



University of Delaware

2020 Hazard Mitigation Plan New Castle County (NCC) Campuses

April 2021



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Introduction

Hazard Mitigation is defined by the Federal Emergency Management Agency (FEMA) as “sustained action taken to reduce or eliminate long-term risk to people and property from hazards and their effects”. The hazard mitigation planning process involves the coordination of actions taken to reduce injuries, deaths, property damage, economic losses, and degradation of natural resources due to natural and human-caused disasters. Hazard mitigation is considered one of four phases in emergency management activities. This includes:

- Preparedness - activities that involve planning and preparing for when a disaster strikes and include response capability actions to ensure an effective and efficient use of resources and efforts to minimize damage.
- Mitigation - activities that involve actions that reduce or eliminate the probability of an occurrence or reduce the impact of a disaster. The goal of the mitigation phase is to decrease the need for a respective response.
- Response - activities that involve providing emergency assistance to victims and minimizing property loss and can include preliminary or initial damage assessments. The response phase begins during or immediately after the onset of a disaster and informs the recovery process.
- Recovery - activities that include short and long-term activities that help return individuals and communities to normalcy as soon as possible. Recovery actions involve clean-up efforts, temporary housing, and repair or replacement of infrastructure.

The previous Hazard Mitigation Plan (HMP) for the University of Delaware (UD) New Castle County Campuses (including Newark and Wilmington) was developed in 2015. The previous plan included, hazard identification and risk assessment, capability assessment, and mitigation strategy. This 2020 Plan Update serves as an update to the 2015 Plan and elaborates upon the various hazards and risks investigated, and mitigation actions revisited to track progress. Future plan maintenance and plan updates will occur in coordination and on the same five-year cycle as the New Castle County Hazard Mitigation Plan.

Purpose

The purpose of this Hazard Mitigation Plan is:

- To protect the health, safety, and wellbeing of the University community by incorporating the concepts of mitigation and loss into all facets of University operations
- To qualify for federal grant funding related to event pre-planning and disaster recovery;
- To make the effects of a disaster less costly and physically damaging to the University therefore making it possible to recover faster;
- To show the University’s desire to be a “Disaster Resistant University;” and
- To comply with all federal legal requirements for local hazard mitigation plans

Scope

This All-Hazard Mitigation Plan will be updated and maintained to continually address those hazards determined to be “high risk” and “moderate risk” through a detailed hazard risk assessment for the University of Delaware. Other hazards that pose a low or negligible risk will continue to be evaluated during future updates to the Plan, but they will not be fully addressed until they are determined to be of high or moderate risk to the University.

The geographic scope (e.g., the overall planning area) for the Plan includes the UD campuses located in New Castle County. This includes the following two campuses: 1) Newark (Main) Campus; and 2) Wilmington Campus.

This All-Hazard Mitigation Plan will be adopted by the President of the University of Delaware.

This Plan was developed in accordance with current federal rules and regulations governing local hazard mitigation plans. The Plan shall be routinely monitored to maintain compliance with the following legislation:

- Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390) and by FEMA's Final Rule published in the Federal Register on February 26, 2002, at 44 CFR Part 201.

Hazard Identification and Risk Assessment

Hazard Identification Summary

For specific hazard definitions and additional and detailed hazard information, please refer to the 2020 New Castle County Hazard Mitigation Plan, including the Hazard Identification, Hazard Analysis, and Vulnerability Assessment chapters.

The Consultants facilitated a Mitigation videoconference to offer representatives the opportunity to review previously identified hazards and update the 2020 hazard rankings, which are shown in Table 1. Two additional hazards were included in this Plan Update: Communicable Disease/Pandemic and Cyber Incident/Attack, bringing the total to 16 hazards.

Table 1 Hazard Ranking for the University of Delaware NCC Campuses

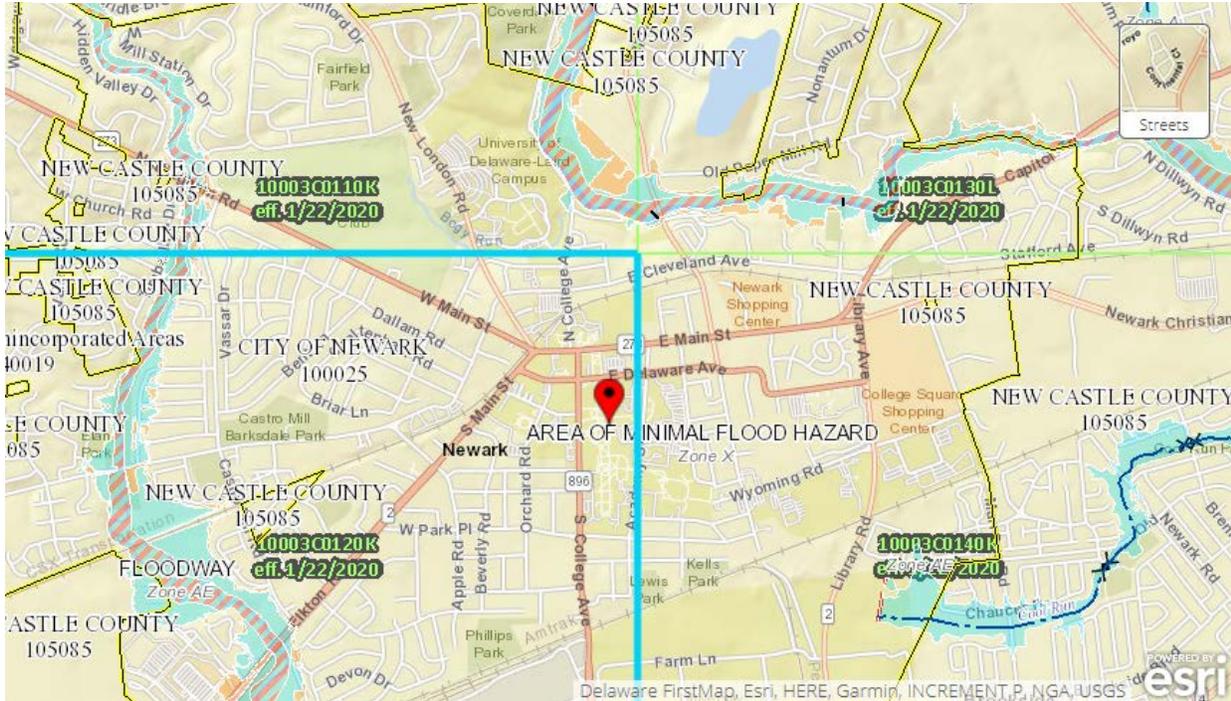
Rank	Based on Likelihood of Occurrence	Based on Impact to the University
1	Thunderstorm	Communicable Disease/Pandemic
2	Communicable Disease/Pandemic	Cyber Incident/Attack
3	Power Failure	Flood
4	Cyber Incident/Attack	Hazmat Incident
5	Flood	Terrorism
6	Winter Storm	Pipeline Failure
7	Pipeline Failure	Fire
8	Fire	Coastal Wind
9	Tornado	Tornado
10	Hazmat Incident	Power Failure
11	Coastal Wind	Winter Storm
12	Extreme Temperatures	Thunderstorm
13	Terrorism	Extreme Temperatures
14	Drought	Drought
15	Dam Failure	Dam Failure
16	Earthquake	Earthquake
Red = High Risk; Orange = Moderate Risk; Green = Low Risk		

The Wilmington Campus is not subject to frequent flooding as determined using the FEMA DFIRM Flood Boundary¹. Based on these FEMA DFIRMs, effective 1/22/2020, the Newark Campus experiences a minor amount of flooding from

¹These Digital Flood Insurance Rate Map (DFIRM) boundaries, effective 1/22/2020, are prepared with updated base mapping and topography that will improve the accuracy of floodplain determinations. The improvements in spatial accuracy

a small tributary of the White Clay Creek. Based on a review of coastal flooding, the risk to the Wilmington and Newark campuses is negligible, as shown in Figure 1 and Figure 2.

