are random within the path of the thunderstorm and the path of the thunderstorm is also somewhat random. Because the consequences of these events can be catastrophic and based on numerous past occurrences, we consider tornados/straight-line winds/wind not only a high risk hazard(s), but the primary hazard(s) at the University.

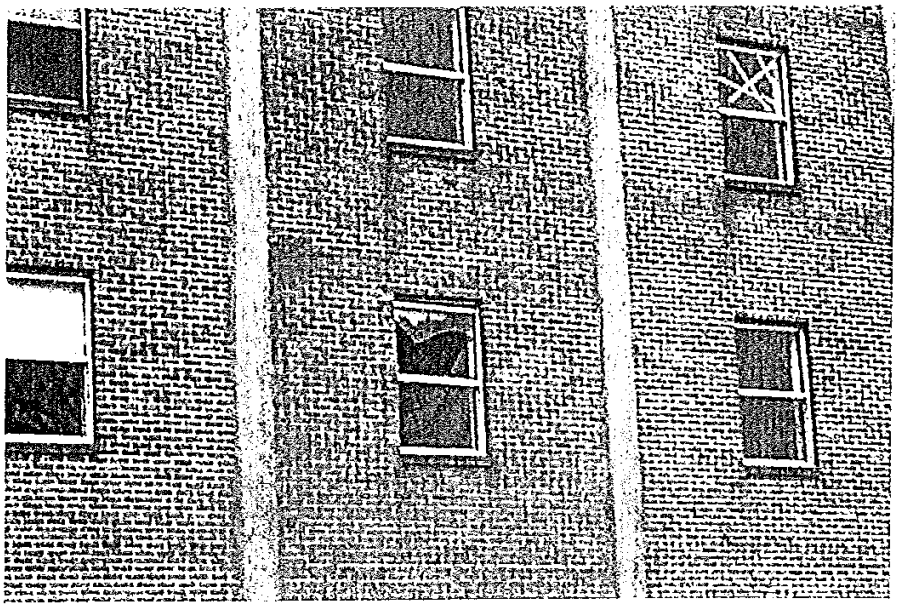
Pictures on the next two pages display some damages from the Feb. 16, 2001 straight line wind event that hit MUW campus.

East of Hogarth Cafeteria



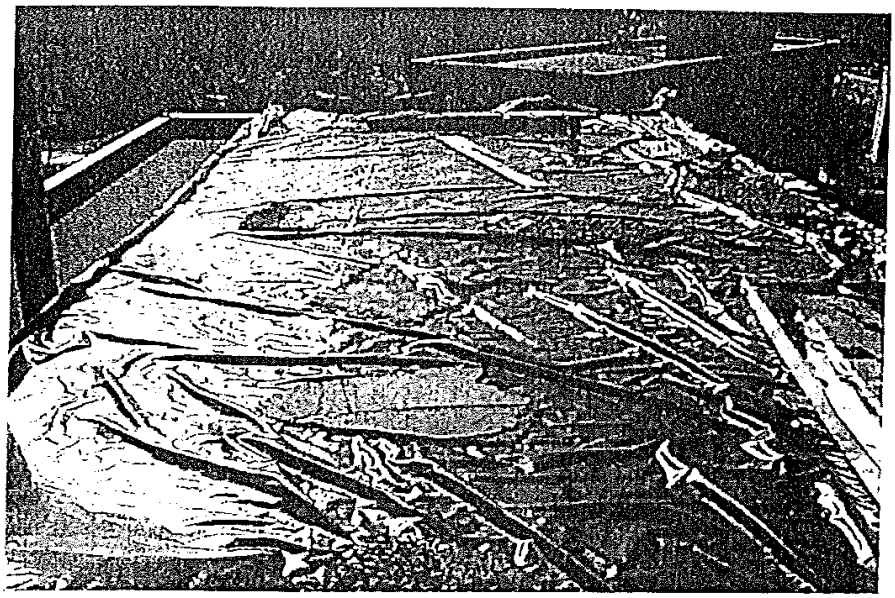
Damage Description: East of cafeteria has 160 feet of fence damage.

Broken Windows Throughout Campus



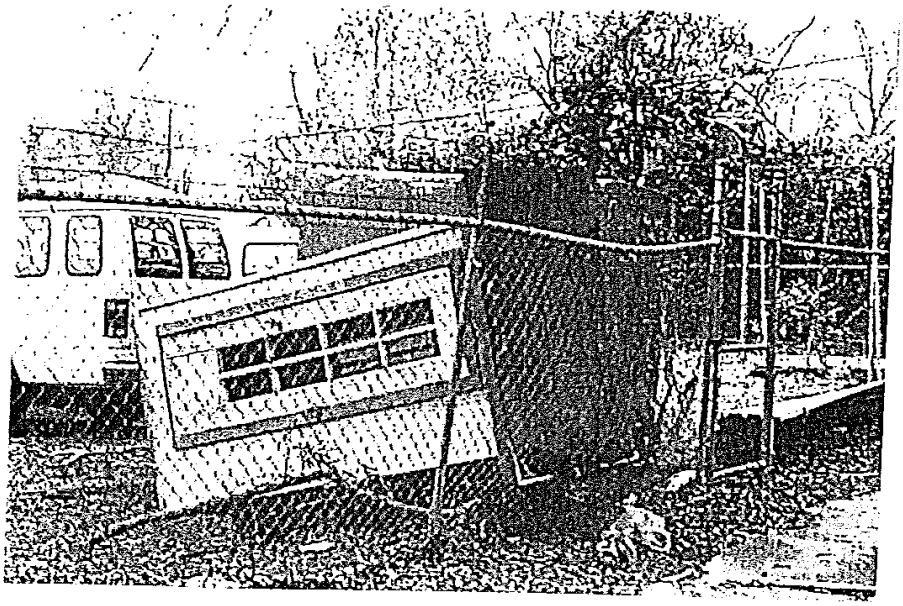
Damage Description: Old Pohl Gym, Painter and other buildings had broken windows.

Taylor Hall



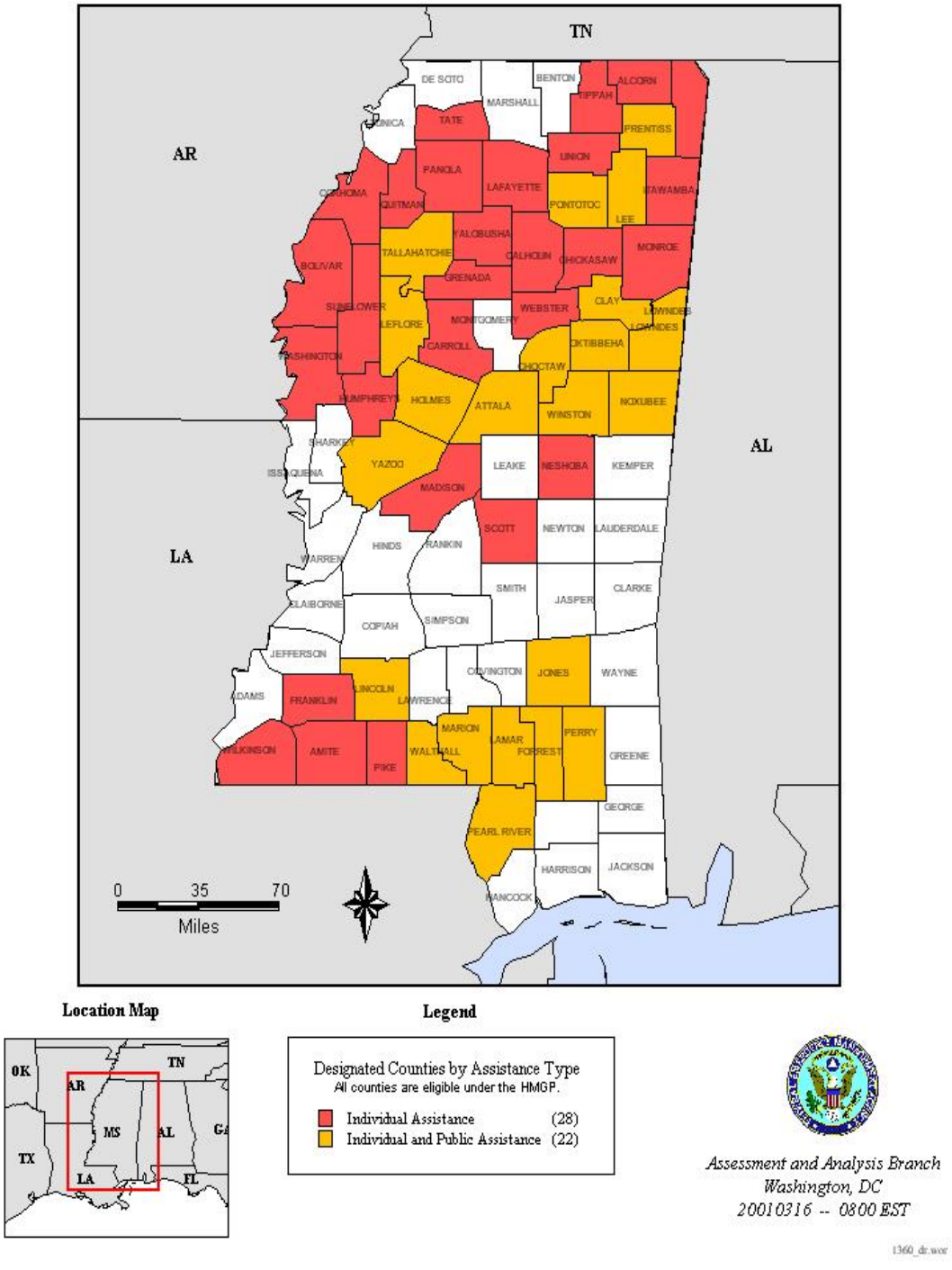
Damage Description: Roof on elevator penthouse requires replacement.

Barrow Perimeter Fence



Damage Description: Fence damaged on the east side west side and south side of Physical Plant compound.

FEMA-1360-DR, Mississippi
As of March 15, 2001



Location Map

Legend

Designated Counties by Assistance Type
All counties are eligible under the HMGP.

Individual Assistance	(28)
Individual and Public Assistance	(22)

Assessment and Analysis Branch
Washington, DC
20010316 -- 0800 EST

1360_dr.wor

Wildfire

The county mitigation plan states a wildfire is any fire that burns uncontrollably in a natural setting such as, grasslands, forest, and brush land. Prescribed burnings are the only exception to a wildfire. Wildfires can be either man-made or natural. The typical cause of natural wildfires is

lightning. Prescribed burning, also known as controlled burning is the deliberate use of fire under specified and controlled conditions. Prescribed burns are used by forest management professionals and individual landowners.

Wildfire is often associated with high air temperatures and dry conditions, although not exclusively. Wildfire differs from controlled burns in that they are destructive to the woodland /grasslands habitat in which they occur and lack the controlling factors which make controlled burns beneficial. Wildfire is most often a hazard in woodlands or grasslands during dry, hot weather. Often wildfire has man-made origins such as burning trash in dry, windy conditions but natural origins such as lightning can also start wildfires. Wildfire typically becomes problematic when dry windy weather prevails for an extended period of time. These conditions result in dry vegetation (fuel) and make ideal conditions for small man-made or natural fires to expand rapidly, burn intensely, and become uncontrollable Wildfire, as opposed to controlled or prescribed burns, damages the woodland environment and potentially destroys the built environment. Although most often associated with the more arid west, they can also pose hazards in Mississippi. Mississippi Forestry Commission (MFC) reports show that from July 1, 2007 to March 15, 2008, 1,335 wildfires burned 16,818 acres. For FY 2007 there were 3,951 wildfires which burned 65,113 acres. The main cause of wildfires is incendiary, followed by debris burning. Other causes are campfires, children, equipment use, lightning, miscellaneous, railroads, re-ignition and smoking. NAOO lists no wild or forest fire events for Lowndes County. However the county mitigation plans states Lowndes County had a total of 63 wildfires between 2002 and 2007 that were recorded by the MFC. These fires do not include events that were responded by the local voluntary fire departments. The MFC recorded fires alone make up about 611 acres of burning.

There is no evidence to indicate that the MUW campus has been effected by wildfire. But due to numerous thunderstorms that produce lightning; high risk of drought/ heat extreme and trees on the south end of campus, this hazard is retained as a low risk.

Winter Storm A winter storm is an event in which the dominant varieties of precipitation are forms that only occur at cold temperatures, such as snow or sleet, or a rainstorm where ground temperatures are cold enough to allow ice to form (i.e. freezing rain). In temperate continental climates, these storms are not necessarily restricted to the winter season, but may occur in the late autumn and early spring as well. (Wikipedia)

FEMA uses the following terms to identify a winter storm hazard:

Freezing Rain --Rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees, and power lines.
Sleet -- Rain that turns to ice pellets before reaching the ground. Sleet also causes moisture on roads to freeze and become slippery.
Winter Storm Watch-- A winter storm is possible in your area. Tune in to NOAA Weather Radio, commercial radio, or television for more information.
Winter Storm Warning-- A winter storm is occurring or will soon occur in your area.
Blizzard Warning--Sustained winds or frequent gusts to 35 miles per hour or greater and considerable amounts of falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer.
Frost/Freeze Warning -- Below freezing temperatures are expected.

The NWS associates the following conditions with winter storms that can be extremely hazardous.

Storms with Strong Winds –Sometimes winter storms are accompanied by strong winds creating blizzard conditions with blinding wind-driven snow, severe drifting, and dangerous wind chill. Strong winds with these intense storms and cold fronts can knock down trees, utility poles, and power lines. Storms near the coast can cause coastal flooding and beach erosion as well as sink ships at sea.

Extreme Cold -- Extreme cold often accompanies a winter storm or is left in its wake. Prolonged exposure to the cold can cause frostbite or hypothermia and become life-threatening. Infants and elderly people are most susceptible. What constitutes extreme cold and its effect varies across different areas of the U.S. In areas unaccustomed to winter weather, near freezing temperatures are considered "extreme cold." Freezing temperatures can cause severe damage to citrus fruit crops and other vegetation. Pipes may freeze and burst in homes that are poorly insulated or without heat. In the north, below zero temperatures may be considered as "extreme cold." Long cold spells can cause rivers to freeze, disrupting shipping. Ice jams may form and lead to flooding.

Ice Storms -- Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days while utility companies work to repair the extensive damage. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians.

Heavy Snow Storms -- Heavy snow can immobilize a region and paralyze a city, stranding commuters, stopping the flow of supplies, and disrupting emergency and medical services. Accumulations of snow can collapse buildings and knock down trees and power lines. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost. In the mountains, heavy snow can lead to avalanches. The cost of snow removal, repairing damages, and loss of business can have large economic impacts on cities and towns.

The impact of a winter storm includes strong winds creating blizzard conditions, blinding, wind-driven snow, severe snowdrift and dangerous “wind chill”. Extreme cold causes damage to crops, freezes pipes and creates the conditions necessary for heavy snow, ice storms, and winter storms.

The NWS in Jackson, Mississippi advises there are three categories of winter weather events. The criteria for winter events are classified as follows:

Heavy Snow - Two inches or more in a 12-hour period for the southern two thirds of the state and two to four inches or more in 12-hours for the northern one-third of the state.

Ice Storm - Any accumulation of ice one-quarter inch or more within a 12-24 hour period.

Winter Storm - Any combination of the ice or snow above. A mixture of snow and freezing rain would trigger a winter storm warning issued by the NWS in Jackson.

Winter storms are capable of causing severe damage in Mississippi. The 1994 ice storm comes to mind as it caused about 2 billion in damages in Mississippi alone. No evidence was found that indicated Lowndes County was severely affected by the 1994 winter storm. MUW records a as well as several staff members from that time recall the campus was not affected by this storm. Records show that Northern Mississippi was probably the area of the southeast hardest hit by the storm. Ice thicknesses of 7-14 cm were common and caused catastrophic damage in many areas. Over 120 mm of rainfall at some locations produced considerable flooding in addition to the ice damage. Approximately 750,000 customers were without power at some point, with about the same number also without water. Electricity to some locations was not restored for one month. The University of Mississippi campus in Oxford was closed for several days because of a lack of electrical power and public water supply which significantly

disrupted the class scheduling. (The February 1994 Ice Storm in the Southeastern U.S. J Neal Lott and Matthew C. Sittel)

NOAA records show a winter storm in Lowndes County on January 27, 2000, that brought a swath of heavy snow across central Mississippi. The snow began falling over western portions of the area during the early morning on the 27th and spread eastward during the day. The snow was heavy at times and did not end until the morning of the 28th. Snowfall amounts generally ranged from four to ten inches. The heaviest amounts fell along the Highway 82 corridor from Greenville to Starkville where isolated snow depths of 12 inches were reported. Damage from the heavy snow was relatively minimal with reports limited to a few collapsed roofs and downed trees. Power outages were sporadic, but traveling was more than just an inconvenience as numerous reports of vehicles running off the road were received. This event affected 17 counties and caused over $1 million in damages. There is no record to show damage or injuries were at MUW. The 2000 Meh Lady Yearbook states classes were cancelled. The yearbook also states that the last heavy snow was four years ago which is a reference to the February 1, 1996, winter storm in which a mix of snow, sleet and freezing rain that covered much of North Mississippi. Between two and five inches of snow and ice accumulated across the area. Numerous trees and power lines were knocked down due to ice and snow accumulations. Many roads were closed due to the icy conditions. In Lee County, a metal canopy collapsed at the Saltillo Elementary School. Property damages totaled $500,000.

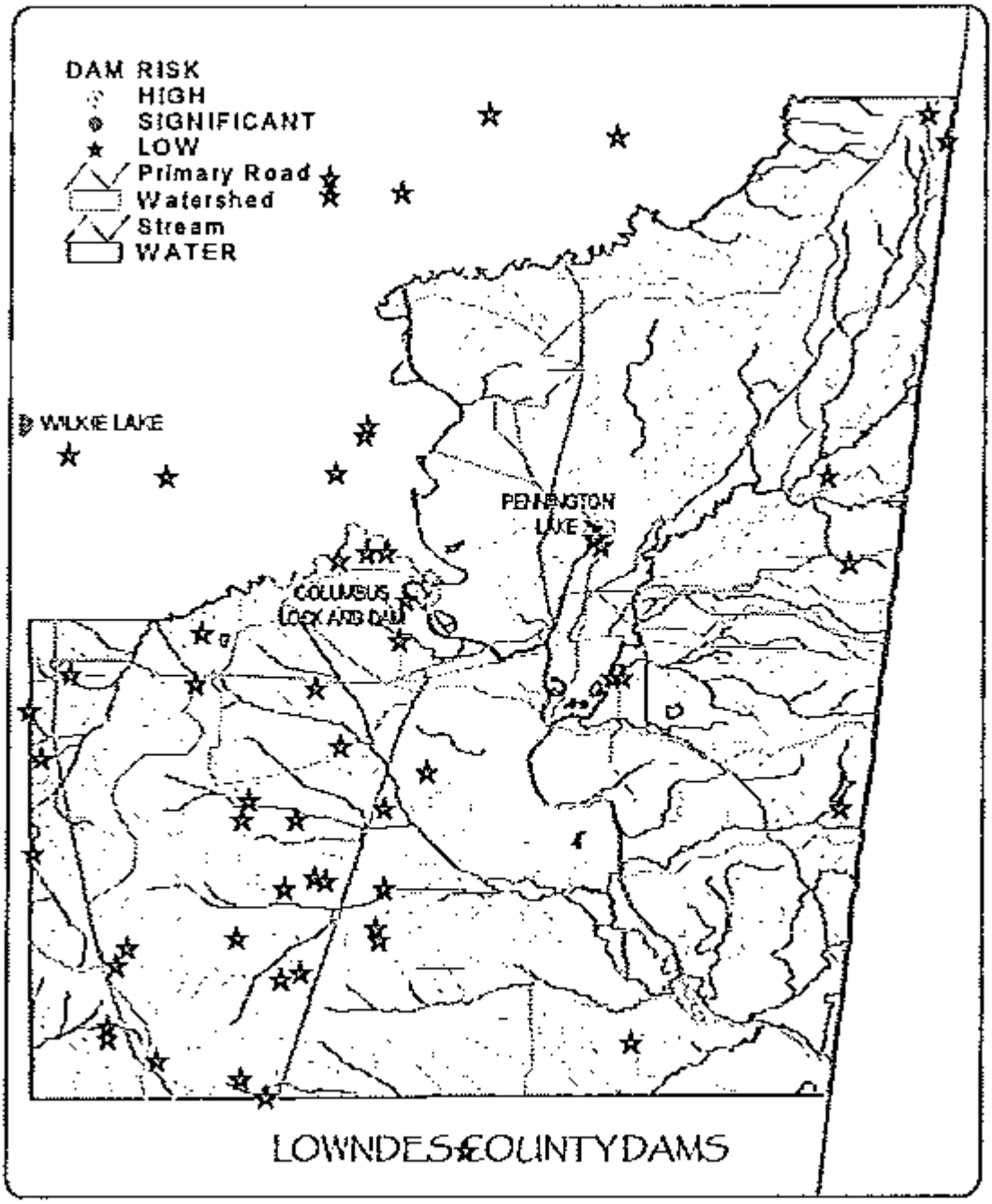
A strong cold front hit Mississippi in February of 2014 and February of 2015. A combination of snow, freezing rain, and Ice lead to wide spread icing on MS roads. Because MS is not adequately prepared to deal with ice and snow covered roads, many of the local schools and establishments were forced to close for safety concerns. The MUW closed both both winter weather events. Winter storms occur irregularly and can be associated with some costs to the University. These events are not expected to do structural damage, but could cause extensive damage to lifelines and debris clean-up costs can be significant. The University may be expected to be closed one to several days depending on the severity of the storm. While winter storms are not likely to pose a major threat to the University, it is retained as a medium hazard because of past occurrences.

MUW PROFILE OF REQUIRED NATURAL HAZARDS

While the plan profiles 10 natural hazards (described in the previous section), seven of these are required by MEMA – dam failure, drought, earthquake, flooding, hurricanes, tornado and wildfire. Dam failure, drought, earthquake and wildfire were assigned a low risk/likely occurrence and low mitigation priority ranking.

Dam Failure

MUW is located about 7 miles from the nearest dam, Columbus Lock & Dam. This dam is classified as a low hazard which means dam failure may cause damage to farm buildings (excluding residences), agricultural land, or county or minor roads. There is no evidence to support dam failure in the past and there is no reason to believe failure should occur in the future. Thus, dam failure is ranked a low hazard for MUW.



Source: Lowndes County Hazard Mitigation Plan

Drought

A drought is defined as a period of abnormally dry weather sufficiently prolonged for the lack of water to cause serious hydrologic imbalance in the affected area (Glossary of Meteorology 1959). The National Weather Service (NWS) defines it as a period of unusually persistent dry weather

that persists long enough to cause serious problems such as crop damage and/or water supply shortages. The severity of the drought depends upon the degree of moisture deficiency, the duration, and the size of the affected area. Below are the five most recent drought events in Lowndes County.

Drought of 1995: This drought had an effect on the entire State. It resulted in fifty counties being declared disaster areas due to the extreme drought, heat, and crop conditions.

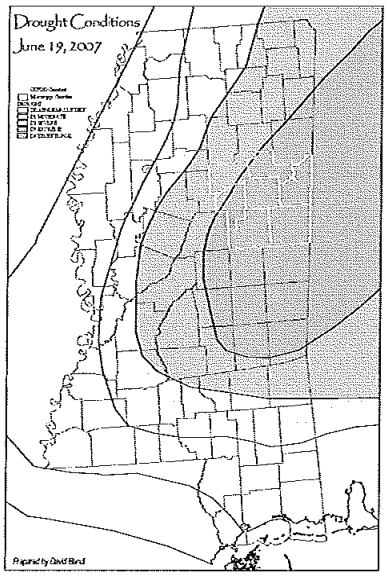
Drought of 1999: From March 1, 1999, through November 18, 1999, the State experienced extreme drought conditions and excessive heat. The lingering conditions resulted in 81 of Mississippi's 82 counties receiving some form of disaster designation. Hancock County was the only county ineligible for assistance.

Drought of 2000: On September 7, 2000, all 82 counties in the State were designated to receive disaster assistance. This was due to the extreme drought conditions across the State and excessive heat conditions as well.

Drought of 2006: There were five drought events that impacted this county and several others in the State. The severity of these events ranged from moderate to severe conditions. During the month of July the drought condition started as moderate and grew as severe by early September. Later it came down to moderate condition for a few days and rose to the magnitude of severe and extreme by mid-October.

Drought of 2007: As in the previous year, this year also had five drought events that impacted this county and several others in the State. The severity of these events ranged from severe exceptionally drought conditions. Severe drought conditions existed from February through mid-May and grew worse to extreme and exceptional drought magnitude by July.

Drought events occur often in the state and Lowndes County is no exception; but there is no evidence to show that damages to the MUW campus resulted from drought events. While MUW is located in a humid, subtropical region characterized by extreme heat in the summer, drought (aside from extreme heat) and is ranked as low hazards because despite the high probability of future occurrences, a drought is not expected to cause damage to the campus.



The drought events being regional in scale, the historic data were reported for multiple counties in the State.

Source: Lowndes County Hazard Mitigation Plan

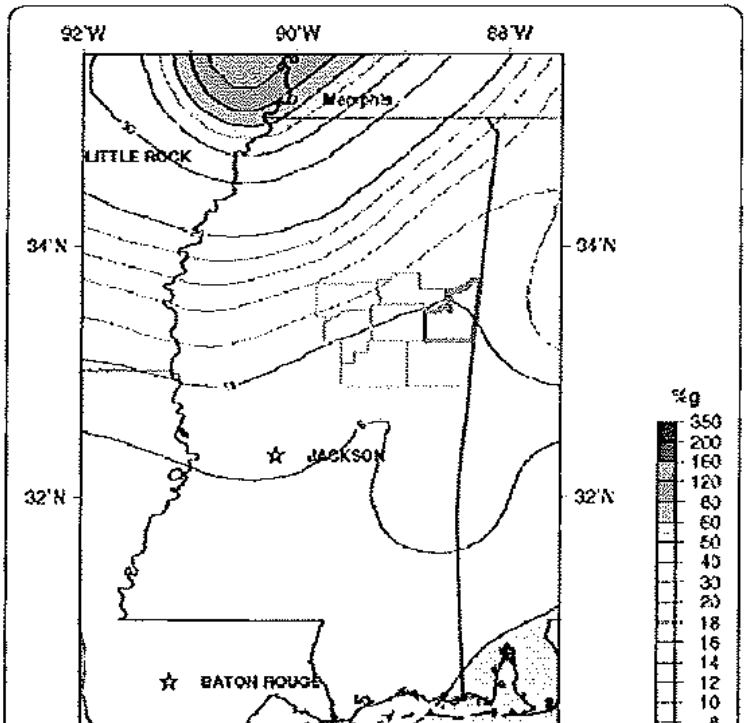
Drought of 2010. In 2010 September and October, and December is noted as a moderate drought month for most of the state of MS.

Drought of 2011. From Jan 2011 thru August 2011 most of the state of MS is noted in a moderate drought state, with the northern most counties in less drought conditions. Periods of extreme drought is noted in the Delta along the Mississippi River.

There were no noted periods of drought for Lowndes County MS from 2012 – 2015 in the Palmer Drought Severity Index. There were some periods of time when the climate conditions were moist indicating more rain than normal. Because of the history of drought in MS (eleven occurrences in the past 75 years), the writer believes the likelihood of recurrence of a drought condition is High. The extent of the drought condition is unknown and cannot be accurately predicted because the factors that contribute to the condition ate not a known science. Drought is a weather related condition that may be driven by atmospheric conditions which can be driven by natural and manmade events. Drought is a condition that is beyond man's control. However even with a high probability of drought condition existing, unless it is so severe as to cause the city to curtail water use on Campus, it will effect the university very little, if any.

Earthquake The Center for Earthquake Research and Information (CERI) and the University of Memphis defines an earthquake as the sudden, sometime violent movement of the earth's surface from the release of energy in the earth's crust. In simpler terms earthquakes are the result of movement along faults.

The Lowndes County mitigation plan states that our county is in line with this fault zone. Based on the Mercalli Intensity Scale, Lowndes County is expected to experience an intensity level of V from a magnitude 8 earthquake occurring along the New Madrid Seismic Zone (NMSZ). A level V means almost everyone feels movement; sleeping people are awakened; doors swing open or close; dishes are broken; pictures on the wall move; small objects move or are turned over; trees might shake; and liquids might spill out of open containers. An earthquake with a magnitude of 8 is considered a great earthquake that can cause serious damage in areas several hundred kilometer across. In addition to this, according to the Mid-America Earthquake Center, the line quadrant of the state that is labeled as critical counties ends at Monroe County, which is about 15 miles north of MUW. While MUW has not experienced an earthquake in the past, it is possible that the campus could experience an earthquake or after-shocks given the prediction and proximity to Monroe County, making this a medium-ranked hazard to MUW.



Source: Lowndes County Hazard Mitigation Plan

Flood

MEMA defines a flood as any general or temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters; the unusually and rapid accumulation or runoff of surface waters from any source. Flooding is a natural and inevitable occurrence. Floods occur seasonally with general or torrential rains associated with tropical storms that later drain into river basins and fill them with an abundance of water.

