

UNCW DRU MITIGATION HISTORY

Since receiving \$100,000 in funds under the Disaster Resistant University initiative in the year 2000, UNCW has made a conscious effort to incorporate disaster resistance into university planning, policy, and procedures. Senior officials have endorsed the commitment to becoming disaster resistant to reiterate the importance of establishing a disaster resistant culture on campus. UNCW has participated in mitigation activities to enhance disaster resistance through the following methods:

- Strengthening relationships;
- Performing planning activities; and
- Completing mitigation projects on campus.

These past and continuing mitigation activities are specifically outlined below.

Main Ditch Drainage Improvement Project

The Main Ditch Drainage Improvement was the most extensive project UNCW chose to complete using DRU 2000 funding. Recent hurricane events produced major amounts of rain. Flooding in the Wilmington area included 9.06 inches from Hurricane Bonnie, 5.66 inches from Hurricane Bertha, 7.00 inches from Hurricane Fran, and 13.38 inches from Hurricane Floyd. Because of the high risk of damage from hurricane induced flooding, UNCW identified the main drainage ditch for the storm water system that drains the entire campus as the most problematic area of campus in relation to

disasters. Improvements to this ditch, though extensive, mitigated an enormous amount of potential damage in an area with a long history of flooding. Flooding in this area could cause damage to the Social & Behavioral Services Building, which houses most of the animal research that is done on campus; Dobo Hall, an integral research facility for chemical and biological sciences; and the Cameron Hall (School of Business). This project superseded any planning projects because of its great benefit to physical structures and continuity of operations on the UNCW campus.

The project improved drainage to the area by opening drainage ditches that were prone to clogging by aquatic vegetation which slowed the flow of water causing heavy flooding during extensive rain events. Approximately 425 feet of 36-inch reinforced concrete pipe was installed along Price Drive to its intersection with Reynolds Drive along three junction boxes. After clearing vegetation above the high water line in the drainage ditch, approximately 375 feet of six foot by five foot concrete box culvert and four drop inlets were installed between the University Union and Price Drive, next to the Campus Commons. Ten months prior to this construction Hurricane Floyd deluged the area with a 100-year rain event causing massive flooding in the Campus Commons area. Since the installation of the drainage improvements, several significant rainfall events have occurred and the improvements to the drainage ditch have substantially improved drainage and have reduced the possibility of flooding in the critical central portion of campus. Implementation of this mitigation project has therefore shown immediate benefits and has made UNCW more disaster resistant to flooding caused by hurricanes, nor'easters, and other heavy rainfall events.

Hazards Assessment

By applying matching funds to the 2000 DRU grant, UNCW completed a Hazards Assessment to study the potential for specific disasters and emergencies that could adversely affect research, teaching, and business operations at the university. The report included a historical review of hazards in the region and determined the relative likelihood and impact of these natural and technological hazards. The Hazards Assessment organizes data from the NOAA Community Vulnerability Assessment Tool (New Hanover County, North Carolina Case Study), the North Carolina Emergency Management Hazard Mitigation Web Site, the North Carolina State Climate Office, and the Southeast Regional Climate Center (SRCC) to inventory specific hazards along with their frequency and potential impact to create a total priority score.

Disasters considered for the assessment included earthquakes, wildfire, tornado, severe winter weather, technological disasters (hazardous materials spills, terrorism, nuclear emergency), and tropical cyclones and hurricanes. The impact summary denotes that UNCW is most vulnerable to damage associated with hurricanes, including flooding, wind, and storm surge damage. However, tornados, wildfires, earthquakes, severe winter weather, and technological disasters pose a threat to the university as well. The 1986 Holly Shelter Wildfire significantly impacted New Hanover County and surroundings, burning more than one million acres of woodlands; records of snow and ice storms depict their occurrence 10 times in the past 50 years in the UNCW area; and with over 7,000 hazardous chemicals, biological agents, and radioactive materials utilized for research on campus, UNCW is also vulnerable to technological disasters. UNCW is located on College Road, a major transportation route for hazardous materials, a nuclear power plant

is located approximately 15 miles south of the university, and the Global Nuclear Fuels Processing Facility and Headquarters is located approximately 10 miles northeast of UNCW.

