Hazard Mitigation Plan Update

Steering Committee Meeting

May 23, 2023
10:00-11:30 am
Agenda

- Safety Moment
- Project Update
  - Chapter 1: Planning Process
  - Chapter 2: University Profile
  - Chapter 3: Risk Assessment
  - Chapter 4: Mitigation Strategy
  - Chapter 5: Plan Maintenance

Dear Colleague:

Thanks to your notable contributions to the university community in the past, as well as the efforts of your colleagues, the University of Kentucky Hazard Mitigation Plan was approved in February 2010 and again on March 10, 2016.

The Plan has kept the university in compliance with federal hazard mitigation planning standards resulting from the Disaster Mitigation Act of 2000, as contained in 44 CFR 2016. The current Plan is approved for a period of five years. As a result, UK is eligible to apply for state and federal funds for mitigation and disaster assistance grant programs administered by the Federal Emergency Management Agency (FEMA).

This plan is a critical part of how we take care of our people — a core principle in UK’s strategic plan. In this spirit, I ask for your commitment to the 2023 University of Kentucky Hazard Mitigation Plan Update. Steering Committee members will include university stakeholders throughout campus and the greater Lexington community. Your contributions and expertise will guide hazard mitigation activities over the coming years.

Your commitment is imperative to the success of the Plan’s goals:
1. Protect lives
2. Protect university property
3. Enhance existing or develop new university policies
4. Build and strengthen partnerships
5. Increase campus community understanding
6. Integrate risk reduction strategies

The 2023 update to the University of Kentucky Hazard Mitigation Plan will be a collaborative effort between the UK Police Department’s (UKPD) Division of Crisis Management and Preparedness; the UK Hazard Mitigation Plan Steering Committee; state and local agencies; and Stantec Consulting Services, Inc.

In the coming months, you will begin receiving invitations to participate in five Steering Committee meetings that will be held on campus and will take place between September 2022 and May 2023.

I deeply appreciate your willingness to serve our community in such an important way and look forward to your involvement and input. For more information, please do not hesitate to contact Laurel Wood, Director of Business Continuity for UKPD, at cmp@uky.edu or 859-257-6655. You also can find more information here.

Thank you for all you do to advance Kentucky.

Eric Monday
Executive Vice President for Finance and Administration
Safety Moment

Be prepared for ticks

- Use a sheet over car seats to catch hitch hikers
- Conduct frequent tick checks
- Shower as soon as practicable
- Tumble clothes on high heat before putting in laundry

After a tick bite

- Remove the tick immediately using pointed tweezers or a “tick key”; pull gently & steadily
- Seal the tick in a container and place in a freezer
- Wash the wound site and your hands with soap and water; cleanse the bite with an antiseptic wipe
- Take a photo of the bite site; watch for an expanding rash / lesion, or unexplained fever / aches / fatigue
Project Update

Plan Components:
- Chapter 1: Planning Process
- Chapter 2: University Profile
  - Main Campus
  - Clery Act Campuses
  - 4-H Camps
- Chapter 3: Risk Assessment
  - Critical Facilities
  - Risk and Vulnerability Profiles
- Chapter 4: Mitigation Strategy
  - Goals
  - Capability Assessment
  - 2023 Mitigation Action Workbook
  - 2016 Actions Updated
- Chapter 5: Plan Adoption and Maintenance
  - Draft Document

Interviews Performed:
- Risk Management
- Research
- GIS
- Facilities
- Hazardous Materials
- IT
- Agriculture
- Health Care
- Equity – Office for Institutional Diversity
- Kentucky Climate Consortium
Campus Locations
Risk Assessment – Hazards Reviewed

Weather Hazards
• Extreme Heat
• Extreme Cold
• Wildfire
• Hail
• Severe Storm
• Severe Winter Storm
• Tornado

Hydrological Hazards
• Flood
• Drought
• Dam/Levee Failure

Geological Hazards
• Earthquake
• Landslide
• Karst

Industrial Hazards
• Hazardous Materials Release

Human-Caused Hazards
• Cyber Attack
• Emerging Infectious Disease
Losses: Summary of Key Findings

Events with Greatest Losses ($)