According to the FIRM, MUW is located in Zone X, which is defined as other flood areas, areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage area less than 1 square mile. According to MEMA's Flood Hazard and Repetitive Loss Risk Properties by Planning and Development District Area, Table 3.3.17, Lowndes County has no state buildings in a flood plain. Therefore there is no need for MUW to participate in the National Insurance Flood Program (NFIP).

According to Tommy Alexander, a retired physical plant employee who started at MUW in 1977, flooding was a major problem on campus. He stated that stopped up ditches and drains, not necessarily a big rain, would cause flooding. Therefore just about every time it rained, there was flooding on campus. He recalled how water got into the basements of Magnolia Dorm (now demolished) and the old Laundry Building (located on south campus, a very low-lying area) as well as the Art & Design building and Fant Library (both centrally located on campus). In addition to these buildings, water would also get in the basement of Welty Hall (located on front campus) even after the renovation in 1991. University records indicate that in 1993 and in 1999 water was waist deep in certain places on south campus. Many cars were unable to make it through the flood waters. (Meh Lady Yearbook, 1993, Volume 84 and Meh Lady Yearbook 2000, Volume 90). The straight-line wind event on February 16, 2001 also caused flooding on south campus as well as several buildings.

Since these instances, a storm and drainage project has been initiated and has ceased flooding on campus. This is evident from two very recent flood events in Columbus. On January 6, 2009, when nearly six inches of rain fell in and MUW had no flooding. On February 27, 2009, more than five inches of rain came down and yet again, MUW experienced no flooding. Alexander said if we didn't get any flooding from these two events, we probably won't. However, the university ranks this hazard with a medium risk based on past occurrences.

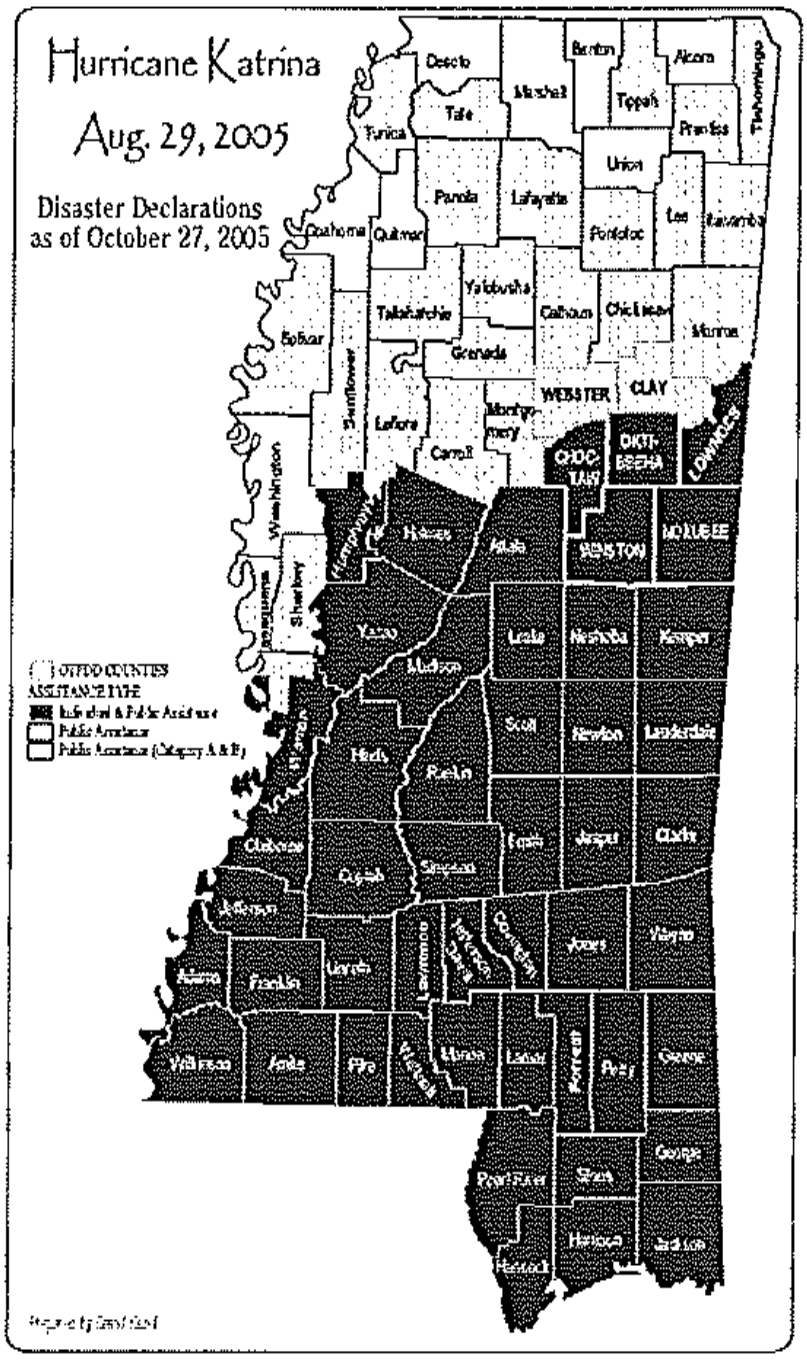
Hurricanes & Tropical Storms

FEMA defines hurricane as a type of tropical cyclone, the generic term for a low pressure system that generally forms in the tropics. A typical cyclone is accompanied by thunderstorms, and in the Northern Hemisphere, a counterclockwise circulation of winds near the earth's surface.

Hurricanes are typically considered coastal hazards, but these large storms move inland generating large amounts of rainfall and may spawn tornados and damaging straight-line winds.

The hurricane in which effects were felt on the MUW campus happened on August 29, 2005. Hurricane Katrina which is likely to go down as the worst and costliest natural disaster in the U.S. history as the devastation was not only confined to the coastal region, but widespread and significant damage occurred well inland. MUW received minor damages from the effects of Hurricane Katrina -- approximately $28,000. This was mainly roof damage; however debris removal and clean up is included. Also included are supplies, items and meals needed as MUW's residence halls served as a temporary shelter for over 150 Katrina evacuees for over two months. Due to this one past occurrence and the distance MUW is from the coast, hurricanes are ranked as low.

There has been no hurricane recurrence at MUW since Katrina up to the 2015 plan review and update. The probability of future Hurricane related damages to MUW is low, considering that the Mississippi University for women are located inland (near 250 miles inland) and only two instances of storms produced by hurricanes in the past 120 years have come near Lowndes county and only one has had a damaging impact to the Mississippi University for women, the effects of which were minimal. The extent of future damages related to storms caused by hurricanes or hurricanes is also considered minimal (near zero) considering our history of damaging effects ($28000) of hurricanes and storms that that reach MUW. The Probability of recurrence of Hurricanes/Tropical Storm is unlikely, as we have not had any significant event in the past 100 years.



Source: Lowndes County Hazard Mitigation Plan

Tornado

A tornado is a powerful column of winds spiraling around a center of low atmospheric pressure. It looks like a large black funnel hanging down from a storm cloud. The narrow end will move over the earth, whipping back and forth like a tail. The swath of damage can be over one mile wide and 50 miles long. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud

of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

On October 10, 1992, a level 2 tornado came through and left behind damages estimating over $3 million. University resources state the front campus looked like the aftermath of a war. Power lines were down and students had to wade through several inches of water. Damage was sustained to most of the historic front campus buildings including the famous Callaway Hall Clock Tower as well as the Old Maid's Gate. The cost to repair the clock tower was $318,000. The majority of the damage to back campus was uprooted trees and imploded windows. The freshmen residents of Callaway Hall were moved to back campus after Callaway Hall was deemed unsafe. There were no major injuries. Damages totaled $3 million. (Meh Lady Yearbook, 1993, Volume 84)

A little over 10 years after the 1992 tornado, another devastating tornado rocked the campus. On November 10, 2002, a level 3 tornado hit MUW leaving behind damages totaling over $22 million. The tornado completely destroyed the physical education building and left the Art & Design building without a third floor leaving the university with a complete loss of two academic buildings. Twenty six of 60 buildings were damaged and the campus was closed for a week. Additional damages included uprooted trees, downed power lines, downed fences, imploded windows, water damage, etc., There was no loss of life or injuries requiring medical attention.

Likelihood of future occurrence is hard to predict as tornado tracks are random within the path of the thunderstorm and the path of the thunderstorm is also somewhat random. However, based on the possible catastrophic consequences of this event and based on past occurrences, we consider tornados not only a high risk hazard, but the primary hazard at the University as they can occur at any time with or without warning.

Wildfire

The county mitigation plan states a wildfire is any fire that burns uncontrollably in a natural setting such as, grasslands, forest, and brush land. Prescribed burnings are the only exception to a wildfire. Wildfires can be either man-made or natural. The typical cause of natural wildfires is lightning. Prescribed burning, also known as controlled burning is the deliberate use of fire under specified and controlled conditions. Prescribed burns are used by forest management professionals and individual landowners. Wildfire is often associated with high air

temperatures and dry conditions, although not exclusively. Wildfire differs from controlled burns in that they are destructive to the woodland / grasslands habitat in which they occur and lack the controlling factors which make controlled burns beneficial. Wildfire is most often a hazard in woodlands or grasslands during dry, hot weather. Often wildfire has man-made origins such as burning trash in dry, windy conditions but natural origins such as lightning can also start wildfires.

The county mitigation plans states Lowndes County had a total of 63 wildfires between 2002 and 2007 that were recorded by the Mississippi Forestry Commission. There is no evidence to indicate that the MUW campus has been effected by wildfire. But due to numerous thunderstorms that produce lightning; low risk of drought, high risk of heat extreme and trees on the south end of campus, this hazard is retained as a low risk with a low probability of future occurrence.

MAN-MADE DISASTERS

Profiled below are man-made disasters that may threaten MUW. While little or no evidence supports occurrences of these on campus, they were retained as hazards primarily because safety is the ultimate goal; but secondarily most of these are covered in the University's emergency response and preparedness plan and allows co-mingling of the two plans.

Civil Disturbance

Most campus demonstrations such as marches, meetings, picketing and rallies will be peaceful and non-obstructive. A student demonstration should not be disrupted unless one or more of the following conditions exists as a result of the demonstration:

- Interference with the normal operations of the University
- Prevention of access to office, buildings or other university facility
- Threat of physical harm to persons or damage to university facilities

If any of these conditions exist, the MUW Police should be notified and will be responsible for contacting the President. Depending on the nature of the demonstration the appropriate procedures listed below should be followed:

Non-disruptive Demonstrations

Generally, demonstrations of this kind should not be interrupted. Demonstrations should not be obstructed or provoked and efforts should be made to conduct university business as normally as possible. If demonstrators are asked to leave, but refuse to leave by regular facility closing time, arrangements will be made by the Chief of Police to monitor the situation during non-business hours, or a determination will be made to treat the violation of regular closing hours as a disruptive demonstration.

Disruptive Demonstrations

In the event that a demonstration blocks access to the university facilities or interferes with the operation of the university, demonstrators will be asked to terminate the disruptive activity by the Chief of Police or designee. If demonstrators persist in the disruptive activity they will be apprised that failure to discontinue may result in disciplinary action including suspension, expulsion or arrest. Except in extreme emergencies the President will be consulted before such disciplinary actions are taken.

Efforts should be made to secure positive identification of demonstrators in violation to facilitate later testimony, including photographs/video if deemed necessary. After consultation with the President, Chief of Police, and Vice President for Student Services, the need for an injunction and

arrest will be determined. If determination is made to arrest the demonstrators, they should be so informed and warned of the intention of arrest.

MUW has had high profile visitors to campus – President W.H. Taft in 1911; Vice President Dick Cheney on October 27, 2003; and most recently President Barack Obama on March 10, 2008 (President-elect at the time of visit). These visits could have sparked a civil disturbance, but no such actions were reported ranking this a low hazard.

Computer Crime or Attack

It is no secret that institutions are bearing the brunt of today's malicious software attacks. Bot-infected computers are rampant in the educational space, especially in colleges and universities where academic freedom often translates to unmanaged computers on a fairly wide-open network.

Attacks today are virtually identical to crimes perpetrated when the slide rule (the mechanical analog computer) was king. The computer simply introduces automation and removal of personal contact. These two factors have dynamically changed our society, yet our educational system has not evolved to teach the skills required to live in this evolved society.

Recently, the landscape has been changing. Information technology workers at higher education institutions have increasingly been able to convince decision makers that controls and restrictions must be put in place. Many institutions are implementing a variety of security technologies, including antivirus software, network access or authentication control, quarantine systems, network segmentation, and other technologies to help secure their networks. The technologies have their place and go a long way toward mitigating the problem. However, technology is not the source of the problem and therefore won't be the ultimate solution. (The EDU Challenge article moving beyond technology in maintaining a secure network, Randy Abrams, May 2008)

In today's technology driven environment, computer related threats are frequent occurrences that require vigilant awareness. MUW systems and networks experiences computer related threats and attacks on a daily basis. Thousands of Internet-connected wired/wireless devices are employed everyday on MUW's campus networks which in turn increases exposure for computer hackers to exploit potential vulnerabilities. Though it is impossible to protect against every threat, mitigating risks from computer related threats and attacks can be achieved by providing awareness, training, and maintaining system controls.

MUW personal computers and servers are usually susceptible to the highest risk of computer crime or attack. Personal computer attacks are usually passive exploits (trap and capture) unintentionally initiated by the end user. Personal computer threats can impact user productivity, compromise stored data, and provide backdoors to other interconnected systems. Conversely, server attacks are usually aggressive exploits perpetrated by malicious entities. Server attacks can impact system-wide productivity, compromise sensitive system data, impede campus-wide communications, as well as provide backdoors to other interconnected systems. Personal computers and servers present different sets of challenges to minimize threats. However, user awareness and training is the greatest common denominator in mitigating risks that involve personal computers and servers.

MUW engages many hardware and software security applications to help protect against computer crime and attack. Network perimeter security, anti-malicious software applications, access controls, and network design are many tools used at MUW to successfully mitigate security risks. However, even with many levels of security, some MUW systems have been compromised in the past. Fortunately, most compromised server systems involved web servers that did not contain sensitive data. To date, MUW has not knowingly suffered a serious breach of

sensitive data. Nonetheless, as like many other institutions with a significant presence on the Internet, MUW will remain a target for entities with malicious intent. The rank for this hazard category should have a high rating.

Disease/Epidemic

A disease or medical condition is an abnormal condition of an organism that impairs bodily functions, associated with specific symptoms and signs. It may be caused by external factors, such as invading organisms, or it may be caused by internal dysfunctions, such as autoimmune diseases (Wikipedia). The Second College Edition of The American Heritage Dictionary defines an epidemic as spreading rapidly and extensively by infection among many individuals in an area.

What causes infectious diseases? Germs, or microorganisms, as they are called by scientists. The most common microorganisms are bacteria and virus, but others are fungi, protozoans, and worms. Bacteria, which are one-celled organisms, and viruses, which are even smaller, are mainly (parasites) that multiply sometimes with astonishing speed.

Although vaccine-preventable diseases have declined to record-low levels in the United States, infectious disease "epidemics" on college campuses continue. A large student body with variable immunization status makes a college campus fertile ground for the spread of communicable diseases. The presence of international students and an increasingly large number of students traveling abroad make it essential that individuals charged with defining and instituting health-related policies for the university have knowledge about health issues occurring in foreign countries as well. Several safe and effective vaccines are available that offer protection to young adults from a variety of infectious diseases in the United States. Because vaccine-preventable diseases can cause both human and economic problems for colleges and universities, administrators should take steps to assure that the students on college campuses benefit from these vaccines. (A. Kumar, Department of Pediatrics and Human Development, College of Human Medicine, Michigan State University)

Two of the most talked about diseases prevalent on college campuses are sexually transmitted diseases (STDs) and meningitis.

Sexually Transmitted Diseases (STDs)

According to Health Services at Columbia University, 20-25 percent of college students across the country have either been infected with a STD or transmitted an STD to their sexual partners. Two thirds of all individuals with STDs are under the age of 25.

STDs are generally divided into two classes. Viral STDs include genital warts, herpes, hepatitis and HIV and bacterial STDs include gonorrhea, chlamydia and syphilis. Bacterial infections are generally easier to cure with a round of antibiotics but will still take their toll on the individual. Viral infections are very serious and cannot be cured, only treated. Unlike most ailments, STDs are tricky in that individuals may be asymptomatic. As such, these individuals may continue having sexual relations and unknowingly transmit the disease to others.

According to the Centers for Disease Control and Prevention (CDCP), the most commonly contracted STD in recent years has been Human Papilloma Virus (HPV), also known as genital warts. Four to six million cases of HPV are seen each year, and it has been termed as the most common STD on college campuses across the country. The American Social Health Association (ASHA) claims that there are over 100 different types of HPV, 30 of which cause genital warts.

HPV is spread primarily through skin-infected skin contact, and it manifests itself as warts around the genitals. In rare cases, HPV has the potential to cause cervical cancer in women. Although individuals may be affected with genital warts, HPV can remain dormant, which makes it difficult to diagnose and treat.

Meningitis

Meningitis is inflammation of the protective membranes covering the brain and spinal cord, known collectively as the meninges. The inflammation may be caused by infection with viruses, bacteria, or other microorganisms, and less commonly by certain drugs. Bacterial meningitis, and some other causes are life-threatening because of the inflammation's proximity to the brain and spinal cord; therefore it is a medical emergency (Wikipedia).

Meningococcal disease is contagious and progresses very rapidly. The bacteria are spread person-to-person through the air by respiratory droplets (e.g., coughing, sneezing). The bacteria also can be transmitted through direct contact, such as kissing, with an infected person.

The American College Health Association (ACHA) recommends all first-year students living in residence halls receive the meningococcal vaccine. The ACHA recommendations further state that other college students under 25 years of age may choose to receive meningococcal vaccination to reduce their risk for the disease. Because disease rates begin to climb earlier in adolescence and peak between the ages of 15 and 20 years, the vaccine is also recommended for all adolescents 11 through 18 years of age (ACHA article Vaccination Recommendations for College Students).

These recommendations, coupled with ample supply of a vaccine that may provide longer duration of protection, will help increase rates of immunization against meningococcal disease and will give college health professionals the guidance needed to help protect college students against meningococcal disease. (ACHA article Transmission and Symptoms of the Disease).

According to an article on woodtv.com, a Noro-like virus, caused Hope College in Holland, Michigan to close in 2008. An order from Ottawa County health officials came down after more than 120 Hope College students became ill from a noro-like virus. The campus health clinic noticed the beginning of the outbreak in which symptoms included diarrhea, nausea and vomiting, which pointed to the highly contagious norovirus. As the number of patients closed in on 120, county health officials ordered the campus shut down. Classes, sporting events, any gathering of people on the campus was prohibited. All dining facilities were closed and didn't reopen until they were disinfected. All common areas in dorms, classroom buildings and other public facilities were cleaned as well. Because of Hope's close proximity to downtown Holland, campus officials didn't take any chances as campus security and Holland police were asked to break up any parties or other student gathering both on, and off, campus. The virus is also spread through contact with surfaces, like tables, computer keyboards, phones or any number of sources. (woodtv.com, Perfect storm' shuts down Hope campus, November 7, 2008, Joe LaFurgey)

The recent pandemic of the swine flu raised concerns but did not cause alarm on the MUW campus; however it did increase awareness about the importance of hand washing, sanitizing, etc. and caused for review of the pandemic emergency plan.

According to Amy Wallace, an MUW campus health center official, since 1998 there have been 10 positive STD tests with the particular STD being Chlamydia and a couple of positive genital herpes screens. Since that same time there has only been one documented case of meningococcal

meningitis. While the documented cases are low, because of the unpredictable campus environment, MUW ranks this hazard with medium severity.

Fire/Arson

Fire is the oxidation of a combustible material releasing heat, light, and various reaction products such as carbon dioxide and water (Wikipedia). Each year, more than 4,000 Americans die and more than 25,000 are injured in fires, many of which could be prevented. Direct property loss due to fires is estimated at $8.6 billion annually.

In an average year, 1,800 fires hit college campuses, killing some, injuring many more and causing millions of dollars in property damage, according to the U.S. Fire Administration. The potential threat of college dormitory fires is often not taken seriously enough by students until it is too late. Campus authorities and students sometimes let their guard down because of the high frequency of pranks and false alarms.

On April 12, 1987, in Williams Hall of Wesley College in Dover, Delaware, and fire caused by smoke bombs killed an 18-year-old one student and injured four others, one critically. Incidents involving smoke bombs had occurred before, and students apparently thought the smoke this time "was just another smoke bomb." As a result the fire department was not immediately notified. There had been frequent false alarms, and students considered them annoying. The fire alarm in the dormitory did not operate on the day of the tragic fire, apparently because the fire alarm bell had been stolen from the first-floor hallway after a false alarm the previous day.

A fire on April 28, 1987, in Frazer Dormitory of Longwood College in Farmville, Virginia, was apparently caused by an unauthorized overloaded, multi-outlet extension cord. Fifteen students were injured in this event. As in the Wesley College incident, the fire alarm failed to work. In this case, activation was delayed about 10 minutes because the breaker switch was off. In addition, the majority of in-room smoke detectors were disconnected or failed to operate. Similar to those at Wesley College, the Longwood College students apparently did not evacuate immediately because they thought it was "just another fire drill." Both these incidents point out the importance of enforcing fire safety policies and procedures in residence halls and encouraging use of the 911 emergency number for reporting emergencies to appropriate authorities (U.S. Fire Administration/Technical Report Series, College Dormitory Fire, Dover, Delaware, and Farmville, Virginia, USFA-TR-006/April 1987).

There were 3,300 college housing fires in 2005, up from 1,800 in 1998, according to a report by the National Fire Protection Association (NFPA). From 2002 to 2005, there were 39 deaths and close to 400 injuries from fires in residences that include dormitories, fraternities, sororities and barracks. Federal officials said the increase comes as students cram more electrical equipment into their dorm rooms, with microwaves and hot plates responsible for a majority of the fires. Most of the fatalities, however, were blamed on fires started by smoking or unattended candles.

On Tuesday, May 6, 2008, a fire broke out in the Main Building on the Our Lady of the Lake University (OLLU) campus in San Antonio, Texas at 7:30 p.m. The fire continued until the early morning hours of Wednesday, May 7. All occupants safely evacuated the building and no one was injured in the fire. While the fire did cause significant damage to the historic Main Building, the fire was contained to that building. No other building sustained fire damage. In what was the city's first four-alarm fire in nine years, more than 100 firefighters from the San Antonio Fire Department battled the blaze. The San Antonio Police Department and campus police from surrounding areas arrived to assist. Reports stated that the roof, attic and most of the fourth floor suffered significant fire damage. The first, second and third floors sustained substantial water and smoke damage. After a thorough investigation by forensics experts and the Arson Unit, the cause

of the fire was deemed accidental by San Antonio Fire Department officials. Fire Department investigators determined the fire began in the attic of Main and was probably electrical (www.ollu.edu, Our Lady of the Lake University).

MUW has records of two fires on campus: One in Shattuck Hall on front campus on July 14, 1953 in which the top two floors were destroyed rendering the dining hall and other residential space useless. The other fire was in 1991 at two faculty apartments located on south campus with damages totaling $80,000.

Arson
Arson, the act of deliberately setting fire to a building, car or other property for fraudulent or malicious purposes, is a crime in all states (Insurance Information Institute III).

Arsonists set fires that destroyed $878 million worth of property in 2007, down 1.2 percent from $889 million in 2006. These fires include factories, residential buildings, churches and motor vehicles, according to the National Fire Protection Association (NFPA). Unfortunately, college campuses are not exempt from arson.

On February 18, 2009, there was a fire, caused by arson, that totaled up to $1 million in damages at Lorain County Community College in Elyria, Ohio. No one was injured but the blaze sent heavy smoke through underground tunnels that connected several buildings. In all nine buildings were damaged due to heavy smoke. A 24-year-old student with a long criminal record including another arson case was arrested. (Chronicle of Higher Education, Student Charged With Arson That Shut Down Community College in Ohio, February 20, 2009).

On March 4, 2009, arson was the cause of five fires in two buildings at College of Mount St. Joseph in Cincinnati, Ohio resulting in the death of a student, who suffered a seizure, and smoke inhalation injuries to another. Delhi Township Fire Chief William Zoz said three fires were set in the Arts Building and two more on the fifth floor of Seton Hall, where 400 students live. Four were in bathrooms and one was in a stairwell. All the blazes were small and were extinguished by sprinklers in the buildings. Damage was set at less than $20,000 and was mostly due to water used to extinguish the blazes. An 18-year-old resident student was charged with two counts of aggravated arson (Kypost.com, MSJ Fires Ruled Arson, Student Dies after Seizure, March 5, 2009).

Because of a fire suppression project currently underway and structural damages in the past, the University ranks hazard of medium severity.

Loss of Lifelines (Utilities)
MUW's utilities are provided by the following:
Electric – Columbus Light & Water Department
Plymouth Bluff's electric is provided by 4-County
Water – Columbus Light & Water Department
Gas – Atmos Energy
Communications – AT&T provides all telephone services and is the university's internet service provider.

Electric/Water
Severe weather is one of the greatest causes of power loss. Snow, ice, high winds, and lightning can cause damage to electric power grid infrastructure. Other causes of power outages include flooding; fallen tree limbs, vehicle accidents involving utility poles, and small animals climbing the lines and shorting out power supply. Other hazards resulting from power outages include temperature extremes,

unsafe drinking water, electrical shock from downed power lines, and carbon monoxide poisoning. Power outages can also be and often are a secondary effect of severe weather.

Gas

Most of the buildings on MUW campus are on natural gas.

Communications

While MUW has several ways of maintaining communication, they are all still vulnerable to communication failures.

The probability of a large-scale and extended period of utility failure is low. However, small scale and shorter periods of utility failure may occur more frequently. The maximum utilities failure threat to MUW is a loss of electricity, water and communications. These resources help ensure the health, safety, and general welfare of the campus. While the University is vulnerable to a loss of utilities, the greatest threat is a loss of utilities for prolonged periods of time. The longer the breakdown, the worse the impact will be. A loss of natural gas can negatively impact the University, but it will not have the impact, when compared with the loss of other utilities, such as electricity, water and communications. A loss of electricity can also negatively impact emergency responders as well.

MUW has not had a major utility failure that resulted in damages thus far; but because this could be the result of a natural or man-made disaster, it is rated with medium severity.

Terrorist Acts/Explosive Devices

The Free Dictionary says a terrorist act is the calculated use of violence (or the threat of violence) against civilians in order to attain goals that are political or religious or ideological in nature; this is done through intimidation or coercion or instilling fear.

The tragic events that occurred on September 11, 2001 caused people to rethink security strategies for nearly every profession in the U.S. College campuses are no exception. Terrorist attacks must be considered due to their random and unpredictable nature. The risk is always present for various extremist individuals to be displeased with university research, policies, or happenings and to show this displeasure with violence.

One terrorist act that would be of great concern to MUW would be explosive devices. Most acts of terrorism in the U.S. are directed toward government buildings and officials. The most notable of these terrorist acts would be the terrorist attacks on September 11, 2001, otherwise known as the "9/11 attacks," in which about 3,000 people were killed when four airline jets were hijacked. Two planes were intentionally crashed into the twin towers of the World Trade Center, one crashed into the Pentagon, and the last plane was unintentionally crashed into a field in Pennsylvania. While most terrorism acts are not this severe and are focused on government, some have occurred in schools and universities. There have been 23 shootings in colleges and universities throughout the U.S. Some of the more damaging school shootings in U.S. history are as follows:

> **August 1, 1966** -- University of Texas, Charles Whitman killed 14 people and wounded 31, while shooting a rifle from an observation deck. He killed his wife and mother before going on his shooting rampage, which ended in him being killed by police. During his autopsy it was discovered that he had a brain tumor, which some believe caused his mental instability. This incident led a movement toward the creation of modern SWAT teams.
> **January 26, 1995** -- University of North Carolina, Chapel Hill, a schizophrenic law student killed two and injured two others with a rifle.
> **April 20, 1999** -- Columbine High School, two students went on a shooting rampage in Colorado, killing 13 people and wounding 24 others before both committing suicide. They used various shotguns, handguns, rifles, and bombs during their massacre. The cause of

the rampage is thought to be due to many things including feelings of isolation, being outcasts and bullied, depression, and previous violent natures.
October 28, 2002 -- University of Arizona, a 41-year-old nursing student who was failing the nursing program shot and killed three nursing professors before committing suicide.
April 26, 2007 -- Virginia Tech University, a 23-year-old South Korean immigrant and Virginia Tech student Seung-Hui Cho killed 32 people and wounded 25 others before committing suicide while on a shooting massacre. This was the deadliest shooting in modern U.S. history. It is unclear as to why Cho went on his killing rampage, but some speculate his tendency to be a loner, his hatred of the wealthy, and his past occurrences of mental illness (he had undergone psychiatric treatment previously) contributed to his decision to go on a killing rampage.
Source: University of Tennessee at Knoxville Hazard Mitigation Plan

Terrorist acts, whether foreign or domestic have become a significant topic of concern in the past few years. To counteract the threat of terrorism on campus all faculty and staff must be attuned to the signs of possible terrorist activity. Some signs of possible terrorist activity occurring includes but is not limited to white powder substances found in or on campus property/facilities; suspicious mail or packages received with no return address or package is moist, wet or weathered; international or foreign students demonstrating or voicing hatred for Americans; unlawful computer website access by foreign students and/or tracking of packages/mail delivery via college computers.