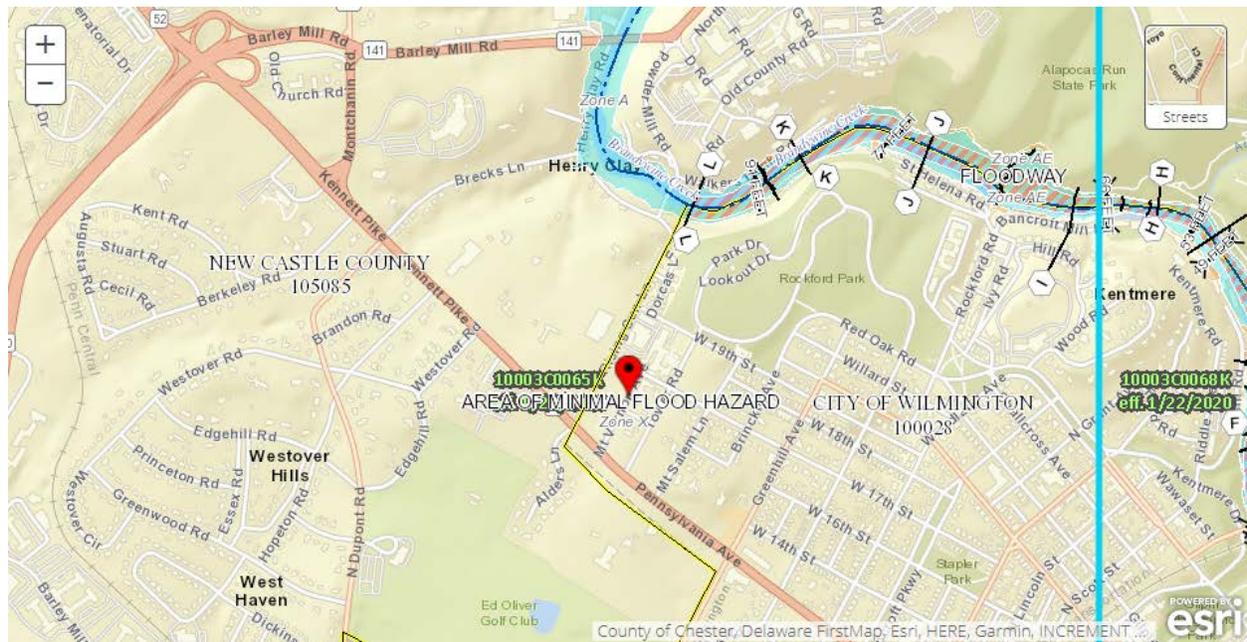
Figure 1 University of Delaware (Newark) dFIRM



According to the FEMA DFIRM, the UD Newark Campus is not at high risk to flooding, but does experience some minor flooding on the northern end of campus from the White Clay Creek. Other flood hazard areas close to the vicinity of campus (but not on campus), come from Cool Run to the southeast of campus and the Christiana River to the west and southwest of campus, although they do not pose a flood threat to campus.

provided by the new base map, and the availability of electronic floodplain information is expected to enhance the maps' use for planning, permitting, and insurance applications.

Figure 2 University of Delaware (Wilmington Campus) dFIRM



According to the FEMA DFIRM, there are no flood hazard areas located on the UD Wilmington Campus, while the only flood hazard in the vicinity comes from Brandywine Creek, just north of the UD Wilmington Campus.

Because of the nature of human-caused hazards and the nature in which risk and vulnerability is presented for human-caused hazards, it is not possible to rank them fairly in direct comparison with natural hazards. In summary, all human-caused hazards addressed in this section—terrorism (chemical, radiological and biological agents), hazardous materials incidents (HazMat), and energy pipeline failures—warrant an overall rating of low risk. The final risk ranking demonstrates that flooding and severe storms, with the potential for power failure, are the two most critical threats to the University of Delaware population and built environment.

Hazard Analysis Summary

Over the previous five years, there have been a number of hazard events that have impacted University assets, although no hazard events have been significant enough to necessitate the need for advanced planning, nor the need to designate additional funding in response to hazard events. One of the more significant hazard occurrences was August 13, 2018, when flash flooding occurred and resulted in approximately 35 buildings being damaged, which occurred just prior to reopening for the 2019 school year.

There were three significant fires on campus causing damage to facilities. On June 4, 2021, a university hydrogen bus located at the STAR Campus caught fire damaging three other buses and the building in which they were stored. On January 30, 2018, a fire damaged the university Maintenance Center. In August, 2017, a fire at the McKinly Lab, which was caused by a construction saw, caused major damage to the facility.

In light of the increasing cost of operation and maintenance of the Christiana Towers, the university decided to close both of the towers at the end of the 2018-2019 academic year. Conover Apartments was also closed due to mechanical issues/age and other concerns. Additionally, there have been several rental houses closed due to mechanical problems, basement flooding, and potentially other concerns.

The biggest hazard over the past five years has been the impact of the COVID-19 pandemic. Public health is the primary concern associated with this pandemic, and vulnerable populations (i.e., elderly, individuals with pre-existing

health conditions) can be considered more at risk to this hazard than non-vulnerable populations. Pandemics/Communicable Disease Outbreaks can occur at the building level or campus level and can be contained, or can be widespread as in a global pandemic. COVID-19 is an example of a global pandemic that spread throughout the world very rapidly.

The University shares information about the status of campus activity regarding COVID-19 positive cases among members of the campus community to aid in informing our community about public health. These statistics can be found at: <https://www.udel.edu/home/coronavirus/dashboard/>. As of April 2nd, 2021, in the State of Delaware there has been a total of 96,806 confirmed positive cases, 53,807 confirmed positive cases in New Castle County, and 5,194 confirmed positive cases within the Newark zip code of 19711.

Other past hazard occurrences and associated impacts include Hurricane Isabel in 2003 which resulted in water intake in Gilbert Residence Hall. One of the oldest residence halls on the Main Campus in Newark, this facility was demolished in May 2010 to make way for a larger, more advanced residence hall that opened in the fall of 2012. The University did incur costs associated with the snowstorms of 2010, mostly snow removal costs, but there was no significant damage to property or facilities.

Capability Assessment

This section includes the capability assessment of the University to implement hazard mitigation activities. The capability assessment helps identify existing gaps, conflicts and/or shortcomings that may need to be addressed through future mitigation actions and helps to ensure that proposed mitigation actions are practical, while considering the University's capacity to implement these actions. The mitigation capability assessment includes an analysis of the University's capacity from a planning, policy, staffing, and training standpoint.

Campus and Public Safety, Emergency Management

The responsibility of the Office of Emergency Management is to ensure that the University is prepared to respond to, recover from, and mitigate against the effects of a wide variety of disasters that could adversely affect the health, safety and/or general welfare of its students, faculty, staff, and visitors.

The Emergency Management Section is designed to provide the structure and guidance for the development of a hierarchy of programs for preparation, mitigation, planning and recovery from disasters. The Emergency Operations Plan (EOP) is the official emergency plan for the University. This Plan applies directly to all persons and entities associated with the University, including its students, faculty, staff, visitors, contractors, and other support entities. The EOP defines the roles, responsibilities and relationships of external agencies and entities not normally associated with daily University operations but which may have a role in disaster response. The Plan applies to all campuses, facilities and programs administered by the University regardless of location or purpose. Individual departments are highly encouraged to develop local emergency guidelines that are consistent with the University plan.

Emergency Management at the University is governed by [University Policy](#) 7-6; 7-51; 7-52 and 7-54 and the [Robert T. Stafford Act/Disaster Relief and Emergency Assistance Act of 1974](#) (Public Law 93-288).

Since 2015 there has been increased emphasis upon the overall preparedness level of the University community through enhanced outreach and training of all personnel. As an example, regular NIMS and ICS training has been increased to include annual training. The trainings are open to all faculty, staff, and students with free registration.

Additionally, Tabletop exercises covering a wide array of various hazards and vulnerabilities are conducted on a quarterly basis. Regular coordination meetings with University Police, University Environmental Health and Safety and University Emergency Care Unit are conducted to better understand each other's capabilities and capacities.

