Section 5
Planning Process

Contents of this Section

Section 5.1 Interim Final Rule Requirements for the Planning Process

Requirement §201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Section 5.2 Description of the Planning Process

How the Plan was Prepared

The University of Maryland Hazard Mitigation Plan was prepared in accordance with the process established in the How-To Guides produced by the Federal Emergency Management Agency [FEMA], and the requirements of the February 26, 2002 IFR, including publication 443 *Building a Disaster-Resistant University.* The process established in this guide and the related series of mitigation planning "How-To" publications, has several steps.

Step 1 Organize resources
Step 2 Assess risks
Step 3 Develop a mitigation plan
Step 4 Implement the plan and monitor progress

These guides provided the structure for the process that was used to develop the Plan. Other sections of this Plan include details about how the IFR requirements were met, and the process that was used to obtain and interpret data, and eventually make decisions in such areas as mitigation goals, as well as project and action priorities. These are discussed only generally in this section.

Step 1 Organize Resources

The University of Maryland used a fairly standard organizational structure to develop the Hazard Mitigation Plan.

- Mitigation Core Team (MCT)
- Subject matter experts
- Stakeholders
- University Administration
- UM Facilities Council
- UM Board of Regents

As noted elsewhere, the UM Plan was partly funded through a grant from the Federal Emergency Management Agency. Early in the process, UM secured the services of a professional planning consultant to facilitate the process.

Composition of the University of Maryland Mitigation Core Team

The UM Hazard Mitigation Core Team (MCT) is comprised of the following individuals:

Table 5-1
University of Maryland Hazard Mitigation Plan, Mitigation Core Team

Name	Affiliation
Jack Baker	UM Facilities Management
David Cosner	UM Facilities Management
John Farley	UM Administrative Affairs
Jay Gruber	UM Department of Public Safety
Maureen Kotlas	UM Department of Environmental Safety
Julie Kromkowski	UM Facilities Management
Carver Struve	Maryland Emergency Management Agency

Hazard Mitigation Core Team Schedule

The Hazard Mitigation Core Team and the consultant hired by the University were responsible for developing the Plan and all of its component sections. The MCT met four times during the development of the plan. All meetings took place at the Service Building on the UM College Park campus. Appendix B includes minutes of all meetings.

Meeting 1	January 4, 2007
Meeting 2	January 19, 2007
Meeting 3	April 16, 2007
Meeting 4	June 20, 2007

Subject Matter Experts and the Stakeholders Group

Early in the planning process the MCT determined that it would be desirable to have both a group of subject matter experts who could be called upon for technical support, and a group of stakeholders, individuals or organizations with an interest in the outcome of the plan, and who will be kept informed of progress and occasionally solicited for input or comments on documents. Their names and organizations are provided in the tables below.

Table 5-2
University of Maryland Hazard Mitigation Plan, Subject Matter Experts

Name	Organization
Terry Brenner	UM FM Facilities Planning
Charles Bowler	UM FM Facilities Planning
Donna McMahon	UM Department of Environmental Safety
John Coffey	UM Department of Environmental Safety/FM
Alan Sactor	UM Department of Environmental Safety
Laura Wildesen	UM FM Operations and Maintenance
David Cosner	UM Emergency Planning Group
Willie Brown	UM Office of Information Technology
Carlo Colella	UM FM Architecture, Engineering, Construction
Jack Sullivan	UM Environmental Stewardship Committee
Kay Senator	State of Maryland Treasurer's Office

Table 5-3
University of Maryland Hazard Mitigation Plan, Stakeholders Group

Name	Organization
Jim Cohen	UM Urban Studies and
Bob Ryan	City of College Park
Patricia Mielke	UM Student Affairs
Nariman Favardin	UM Dean's Council
Frank Brewer	UM Facilities Advisory Council
Dr. M. Cheng	Prince George's County

The stakeholders group typically received information via email. The information included minutes of meetings and draft and final sections of the plans.

Step 2 Assess Risks

In accordance with general mitigation planning practice and the process FEMA established in its Planning "How-To" series of guides, the risk assessment forms the basis for this hazard mitigation plan by quantifying and rationalizing information about how natural hazards affect the UM College Park campus. Sections 6 and 7 of this Plan include detailed descriptions of the processes used to complete the hazard identification and risk assessment.