- UKREC
  - Tornado December 2021
  - $26M in damages

- July 2022 Floods
  - RCARS and Robinson Forest
  - $2M+ in damages

- Bosomworth Health Sciences
  - Burst water main in January 2014
  - $556K in damages

- Other claims-related losses are less than $100K
Vulnerability: Summary of Key Findings

**Dam/Levee Failure**
- No buildings in mapped inundation areas

**Flood**
- 11 buildings in 100-year floodplain
- 5 buildings in 500-year floodplain

**Earthquake**
- High Hazard Areas
  - Paducah College of Engineering
  - Research and Education Center (Princeton)

**Karst**
- 763 in karst risk areas

**Landslide**
- 38 buildings in moderate risk areas
- 79 buildings in high risk areas

**Hazardous Materials Release**
- Fixed-site:
  - 10 in primary buffer
  - 571 in secondary buffer
- Mobile:
  - 485 in primary buffer
  - 440 in secondary buffer

**Wildfire**
- Highest Probability Areas
  - Robinson Forest - Clayhole
  - RCARS
  - Feltner 4-H Camp - Hazard
  - Lake Cumberland 4-H Camp
Flood

- **RCARS**

- **North Farm**
Flood

West Kentucky 4-H Camp

Diagram showing the location of Boat House and Storage Shed in relation to the 4H Camp Rd.
Karst

➢ Bowling Green
➢ Main Campus
➢ Lake Cumberland 4-H Camp
Wildfire
Capability Assessment Recommendations

- Disaster Recovery Plan
- Document lessons learned from past events to share with the Workgroup and other relevant University departments to inform future mitigation efforts.
- Resilience Program
- Workgroup implementation meetings to encourage increased communications and education between stakeholders, improve plan implementation, and documenting successes, needs, and capabilities.
- Invite the Office of Institutional Diversity and the Disability Resource Center to the Workgroup meetings to include equity considerations during plan implementation.
- Invite the Kentucky Climate Consortium to the Workgroup meetings to solicit input regarding climate change impacts affecting the University.
- Continued cyber security education for students, faculty, and staff
- Update the UK Hazard Mitigation GIS geodatabase
2015 Mitigation Goals

GOAL 1 Protect lives and reduce injuries from hazards and threats.
GOAL 2 Protect university property, organizational information, and research from hazards and threats.
GOAL 3 Enhance existing, or develop new University policies and practices that are designed to reduce damaging effects from hazards and threats.
GOAL 4 Build stronger partnerships between government, educational institutions, business, and the community.
GOAL 5 Build disaster preparedness and response through mitigation education and outreach.
## 2023 Mitigation Actions

<table>
<thead>
<tr>
<th>Action Name</th>
<th>Action Description</th>
<th>Responsible Department/Office</th>
<th>Mitigation Addressed</th>
<th>Feasibility</th>
<th>Climate Resilience</th>
<th>Public Safety/Emergency Management</th>
<th>Public Health</th>
<th>Greatest Concern</th>
<th>Risk</th>
<th>Risk Management/Preparedness</th>
<th>Costs</th>
<th>Total Prioritization</th>
<th>Potential Funding Source</th>
<th>Project Type</th>
<th>Other Partners</th>
<th>Implementation Schedule</th>
<th>Comments and Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blast Resistant</td>
<td>Minimize the risk of blast-related injuries and property damage</td>
<td>Architectural Engineering and Construction</td>
<td>All Hazards</td>
<td>95</td>
<td>100</td>
<td>80</td>
<td>80</td>
<td>60</td>
<td>85</td>
<td>70</td>
<td>60</td>
<td>State/Fed</td>
<td>Private</td>
<td>None</td>
<td>2023</td>
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</tr>
<tr>
<td>2</td>
<td>Nuclear Reactor</td>
<td>Minimize the risk of nuclear-related injuries and property damage</td>
<td>Nuclear and Radiological</td>
<td>All Hazards</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>State/Fed</td>
<td>Public/Cooperative</td>
<td>0</td>
<td>2030</td>
<td></td>
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<tr>
<td>3</td>
<td>Geotechnical</td>
<td>Mitigate the risk of geotechnical-related injuries and property damage</td>
<td>Civil and Environmental Engineering</td>
<td>All Hazards</td>
<td>20</td>
<td>60</td>
<td>50</td>
<td>60</td>
<td>20</td>
<td>60</td>
<td>20</td>
<td>60</td>
<td>State/Fed</td>
<td>University/Fed</td>
<td>University/Fed</td>
<td>2007-2028</td>
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## 2023 Mitigation Actions

