Developing and Administering Disaster Recovery and Business Continuity Plans
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1) Executive Overview

Key Observations

Unit leaders prepare disaster recovery and business continuity sub-plans that identify service priorities, resources necessary for full unit functionality, and authorized decision makers. Disaster management administrators at three profiled institutions direct unit leaders to complete sub-plans through an online template and integrate sub-plans into the university’s comprehensive emergency management plan. Sub-plans ensure post-disaster coordination between unit and university leaders. Unit leaders update sub-plans on an annual basis.

Disaster recovery and business continuity plans include risk assessments that direct unit leaders to consider unit vulnerability to likely disaster scenarios. The university-wide disaster recovery and business continuity plan at one profiled institution ranks possible disaster types by likelihood and magnitude; contacts report that rankings help unit leaders develop sub-plans that anticipate the impacts (e.g., compromised staffing levels, unreliable utilities) of likely disasters. Institutions simulate likely disasters that affect the entire university to test emergency management, disaster recovery, and business continuity plans.

Disaster management administrators do not maintain formal disaster simulation schedules but typically perform at least one simulation per year. Full-scale simulations require significant staff resources from university units and external first responders and rarely test disaster recovery and business continuity plans. Administrators at one profiled institution conduct tabletop simulations that can be completed in one business day and do not burden staff outside of the emergency operations center.

Disaster recovery and business continuity plans encourage administrators to consider university vulnerabilities and to engage in proactive risk reduction initiatives. Contacts at two profiled institutions report that unit leaders who complete DR/BC sub-plans become more aware of risk management strategies and increasingly comply with university risk reduction standards. Contacts at one profiled institution assessed the computing risks of each academic department and encouraged unit leaders to adopt regular backup policies, migrate data to off-site servers, and improve information security protocols.
Plan Structure

**Include DR/BC Plans in Emergency Management Protocols to Guide Post-Disaster Recovery**

Disaster management administrators at three profiled institutions integrate departmental DR/BC plans into university-wide emergency management protocols to direct post-disaster recovery efforts.

**Emergency Management Process at Institution B**

<table>
<thead>
<tr>
<th>Increased Readiness</th>
<th>Initial Response</th>
<th>Extended Response</th>
<th>Recovery Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>The University Chief of Police receives a warning that a threat or emergency is imminent and briefs the University president. The Chief of Police directs relevant staff to prepare (e.g., emergency medical staff) and activates the Emergency Operations Center (EOC).</td>
<td>Emergency administrators disseminate warnings to the campus community, direct evacuations and rescue operations, conduct initial damage assessments, and coordinate with state and federal agencies to minimize the effects of the threat, hazard, or emergency.</td>
<td>EOC staff prepare detailed damage assessments, coordinate mass casualty operations, and prioritize resource allocation as the emergency threat subsides. EOC staff continue to disseminate emergency information to campus constituents and communicate with external agencies.</td>
<td>The University Incident Response Team (IRT) orders recovery operations when public safety and utilities services resume normal operations. The IRT manages disaster recovery for university-wide critical business functions and directs division leaders to coordinate departmental recovery activities.</td>
</tr>
</tbody>
</table>

Emergency management and DR/BC plans identify administrators responsible for the direction and management of the university response to an emergency or disaster.

**Sample Emergency Response Process**

**Emergency Declaration**: The university president, vice presidents, and chief of police declare emergency conditions and initiate the university disaster response protocol.

**Incident Response Team**: The Incident Response Team (IRT) assembles as soon as possible following an emergency declaration. The president chairs the group, which includes the president’s cabinet, the chief of police, and additional administrators relevant to the emergency situation (e.g., health center staff, facilities management staff).
Emergency Operations Center Group: The IRT activates the Emergency Operations Center to manage any emergency that is catastrophic or requires a multi-day response. The EOC Group can include personnel from additional offices necessary for an effective emergency response.

Departments Develop DR/BC Plans to Supplement University-Wide Plans

Disaster management administrators at profiled institutions develop DR/BC plans for university-wide critical business functions and direct department leaders to create DR/BC sub-plans plans for their departments. Disaster management administrators at Institution B and Institution E require department leaders to develop initial plans and suggest that departments update sub-plans at least once per year.

Components of Departmental DR/BC Sub-Plans

- **Business Interdependencies**: Disaster management administrators at Institution B ask department leaders to identify services and resources provided by other departments (e.g., enterprise applications, printing services) that their departments require for normal business operations.

- **Human Resources**: Business continuity sub-plans at profiled institutions include a list of department staff and describe what services departments could provide with compromised staffing levels.

- **Equipment**: Department leaders identify the equipment necessary to provide normal services. The Manager of the Office of Emergency Preparedness at Institution F also asks departments to list valuable assets (e.g., artwork, rare books) that are irreplaceable to facilitate post-disaster insurance claims.