- The natural hazards that are most likely to affect the campus
- How often hazards are expected to impact the campus
- The expected severity of the hazards
- What areas of the campus are likely to be affected
- How UM assets, operations, people and infrastructure may be impacted
- The expected future losses if the risk is not mitigated

Through a rating system explained in detail in Section 6, the MCT reduced the initial list of eleven hazards to a final list of three that will be considered in the risk assessment part of the Plan. The hazards with the most likelihood of impacting the College Park campus include:

- Floods
- Wind

Hurricanes and tropical storms are included in both the flood and wind categories because their potential effects fall into both; neither of these hazards have discrete sections of the plan dedicated to them. Both the hazard identification and profile and risk assessment sections of the plan include detailed discussions of the flood and wind hazards. The wind category includes discussions about straight-line winds (most often associated with thunderstorms), tornadoes and those generated by hurricanes.

The Risk Assessment section (7) includes generalized future loss calculations (for flood, wind and lightning hazards) for the campus as a whole, and more detailed determinations for 32 facilities that are considered most critical. The results of the risk assessment were made available to the public during the public presentations noted elsewhere in this Plan. As noted above, a fuller description of this process and its results are presented in Section 7.

Step 3 Develop the Mitigation Plan

As noted elsewhere in this section and others, the process employed to develop this Plan was based entirely on the FEMA 386 series of guides and FEMA publication 443. Throughout the document there are cross references to Interim Final Rule and FEMA crosswalk criteria.

Step 4 Implement the Plan and Monitor Progress

Plan implementation is the responsibility of the University of Maryland. Section 9 of this plan provides additional details about the University's implementation, monitoring and updating processes.

5.3 How the Public and Other Jurisdictions were Involved

During the development of this Plan, the public was involved by requesting their participation in two public presentations/meetings, providing drafts of the Plan for review, and inviting comments on the contents of the Plan. Minutes of meetings (and attendee lists) are included in Appendix J. The public presentations and meetings were held at the UM campus on the following dates:

Presentation/Meeting 1	May 17, 2007
Presentation/Meeting 2	September 5, 2007

Prior to each meeting UM notified the public and various internal groups by a variety of means.

- Circulated notice via the *FYI Digest,* a campus-wide internal email group
- Published an ad in *Outlook,* the faculty and staff newspaper
- Published an on-line ad in the *College Park Gazette,* the local newspaper

- Posted notice and a link to the draft plan on the UM home web page

Copies of the advertisements for the meetings, sign-in sheets and summaries of public comments are included in Appendix J. The May 17 meeting was conducted as a presentation and open house, and copies of the presentation boards are included in Appendix I.

In addition to the activities described above, in June, 2007 complete copies of the draft plan were provided to the City of College Park (Mr. Bob Ryan) and Prince George's County (Dr. Mou-Sow Cheng) for review and comment. The University of Maryland solicited feedback from Mr. Ryan and Dr. Cheng approximately two weeks after the plans were provided.

5.4 Review and Incorporation of Plans, Studies, Reports and other Information

This subsection includes a review and summary of various plans, studies and reports related to building construction, land development and floodplain management in and around the UM College Park campus. Where applicable, each of the subsections includes potential options for including hazard mitigation principles and practices in these documents. These options are not intended to commit UM to specific courses of action, but are for reference and to provide University planners with ideas about actions to better integrate hazard mitigation into other plans and activities.

Inventory and Review of Relevant Plans

Campus Master Plan (2000)

The UM campus master plan defines the nature of future physical development of the campus. The focus of the CMP is on physical and functional development from the time the plan was updated (in 2000) to 2020, the end of the planning horizon. The plan addresses numerous aesthetic and functional issues, but does not incorporate or contemplate any that are related to mitigating natural hazards. There is a good opportunity to include some general hazard mitigation guidelines in the master plan, although detailed implementation strategies and timelines would be more appropriate in other documents, such as this plan, and the DCFS (see below). As discussed elsewhere in this document, the campus master plan notes that "the advanced age and deteriorating condition of UM facilities are a major concern" (p.9), suggesting that there may be opportunities to incorporate hazard mitigation into activities related to new construction or rehabilitation of older structures on campus.

Options for Incorporating Hazard Mitigation Principles into the Master Plan

- Incorporate into the Planning Principles section a statement that the University will consider the potential effects of natural hazards in planning for future growth and modifications to the College Park campus.
- Incorporate a cross-reference to the DCFS, indicating that siting of future structures on campus will conform to DCFS guidelines, affirming the importance of locating structures away from high hazard areas and/or those that are vulnerable to the effects of wind and water.
- Add to the Global Issues section a comment that with its aging buildings and infrastructure, complex mission and dense development, the University is at increased risk from damage related

to natural hazards, and will look for opportunities to better protect itself from these events and their effects.