The Hazards Assessment provides organized data for making decisions about mitigation activities on campus, including which parts of campus are most vulnerable to hazards. Using this information, university officials can dedicate resources to mitigating hazards that have definite potential to negatively affect university operations. This information, therefore, lays the foundation for UNCW to become more disaster resistant.

Emergency Management Coordinator/DRU Coordinator

In June of 2003, UNCW added an experienced, professional Emergency Management Coordinator to the Environmental Health & Safety Department. The responsibilities of the Emergency Management Coordinator are as follows:

- Emergency Operations Plans Preparation
- Emergency Drills/Exercise Development
- Disaster Response Coordination
- Committees, Community Interface, and Relationships

Since June 2003, the Emergency Management Coordinator has completed a UNCW Hurricane Operations Plan and has begun writing the All Hazards Emergency Operations Plan. She participated in the response to Hurricane Isabel in coordination with New Hanover County and worked in the New Hanover County Emergency Operations Center

during its activation following preparing the campus for the storm. Following Hurricane Isabel, she wrote an After Action Report, detailing conflicts and problems as well as successes with UNCW's response to the hurricane. The Emergency Management Coordinator remains on call 24 hours a day, 7 days a week for any emergencies that may occur involving the campus, and she has begun the development of drills and exercises for UNCW internally as well as in coordination with external entities. She has also attended a number of county and state drills and kept constant contact with her counterparts in the county and state emergency management agencies as well as served as a committee chairperson for the New Hanover County Local Emergency Planning Committee. The Emergency Management Coordinator has maintained the Emergency Operations Group, a committee designated to make emergency management decisions for the university. Along with her regular responsibilities, she has also taken on the position of DRU Coordinator establishing a DRU council and holding meetings to facilitate discussions on disaster resistant challenges and implementation of potential projects.

The hiring of this position enables the university to streamline all emergency management tasks and resources to one person, aiding in better coordination and use of resources, and consistency in plans and procedures. The confluence of all emergency management activities to one individual as the nexus of all emergency tasking and resource allocation has enabled better coordination in emergency response and preparedness at UNCW. Because of the added responsibility of DRU coordination, the Emergency Management Coordinator can also ensure the UNCW community's commitment to disaster resistance. DRU efforts can remain organized and consistent,

building a consensus of DRU strategies providing for the most dynamic program possible.

Fostering Internal and External Relationships

Over the past years, UNCW has made a conscious effort to foster relationships with county and state emergency management and other government officials. UNCW maintains constant contact with both the New Hanover County Department of Emergency Management and the North Carolina Division of Emergency Management and keeps up membership in community committees such as the Local Emergency Planning Committee. UNCW representatives also regularly participate in county, state, and federal training and exercises including:

- Emergency Management Institute Training
 - Integrated Emergency Management Course—Consequences of Terrorism
Customized for New Hanover County, NC
 - Integrated Emergency Management Course—All Hazards Preparedness and Response
 - Integrated Emergency Management Course—Hurricane: Preparedness and Response
 - Integrated Emergency Management Course—Hurricane: Recovery and Mitigation
- Biannual Brunswick Nuclear Power Plant Response Exercise
 - UNCW is a field monitoring and decontamination station
- New Hanover County Hurricane Response Drill

- Wilmington Safety and Health School
- Area Health Education Center: Community Response to Disaster/Terrorism
- Tar Heel Response: North Carolina Defense Coordinating Element Command Post
Terrorism Exercise
- Hurrex03: 1st Army Joint Task Force and North Carolina Defense Coordinating
Element Command Post Hurricane Exercise
- North Carolina Regional Emergency Management Hurricane Table Top Exercise
- North Carolina Division of Emergency Management Training
 - Principles of Emergency Management
 - New Coordinator Workshop
- FEMA Emergency Management Institute Independent Study Courses
- Certified Emergency Manager (in progress)
- Cape Fear Chapter of the American Red Cross Classroom Instruction
 - Adult/Child/Infant CPR and AED
 - Workplace Safety
 - Bloodborne Pathogens Training
 - CPR for the Professional Rescuer
 - Fundamentals of Instructor Training

Participating in training and exercises has enabled UNCW to establish a good relationship with state and county officials and evoked coordination activities which in turn increase disaster resistance at UNCW.