There are approximately 4,000 Title IV institutions of post-secondary education in the U.S. serving 15 million students, and several million faculty, staff and visitors. According to the Bureau of Justice Statistics, there are roughly 30,000 campus police and security officers protecting these institutions and individuals. (Campus Public Safety: Weapons of Mass Destruction Terrorism Protective Measures Office for Domestic Preparedness, U.S. Department of Homeland Security, April 2003)

Explosive Devices
Free Dictionary defines an explosive device (bomb) as a container filled with explosive or chemical material and generally used in warfare. An improvised explosive device (IED) is a bomb constructed and deployed in ways other than in conventional military action. They may be partially comprised of conventional military explosives, such as an artillery round, attached to a detonating mechanism (Wikepedia).

It appears as though bomb threats may be on the rise on campuses all across the U.S. In August 2007 Middle Tennessee State University (MTSU) in Murfreesboro was among five universities across the country to receive bomb threats on the first day of the fall semester. Three MTSU employees received e-mails saying there were explosive devices on campus. Authorities said they checked several buildings, but didn't find anything. Princeton University, Clemson University, Carnegie Mellon University and the University of Alaska at Anchorage also received bomb threats. (News Channel5.Com, Bomb Threat Raises Concern on Local College Campus, August 27, 2007)

On March 12, 2008, administrators and police at the Levelland campus of South Plains College in Texas evacuated three buildings after an unknown person made two phone calls to Levelland police saying there were bombs in three on-campus buildings. South Plains College administrators and local police evacuated the administration building, science building and technical arts building in response to the threat. Police, however, did not find bombs after a thorough search of the buildings, said Tom McCain, assistant chief of the Levelland Police Department. Though all three buildings had been cleared by the Lubbock Sheriff's Department's

bomb squad and bomb-sniffing dogs, administrators canceled afternoon classes in the buildings. (The Daily Toreador, Bomb threat causes evacuations, class cancellations at South Plains College by Matt McGowan, March 12, 2008)

On January 26, 2009, ffire fighters say a plastic bottle containing chemicals exploded in a dormitory stairwell at Wittenberg University in Springfield, Ohio. No one was injured when the homemade device exploded in a residence hall. Assistant Springfield Fire Chief Nick Heimlich said the device consisted of a plastic water bottle containing over-the-counter ingredients such as drain cleaner, and the bottle exploded when the combined ingredients created an expanding gas. (WDTN2.Com, Bottle bomb explodes on college campus, January 27, 2009).

According to University police secretary Sherry Honsinger, since 1999 there has been one bomb threat on campus; however no bomb was found. Initially because of the low number of past incidents, MUW ranked this a low hazard, but due to more terrorist's acts on college campuses, it has been moved to a medium hazard.

Transportation Accidents/Explosions/Chemical Spills/Hazardous Materials
Because all these hazards are somewhat related, MUW decided to bundle them. The University has a railroad track that runs near the campus thus putting the university at a high risk for all these hazards. Certain academic courses such as chemistry as well as products used by the custodial department also put the University at a high risk for explosions and incidents dealing with hazardous materials, chemicals and chemical spills.

Since the plan already addressed explosive devices in the previous section, explosions in this section are related to those as a result of transportation accidents, equipment, hazardous materials, chemicals or chemical spills. Unfortunately, college campuses are not exempt from these hazards.

On Monday, January 11, 2009, A Black Hawk helicopter performing training exercises on the Texas A&M campus in College Station crashed on takeoff, killing a 2008 A&M graduate and injuring four Army guardsmen on board. No students were on the aircraft.

In October 2004 at Texas A&M, the Physical Plant's $5.8 million on-campus boiler caused an explosion. No one was injured, but had someone been standing at the wrong place at the wrong time, an injury would have been sustained said Lee McQueen, assistant director for utilities. It was said the explosion involved a piece of machinery inside the boiler (On Campus Boiler Explosion Still Under Investigation, The batt.com Independent student voice of Texas &M, October 29, 2004, Pammy Ramaji).

Chemicals are found everywhere and can be hazardous to humans or the environment if used or released improperly. Hazards can occur during production, storage, transportation, use, or disposal. Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes routinely. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines.

In June 2005 a chemical reaction in Glenn L. Martin Hall at the University of Maryland sparked an explosion that burned one student and forced others to evacuate. A second-year graduate student was working with about a liter of nitric acid in a first-floor electronics packaging laboratory. He mixed the acid with an unknown compound, also with a nitric acid base, and accidentally triggered a minor explosion. The student suffered first- and second-degree burns to his face and upper body -- the burns were not life-threatening. A Hazardous Materials Team also worked to decontaminate the student and the building after students evacuated. Some property

damage, including broken beakers, were reported (Chemical reaction causes small explosion, injures one, Diamondback, University of Maryland's Independent Daily Student Newspaper, Megha Rajagopalan, June 16, 2005).

Chemical manufacturers are one source of hazardous materials, but there are many others, including service stations, hospitals, and hazardous materials waste sites. Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation accidents or because of chemical accidents in plants (FEMA).

The Occupational Safety and Health Act of 1970 (OSH Act) is the regulatory vehicle that ensures that the safety of workers, in firms larger than ten employees, is addressed. It sets standards of safety that help prevent injury or sickness among workers. The key factors of the OSH Act are regulating employee exposure and informing workers of the dangers of certain materials. About 500,000 different chemical products are used in the workplace. Many of these chemicals can cause health effects if overexposure should occur. They also pose safety hazards and have the potential to cause fires, explosions and other severe accidents.

Because of these potentially serious problems and because there was little information available from chemical manufacturers, the federal Occupational Safety and Health Administration (OSHA) legislated the "Hazard Communication Standard" (HCS). The HCS is more commonly referred to as the "Right to Know" Law. The "Right to Know" Law requires chemical manufacturers and importers to develop information on the possible hazards of their chemicals and provide that information on a form called a Material Safety Data Sheet (MSDS) to companies that buy their chemicals. MSDS's provide information about the chemical substances within a product, safe handling procedures, first aid measures if exposed, and procedures to be taken when the product is accidentally released or spilled.

While no evidence was found to indicate any the aforementioned hazards have occurred, MUW retains this a high risk due to the nearby railroad tracks and number of various chemicals located on campus.

Water/Food Contamination

The Dictionary of Military and Associated Terms, US Department of Defense 2005, defines contamination as the deposit, absorption, or adsorption of radioactive material, or of biological or chemical agents on or by structures, areas, personnel, or objects and as food and/or water made unfit for consumption by humans or animals because of the presence of environmental chemicals, radioactive elements, bacteria or organisms, the byproduct of the growth of bacteria or organisms, the decomposing material (to include the food substance itself), or waste in the food or water.

There are many forms and causes of contamination of water. In general water contamination can be categorized in the following subjects:

- Water pollution
- Bacterial water contamination -- water disinfection
- Surface water contamination
- Well water contamination (groundwater contamination)
- Mineral water impurities
- Water turbidity
- Waste water contamination
- Non-biodegradable water contamination

Water contamination can occur naturally, by human error or intentionally. Water supplies along transportation routes may be affected by hazardous materials spills. Water distribution can be affected in three ways: the amount of water available; the quality of the water; and the viability of the physical components of the distribution systems. The quantity of water usually depends on nature. Humans, on the other hand, are primarily responsible for the maintenance of water quality. Water contamination is more prevalent on college campuses than many realize.

East Carolina University (ECU) dealt with a water contamination incident in 2008. ECU personnel posted "don't drink" signs on water fountains throughout the campus. The university's dining hall remained open using paper and plastic plates. The only food that was prepared was food that didn't require rinsing. All food services employees had to use hand sanitizer. Any food that was prepared prior to the water contamination alert was thrown away and signs were posted at all possible water sources alerting students and employees not to drink the water (witn.com, ECU Takes Steps Because Of Water Contamination, June 26, 2008, Bill Wilson)

Food contamination is no different. An incident involving Hope College was referenced in a previous section (Disease /Epidemic). This same incident is used again because the source was thought to have been caused by food contamination which resulted in an epidemic.

An outbreak of the vomiting, diarrhea and stomach cramp-inducing Norovirus caused Hope College's campus in Michigan to be shut down for three days in November of 2008. More than 400 students reported flu-like symptoms throughout the weekend, according to an article by The Grand Rapids Press. The outbreak on the campus of 3,200 prompted Hope to close for an investigation by the Ottawa County Health Department. Tests from that investigation indicated it was a Noro-like virus, not the flu that caused the illnesses. The Norovirus, and other viruses like it, induces low fever, vomiting, diarrhea, stomach cramping and other flu-like symptoms. It is extremely contagious and often caused by food contamination from an infected handler, according to the Central Michigan Health Department's Web site. Infection usually occurs from contact with or ingestion of fecal matter on food or in water. However, no cause had been determined at the conclusion of the investigation (cm-life.com, Independent Voice of Central Michigan University, Hope College closes after 400 fall ill, November 12, 2008, Lindsay Holt)

MUW has no records of food/water contamination; however because of the contamination can occur naturally, by human error or intentionally we deem this a medium hazard.

Threat/Violence

Violence affects the safety of everyone at the college and in the surrounding community. Violence is a complex behavior with determinants rooted in childhood experience/trauma, community norms, social and economic conditions. Violence on campus today takes on many forms including but not limited to the following: hate crimes, hazing, rape, stalking, suicide, and vandalism. Violence can start with one person but have a trickle effect on campus. Violence can have long-term consequences to others that may lead to social or academic problems.

Work Place Violence

Workplace violence is violence or the threat of violence against workers. It can occur at or outside the workplace and can range from threats and verbal abuse to physical assaults and homicide, one of the leading causes of job-related deaths.

Assessing Vulnerability

MUW campus includes almost 60 buildings, 23 of which are listed on the National Register of Historic Places, with a total building value of $329,000,000. These numbers include two buildings off-site, Plymouth Bluff Center and Carrier Lodge, as well as contents.

Equally important is the contents contained within these facilities. These contents may include, for example, furniture in residence halls, equipment in laboratories, power generation equipment and computers. The total acquired value of contents is $49,500,000 which includes $18,700,000 for library collections. Adding the value of the structures, the value of the contents (including library collections) yields a total dollar exposure for the structures and equipment of $379,000,000.

The methodology for assessing vulnerability was based on a hazard vulnerability analysis chart done by DRU team member Pauline Redmond of The American Red Cross, and past occurrences. MUW ranks earthquakes as low on our hazards while flooding and windstorms are ranked high; however flooding has been somewhat eliminated with the recent storm drainage project. The last straight-line wind event was in 2001. MUW also used an old facilities master plan, the campus master plan, the master plan notebook, insurance information and the facility capital action plan (FCAP) as other resources to determine vulnerability and estimate losses. MUW ordered FEMA's HAZUS-MH disk, which focuses on earthquake, wind and flood, however according to Larry Jones, Director of ITS and planning team member, the disk was too large to load on any of the university's personal computers.

Classification of Structures by the DRU Planning Team
The campus structures were classified by MUW members of the DRU Planning Team according to their importance and criticality to the campus operations.

DRU Planning Team classification used the following criteria to group buildings.
1) Usefulness to the continuance of campus operations and response during a crisis event
2) Usefulness to recovery operations after a natural disaster
3) Amount of dollar exposure due to the structure and / or its contents
4) Does the structure contain unique records or research data?
5) Does the structure contain particularly expensive equipment, research, or cultural material that warrants special consideration?
6) Does the structure house large numbers of students or staff representing a concentration of people.

The campus structures were classified as the following:
Critical structures: critical to operations and recovery in the event of a natural disaster
High priority structures: structures important because they contain high concentrations of people, they contain important records or equipment, the structure contains high potential dollar loss because of cultural or scientific materials, or the structure may be of use in a crisis management / recovery event.
Medium priority: contain significant investment of research funds, a significant concentration of people, or is a structure of historic value.
Low priority: those of lesser importance to the functioning of the university during or after an event.
The critical structures group included those structures which were deemed critical to operations and recovery in the event of a natural disaster. Eleven structures are included into this class. The building containing the campus police department which is the first source of emergency response is included in the critical structures class. Building value information was obtained from a statement of values from our property insurance carrier, Affiliate FM, underwritten by Willis of North Carolina.

Table 8 – Listing of Critical Structures			
Structure	**Function**	**Concerns/Comments**	**Building Value** (in millions)
Barrow School	Facilities Mgmt. Ops	3rd floor not usable	3.7
Hogarth Student Center	Houses Police Dept.	No elevator/lots of glass	11.2
Hogarth Cafeteria	Primary Food Distribution	Lots of glass	6.5
Eckford Hall	Houses Health Center	Renovated 2 years ago	1.0
Stark Recreation Center	Potential Shelter	High dollar value structure	7.1
Emma Ody Building	Potential Shelter	High dollar value structure	9.1
McDevitt Hall	Houses ITS	Built in 1927	4.1
Physical Plant Warehouse	Houses all PP offices	Completed 3 years ago	1.1
Martin Chiller Plant	Chillers, boilers, towers		1.4
Warehouse #3 Power Plant	Plumbing Storage		205,000
Heating Plant	Houses Boilers		1.0
Grounds/Automotive	Houses shops, equipment		203,000
		TOTAL	**$47.0**

The DRU Planning Team identified the high priority class as those structures (including lifelines) that may be useful in recovery efforts, but less of a factor in helping the University survive and recover from a natural disaster than the critical facilities, or it represents a significant investment in monies or in research or would represent a high potential loss structure. High priority structures were considered important because they contain high concentrations of people, they contain important records or equipment, the structure contains high potential dollar loss because of cultural or scientific materials, or the structure may be of use in a crisis management / recovery event. Twenty one structures are included in this class.

Fant Memorial Library, with its total dollar building value of approximately $11,384,885 and an even higher content value of $18,675,400 is an example of a structure with a significant, high potential loss value that is included in this class. Also included are the residence halls on campus. These dormitories were included because of the concentration of people that could be contained in one structure, which ranges from 60 to 225 students at one time. Because student safety is a high priority on the MUW campus, it was decided that all residence halls would be included in the high priority listing as shown in Table 9.

Table 9 – Listing of High Priority Structures			
Structure	**Function**	**Concerns/Comments**	**Building Value**
Whitfield Hall	Houses HR & Res. Mgmt.	Built in 1927	6.0
Welty Hall	Administration Building	Numerous student records	8.4
Fant Memorial Library	Library	High dollar value/ contents	12.8
Callaway Hall	Residence Hall	4 story/accommodates 134	4.3
Columbus Hall	Residence Hall	Accommodates 60	7.2
Faculty Apartments 1	Dwelling	Built in 1960	5.0
Faculty Apartments 2	Dwelling	Built in 1967	6.4
Art & Design	Academic Building	In use again after 02 storm	11.0
Frazier Hall	Residence Hall, MSMS	5 story/accommodates 220	10.9
Goen Hall	Residence Hall , MSMS	5 story/accommodates 220	10.9
Hastings/Simmons Hall	Residence Hall	4 story/accommodates 112	5.4
Hooper Science Building	MSMS class/offices	High dollar value/contents	9.1
Kincannon Hall	Residence Hall	5 story/accommodates 225	7.1
Jones Hall	Residence Hall	5 story/accommodates 225	11.1
Parkinson Hall	Academic Building	High dollar value/contents	15.4
Poindexter Hall	Academic Building	Vacant, Being renovated	6.8
Martin Hall	Academic Building	High dollar value/contents	11.9
Shattuck Hall	Academic Building	High dollar value/contents	11.6
Shackleford Hall	MSMS	Elevator added in 2007	1.5
Cromwell Hall	Academic Building	High dollar value/contents	21.3
Grossnickle Hall	Residence Hall, Honors	2 story w/22 suites	3.6
		TOTAL	**187.0**

The Medium priority structures class consists of facilities and buildings that are important, but are not critical to the continuity of the university during the recovery phase of a disaster. However, these structures contain significant information, a significant concentration of people, or is a structure of historic value. Eleven structures were included in the medium priority class. There is no majority in this class as Table 10 shows the different type of buildings classified as medium priority.

Table 10 – Listing of Medium Priority Structures			
Structure	**Function**	**Concerns/Comments**	**Building Value**
Painter Hall	Academic Building	No elevator	5.1
Reneau Hall	Academic Building	High dollar value/contents	7.1
Stovall House	Alumni Relations	2nd floor not usable	785,000
Cochran Hall	Student Services Offices	Renovated 4 years ago	2.8
Plymouth Bluff Center	Environmental Center		9.1
Plymouth Bluff House	PBC Director Dwelling		126,000
Education/Human Science	Academic Building	High dollar value/contents	9.1
G&A Warehouse	Built in 2006		1.1
Mary Wilson Home	MSMS Administration		411,789
President's Home	Dwelling		813,000
Old Fitness Center	MSMS Fine/Perf. Arts		1.3
		TOTAL	**$37.7**

Low priority buildings were considered to be of lesser importance to the functioning of the University during or after an event. This group is primarily made up of vacant buildings. However the committee deemed it necessary to include these buildings as they provide the university with optional space in case of a disaster. There are 15 structures in this group.

Table 11– Listing of Low Priority Structures			
Structure	**Function**	**Concerns/Comments**	**Building Value**
Carrier Chapel	Weddings, music classes		1.7
Carrier Lodge	Potential shelter, not in use		1.0
Dem School	Vacant, former school		5.4
Fant Hall	Vacant	In planning phase	11.7
Franklin Hall	Vacant		2.2
Keirn Hall	Vacant	To be demolished	10.4
Taylor Hall	Vacant	To be demolished	11.0
Orr Building	University Archives		5.1
Peyton Hall	Vacant		10.6
Pohl Gym	MSMS activities		6.8
Puckett House	Receptions, lodging		7.1
Barrow School Annex	Vacant		2.0
AA House	Community meetings		272,000
Residence	Vacant, dwelling		350,000
Residence-White House	Vacant		424,000
		TOTAL	**$76.0**

VULNERABILITY TO NATURAL HAZARDS

When assessing the vulnerabilities in the midst of the economic situation, it was important to establish a threshold amount that would be considered a problem for the university from a budgetary perspective. After a discussion with Tonya Moak, comptroller, it was determined that $580,000 would be the threshold amount that would be considered problematic from a budgetary perspective. This amount is equivalent to 2% of the university's FY 2010 estimated $29,000,000 budget.

Dam Failure Vulnerability

The closest dam to MUW is about seven miles from the campus and it is classified as a low hazard dam meaning failure may cause damage to farm buildings (excluding residences),

agricultural land, or county or minor roads. MUW feels vulnerability from this hazard is minimal to the University and costs would not be expected to exceed the $580,000 threshold that would be considered problematic from a budgetary perspective.

Drought/Extreme Heat Vulnerability
While MUW retains drought/extreme heat as a high hazard, there are no recorded losses to the university because of this event. The biggest concern would be conditions would become so dry as to spark a fire which is covered another category. Therefore, MUW considers vulnerability from this hazard minimal to the university as costs would not be expected to exceed the $580,000 threshold that would be considered problematic from a budgetary perspective.

Earthquake Vulnerability
MUW ranks earthquake as a medium hazard based on the fact that the Lowndes County Mitigation plan says our county is in line with a fault zone. Based on the Mercalli Intensity Scale, Lowndes County is expected to experience an intensity level of V from a magnitude 8 earthquake occurring along the NMSZ. In addition to this, according to the Mid-America Earthquake Center, the line quadrant of the state that is labeled as critical counties ends at Monroe County, which is about 15 miles north of MUW. According to the Modified Mercalli Intensity Scale, an intensity level of V means everyone would feel movement; people are awakened; doors swing open or close; dishes are broken; pictures on wall move; small objects move or are turned over; trees might shake and liquids might spill out of open containers. On this basis, MUW would look to experience some minor content damage as opposed to major content and/or structural damage thus making an earthquake event a minimal vulnerability to the campus. Contents value for all insured buildings on campus totals $49,500,000; however costs associated with this event would not be expected to exceed the $580,000 threshold that would be considered problematic from a budgetary perspective

Flood Vulnerability
Columbus has had several floods to devastate the city, but there are no recorded losses on the MUW campus from riverine floods. While MUW is not in a flood plain, it has had its share of flooding in the past. However, the flooding was not necessarily due to the amount of rainfall but rather was a result of design flaws in drainage systems as it did not take a lot of rain in order for flooding to occur. The drainage system is now being repaired. In the past, the southern part of campus would flood with water waist deep. Cars have been flooded as well, but again that was a result of outdated, poorly designed drainage systems which are now being repaired. Because of this project and the fact that the campus is not located in a flood plain, we feel the vulnerability from this hazard is minimal and any associated costs would not be expected to exceed the $580,000 threshold that would be considered problematic from a budgetary perspective

Hail Vulnerability
Because hail is often associated with thunderstorms and because thunderstorms happen often in our area, hail is ranked as a high hazard. While no evidence of property damage specifically caused by hail was found, we realize typically hail tends to damage roofs. Roof damage is likely to occur if the roofing material is of a vulnerable type, such as asphalt shingle.

To evaluate the vulnerability of the university to hail damage, the type of roof materials was the primary consideration. Buildings with roofs made of tile shingles or metal were excluded. A total of 24 buildings were identified with asphalt shingle roofs. According to Sam Wise, Director of Sodexo Facilities Management at MUW, the total estimated replacement costs for all asphalt shingle roofs on campus would cost 1.8 million. Contents

value for these same buildings total $3,031,688. Five percent (taken from University of Mississippi's plan) was also calculated to cover water damage to interior contents ($46,500), making the total vulnerability $1,846,500 which includes 24 asphalt roofs and contents loss. Building value was not considered because hail typically causes damage to the roofs not the structure. Potential costs resulting from this hazard exceeds the $580,000 threshold used by the University as a point at which loss become problematic from a budget perspective, particularly doing these lean economic times. The potential loss is unlikely to occur during a single event, but because of the numerous thunderstorms in Lowndes County, is considered a long-term vulnerability.

Hurricane and Tropical Storm Vulnerability

Hurricanes are typically considered coastal hazards, but these large storms move inland generating large amounts of rainfall and may spawn tornados and damaging straight-line winds. Columbus is located 250 miles north of the Gulf of Mexico and is very susceptible to hurricanes. The main threats regarding hurricanes at MUW are winds and tornadoes. MUW felt the effects of Hurricane Katrina in 2005 as approximately $28,000 worth of damage was done to the campus. This mainly consisted of roof damage, debris clean up and removal. This amount also included meals, supplies and items needed as MUW's residence halls served as a temporary shelter for over 150 Katrina evacuees for over two months.

Because hurricanes don't typically affect our area, the determination of the vulnerability is based the 2005 event. During this event seven roofs were damaged. They were asphalt shingle roofs and the total was $7,000. Again, we look at the 24 buildings that have asphalt shingle roofs. Total replacement of all these roofs total 1.8 million. Based on repair damage from 2005, the University today would be looking at roughly $1,500 per roof for repairs which equals $36,000. Debris clean up and removal totaled $4,700 in 2005. That averages out to roughly $700 per building. The university estimates debris clean up/removal cost would not change that much – putting the total debris removal cost for all 24 buildings at $16,800, bringing the hurricane/tropical storm vulnerability total for the university to $52,800 for repairs/clean up and $1,816,000 for roof replacement and clean up. Potential costs, depending on the damages, resulting from this hazard may or may not exceed the $580,000 threshold used by the University as a point at which loss becomes problematic from a budget perspective. Estimated potential loss was included because information was available. However, because the damage on campus from this event was not actually caused by a hurricane, but the effects of it such as hail and/or wind, MUW feels the vulnerability from this hazard is minimal, but will be addressed more in the Tornado/Straight-line Winds/Windstorm section.

Lightning Vulnerability

MUW has no records indicating any damage due to this event. In reviewing the vulnerability, the initial assessment was to review wood frame structures as those of masonry construction are seldom significantly damaged from lightning. Wood frame structures, however, are vulnerable to lightning-generated fires. The initial evaluation identified six campus structures of wood construction representing a building value of $6,068,289 of exposure to the hazard. Four other structures are partially wood, representing a building value of $19,770,843 for a total building vulnerability of $25,839,132. The contents of the same buildings (10) adds in another $1,397,600 putting the university at a possible $27,236,732 vulnerability for this event. Mark Hagan, senior account engineer for Affiliated FM, stated many variables play into estimations such as whether cost damages are for total exposure, value of buildings, location of building, etc. Affiliated always shows their damage calculations that include replacement cost building and contents values. Nevertheless he

suggested a 30% minimum loss per building, which does not include contents, as a reasonable estimation for vulnerability. He added there is no standard percent for contents unless it is based upon occupancy class. With that being the case, we randomly used 10 percent for content losses realizing this may not be accurate but it will provide us with a figure as 10 percent was used in the University of Mississippi's plan.

The potential loss to lightning-generated fire was estimated at $27,236,732. Damage to the contents of the structures was estimated at 10 percent of the content value. This potential loss amounts to $139,760 while an overall 30 percent loss equals $8,171,019. Total potential loss from damage to the structure and its content value totals to $8,310,779. Potential costs resulting from this hazard exceeds the $580,000 threshold used by the University as a point at which loss become problematic from a budget perspective, particularly doing these lean economic times.

As lightning would not be expected to generate fires in all vulnerable structures in any given time frame, the potential loss figure represents a long-term vulnerability and not a vulnerability likely to be realized within seconds or minutes, such as may result from earthquakes and tornados.

Tornado/Straight-line winds/Windstorm Vulnerability

Unlike an earthquake, the destructive effect of a tornado does not radiate from a source such as a point along a fault, but rather follows the direction of the tornados' path. Unlike a hurricane this path does not cover an area about the center of the vortex that can be measured in miles, but rather feet or yards. A review of the tornado hazard profile suggests that the likelihood of an F3 tornado is significant enough to consider it as a possibility in both the near and long term. The potential damage that tornados can cause in a densely populated university campus is illustrated by the destruction caused by the 1992 and 2002 tornadoes that hit campus. These tornados caused an estimated $3 million and $22 million worth of damage, respectively.

The tornado/straight-line wind hazard is considered the primary hazard for the campus and is likely to be the most costly in terms of money and casualties. While MUW has had no casualties, it has had its share of damages from tornadoes. The most recent one being the Nov. 10, 2002 tornado that the University finally recovered from earlier this year with the completion of the Art and Design building. That storm caused over $22 million in damages. It completely destroyed the physical education building and left the Art and Design Building without a third floor. Twenty six buildings were damaged along with downed power lines, uprooted trees, imploded windows, water damage, roof repairs, downed fences.

Because tornadoes are so destructive, the types of construction really have no bearing on what type of damage to expect as the Art and Design and physical education buildings were both brick/masonry constructions yet received the most damage in the 2002 tornado. Debris removal and clean up from these building alone were a chore, not to mention the other 24 buildings that were damaged at this time coupled with power issues.

MUW's campus covers 114 acres, but for the most part our campus is compacted. And with the unpredictable path of a tornado, no building is safe. Since this is the University's primary hazard, we reviewed the damages and costs from the 2002 and 1992 tornadoes. The 1992 tornado primarily did its worst damage on front campus while the tornado in 2002 did most of its damage on south campus. Based on this assessment and the unpredictable path of a tornado, it was best to assume a worst case scenario in which every critical, high and medium priority building would be affected by a tornado. Again, this event is a primary

hazard so this evaluation is based on the recommendation of Nora Miller, Vice President for Finance and Administration at MUW, as she has extensive experience with the operational, financial and recovery aspects of a tornado event. Table 12 shows the critical structures included in the tornado scenario. The 18 critical structures are considered essential for the campus to manage a tornado disaster and then to recover from it. Some structures are included because they are crucial to the academic mission of the university while others contain very high potential dollar loss because of academic materials, equipment, etc. Other structures may be of great use in a crisis management/ recovery event.

Table 12 – Listing of Critical Structures for Tornado Event

Structure	Date Built/Most Recent Renovation	Stories	Building Value in Millions (2008 Asset Valuations)	Replacement Value in Millions (2009 FCAP)
Art & Design Building	1961/2009	3	3.3	7.1
Eckford Building	1929/2007	1	1.2	2.2
Frazier Hall	1965/1997	5	6.0	7.6
Goen Hall	1963/1995	5	6.0	7.6
Hooper Science Building	1955/2002	2	7.7	8.5
McDevitt	1927/1995	1	3.9	6.0
Old Fitness Center, MSMS PFA	1963/1975	1	1.3	1.5
Martin Hall	1929/2005	3	7.1	7.7
Parkinson Hall	1951/2003	2	8.0	9.5
Poindexter Hall	1904/2002	4	3.8	4.2
Shattuck Hall	1910/2001	2	9.3	12.5
Shackelford Hall	1963/2007	2	2.0	2.6
Whitfield Hall	1927/1996	2	5.8	6.8
Fant Memorial Library	1969/2002	2	11.4	14.5
Martin Chiller Plant		1	1.4	1.6
Hogarth Cafeteria	1969/2002	2	9.0	10.6
Cromwell Communications	1977/2002	2	12.8	13.6
Physical Plant Warehouse	2006	1	1.3	2.3
Stark Recreation Center	2007	2	6.4	9.0
Emmy Ody Pohl Building	2007	2	7.8	10.0
			115.0	**145.0**

Table 13 lists the high priority structures for a tornado event. Again, the structure evaluation is based on recommendations from Nora Miller as she has extensive experience in with the operational, financial and recovery aspects of a tornado event. High priority structures were considered important because they contain high concentrations of people, they contain important records or equipment, or the structure may be of use in a crisis management / recovery event.

