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Ensuring the Safety of our Institutions of Higher Learning

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Ensuring the Safety of our Institutions of Higher Learning

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Dewberry Consultants LLC**

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 Derecho**



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!**

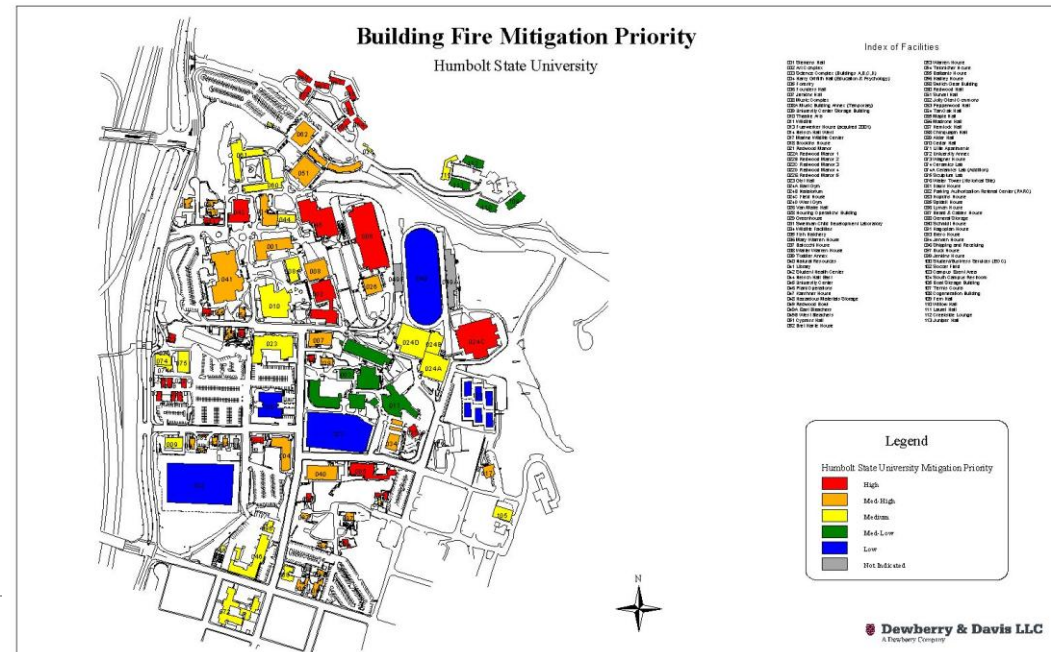


Hazard Identification – Risk Analysis (HIRA)

