

DRU FUTURE PROJECTS

PLANNING PROJECT 1: PLANNING PROJECTS UNDER EMERGENCY MANAGEMENT/DRU COORDINATOR

Description of Project

The hiring of an Emergency Management Coordinator has greatly enhanced the disaster preparedness program at UNCW. Previously, emergency management functions were distributed among three to five other positions that were already overloaded. Streamlining all emergency management and disaster resistant projects and activities through one, dedicated individual has increased the amount of projects completed and ensured timeliness of mitigation projects. It also provides the university with the expertise for plan completion and exercise development. With the added responsibility of DRU coordination, the Emergency Management Coordinator will also ensure the priority of DRU initiatives. With additional DRU funding, the Emergency Management Coordinator will continue on tasks already initiated, as well as complete the following planning projects:

All Hazards Emergency Operations Plan

Because of UNCW's vulnerability to a variety of hazards, it greatly needs an All Hazards Emergency Operations Plan. Using the format of the Federal Response Plan, UNCW's plan will enable university officials to respond to any type of disaster or emergency on campus. Emergency Support Functions will be tailored to UNCW's needs

and Hazard Specific Annexes will address specific tasks that must be completed in certain more probable disasters. The Emergency Management/DRU Coordinator will lead the effort to compose this plan, working with university officials in a variety of departments. Upon completion of the All Hazards Plan, UNCW officials will exercise the new planned procedures through table-top and full-scale exercises. The All Hazards Emergency Operations Plan will aid the university community in preparing for, responding to, and recovering from disasters and emergencies and will therefore boost the disaster resistance on campus.

Vulnerability Assessment

In order to fully prepare for and mitigate the effects of disasters, UNCW must prepare a study of the campus to assess its vulnerabilities. The Emergency Management/DRU Coordinator will lead this project and conduct surveys of critical facilities on campus to assess their vulnerabilities to hazards likely to affect UNCW. The Emergency Management/DRU Coordinator will also identify areas of critical research and infrastructure that need protection and organize the hiring of an engineering consultant to provide quantitative information on the following campus structures:

- Hoggard Hall, the computing center and EOC;
- Dobo Hall, which holds sensitive biological and chemical research;
- Social & Behavioral Services building, which holds sensitive animal research;
- Center for Marine Science, which holds sensitive marine biological research;

- Telecommunications building, which houses critical telecommunication infrastructure;
- Trask Coliseum, which is a major facility used in some emergencies;
- Warwick Center, which is the future home of Financial Aid and Student Accounts;
- PPH Lab, which holds sensitive animal research;
- Randall Library;
- Westside Hall, which houses the Student Health Center; and
- General Infrastructure, such as gas, electric, water, sewer, and storm water vulnerability.

Once the vulnerabilities on campus are identified, the Emergency Management/DRU Coordinator can determine and develop mitigation projects needed to protect critical facilities and research, thereby increasing disaster resistance on campus.

Exercises

Following the completion of the All Hazards Emergency Operations Plan, the Emergency Management/DRU Coordinator will plan and execute at least two natural hazard exercises and one technological drill involving outside agencies to test the plan. These exercises will range from table-top to full-scale and will involve outside agencies such as New Hanover County Emergency Management. One exercise will encompass a major emergency involving UNCW students, such as a biological event in residence

halls. The exercises will enable university officials to increase their response capabilities and become more prepared for actual emergencies that may affect the university.

DRU Council

The Emergency Management/DRU Coordinator will conduct regular meetings of the DRU council to discuss DRU initiatives and projects. Membership will continue to encompass university officials and also include county, state, and UNC System representatives for additional input and suggestions. The DRU Council will monitor progress of DRU projects and make major decisions about the projects when necessary. The DRU council will also keep a forward-looking perspective and brainstorm on projects that could be completed in the future, as well as help foster a disaster resistant culture throughout the UNCW community.

Outreach Efforts

The Emergency Management Coordinator will continue to initiate outreach activities to the county, state, and other universities. By utilizing the UNC Office of the President, UNCW will mentor other universities in the UNC System to become more disaster resistant. The Emergency Management/DRU Coordinator will also research and encourage training activities for university officials through the county and state and invite state and county officials to emergency exercises hosted by and held at UNCW. Specific outreach activities to other universities include:

- Provide universities with an outline for an All Hazards Emergency Operations Plan.

