Ensuring the Safety of our Institutions of Higher Learning

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The Disaster Mitigation Act of 2000

• Amended the Robert T. Stafford Disaster Emergency Assistance Act to include pre-disaster mitigation; and

• Required state and local all-hazards mitigation plans to maintain eligibility for disaster recovery & mitigation funds; and

• Established funding mechanisms for priority projects.
Today’s Discussion Topics

• Inspire on-campus mitigation possibilities

• Challenge colleges & universities to seek mitigation opportunities
  • DRU planning
  • Relationships to emergency management, response and COOP planning
  • Mitigation projects

• How do we create campus communities that are safer and more resilient?
Why is Mitigation Important to Campus Communities?

Hazard Mitigation

...is a sustainable action that will reduce or eliminate injury to citizens, damages to structures and allow continuity of critical society functions...
Recent Virginia Disasters

• Hurricanes Camille; Agnes; Fran; Floyd; Isabel, Irene; Sandy

• Winter Storms 1979;1993;1994;2010; 2011

• The September 11, 2001 Attacks on the Pentagon

• Virginia Tech Shooting

• August, 2011 Louisa County Earthquake

• June 2012 Derechino
VA Universities Impacted by Disasters
Disasters Impact Continuity of University Operations
DRU Concepts

• $Billions awarded *disaster assistance* to public and private U.S. universities

• Disaster Resistant University program created to support universities *to reduce and manage their vulnerability to hazards.*

• Business interruption costs thought to be >$1B
DRU Plans are led by Steering Committees

- *Facilities staff* support building assessment
- *Steering Committee* prioritizes hazards
- *Consultants or Subject Matter Experts* may be best able to assess campus buildings and infrastructure
- Steering Committee and University must own the plan!
Structural Engineers with disaster experience evaluate priority campus buildings in partnership with campus facility managers.

- Provide vulnerability analysis based on structure’s exposure to hazards.
- Interactive partnership with mitigation steering committee.
Why Vulnerability Analysis Matters

• Perform a Hazard ID + Risk Assessment
• Analyze campus vulnerabilities
  • Risks to persons and structures
  • Continuity of Operations
  • Societal Impacts
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<th>Human-Caused Hazards</th>
<th>Capability Needs</th>
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Courtesy: Dewberry
Project Approach – Survey, Analysis, Recommendation

1. Hazard Identification

2. Data Collection

3. Building and Asset Inventory

4. Building/Asset Hazard Index

5. Detailed Evaluation of Priority Buildings/Assets

6. Data Analysis

7. Loss Estimates

8. Vulnerability Index

9. Mitigation Goals, Objectives and Strategies

10. Measures

11. Mitigation Index

Mitigation Plan

- Capability Assessment
- Programmatic Mitigation Measures
- Business Recovery Planning

Virginia Tech

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Virginia Tech

FEMA Flood Zones
- 100-Year Flood Boundary
- 500-Year Flood Boundary
Old Dominion University
UVA Building Fire Vulnerability

Figure C-7. University of Virginia Fire Vulnerability Index
Unique Mitigation Possibilities:

- Historic Structures
- Density of Populations
- Critical Facilities
- Large Events
- Infrastructure
- Shared Resources
- Capital Improvement priorities – 4 to 6 year cycles

Christopher Wren Building
William & Mary
Second Oldest U.S. University
Why a Disaster Resistant University Plan?

- Universities are compact microcosms of society
- Large concentrations of residential areas
- Highlight campus “soft spots”
- Integrate other facility plans
  - COOP
  - Renovation
  - Expansion
  - Emergency Operations
What Keeps You Up at Night?

- Natural Hazards
- Human-Caused Hazards
  - Accident
  - Crime
  - Terrorism

- Campuses have diverse building stock that is often not to current code
- Campuses are porous
- Campuses support multiple disciples and business objectives
Priceless Buildings & Collections
Medical Campuses

• Research
• Biotech
• Trauma Med-Flights
• Hazardous Waste
• Data
Discussion Topics

• What are your major concerns?
  • What events do you think are likely to occur?
  • What specific vulnerabilities exist?
  • What specific information can you provide?
We will prevail...

We are Virginia Tech