In 2020, the [LiveSafe mobile app](#) was thoroughly updated with new features added to increase the overall preparedness of the campus community. New features include a more effective design and layout as well as the addition of Covid-19 specific information and links.

The Office of Emergency Management, in collaboration with Human Resources and University Police, developed a new online training course entitled *Surviving an Active Shooter or Similar Emergency Situation*. The course is offered through the university's online learning management system to all faculty, staff, and students. Finally, the University has purchased and implemented the Quali Ready Academic and Business Continuity software. Individual departments are being trained on the use of the software and gradually uploading their Plans. The Office of Emergency Management developed their Business Continuity Plan within the last five years.

The 2015 Hazard Mitigation Plan identified the need to collaborate with Aetna Hose, Hook & Ladder & EHS on a real-time hazardous materials database. The database would be a secure central repository encompassing the transportation sector that utilizes the major roadways and railways in/around the City of Newark. Although not accomplished, there were efforts to provide better awareness around hazardous materials on campus. In October 2017, EHS began the initiative to inventory all the research chemicals on campus, and to accomplish this task, it required a new chemical inventory program, uniquely named ChemInventory. The implementation of the new program has been well-received and, as of 2020, it has helped more than 215 principal investigators with their respective inventories.

The Office of Emergency Management has identified the following needs to be addressed:

- **Training:** Upon adoption of the 2020 All-Hazards Mitigation Plan, Office of Emergency Management would like to provide formal education, outreach, and training on the Plan to the campus community.
- **Redundant emergency notification systems:** The 2015 Plan identified certain technologies that were previously used for emergency notifications. Some of these systems such as the classroom projection override system have become obsolete. The 2015 Plan requested the procurement of equipment that will supplement the UD Alert system and provide redundant communications in the event of a disaster or emergency. This system was requested through the general fund budget process. The system was not funded and the Office of Emergency Management has sought to increase the use of the LiveSafe app for greater emergency notification system capabilities to include broadcast messaging.
- **COVID-19 Training:** The University, like many organizations, has been challenged with managing the Covid-19 novel coronavirus. As such, the Office of Emergency Management would like to lead an effort to better train all senior leaders on a host of topics related to pandemic planning and response. A one-day executive leadership course would help to familiarize individuals of the important role they play in the event of a pandemic.
- **Staffing:** The additional staffing in the Office of Emergency Management identified in the 2015 Plan was not approved for funding. The Department seeks to hire a work study or graduate research student to provide programmatic support; data management; social media management, research and planning and web services to increase awareness, outreach, and training.

College of Earth, Ocean, and Environment

Through leading-edge interdisciplinary research and education, the University of Delaware College of Earth, Ocean, and Environment (CEOE), explores and addresses complex issues of planetary-scale sciences of the Earth's systems, supports resiliency for long-term sustainability, and prepares future generations of leaders, all in partnership with academia, government, businesses, and communities.

The College houses three very important components of Delaware's emergency management infrastructure-- the Delaware Geological Survey (DGS), the Office of the State Climatologist, and the Delaware Environmental Observing System (DEOS). The CEOE also conducts significant research on hazards associated with the environment and is home to the Delaware Sea Grant (DESG) which features Federal and State funded research and community outreach programs devoted to hazard mitigation and resilience.

The Delaware Geological Survey, the Office of the State Climatologist, and the Delaware Environmental Observing System all work with emergency management officials to decrease vulnerability to the University's top hazards. The two primary ways DGS, DEOS, and the State Climate Office support the State's emergency operations and reduce potential losses is: 1) continued operation of our real-time monitoring platforms and subsequent derived data products that support emergency management and provide up-to-the-minute monitoring of our local environment; and 2) provide expert advice and support during emergencies caused by natural hazards.

DESG initiates and develops education and outreach programs that effectively communicate hazard-related information, strategies, and best practice guidance to citizens and local governments. Examples include natural disaster-related school programs and activities conducted as part of hazard awareness campaigns such as Hurricane Awareness Week, development of community natural hazard and climate adaptation action plans, and sponsorship of workshops and seminars focused on community resiliency. In addition, the Delaware Sea Grant College Program delivers products and publications related to hazard awareness and adaptation planning, including the *Delaware Homeowners Handbook to Prepare for Natural Hazards*, the *Natural Hazard and Climate Change Adaptation Tool Kit for Delaware Communities*, and a flood-risk awareness webpage.

Delaware Sea Grant also provides funding for multiple research and monitoring projects that assist in establishing resilient communities that can adapt to the impacts of hazards and climate change. This includes research aimed at 1)

improving the forecasting of coastal hazards (e.g., storm flooding and inundation, sea-level rise) for decision makers and the communities they serve; 2) programs that help decision makers adopt policies that will reduce risks, manage catastrophic events, and speed recovery; and 3) developing and/or making accessible state/regional databases that support hazard-related planning.

CEOE does have a disaster plan in place, and staffing and funding levels are adequate.

Delaware Geological Survey

The Delaware Geological Survey's (DGS) mission is, by statute, geologic and hydrologic research and exploration, and dissemination of information through publication and public service.-Research and service activities are focused on five areas: (1) geology; (2) hydrology; (3) natural hazards; (4) the State geospatial framework; and (5) information dissemination. DGS is involved in identification, investigation, and advisement regarding natural hazards including earthquakes, landslides, droughts, riverine and coastal flooding, erosion, sinkholes, unstable earth and subsidence, hurricanes, and winter storms. They are also involved in public education and outreach related to natural hazards.

Natural hazards are those events in the physical environment that present risks to human life or property. The DGS identifies and investigates natural hazards to help understand the earth systems that present the hazards and determine strategies to prepare for or mitigate the risks. The DGS is active in advising emergency management agencies on natural hazards, included in the Delaware Emergency Operations Plan, as an agency having a vital role in dealing with floods, northeaster/extratropical storms, droughts, earthquakes, sinkholes, and dam failures. Because of the risk of coastal flooding in southern Delaware, the DGS conducts a program to document the effect of tides and winds on coastal erosion, especially for events with potentially large human impact.

One of DGS' primary roles is to provide hydrologic information relevant to floods, hurricanes and coastal storms, severe thunderstorms, and winter storms. DGS provides real-time analysis of hydrologic conditions (stream and river flooding, coastal flooding, and erosion, etc.) as well as historical records, information and analysis to organizations such as the Delaware Emergency Management Agency, county emergency management agencies, municipalities, and the public, etc. The DGS, in cooperation with the United States Geologic Survey (USGS), manages and operates a statewide network of stream gages (flood), tide gages (coastal flood), and groundwater monitoring wells (drought). The DGS, in cooperation with the Delaware Environmental Observing System (DEOS), and the USGS has an early warning alert system in operation for stream flow and potential flooding conditions in northern New Castle County. DGS works closely with the Delaware Emergency Management Agency (DEMA), New Castle County, City of Wilmington, and City of Newark through provision of real time analysis and advisement prior to and during flooding events. DGS participates in DEMA's bridge calls and provides real time analyses of hydrologic conditions during major weather events. DGS staff serves in the DEMA Technical Assessment Center during major storm events. The real time stream and tide gage information is available online by those stakeholders involved in preparing for, responding to, and recovering from stream and tidal flooding and droughts.

DGS's authority is statutory and has several active programs that are relevant to characterizing natural hazards. One such program is the operation and maintenance of the DGS Seismic Network. The DGS does not have statutory authority to protect people and property from losses due to natural, technological, and man-made disasters but provides interpretative reports, information, analysis, and advice to those who have such responsibilities.

DGS, in partnership with DEOS, also maintains the Delaware Coastal Flood Monitoring System (CFMS). CFMS is a web-based display tool and early warning system designed to provide emergency managers, planners, and others the information on the extent, timing, and severity of upcoming coastal flood conditions. It is comprised of hydrologic 48-hour forecasts along the Delaware Bay/River, a back-end system that determines predicted water levels for each coastal community and sends out any necessary alert notices, real-time water level observations from USGS and National Ocean Service (NOS) tides gauges, and a website to display that information.