<table>
<thead>
<tr>
<th>Name:</th>
<th>Description</th>
<th>Responsible Department</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mitigation Actions for the Center for Disaster Recovery and Resilience</td>
<td>Center for Disaster Recovery and Resilience</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prioritization Metric</th>
<th>Weighting Factor</th>
<th>Scoring Criteria</th>
<th>Score</th>
<th>Points</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Feasibility</td>
<td>20%</td>
<td>6 - Partially identified, fully implemented within this year</td>
<td>5</td>
<td>100</td>
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<td></td>
<td></td>
<td>5 - Partially identified, implementation delayed or complete at a later date</td>
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<td></td>
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<td>4 - Failing identified, implementation incomplete or complex, biggest challenges</td>
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<td></td>
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<td>3 - Not feasible, technologically and/or not able to be implemented</td>
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<tr>
<td>2 Climate Resilience</td>
<td>20%</td>
<td>6 - High priority provides multiple benefits for climate resilience or adaptive</td>
<td>5</td>
<td>100</td>
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<tr>
<td></td>
<td></td>
<td>mitigation measures</td>
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<td>5 - High priority provides at least one benefit for climate resilience</td>
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<td>4 - Moderate priority provides limited benefits for climate resilience</td>
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<td></td>
<td>3 - Low priority provides no clear benefit for climate resilience</td>
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<tr>
<td>3 Public (Project Type)</td>
<td>10%</td>
<td>6 - Structural Projects</td>
<td>5</td>
<td>50</td>
<td></td>
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<td></td>
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<td>5 - Public Education and Awareness</td>
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<td>4 - Safety and Resilience</td>
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<td>3 - Program Protection</td>
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<td></td>
<td></td>
<td>2 - Emergency Services</td>
<td></td>
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<td></td>
<td></td>
<td>1 - Prevention</td>
<td></td>
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<tr>
<td>4 Public (Hazard of</td>
<td>10%</td>
<td>6 - Action addresses one or more hazards identified by the university community as</td>
<td>5</td>
<td>50</td>
<td></td>
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<tr>
<td>greatest concern)</td>
<td></td>
<td>being a high threat to the University</td>
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<td>5 - Action addresses one or more hazards identified by the university community as</td>
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<td></td>
<td></td>
<td>being a moderate threat to the University</td>
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<td>4 - Action addresses one or more hazards identified by the university community as</td>
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<tr>
<td></td>
<td></td>
<td>being a minimal threat to the University</td>
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<tr>
<td>5 Risk Reduction/Benefits</td>
<td>20%</td>
<td>6 - High-benefit projects associated with high public benefit with consideration</td>
<td>3</td>
<td>60</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>to economic, social, and environmental factors</td>
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<td></td>
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<td></td>
<td>5 - Moderate (some benefits associated with consideration to economic, social, and environmental factors)</td>
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<td></td>
<td></td>
<td>4 - Low-benefit associated with consideration to economic, social, and environmental factors</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6 Costs</td>
<td>20%</td>
<td>6 - Project Costs are significantly reduced</td>
<td>5</td>
<td>100</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>5 - Project Costs are estimated between $100,000 and $500,000</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>4 - Project Costs are estimated between $500,000 and $2,000,000</td>
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</tbody>
</table>