- In the next update of the Master Plan, include an entire section devoted to mitigating the effects of natural (and potentially manmade) hazards on the campus, with cross references to other documents and guidelines such as this Hazard Mitigation Plan and the DCFS.
- In the section entitled *Global Issues: Environmental Stewardship, Vehicular and Pedestrian Circulation, and Land Use*, add the following language as a recommended action under the 1st goal (Preserve and reinforce regional ecological connections): *"Protect the 100-year floodplain".*
- Ensure that research facilities are not sited in high hazard areas. The siting should also be based on the purpose and type of research. The Master Plan should reflect appropriate consideration for the vulnerability of forested areas and those in the floodplain.
- The University should consider natural hazard risk evaluations as part of its overall master planning process.

Design Criteria/Facility Standards Manual (DCFS, 2005)

The UM Design Criteria/Facility Standards (DCFS) Manual is the document that the University uses to guide development and construction on the campus. It covers a very wide range of related areas, and includes both specific guidance and references to many other documents. The document was created through the efforts of nine subcommittees, including Architecture, Interior Design and Egress, Commissioning, Division 15, Environmental Controls, Environmental Permitting, Exterior and Site Considerations, Fire Alarms, Fire Suppression Systems, Health and Safety, and Security. The DCFS manual may serve as a good platform to incorporate mitigation strategies and practices into UM's long-term development process. One significant goal in the DCFS is to create facilities that will last 50 to 100 years, a goal that could clearly be supported through the use of proven mitigation practices.

Options for Incorporating Hazard Mitigation Principles into the DCFS

- Add a mitigation subcommittee to the DCFS review and update group.
- Incorporate hazard mitigation as a design principle in Section 1.01 (Building Goals and Design Principles).
- In Section 1.03 (Codes), include references to FEMA engineering guidelines for shelters.
- Update engineering standards to include use of best practices for wind resistance in high-occupancy areas
- Review and update Section 1.07 (Structural) to add detail about wind and snow loads on buildings.
- Review and update Section 1.07 E1 (Exterior Cladding) to specify wind resistance standards, especially regarding window construction and details.
- In the Mechanical and Electrical Equipment subsection (1.07 F 2), as appropriate, include language specifying standards for attaching mechanical and electrical equipment to roofs and exteriors.
- Section 2.20 discussed wetlands and the floodplain, but does provide specific guidelines (the section refers to the Maryland Department of the Environment and the U.S. Army Corps of Engineers). This section could be updated to include a list of guidelines and regulations related to development in and around floodplains and wetlands, for reference.
- Section 7.03 (Roofs and Moisture Control) could be modified to include requirements for wind-resistant construction practices and specifications.
- Section 8.01 (Doors and Frames) could be modified to include requirements for wind-resistant construction practices and specifications.

- Section 8.02 (Glass and Glazing) could be modified to include requirements for wind-resistant construction practices and specifications.
- Section 8.04 (Windows) could be modified to include requirements for wind-resistant construction practices and specifications.
- Add a shelter-in-place section to the document. The section could establish requirements and specifications for shelters in and around high-occupancy areas.

University of Maryland Capital Improvement Plan

The University of Maryland's Capital Improvement Program identifies major public expenditures that will be implemented over the next five to 10 years. It ties in with the Facilities Master Plan and other campus plans. Projects that relate to hazard mitigation are included below from the Draft FY 2009-2015 CIP. These projects are slated for construction in the next five years. The major portion of funding for these projects is from State funds (general obligation bonds). UM has an opportunity to increase the visibility of hazard mitigation activities by introducing them into the capital improvements planning process.

Options for Coordination between the UM Mitigation and Capital Improvement Plans

- UM should consider a more unified approach to planning processes, with the goal of better integration between various planning documents, such as this mitigation plan, the CIP, the Master Plan and the DCFS.
- The University should include in the capital planning and budgeting processes individuals with detailed knowledge of potential mitigation options on the campus, and knowledge of how funds can be leveraged through federal and State grant programs.
- As part of its input into the State capital budgeting process, the University should advance hazard mitigation projects as high priorities, particularly when they are part of other new construction or reconstruction projects.
- The existing CIP includes plans for numerous facility renovations over the next decade. UM may wish to seek opportunities to incorporate hazard mitigation elements into these projects, especially where there is the possibility of securing grants to pay for part or all of the actions.
- There may be an opportunity to incorporate mitigation elements into the Campus Creek restoration project.
- The University has planned numerous phased exterior renovation projects that might offer good opportunities to improve wind resistance of critical and/or high-occupancy facilities.