Table 13 – Listing of High Priority Structures for Tornado Event

Structure	Date Built/Most Recent Renovation	Stories	Building Value in Millions (2008 Asset Valuations)	Replacement Value in Millions (2009 FCAP)
Callaway Hall	1860/1993	4	6.3	8.0
Columbus Hall	1896/2001	4	3.9	4.9
Faculty Apartments 1	1960/2001	2	1.9	2.5
Faculty Apartments 2	1967	2	2.4	2.9
Hastings/Simmons Hall	1900-1996	5	3.0	4.5
Jones Hall	1964/1993	5	6.0	7.6
Welty Hall	1929/1991	3	5.3	6.5
Grossnickle Hall	1922-1996	2	1.8	2.3
			30.0	**39.0**

Table 14 lists the medium priority structures for a tornado event. The medium priority structures class consists of facilities and buildings that are important, but are not critical to the continuity of the university during the recovery phase of a disaster. However, these structures contain significant information, a significant concentration of people, or is a structure of historic value.

Table 14 – Listing of Medium Priority Structures for Tornado Event

Structure	Date Built/Most Recent Renovation	Stories	Building Value in Millions (2008 Asset Valuations)	Replacement Value in Millions (2008 ACF Study)
Painter Hall	1922/1995	2	3.9	4.3
Heating Plant	1964	1	2.3	2.6
President's Home	1969/2002	1	0.5	0.5
Reneau Hall	1929/1997	4	5.3	6.0
Cochran Hall	1908/2005	4	3.6	4.3
Stovall House	1910/1995	2	0.5	0.5
Student Center	1961/2002	2	10.6	11.3
Grounds & Automotive		1	0.5	0.5
Plymouth Bluff House	1968	1	0.5	0.5
Education Building	1974/2002	4	6.8	7.1
Plymouth Bluff Center	1994/2005	1	2.3	2.8
Grounds & Automotive Warehouse	2005	1	0.5	0.5
Mary Wilson Home	1929	2	0.5	0.5
			37.0	**41.0**

In this worst case scenario, the total dollar loss estimation for building value for all critical, high and medium priority structures is $182 million while the replacement value for the same structures is $225 million. Add in $49.5 million for contents and that brings to the totals to $228 and $271 million respectively. Low priority structures are not included in this damage estimate. Other likely costs such as potential damage to infrastructure, debris removal, cost of security services and damage to other University property are excluded as we have no way of measuring that need. Potential costs resulting from this scenario far exceed $580,000 threshold used by the University as a point above which loss become problematic from a budget perspective.

Straight line winds are those that come out of a thunderstorm. If these winds meet or exceed 58 mph then the storm is classified as severe by the NWS. On Feb. 16, 2001, a sudden and violent storm hit campus that lasted approximately 20 minutes and caused major damage to both the city and the university. The storm carried tornado-like winds estimated to be in excess of 100 mph; it was later decided the storm consisted of straight-line winds caused by the highly unusual confluence of two vastly different weather fronts. The nature of the storm accounted for the fact there was virtually no warning given to the community. While MUW was hosting a regional student journalism conference at the time, no fatalities or injuries resulted from the storm. The campus suffered significant damage, especially to roofs and trees, but no buildings were structurally damaged. Over 20 buildings suffered significant roof damage. There were 41 large, older trees completely uprooted on campus as well as Plymouth Bluff Environmental Center seven miles away. Additional damage included fallen trees, destroyed fences, snapped power lines, etc. Damages totaled $1.3 million.

Upon review of the documentation from the 2001 wind event, the greatest amount of damage occurred to roofs. Upon further review, it was determined these roofs were made of asphalt shingles. It has already been established MUW has 24 buildings with asphalt shingle roofs. It

would cost 1.8 million to replace the roofs on these buildings, including the 5% loss for contents that makes the total vulnerability $1,846,500 for roofs only. However, a prediction of the likelihood of straight-line winds tracking across the MUW campus would be difficult as tornado tracks are random within the path of the thunderstorm and the path of the thunderstorm is also somewhat random. Therefore we use the same method for loss estimation as we did with tornadoes—a total building value vulnerability (including contents) of $228 million and a total replacement vulnerability (including contents) of $271 million. Again, potential costs resulting from this scenario far exceed $580,000 threshold used by the University as a point above which loss become problematic from a budget perspective.

Wildfire Vulnerability

MUW has never had a documented wildfire. The campus does have numerous trees on the south part of campus and due to the number of thunderstorms that produce lightning, the hazard does exist. Vulnerable structures are considered those close to the trees on the south campus. Although we feel that the wildfire hazard exists, we feel the potential for significant loss due to wildfire is minimal.

Winter Storm Vulnerability

There are no records indicating damages or injuries at MUW related to a winter storm event. In 2000 a winter storm brought a swath of heavy snow across central Mississippi. While some parts of the state saw four to 10 inches, Columbus did not receive that much. The 2000 Meh Lady Yearbook states classes were cancelled. The yearbook also stated that the last heavy snow was four years ago which is a reference to the February 1, 1996, winter storm in which a mix of snow, sleet and freezing rain that covered much of North Mississippi in which between two and five inches of snow and ice accumulated across the area.

Winter storms occur irregularly and can be associated with some costs to the University. These events are not expected to do structural damage, but could cause damage to lifelines and debris clean-up costs may be expected. The University may be expected to be closed one to several days depending on the severity of the storm. Winter storms are not likely to pose a major threat to the University. Therefore, MUW considers vulnerability from this hazard minimal to the university.

VULNERABILITY TO MAN-MADE HAZARDS

MUW has identified the following as man-made hazards that could pose a threat to the campus community:
Civil Disturbance
Computer Crime or Attack
Disease/Epidemic
Fire/Arson
Loss of Lifelines
Terrorist Acts/Explosive Devices
Transportation Accidents/Explosions/Chemical Spills/Hazardous Materials
Water/Food Contamination
Threat/Violence
Work Place Violence.

Civil Disturbances

Because the University has no records of past occurrences and predicts a low likelihood of future occurrence, MUW feels vulnerability from civil disturbance and water/food contamination is very minimal to the university and warrant no further discussion in this plan at this time. However, these hazards are addressed in the university's emergency response and preparedness plan. As for disease/epidemic and loss of lifelines, again based on past occurrence and the likelihood of future occurrence, the university feel vulnerability from these hazards to be minimal. The disease/epidemic hazard is not seen as a threat because of the recent evaluation of the university's pandemic plan and the education to the campus community about it. It is also not seen a major threat because it doesn't pose a monetary loss to campus. Due to the number of generators on campus to supply back up power to several key buildings and the professional business relationship maintained with utilities suppliers, loss of lifelines is not seen as a major threat to the university. These two hazards warrant no further discussion in this plan at this time. However, these hazards are addressed in the university's emergency response and preparedness plan.

Computer Crime or Attack Vulnerability

While MUW has no record of computer crime or attack, it is considered as a hazard that can drastically affect the university and will remain a hazard with long-term vulnerability. MUW's Information Technology Services (ITS) already has a disaster recovery plan in place to deal with such a hazard. ITS is responsible for the planning, implementation, and support of administrative information systems throughout the university. These systems range from small departmental applications to the comprehensive SCT Banner system. Loss of these systems, resulting from an emergency or disaster, poses at best a severe inconvenience to the university community and at worst could keep the university from fulfilling its mission. ITS recently revised its Disaster Recovery Plan to reflect the on-going threat to the university's computer system. The manual provides a clear and effective method of dealing with such a crisis. In addition, an ITS site for backup information has been established at a location off campus.

Since the majority of the university's critical information is concentrated, ITS must take special care to back up our work and protect these backups at all cost. However, a viable and effective Disaster Recovery Plan must support these precautions.

The primary objective of Disaster and Contingency Planning is to ensure the survival of the university. ITS must be able to meet obligations and supply the critical services and information to the university community. To accomplish these goals, ITS must: 1) minimize the time required to respond effectively to an emergency or disaster; 2) facilitate effective coordination of recovery tasks and 3) reduce the complexity of the recovery effort.

While a computer crime or attack is not likely to result in monetary losses, it can result in productivity losses such as vendors not being paid in a timely fashion, hindering payroll, etc. The likelihood of this kind of situation at MUW is thankfully remote. However, personnel must be trained to detect such situations and react to each situation in the proper manner. Supervisors should understand assessment of a disaster, and obtain proper authorization to notify needed personnel and mobilize for Disaster Recovery. Restoration procedures must be followed at the backup site to assure the safety and accuracy of our data. Finally, management to return MUW to a normal processing environment must initiate reconstruction procedures. The study and understanding of these procedures must be an on-going concern to all personnel in order to affect successful recovery from a variety of disasters and ensure the survival of the university. Due to changing technology and the reality of how dependent we are on computers, this hazard is seen as

one with long-term vulnerability to the campus measured not necessarily by money, but by productivity.

Fire/Arson Vulnerability

MUW has records of two fires on campus and no records of arson. The fire in Shattuck Hall on front campus on July 14, 1953, destroyed the top two floors. A fire in 1991 damaged two faculty apartments with damages totaling $80,000. In order to assess these incidents we looked that current building and contents values for Shattuck Hall and all apartments on campus. Both buildings along with contents totals over $9 million. All buildings are capable of fire/arson, but we focused on structures constructed of wood. While the likelihood of all wood structures being destroyed by fire/arson is low, the same method used for evaluating lightning vulnerability is applied here as well. The initial evaluation identified six campus structures of wood construction representing a building value of $6,068,289 of exposure to the hazard. Four other structures are partially wood, representing a building value of $19,770,843 for a total building vulnerability of $25,839,132. The contents of the same buildings (10) adds in another $1,397,600 putting the university at a possible $27,236,732 vulnerability for this event. Again, many variables play into loss estimations such as whether cost damages are for total exposure, value of buildings, location of building, etc. The potential loss was estimated at $27,236,732. Damage to the contents of the structures was estimated at 10 percent of the content value. This potential loss amounts to $139,760 while an overall 30 percent loss equals $8,171,019. Total potential loss from damage to the structure and its content value totals to $8,310,779. Potential costs resulting from this hazard exceeds the $580,000 threshold used by the University as a point at which loss become problematic from a budget perspective, particularly doing these lean economic times.

Terrorist Acts/Explosive Devices Vulnerability

As mentioned earlier the one terrorist act that is of concern to MUW is explosive devices. Because there is no rhyme or reason in the mind of a terrorist, the planning team found the best way to assess the vulnerability of this hazard is to assume an explosive device is targeted for all critical and high priority buildings. These are random buildings consist of the cafeteria, all academic buildings and all residence hall, along with other buildings that could be a target such as the administration building. While it is highly unlikely all buildings would be destroyed by this hazard, we have to assume a worst case scenario in which all critical and high structures are destroyed, leaving the university with a $184 million vulnerability from his hazard. Add in another $30 million for contents and brings the total to $214 million.

Transportation Accidents/Explosions/Chemical Spills/Hazardous Materials Vulnerability

Because these hazards are related, MUW bundled them. There is a railroad track that runs through campus which puts MUW at a high risk for all of these hazards. In this section explosions relate to those that are a result of transportation accidents, chemicals, chemical spills, equipment or hazardous materials. While chemicals are used by various departments on campus (science, art, custodial) and put the university at a high risk, based on past occurrences and stricter rules for distribution, labeling and storage, we do not see chemical spills, explosions, or hazardous materials as a high vulnerability to campus. However, when these hazards are the result of a traffic accident that poses another situation. For the sake of clarity, we will estimate loss potential from these hazards only as a result of a transportation accident because of the railroad truck that runs through the campus.

When assessing the loss to campus, we looked at which hazards are most likely to cause the most the damage. The result was transportation accidents and explosions as these two are the most likely ones that could not be predicted or contained. Chemical spills and hazardous materials would most likely pose a productivity and minor threat to campus as the Police Department, local law enforcement and Facilities Management are more equipped to handle and contain these while accidents and explosions are more complicated as we have no control over containment. It's a possibility there would be some clean-up fees, but those are minor.

While there are other transportation accidents that could happen on campus, the most likely to happen is a railroad accident because of the proximity of the railroad tracks; however the mitigation actions would be the same for all other transportation accidents. To estimate loss, we had to review the location of the tracks and its proximity to campus buildings. The train track enters the campus on the south side bypassing some buildings before cutting directly through the central east side of campus and exiting on a nearby street. Because the tracks are very close to several buildings on the east side, all of these buildings are in a critical path. Because accidents and explosions are not controlled, it was determined that all buildings within a block are in a critical path too. The most common scenario would be a vehicle of some type crashing into the train causing a wreck and/or explosion. Taking that into consideration, we looked at all buildings within one block of the track to estimate potential loss for an initial assessment. A campus map – with buildings circled --follows that will better illustrate this evaluation. Sixteen buildings – three of which are vacant --are included in this assessment. The building numbers are 15, 16, 25, 26, 33, 34, 35, 36, 37, 43, 44, 45 46, 47, 49 and 50. The total building and contents value is $100 million. The likelihood of an accident totally destroying all these buildings and contents is highly unlikely but the university felt it was better to use this worst case scenario. In addition, depending on the chemicals, smoke, hazardous material released, it is very likely some contents could be damaged while a building stays intact. Potential costs resulting from this scenario far exceed $580,000 threshold used by the University as a point above which loss become problematic from a budget perspective.

Threat/Violence on Campus

The threat/violence perpetrated on campus over the past few years has been documented and listed below. The situations are predominately limited to inappropriate use of drugs and alcohol, with each situation handled through judicial referral. None of the situations led to threat or violence, however the potential for escalation exist. In addition, the City of Columbus' violence is important as the surrounding community incidents have potential to come on to The W campus. During the past 6 months, there has been a seemingly increase in shootings nearby, with at least three shootings within a mile proximity of the University. Fortunately none have cause harm to the university, however an increased awareness in each situation was required until the local law enforcement had contained the situation.

2011 MUW Crime and Fire Statistics

5/1/2011	ROBBERY ON-CAMPUS	RESIDENTIAL	UNFOUNDED

2012 Crime and Fire Statistics

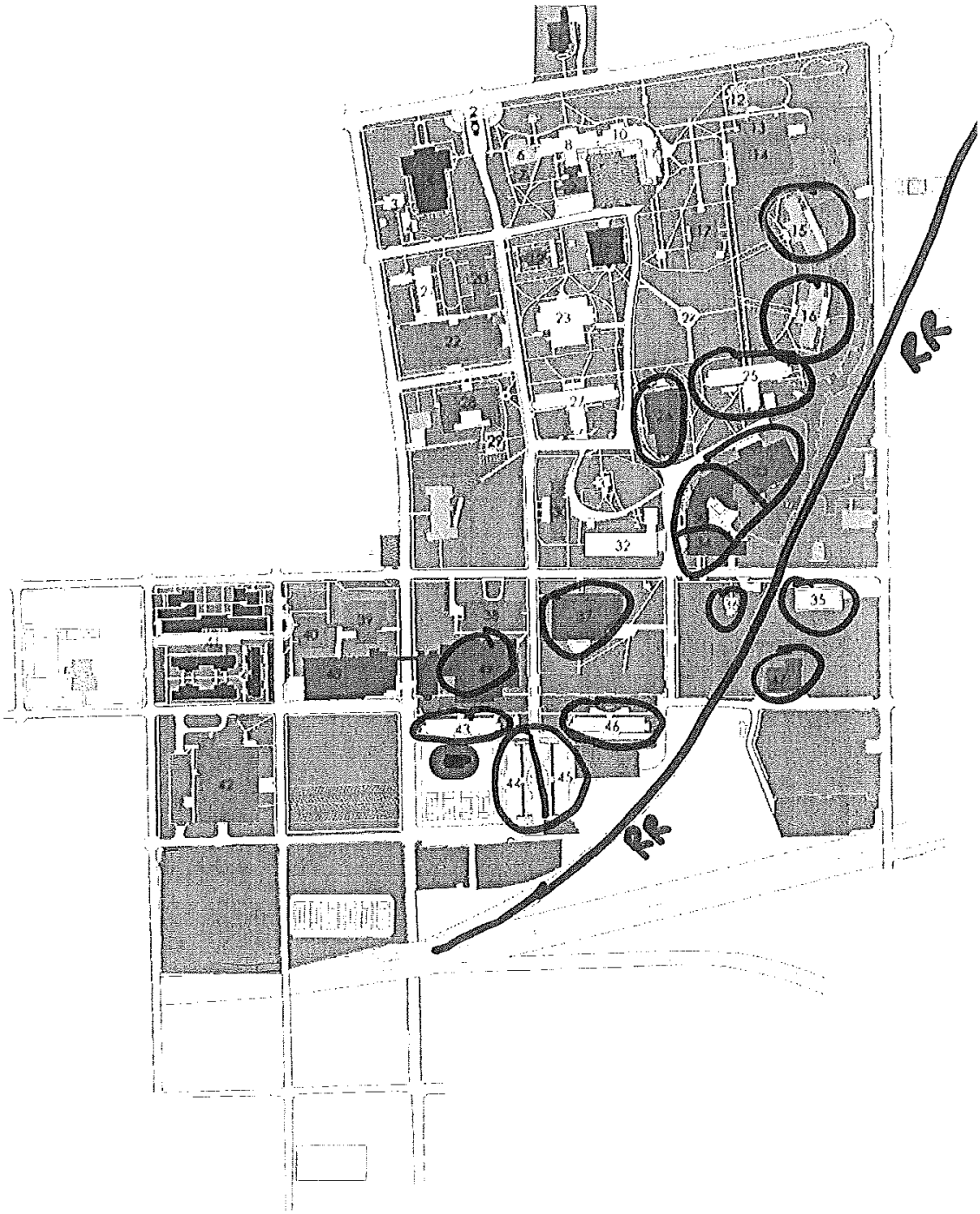
2/25/2012	DRUG ABUSE VIOLATIONON	CAMPUS	JUDICIAL REFERRAL
6/22/2012	LIQUOR LAW VIOLATIONON-	RESIDENTIAL	JUDICIAL REFERRAL
9/4/2012	DRUG ABUSE VIOLATIONON	RESIDENTIAL	JUDICIAL REFERRAL
9/5/2012	FORCIBLE SEXUAL OFFENSE	RESIDENTIAL	ARREST/NOT GUILTY

2013 MUW Crime and Fire Statistics

3/19/2013	LIQUOR LAW VIOLATIONON	RESIDENTIAL	JUDICIAL REFERRAL

Work Place Violence Fortunately, MUW's history of dealing with workplace violence has been minimal. In recent years the workplace violence has been limited to three recalled circumstances.

1. A situation of a faculty and student action led to physical violence, but limited to the two, as well as disruption of an educational setting.
2. A contractor employee and his spouse disturbance spilled over to campus leading to threats of violence.
3. A staff employee's action led to a disturbance in the office, but stopped short of a threat or violence. The potential for workplace violence exists with disgruntled employees and customers and domestic issues that have followed employees to the workplace. Placing a monetary value or cost on this hazard would be difficult as it deals directly with human safety and life.



Map of MUW campus

Campus Threat/Violence

The Team decided to combine the Threat/Violence on campus and the Work Place Violence hazard into one hazard since they were closely related. Therefore for the remainder of this document the combined hazard Campus Threat/Violence will be addressed.

Mitigation Strategy

The DRU Planning Team ultimately identified and prioritized 35 mitigation action measures that will reduce the University's vulnerability to these hazards. The mitigation measures include proposed changes to policy and operational procedure as well as structural evaluations and construction to address specific vulnerabilities. The mitigation goals and objectives identified in this section were derived from descriptions of damage reported in the hazard profile section, discussions with the MUW Facilities Management personnel, discussions with various University personnel not associated with the Facilities Management (professors, deans, etc.), and the members of the DRU Planning Team. Sources used for background information and guidance included FEMA's Building a Disaster Resistant University (August 2003), the Lowndes County Hazard Mitigation Plan (2008), FEMA's Multi-hazard Mitigation Planning Guidance (2007) and information from the Mitigation Planning Workshop including FEMA's Developing the Mitigation Plan (April 2003, FEMA 386-3).

The mitigation goals and objectives included were derived by considering the following criteria: the typical damage caused by a hazard based on past occurrence, life safety, operational criticality, overall vulnerability and a structure's value to emergency operations and recovery. The benefit-cost-analysis approached (BCA) was considered but was not used for this plan. Consideration was also given to certain goals of the university's strategic plan, particularly goals 1, 2, 3, 6, 8, 9 and 10 found in Table 15

Table 15 -- W-2009 Strategic Plan for MUW

MUW Goal 1:	Provide high quality, student-centered instructional programs in a personalized learning environment.
MUW Goal 2:	Ensure high quality academic and leadership preparation for women.
MUW Goal 3:	Provide student life programs that stimulate intellectual, social, emotional, physical, and leadership development.
MUW Goal 4:	Increase enrollment through effective recruitment and retention strategies.
MUW Goal 5:	Promote effective organizational principles.
MUW Goal 6:	Provide programs and services that enhance the cultural, intellectual, social, and professional development of the citizens of our region, state, and nation.
MUW Goal 7:	Promote diversity among MUW students, faculty and staff.
MUW Goal 8:	Encourage research, scholarship, and creative endeavors to enhance instruction and professional development.
MUW Goal 9:	Provide physical resources, infrastructure, and technology to advance the educational, operational and public service goals of the University.
MUW Goal 10:	Build partnerships and public awareness to support the University's mission and to promote institutional and economic development.

Thought was given to the county's mitigation plan in hopes of mutual benefits for the campus and surrounding community. Potential mitigation projects were discussed as there has been some past efforts made but for funding reasons were not completed.

Prioritization of University Hazards

The hazards profiles, described earlier, illustrated that hazards do not have the potential to affect the University with equal severity. For purposes of this document, mitigation actions for natural hazards will be focused on while man-made hazards will be incorporated as needed. These hazards have been prioritized, based disaster analysis and feedback from the planning team, to provide guidance to potential mitigation actions. The priority listing was based on past occurrences, the likelihood of a future occurrence, the typical damage caused by a hazard based on past occurrence, life safety, operational criticality, overall vulnerability and a structure's value to emergency operations and recovery life safety. Natural hazards are listed in order of decreasing importance while man-made hazards are in no particular order as they were all ranked as medium mitigation priority. Again, mitigation actions for man-made hazards will be incorporated as needed.

Natural Hazards:

Tornado/Straight-line winds/Windstorm
Hurricanes/Tropical Storms
Winter Storm
Flooding
Hail
Lightning
Extreme Heat/Drought
Earthquake
Wildfire
Dam Failure

Man-made Hazards*:

Computer Crime or Attack
Fire/Arson
Terrorist Acts/Explosive Devices
Transportation Accidents/Explosions/HazMat/Chemical Spills
Campus Threat/Violence

*As previously stated, civil disturbance, disease (epidemic or otherwise), loss of lifelines (utilities), water/food contamination warrant no further discussion and are not included in the mitigation process, however these hazards are included in the university's emergency preparedness plan.

Mitigation Goals, Objectives and Actions *Considered* to Reduce Vulnerabilities

The DRU planning team has identified the following goals and objectives in order to provide guidance and direction in the development of the mitigation plan. The mitigation goals and objectives listed below are broad, but provide general guidance that defines long-term direction of the mitigation planning process. Mitigation actions are often categorized in six groups: prevention, property protection, public education and awareness, natural resource protection, emergency services protection and structural projects. In setting goals, current plans, projects, hazard mitigation requests, facilities reports, etc. were reviewed in reference to emergency preparedness and recovery methods. Each goal statement has two or more objectives that provide a more specific framework for actions to be taken. This is initial list that was later downsized to suit the needs of the university.

Goal 1:
Introduce, enhance and maintain hazard mitigation as a part of the University's standard operating procedure in order to reduce / eliminate future vulnerabilities for campus and community

Objectives:

- **a.** Introduce and increase awareness of hazard mitigation plan
- **b.** Increase campus DRU planning team members
- **c.** Implement a process to tie in hazard with future construction projects
- **d.** Develop student groups, outreach programs to inform citizens of the efforts of mitigation planning and programs
- **e.** More involvement with local emergency officials and government
- **f.** Partner with public and private sectors to promote hazard mitigation programs

Actions:

- **a.** Invite more deans, administrative assistants and facilities employees to serve on committee; revise current emergency notification process to designate certain people for certain responses.
- **b.** Use emails, website, meetings, manuals, press releases to increase awareness of plan
- **c.** Transfer mitigation measures to future construction by integration of the hazard mitigation plan to the campus master plan. This includes building codes and various provisions. Hold meetings with DRU planning team and facilities planning staff.
- **d.** Work with Student Services, particularly community services department, to incorporate hazard mitigation into their programs
- **e.** Work closely with emergency management personnel and keep city officials abreast of changes and updates as well as seek their input
- **f.** Expand on the relationship with Affiliated FM who provides valuable knowledge concerning buildings and hazard mitigation and seek out other sources of knowledge to establish partnerships

Goal 2:
Eliminate/reduce vulnerabilities to existing university property and critical resources from natural and man-made hazards

Objectives:

a. Identify buildings and structures at risk to prevent further damage
b. Establish project professional criteria for future developments
c. Look for ways to fund more generators, in particular for EOC's.
d. Evaluate current campus warning/siren system and make improvements where needed.
e. Enhance communications between Police Department, Facilities other personnel and local and State Emergency Responders.
f. Reduce wind vulnerabilities from the tornado/straight-line wind and windstorm & hurricane tropical storm hazard
g. Reduce hail vulnerabilities from tornado/straight-line wind and windstorm
h. Reduce winter storm vulnerabilities
i. Reduce fire vulnerabilities (fire/arson, lightning, wildfire, explosion)
j. Reduce flood and dam failure vulnerabilities
k. Reduce earthquake vulnerabilities
l. Reduce vulnerabilities from man-made hazards

Actions:

a. Look at buildings/structures that received the most damage in the past; look at those made of wood; look at those that house functions that are critical to the mission and vision of the university as well as those that are older and vacant
b. Consult with FM Affiliated to establish a criteria for project professionals to ensure we are using materials, codes, processes that will lead to the best outcome for hazard mitigation, this includes environmental aspects as well.
c. Seek funding methods for more generators on campus as the university currently has eight.
d. Seek funding to add on to current warning/siren system (voice-overs)
e. Ensure communications/channels/towers and Radios are working properly, and procure equipment and radios necessary such that all departments can communicate in an emergency situation such as Police, Facilities, EOC, and Local emergency Responders, etc.
f. Consider installing wireless intercoms in all buildings that will improve communications in an emergency
g. Wind:
    - Install wind warning system component to augment the existing warning system.
    - Install safety film on all large glass panes to prevent the glass from shattering into shards and causing injuries.
    - Inspect, repair roof flashing, roof covering, roof drains and gutters
    - Reduce and/or eliminate openings
    - Retrofit structures to strengthen resistance to damage
    - Reinforce window glass and frames
    - Shut down operations that depend on outside power sources
    - Strengthen exterior elements to resist air pressure and impact
    - Secure outdoor equipment
    - Improve roof-wall-foundation connections
    - Install shutters
    - Install and/or improve back-up systems
    - Inform campus personnel or risks and strategies

h. Hail
    - Improve roofing material
    - Install safety film on all large glass panes to prevent the glass from shattering
    - Reinforce window and glass frames
    - Install and/or improve back-up systems
    - Inform campus personnel of risks and strategies

i. Winter Storm
    - Monitor amount of accumulation, particularly on roofs
    - Drain all idle pumps and compressors
    - Lubricate equipment for cold weather operation
    - Verify instrumentation lines and other in-service equipment are insulated
    - Drain and blowout seasonal equipment
    - Inspect all boilers and other heating equipment
    - Check all steam traps for proper operation
    - Verify adequate heat
    - Install and/or improve back-up systems
    - Inform campus personnel or risks and strategies

j. Fire (fire/arson, lightning, wildfire, explosion)

- Improve sprinkler systems
- Install seismic gas shut-off valves on all university buildings with natural gas connections
- Install/improve fire hydrants
- Improve roof materials
- Reduce number of wood structures
- Require the use of fire-retardant materials in new constructions
- Determine each building's fire code requirements
- Develop pre-incident plan with local fire department
- Review the configuration of offices
- Review campus fire safety particularly in residence halls
- Increase use of fireproofing and/or fire-resistant building materials
- Train staff in firefighting techniques
- Ensure adequate water supplies for fire protection
- Control ignition sources
- Maintain site setups such as keeping chemicals and hazardous materials properly stored away; proper maintenance of grounds in reference to ditches, clear paths, etc.
- Install and/or improve back-up systems
- Inform campus personnel or risks and strategies

k. Flood & Dam Failure

- Elevation or flood proofing of buildings
- Elevate or relocate highly valuable items
- Improve drainage system
- Close emergency valves to sewer drains
- Check sump pumps for proper operation
- Prevent water from entering key areas by using flood gates, stop logs, water barriers
- Fill empty storage tanks to prevent floating
- Keep fire protection equipment operational
- Install and/or improve back-up systems
- Inform campus personnel or risks and strategies

l. Earthquake

- Install steel moment frames, shear wall and cross bracing
- Strengthen floor systems with shotcrete fiber materials
- Reinforce columns with fiber wraps/steel jackets
- Add tension/shear anchors and vibration dampers
- Brace bookshelves and other high mounted items
- Secure expensive equipment
- Retrofit structures to strengthen resistance to damage
- Examine fuel-fired equipment
- Control ignition sources
- Install and/or improve back-up systems
- Inform campus personnel or risks and strategies

l. Man-made (computer crime/attack (cca), terrorists acts/explosive devices (taed), hazardous materials/chemical spills (hazmat/chemspill)

- Maintain and update university's disaster and contingency planning document (cca)

- Minimize the time required to respond effectively to an emergency or disaster (cca)
- Facilitate effective coordination of recovery tasks (cca)
- Reduce the complexity of the recovery effort (cca)
- Become more observant of students' unusual behavior, patterns, etc. (tead)
- Report unusual, peculiar packages, mail, devices immediately (tead)
- Strengthen security controls on campus (tead)
- Review and evaluate department chemical safety rules (tead/hazmat/chemspill)
- Ensure all chemistry labs have spill kits and fire blankets (hazmat/chemspill)
- Enforce all safety rules
- Perform and review results of safety audits (hazmat/chemspill)
- Ensure proper labeling and storage of chemicals and hazardous materials (hazmat/chemspill)
- Keep accurate inventory/filing system of chemicals (hazmat/chemspill)
- Properly train all staff, students, personnel (hazmat/chemspill)
- Increase awareness of Chemical Hazards Communication Plan ((hazmat/chemspill)
- Remain OSHA compliant (hazmat/chemspill)

Goal 3:
Protect the health, safety and welfare of students, faculty, staff and visitors at MUW
Objectives:

a. Enhance the communication and warning capabilities needed before and during a natural hazard (also refer to Objective 2.2)
b. Continue to increase awareness of university's emergency preparedness plan
c. Identify emergency traffic routes
d. Identify "safest place" in each building
e. Seek funding for storm shelters for selected areas on campus and Plymouth Bluff
f. Determine building code compliance
g. Continue safety inspections
h. Properly train employees

Actions:

a. Build upon siren system by looking for ways to fund voice activated sirens which will allow a pre-record message for emergencies as they have greater penetration on campus and can be heard in the surrounding community. Also look at emergency notification system enhancement such as installing emergency alert monitors in all campus buildings.
b. Expand on DRU planning team; utilize student groups particularly those performing community service; make everyone aware of university's plan by email, websites, press releases, etc.
c. Establish and identify emergency traffic routes by posting signs on campus routes and working closely with local law enforcement agencies. This will aid in traffic flow in and out of campus during an event.
d. Build upon the "safest place" program already in progress--add this information to the university emergency plan and post these areas in highly visible places in each office.
e. Continue to look for ways to fund tornado/storm shelters for certain areas of campus and Plymouth Bluff- possibly prefabricated shelters can be used.

f. Survey campus buildings to determine their compliance with ADA, fire and other codes and specific requirements.
g. Utilize Sodexo's safety audit and continue to work with fire marshal's office – possibly reintroduce the environmental health and safety committee
h. Be sure all employees, particularly those in Police Department and Facilities Management, are properly trained in the procedures, operation, maintenance, or emergency response of equipment, processes, or physical hazards in a facility. Administration will need to be abreast of policies and procedures in times of an emergency event and/or disaster.