Current staffing levels are adequate for everyday research and departmental activities; however, any additional research assignments would require short-term employees. Additional funding is always being sought to continue to

maintain the same level of support for the state, and to accommodate and acquire new and better technologies for real-time earth observations.

Facilities Custodial and University Services

The mission of Custodial and University Services Department is to provide a welcoming, safe, and healthy environment for the University community in a beautiful, verdant setting. The Department provides excellence in the services necessary for the University to pursue its mission. Custodial and University Services is comprised of Custodial Services, Grounds Services, Mail Services, Pest Control Services, Mover and Campus Delivery Services. The Department works very closely with Campus & Public Safety in proactively preparing for and responding to the effects of severe weather (i.e., winter storms). Grounds Services is responsible for all grounds maintenance functions as they relate to the safety and appearance of the campus. The Department also serves as the central point for snow removal, solid waste and recycling services and pavement sweeping services.

The Grounds Unit maintains all university grounds, gardens, and the athletic complex. Staff includes heavy equipment operators, refuse collectors, grounds equipment technicians, caretakers, grounds workers, arborists, horticulturists, grounds technicians, drivers and their supervisory staff who are dedicated to providing exceptional service to the University community.

Custodial Services provides the University with quality custodial maintenance, ensuring a safe and healthy environment in all campus facilities and using products that meet Green Seal standards. Employing appropriate proper protective equipment, the department aids in mitigating future hazards.

The Department proactively plans and participates in functional and table-top exercises to assure a high-level of preparedness for all-hazards that could confront the University. The Department routinely partners with the Office of Emergency Management and University Police on all relevant tabletop exercises and drills, including hazard mitigation, emergency operations, and situational exercises as it pertains to the EOP. A list of recent exercises is included below:

- Joint exercise with Office of Emergency Management and Residence Life and Housing in the simulation of a major fire at a residence hall with evacuation and enactment of the University Shelter Management Plan.
- Active Shooter and Violent Intruder Training
- National Incident Management System (NIMS)/Incident Command System (ICS) training and exercise
- Sports Event Management training and exercise

It is important that existing staffing and funding levels be maintained in order to support mitigation efforts. These levels must be reviewed and adjusted accordingly as the campus buildings/systems continue to expand.

Facilities, Real Estate & Auxiliary Services (FREAS)

Facilities Maintenance and Operations

The mission of Facilities - Maintenance & Operations is to perform all of the corrective and preventive maintenance to ensure that buildings/systems are functional prior to any hazard event. The Facilities Maintenance Department operates and maintains the University of Delaware's campus in support of the University's teaching, research, and community service responsibilities. FREAS is responsible for the maintenance, operation, protection, and preservation of the facilities of the University of Delaware. All University of Delaware students, faculty, staff, and visitors are their customers. FREAS' responsibilities include: inspection of rain leaders, storm inlets building sump pumps, and regular and emergency power. This Department also assists in the development of design standards, which facilitates the mitigation of the effects from disasters. A Preventative Maintenance (PM) program is in place, which is designed to reduce potential losses. All PM's are performed via a set schedule, and implemented through a Computerized

Maintenance Management System (CMMS). Existing staffing and funding levels are required to be maintained in order to support mitigation efforts. These levels must be reviewed and adjusted accordingly as the campus buildings/systems continue to expand.

Facilities Planning and Project Delivery

The mission of Facilities Planning and Construction Office is to design, construct, and maintain safe and highly functional buildings and grounds for the University of Delaware students, faculty, staff, and guests. The Facilities Planning & Construction Office uses the applicable codes and standards enforced by the State of Delaware Department of Natural Resources and Environmental Control, and the City of Newark Building codes for all construction projects on campus as it relates to building, life safety, and environmental requirements.

Planning and Project Delivery is responsible for implementing planning and design recommendations to ensure the preservation of the physical attributes of the University of Delaware, developing and maintaining design guidelines that will preserve and enhance the function, character and beauty of the University's various campuses, and the oversight of all renovation, additions, alterations, and new construction on the University campuses. The Department also provides facility information services through maintenance of a Records Retention Room.

In the event of a predicted storm or high wind event, the Department ensures that Contractors secure the construction site to minimize damage from winds, snow, or flooding. Securing scaffolding and construction material that may become windborne and clearing grates to ensure adequate drainage are a few examples of their efforts. Hot work permitting and fire watch is required as part of the construction safety procedures to decrease vulnerability from fire.

Facilities ensures Contractors follow the Federal, state, local, and University safety requirements and request assistance from the UD Environmental Health and Safety Office, when necessary. Furthermore, Inspectors are hired to conduct site inspections on active construction sites to ensure sediment and storm water requirements are being adhered to, by Contractors.

FREAS divisions utilize existing written policies concerning safety and environmental hazard identification. Policies are frequently updated to reflect evolving trends and situations. During Covid-19, the Department has had to pivot and put a greater emphasis on a host of facility-related challenges to include implementing social distancing, hand sanitizer, and ensuring frequent cleaning of buildings. Deferred maintenance of existing facilities continues on campus, however, with the potential financial impact of the pandemics, certain projects were re-evaluated, and some may need to be altered or value-engineered. FREAS will continue to work in collaboration with Environmental Health and Safety, Emergency Management, and other campus partners to assess vulnerabilities and take steps to decrease hazard vulnerability.

Science, Technology, and Advanced Research (STAR) Campus

The University of Delaware's Science, Technology and Advanced Research (STAR) Campus is a 272-acre property currently being developed as a space that combines business, research, education and more. A former auto assembly plant, STAR Campus is currently home to [UD's Health Sciences Complex](#), AP Biopharmaceutical Innovation Center, California-based [Bloom Energy's East Coast fuel cell manufacturing center](#) and UD's [eV2g project](#).

Future development will establish it as a center of innovation, focused on leading research in areas such as health science, cyber security, and alternative energy. Through partnerships with private businesses and government agencies, the University will provide educational and professional opportunities for students while igniting job and economic growth within the State.

The following needs have been identified to assist with future efforts focused upon all-hazards preparation, response, mitigation, and recovery:

- Expanded training in ICS and NIMS methodologies (both functional and table-top exercises related to disaster management)

- A comprehensive plan to ensure business continuity of site operations - Work with the Office of Risk Management to update the University Continuity of Operations Plan.

Finance and Risk Management

The mission of the Office of Risk Management, within the Office of the Vice President of Finance, is to manage the protection of the University's human, physical, natural, and financial resources to minimize property and casualty losses and legal liabilities. The Office administers the University's risk management program by providing central coordination of the identification, evaluation, control, and financing of the risks faced by the University.

Through its risk control responsibilities, the Office of Risk Management provides services to reduce the frequency and severity of losses. In addition, through its risk financing responsibilities, it utilizes insurance and the transfer of risk to protect the University from the consequences of a financial loss.

Utilizing the expertise of the University's commercial property insurance engineers, Risk Management reviews building plans for new campus construction and major building renovations. The focus of these reviews is to prevent losses arising out of fire and high winds. Risk Management also conducts annual inspections of all major University facilities, and monthly inspections of new construction projects, with the goal to minimize building losses arising out of various perils including flood, high winds, and fire.

At this time, existing staffing and funding levels are adequate for the current level of hazard mitigation actions.

Human Resources

Human Resources (Includes: Payroll, Records Management and Human Resources Information Systems (HRIS), Equity & Inclusion/Title IX, Employee Education and Well-being, Employee and Labor Relations, Compensation and Benefits, and Recruitment.) The mission of this unit primarily revolves around employees, their wellbeing, payment, and inclusion in the University community.

If there were a technological disaster it would definitely hinder the departments, but being a large user of technology has allowed the departments to be part of the technology disaster planning to help mitigate the effects of disaster. Human Resources plays a role in creating the University policies around how employees are impacted by these events and would be called upon after the fact to help employees and the University.