US Route 1 Corridor Sector Plan

This Plan is one of the Corridor Sector Plans developed by M-NCPPC. The goal of this plan is to create an attractive and vibrant gateway to the City of College Park and the University of Maryland along U.S. Route 1. The Sector plan includes only very limited discussion of natural hazards or floodplain considerations. The *Environmental Framework* section has short recommendation subsections devoted to *Stormwater Management and Stream Restoration, Floodplain,* and *Wetlands.* The Floodplain subsection recommends that "new buildings should be elevated out of the floodplain when redevelopment occurs." The Sector Plan offers an opportunity for the University to coordinate development with surrounding jurisdictions, especially with regard to restricting development in the floodplain.

Maryland State Hazard Mitigation Plan (2005)

The Maryland State Hazard Mitigation Plan addresses risks, mitigation capabilities, strategies and actions on a State level. There are a few areas of the State plan that suggest possible actions on the part of both the State and UM that would help to align their mitigation goals and strategies, and would foster cooperation between the groups to advance mitigation efforts.

Options for Coordination between the UM and State Hazard Mitigation Plans

Section 7.1.3 of the State Plan states an objective to "(i)dentify and explore the implementation of mitigation activities for State-owned facilities that are most at-risk to multiple hazards and most valuable in terms of use and cost". The State Plan indicates that there are an estimated 18 State-owned critical facilities that are at risk from four or more hazards, with an additional 389 facilities at risk from two or three hazards. The Plan states that the State should "begin the development of facility specific mitigation actions with these facilities." The strategy related to this objective is for the State to approach the agencies with responsibility for the facilities in order that potential mitigation projects can be included in the 2007 State plan update. The numbers in parentheses after the goals refer to sections in the Maryland State plan.

- One of the goals in the State Plan is to have the State Mitigation Planner serve on other boards and committees. UM could identify specific committees and processes where a State mitigation representative could participate. This would improve understanding of mitigation for both the State and UM, and may improve UM's opportunities for securing FEMA mitigation grants, which require the endorsement of the State.
- Assist the State in documenting mitigation actions undertaken by UM (7.1.5).
- Expand mitigation education and outreach efforts (7.1.6).
- Undertake and sustain efforts to identify and analyze projects that reduce wind risk to UM assets and operations (7.5.1).
- Continue efforts to ensure that building codes are enforced with regard to wind resistance (7.5.3).
- Explore mitigation options for mitigating the effects of "criminal actions" (presumed to mean acts of terrorism, sabotage or vandalism) in combination with natural hazard mitigation efforts. (7.12.1).

Prince George's County Hazard Mitigation Plan (2005)

The Prince George's County Hazard Mitigation Plan is a standard local hazard mitigation plan that was adopted in 2005. The Plan provides information on people and property that are exposed to risk due to specific hazards in the County such as winter storms, high winds, and floods, among other hazards. Flooding ranked high in the Prince Georges County Plan and the UM Plan and tornadoes/windstorms are ranked high in all three plans. The hazard ranking table indicates that, for the most part, the County Plan and the University Hazard Mitigation Plans ranked hazards similarly.

Options for Coordination between the UM and Prince George's County Hazard Mitigation Plans

- As part of the next update to the Prince George's County Plan, planners from UM and the County should collaborate on a detailed review of their existing plans to identify areas where they can be brought into alignment with each other and the State Plan.

City of College Park Comprehensive Plan (1995)

The City of College Park Comprehensive Plan was completed in December 1995, and serves as a general, long-term guide to land use in the City. Although it is more than 10 years old, it includes an important goal – to improve relations with the University of Maryland. The University and City regularly communicate and cooperate on issues and work together to coordinate decision-making and share resources.

Options for Coordination between the UM Hazard Mitigation and the City of College Comprehensive Plan

- The University and City of College Park should look for opportunities to work together in developing new plans or updating existing ones.
- The City and University should also collaborate in preparing grant applications and work closely with the State to determine the amount of mitigation dollars available at the State for planning as well as project development, particularly where there are mutual benefits that would result from cooperation.
- The City and University should collaborate on applying for joint funding for emergency management equipment.
- The City and University should work together in identifying locations for off-campus student housing and identify properties that are not in high hazard areas such as in or near the floodplain.