Goal 4:
Reduce vulnerabilities to campus lifelines from hazards and minimize interruption of mission performance
Objectives:
a. Review electrical configuration and consumption
b. Stay abreast of utilities updates
c. Establish back up system

Actions:
a. Check to see if any above electrical power lines can be replaced with underground ones; monitor electrical consumption to eliminate overload.
b. Maintain healthy professional relationships with Columbus Light & Water, AT &T and Atmos Energy and Cable One.
c. Ensure generators are working properly and enough fuel is on hand and seek funding for more generators and maintenance of generators on campus

Goal 5:
Reduce / eliminate vulnerabilities to equipment, investments, unique research data and administrative records.
Objectives:
a. Evaluate university's current record retention policy
b. Review Analysis By Space Classification booklet to make sure all stated items are kept in the safest location
c. Expand on the policy to include safer storage locations (individual departments will know the safest locations)
d. Establish guidance on means of archiving data
e. Try to reduce the amount of paper used/stored
f. Establish alternate location of the backbone of the campus, ITS
g. Analysis of equipment location in each office
Actions:
a. Review current record retention policy to see if there are changes in the amount of time records are to be housed
b. Review Analysis by Space information to see if records are housed in the safest place
c. After analysis of space is complete, possibly include in policy that records retained will be housed in the safest location in each particular building
d. Establish policy for university departments to ensure data is properly archived and stored
e. Use emails as much as possible, back up information on computer, disks, CDs, etc.
f. Continue to seek funding for alternate ITS site

g. Ensure equipment in offices is not placed in hazard zones (i.e. office equipment is not placed directly underneath sprinklers or near objects that could cause fire).

Goal 6:
Continue to improve upon MUW's DRU plan
Objectives:
a. Initiate DRU planning activities at other Mississippi institutions and local schools
b. Continue to seek input from individuals, agencies, organizations from the community
Actions:
a. Visit local schools, nearby community colleges and universities to discuss disaster resistance and exchange ideas, using MUW's DRU project as a model, particularly for local schools
b. Be mindful of responses from individuals, agencies, organization who are dealing with an emergency and/or disaster recovery as this plan is a living document.

Mitigation Goals, Objectives and Actions *Chosen* to Reduce Vulnerabilities

After reviewing the above information, the DRU planning team ranked each mitigation action using the following criteria: past occurrences, the likelihood of a future occurrence, the typical damage caused by a hazard based on past occurrence, life safety, operational criticality, overall vulnerability and a structure's value to emergency operations and recovery. While we recognize there are costs associated with mitigation actions, we did not utilize the benefit cost analysis (BCA) in prioritizing mitigation actions; however costs are provided in the implementation section. We felt our experience from the 2002 tornado well equipped us with the knowledge to prioritize actions based on the multiple criteria stated above. In addition to this, most of our actions require change in behavior, habits, policies and administrative processes, not that of a monetary nature. The 98 mitigation actions described in the previous section were distributed to all members of the DRU planning team for review and input. Each mitigation action was ranked on a 1 to 5 priority scale with 1 being top priority and 5 being the lowest priority. Some actions may qualify for an alternative mitigation action. Again, when ranking actions planning team members were asked to please consider following: past occurrences, life safety, operational criticality, overall vulnerability and a structure's value to emergency operations and recovery. MUW used the numerical voting method suggested in FEMA's Developing the Mitigation Plan, April 2003, FEMA 386-3. In this ranking all of the mitigation actions are listed and the planning team members reviews and ranks the given action as stated above. The ranks for each action are added and then divided by the number of votes. As time would not allow for all 98 mitigation goals listed above to be included in this plan, those actions receiving rankings from 2.5 to 1.0 are used in this plan as they are considered high priority. Five (5) goals and thirty-five (35) actions were ranked high priority and will be included in this plan; however some may ultimately be listed as alternative mitigation actions while others may be combined for a more effective result.

Five (5) additional actions were added to the Plan during the 2015 plan review and update. They were integrated into the original list of thirty five, then voted on for the final prioritization. Actions that ranked medium and low priority will be kept on file for future evaluation and possible implementation.

Goal 1: Enhance and maintain hazard mitigation as a part of the University's standard operating procedure in order to reduce/ eliminate future vulnerabilities for campus and community

Objective1.1: More involvement with local emergency officials and government

Action 1.1.1: Work closely with emergency management personnel and keep city officials abreast of changes and updates as well as seek their input
Which hazard(s) does this action address? All
Implementing office/ department: Vice President for Finance & Administration (VPFA)
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: On-going
Notes: Utilize Lowndes Emergency Planning Committee, Red Cross, etc. meeting, increase awareness on campus as well

Goal 2: Eliminate/reduce vulnerabilities to existing university property and critical resources from natural and man-made hazards

Objective 2.1: Continue to look for ways to fund more generators, in Particular for EOCs.

Action 2.1.1: Seek funding methods for more generators on campus as the university currently has eight.
Which hazard(s) does this action address?
/ Natural
Implementing office/ department: VPFA
Estimated cost: $250,000
Funding Source: MEMA/University Funds
Implementation Schedule: ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Objective 2.2: Evaluate current campus warning/siren system and make improvements as needed.

Action 2.2.1: Seek funding to add on to current warning/siren system (voice-overs) including indoor early warning systems where needed.
Which hazard(s) does this action address? All
Implementing office/ department: VPFA
Estimated cost: $150,000
Funding Source: State Funds/MEMA
Implementation Schedule: ongoing
Notes: voice-activated sirens which allows pre-recorded messages
Can this be an alternative mitigation action, if so, why?

Objective 2.3: Enhance communications between Police Department, Facilities other personnel, and local and State Emergency responders.

Action 2.3.1: **Ensure communications/channels/towers** and radios are working properly, and seek funding to procure equipment and radios necessary such that MUW can communicate in an emergency situation with Police, Facilities, EOC, and Local and State emergency Responders, etc.
Which hazard(s) does this action address? All
Implementing office/ department: Facilities Management/University Police
Estimated cost: $150,000
Funding Source: MEMA/University Funds
Implementation Schedule: Ongoing
Notes: Assessments and testing
Can this be an alternative mitigation action, if so, why?

c. **Action 2.3.2:** Seek funding to install wireless intercoms in all buildings to improve communications in an emergency.
Which hazard(s) does this action address? All
Implementing office/ department: Police Department/Facilities Management

Estimated cost: $100,000
Funding Source: MEMA/University Funds
Implementation Schedule: December 2016 - ongoing
Notes: Assessments and testing
Can this be an alternative mitigation action, if so, why?

Objective 2.4: Reduce wind vulnerabilities from the tornado/straight-line wind and windstorm & hurricane tropical storm hazard

Action 2.4.1: Inspect, repair roof flashing, roof covering, roof drains and gutters
Which hazard(s) does this action address? Tornado/straight t line wind, windstorm, hurricane, tropical storm and hail
Implementing office/ department: Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Ongoing
Notes: Part of routine maintenance
Can this be an alternative mitigation action, if so, why?

Objective 2.5: Reduce winter storm vulnerabilities

Action 2.5.1: Inspect all boilers and other heating equipment
Which hazard(s) does this action address? Winter storm, fire, explosions
Implementing office/ department: Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Ongoing
Notes: Part of routine maintenance
Can this be an alternative mitigation action, if so, why?

Action 2.5.2: Check all steam traps for proper operation
Which hazard(s) does this action address? Winter storm, fire
Implementing office/ department: Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: June 2016. All steam traps have been removed except for Cafeteria which will be renovated June 15, 2016.
Notes: Part of routine maintenance
Can this be an alternative mitigation action, if so, why?

Action 2.5.3: Verify adequate heat
Which hazard(s) does this action address? Winter storm
Implementing office/ department: Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: As needed
Notes: New Boilers will be added by August 30, 2015.
Can this be an alternative mitigation action, if so, why?

Objective 2.6: Reduce fire vulnerabilities (fire/arson, lightning, wildfire, explosion)

Action 2.6.1: Improve sprinkler systems
Which hazard(s) does this action address? Fire, arson, lightning, explosion
Implementing office/ department: Facilities Management
Estimated cost: $4,000,000

Funding Source: State Funds
Implementation Schedule: July 2015 -December 2021
Notes: By the end of 2014 all active residence halls had sprinkler systems completed.
Can this be an alternative mitigation action, if so, why?

Action 2.6.2: Require the use of fire-retardant materials in new construction
Which hazard(s) does this action address? Fire/arson, lightning, explosion
Implementing office/ department: Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: July 2015 – ongoing
Notes: Include this in planning phase of design
Can this be an alternative mitigation action, if so, why?

Action 2.6.3: Determine each building's fire code requirements
Which hazard(s) does this action address? Fire/arson, chemical spill, hazmat, explosion, lightning
Implementing office/ department: Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: August 2015
Notes: Continue to work with State Fire Marshal's office and IHL risk Manager to determine the Code requirements.
Can this be an alternative mitigation action, if so, why?

Action 2.6.4: Review the configuration of offices
Which hazard(s) does this action address? Fire/arson, flood, explosions, hazmat, chemical spills, earthquake,
Implementing office/ department: Facilities Management/Health & Safety Committee
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: January 2015- ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Action 2.6.5: Review campus fire safety particularly in residence halls
Which hazard(s) does this action address? Fire/arson, lightning, explosion
Implementing office/ department: Housing and Residence Life
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Annually by move in day. Ongoing
Notes: The Housing and Residence Life Director will coordinate a fire safety review of all RHs with a team composed of Dean of Students, Facilities Manager, MUW Emergency Management Coordinator, IHL Risk Management, and Columbus Fire Department
Can this be an alternative mitigation action, if so, why?

Action 2.6.6: Increase use of fireproofing and/or fire-resistant building materials
Which hazard(s) does this action address? Fire/arson, wildfire, explosion, hazmat, chemical spills

Implementing office/ department: Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: July 2015; Ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Action 2.6.7: Ensure adequate water supplies for fire protection
Which hazard(s) does this action address? Fire/arson, lightning, explosions, chemical spills, hazmat, wildfire, earthquake, extreme heat/drought, transportation accidents
Implementing office/ department: Facilities Management
Estimated cost: $10,000
Funding Source: University Funds
Implementation Schedule: July 2015-ongoing
Notes: Testing
Can this be an alternative mitigation action, if so, why?

Action 2.6.8: Control ignition sources
Which hazard(s) does this action address? Fire/arson, explosions, chemical spills, hazmat
Implementing office/ department: Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: July 2015- Ongoing
Notes: Routine inspection
Can this be an alternative mitigation action, if so, why?

Objective 2.7: Reduce flood and dam failure vulnerabilities

Action 2.7.1: Improve drainage system
Which hazard(s) does this action address? Flood, dam failure, tornado, hurricane
Implementing office/ department: Facilities Management
Estimated cost: $750,000
Funding Source: State Funds
Implementation Schedule: completed as of
82% 2015
Notes: Storm & drainage project are complete as of the plan update of 2015.
Can this be an alternative mitigation action, if so, why?

Action 2.7.2: Prevent water from entering key areas by using flood gates, stop logs, water barriers
Which hazard(s) does this action address? Flood, dam failure, hurricanes/tropical storms, tornado
Implementing office/ department: Facilities Management
Estimated cost: $5,000
Funding Source: University Funds
Implementation Schedule: As needed
Notes:
Can this be an alternative mitigation action, if so, why?

Action 2.7.3: Install and/or improve back-up systems
Which hazard(s) does this action address? All
Implementing office/ department: Facilities Management
Estimated cost: $10,000

Funding Source: University Funds
Implementation Schedule: July 2015- Ongoing
Notes: Begin with a comprehensive plan to see if installation or improvements are needed

Objective 2.8: Reduce vulnerabilities from man-made hazards (computer crime/attack (cca), terrorists acts/explosive devices (taed), hazardous materials/chemical spills (hazmat/chemspill)

Action 2.8.1: Maintain and update university's disaster and contingency planning document
Which hazard(s) does this action address? Computer crime attack, terrorists acts
Implementing office/ department: Information Technology Services (ITS)
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Action 2.8.2: Minimize the time required to respond effectively to an emergency or disaster
Which hazard(s) does this action address? Computer crime attack
Implementing office/ department: ITS
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Action 2.8.3: Facilitate effective coordination of recovery tasks
Which hazard(s) does this action address? Computer crime attacks
Implementing office/ department: ITS
Estimated cost: $N/A
Funding Source: University Funds
Implementation Schedule: January 2010; ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Action 2.8.4: Reduce the complexity of the recovery effort
Which hazard(s) does this action address? Computer crime attack
Implementing office/ department: ITS
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: July 2010; ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Action 2.8.5: Report unusual, peculiar packages, mail, devices immediately
Which hazard(s) does this action address? Terrorist acts, explosive devices
Implementing office/ department: VPFA
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Action 2.8.6: Strengthen security controls on campus

Which hazard(s) does this action address? Arson, terrorist acts, and explosive devices
Implementing office/ department: Police Department
Estimated cost: $2,050,000
Funding Source: State Funds/Grant Opportunities/University Funds
Implementation Schedule: July 2015; ongoing
Notes: contract for security audit, update all perimeter gate operators/card readers; replace north campus fencing; installing camera system at front gate, residence hall parking lots and other buildings as identified
Can this be an alternative mitigation action, if so, why?

Action 2.8.7: Ensure all chemistry labs have spill kits and fire blankets
Which hazard(s) does this action address? Hazmat, chemical spills, and explosions
Implementing office/ department: Vice President for Academic Affairs
Estimated cost: $2,100
Funding Source: University Funds
Implementation Schedule: Complete as of 2015 update
Notes: All labs currently have spill kits and fire blankets
Can this be an alternative mitigation action, if so, why?

Action 2.8.8: Enforce all safety rules
Which hazard(s) does this action address? All hazards
Implementing office/ department: VPFA
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Goal 3: Protect the health, safety and welfare of students, faculty, staff and visitors at MUW

Objective 3.1: Enhance the communication and warning capabilities needed before and during a natural hazard

Action 3.1.1: Build upon siren system by looking for ways to fund voice activated sirens and installing emergency alert monitors in all campus buildings, initially academic buildings.
Which hazard(s) does this action address? All
Implementing office/ department: VPFA/Facilities Management
Estimated cost: $250,000
Funding Source: State Funds/MEMA
Implementation Schedule: 1/2015 – 12/21
Notes:
Can this be an alternative mitigation action, if so, why?

Objective 3.2: Identify "safest place" in each building

Action 3.1.2: Build upon the "safest place" program already in progress--add this information to the university emergency plan and post these areas in highly visible places in each office.
Which hazard(s) does this action address? Natural
Implementing office/ department: Police Department
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: January 2015; ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Action 3.2.2 Develop and provide training for Staff, Faculty, and Students on the Safest Place in each building
Which hazard(s) does this action address? Natural
Implementing office/ department: Police Department
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Dec 2016; as needed.
Notes:
Can this be an alternative mitigation action, if so, why?

Objective 3.3: Determine building code compliance

Action 3.1.3: Survey campus buildings to determine their compliance with ADA, fire and other codes and specific requirements.
Which hazard(s) does this action address? Fire, flood, earthquake
Implementing office/ department: Facilities Management
Estimated cost: $80,000
Funding Source: State Funds/Grant Opportunities
Implementation Schedule: July 2015-December 2016
Notes:
Can this be an alternative mitigation action, if so, why?

Objective 3.4: Properly train employees

Action 3.1.4: Be sure all employees, particularly those in Police Department and Facilities Management, are properly trained in the procedures, operation, maintenance, or emergency response of equipment, processes, or physical hazards in a facility. Administration will need to be abreast of policies and procedures in times of an emergency event and/or disaster.
Which hazard(s) does this action address? All
Implementing office/ department: Police Department/VPFA
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Goal 4: Reduce vulnerabilities to campus lifelines from hazards and minimize interruption of mission performance

Objective 4.1: Stay abreast of utilities situations and updates

Action 4.1.1: Maintain healthy professional relationships with Columbus Light & Water and Atmos Energy and Cable One.
Which hazard(s) does this action address? All
Implementing office/ department: VPFA/Facilities Management
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: Ongoing
Notes:
Can this be an alternative mitigation action, if so, why?

Objective 4.2: Enhance back up system

Action 4.1.2: Ensure generators are working properly and enough fuel is on hand
Which hazard(s) does this action address? Natural
Implementing office/ department: Facilities Management

Estimated cost: $25,000
Funding Source: University Funds
Implementation Schedule: 1/2015 – 12/2021
Notes:
Can this be an alternative mitigation action, if so, why?

Goal 5: Reduce / eliminate vulnerabilities to equipment, investments, unique research data and administrative records.

Objective 5.1: Establish guidance on means of archiving data

Action 5.1.1: Establish policy for university departments to ensure data is properly archived and stored

Which hazard(s) does this action address? All
Implementing office/ department: VPFA
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: July 2015; ongoing
Notes: Administrative Review
Can this be an alternative mitigation action, if so, why?

Objective 5.2: Analysis of equipment location in each office

Action 5.1.2: Ensure equipment in offices is not placed in hazard zones (i.e. office equipment is not placed directly underneath sprinklers or near objects that could cause fire).

Which hazard(s) does this action address? Fire/arson, flood, explosions, hazmat, chemical spills, earthquake,
Implementing office/ department: Facilities Management/Health & Safety Committee
Estimated cost: N/A
Funding Source: N/A
Implementation Schedule: January 2015
Notes:
Can this be an alternative mitigation action, if so, why?

Goal 6.0: to enhance the student experience for all students on Campus through training.

Objective 6.1: Campus faculty Staff and Students recognize threats before a situation becomes violent.

Objective 6.2: reduce the number of occurrences of hate crimes, rape, stalking, etc.

Action 6.1.1 Provide threat awareness training for staff, Faculty and Students on a recurring basis. Work with the following offices: Counseling, Provost, Human Resources, Dean of Students

Which hazard does this address? Campus Threat/Violence
Implementing office: Dean of Students and Human Resources
Cost: $2000
Funding Source:
Implementation schedule: Annually
Notes:

Goal 7.0: to work towards a campus environment that addresses threats of violence in a proactive manner for employees and students, ultimately eliminating threats all together.

Objective 7.1: Create an environment where employees and students are encouraged to report promptly any threat of violence.

Objective 7.2: Create an environment where employees and students understand that there will be no retaliation for reporting workplace violence or threats of violence.

Action 7.1.1 Provide awareness training for threat reporting for staff, Faculty and Students on a recurring basis. Work with the following offices: Counseling, Provost, Human Resources, Dean of Students
Which hazard does this address? Campus Threat/Violence
Implementing office: Human Resources and Dean of Students
Cost: $5000
Funding Source:
Implementation schedule: Annually
Notes:

Goal 8.0: to enhance the awareness of the Behavioral Intervention Team (BIT) concerning the current national issues surrounding threat ands and violence on College Campuses.

Objective 8.1: Continued training for BIT team from the National Behavioral Intervention Team Association (NaBITA) in order to stay current on trends with violence.

Action 8.1.1 Provide awareness training for the Behavioral Intervention team (BIT) on a recurring basis.
Which hazard does this address? Campus Threat/Violence
Implementing office: Dean of Students
Cost: $5000
Funding Source:
Implementation schedule: Annually
Notes:

Prioritizing Action Measures for Implementation

In this section, the action measures described above will be prioritized to establish a guideline for order of implementation. The DRU planning team again reviewed all action measures and ranked them from 1 to 40 with 1 being top priority and 40 being low priority. As the DRU planning team includes representatives from a cross-section of local, state and national level, all concerned parties were able to review the mitigation strategy / plan and had the opportunity to participate. The STAPLEE (social, technical, administrative, political, legal, economic and environment) criteria is suggested by FEMA (FEMA, 2003(b)) as a guide to evaluate and prioritize potential mitigation actions. While the STAPLEE criteria may not be applicable to all aspects of a university setting, it was considered in the prioritization of the mitigation actions. Those that didn't fit the university model were discounted while the ones that did apply were used. To complement the STAPLEE criteria the prioritization process considered the hazard profiles, vulnerabilities, project costs and potential benefits. Social aspects of the mitigation actions were also considered. The major component of the university population is the student body. The student body is a diverse group of people from different origins that change as students come and go from the university. One particular group, disabled persons, remains fairly constant on campus and this group was identified as one where mitigation measures would be particularly useful. Many of the structures on campus were constructed prior to the Americans with Disabilities Act, and so continued improvement of facilities to better protect this group from hazards is priority. Table 16, below, reflects the prioritized listing agreed upon by members of the DRU planning team. The actions were ranked from 1 to forty with one being top priority and forty being low priority. The responses were then averaged. Those actions with the lowest averaged points were given priority. While the table below is a prioritized listing, it merely serves as an overall guideline for implementation. Because of different variables, such as funding, time, etc., actions may not necessarily be implemented in this order.
Note: No actions were listed as alternative mitigation actions.

Table 16—Prioritized Listing of Mitigation Actions by DRU Planning Team				
Priority/ Actionee(s)	Action Measure Number/Action Measure Hazard(s) addressed	Affects existing structures	Affects future structures	Estimated Implementation With Updates
1/FM/UPD	2.3.1/Ensure communications are working properly. Enhance to ensure emergency responders at MUW, Local and State can communicate Hazard(s) addressed: All hazards	N/A	N/A	Completed Dec 2015.
2/UPD/VP FA	3.1.4/Ensure all employees are properly trained in emergency response procedures Hazard(s) addressed: All hazards	N/A	N/A	Completed 12/2015, but the training is an ongoing requirement
3/H&RL	2.6.5/Review campus fire safety especially residence halls Hazard(s) addressed: fire/arson, lightning, explosion	No	No	Completed 10/2015
4/UPD/ FM	Action 2.3.2 seek funding to install wireless intercoms in all buildings to improve communications in an emergency	N/A	N/a	Deferred (till funds available)
5/FM	4.1.2/Ensure generators are working properly/enough fuel on hand Hazard(s) addressed: All hazards	No	No	Completed 12/2015
6/FM	2.6.1/Improve sprinkler systems Hazard(s) addressed: fire, arson, lightning, explosion, explosive devices	Yes	Yes	7/2015-12/2021 (Residence Halls are completed)
7/VPFA	2.2.1/Seek funding to add voice over to or improve our current warning system, to include indoor early warning systems where necessary. Hazard(s) addressed: All hazards	No	No	Deferred pending Funding
8/VPFA	3.1.1/Seek funding for voice activated sirens, alert monitors Hazard(s) addressed: All hazards	No	No	Deferred pending funding
9/UPD	3.1.2/Build upon "safest place" program Hazard(s) addressed: Natural hazards	No	No	To Be completed by 12/2016
10/UPD	3.2.2 Develop and provide training for Staff, Faculty, and Students on the Safest Place in each building	NA	NA	To be completed by 12/2016
11/VPFA/ VPSA	2.8.8/Enforce all safety rules Hazard(s) addressed: All hazards	No	No	Completed
12/VPFA	1.1.1/Work closely w/EM personnel/keep city officials updated Hazard(s) addressed: All hazards	N/A	N/A	Completed
13/DNS (ITS)	2.8.2/Minimize time required to respond effectively to emergency Hazard(s) addressed: computer crime attack	N/A	N/A	Completed
14/FM	3.1.3/Determine ADA, fire, codes for campus buildings Hazard(s) addressed: fire/arson, flood, earthquake, explosive devices, hazmat, chemical spills	Yes	Yes	To be completed Aug. 2015 – August 2016
15/VPFA	2.1.1/Seek funding for more generators, in particular the EOCs Hazard(s) addressed: Natural	No	No	Grant Application by 2016
16 DNS(/ITS)	2.8.1/Maintain/update university disaster/planning document Hazard(s) addressed: computer crime attack, terrorists acts	No	No	To be completed by 12/2017
17/FM	2.6.7/Ensure adequate water supplies for fire protection Hazard(s) addressed: fire/arson, lightning, explosions, chemical spills, hazmat, wildfire, earthquake, extreme heat/drought, transportation accidents	Yes	Yes	completed
18/FM	2.4.1/Inspect, repair roof flashing, covering, drain and gutters Hazard(s) addressed: tornado/straight line wind, hurricane, tropical storm, hail	No	No	To be completed by 12/2017
19/ITS (DNS)	2.8.3/Facilitate effective coordination of recovery tasks Hazard(s) addressed: computer crime attacks	N/A	N/A	To be completed by 12/2017

20/FM	2.6.2/Require use of fire-retardant materials in new constructions Hazard(s) addressed: fire, arson, lightning, explosion	No	Yes	completed
21/FM	2.5.2/Check all steam traps for proper operation Hazard(s) addressed: winter storm, fire	No	No	Completed June 2016
22/ VPAA	2.8.7/Ensure all chemistry labs have spill kits and fire blankets Hazard(s) addressed: hazmat, chemical spills, explosions	N/A	N/A	Complete 2015
23/FM	2.6.3/Determine each building's fire code requirements Hazard(s) addressed: fire/arson, explosion, chemical spill, lightning, hazmat	Yes	Yes	Completed August 2015
24/FM	2.6.6/Increase fire proofing and fire-resistant building materials Hazard(s) addressed: fire/arson, wildfire, explosion, hazmat, chemical spills	Yes	Yes	Completed
25/VPFA & FM	4.1.1/Maintain good relationship with utilities providers Hazard(s) addressed: All hazards	N/A	N/A	Completed
26/UPD	2.8.6/Strengthen security controls on campus Hazard(s) addressed: arson, terrorists acts, explosive devices	N/A	N/A	Completed
27/DOS & HR	6.1.1 Provide threat awareness training for staff, Faculty and Students on a recurring basis. Work with the following offices: Counseling, Provost, Human Resources, Dean of Students	N/A	N/A	To be completed by 12/2017
28 HR & DOS	7.1.1 Provide awareness training for threat reporting for staff, Faculty and Students on a recurring basis. Work with the following offices: Counseling, Provost, Human Resources, Dean of Students	N/A	N/A	To be completed by 2017
29/ DOS	8.1.1Provide awareness training for the Behavioral Intervention team (BIT) on a recurring basis (NaBITa training)	N/A	N/A	To be completed by 2017
30/FM	2.5.1/Inspect all boilers and other heating equipment Hazard(s) addressed: winter storm, fire, explosions	No	No	Completed 2015
31/DNS (ITS)	2.8.4/Reduce the complexity of the recovery effort Hazard(s) addressed: computer crime attack	N/A	N/A	To be completed by 2017
32/FM	2.7.3/Install and/or improve backup systems Hazard(s) addressed: All hazards	Yes	Yes	Completed 2015
33/VPFA	2.8.5/Report unusual packages, mail devices immediately Hazard(s) addressed: terrorists acts, explosive devices	N/A	N/A	Completed 2015
34/VPFA	5.1.1/Establish policy to ensure date is stored/archived properly Hazard(s) addressed: All hazards	N/A	N/A	Completed 1/2015
35/FM	2.7.1/Improve drainage system Hazard(s) addressed: flood, dam failure, tornado, hurricane	No	No	Completed 2015
36/FM & H&S comm.	5.1.2/Ensure office equipment is not placed in hazard zones Hazard(s) addressed: fire/arson, flood, explosions, hazmat, chemical spills, earthquake,	N/A	N/A	Completed 1/2015
37FM	2.7.2/Prevent water from key areas using flood gates, stop logs,etc Hazard(s) addressed: flood, dam failure, tornado, hurricane	N/A	N/A	Completed
38/FM	2.6.8/Control ignition sources Hazard(s) addressed: fire/arson, explosions, chemical spills, hazmat	N/A	N/A	Completed
39/FM	2.5.3/Verify adequate heat Hazard(s) addressed: winter storm	N/A	N/A	Completed
40/FM & H&S comm.	2.6.4/Review configuration of offices Hazard(s) addressed: fire/arson, flood, explosions, hazmat, chemical spills, earthquake	N/A	N/A	To be completed by Dec 2017

Implementation of Action Measures

Again, because of different variables, such as funding, time, etc., some actions will be implemented quicker than others and not necessarily in the order shown in Table 16. Those mitigation actions that benefit the most people were given top priority. For example, mitigation actions that would add a measure of protection to a residence hall where 200 plus students reside would be more advantageous than a measure that would add additional protection to a structure with only 50 students. Minimal cost mitigation actions, which involve the addition of mitigation measures to existing plans and design guidance, will be implemented upon approval of the plan.