The Units' authorities include the functioning of employees at the University and to the extent this would impact employees all of the personnel policies and procedures is their authority. There are many statutes and UD policies that govern the operation of the units in Human Resources. These items cover much of what the unit does, but they believe there may be some room to better define polices and to create some policies that do not exist. The units currently have a Disaster Recovery Plan that would help them recover from most of the disasters listed.

The biggest concern for Human Resources is the loss of technological records. As long as the physical records can be accessed, systems can continue, although payroll, benefits and other processes might take longer to complete.

The units do have procedures designed to reduce losses in their Disaster Recovery Plan. When considering Staffing levels, for minimal disasters, staffing could be reassigned while normal functions of the unit were put on hold; however, for prolonged disasters, staffing would become an issue. Current funding is insufficient to cover disaster situations.

Information Technology

The mission of Information Technologies (IT) includes maintaining the communication infrastructure (Internet, telephone, cable television, radio, wired and wireless networking) as well as the emergency notification infrastructure (emails, text, and voice mail), all 1-800 call center on-demand issues, maintaining network and data center redundancy and maintaining the 911 location data (ALI) for buildings and residence halls. The responsibilities of IT act to facilitate

the mitigation of the effects of a disaster. Communications are essential in managing a response to a disaster. The UD community and the public need information to be able to communicate with others.

IT has fire suppression to mitigate fire issues in the main data center on Chapel St. IT has implemented a disaster recovery site to allow for switch over to an alternate computing site in the event the main site becomes unusable. The communication infrastructure supporting Internet access, digital telephone and other forms of communication are highly redundant with three diversely connected Internet Service Providers (ISPs). IT has campus-wide responsibility for administrative computing functions and a robust and diverse communications infrastructure. IT does not have direct authority over non-IT managed computing infrastructures found in many of the individual colleges.

The main data center has an Uninterruptible Power Supply (UPS) system that includes battery backup as a transitional power source and a diesel generator for extended outages to support IT operations. The capacity of the generator is two megawatts. The generator fuel tank capacity is 6,000 gallons and 3,000-4,000 gallons is kept in the tank. At current power usage levels, that amount of fuel will provide more than 24 hours of runtime. IT has contracted for diesel fuel delivery as necessary (not less than once per day) should the generator be operated for an extended period of time.

IT also has the ability to respond to emergencies on an as needed or ad-hoc basis as was illustrated during the H1N1 crisis in 2010. IT helped to establish a temporary infirmary in the Bob Carpenter Center for the H1N1 crisis. Additionally, IT has a disaster recovery site to ensure continued operations of computing functions and are currently engaged in a project to develop procedures and documentation for the recovery staff of the disaster recovery site in an emergency.

Office of Communications and Marketing

The University of Delaware Communications and Marketing Office is dedicated to developing strategies that will continue to elevate recognition of the University of Delaware as a premier research institution. Its aim is to help attract the brightest students and most distinguished faculty, and highlight that talent for potential donors and supporters.

The Office is led by the Vice President of Communications and Public Affairs who is the authorized Public Information Officer (PIO) for the University. All public information is coordinated and disseminated by this Office with assistance from other University departments and personnel.

During critical incidents, the Communications and Public Affairs work with each organizational unit to gather accurate information regarding the situation and details of the University response. The University PIO, working with other University Critical Incident Management Team (CIMT) members and City and County PIOs, as appropriate, will provide notification to faculty, staff and students, and the general public on progress toward recovery. The PIO works with the CIMT at the Emergency Operations Center and provides timely briefings at a pre-designated media briefing location.

The Office will participate in joint trainings and exercises to ensure that key staff members are following best practices and the procedures of the University. Should additional technological equipment related to the crisis management function and the emergency notification systems be acquired, the Office would like to ensure that key staff members are trained in the use of these systems. Since the Office is also involved in a major overhaul of the University's main web pages, the need for emergency communications will be a key component of that effort.

Office of Residence Life

Residence Life and Housing supports the missions of the University of Delaware and the Division of Student Life by collaborating with students to develop vibrant inclusive communities where students engage in living-learning environments, freely exchange ideas, and cultivate skills and knowledge to become citizens and leaders in a global society.

The Office serves to facilitate the response in terms of communication to students. Because a large percentage of UD students live in residence halls, the Department has the ability and an obligation to communicate to them quickly

should a disaster occur. Residence Life and Housing also provides support to those units on campus charged specifically with disaster management.

Earlier this year, the Office worked closely with senior leadership and the Medical Director to quickly assess the impact of Covid-19 upon those students who were residing in university housing. On March 13, 2020, the University informed all students that university housing would be closing. In limited cases, the University provided housing to those individuals who had hardships and were not able to evacuate housing. Designated on-campus housing was provided to those with special circumstances.

In conjunction with Facilities, Public Safety and Environmental Health and Safety, residence life and housing staff works to communicate fire safety expectations to students living in the residence halls. Staff members are trained on alarm response protocol, fire prevention strategies, and are expected to strictly enforce those policies in place to lessen fire risks in the buildings. Staff also work to educate students throughout the year about fire safety risks through educational programs and conversations; and by conducting safety room inspections several times a year.

In addition to enforcing those policies articulated in the Code of Conduct and referring students to the Office of Student Conduct, as necessary, Residence Life and Housing also administers the Residence Hall Regulation System. Existing staffing and funding levels are adequate for hazard mitigation efforts.

Residence Life and Housing leadership identified the need to enhance communication during a disaster and request that their office be provided with radiophones that work through radio communications. Since this office is central in communicating emergency plans to staff and students, in the event of loss of electricity, they will not be able to communicate through the provided VOIP service. Also, if cell towers are down or overloaded, it leaves no realistic way to communicate urgent emergency instructions or updates.

In order to ensure that plans were current and staff were familiar with expected actions, the Office of Emergency Management provided a tabletop exercise in January 2020 for the Residence Life & Housing staff. This exercise involved a simulated major fire at a residence hall, which required the evacuation and sheltering of students. Through this exercise, the team collaborated on communication tools to ensure all personnel and students were kept informed about all aspects of this disaster scenario. It was agreed that the existing strong partnership with the Office of Communication and Marketing which would oversee communications during a disaster would be the central hub of communications in any disaster. Other tools would include the UD Alert system, social media, and use of the university home page and email system.

Additional department needs that have been identified include:

- Continuing to offer training on NIMS/ICS concepts with special attention given to guidelines on terminology, especially for those non-first responders who, by virtue of their roles, need to be familiar with NIMS/ICS, but do not practice it frequently. This was last completed in June 2019.
- The Red Cross and New Castle County have a very limited number of cots available to the University. The University should explore the procurement of at least 200 cots, which can be deployed quickly and effectively, into a shelter on campus.

University Police

The University Police works with members of the University community and other law enforcement agencies in providing a collaborative approach to crime prevention and the safeguarding of life and property. The mission of the University Police is committed to working with members of the University community and other law enforcement agencies in providing a collaborative approach to prevent crime, enhance safety, and build trust with our stakeholders.

In order to accomplish the department's mission, members of the Department will deploy innovative crime reduction strategies and community policing initiatives that are focused on the safety and welfare of the public they serve. They

are committed to delivering quality service, maintaining high ethical standards, and fostering an atmosphere of P.R.I.D.E. – Professionalism, Responsibility, Integrity, Dedication, and Excellence - in their quest to become a dynamic leader in campus law enforcement.

The Office of Emergency Management conducts ongoing educational outreach programs on ICS and NIMS methodologies to campus partners. The University Police collaborates with these trainings, which is usually followed by tabletop exercises, drills, and situational exercises. The Department has also expanded training on the Emergency Operations Center and the 911 Center fold-down procedures with the Newark Police Department. Also, the 911 Center table of organization has been updated with senior dispatchers being responsible for providing training for line-level dispatchers. In 2020, the University 911 received the Commission on Accreditation for Law Enforcement Agencies (CALEA) Communications Center Accreditation. The voice over internet protocol (VOIP) Phone System in the University 911 Center was transferred back to copper as a more reliable solution which would be independent of any university network outages, in January 2020.