- Conduct training sessions for other universities on evacuation procedures, shelter-in-place guidelines, and critical decision making.
- Target the Historically Black Colleges and Universities (HBCUs) and smaller universities within the UNC System, and especially those with vulnerability to the effects of hurricanes, and provide education, resources, and mentoring for these universities to improve their disaster resistance.

UNCW will share experiences and best practices with other DRUs by traveling to these universities and giving presentations, and by maintaining constant contact with them during their first initiatives to become disaster resistant. Because UNCW is a more experienced DRU, the information it can provide to others is invaluable and will help spread the disaster resistant notion throughout the country to other universities.

UNCW will also provide outreach to the surrounding community. Because of the close collaboration UNCW and New Hanover county and other surrounding counties have developed, UNCW policies and procedures often affect the greater good of the community. Incorporating an outreach effort to the community remains a major goal for UNCW under the Disaster Resistant University Initiative. Specific outreach activities to the community include:

- Develop brochures about evacuation and shelter-in-place procedures targeting commuter students, a population which encompasses 8,000 residents in the local community. Though this project will target commuter students, it will also

benefit other citizens in the community who may become affected by shelter-in-place or evacuation orders.

- Conduct disaster classes for the Greek organizations on campus so they in turn can go out into the community and provide training to citizens.
- Enhance publicity to the community about the DRU program at UNCW including how it affects them and how they are benefited by it.

Conferences

The Emergency Management/DRU Coordinator will organize conferences to aid in outreach and education objectives. By hosting a DRU training conference for the 16 schools in the UNC System, UNCW will encourage and educate these schools in becoming more disaster resistant, thus building a more disaster resistant system and state as a whole. Due to the constant coordination among the UNC schools, cooperation and sharing of knowledge is imperative to keep a strong system.

The Emergency Management/DRU Coordinator will also make an effort to attend other DRU conferences given around the country by DRU universities or the federal government to learn from and mentor other DRUs. These conferences will enable the DRUs to share successes and failures in their DRU endeavors which will help UNCW plan for future DRU projects as well as improve continuing projects to make UNCW more disaster resistant.

PLANNING PROJECT 2: DRU INTERNSHIP

Description of Project

Because of the volume of disaster resistant work UNCW would like to complete, the hiring of an intern will greatly aid UNCW in achieving its mitigation goals. A graduate student in a relevant field, such as environmental science or coastal management, will enhance the knowledge applied to mitigation activities and provide an extra resource to complete the activities.

The graduate intern will specifically assist in gathering information for and writing the campus Vulnerability Assessment. The intern will gather information from laboratories, departments, and critical facilities on campus in order to prioritize mitigation efforts and projects. The intern will collaborate with the Emergency Management Coordinator and external contractors on this project to collect the appropriate information and pull it all together in a final comprehensive assessment. The intern will also collaborate on other projects under the Emergency Management Coordinator such as the DRU Conferences, outreach projects, and emergency exercises.

The graduate intern will also take on individual mitigation and outreach projects. The intern, under supervision of the Emergency Management Coordinator, will complete a UNCW DRU website, for internal and external outreach. This web site will be the central information source for DRU activities going on at UNCW as well as DRU conferences, seminars, and events. This website will enable the UNCW community to have access to information about the DRU initiative, including its background and other universities chosen for the initiative. The intern will be responsible for updating the

website on a regular basis as well as adding information on projects as they begin and are completed. By creating this website, the intern will increase disaster resistance and awareness on campus and in turn, help achieve the goal of permeating a disaster resistant culture throughout the UNCW community.