- **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

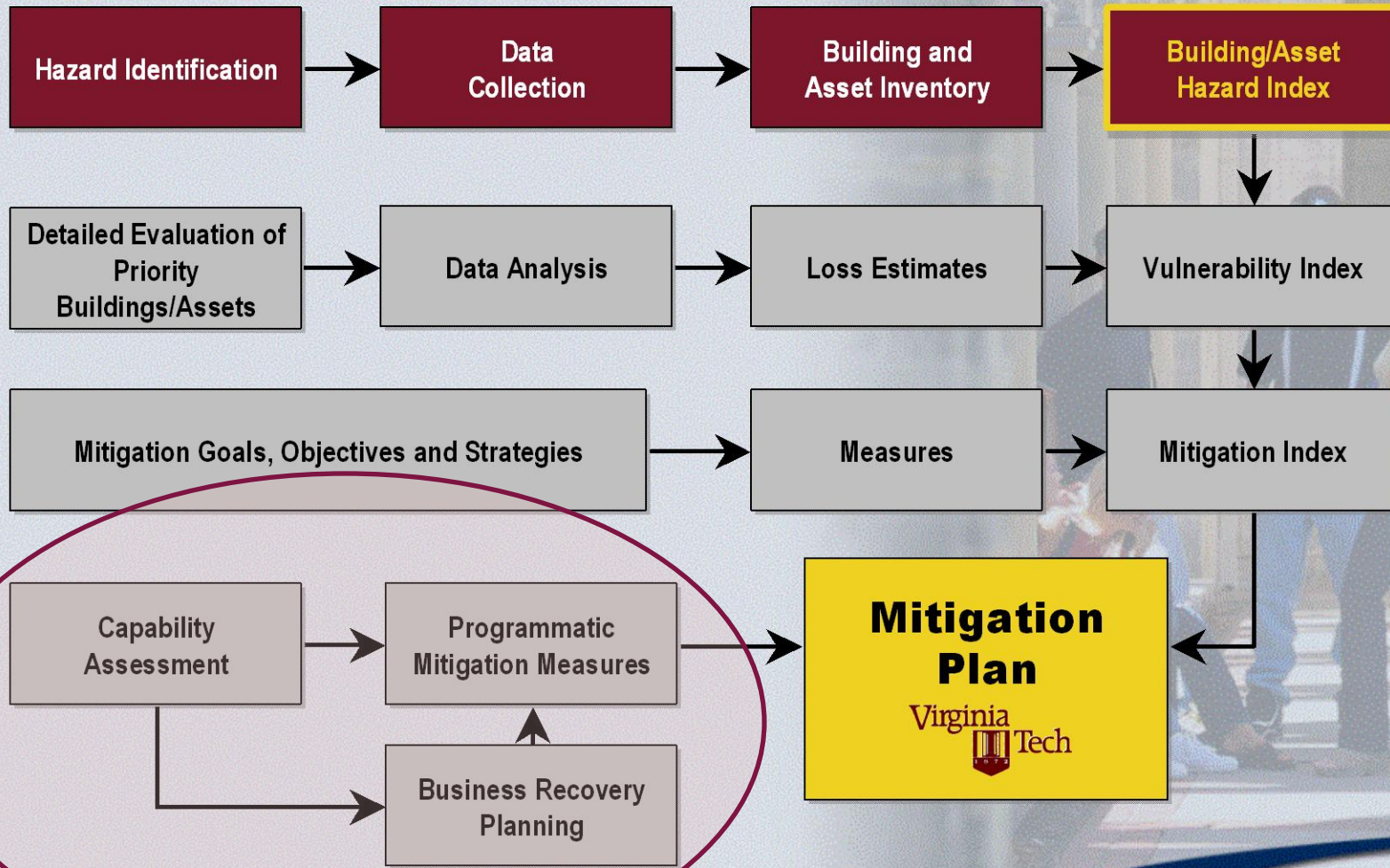
- Perform a Hazard ID + Risk Assessment
- Analyze campus vulnerabilities
 - Risks to persons and structures
 - Continuity of Operations
 - Societal Impacts



Building Class	Natural Hazards			Human-Caused Hazards		Capability Needs			
	Flood	Wind	EQ	Fire	Hazmat Spills	Crime	Power Back-Up	IT Back-Up	Etc.
Academic	✓	✓	✓	✓	✓	✓	✓	✓	
Residences		✓		✓		✓	✓	✓	
Athletic			✓		✓	✓			✓
Utilities	✓	✓				✓	✓		
Agricultural	✓		✓			✓	✓		✓
Corporate		✓		✓		✓	✓	✓	