Additionally, in 2015 the need to collaborate with Aetna Hose, Hook & Ladder & EHS on a real-time hazardous materials database was determined. The database would be a secure central repository encompassing the transportation sector that utilizes the major roadways and railways in/around the City of Newark. Although not accomplished, there were efforts to provide better awareness around hazardous materials on campus. In October 2017, EHS began the initiative to inventory all the research chemicals on campus, and to accomplish this task it required a new chemical inventory program, uniquely named ChemInventory. The implementation of the new program has been well-received and, as of 2020, it has helped more than 215 principal investigators with their respective inventories.

The Department has identified the following needs to assist with all-hazards preparation, response, mitigation, and recovery.

- Continue to enhance safety and security at the University Courtyard Apartment Complex which was acquired by the University in 2019. The goals include continuing to enhance student cadet patrols, technology improvements, and staffing a new Community Engagement Team satellite office
- Identify and secure space in Whitney Athletic Center at the Delaware Stadium for a UD Police Department command post to enhance game day situational planning and response
- Implement “Stop the Bleed” campaign
- Continue to provide various safety educational programs including alcohol awareness campaigns, Rape Aggression Defense, and the many Community Resource Unit educational programs: First Year Experience, Criminal Justice Program, Early Learning Childhood initiatives, De-Escalation training, and the creation of a new and improved active shooter video to share with all University stakeholders.
- Develop communications accreditation standards to be in compliance with the Public Safety Communications Accreditation Program, through CALEA.

Office of the Provost

As the University's Chief Academic Officer, the Provost is responsible for administration of all programs of instruction, research, and service, and for facilitating the success of the University's faculty and students.

With respect to hazard mitigation and safety, the Office of the Provost coordinates with the Office of the President, the Office of Campus and Public Safety, the Office of Communications and Marketing, the Office of Student Life, as well as university-wide academic and administrative units to disseminate information and promote activities that will help the University prepare for, respond to, and recover from, emergency hazards and disasters.

The Provost serves on the Critical Incident Management Team (CIMT), which may be convened as a decision-making body for the University on issues related to an emergency or disaster. This team is comprised of an Operations Group

and a Policy Group. The Provost serves on the Policy Group with the University President, Executive Vice President, and others. The priorities of the Policy Group include defining crisis policy; approving overall priorities and strategies; disseminating timely, accurate and appropriate information to the University faculty, staff and students, parents, media, and other concerned community partners; determining class or campus closure and resumption; and planning long-term recovery actions.

As the University completes the 2020 All-Hazards Mitigation Plan, the Office of the Provost recommends the primary goal of ensuring the University's mission of teaching, research and public service is maintained in the event of a natural or man-made disaster. Additionally, the protection of university assets and critical infrastructure including utilities infrastructure, communication systems, information technology systems and research facilities is critically important. In 2020, the Office expanded the number of duress alarms in their space. Additionally, Hullahen Hall, which is where the Provost's Office is located, was outfitted with the ProWatch access control system in 2019. This system limits access to the building and provides an additional layer of security.

As was evidenced with the Covid-19 pandemic, it is critically important that the Office of the Provost continues to serve a priority role with regard to academic continuity and ensure the safety of the entire campus community during challenging times.

Office of Student Conduct

The Office of Student Conduct's mission is to foster safe, healthy, and positive learning and living environments so students can be successful in all their endeavors. Students are educated about behavior expectations, which are contained in the Student Guide to University Policies. When students make mistakes, the Office of Student Conduct's role is to respond in a balanced manner emphasizing both education and accountability. Through these efforts, they strive to effect change in students so that additional mistakes do not occur and impact students' success.

Student Conduct works very closely in partnership with Campus and Public Safety to achieve the overall goal of decreasing student vulnerability to any natural or human-made hazards. An example of hazard mitigation is the Office's proactive efforts to ensure system redundancy by maintaining database backup on an off-campus server. In September, 2012, the Office procured new safety technology by installing nine duress alarms, which are maintained throughout the office for the personal protection of employees, especially when hearings are being conducted. This technology provides employees with a secondary means of contacting University 911 in the event of an emergency. Additionally, Hullahen Hall, which is where Student Conduct is located, was outfitted with the ProWatch access control system in 2019. This system limits access to the building and provides an additional layer of security.

Student Health Services

The mission of the University of Delaware's Student Health Service (SHS) is to provide students with quality primary health care and education about healthy lifestyles. SHS is a nationally accredited by the Accreditation Association for Ambulatory Health Care (AAAHC) every 3 years. The in-house clinical laboratory is also nationally accredited every 3 years by the Commission on Office Laboratory Accreditation (COLA). Both national accrediting agencies have Quality Improvement (QI) standards that measure patient care but also the infrastructure of the administration (Governance) and the physical plant. Health education is provided to individual patients and to the whole campus through the website as well as a Healthy HENS program encouraging healthy exercise, nutrition, and sleep. Infection control (hand washing, cough etiquette, etc.) is emphasized in all encounters.

SHS provides medical support to victims and plays a significant role in decreasing vulnerability to infectious processes that affect the campus. There are immunization requirements for all students for many communicable diseases (Measles, Mumps, and Rubella) and recommendations for vaccination for Tetanus, Diphtheria, Pertussis, Varicella (Chickenpox), Hepatitis A and B, Meningococcal Meningitis, and screening requirements for Tuberculosis. The Department is given the authority to address campus health concerns and also offers education classes designed to reduce potential hazards. The Department maintains internal written policies and procedures that focus on reducing loss during a disaster.

The Student Health Services has served a critical role in the mitigation of Covid-19. Drawing upon plans and experience from the 2009 H1N1 flu pandemic, the staff of SHS was well-prepared to deal with the first case of Covid-19 on campus. By working closely with the Delaware Department of Public Health (DPH), DEMA, and many campus partners, SHS leadership quickly made sound decisions in mitigating the spread of the virus on campus. SHS was primary point for testing for students when the issues started on campus. Working closely with DPH, SHS had sufficient testing and assisted with information for DPH for contact tracing. Due to increased volume during March 2020, SHS commandeered the construction trailer to become a triage and testing point for students with COVID-like symptoms. SHS continues to work daily with various internal and external stakeholders and university leadership to prepare for future developments and challenges that Covid-19 will surely present into the future.

The SHS facility has added perimeter security from an access control perspective. All doors have ProWatch access control technology and ingress/egress is effectively managed using this technology. Building security and situational awareness is also enhanced by video surveillance cameras which “feed” live video imagery to the University 911 Center. Additionally, in 2012, a total of seven duress alarms were installed in certain areas within Laurel Hall. These are primarily assigned to the Center for Counseling and Student Development. This technology provides employees with a secondary means of contacting University 911 in the event of an emergency. SHS also have been outfitted with two portable duress alarm pendants which may be carried throughout the facility.

SHS has identified the following needs to assist with all-hazards preparation, response, mitigation, and recovery.

- SHS will need to increase staffing in order to be able to effectively mitigate the various hazards that have been identified. Providing ongoing cost projections would be difficult without a delineation of the specific hazard and total staff/time needed to address it. Additional funding support is necessary to provide sufficient staffing coverage
- SHS has experienced some flooding issues during times of heavy rain. This tends to cause collection of water in the SHS basement. This has been a long-term issue that needs to be addressed with University deferred maintenance funds.

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Mitigation Strategy

The mitigation strategy serves as the long-term road map to reduce the potential losses, vulnerabilities and shortcomings identified in the Risk Assessment section. A typical mitigation strategy includes a list of goals and objectives and the necessary mitigation actions to address them. These are then prioritized, based on the University's requirements.

Goals and Objectives

For the purposes of this Plan, goals are defined as general policy guidelines or broad statements that represent a vision for a university. Objectives define strategies or implementation steps to attain the identified goals. Compared to goals, objectives are more specific and measurable. The goals for this planning process have been developed in close coordination with the Steering Committee, based on the findings of the Hazard Identification and Risk Assessment (HIRA), the mitigation capability assessment, as well as the 2015 Hazard Mitigation Plan. The goals and objectives are also designed to serve as the basis for the mitigation actions at the county and municipal levels.