PLANNING PROJECT 3: HAZARDOUS MATERIALS PROGRAM

Description of Project

UNCW research laboratories are stocked with many containers of chemicals, ranging from non-hazardous sugars and salts to particularly hazardous poisons and highly flammable and/or potentially explosive substances. Unlike an industrial setting, where large quantities of a few chemicals are used in defined process locations, a single university laboratory may keep relatively small quantities of hundreds of materials for use in procedures that can change dramatically from one day to the next. Scientific research buildings on campus potentially contain thousands of individual containers that are managed by multiple faculty members and handled by an ever-changing array of students. Managing the inventories of multiple departments throughout the university campus and conveying the specific hazards to emergency responders is a formidable task.

UNCW needs a mechanism to better catalog and manage its hazardous materials inventory and to accurately report this information, internally to Environmental Health & Safety (EH&S), and externally to the Wilmington Fire Department. The University of New Hampshire has developed and proven an effective web-based product, the Chemical

Environmental Management System (CEMS), which meets the unique needs of a university campus. It is available on a subscription basis and has been adopted by The University of Massachusetts and Brown University. Implementation of CEMS at UNCW will provide a means to track chemical usage by user, location, and hazard level. This information will not only enable UNCW to inventory hazardous materials, but also gives important information as to where chemicals are located on campus and which ones need to be secured and/or protected in the event of a major disaster, such as a hurricane. Using knowledge gained from the tracking system, UNCW officials can prepare areas of hazardous materials before hurricanes and other predictable disasters and maintain necessary conditions to keep areas of hazardous materials storage safe.

CEMS has several levels of accessibility built into it so security is not compromised by a completely public inventory. Researchers can hide sensitive items from other system users so neither presence nor location of potentially dangerous materials need be disclosed. These capabilities directly mitigate the potential for use of the hazardous materials on campus for terrorist activities. EH&S and emergency responders can, however, be given full access so appropriate safety and law enforcement personnel are aware of these special conditions. It is also designed so that community emergency planners can be given access to the system and it provides a tremendous opportunity to share meaningful information with emergency responders. In the event of an incident involving a chemical laboratory or hazardous materials storage area, the immediate availability of the chemical inventory ensures that emergency responders consider hazards that are or may have been present in the area, thereby mitigating injury of response personnel.

In addition to increasing the accuracy of inventories by bar-coding each product as it is received, the system offers the potential to reduce the amount of hazardous materials on campus. Each laboratory can view a list of containers they have on hand, avoiding redundancy. Substitutions of chemicals and sharing among faculty members when small amounts are needed means that fewer chemicals are purchased and less hazardous waste is generated. An accurate inventory also means an accurate door posting of the hazards in each laboratory. CEMS will generate these signs based on the inventory and can be updated easily at any time. Because they reduce the amount of hazardous materials on campus, these factors mitigate potential accidents involving hazardous materials.

A key component of an effective EH&S program is training. CEMS quickly identifies who is working with materials that require special training and allows EH&S to implement programs when and where they are needed most. The system maintains a library of material safety data sheets, so this important safety information is readily available at any networked location. Other modules of CEMS are used to track environmental inspections, such as fuel storage tanks, and safety inspections, such as fire extinguisher status. Problems noted in these inspections are flagged as “alert” conditions and can be electronically sent to the appropriate staff member for immediate attention. CEMS will also track chemical waste by the researcher or laboratory that generates it and by the waste stream.

The Chemical Environmental Management System is a comprehensive program. Its implementation will vastly improve UNCW’s ability to manage hazardous chemicals and will elevate the level of pertinent information that is provided to emergency planners and responders therefore mitigating possible hazardous materials emergencies on campus.

PROJECT 1: DISASTER RESISTANT COMPUTING CENTER AND EMERGENCY OPERATIONS CENTER

Description of Project

The construction of a new addition to Hoggard Hall, as well as the renovation of the old building, will incorporate necessary disaster resistant strategies because of the importance of the contents of the building. Hoggard Hall will house the new UNCW Emergency Operations Center (EOC), which will be used by emergency personnel during a disaster or emergency. It is imperative that the EOC area remain intact and safe during an emergency for continuity of normal university operations and response operations. The new addition to Hoggard Hall will house the university's enterprise servers where research and administrative data is stored and processed. This facility also houses the routers that provide the university's connection to Internet2 and the commodity Internet. Disruption of any of these services would severely impact research on campus.