Because of the funding needs for some of the action measures, it was determined that the overall lead administrative department for implementation of DRU-related mitigation work will be the Office of the Vice President for Finance and Administration (VPFA). This office will assign work to the appropriate departments and will ensure all applicable federal and state laws, rules and regulations are adhered to throughout the process of project completion. Priority for implementation of action measures has been established by the DRU planning team. The VPFA office will ensure all proposed work will include the identification of work to be completed, the location of the proposed work, time of performance, estimated cost of the project, and the identification of potential funding sources. Standard accounting procedures will be followed. The VPFA office will also assign quality control and assurance responsibilities to the proper department. Some of the proposed mitigation actions will not require procurement of additional funds. These action measures can be implemented without the delay associated with seeking external funding.

Plan Adoption and Implementation

This plan was approved by the U.S. Department of Homeland Security, FEMA Region IV on November 10, 2010, and was adopted by Interim President Allegra Brigham on November 18, 2010. The 2015 updated Plan was adopted by the President of the University, Dr. Jim Borsig on February 29, 2016.

Plan Monitoring, Evaluating and Revising

In accordance with 44 CFR 201.6 (c) (4) (I), this plan will be periodically updated. As the DRU planning team is responsible for plan maintenance, monitoring and evaluation, the team has decided to review the plan at least once annually beginning in Dec or 2016, but will be encouraged to review and evaluate the plan quarterly or as situations change. The purpose of the evaluation is to identify changes in the plan that may be necessary to make it a more efficient planning document or to improve on the execution of the mitigation measures. The team will consider the following when evaluating the plan:

1. New construction or conditions that may require plan updates
2. Identify areas where the plan has been successful and areas where additional work is needed
3. Identify any new mitigation measures that should be added or existing measures that should be deleted from the plan,
4. New legislation or rule making that may influence the operation and implementation of the plan, and adequacy of funding to implement measures,
5. Review the current mitigation action prioritizations
6. Results from on-going plan monitoring
7. The State of MS hazard mitigation Plan
8. Lowndes County Comprehensive Emergency Management Plan

The chair of the DRU planning team may also call special meetings of the team to evaluate the plan should a significant event occur on campus. Natural hazard-related events on campus and the influence (or lack thereof) that mitigation work had on the damage caused by the event will be evaluated. The chair may also appoint subcommittees to investigate and evaluate special aspects of the plan and report back to the team as a whole. Problem areas or successful mitigation will also be identified during this evaluation. The DRU planning team may decide that the plan needs no major update, it needs immediate updating, or updating is needed, but can wait to the end of the five year cycle.

If immediate major update is required, the update will be approved by the DRU planning team and then submitted to MEMA and FEMA for their concurrence. At the end of every five year period the DRU planning team will evaluate and make any major updates needed to the plan or add updates identified earlier. MEMA and FEMA will be notified if major upgrades to the plan are required and the plan will be submitted for their concurrence. This plan will be provided to the university administration and any concerned government agency or member of the public.

The plan was sent to the DRU planning team as well as the campus community on August 29, 2011 and August 29, 2012 for revisions. Only Minor revisions were made. Scheduling a review of this document around the time of the annual university-wide disaster drill is best.

A major review of the Hazard mitigation Process was conducted during 2015, and the document is updated. The review process began in Jan with the requesting of mitigation funding to assist, and continued thru the last Public Hearing held August 10, 2015, with reviews and updates along the way.

NOTIFICATION UPDATES: The planning team felt it was necessary to include social media in the plan as it has become one of the best ways to notify the campus community, especially students, of any weather alerts, updates, etc. Alerts are posted on the university's main webpage, Facebook and Twitter. The campus community has been strongly encouraged to sign up for W Alert (Get Connected) which sends a text or landline message to whichever number is given. Also, emergency sirens have been strategically erected on campus. (added 9/4/2012). Additionally, we have recently developed and deployed a new Crisis Manager App for smart phones. This app, deployed in September of 2015, provides quick and electronic access to our emergency Desktop guide.

Incorporation into existing planning mechanisms.

The mitigation measures identified in this plan will be considered for integration with the university's emergency response and preparedness plan (incident preparedness plan) the campus master plan, facilities improvement plan and other planning tools that the University uses. Incorporating with the campus master plan covers all planning for future campus construction and alerts design engineers to specific mitigation issues the university wishes to incorporate into future campus design. The process by which aspects of the mitigation plan are incorporated into other university plans, such as the university's emergency response and preparedness guide (incident preparedness plan), is not complex. For an action measure to be incorporated into another university plan requires only the approval of the department director which administers the plan. Each university department has prepared and maintains its own incident preparedness plan which is included in the Campus Incident preparedness Plan, directed and maintained thru the Senior Vice President for Finance. If, for example, an action measure was to be included in the emergency response and preparedness guide (incident preparedness plan), the approval

of the department director who directs the particular plan would be required. Approval of the director assures inclusion of the measure. All business of the university is, of course, subject to oversight of the appropriate President Cabinet member.

State of MS hazard Mitigation Plan. Additionally, all the hazards profiled in the State of MS hazard mitigation Plan were considered and reviewed during the update. At each of the future annual review sessions, the State hazard mitigation plan will be again reviewed as part of the MUW hazard mitigation plan session reviews.

Lowndes County Comprehensive Emergency Management Plan (CEMP). The Lowndes County Emergency Management Plan has been reviewed and considered during the 2015 MUW hazard mitigation plan review as well as the Emergency Support Functions that are assigned to Lowndes County. The CEMP will be reviewed during each of the Annual MUW plan reviews.

Jurisdictional authorities, Policies, Programs, and Resources. This is not a multi-jurisdictional plan. The MUW is an independent Institution of Higher learning, operating under the rules and regulations, and bylaws of the Mississippi Institution of Higher Learnings. As such, the MUW has total autonomy to manage its resources within this framework. The existing authorities, policies, and programs of the MUW were evaluated and we ensure the ability to expand and improve their existing policies and programs. MUW Hazard mitigation and Emergency Management is a collaborative effort of all of the administration and management who come together to form our Crisis Action Team (CAT). The Members of the CAT was also members of the 2015 Hazard Mitigation Plan update review Team and therefore participated in the plan update and review. Each member of the Crisis Action team has a role to play in the University in carrying out its purpose, for instance the Facilities Manager, is the senior employee of our facilities Management Service provider (a contractor). The Facilities manager who is a CAT member is charged with managing the resources provided to not only maintain our facilities, but to also be available and able to participate, and mitigate our actions in our Hazard Mitigation plan through the daily actions of the facilities Management. Our Crisis Action Team Members are all senior members of the university with the authority to execute their responsibilities within the guidelines of their respective functions. Members of the Cat Team are University President, Senior VP for Administration and CFO, VP student Affairs, Provost, University Counsel, MSMS Executive Director, and Facilities Director. Chief of Police, CIO, Food Service Manager, Outsource director, project director, University Relations Director, Network Services director, Dean of Students, Procurement director, Human resources manager, Housing and Residence Life director, Energy Manager, Grounds Manager, Financial aid Director, and Others. The Mitigation requirements of this Plan are lead and directed by the Senior Vice President and CFO. Each of the members listed above are charged with carrying out their mitigation actions within the framework and resources of their office and functions

Continued Public Involvement

The public will be given the opportunity to participate in the ongoing process via notification by print and electronic means and public meetings. Future meetings that will involve evaluating and upgrading will be announced by email, press releases and public meetings open to the campus and surrounding areas. We will continue to solicit public participation. Announcements will also be placed on the MUW's DRU web site, found at http://muw.edu/vpfa/dru.html. The mitigation plan can be made available in digital or hard copy by request. A hard copy will be kept on file at MUW's Fant Memorial Library.

Supplemental Information

DRU Planning Team Meeting Agendas
DRU Planning Team Sign in Sheets
DRU Public Meeting Sign-In Sheets
DRU Public Viewing Sign-In Sheet
News Releases
Notice of Public Hearings/E-Mail Blast

Mississippi University for Women

Disaster Resistant University (DRU)
Planning Team Kick-off Meeting

1/27/2009
10 AM
Cochran Hall, Room 303

The mission of the DRU planning team is to identify potential hazards, critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

Community Members:
Cindy Lawrence, Lowndes Emergency Management
Joseph St. John, Columbus Police Department
Kenneth Moore, Columbus Fire Department
Becky Thomas, American Red Cross
Bob Boteler, Mississippi Emergency Management Agency
Bob Neal, Mississippi Institutions of Higher Learning
Bert Lind, Salvation Army
Peter Ridilla, Columbus Air Force Base
Travis Johnson, CAFB
Rodney Roberts, CAFB
Joe Higgins, Columbus LINK
Mark Hagan, Affiliate FM
Roger Bell, Columbus and Greenville Railway

MUW Members:
Nora Miller, Finance and Administration
Eric Daffron, PIE Council
Sherry Honsinger, Police Department
Perry Sansing, Assistant to the President
Sam Wise, Facilities
Larry Jones, Information Technology Services
Melanie Freeman, Human Resources
Carol Frazier, ADA Compliance
Gary Bouse, Institutional Advancement
James Denney, Sponsored Programs
Anika Perkins, Public Affairs
Cathy Young, Faculty Senate
Kristen Barnes, Student Government Association
Sirena Parker, Community Living
Amy Wallace, Health Center
Bill Winters, Mississippi School for Mathematics & Science
Angela Jones, Project Coordinator

Agenda

10:00 – 10:10	Welcome & Introductions	Angela Jones
10:10 – 10:20	Brief Overview	Nora Miller
10:20 – 10:40	Disaster Recovery Plan – The Human Factor	Mark C. Hagan, CFPS, Sr. Account Engineer, Affiliated FM
10:40 – 11:00	The Process and Advantages of Conducting Campus Hazard Mitigation Planning	Bob Neal, Emergency & Fire Safety Coordinator, Mississippi Institutions of Higher Learning
11:00 – 11: 15	Review Prioritized Hazard List, Identify Additional Potential Hazards & Questions	Worksheet 3; Feedback from Planning Team
11:15	Set Next Meeting & Adjourn	

Additional Information

Seven potential hazards that have affected Columbus, Lowndes County: Source: National Climatic Data Center

<u>This list, after review from the team, will be MUW's prioritized hazard list for the DRU plan</u>
Tornadoes – Jan. 10, 2008; Nov. 10, 2002; Oct. 12, 2001
Thunderstorm/Straight-line Winds –Oct. 7, 2008; Aug. 2, 2008; Feb. 24, 2007
Hurricanes –Aug. 29, 2005 Katrina; July 10, 2005 Dennis; Sept. 16, 2004 Ivan
Floods –Jan. 6, 2009; Feb. 2, 2004; April 21, 1995
Hail –Aug. 8, 2008; April 7, 2007; April 20, 2006
Winter/Ice Storms – Dec. 21, 2000, Jan. 27, 2000, Jan. 22, 1998
Lightning – Aug. 2, 2008, July 22, 2008, Nov. 14, 2007

NOTES: Please send any information concerning past hazards, cost estimates, maps, etc. to Angela Jones at ajones@vpfa.muw.edu. Please remember to sign the sign-in sheet. Thank you for your service.

MISSISSIPPI UNIVERSITY FOR WOMEN
Disaster Resistant University Planning Team Kick-off Meeting
Tuesday, January 27, 2009 @ 10 a.m., Cochran Hall, Room 303

NAME	ORGANIZATION	E-MAIL ADDRESS
E Daffron	MUW	edaffron@muw.edu
Sam Wise	MUW	Swise@oc.muw.edu
Sirena Parker	MUW- community living	sparker@ss.muw.edu
Sherry Honsinger	MUW Police Dept	shonsinger@pd.muw.edu
Lamar Peacock	MUW Police Dept.	lpeacock@pd.muw.edu
Cary A. Bouse	muw Institutional Adv.	gbouse@muw.edu
Anika M. Perkins	MUW Public Affairs	aperkins@pa.muw.edu
Pauline Redmond	TENN-TOM Chapter American Red Cross	curdart@yahoo.com
Melanie Freeman	MUW - Dir of H.R.	mfreeman@hr.muw.edu
Bill Winters	MSMS	bwinters.msms.k12.ms.us
Tracy Pharr	MEMA	tpharr@mema.ms.gov
Cindy Lawrence	Lowndes County EMA	Clawrence@bellsouth.net
Pete Ridilla, Lt Col	Columbus AFB	peter.ridilla@columbus.af.mil
Travis Johnson, 1Lt	CAFB	Travis.Johnson@Columbusaf.mil
Brandon Ward SSgt	CAFB EM	Brandon.Ward@Columbus.af.mil
Clinton McDaniel SSgt	CAFB Em	clinton.mcdaniel@columbusaf.mil
Carolyn McKinney	MEMA	cmckinney@mema.ms.gov
Bill PATRICK	MEMA	wpatrick@mema.ms.gov
Bob Neal	IHL	bneal@mississippi.edu
MARK HAGAN	AEM	see card
Angela Jones	MUW	ajmiller@upfa.muw.edu
Nora Miller	MUW	gjones@upfa.muw.edu

Mississippi University for Women

Disaster Resistant University (DRU) Planning Team Meeting

8/27/2009
9:30 AM
Cochran Hall, Room 303

The mission of the DRU planning team is to identify potential hazards, critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

Community Members:
Cindy Lawrence, Lowndes Emergency Management
Joseph St. John, Columbus Police Department
Kenneth Moore, Columbus Fire Department
Becky Thomas, American Red Cross
Bob Boteler, Mississippi Emergency Management Agency
Dr. Bob Neal, Mississippi Institutions of Higher Learning
Bert Lind, Salvation Army
Peter Ridilla, Columbus Air Force Base
Travis Johnson, CAFB
Rodney Roberts, CAFB
Joe Higgins, Columbus LINK
Mark Hagan, Affiliate FM
Roger Bell, Columbus and Greenville Railway

MUW Members:
Nora Miller, Finance and Administration
Dr. Eric Daffron, PIE Council
Sherry Honsinger, Police Department
Kennedy Meaders, Police Chief
Perry Sansing, Assistant to the President
Sam Wise, Facilities
Larry Jones, Information Technology Services
Melanie Freeman, Human Resources
Carol Frazier, ADA Compliance
Dr. Gary Bouse, Institutional Advancement
James Denney, Sponsored Programs
Anika Perkins, Public Affairs
Cathy Young, Faculty Senate
Kristen Barnes, Student Government Association
Sirena Parker, Community Living
Amy Wallace, Health Center
Bill Winters, Mississippi School for Mathematics & Science
Angela Jones, Project Coordinator

Agenda

9:30 – 9:40	Welcome	Nora Miller
9:40 – 10:10	Update on Progress	Angela Jones
	Review of Implementation Section	
	Set next meeting	

Additional Information

MUW's DRU website is http://muw.edu/vpfa/dru.html

Please feel free to send all suggestions to ajones@vpfa.muw.edu

MISSISSIPPI UNIVERSITY FOR WOMEN
Disaster Resistant University Planning Team Meeting
Thursday, August 27, 2009 @ 9:30 a.m., Cochran Hall, Room 303

NAME	ORGANIZATION	E-MAIL ADDRESS
James J Kennedy	MUW	JJDENNOY@VPAA.MUW.EDU
Melanie Freeman	MUW	mfreeman@hr.muw.edu
Lt Col Pete Ridilla	Columbus AFB	peter.ridilla@columbus.af.mil
Amy Wallace	Campus Health	AWallace@usersup.muw.edu
Kennedy Meaders	MUW P.D.	Kmeaders@pd.muw.edu
Larry Power	MUW	LPOWER@MUW.EDU
Sam Wise	MUW	SWise@oe.muw.edu
Cathy Young	MUW	cyoung@muw.edu
Sirena Parker	MUW	sparker@ss.muw.edu
Sherry Honsinger	MUW PD	shonsinger@pd.muw.edu
Edwards	MUW	edathm@muw.edu
Bill Winters	MS MS	Bwinters@msmskiz.com
Cindy Lawrence	Lowndes County EMA	clawrence@bellsouth.net
Angela Jones	MUW	ajones@vpfa.muw.edu
Nora Miller	MUW	nmiller@vpfa.muw.edu

Mississippi University for Women

Disaster Resistant University (DRU) Planning Team Meeting

9/15/2009
9:30 AM
Cochran Hall, Room 303

The mission of the DRU planning team is to identify potential hazards, critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

Community Members:
Cindy Lawrence, Lowndes Emergency Management
James Grant, Columbus Police Department
Kenneth Moore, Columbus Fire Department
Becky Thomas, American Red Cross
Bob Boteler, Mississippi Emergency Management Agency
Dr. Bob Neal, Mississippi Institutions of Higher Learning
Bert Lind, Salvation Army
Peter Ridilla, Columbus Air Force Base
Travis Johnson, CAFB
Rodney Roberts, CAFB
Joe Higgins, Columbus LINK
Mark Hagan, Affiliate FM
Roger Bell, Columbus and Greenville Railway

MUW Members:
Nora Miller, Finance and Administration
Dr. Eric Daffron, PIE Council
Sherry Honsinger, Police Department
Kennedy Meaders, Police Chief
Perry Sansing, Assistant to the President
Sam Wise, Facilities
Larry Jones, Information Technology Services
Melanie Freeman, Human Resources
Carol Frazier, ADA Compliance
Dr. Gary Bouse, Institutional Advancement
James Denney, Sponsored Programs
Anika Perkins, Public Affairs
Cathy Young, Faculty Senate
Kristen Barnes, Student Government Association
Sirena Parker, Community Living
Amy Wallace, Health Center
Bill Winters, Mississippi School for Mathematics & Science
Angela Jones, Project Coordinator

Agenda

9:30 – 9:40	Welcome	Angela Jones
9:40 –	Update on Progress	Angela Jones
	Upcoming Public Meetings*	
	Set next meeting	

Additional Information

MUW's DRU website is http://muw.edu/vpfa/dru.html

Please feel free to send all suggestions to ajones@vpfa.muw.edu

- *September public meetings will be Tuesday, Sept. 22, and Wednesday, September 23, Welty Board Room, 4 to 6 p.m.
- *October public meetings will be Tuesday, Oct. 6 and Wednesday, Oct. 7, Cochran Ballroom, 4 to 6 p.m.

MISSISSIPPI UNIVERSITY FOR WOMEN
Disaster Resistant University Planning Team Meeting
Tuesday, September 15, 2009 @ 9:30 a.m., Cochran Hall, Room 303

NAME	ORGANIZATION	E-MAIL ADDRESS
Sirena Parker	MUW community living	sparker@ss.muw.edu
Sam Wise	muw Facilities	swise@oe.muw.edu
James Grant	Columbus Police Dept	jgrant@columbusms.org
James Dennicy	muw Sponsored Programs	jdennicy@vpaa.muw.edu
Cindy Lawrence	Lowndes County EMA	Clawrence@bellsouth.net
Cathy Young	MUW Library	
[illegible]	PIE Council	
Bill Winters	MSMS	

Mississippi University for Women

Disaster Resistant University (DRU) Planning Team Meeting

10/6/2009
9:30 AM
Cochran Hall, Room 303

The mission of the DRU planning team is to identify potential hazards, critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

Community Members:
Cindy Lawrence, Lowndes Emergency Management
James Grant, Columbus Police Department
Kenneth Moore, Columbus Fire Department
Becky Thomas, American Red Cross
Bob Boteler, Mississippi Emergency Management Agency
Dr. Bob Neal, Mississippi Institutions of Higher Learning
Bert Lind, Salvation Army
Peter Ridilla, Columbus Air Force Base
Travis Johnson, CAFB
Rodney Roberts, CAFB
Joe Higgins, Columbus LINK
Roger Bell, Columbus and Greenville Railway

MUW Members:
Nora Miller, Finance and Administration
Dr. Eric Daffron, PIE Council
Sherry Honsinger, Police Department
Kennedy Meaders, Police Chief
Perry Sansing, Assistant to the President
Sam Wise, Facilities
Larry Jones, Information Technology Services
Melanie Freeman, Human Resources
Carol Frazier, ADA Compliance
Dr. Gary Bouse, Institutional Advancement
James Denney, Sponsored Programs
Anika Perkins, Public Affairs
Cathy Young, Faculty Senate
Kristen Barnes, Student Government Association
Sirena Parker, Community Living
Amy Wallace, Health Center
Bill Winters, Mississippi School for Mathematics & Science
Angela Jones, Project Coordinator

Agenda

9:30 – 9:40	Welcome	Angela Jones
9:40 –	Update on Progress	Angela Jones
	Upcoming Public Meetings*	
	Review and Finalize	

Additional Information

MUW's DRU website is http://muw.edu/vpfa/dru.html

Please feel free to send all suggestions to ajones@vpfa.muw.edu

- *October public meetings will be Tuesday, Oct. 6 and Wednesday, Oct. 7, Cochran Ballroom, 4 to 6 p.m.

MISSISSIPPI UNIVERSITY FOR WOMEN
Disaster Resistant University Planning Team Meeting
Tuesday, October 6, 2009 @ 9:30 a.m., Cochran Hall, Room 303

NAME	ORGANIZATION	E-MAIL ADDRESS
Angela Jones	MUW	
James Dennis	MUW	
Bill Winters	MSMS	
Sirena Parker	MUW	
Brandon Newsome	SGA (MUW)	
SSgt Brandon Ward	CAFB EM	brandon.ward.1@us.af.mil
SSgt Clinton McDaniel	CAFB EM	clinton.mcdaniel@us.af.mil
Cindy Lawrence	Lowndes County EMA	Clawrence@kellsouth.net
Sherry Honsinger	MUW	shonsinger@pd.muw.edu
Kenneth E. Meaders	MUW	Kmeaders@pd.muw.edu
Cathy Young	MUW	cyoung@muw.edu

MUW PUBLIC HEARINGS SIGN-IN SHEETS (4)

MISSISSIPPI UNIVERSITY FOR WOMEN
Hazard Mitigation Plan Public Hearing Meeting
Tuesday, September 22, 2009
Welty Board Room, 4 to 6 p.m.

NAME	ORGANIZATION	E-MAIL ADDRESS
Angela Jones	MUW	
James Dennery	MUW	JDENNEY@VPAA.MUW.EDU
Lora Miller	MUW	lmiller@muw.edu
Rodie Cunningham	MUW	rodiec@VPFA.muw.edu
Sandra Darnell	MUW	sdarnell@pres.muw.edu
Jo O'Bryant	MUW	jobryant@pres.muw.edu
Juanita Hicks	MUW	JHicks@vpaa.MUW.edu
Hal E. Jenkins, II	MUW	hjenkins@ehhs.muw.edu

MISSISSIPPI UNIVERSITY FOR WOMEN
Hazard Mitigation Plan Public Hearing Meeting
Wednesday, September 23, 2009
Welty Board Room, 4 to 6 p.m.

NAME	ORGANIZATION	E-MAIL ADDRESS
Gail P. Gunter	MUW	ggunter@muw.edu
Tonya Moak	MUW	tmoak@muw.edu
Susan Sobley	MUW	ssobley@muw.edu
Cindy Hudson	MUW	chudson@muw.edu
Cathy S. Young	MUW	cyoung@muw.edu
Tiffany Winter	MUW	twinter@Comptroller.muw.edu
Rachel Suddeth	MUW	rsuddeth@comptroller.muw.edu
James Denney	MUW	Jdenney@vpaa-muw.edu
Tammy Godfrey	MUW	tgodfrey@muw.edu
Angela Jones	MUW	

MISSISSIPPI UNIVERSITY FOR WOMEN
Hazard Mitigation Plan Public Hearing Meeting
Tuesday, October 6, 2009
Cochran Hall Ballroom, 4 to 6 p.m.

NAME	ORGANIZATION	E-MAIL ADDRESS
Amy Wallace	Complex Health Mgmt	AWallace@nsgslp.muw.edu
Betsy Matthews	Nursing Program	bmatthews@nsgslp.muw.edu
James Denney	muw	JDENNEY@vpaa.muw.edu
Sandra B. Darnell	MUW	Sdarnell@muw.edu
Leander Williams Jr.	MUW Student	ldw2@muw.edu
Nicole Aranda	Community Living	
Amanda Williams	Student Life	
Amy Edwards	Career Service	
[illegible]		
Brandon Newsome	SGA	bsn@muw.edu
Angela Jones	MUW	
Homer W. [illegible]	MUW	

MISSISSIPPI UNIVERSITY FOR WOMEN
Hazard Mitigation Plan Public Hearing Meeting
Wednesday, October 7, 2009
Cochran Hall Ballroom, 4 to 6 p.m.

NAME	ORGANIZATION	E-MAIL ADDRESS
Cynthia Cunningham	uDevelopment	CCunningham@dev.muw
Lynda Keel	uDevelopment	lkeel@dev.muw.edu
Chris Tabler	MUW Student	CT11@muw.edu
Danielle Thompson	MUW Student	sdt1@muw.edu
Brittany Love	MUW Student	bsl@muw.edu
LeAnn Alexander	MUW Student	
Lesly Griffin	MUW Student	lwg@muw.edu
Samantha Collins	MUW Student	smc3@muw.edu
Nuelle Auenmerg	MUW Student	ana1@muw.edu
Ryan Sims	MUW Student	ras1@muw.edu
Tameta Reymolds	MUW Student	tsr@muw.edu
Angela Smith	MUW Student	ads2@muw.edu
Rebekah Groman	MUW Student	rlg3@muw.edu

DRU PUBLIC SIGN-IN SHEET FROM CAMPUS LIBRARY

MISSISSIPPI UNIVERSITY FOR WOMEN
MUW's Hazard Mitigation Public Viewing
Fant Memorial Library

NAME	ORGANIZATION	E-MAIL ADDRESS
Sherry Harper	MUW Library	sharper@muw.edu
Allison Bennette	MUW Library	akb@muw.edu
Marty Brock	CTE	mbrock@muw.edu
Nancy Wheeley	Fant Library	nwheeley@muw.edu
[illegible]	Fant Library	abluitt@muw.edu
Betty K. Fugitt	Fant Library	bfugitt@muw.edu
JoBetty Hamlett	Library	jhamlett@muw.edu
Robin Halleman	Library	rhalleman@muw.Edu

Mississippi University for Women

MUW Office of Public Affairs | Alumni Affairs | Development | Public Affairs

Public Affairs - Press Release

News Releases

Latest News Releases

Recent Accomplishments

News Archives

FOR IMMEDIATE RELEASE
March 5, 2009
Contact: Anika Mitchell Perkins
(662) 329-7124
aperkins@pa.muw.edu

MUW begins disaster planning effort

COLUMBUS, Miss. - Efforts are under way at Mississippi University for Women to make the campus safer from natural and man-made hazards.

The Disaster Resistant University (DRU) Planning Team is in the process of identifying, ranking and profiling risks that could affect the university. The Federal Emergency Management Agency (FEMA) requires each plan to identify the following hazards: earthquake, dam failure, drought, flood, hurricane, tornado and wildfire.

"In identifying hazards, we have to look at the historical review of hazards that have occurred on campus as well as those that could happen and cause the greatest amount of destruction and potential loss of life while estimating monetary losses," said Angela Jones, project coordinator and MUW assistant to the vice president for finance and administration.

She added, "The ultimate goal is a safer campus. This is an in-depth process that will be done in phases and will include public input. The mayor and board of supervisors are aware of this project and will be updated as it progresses. Once the plan is completed, it will be monitored and updated."

The DRU Planning Team is composed of a cross-section of university staff, city government representatives, community organizations, Columbus Air Force Base personnel, IHL and MEMA officials and Affiliated FM, the university's property insurance carrier. The team provides guidance and advice in order to complete the plan and will continue to provide communication to ensure continuing mitigation work into the future.

Nora Miller, project chair and MUW vice president for finance and administration, said, MUW looks forward to the development of this plan which is a collaborative effort. This process also will help us identify future mitigation efforts for the university to pursue."