Goal #1 - Protect the health, safety and wellbeing of our student body, faculty, and staff from the negative impacts of a disaster, through the implementation of mitigation projects at all campuses.

- Objective 1.1: Continue to support funding reasonable mitigation projects which look to improve all aspects of safety on UD campuses.

Goal #2 – Protect UD property from adverse effects of different hazards and disasters through mitigation projects on all UD campuses.

- Objective 2.1: Support funding reasonable mitigation projects to help reduce losses to the University.
- Objective 2.2: Ensure the redundancy of power systems that affect buildings, equipment, and research projects.

Goal #3 – Incorporate mitigation aspects into existing University partnerships with the State of Delaware, County of New Castle, and City of Newark.

- Objective 3.1: Partner with various levels of government on disaster awareness, education, and outreach initiatives to reach multiple audiences.

Goal #4 – Help reinforce and augment the University's mission to prepare for, respond to, and recover from disaster events affecting any of our campuses.

- Objective 4.1: Encourage emergency response planning on both the academic and administrative sides of the University.
- Objective 4.2: Continue to foster existing emergency planning and response partnerships with all levels of government.

Goal #5 – Incorporate mitigation planning into University-sponsored construction.

- Objective 5.1: Increase the overall preparedness level of the University community through outreach and training of both the student and the employee population.
- Objective 5.2: Work with the University Facilities Planning and Project Delivery to ensure hazard considerations are included in all new facility planning.
- Objective 5.3: Encourage the incorporation of reasonable mitigation projects and concepts into new construction on UD campuses.

Mitigation Actions

The mitigation actions from the 2015 University Plan were updated through consultation with the Steering Committee over the course of the plan development process. In addition to the meeting, University departments were contacted

and requested to review and update the actions from the 2015 Hazard Mitigation Plan. The Tables below identify actions that were either completed or cancelled since the 2015 Plan Update and identifies the previous and newly developed actions that need to be implemented.

Status of Past Actions

Table 2 Cancelled and Completed Actions 2015 to 2020

No.	Action	Status	Notes
1	Update individual departments' disaster preparedness and emergency action plans. Focus on educating departments on the importance of keeping these plans current and rethink unit planning – scale and process and consider combining plans.	Cancelled	UD has directed units to refer to the University EOP for this

Table 3 Ongoing, In Progress, Not Started Actions 2015 to 2020

No.	Action	Status	Notes
1	Develop a strategy to abate asbestos campus-wide.	Ongoing	This action is ongoing.
2	Alleviate the water infiltration/flooding-taking place within four University buildings on the Newark campus: New Castle Hall, Kent Hall, Sussex Hall, and Robinson Hall.	In Progress / Not Started	Before the COVID-19 shutdown this had come up in IAQ meetings, PPD determined it is something that needs to be looked at and considered, but has not come close to starting.
3	Utilize the University's administrative and academic resources for emergency management related projects.	Ongoing	Action is ongoing.
4	Add utility meters at the building level for water, steam, chilled water, gas, and electricity on all buildings on the Newark campus.	Carried Forward	Communicated with appropriate university employees to determine that this action is carried forward.
5	Increase the occurrence of joint trainings and exercises between the State of Delaware, New Castle County, the City of Newark, and the University to strengthen the response partnership among agencies.	Ongoing	This action is ongoing.
6	Increase the overall preparedness level of the University community through outreach and training of both the student and the employee population.	Ongoing	This action is ongoing.
7	Develop an informational website that would be linked to the main site for Emergency Management. This site could be used with the University and departmental social media tools (i.e., Facebook, Twitter, etc.).	Ongoing	This action is ongoing.
8	Improve access to required annual safety trainings for faculty, staff, and students as well as tracking laboratory activities such as lab inspections, chemical inventory, etc.	Ongoing/ Implemented	The University has trainings in BioRAFT and live session. BioRAFT manages lab inspections as well. UDEL also has cheminventory.net program to manage the chemical inventory

9	Consider integrating effective mitigation practices and concepts into other relevant University Plans (e.g., University Strategic Planning Initiative, Facilities Design Guidelines, Critical Incident Management Plan, etc.).	Ongoing	The STAR Campus Master Plan was integrated into emergency management plans.
10	Continue to work closely with the State of Delaware, New Castle County, and the City of Newark to ensure that the mitigation actions are coordinated effectively and are in harmony with mitigation actions for the State, County and City. Collaborate with the local governments to improve the University's and the community's disaster resistance by conducting regular meetings with them to identify mitigation funds.	Ongoing	UD EM Director meets with and collaborates with EM Directors on a regular basis, especially with recent pandemic planning and response.
11	Develop procedures and documentation for the Information Technology recovery staff to ensure seamless operation of the Disaster Recovery site, thereby facilitating uninterrupted computer operations university-wide.	Ongoing	This action is ongoing
12	Procure advanced emergency notification systems to include an exterior Public Address System; an in-classroom emergency notification system in academic buildings and a dedicated non-University redundant website for emergency notifications in the event the www.udel.edu site becomes overwhelmed during a disaster situation.	Partially Completed (In Progress)	Outdoor P.A. System was requested, but was not funded. An in-class ENS system is being facilitated by use of the existing UD Alert system. A dedicated redundant website is now online.
13	Update the University Continuity of Operations Plan.	Partially Completed (In Progress)	UD Office of Risk Management is in process of rolling out the Quali Ready program to university departments (some of this activity was suspended in March 2020 due to pandemic)

New Mitigation Actions and Implementation Plan

Table 4 below lays out the new mitigation actions developed for the 2020 Update, along with an implementation plan for each actions. Each action identifies:

- a. **Category:** Type of mitigation action
- b. **Action Item:** Specific actions that, if accomplished, will reduce vulnerability and risk in the impact area. Actions are linked to the mitigation goals and objectives.
- c. **Hazard(s):** The hazard(s) the action attempts to mitigate.
- d. **Lead Agency/ Department Responsible:** The local agency, department or organization that is best suited to accomplish this action.
- e. **Estimated Cost:** The approximate cost to accomplish the mitigation action.
- f. **Funding Method:** Source of funding - existing operating budgets (General Revenue), a previously established contingency fund (Contingency/Bonds), or a federal or state grant (External Sources).
- g. **Timeline:** How long in which the action is expected to be completed.
- h. **Priority:** 1) High priority (short-term immediate future); 2) Moderate priority (near future) ; and 3) Low priority (long term)

Table 4 2020 New and Carried Forward Hazard Mitigation Actions and Implementation Plan for UD NCC Campuses

Action #	Hazard(s) Mitigated	Mitigation Action	Lead Department	Timeline	Estimated Cost	Potential Funding Sources	Action Category	Priority
University of Delaware (New Castle County Campuses) New Hazard Mitigation Actions								
1	Communicable Disease/ Pandemic	Identify departments and levels of action for Communicable Disease/Pandemic cases including influenza and other public health events.	Emergency Management	16 months	Staff Time	N/A	Local Plans and Regulations	Medium
2	All Hazards	Maintain and improve <u>Business Continuity</u> Planning.	All administrative and academic units	24 months	\$250,000	University General Fund	Local Plans and Regulations	Medium
3	Other	Maintain ongoing strategy to address asbestos mitigation campus-wide.	FREAS; EHS	Ongoing	\$1,000,000	University General Fund	Structure and Infrastructure Projects	Medium
4	All Hazards	Maintain and publish an assessment of appropriate sites for sheltering-in-place during critical incidents such as fire, severe weather, etc.	Emergency Management; Residence Life & Housing	16 months	Staff Time	N/A	Education Awareness Programs	High
5	All Hazards	Increase the occurrence of joint trainings and exercises between the State of Delaware, New Castle County, the City of Newark, and the University of Delaware to strengthen the response partnership between these agencies.	Emergency Management	Ongoing	\$25,000	University General Fund	Education Awareness Programs	Medium
6	All Hazards	Increase the overall preparedness level of the University community through outreach and training of both the student and the employee population.	Emergency Management; Student Life; UDPD; Communications and Marketing?	24 months	\$25,000	University General Fund	Education Awareness Programs	Low
7	All Hazards	Improve access to required annual safety trainings for faculty, staff, and students as well as tracking laboratory activities such as lab inspections, chemical inventory, etc.	EHS	ongoing	\$30,000	University General Fund	Education Awareness Programs	Low