Impact resistant windows are in the base contract for the new computer room in the Technology Support Center as the campus will almost certainly experience winds in excess of 100 mph or greater in the coming years. Flying objects may endanger the building including two strong possibilities of green pine cones and pieces of slate from surrounding buildings. In addition, a tree could very easily fall into one of these windows. If any window in the facility should become compromised, pressure and environmental conditions in the computer room would most likely be affected resulting in potential damage to the servers and data communications equipment. Impact resistant

windows will reduce the chances of a disruption of the computing services because of broken windows due to wind or flying objects.

An enhanced ceiling will also protect the computer room. Because ceiling tiles are not adequate protection for a computer room due to the potential for and history of leaks, a secondary shield between the grid ceiling tiles and the main roof is necessary. This will minimize the possibility of a water leak into a mission critical server or communications rack. During past disasters, without this added roofing protection, the university has had to cut power to all servers and wrap them in plastic. Once the new computer room is occupied with generator power, the university intends to leave the servers running and thus every precaution must be taken to prevent water from leaking into the servers and communications equipment.

The university will also use this facility following its renovation as the EOC in an emergency or disaster and the planned impact resistant windows will also protect this vital facility. Equipping the entire building with impact resistant windows (in addition to the computer room) will enable the EOC to direct the activities of an emergency situation from multiple rooms. In the past when the EOC was operating in a single room, it has been somewhat chaotic with multiple activities and conversations. Privacy or an opportunity for rest for the staff on duty has been impossible. Impact resistant windows and generator power will ensure continued operation of the EOC and protection of emergency personnel and resources.

Because Hoggard contains such critical resources as the EOC and computing center for the university, it is imperative to incorporate disaster resistant projects into the

construction and renovation of this building. The mitigation activities described will undoubtedly increase the disaster resistance of this critical facility.

PROJECT 2: FLOOD CONTROL ON CAMPUS: REYNOLDS/CAHILL INTERSECTION

Description of Project

The intersection of Reynolds Drive and Cahill Drive on UNCW's main campus is prone to flooding, which results in hazardous traffic conditions and endangers the surrounding buildings, including the School of Education. Flooding in this area occurs in minimal rain events and extreme flooding occurs in severe weather events. This intersection is a main thoroughfare on campus and flooding on the roadways may cause traffic accidents and a slow response time for emergency vehicles, or may allow no passage at all. This intersection is also a major evacuation route out of campus and has been used many times during hurricane evacuations. Any hindrance of evacuation procedures would result in a more dangerous environment for students, especially those that live on campus. Mitigating flooding in this area is critical and necessary for the safety of students, faculty, and staff.

In order to mitigate flooding in this area, the grade at the intersection will be raised a minimum of 1.5 feet, tapering back to existing asphalt paving. Storm drainage will be extended to the existing storm water drainage system located along Price Drive. Alternately, drainage will be extended to the heavily wooded area opposite of the School

of Education. These mitigation measures will undoubtedly protect the critical area from future flooding.

PROJECT 3: CENTER FOR MARINE SCIENCE PROTECTION OF RESEARCH

Description of Project: Air Intake Protection

The mission of the Center for Marine Science is to promote basic and applied research in the fields of oceanography, coastal and wetland studies, marine biomedical and environmental physiology, and marine biotechnology and aquaculture. The Center for Marine Science building is located adjacent to the Atlantic Intracoastal Waterway. The outside air intake for the building's air conditioning system faces the waterway and is located such that flood water levels predicted for a Category 4 or stronger hurricane would inundate the areaway from which outside air is drawn. The air handler operates with 100% outside air with no recirculation of the air. Should the areaway become flooded to the level predicted, the outside air supply would be shut off to the air handling unit, and the unit would cease to operate. In order to mitigate the incursion of flood waters, a perimeter wall will be constructed around the air intake. This will keep water from flowing into the air intake, and therefore mitigate the potential for poor indoor air quality due to moisture and the destruction of the air intake system due to salt aerosols, and minimize the chance of terrorist attack involving air contamination. Air quality

problems will disrupt research at the facility as well as harm people inside the building, as will the damage of the air intake equipment or possible terrorist attack.