In 2002, the United States Department of Homeland Security initiated the program. Administered by the Mississippi Emergency Management Agency (MEMA), the DRU Program assists universities and colleges to implement a sustained pre-disaster hazard mitigation program to reduce risk to students, faculty, staff, facilities and research assets.

Last year, the Mississippi Institutions of Higher Learning, Office of Risk Management, entered into a contract with MEMA to produce hazard mitigation plans on all campuses. Funding is provided through a grant to IHL by MEMA.

Mississippi University for Women Office of Public Affairs
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aperkins@muw.edu

News Releases
Latest News Releases
Recent Accomplishments
News Archives

FOR IMMEDIATE RELEASE
Aug. 21, 2009

MUW at halfway mark on disaster plan

COLUMBUS, Miss. -- MUW has completed phases 1 and 2 of the Disaster Resistant University (DRU) plan as the DRU planning team has identified and ranked hazards that could affect the university.

The team also has assessed the vulnerability of each hazard and identified critical structures and buildings on campus. Loss estimations are complete as well.

Phase 3 of the plan is developing the mitigation plan. The planning team has ranked mitigation actions to come up with a list of actions to implement. The next step is to prioritize the implementation of these actions. In order to ensure this plan is comprehensive, input is sought from the university community as well as the public. A draft of the plan along with other information can be found at the university's DRU website at http://muw.edu/vpfa/dru.html. You may also go to the Finance and Administration page and click on the DRU link. A series of public meetings will be scheduled and announced over the next couple of months.

In 2002, the United States Department of Homeland Security initiated the program. Administered by the Mississippi Emergency Management Agency (MEMA), the DRU Program assists universities and colleges to implement a sustained pre-disaster hazard mitigation program to reduce the overall risk to students, faculty, staff, facilities, surrounding community and research assets. The ultimate goal is simply a safer university. Upon a positive review by the MEMA and FEMA, MUW will qualify for pre-disaster financial assistance to help initiate the mitigation actions outlined in the plan.

The DRU planning team is composed of a cross-section of university staff, representatives from city government, community organizations, Columbus Air Force Base, the Mississippi Institutions of Higher Learning (IHL), MEMA and Affiliated FM, commercial property insurance specialists. The team serves as the overall guiding organization for the development of the mitigation plan. The mission of the DRU planning team is to identify potential hazards (natural and man-made), critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

Last year, the IHL Office of Risk Management, entered into a contract with MEMA to produce hazard mitigation plans on all campuses. Funding is provided through a grant to IHL by MEMA. The Federal Emergency Management Agency (FEMA) requires each plan to identify the following hazards: earthquake, dam failure,

drought, flood, hurricane, tornado and wildfire. Man-made hazards are included in the plan as well.

The mayor's office and the Board of Supervisors have been mailed a draft of the plan in order to stay abreast of this project. After the plan is implemented it will have to be adopted, monitored and updated, which is the final phase of the project.

"Once the plan is complete, the university will have a comprehensive disaster plan in place. We would like to think we'd never have to use it, but as we know it's better to have it and not need it than the need it and not have it," said Angela Jones, project coordinator and MUW assistant to the vice president for finance and administration. "I would like to thank the entire DRU planning team because this has been a major undertaking but with their guidance and feedback, piece by piece it's coming together."

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Mississippi University for Women

MUW Office of Public Affairs | Alumni Affairs | Development | Public Affairs

Public Affairs - Press Release

News Releases

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FOR IMMEDIATE RELEASE
Sept. 15, 2009

MUW includes public in DRU process

COLUMBUS, Miss. – Mississippi University for Women will hold public meetings as it nears the completion of its Disaster Resistant University (DRU) process.

The come-and-go meetings are scheduled for Sept. 22 & 23 in Welty Board Room and for Oct. 6 & 7 in Cochran Hall Ballroom. The time for all meetings is from 4 to 6 p.m. These meetings will allow the community a chance to offer feedback on the university's DRU plan, which can be found at http://muw.edu/vpfa/dru.html.

"These public meetings are informal but they allow those interested in the process a chance to ask questions and allow for feedback as well," said Angela Jones, project coordinator.

The DRU planning team, composed of a cross-section of university staff, representatives from city government, community organizations, Columbus Air Force Base (CAFB), IHL, MEMA and Affiliated FM, commercial property insurance specialists, has identified potential hazards (natural and man-made), critical assets and resources that will minimize vulnerabilities to the university while estimating monetary losses that could incur due to these hazards. More recently the team has ranked mitigation actions and prioritized the implementation of these actions.

In 2002, the United States Department of Homeland Security initiated the program. Administered by the Mississippi Emergency Management Agency (MEMA), the DRU Program assists universities and colleges to implement a sustained pre-disaster hazard mitigation program to reduce the overall risk to students, faculty, staff, facilities, surrounding community and research assets. The ultimate goal is simply a safer university.

Once the plan is complete, it will be forwarded to MEMA and FEMA for review. Upon a positive review by these agencies, MUW will qualify for pre-disaster financial assistance to help initiate the mitigation actions outlined in the plan. The final phase of the plan includes implementation, adoption, monitoring and revising.

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FOR IMMEDIATE RELEASE
Oct. 9, 2009

MUW nears completion of DRU process, continues to seek public input

COLUMBUS, Miss. – Mississippi University for Women is still seeking public input as it enters the final phases of its Disaster Resistant University (DRU) process.

Recently, four public meetings were held on campus that allowed campus and community members a chance to ask questions and/or provide feedback on the university's disaster plan. A draft copy of the plan can still be viewed at the Memorial Fant Library on the MUW campus until Thursday, Oct. 22, 2009. A signature sheet will be available as well. The plan is also on the university's DRU website at http://muw.edu/vpfa/dru.html.

"Gail Gunter, dean of libraries, came up with the idea of a public viewing/signing," said Angela Jones, project coordinator. "She thought it would provide one more way to reach the public and I am appreciative to her for that.

In 2002, the United States Department of Homeland Security initiated the program. Administered by the Mississippi Emergency Management Agency (MEMA), the DRU Program assists universities and colleges to implement a sustained pre-disaster hazard mitigation program to reduce the overall risk to students, faculty, staff, facilities, surrounding community and research assets. The ultimate goal is simply a safer university.

"I appreciate the DRU Planning team for their assistance and guidance during the entire process. Because of their work, MUW now has a disaster plan." Jones added.

Once the plan is complete, it will be forwarded to MEMA and FEMA for review. Upon a positive review by these agencies, MUW will qualify for pre-disaster financial assistance to help initiate the mitigation actions outlined in the plan. The final phase of the plan includes implementation, adoption, monitoring and revising.

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Disaster Resistant University Project at Mississippi University for Women

Project Background

In 2002, the United States Department of Homeland Security's Federal Emergency Management Agency (FEMA) initiated the Disaster Resistant University Program. Administered by Mississippi Emergency Management Agency (MEMA), the DRU Program assists universities and colleges to implement a sustained pre-disaster hazard mitigation program to reduce risk to students, faculty, staff, facilities and research assets. On March 27, 2008, the Mississippi Institutions of Higher Learning, Office of Risk Management, entered into a contract with MEMA to produce hazard mitigation plans on all campuses, with the exception of the University of Mississippi, who already has one. MUW was notified of the DRU award in a letter dated April 4, 2008 from Mississippi Institutions of Higher Learning's Office of Insurance and Risk Management; however the grant, in the amount of $84,600 (95%/5%) was not signed by IHL until October 20, 2008. The contract requires the plan to be completed and approved by MEMA and FEMA no later than March 20, 2010.

Project Summary

On April 4, 2008, Mississippi Institutions of Higher Learning notified MUW that the University had been approved for a multi-jurisdiction Disaster Resistant University (DRU) grant as announced by FEMA in the amount of $80,370 (95%/5%). The funding from this grant will finance 95% of the cost of assembling the hazard mitigation project. MUW will provide a matching commitment of $4,230 for a total of $84,600. The goal of the project is to produce and implement a sustained pre-disaster natural hazard mitigation plan for MUW to reduce the overall risk to students, faculty, and staff, surrounding community, facilities and research assets. The ultimate goal is simply a safer university. Upon a positive review by the MEMA and FEMA, MUW will qualify for pre-disaster financial assistance to help initiate the mitigation actions outlined in the plan.

DRU Planning Team

The DRU planning team is composed of a cross-section of University staff, representatives from city government, community organizations, Columbus Air Force Base (CAFB), IHL, MEMA and Affiliated FM, commercial property insurance specialists. The DRU planning team provides guidance and advice in order to complete the plan and will continue to provide communication to ensure continuing mitigation work into the future. The team serves as the overall guiding organization for the development of the mitigation plan. All members are allowed direct input into the process of the plan. As each phase of the plan is completed, each member is given a chance to review the plan and offer feedback. The DRU planning team also provides overall guidance and assistance in the locating data specific to the University. Individual members of the team are involved throughout the planning process.

The mission of the DRU planning team is to identify potential hazards (natural and man-made), critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

MUW's DRU Planning Team	
Community Members	**Organization**
Cindy Lawrence	Lowndes County Emergency Management
Joseph St. John	Columbus Police Department
Kenneth Moore	Columbus Fire Department
Pauline Redmond	American Red Cross
Bill Patrick	Mississippi Emergency Management Agency (MEMA)
Tracy Pharr	MEMA
Cynthia McKinney	MEMA

Dr. Bob Neal	Mississippi Institutions of Higher Learning
Bert Lind	Salvation Army
Peter Ridilla	Columbus Air Force Base, CAFB
Travis Johnson	CAFB
Rodney Roberts	CAFB
Brandon Ward	CAFB
Clinton McDaniel	CAFB
Joe Higgins	Columbus LINK
Roger Bell	Columbus and Greenville Railway
MUW Members:	**Department**
Nora Miller	Project Chair & VP for Finance and Administration
Dr. Eric Daffron	Planning and Institutional Effectiveness Council
Sherry Honsinger	Police Department
Perry Sansing	Assistant to the President
Kennedy Meaders	Police Department
Sam Wise	Facilities Management
Larry Jones	Information Technology Services
Melanie Freeman	Human Resources
Carol Frazier	ADA Compliance
Dr. Gary Bouse	Institutional Advancement
James Denney	Sponsored Programs
Anika Perkins	Public Affairs
Cathy Young	Faculty Senate
Kristen Barnes	Student Government Association
Sirena Parker	Community Living
Amy Wallace	Health Center
Bill Winters	Mississippi School for Mathematics & Science
Angela Jones	Project Coordinator

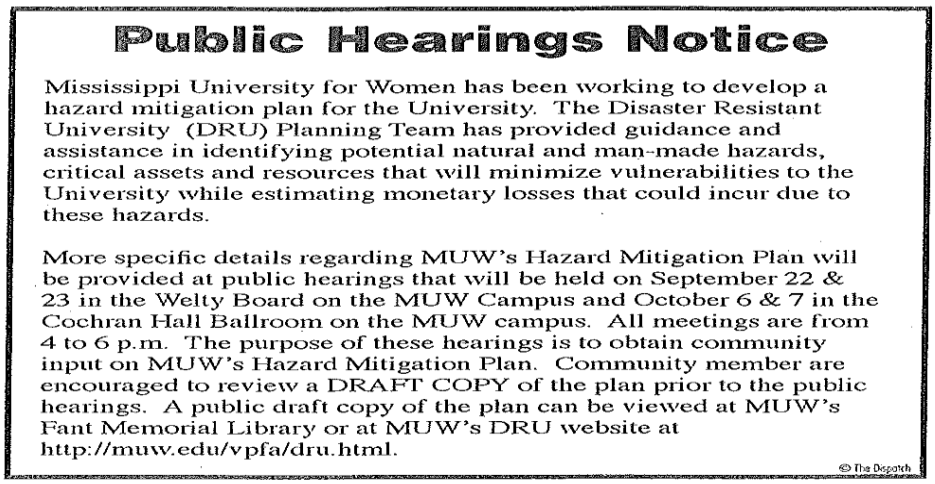
DRU Phases & Progress

The DRU plan is divided into four phases:
Phase 1 – Organize Resources
Phase 2 – Hazard Identification and Risk Assessment
Phase 3 – Developing the Mitigation Plan
Phase 4 – Adoption and Implementation

MUW has completed phases 1 and 2 of the plan as the DRU planning team has identified and ranked hazards that could affect the university. The team has also assessed the vulnerability of each hazard and identified critical structures and buildings on campus. Loss estimations are complete as well. We are currently in phase 3 which is developing the mitigation plan. The planning team has ranked mitigation actions to come up with a list of actions to implement. In order to ensure this plan is comprehensive, we will continue to seek input from the university community as well as the public through meetings and by the university's DRU website which can be found at http://muw.edu/vpfa/dru.html. You may also go to the Finance and Administration page and click on the DRU project link.

The Mayor's office and the Board of Supervisors have been mailed a draft of the plan in order to stay abreast of this project. Upon completion of phase 3, the plan will have to be adopted, implemented, monitored and evaluated.

DRU PUBLIC HEARINGS AD/E-MAIL BLAST



Public Hearings Notice

Mississippi University for Women has been working to develop a hazard mitigation plan for the University. The Disaster Resistant University (DRU) Planning Team has provided guidance and assistance in identifying potential natural and man-made hazards, critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

More specific details regarding MUW's Hazard Mitigation Plan will be provided at public hearings that will be held on September 22 & 23 in the Welty Board on the MUW Campus and October 6 & 7 in the Cochran Hall Ballroom on the MUW campus. All meetings are from 4 to 6 p.m. The purpose of these hearings is to obtain community input on MUW's Hazard Mitigation Plan. Community member are encouraged to review a DRAFT COPY of the plan prior to the public hearings. A public draft copy of the plan can be viewed at MUW's Fant Memorial Library or at MUW's DRU website at http://muw.edu/vpfa/dru.html.

FIRST OF 3 E-MAIL BLASTS SENT TO CAMPUS

MUW has been working to develop a hazard mitigation plan for the University. The Disaster Resistant University (DRU) Planning Team has provided guidance and assistance in identifying potential natural and Man-made hazards, critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

More specific details regarding MUW's Hazard Mitigation Plan will be provided at public meetings that will be held tomorrow, Sept. 22 and Wednesday in the Welty Board and October 6 & 7 in Cochran Hall Ballroom. All meetings are from 4 to 6 p.m. The purpose of these meeting is to obtain campus and community input on MUW's Hazard Mitigation Plan. Campus and community members are encouraged to review a DRAFT COPY of the plan prior to attending the public hearings. A draft copy of the Plan can be viewed at MUW's DRU website at http://muw.edu/vpfa/dru.html. A copy is also available at the library.

5 year Plan update Supplemental Information.

Update Planning Team Kick-off meeting Agenda/Sign-In Sheet of June 2, 2015

Update Planning Team Meeting Agenda/Sign-In Sheet (2) of Jul 2, 2015

Press Releases
- Update release of May 20th, 2015
- Update press release of July 28, 2015

Letters
- Letter to Board of Supervisor of June 19, 2015
- Letter to the Mayor, City of Columbus, of June 19, 2015.

Public Hearing Meetings
- Update Public Hearing Meeting Sign-In Sheet (1)
- Update Hearing Meeting Sign-In Sheet (2)

Emails
- Notification to Mitigation team of Hearings
- Notification to MUW Employees of Hearings

Larry Taylor larry.taylor@atmosenergy.com

MUW's DRU/Hazard Mitigation Planning Team Meeting June 2, 2015	
Community Members	**Organization**
Cindy Lawrence	Lowndes County Emergency Management
Martin Andrews	Columbus Fire Department
Sandy Patrick/Patty Tucker	American Red Cross
Bill Patrick	Mississippi Emergency Management Agency (MEMA)
Tracy Pharr	MEMA
Carolyn McKinney	MEMA
Glynn Babb	Mississippi Institutions of Higher Learning
MAJs Alan and Cheryl Phillips	Salvation Army
Joe Higgins	Columbus LINK
Mitch Cockrell	Patriot Rail Corp/GTRA
Michael Byrd	Burlington Santa Fe
Mike Arledge	Sheriff, Lowndes County
Tony Carleton	Police Chief, City of Columbus
Ralph Billingsley	Administrator, Lowndes County
Marcus Rushing	Columbus Light and Water
~~Patrick Hyde~~	Atmos Energy Services
Christopher Tarantino	Columbus Air Force Base DPO
MUW Members:	**Department**
Nora Miller	Chair & Sr. VP for Admin./Chief Financial Officer
Dr. Marty Hatton	Associate VP for Academic Affairs
Sherry Honsinger	Police Department
Karen Clay	General Counsel
Mary Slater	Police Department
Dewey Blansett	Facilities Management
Rodney Godfrey	Information Technology Services
Melanie Freeman	Human Resources
James Denney	Sponsored Programs
Anika Perkins	Public Affairs
Dr. Royal Toy	Faculty Senate
Quincy Hughes, SA President	Student Government Association
Andrew Money Maker (H&RL Dir (P)	Housing an d residence Life
Eva Black	Campus Health Center
Tara Sullivan	College of NSLP
Irene Pintado	College of EDHS
Dr. Tom Velek	College of A&S
Scott Tollison	College of B&PS
Walter Clay	Mississippi School for Mathematics & Science
Jim Jones	Project Coordinator/Principal Investigator

Please initial by your name.

LARRY PITRE ATMOS

John Mooney john.mooney@atmosenergy.com

Lt Christopher Valencia CAFB EM
Christopher.valencia.3@us.af.mil

Mississippi University for Women

DR-HMGP-MS-0002 MUW Hazard Mitigation Plan Update

Hazard Mitigation Planning Team Meeting, June 2, 2PM

Agenda

Welcome by the Chairperson	Ms. Nora Miller, Senior VP for MUW and Chief Financial Officer
Discussion of Program and Program Objectives	See attached Press release
Discussion of planning team members	See attached List of Members
Plan of Action and Milestones (POAM)	See attached POAM
Review of Risk	See attached
Open Discussion of related issues	
Meeting Adjournment	

FOR IMMEDIATE RELEASE
May 20, 2015
Contact: Anika Mitchell Perkins
(662) 329-7124
amperkins@muw.edu

The W prepares to update its Hazard Mitigation Plan

COLUMBUS, Miss. – Mississippi University for Women will soon begin the work to update its Hazard Mitigation Plan with a series of meetings, starting Tuesday, June 2 at 2 p.m. in Cochran Hall, Room 305.

The goal of the plan is to make the campus safer from natural and man-made hazards.

About five years ago, The W undertook the task of developing a Hazard Mitigation Plan that led to it being proclaimed a Disaster Resistant University (DRU).

"Basically, this means we have a plan to mitigate hazards and are eligible for federal funds through the Mississippi Emergency Management Agency and the Federal Emergency Management Agency when they are available," explained Jim Jones, project director for campus planning.

With the update, the university will continue to work toward a safer campus and maintain eligibility for mitigation grants from the state and federal government. The plan update is funded by the Mississippi Emergency Management Mitigation Program with a matching share coming from The W.

The Hazard Mitigation Planning team will consist of a cross-section of university staff, city and county government representatives, Institutions of Higher Learning officials and MEMA officials. Nora Miller, The W's senior vice president and chief financial officer, will chair the committee with Jones' assistance.

As the university nears the completion of its Disaster Resistant University (DRU) process, it will hold informal public meetings to allow the community a chance to offer feedback.

Once the plan is complete, it will be forwarded to MEMA and FEMA for review. Upon a positive review by these agencies, The W will qualify for pre-disaster financial assistance to help initiate the mitigation actions outlined in the plan. The final phase of the plan includes implementation, adoption, monitoring and revising. The plan is updated every five years.

The mission of the DRU planning team is to identify, review and update potential hazards (natural and man-made), critical assets and resources that will minimize vulnerabilities to the University while estimating monetary losses that could incur due to these hazards.

Table 1 - MUW's DRU Planning Team	
Community Members	**Organization**
Cindy Lawrence	Lowndes County Emergency Management
Martin Andrews	Columbus Fire Department
Sandy Patrick/Patty Tucker	American Red Cross
Bill Patrick	Mississippi Emergency Management Agency (MEMA)
Tracy Pharr	MEMA
Carolyn McKinney	MEMA
Glynn Babb	Mississippi Institutions of Higher Learning
MAJs Alan and Cheryl Phillips	Salvation Army
Joe Higgins	Columbus LINK
Mitch Cockrell	Patriot Rail Corp/GTRA
Michael Byrd	Burlington Santa Fe
Mike Arledge	Sheriff, Lowndes County
Tony Carleton	Police Chief, City of Columbus
Ralph Billingsley	Administrator, Lowndes County
Marcus Rushing	Columbus Light and Water
Patrick Hyde	Atmos Energy Services
Christopher Tarantino	Columbus Air Force Base DPO
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Nora Miller	Chair & Sr. VP for Admin./Chief Financial Officer
Dr. Marty Hatton	Associate VP for Academic Affairs
Sherry Honsinger	Police Department
Karen Clay	General Counsel
Mary Slater	Police Department
Dewey Blansett	Facilities Management
Rodney Godfrey	Information Technology Services
Melanie Freeman	Human Resources
James Denney	Sponsored Programs
Anika Perkins	Public Affairs
Dr. Royal Toy	Faculty Senate
Quincy Hughes, SA President	Student Government Association
Andrew Money Maker (H&RL Dir (P)	Housing an d residence Life
Eva Black	Campus Health Center
Tara Sullivan	College of NSLP
Irene Pintado	College of EDHS
Dr Tom Velek	College of A&S
Scott Tollison	College of B&PS
Walter Clay	Mississippi School for Mathematics & Science
Jim Jones	Project Coordinator/Principal Investigator

Plan of Action and milestones

Mississippi University for Women

DR-HMGP-MS-0002 MUW Hazard Mitigation Plan Update

Grant approval	Jan 29, 2015
Kickoff Meeting with MEMA	April 9, 2015
Advisory Committee Meeting (MUW Cabinet)	April 24, 2015
Hazard Mitigation Planning Team Meeting	Jun 2, 2015
Communication Plan development (University relations)	June 15, 2015
Hazard Mitigation Plan review/comment by DRU Planning Committee	Jun 30, 2015
Hazard Mitigation Planning Team 2nd Meeting (2pm, Cochran 303)	Jul 1, 2015
MUW Cabinet review/comment Incorporation.	Jul 15, 2015
Plan update Draft	Jul 25, 2015
Public review and 3rd Planning Team Meeting, (Location TBD)	Jul 31, 2015
Incorporate Public meeting comments and revise	Aug 15, 2014
MEMA review and Comment.	Sep 15, 2015
Incorporate MEMA review Comments	Oct 1, 2015
FEMA review and Approval.	Oct 30, 2015

Review of Risk associated with university Hazards. 10/1/2014

New Hazards

Workplace violence - defined as any act or threat of physical violence, harassment, intimidation, or other threatening disruptive behavior that occurs at the work site. It ranges from threats and verbal abuse to physical assaults and even homicide. It can affect and involve employees, clients, customers and visitors.

Medium Risk/likely occurrence *Medium Mitigation Priority*

Threat/violence – disruptive behavior of an individual that interrupts Campus Life

High risk/likely occurrence *High mitigation priority*

Change to existing Hazards

Civil disturbance - High risk/likely occurrence

Computer Crime or attack - high risk/likely occurrence and high mitigation Priority

Hail – High risk/likely Occurrence

Lightning - High risk/likely Occurrence

Loss of Lifelines - High risk/likely Occurrence

Hazardous Material incidents/Chemical - Spills Medium Priority.

Table 2 – List of Hazards Considered			
Hazard	**Accept Hazard**	**Risk/Likely Occurrence Low, Medium, High**	**Mitigation Priority Low, Medium , High**
Avalanche	No	N/A	N/A
Civil Disturbance	Yes	~~Medium~~High	Medium
Coastal Erosion/Storm	No	N/A	N/A
Computer Crime or Attack	Yes	~~Medium~~High	~~Medium~~High
Dam Failure	Yes	Low	Low
Disease (Epidemic or otherwise)	Yes	Medium	Medium
Drought	Yes	Low	Low
Earthquake	Yes	Low	Low
Expansive Soils	No	N/A	N/A
Explosive Devices	Yes	Medium	Medium
Explosions	Yes	Medium	Medium
Extreme Heat	Yes	High	Medium
Fire/Arson	Yes	High	Medium
Flooding	Yes	High	High
Hail	Yes	~~Medium~~High	Medium
Hazardous Material Incidents/Chemical Spills	Yes	Medium	~~Low~~Medium
Hurricanes and Tropical Storms	Yes	Medium	High
Landslides and Subsidence	No		
Lightning	Yes	~~Medium~~High	Medium
Loss of Lifelines (Utilities)	Yes	~~Medium~~ High	Medium
Nuclear Power Plant Emergency	No	N/A	N/A
Radiological Accident	No	N/A	N/A
Straight-line winds	Yes	High	High
Terrorist Acts	Yes	Low	Medium
Threat/Violence	Yes	High	High
Tornado	Yes	High	High
Transportation Accidents	Yes	Medium	Medium
Tsunami	No	N/A	N/A
Volcano	No	N/A	N/A
Water/Food Contamination	Yes	Low	Low
Work Place Violence	Yes	Medium	Medium
Wildfire	Yes	Low	Low
Windstorm	Yes	High	High
Winter Storm	Yes	High	High

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During the hazard identification process it was determined that because of geographic location of MUW, some hazards such as avalanche, coastal erosion/storm, tsunami and volcano were immediately rejected as they pose no threat to the university. Other hazards such as expansive soils, landslides, land subsidence, nuclear power plant, and radiological accident were ruled out because of no or very little occurrence in the past and/or the low likelihood of that hazard happening on campus. Therefore no further discussion of these hazards is needed for this mitigation plan. However, this does not prevent these hazards from being included in future updates if necessary. During this process it was discovered that some hazards were closely related

to others and since the mitigation actions would be the same, these hazards could be bundled. Therefore a second, narrowed-down list of hazards was e-mailed to MUW team members for review and input. This would determine the final list that would be emailed to all team members on March 3, 2009.

While MUW is vulnerable to a wide array of natural and man-made disasters, for purposes of this plan we had to keep in mind that we were looking at a historical review of hazards that have occurred on campus as well as those that could happen and cause the greatest amount of destruction and potential loss of life. After receiving feedback from all team members, reviewing news articles, National Oceanic & Atmospheric Administration (NOAA) weather/damage reports, university history (news releases, publications), MEMA disaster declarations and the county mitigation plan, it was decided the following hazards pose the greatest threat to MUW. However, this does not prevent omitted hazards from being included in future updates if necessary. But for the purpose of this plan the hazards profiled are in Table 3 and have been broken divided into 2 categories: natural and man-made which includes accidental and medical. There is no significance to the order of their appearance.

Table 3 - Hazards Profiled

Natural Hazards	Risk Rank
Dam Failure	Low
Drought/Extreme Heat	High
Earthquake	Medium
Flooding	Medium
Hail	High
Hurricanes and Tropical Storms	Medium
Lightning	Medium
Tornado/Straight-line winds/Windstorm	High
Wildfire	Low
Winter Storm	Medium
Man-Made Hazards/Accidental/Medical	
Civil Disturbance	Low
Computer Crime or Attack	Medium
Disease (Epidemic or otherwise)	Medium
Fire/Arson	Medium
Loss of Lifelines (Utilities)	Medium
Terrorist Acts/Explosive Devices	Medium
Transportation Accidents/ Explosions/HazMat/ Chemical Spills	High
Water/Food Contamination	Medium

Profiles of Hazards of Concern to the University

The hazards described below represent those considered to be the greatest concern/threat to MUW. Natural hazards are discussed first, followed by man-made hazards. The intent of this section is to develop characteristics of the hazards that will have the potential to damage structures on campus and/or inflict injuries to the students, faculty, staff or visitors. Many of the hazards discussed below have relied heavily on information produced by the NOAA National Climatic Data Center (NCDC) . Supplemental sources include records maintained by MUW, county mitigation plan, newspaper articles, other internet sources, and individuals. These profiles use numerous technical and non-technical information. For easier reference, sources are listed throughout the plan.

Mississippi University for Women

DR-HMGP-MS-0002 MUW Hazard Mitigation Plan Update

Hazard Mitigation Planning Team Meeting, Jul 1, 2 p.m.

Agenda

Welcome by the Chairperson	Ms. Nora Miller, Senior VP for MUW and Chief Financial Officer
Discussion of review and update Status	See attached POAM
The current and reviewed plan may be found at http://www.muw.edu/admin/dru (after Jul 1)	
Review of Risk changes and Additions	See handouts
Open Discussion of related issues	
Meeting Adjournment	

Plan of Action and milestones

Mississippi University for Women

DR-HMGP-MS-0002 MUW Hazard Mitigation Plan Update

Grant approval	Jan 29, 2015
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MEMA review and Comment.	Sep 15, 2015
Incorporate MEMA review Comments	Oct 1, 2015
FEMA review and Approval.	Oct 30, 2015

The W Mississippi University for Women
A Tradition of Excellence for Women and Men

Office of the President
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(662) 329-7297 Fax

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June 19, 2015

Mayor Robert Smith
City of Columbus
523 Main Street
Columbus, MS 39701

Dear Mayor Smith,

As you know, in the last decade, disasters have affected university and college campuses and their surrounding communities with high frequency. They sometimes impose injury and always impose monetary losses and disruption of the institution's teaching, research and public service. Damage to buildings and infrastructure as well as interruptions to the institutional mission result in significant losses that can be measured by faculty and student departures, decreases in research funding and increases in insurance premiums. These losses can be substantially reduced or possibly eliminated through comprehensive pre-disaster planning and mitigation actions.