Courtesy: Dewberry

Project Approach – Survey, Analysis, Recommendation



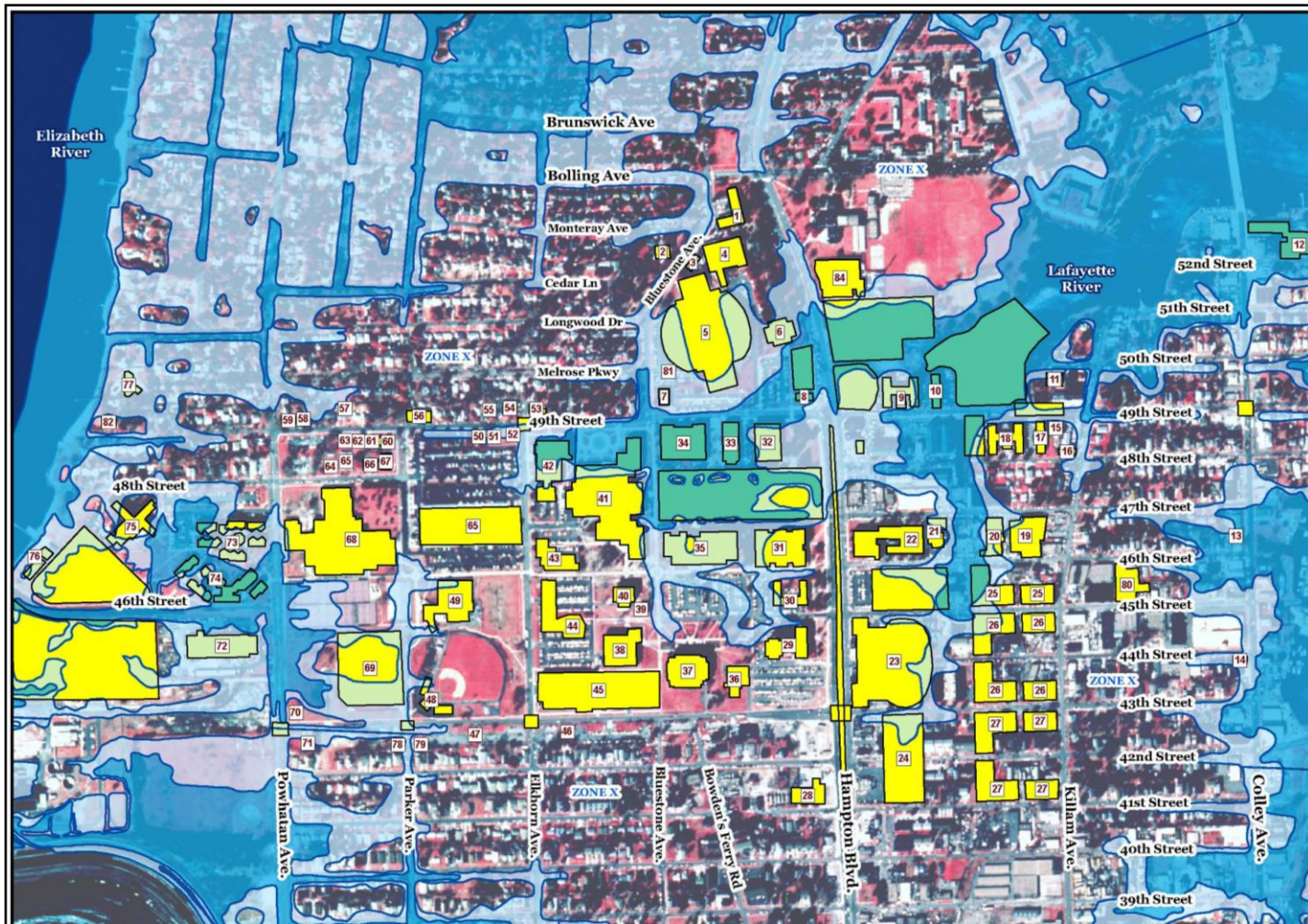
Virginia Tech

FEMA Flood Zones

-  100-Year Flood Boundary
-  500-Year Flood Boundary

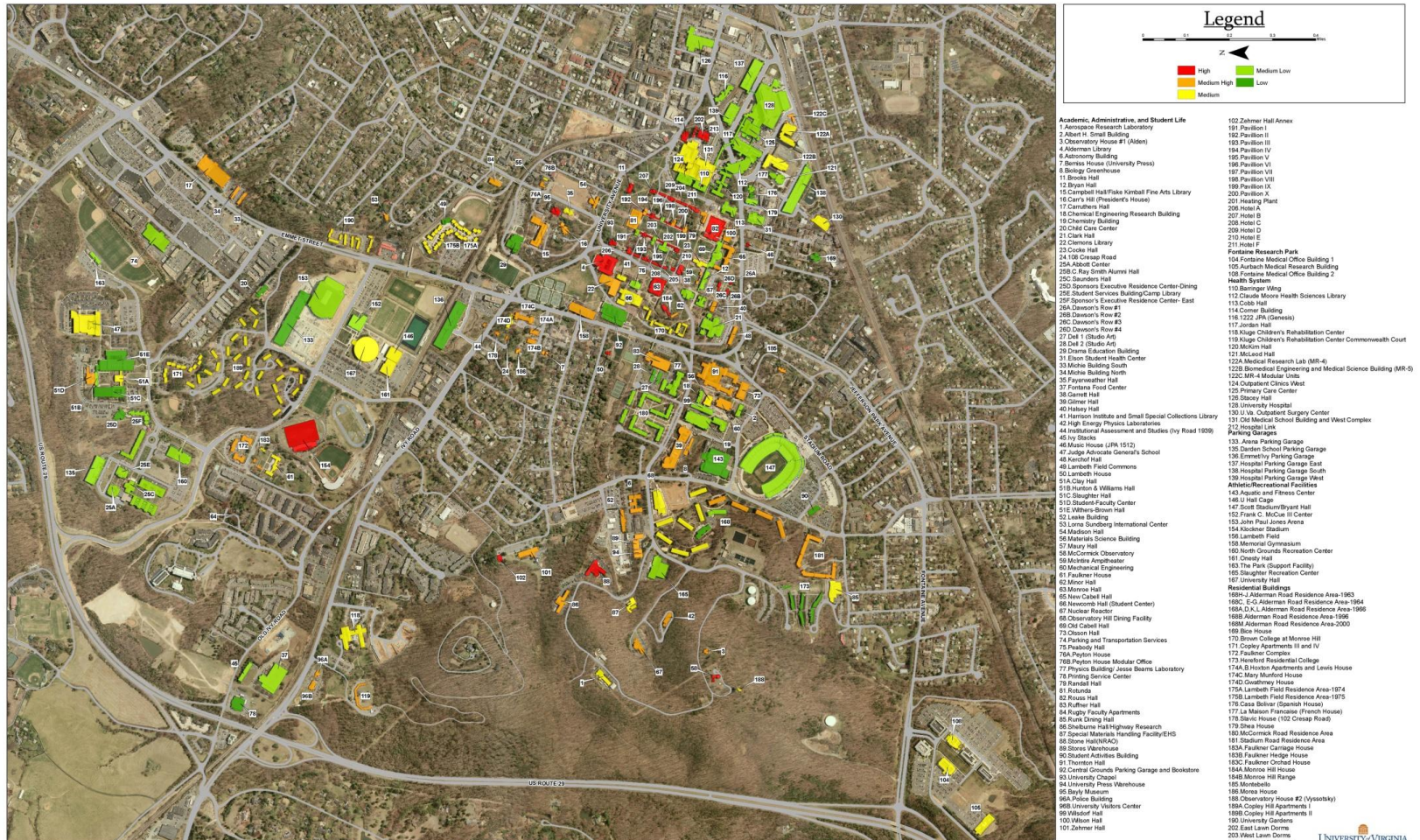


Old Dominion University



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?

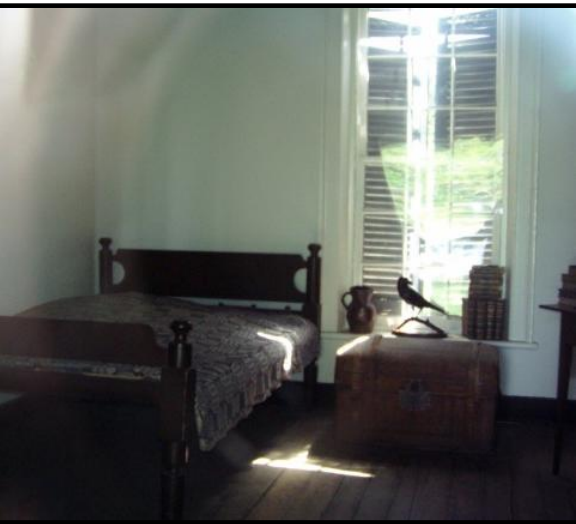
- Universities are compact microcosms of society
- Large concentrations of residential areas
- Highlight campus “soft spots”
- Integrate other facility plans
 - COOP
 - Renovation
 - Expansion
 - Emergency Operations



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 disciplines 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?



Virginia Tech Memorial, April 16, 2008



We will prevail...



We are Virginia Tech