University of Maryland Emergency Operations Plan (April 2006)

The University of Maryland Emergency Operations Plan identifies the University's emergency planning, organization, and response policies and procedures and lays out details to address the integration and coordination with other governmental levels, when required. The plan addresses how the University will respond to extraordinary events or disasters from preparation through recovery. The plan includes a hazard analysis and probability matrix based on each identified hazard and identifies the responsibilities of various departments based on identified hazards.

Options for Coordination between the UM and State Hazard Mitigation Plans

- The University EOP highlights floods, fires, and extreme weather/storm as natural hazards that have the potential to threaten the campus. This list should be extended to include other natural hazards such as hurricanes/tropical storms and windstorms/tornadoes to which the University is vulnerable, based on the analysis in the Hazard Mitigation Plan.
- Page 11 indicates that a hazard matrix outlines each hazard and identifies the likelihood and severity of each hazard. However, the matrix only relates to specific functions and departments within the University. This is a good opportunity for cross referencing between the EOP and the Hazard Mitigation Plan during the next update. For information on the likelihood and severity of each hazard, it should include the table from this Hazard Mitigation Plan or make a reference to the hazard ranking matrix that scores the hazards based on the history of occurrences, potential for mitigation actions, vulnerability of the University's assets, people and operations, availability of data about hazards and their effects, and the number of emergency and disaster declarations related to specific hazards.

Department Operations Plans

Department Operations Plans (DOPs) are standardized plans that address initial response to, and recovery from, major emergencies and operational interruptions. Key departments have developed such plans. These are departments that have critical roles in emergency response, recovery, and/or continuity of critical UM operations. Elements of these plans include chain of command, contact information, recall method, operations center locations, staffing, and assignments, and on- and off-campus resources.

General emergency plans are currently being developed for the entire campus community. These plans will include information on sheltering-in-place, severe weather, fire and hazardous materials, and emergency communications. Additionally, UM is beginning the process of integrating DOPs with the University Emergency Operations Plan.

City of College Park Emergency Management Plan (2004)

The 2004 Emergency Management Plan incorporates the Metropolitan Washington Council of Governments Emergency Coordination Plan, the Prince George's County Emergency Operations Plan, and the University of Maryland Emergency Plan as they affect the residents of the City. Because the City of College Park has limited resources, during most emergencies, the City utilizes county, state, and federal resources to help prevent, mitigate, and recover from negative effects of various emergencies on their residents.

Similar to the University's Plan, the City's Plan includes a hazard matrix outlining each of the hazards and identifies the likelihood of occurrence and severity for each hazard. On page 17, the hazard matrix lists hazards, their likelihood of occurrence, and severity. Flooding is listed as occurring sometimes and moderate severity. Storms are listed as occurring sometimes with moderate to high severity. Fire is listed as occurring frequently with low, moderate, and high severity. This list does not align completely with that in the University's Hazard Mitigation Plan and does not include hurricanes/tropical storms and windstorms/tornadoes.

Options for Coordination between the UM Hazard Mitigation and Emergency Operations Plans, and the City of College Park Emergency Operations Plan

- During the next update of the City's Emergency Operations Plan, consider reconciling the hazard matrix with that of the University's Hazard Mitigation Plan. The University's Hazard Mitigation Plan matrix scores the hazards based on the history of occurrences, potential for mitigation actions, vulnerability of the University's assets, people and operations, availability of data about hazards and their effects, and the number of emergency and disaster declarations related to specific hazards.
- Continue to encourage cooperative management of emergency situations based on a common understanding of hazards and their impacts.

Additional Note on Stormwater Management Regulations

Stormwater management regulations address the runoff of storm water from new developments onto other properties and into floodplains. Since the University is State property, it is not required to comply with Prince George's County, Maryland National Capital Parks and Planning Commission (M-NCPPC), or the City of

College Park's regulations. However, the University's regulations and permit procedures are similar to that of the State. UM may want to consider developing a storm water master plan that would consider low impact development techniques to manage storm water by incorporating techniques such as bio-retention areas, dry wells, infiltration trenches, filter/buffer strips, vegetated swales, rain barrels, and cisterns. This will reduce the impact of flooding on campus.

Additionally, UM may consider clarifying and formalizing the stormwater impact review processes that are currently employed. This could include establishment of a review committee with membership from Maryland Department of the Environment, Prince George's County, and the City of College Park.