Action #	Hazard(s) Mitigated	Mitigation Action	Lead Department	Timeline	Estimated Cost	Potential Funding Sources	Action Category	Priority
8	All Hazards	Ensure continuity of Information Technology services and protect against cyber security threats or malicious insider threat.	Information Technologies	Ongoing	\$500,000	University General Fund	Structure and Infrastructure Projects	Medium
9	All Hazards	Improve facility access control systems to limit unauthorized access to university buildings, particularly research labs.	FREAS; Emergency Management	48 months	\$1,000,000	University General Fund	Structure and Infrastructure Projects	Low
10	All Hazards	Continue to work closely with the State of Delaware, New Castle County, and the City of Newark to ensure that the mitigation actions are coordinated effectively and are in harmony with mitigation actions from the State, County and City. Collaborate with the local governments to improve the University's and the community's disaster resistance by conducting regular meetings with them to identify mitigation funds.	Emergency Management	Ongoing	Staff Time	N/A	Education Awareness Programs	Medium
11	All Hazards	Add utility meters at the building level for water, steam, chilled water, gas, and electricity on all buildings on the Newark campus.	FREAS	16 months		University General Fund	Structure and Infrastructure Projects	Low
12	Flooding	Alleviate the water infiltration/flooding taking place within the following University buildings: (New Castle Hall, Kent Hall, Sussex Hall, and Robinson Hall).	FREAS	48 months	\$1,000,000	University General Fund	Structure and Infrastructure Projects	Medium
13	Other (Asbestos)	Develop a strategy to abate asbestos campus-wide.	FREAS	Ongoing	\$1,000,000	University General Fund	Structure and Infrastructure Projects	Medium
14	All Hazards	Utilize the University's administrative and academic resources for emergency management related projects.	Emergency Management	Ongoing	Staff Time	University General Fund	Education Awareness Programs	Medium

Action #	Hazard(s) Mitigated	Mitigation Action	Lead Department	Timeline	Estimated Cost	Potential Funding Sources	Action Category	Priority
15	All Hazards	Develop an informational website which would be linked to the main site for Emergency Management. This site could be used with the University and departmental social media tools (i.e., Facebook, Twitter, etc.).	Emergency Management, Communications and Public Affairs	16 months	Staff Time	University General Fund	Education Awareness Programs	Medium
16	All Hazards	Consider integrating effective mitigation practices and concepts into other relevant University Plans (e.g., University Strategic Planning Initiative, Facilities Design Guidelines, Critical Incident Management Plan, etc.).	Emergency Management	Ongoing	Staff Time	University General Fund	Local Plans and Regulations	Medium
17	All Hazards	Procure advanced emergency notification systems to include an exterior Public Address System; an in-classroom emergency notification system in academic buildings and a dedicated non-University redundant website for emergency notifications in the event the www.udel.edu site becomes overwhelmed during a disaster situation.	Emergency Management	48 months	\$1,000,000	University General Fund	Structure and Infrastructure Projects	High
18	All Hazards	Update the University <u>Continuity of Operations</u> Plan.	Emergency Management, Office of Risk Management	24 months	\$25,000	University General Fund	Local Plans and Regulations	Low

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Prioritization

Once the mitigation actions and implementation plan were finalized, the mitigation actions were prioritized based on a set of criteria: Social Considerations, Administrative Considerations, and Economic Considerations. The following questions were asked to evaluate criteria for project prioritization.

Social Considerations – Life/Safety Impact

- Will the project have minimal/direct/or significant impact on the safety of businesses, residents, and properties?
- Will the proposed action adversely affect one segment of the population?
- Will the project be a proactive measure to reducing flood risk?

Administrative Considerations – Administrative/Technical Assistance

- Is there sufficient staff currently to implement the project?
- Is training required for the staff to implement this project?

Economic Considerations – Project Cost

- What is the approximate cost of the project?

For each criterion, the level of importance (high, medium, or low) was determined based on the total number of points.

Prioritization Categories

- High priority – Total score of 14+
- Medium priority – Total score between 10 and 13
- Low priority – Total score >10

Table 5 breaks down the prioritization criteria and Table 6 shows the prioritization of mitigation actions.

Table 5 Action Prioritization Criteria

Criteria		Points	High	Points	Medium	Points	Low
Life/Safety Impact		10	Significant impact on public safety for businesses, residents, and/or properties	6	Direct impact on businesses, residents, and/or properties	2	Minimal/negligible impact on businesses, residents, and/or properties
Administrative/ Tech. Assistance		5	No additional staff or technical support needed to implement action	3	Some administrative and technical support needed to implement action	1	Significant administrative and technical support needed to implement action
Project Cost		5	Low cost (<\$25,000)	3	Moderate cost (\$25,000-\$100,000)	1	High cost to implement (>\$100,000)

Table 6 Action Prioritization Table

No.	Action	Life/Safety Impact	Admin./Tech. Assistance	Project Cost	Total	Priority
1	Identify departments and levels of action for Communicable Disease/Pandemic cases including influenza and other public health events.	2	3	5	10	Medium
2	Maintain and improve Business Continuity Planning	6	3	1	10	Medium
3	Maintain ongoing strategy to address asbestos mitigation campus-wide	6	3	1	10	Medium
4	Maintain and publish an assessment of appropriate sites for sheltering-in-place during critical incidents such as fire, severe weather, etc.	6	3	5	14	High
5	Increase the occurrence of joint trainings and exercises between the State of Delaware, New Castle County, the City of Newark, and the University of Delaware to strengthen the response partnership between these agencies.	2	5	3	10	Medium
6	Increase the overall preparedness level of the University Community through outreach and training of both the student and the employee population.	2	3	3	8	Low
7	Improve access to required annual safety trainings for faculty, staff, and students as well as tracking laboratory activities such as lab inspections, chemical inventory, etc.	2	3	3	8	Low
8	Ensure continuity of Information Technology services and protect against cyber security threats or malicious insider threat.	6	3	1	10	Medium
9	Improve facility access control systems to limit unauthorized access to university buildings, particularly research labs.	2	3	1	6	Low
10	Continue to work closely with the State, County, and the City of Newark to ensure that the mitigation actions are coordinated effectively and are in harmony with that of the State, County and City. Collaborate with the local governments to improve the University's and the community's disaster resistance by conducting regular meetings identify mitigation funds.	2	3	5	10	Medium
11	Add utility meters at the building level for water, steam, chilled water, gas, and electricity on all buildings on the Newark campus.	2	1	5	8	Low
12	Alleviate the water infiltration/flooding taking place within the following University buildings: (New Castle Hall, Kent Hall, Sussex Hall, and Robinson Hall).	6	3	1	10	Medium
13	Develop a strategy to abate asbestos campus-wide.	6	3	1	10	Medium
14	Utilize university administrative and academic resources for emergency management related projects.	2	3	5	10	Medium

No.	Action	Life/Safety Impact	Admin./Tech. Assistance	Project Cost	Total	Priority
15	Develop an informational website which would be linked to the main site for Emergency Management. This site could be used with the University and departmental social media tools (i.e., Facebook, Twitter, etc.).	2	5	5	12	Medium
16	Consider integrating effective mitigation practices and concepts into other relevant University Plans (Examples include: the University Strategic Planning Initiative, Facilities Design Guidelines, Critical Incident Management Plan, etc.)	2	3	5	10	Medium
17	Procure advanced emergency notification systems to include an exterior Public Address System; an in-classroom emergency notification system in academic buildings and a dedicated non-University redundant website for emergency notifications in the event the www.udel.edu site becomes overwhelmed during a disaster situation.	10	3	1	14	High
18	Update the University Continuity of Operations Plan.	2	3	3	8	Low