The project to protect the air intake includes the construction of a 10-foot high, eight-inch thick reinforced brick wall surrounding the air intake and the installation of a concrete slab with sump pit and pump and associated piping and electrical. The structure will also include a secure watertight door to the area. The protection of the air intake will aid in the protection of life and property and the valuable research conducted inside the Center for Marine Science.

Description of Project: Disaster Resistant Center for Marine Science Operations

The plans for the future Center for Marine Science Operations building do not include impact and wind resistant exterior windows. The North Carolina building code does not require the use of impact resistant windows; however, protection of the contents of this building is critical. Due to its close proximity to the Atlantic Intracoastal Waterway, the Operations Building is extremely vulnerable to high winds and flooding associated with hurricanes and other severe storms. Impact resistant windows will provide the building the protection it needs from impacts from flying objects and wind damage. Adding the design for impact resistant windows to the building plans can easily be done and the windows will provide a great deal of protection to the critical records, equipment, and research inside of the building.

PROJECT 4: IMPACT RESISTANT WINDOWS ON CRITICAL FACILITIES

Description of Project: Police Headquarters

Reinforcing UNCW Police Headquarters to reduce the potential for loss-of-use of these facilities is critical to the uninterrupted delivery of emergency services to the University. The UNCW Police Department is responsible for responding to and facilitating the response of other law enforcement, medical, and fire responders. Additionally, the police department initiates a response from the various divisions within the University during both acute emergencies, as well as routing operational issues. In this role, the police department is the sole facility that operates and is staffed incessantly.

The duties that police assume during disasters eliminate the ability to relocate critical communication and tactical equipment, criminal records, and event documentation and recorders without significantly impeding the delivery of emergency services.

Additionally, police facilities:

- House a computer network that links the department, and therefore the UNCW community, to local, regional, and national law enforcement and other public safety agencies.
- As required by federal and state statute, maintain physical evidence and other criminal records in both electronic and paper format. The loss, manipulation, or public exposure of this property or information, exposes the university to both criminal and civil responsibility within state and federal venues.

- Support important physical resources including radios, crowd control equipment, evidence collecting equipment, and planning documents, which are utilized by the department when responding to emergencies.
- Houses equipment that provides time-stamped documentation of actions taken by emergency responders that are utilized when reviewing lifesaving efforts, continuity of business actions, and positioning the University for criminal or civil litigation.
- Is an established location used by persons in need of emergency assistance.
- Monitors hundreds of alarms, including fire, hold-up, burglary, panic, and environmental.

In an effort to position the police department to continue to operate during emergency situations, police facilities must be reinforced with impact resistant windows to protect the facility against violent winds, and resulting flying objects, from hurricanes and other natural disasters. Hardening the facility that supports the University's only 24-hour emergency operation will better position the police department and the University to respond to community emergencies, without devoting valuable time and effort to facility related issues. The impact resistant windows will also protect the valuable equipment housed in Police Headquarters and will enable continuity of operations before, during, and after a disaster.

Description of Project: Randall Library

The mission of the Randall Library is to effectively support the University's teaching, scholarship, artistic achievement and service functions by providing in a timely manner (1) dynamic collections of informational resources in all formats; (2) efficient links to

remote informational resources; and (3) appropriate facilities, technologies, services and professional support needed by students, faculty, and staff as they endeavor to fulfill their academic, professional and individual goals. The Library also provides appropriate information resources and services to all citizens and scholars outside the University community. Special efforts are made to collect, preserve and make available information resources relating to the coastal region in which the library is located. Such resources are contained in the William Madison Randall Library Special Collections. The Special Collections department contains irreplaceable rare books, manuscripts, and other materials that have special historical significance for the Lower Cape Fear Region.

Special Collections, as well as all of the resources located in Randall library, are critical to the academic life of the students and faculty at UNCW, as well as the citizens of the Wilmington community. Protection of these resources is vital for the continuity of UNCW's academic mission and service to students. Impact resistant windows will allow necessary protection for Randall Library in the event of a natural disaster, such as a hurricane, that may put the Library and its important contents at risk.