Infrastructure Improvements and Renovations

In 2000, a series of engineering studies identified that campus infrastructure, the very backbone of the campus, had several weaknesses and was vulnerable to a variety of disasters. UNCW began projects in 2002 to correct these vulnerabilities and will complete the projects within the next six months. One project included the addition of multiple water taps to provide fire protection and drinking water from various connection points in the City of Wilmington water system. Additionally, the water system was looped within the campus to allow for a redundancy of feeds if sections must be taken offline during flood events or are broken during other disasters. In similar ways, the natural gas and primary electrical distribution systems were modified to decrease vulnerabilities and add additional connections. UNCW also added numerous generators to telecommunications switching stations and emergency operations facilities to ensure continuity of operations of telecommunications functions in an emergency.

In order to ensure sewage capabilities in an emergency, UNCW replaced the largest campus sanitary sewer lift station, which serves over half of the resident student population, with a gravity main that will not fail in the event of a power outage. UNCW also reviewed and made improvements to storm water systems on campus and will soon complete a storm water system management plan to protect sensitive research and resident student populations on campus.

Incorporating disaster resistance into infrastructure projects at UNCW has enabled the university to mitigate possible problems that may occur on campus in the event of disaster or emergency. Adding disaster resistant values into all projects on

campus will ensure that mitigation efforts will continue and provide for the most disaster resistant campus possible.

Residence Hall Fire Safety Improvements

UNCW has always highly prioritized the protection against fires in residence halls due to the potential for loss of life and damage to the campus community. Therefore, UNCW has conducted improvements in life and fire safety protection in the past two years at a rate in that exceeds all historic improvements during the life of the UNCW campus.

Galloway Residence Hall is the tallest residence hall on campus and houses the largest population of students. Recently, UNCW installed a fire sprinkler system throughout hallways, mechanical spaces, and bedrooms in Galloway Residence Hall. Additionally, UNCW installed a state-of-the-art, fully-addressable fire detection system throughout the building. The second largest residence complex on campus, Graham Hewlett Residence Halls, received a partial sprinkler system and a completely redesigned fire alarm detection system to replace outmoded equipment.

Through these fire protection measures, UNCW has enhanced the safety of its students who live on campus in residence halls. Because building fires are a great threat to the university with the potential for loss of student life, fire protection measures are of utmost importance. Fire protection procedures will remain a priority of UNCW and building fires will be included in the list of disasters the campus will mitigate through infrastructure improvements.

DRU Conferences

In an effort to enhance outreach and education, UNCW representatives have attended a number of DRU conferences and meetings. In November of 2000, UNCW and several other DRU pilot universities attended the Project Impact Summit in Washington, DC hosted by FEMA in. During this summit, the DRU universities shared strategies and methodologies. UNCW was actively involved with the Project Impact Disaster Resistant Communities initiative that was also recognized at this summit. FEMA presented the Outstanding Academic Leader in Support of Project Impact Communities Award to Stephen Meinhold of UNCW.

UNCW also participated in a UNC System conference at the Office of the President in Chapel Hill, North Carolina. Representatives from all of the colleges in the UNC System attended to present and compare disaster resistant strategies and projects. UNCW representatives made presentations about the Disaster Resistant University Initiative, as well as the UNCW efforts and response during Hurricane Isabel. Outreach to other schools, especially those in the UNC System, has become a major objective for UNCW in the disaster resistant university process.

The above projects and activities have enabled UNCW to reach a level of disaster resistance never before achieved at the institution. The DRU culture, although in its infancy at UNCW, will be launched to maturity with the infusion of the DRU 2002 grant during this financially challenging time. By incorporating disaster resistance into future planned projects, and proactively planning for specific mitigation projects, UNCW will continue to grow and flourish in a disaster resistant culture. With the completion of the

above activities and projects, UNCW is now ready to identify further vulnerabilities in order to develop, prioritize, and implement mitigation strategies.