In 2002, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) initiated the Disaster Resistant University (DRU) program. This program assists universities and colleges, through State and local governments, to implement a sustained pre-disaster natural hazard mitigation program to reduce the overall risk to students, faculty, staff, facilities and research assets.

In late 2010, MUW's Hazard Mitigation Plan was finalized, approved and adopted. It is time for a mandatory five year review and update, hence we have again formed a planning team and are in the process of reviewing and updating the Plan.

We wanted to make you aware of this project and will keep you updated on its progress.

If you have any questions, please feel free to call Angela Jones, project coordinator, at (662) 329-7145.

Thank you for your time and cooperation.

Sincerely,

Jim Borsig, Ph.D.
President

Table 2 – List of Hazards Considered			
Hazard	**Accept Hazard**	**Risk/Likely Occurrence Low, Medium, High**	**Mitigation Priority Low, Medium , High**
Avalanche	No	N/A	N/A
Civil Disturbance	Yes	~~Medium~~High	~~Medium~~High
Coastal Erosion/Storm	No	N/A	N/A
Computer Crime or Attack	Yes	~~Medium~~High	~~Medium~~High
Dam Failure	Yes	Low	Low
Disease (Epidemic or otherwise)	Yes	Medium	Medium
Drought	Yes	Low	Low
Earthquake	Yes	Low	Low
Expansive Soils	No	N/A	N/A
Explosive Devices	Yes	Medium	Medium
Explosions	Yes	Medium	Medium
Extreme Heat	Yes	High	Medium
Fire/Arson	Yes	High	Medium
Flooding	Yes	High	High
Hail	Yes	~~Medium~~High	Medium
Hazardous Material Incidents/Chemical Spills	Yes	Medium	~~Low~~Medium
Hurricanes and Tropical Storms	Yes	Medium	High
Landslides and Subsidence	No		
Lightning	Yes	~~Medium~~High	Medium
Loss of Lifelines (Utilities)	Yes	~~Medium~~ High	Medium
Nuclear Power Plant Emergency	No	N/A	N/A
Radiological Accident	No	N/A	N/A
Straight-line winds	Yes	High	High
Terrorist Acts	Yes	Low	Medium
Threat/Violence	Yes	High	High
Tornado	Yes	High	High
Transportation Accidents	Yes	Medium	Medium
Tsunami	No	N/A	N/A
Volcano	No	N/A	N/A
Water/Food Contamination	Yes	Low	Low
Workplace Violence	Yes	Medium	Medium
Wildfire	Yes	Low	Low
Windstorm	Yes	High	High
Winter Storm	Yes	High	High

Threat/Violence

Violence affects the safety of everyone at the college and in the surrounding community. Violence is a complex behavior with determinants rooted in childhood experience/trauma, community norms, social and economic conditions. Violence on campus today takes on many forms including but not limited to the following: hate crimes, hazing, rape, stalking, suicide, and vandalism. Violence can start with one person but have a trickle effect on campus. Violence can have long-term consequences to others that may lead to social or academic problems.

Work Place Violence

Workplace violence is violence or the threat of violence against workers. It can occur at or outside the workplace and can range from threats and verbal abuse to physical assaults and homicide, one of the leading causes of job-related deaths.

Table 3 - Hazards Profiled	
Natural Hazards	**Risk Rank**
Dam Failure	Low
Drought/Extreme Heat	High
Earthquake	Medium
Flooding	Medium
Hail	High
Hurricanes and Tropical Storms	Medium
Lightning	Medium
Tornado/Straight-line winds/Windstorm	High
Wildfire	Low
Winter Storm	Medium
Man-Made Hazards/Accidental/Medical	
Civil Disturbance	Low
Computer Crime or Attack	Medium
Disease (Epidemic or otherwise)	Medium
Fire/Arson	Medium
Loss of Lifelines (Utilities)	Medium
Terrorist Acts/Explosive Devices	Medium
Transportation Accidents/ Explosions/HazMat/ Chemical Spills	High
Water/Food Contamination	Medium
Threat/Violence	
Work Place Violence.	

In the past 5 years, do we have data or information that would cause us to change the ranking (Low, Medium, High) of the Hazards profiled above. Has the on campus occurrence, or threat of occurrence changed over the past 5 years?

Wildfire
The county mitigation plan states a wildfire is any fire that burns uncontrollably in a natural setting such as, grasslands, forest, and brush land. Prescribed burnings are the only exception to a wildfire. Wildfires can be either man-made or natural. The typical cause of natural wildfires is lightning. Prescribed burning, also known as controlled burning is the deliberate use of fire under specified and controlled conditions. Prescribed burns are used by forest management professionals and individual landowners. Wildfire is often associated with high air temperatures and dry conditions, although not exclusively. Wildfire differs from controlled burns in that they are destructive to the woodland / grasslands habitat in which they occur and lack the controlling factors which make controlled burns beneficial. Wildfire is most often a hazard in woodlands or grasslands during dry, hot weather. Often wildfire has man-made origins such as burning trash in dry, windy conditions but natural origins such as lightning can also start wildfires.

The county mitigation plans states Lowndes County had a total of 63 wildfires between 2002 and 2007 that were recorded by the Mississippi Forestry Commission. There is no evidence to indicate that the MUW campus has been effected by wildfire. But due to numerous thunderstorms that produce lightning; low risk of drought, high risk of heat extreme and trees on the south end of campus, this hazard is retained as a low risk with a low probability of future occurrence.

MAN-MADE DISASTERS

Profiled below are man-made disasters that may threaten MUW. While little or no evidence supports occurrences of these on campus, they were retained as hazards primarily because safety is the ultimate goal; but secondarily most of these are covered in the University's emergency response and preparedness plan and allows co-mingling of the two plans.

Civil Disturbance
Most campus demonstrations such as marches, meetings, picketing and rallies will be peaceful and non-obstructive. A student demonstration should not be disrupted unless one or more of the following conditions exists as a result of the demonstration:

- Interference with the normal operations of the University
- Prevention of access to office, buildings or other university facility
- Threat of physical harm to persons or damage to university facilities

If any of these conditions exist, the MUW Police should be notified and will be responsible for contacting the President. Depending on the nature of the demonstration the appropriate procedures listed below should be followed:

Non-disruptive Demonstrations
Generally, demonstrations of this kind should not be interrupted. Demonstrations should not be obstructed or provoked and efforts should be made to conduct university business as normally as possible. If demonstrators are asked to leave, but refuse to leave by regular facility closing time, arrangements will be made by the Chief of Police to monitor the situation during non-business hours, or a determination will be made to treat the violation of regular closing hours as a disruptive demonstration.

Disruptive Demonstrations
In the event that a demonstration blocks access to the university facilities or interferes with the operation of the university, demonstrators will be asked to terminate the disruptive activity by the Chief of Police or designee. If demonstrators persist in the disruptive activity they will be apprised that failure to discontinue may result in disciplinary action including suspension,

expulsion or arrest. Except in extreme emergencies the President will be consulted before such disciplinary actions are taken.

Efforts should be made to secure positive identification of demonstrators in violation to facilitate later testimony, including photographs/video if deemed necessary. After consultation with the President, Chief of Police, and Vice President for Student Services, the need for an injunction and arrest will be determined. If determination is made to arrest the demonstrators, they should be so informed and warned of the intention of arrest.

MUW has had high profile visitors to campus – President W.H. Taft in 1911; Vice President Dick Cheney on October 27, 2003; and most recently President Barack Obama on March 10, 2008 (President-elect at the time of visit). These visits could have sparked a civil disturbance, but no [redacted].

Computer Crime or Attack
It is no secret that institutions are bearing the brunt of today's malicious software attacks. Bot-infected computers are rampant in the educational space, especially in colleges and universities where academic freedom often translates to unmanaged computers on a fairly wide-open network.

Attacks today are virtually identical to crimes perpetrated when the slide rule (the mechanical analog computer) was king. The computer simply introduces automation and removal of personal contact. These two factors have dynamically changed our society, yet our educational system has not evolved to teach the skills required to live in this evolved society.

Recently, the landscape has been changing. Information technology workers at higher ed institutions have increasingly been able to convince decision makers that controls and restrictions must be put in place. Many institutions are implementing a variety of security technologies, including antivirus software, network access or authentication control, quarantine systems, network segmentation, and other technologies to help secure their networks. The technologies have their place and go a long way toward mitigating the problem. However, technology is not the source of the problem and therefore won't be the ultimate solution. (The EDU Challenge article Moving beyond technology in maintaining a secure network, Randy Abrams, May 2008)

[redacted]

Disease/Epidemic
A disease or medical condition is an abnormal condition of an organism that impairs bodily functions, associated with specific symptoms and signs. It may be caused by external factors, such as invading organisms, or it may be caused by internal dysfunctions, such as autoimmune diseases (Wikipedia). The Second College Edition of The American Heritage Dictionary defines an epidemic as spreading rapidly and extensively by infection among many individuals in an area.

What causes infectious diseases? Germs, or microorganisms, as they are called by scientists. The most common microorganisms are bacteria and virus, but others are fungi, protozoans, and worms. Bacteria, which are one-celled organisms, and viruses, which are even smaller, are mainly (parasites) that multiply sometimes with astonishing speed.

Although vaccine-preventable diseases have declined to record-low levels in the United States, infectious disease "epidemics" on college campuses continue. A large student body with variable

Arsonists set fires that destroyed $878 million worth of property in 2007, down 1.2 percent from $889 million in 2006. These fires include factories, residential buildings, churches and motor vehicles, according to the National Fire Protection Association (NFPA). Unfortunately, college campuses are not exempt from arson.

On February 18, 2009, there was a fire, caused by arson, that totaled up to $1 million in damages at Lorain County Community College in Elyria, Ohio. No one was injured but the blaze sent heavy smoke through underground tunnels that connected several buildings. In all nine buildings were damaged due to heavy smoke. A 24-year-old student with a long criminal record including another arson case was arrested. (Chronicle of Higher Education, Student Charged With Arson That Shut Down Community College in Ohio, February 20, 2009).

On March 4, 2009, arson was the cause of five fires in two buildings at College of Mount St. Joseph in Cincinnati, Ohio resulting in the death of a student, who suffered a seizure, and smoke inhalation injuries to another. Delhi Township Fire Chief William Zoz said three fires were set in the Arts Building and two more on the fifth floor of Seton Hall, where 400 students live. Four were in bathrooms and one was in a stairwell. All the blazes were small and were extinguished by sprinklers in the buildings. Damage was set at less than $20,000 and was mostly due to water used to extinguish the blazes. An 18-year-old resident student was charged with two counts of aggravated arson (Kypost.com, MSJ Fires Ruled Arson, Student Dies After Seizure, March 5, 2009).

Because of a fire suppression project currently underway and structural damages in the past, the University rank's hazard of medium severity.

Loss of Lifelines (Utilities)
MUW's utilities are provided by the following:
Electric – Columbus Light & Water Department
Plymouth Bluff's electric is provided by 4-County
Water – Columbus Light & Water Department
Gas – Atmos Energy
Communications – AT&T provides all telephone services and is the university's internet service provider.

Electric/Water
Severe weather is one of the greatest causes of power loss. Snow, ice, high winds, and lightning can cause damage to electric power grid infrastructure. Other causes of power outages include flooding; fallen tree limbs, vehicle accidents involving utility poles, and small animals climbing the lines and shorting out power supply. Other hazards resulting from power outages include temperature extremes, unsafe drinking water, electrical shock from downed power lines, and carbon monoxide poisoning. Power outages can also be and often are a secondary effect of severe weather.
Gas
Most of the buildings on MUW campus are on natural gas.
Communications
While MUW has several ways of maintaining communication, they are all still vulnerable to communication failures.

The probability of a large-scale and extended period of utility failure is low. However, small scale and shorter periods of utility failure may occur more frequently. The maximum utilities failure threat to MUW is a loss of electricity, water and communications. These resources help ensure the health,

safety, and general welfare of the campus. While the University is vulnerable to a loss of utilities, the greatest threat is a loss of utilities for prolonged periods of time. The longer the breakdown, the worse the impact will be. A loss of natural gas can negatively impact the University, but it will not have the impact, when compared with the loss of other utilities, such as electricity, water and communications. A loss of electricity can also negatively impact emergency responders as well.

[redacted]

Terrorist Acts/Explosive Devices

The Free Dictionary says a terrorist act is the calculated use of violence (or the threat of violence) against civilians in order to attain goals that are political or religious or ideological in nature; this is done through intimidation or coercion or instilling fear.

The tragic events that occurred on September 11, 2001 caused people to rethink security strategies for nearly every profession in the U.S. College campuses are no exception. Terrorist attacks must be considered due to their random and unpredictable nature. The risk is always present for various extremist individuals to be displeased with university research, policies, or happenings and to show this displeasure with violence.

One terrorist act that would be of great concern to MUW would be explosive devices. Most acts of terrorism in the U.S. are directed toward government buildings and officials. The most notable of these terrorist acts would be the terrorist attacks on September 11, 2001, otherwise known at the "9/11 attacks," in which about 3,000 people were killed when four airline jets were hijacked. Two planes were intentionally crashed into the twin towers of the World Trade Center, one crashed into the Pentagon, and the last plane was unintentionally crashed into a field in Pennsylvania. While most terrorism acts are not this severe and are focused on government, some have occurred in schools and universities. There have been 23 shootings in colleges and universities throughout the U.S. Some of the more damaging school shootings in U.S. history are as follows:

August 1, 1966 -- University of Texas, Charles Whitman killed 14 people and wounded 31, while shooting a rifle from an observation deck. He killed his wife and mother before going on his shooting rampage, which ended in him being killed by police. During his autopsy it was discovered that he had a brain tumor, which some believe caused his mental instability. This incident led a movement toward the creation of modern SWAT teams.
January 26, 1995 -- University of North Carolina, Chapel Hill, a schizophrenic law student killed two and injured two others with a rifle.
April 20, 1999 -- Columbine High School, two students went on a shooting rampage in Colorado, killing 13 people and wounding 24 others before both committing suicide. They used various shotguns, handguns, rifles, and bombs during their massacre. The cause of the rampage is thought to be due to many things including feelings of isolation, being outcasts and bullied, depression, and previous violent natures.
October 28, 2002 -- University of Arizona, a 41-year-old nursing student who was failing the nursing program shot and killed three nursing professors before committing suicide.
April 26, 2007 -- Virginia Tech University, a 23-year-old South Korean immigrant and Virginia Tech student Seung-Hui Cho killed 32 people and wounded 25 others before committing suicide while on a shooting massacre. This was the deadliest shooting in modern U.S. history. It is unclear as to why Cho went on his killing rampage, but some speculate his tendency to be a loner, his hatred of the wealthy, and his past occurrences of

VULNERABILITY TO NATURAL HAZARDS

When assessing the vulnerabilities in the midst of the economic situation, it was important to establish a threshold amount that would be considered a problem for the university from a budgetary perspective. After a discussion with Tonya Moak, comptroller, it was determined that $580,000 would be the threshold amount that would be considered problematic from a budgetary perspective. This amount is equivalent to 2% of the university's FY 2010 estimated $29,000,000 budget.

Threat/Violence on Campus

The threat/violence perpetrated on campus over the past few years have been documented and listed below. The situations are predominately limited to inappropriate use of drugs and alcohol, with each situation handled through judicial referral. None of the situations lead to threat or violence, however the potential for esculation exist. In addition, the City of Columbus violence is important as the surrounding community incidents have potential to come on to The W campus. During the past 6 months, there has been a seemingly increase in shootings nearby, with at least three shootings within a mile proximity of the University. Fortunately none have cause harm to the university, however an increased awareness in each situation was required until the local law law enforcement had contained the situation.

2011 MUW Crime and Fire Statistics

5/1/2011	ROBBERY ON-CAMPUS	RESIDENTIAL	UNFOUNDED

2012 Crime and Fire Statistics

2/25/2012	DRUG ABUSE VIOLATIONON	CAMPUS	JUDICIAL REFERRAL
6/22/2012	LIQUOR LAW VIOLATIONON-	RESIDENTIAL	JUDICIAL REFERRAL
9/4/2012	DRUG ABUSE VIOLATIONON	RESIDENTIAL	JUDICIAL REFERRAL
9/5/2012	FORCIBLE SEXUAL OFFENSE	RESIDENTIAL	ARREST/NOT GUILTY

2013 MUW Crime and Fire Statistics

3/19/2013	LIQUOR LAW VIOLATIONON	RESIDENTIAL	JUDICIAL REFERRAL
4/23/2013	LIQUOR LAW/DRUG ABUSEON	RESIDENTIAL	JUDICIAL REFERRAL
12/20/2013	LIQUOR LAW VIOLATIONON	CAMPUS	ARREST/NOT GUILTY

Work Place Violence Fortunately, MUW's history of dealing with workplace violence has been minimal. In recent years the workplace violence has been limited to three recalled circumstances. Once a situation of a faculty and student action lead to physical violence limited to the two, as well as disruption of a educational setting. Once a contractor employee and his spouse spilled over to campus leading to threats of violence. And a third situation where a staff employees action lead to a disturbance in the office, but stopped short of a threat or violence. The potential for workplace violence exists with disgruntled employees and customers and domestic issues that have followed employees to the workplace.

MUW's DRU Planning Team meeting Jul 2, 2015	
Community Members	**Organization**
Cindy Lawrence	Lowndes County Emergency Management
Martin Andrews	Columbus Fire Department
Sandy Patrick/Patty Tucker	American Red Cross
Bill Patrick	Mississippi Emergency Management Agency (MEMA)
Tracy Pharr	MEMA
Carolyn McKinney	MEMA
Glynn Babb	Mississippi Institutions of Higher Learning
MAJs Alan and Cheryl Phillips	Salvation Army
Joe Higgins	Columbus LINK
Mitch Cockrell	Patriot Rail Corp/GTRA
Michael Byrd	Burlington Santa Fe
Mike Arledge	Sheriff, Lowndes County
Tony Carleton	Police Chief, City of Columbus
Ralph Billingsley	Administrator, Lowndes County
Marcus Rushing	Columbus Light and Water
Patrick Hyde	Atmos Energy Services
Larry Taylor	Atmos Energy
Larry Pitree	Atmos Energy
John Mooney	Atmos Energy
Christopher Tarantino	Columbus Air Force Base DPO
Christopher Valencia	Columbus AFB EM
MUW Members:	**Department**
Nora Miller	Chair & Sr. VP for Admin./Chief Financial Officer
Dr. Marty Hatton	Associate VP for Academic Affairs
Sherry Honsinger	Police Department
Karen Clay	General Counsel
Mary Slater	Police Department
Dewey Blansett	Facilities Management
Rodney Godfrey	Information Technology Services
Melanie Freeman	Human Resources
James Denney	Sponsored Programs
Anika Perkins	Public Affairs
Dr. Royal Toy	Faculty Senate
Quincy Hughes, SA President	Student Government Association
Andrew Money Maker	Housing an d residence Life
Sirena Cantrell	Dean of Students
Eva Black	Campus Health Center
Tara Sullivan	College of NSLP
Irene Pintado	College of EDHS
Dr Tom Velek	College of A&S
Scott Tollison	College of B&PS
Walter Clay	Mississippi School for Mathematics & Science
Jim Jones	Project Coordinator/Principal Investigator

Please initial next to your name or write your name and e-mail address below if not listed.

The Mississippi University for Women
A Tradition of Excellence for Women and Men

Office of the President
1100 College Street, MUW-1600
Columbus, MS 39701-5800
(662) 329- 7100
(662) 329-7297 Fax

www.muw.edu

June 19, 2015

Mr. Harry Sanders, President
Lowndes County Board of Supervisors
P.O. Box 1364
Columbus, MS 39703

Dear Lowndes County Board of Supervisors,

As you know, in the last decade, disasters have affected university and college campuses and their surrounding communities with high frequency. They sometimes impose injury and always impose monetary losses and disruption of the institution's teaching, research and public service. Damage to buildings and infrastructure as well as interruptions to the institutional mission result in significant losses that can be measured by faculty and student departures, decreases in research funding and increases in insurance premiums. These losses can be substantially reduced or possibly eliminated through comprehensive pre-disaster planning and mitigation actions.

In 2002, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) initiated the Disaster Resistant University (DRU) program. This program assists universities and colleges, through State and local governments, to implement a sustained pre-disaster natural hazard mitigation program to reduce the overall risk to students, faculty, staff, facilities and research assets.

In late 2010, MUW's Hazard Mitigation Plan was finalized, approved and adopted. It is time for a mandatory five year review and update, hence we have again formed a planning team and are in the process of reviewing and updating the Plan.

We wanted to make you aware of this project and will keep you updated on its progress.

If you have any questions, please feel free to call Angela Jones, project coordinator, at (662) 329-7145.

Thank you for your time and cooperation.

Sincerely,

Jim Borsig, Ph.D.
President

The W Mississippi University for Women
A Tradition of Excellence for Women and Men

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1100 College Street, MUW-1600
Columbus, MS 39701-5800
(662) 329- 7100
(662) 329-7297 Fax
www.muw.edu

June 19, 2015

Mayor Robert Smith
City of Columbus
523 Main Street
Columbus, MS 39701

Dear Mayor Smith,

As you know, in the last decade, disasters have affected university and college campuses and their surrounding communities with high frequency. They sometimes impose injury and always impose monetary losses and disruption of the institution's teaching, research and public service. Damage to buildings and infrastructure as well as interruptions to the institutional mission result in significant losses that can be measured by faculty and student departures, decreases in research funding and increases in insurance premiums. These losses can be substantially reduced or possibly eliminated through comprehensive pre-disaster planning and mitigation actions.

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If you have any questions, please feel free to call Angela Jones, project coordinator, at (662) 329-7145.

Thank you for your time and cooperation.

Sincerely,

Jim Borsig, Ph.D.
President

FOR IMMEDIATE RELEASE
May 20, 2015
Contact: Anika Mitchell Perkins
(662) 329-7124
amperkins@muw.edu

The W prepares to update its Hazard Mitigation Plan

COLUMBUS, Miss. – Mississippi University for Women will soon begin the work to update its Hazard Mitigation Plan with a series of meetings, starting Tuesday, June 2 at 2 p.m. in Cochran Hall, Room 305.

The goal of the plan is to make the campus safer from natural and man-made hazards.

About five years ago, The W undertook the task of developing a Hazard Mitigation Plan that led to it being proclaimed a Disaster Resistant University (DRU).

"Basically, this means we have a plan to mitigate hazards and are eligible for federal funds through the Mississippi Emergency Management Agency and the Federal Emergency Management Agency when they are available," explained Jim Jones, project director for campus planning.

With the update, the university will continue to work toward a safer campus and maintain eligibility for mitigation grants from the state and federal government. The plan update is funded by the Mississippi Emergency Management Mitigation Program with a matching share coming from The W.

The Hazard Mitigation Planning team will consist of a cross-section of university staff, city and county government representatives, Institutions of Higher Learning officials and MEMA officials. Nora Miller, The W's senior vice president and chief financial officer, will chair the committee with Jones' assistance.

As the university nears the completion of its Disaster Resistant University (DRU) process, it will hold informal public meetings to allow the community a chance to offer feedback.

Once the plan is complete, it will be forwarded to MEMA and FEMA for review. Upon a positive review by these agencies, The W will qualify for pre-disaster financial assistance to help initiate the mitigation actions outlined in the plan. The final phase of the plan includes implementation, adoption, monitoring and revising. The plan is updated every five years.

FOR IMMEDIATE RELEASE
July 28, 2015

The W to hold public hearings for its Hazard Mitigation Plan

COLUMBUS, Miss. – Details of Mississippi University for Women's Hazard Mitigation Plan will be provided at public hearings scheduled for Thursday, Aug. 6, and Monday, Aug. 10 from 4 p.m. to 6 p.m. in the Claudia A. Limbert Assembly Room in Cochran Hall.

The W has been updating its plan with guidance and assistance from the Hazard Mitigation Planning team, which consists of a cross-section of university staff, city and county government representatives, Institutions of Higher Learning officials and MEMA officials.

The goal of the plan is to make the campus safer from natural and man-made hazards, with members reviewing and updating the current hazards and providing new recognized hazards as well as critical assets and resources that will minimize the vulnerabilities to the university as well as estimating losses that might occur due to these hazards.

More specific details of these hazards will be provided at the upcoming public hearings on campus. The purpose of these meetings is to obtain community input on The W's Hazard Mitigation Plan.

Community members are encouraged to review a draft copy of this plan prior to the update. A public draft copy of the plan may be reviewed on The W's website at http://www.muw.edu/admin/dru and the MUW library.

About five years ago, The W undertook the task of developing a Hazard Mitigation Plan that led to it being proclaimed a Disaster Resistant University (DRU).

With the update, the university will continue to work toward a safer campus and maintain eligibility for mitigation grants from the state and federal government. The plan update is funded by the Mississippi Emergency Management Mitigation Program with a matching share coming from The W.

MUW Hazard Mitigation Plan Public Hearings 8/6/2015

Name	Activity	Email address	Phone number
James Jones	MUW	Jajones4@muw.edu	662-241-6389
Gail Gunter	MUW	gpgunter@muw.edu.	662-329-7336
Quincy Hughes	MUW	qdhughes@mygapps	314-421-9279
Dewey Blansett	MUW/Sodexo	dblansett@muw.edu	662-329-7398
Nora Miller	MUW	nrmiller@muw.edu	662.329.7145
David Haffly	MUW	pdhaffly@muw.edu.	662-241-6214

MUW Hazard Mitigation Plan Public Hearings 8/10/2015

Name	Activity	Email address	Phone number
James Jones	MUW	Jajones4@muw.edu	662-241-6389
[illegible]	MUW	slcantrell@muw.edu	662-241-6083
Melanie Freeman	MUW	mhfreeman1@muw.edu	662-329-7122
Angela Jones	MUW	aljones@muw.edu	329-7145
Morgan Jones	Community	mcassidylynn@yahoo.com	328-5140

Page 1 of 2

MUW Hazard Mitigation Plan Public Hearings

8/10/2015

Name	Activity	Email address	Phone number
James Jones	MUW	Jajones4@muw.edu	662-241-6389
Carla Lowery		CMlowery@muw.edu	6623297797
Meridith Geuder		mgeuder@muw.edu	662-329-1976
Annika Perkins		amperkins@muw.edu	662-329-7124
Glynn Bubb	IHL	gbubb@mississippi.edu	601-432-6624
		lthweatt@muw.edu	662-251-2249
		dcpatton@muw.edu	662-241-7777
Jim Borsig	MUW	jborsig@muw.edu	662-329-7100

Page 2 of 2

From: Jim A Jones
Sent: Thursday, August 06, 2015 7:31 AM
To: Andrew Moneymaker; Anika Perkins; Billy Patrick; Carolyn McKinney; Cheryl Phillips (cheryl_phillips@uss.salvationarmy.org); Christopher Tarantino; Cindy Lawrence (clawrence@bellsouth.net); Columbus and Greenville Railway Michael Byrd; Columbus Fire Chief Martin Andrews; Columbus Fire Dept. Anthony Colom; Columbus Fire Dept. Duane Hughes; Columbus Light & Water Marcus Rushing; Columbus Police Dept. Fred Shelton; Eva Black; Glynn Babb; hsims@ihl.state.ms.us; Irene Pintado; James Denney; Joe Higgins; John Mooney; Karen G Clay; Larry Pitre; Larry Taylor; Lowndes County Sheriff Mike Arledge; Lt Christopher Valencia; Major Alan Phillips, Salvation Army; Martin L Hatton; Mary Slater; Melanie Freeman; Michael Byrd (mitch.cockrell@patriotrail.com); Nora Miller; patrick Hyde (patrick.hyde@atmosenergy.com); quincy Hughes (qdhughes@myapps.muw.edu); Ralph Billingsley (lcrbillingsley@bellsouth.net); Rodney Godfrey; Royal Toy; Scott Tollison; Sherry Honsinger; Sirena Cantrell; Tara Sullivan; Thomas Velek; Tracy Pharr (tpharr@mema.ms.gov); Walter Clay (wclay@themsms.org)
Subject: Draft Hazard Mitigation Plan five year plan update

Folks, public hearings are scheduled for today, Thursday, Aug. 6, and Monday, Aug. 10 from 4 p.m. to 6
p.m. in the Claudia A. Limbert Assembly Room in Cochran Hall on The W Campus. The Public is
encouraged to review a draft copy of this plan prior public meetings and comment. A public draft copy of
the plan is available on The W's website at http://www.muw.edu/admin/dru and reserved at the MUW
library on Campus. You are encouraged to attend one or both of the public hearings.

Thanks for your help. Jim

Jim Jones
MUW 509
1100 College Street
Columbus, MS 39701
Jajones4@muw.edu
662-241-6389 (Office)
XXXXXXXX (Cell)

From: Jim A Jones
Sent: Thursday, August 06, 2015 7:49 AM
To: announcements-employees@lists.muw.edu
Subject: Draft MUW Hazard Mitigation Plan update

Folks, public hearings for our Draft Hazard mitigation Plan are scheduled for today, Thursday, Aug. 6,
and Monday, Aug. 10 from 4 p.m. to 6 p.m. in the Claudia A. Limbert Assembly Room in Cochran Hall on
The W Campus. The Public is encouraged to review a draft copy of this plan prior to the meetings and
comment. A public draft copy of the plan is available on The W's website at
http://www.muw.edu/admin/dru and reserved at the MUW library on Campus. You are encouraged to
attend one or both of the public hearings.

Thanks for your help. Jim

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