Total: 100%
# 2023 Mitigation Actions – Prioritization

<table>
<thead>
<tr>
<th>#</th>
<th>Action Name</th>
<th>Action Description</th>
<th>Responsible Department(s)</th>
<th>Hazard Addressed</th>
<th>Feasibility</th>
<th>Climate Related</th>
<th>Public Health or Safety</th>
<th>Public Health of Greatest Concern</th>
<th>Risk Reduction Effort</th>
<th>Cost</th>
<th>Total Prioritization</th>
<th>Potential Fun Source</th>
<th>Project Title</th>
<th>Implementor(s)</th>
<th>Implementation Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Climate Emergency Manager</td>
<td>Enhancing Climate Emergency Preparedness and Response</td>
<td>Climate Emergency Preparedness</td>
<td>Multiple Hazards</td>
<td>100</td>
<td>850</td>
<td>50</td>
<td>100</td>
<td>450</td>
<td>General Fund</td>
<td>Prevention</td>
<td>None</td>
<td>2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Center for Recovery and Resilience</td>
<td>Maintaining and updating the hazard mitigation website and educational material, including social media updates, educational videos, and other educational materials for hazard mitigation.</td>
<td>Center for Recovery and Resilience</td>
<td>All Hazards</td>
<td>100</td>
<td>850</td>
<td>50</td>
<td>100</td>
<td>450</td>
<td>General Fund</td>
<td>Public Education and Awareness</td>
<td>0</td>
<td>2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Education and Awareness</td>
<td>Implementing educational programs, including social media updates, educational videos, and other educational materials for hazard mitigation.</td>
<td>UK Policies Department</td>
<td>Multiple Hazards</td>
<td>100</td>
<td>850</td>
<td>50</td>
<td>100</td>
<td>450</td>
<td>General Fund</td>
<td>Public Education and Awareness</td>
<td>0</td>
<td>2022-2023</td>
<td></td>
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</tr>
<tr>
<td>17</td>
<td>Geographically Mapping Fire Equipment and Other Resources</td>
<td>Develop and maintain a comprehensive inventory of fire protection and related equipment.</td>
<td>Fire Protection Management</td>
<td>Multiple Hazards</td>
<td>100</td>
<td>850</td>
<td>50</td>
<td>100</td>
<td>450</td>
<td>General Fund</td>
<td>Structural Projects</td>
<td>0</td>
<td>2023-2024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Thermal Imaging Program</td>
<td>Perform thermal imaging surveys that utilize risk to detect fire hazards and reduce risks.</td>
<td>Facility Management</td>
<td>Multiple Hazards</td>
<td>100</td>
<td>850</td>
<td>50</td>
<td>100</td>
<td>450</td>
<td>General Fund</td>
<td>Prevention</td>
<td>0</td>
<td>2023-2024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Environmental Health Monitoring Team</td>
<td>Implement environmental health monitoring programs and assessments, including air quality monitoring.</td>
<td>Environmental Health Monitoring Team</td>
<td>Multiple Hazards</td>
<td>100</td>
<td>850</td>
<td>50</td>
<td>100</td>
<td>450</td>
<td>General Fund</td>
<td>Public Education and Awareness</td>
<td>0</td>
<td>2023-2024</td>
<td></td>
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</tr>
</tbody>
</table>
2023 Mitigation Actions – Draft Prioritization

1. Hire Disaster Recovery Manager
2. Center for Disaster Recovery and Resilience
3. Education and Awareness – Maintain and update educational resources
4. Geospatially Identify Shut Off Valves and Other Equipment
5. Thermal Imagery Flyover
6. Personal Preparedness
7. Record Disaster Management Data
8. Hazard Mitigation Education in UK 101
9. Construction Impacts – improve communication regarding construction impacts to mobility
10. Emergency Plans and Procedures (CAFE BEAPs)
11. Tree Inventory
12. Business Continuity Plan
13. Campus CERT Program
14. Generators at UK HealthCare facilities
15. Training for Campus Recreation Staff and Ras
16. Hazard Mitigation Workgroup
17. Develop New Planning Documents
18. Resilience Hubs/Centers
19. LFUCG and State HMP Participation
20. Hospital Incident Command
21. Improvements to 4-H Camp Buildings
22. Facilities Improvements at REC, RCARS, and Robinson Forest
23. Construction Drawings
24. Update Hazard Mitigation Geodatabase
25. Stormwater and Sewer Master Plans
26. Generators for Main Campus
27. Lightening Protection
28. Underground Utility Lines at 4-H Camps
29. Cybersecurity
30. Mock dorm room burn unit
31. Mobile response unit
32. Improve Karst Resilience
33. New Police Department with EOC
Funding Opportunities

- Hazard Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA)
- Building Resilient Infrastructure and Communities (BRIC)

Adoption and Plan Maintenance

- KYEM and FEMA review
- University Adoption
- Regularly scheduled check in meetings
- Document progress and needs
- Coordinating funding and grant opportunities
Questions and Contact Information

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859-257-6655

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Christina Hurley
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910-540-9215

Thank you!