- **Space Needs**: Department sub-plans state each department’s current space needs (including classroom and office space) and require unit leaders to estimate the minimum allotted space necessary to function normally after a disaster.

- **Information Security**: Emergency management administrators ask unit leaders to list application and server needs and encourage units to regularly back up essential data.

- **Decision Makers**: Departments identify a unit coordinator (typically the unit leader) empowered to make decisions on behalf of the department during an emergency. The coordinator serves as the main point of contact between the EOC and the department during emergency management and recovery operations.
University-Wide DR/BC Plans Include Critical Business Functions

Disaster management administrators apply increased scrutiny to DR/BC sub-plans for departments that provide critical business services; the university-wide DR/BC plan at Institution B incorporates these sub-plans into the overall document.

DR/BC plans for university-wide critical business functions identify department functions and assign maximum allowable downtime and restoration priority values to each function.

Sample Business Function Ratings:

▪ High Priority, No Allowable Downtime:
  – University Comptroller: Payroll
  – Environmental Safety: Staffing operations of critical personnel for emergency response, providing emergency response for the campus, access to emergency communications equipment and vehicles
  – Public Safety: Staffing operations of critical personnel for emergency response
  – Resident Life: Residence halls, housekeeping and maintenance

▪ Medium Priority, Some Allowable Downtime:
  – Copy and printing services (one to two days)
  – Bursar non-peak walkup payments (two to three days)
  – Facilities planning (one to two days)
  – Health center information systems (one to two hours)

▪ Low Priority:
  – Campus recreation center (one to two days)
  – Storage of controlled waste (seven days)
  – Human resources organizational development and training (five days).

Cabinet-level leadership evaluate priority rankings and allowable downtime values to prioritize the restoration of business services in the event of a university-wide disaster.

Critical Business Units at Institution B

▪ Academic Affairs Division: Office of the Provost, Graduate and Undergraduate Admissions, Financial Aid, Registrar, International Student Services
▪ Administrative Affairs: Business Services, Human Resources, Procurement, Comptroller, Facilities Management, Environmental Safety, Public Safety
▪ Student Affairs: Campus Recreation Services, Counseling Center, Dining Services, Health Center, Residential Facilities, Transportation Services
▪ University Relations: University Communications

Provide Web Templates to Develop DR/BC Plans and Sub-Plans

Disaster management administrators at Institution A and Institution E direct university units to develop sub-plans with the Kuali Ready online business continuity planning tool. The Risk and Insurance Analyst at Institution E adopted the open-source UC Ready tool developed by
the University of California at Berkeley and recently transitioned to the Kuali Ready platform, which features an updated interface. Contacts report that the Kuali Ready template is intuitive, but some department leaders request additional assistance to complete unit sub-plans.

### Job Description: Risk & Insurance Analyst at Institution E

- **Contract Review**: The Risk and Insurance Analyst reviews all insurance and liability clauses contained in contracts between university units and third-party vendors to ensure compliance with provincial standards. The analyst verifies that contract language does not require the university to accept an inappropriate degree of risk.

- **Perform Risk Assessments**: The analyst reviews university activities and uses a uniform framework to assign a numerical risk assessment rating to activities and university units. The Risk Management Steering Committee collects and aggregates these ratings to ensure compliance with the university’s risk appetite.

- **Coordinate Unit Sub-Plan Development**: University policy requires all departments to develop business continuity sub-plans and to update sub-plans annually. The analyst conducts mandatory training exercises with major unit leaders to familiarize leaders with the web-based business continuity planning template.

- **Update Valuable Asset Inventory**: University units compile photographic records of valuable unit assets to facilitate post-disaster insurance settlements. The analyst maintains and updates the valuable asset inventory with new records submitted by university units.

### Model Emergency Management and DR/BC Plans on Provincial Policies

The Manager of Campus Services & Operations at Institution F formerly worked in the municipal police department and launched a training program that confers provincial EOC certification on university employees. The manager also encourages department leaders to develop DR/BC plans that comply with provincial government standards (although this is not legally required). Contacts report that provincial certification ensures effective crisis management in the EOC during an emergency.

Administrative committees draft and oversee university-wide emergency management policies and plans that include DR/BC provisions. Contacts at all profiled institutions identify senior university leadership participation as the most important factor for initiative success.

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**Government Protocol**

“There’s no legislation that says we have to have anything. Our university is larger than most of the recognized municipalities in the province, so why shouldn’t the provincial standards that apply to municipal governments apply to us? I make sure that we do everything the legislation requires.”

- Forum Interview
# Emergency Management Plan Development at Institution F

## Leadership Interest

The Vice President, Finance & Administration hires an external consultant to perform a university-wide risk assessment survey that recommends the creation of formal protocols for disaster management and response. The VP, Finance & Administration briefs senior leadership and identifies stakeholder units that should participate in policy development.

## Plan Drafting

The VP, Finance & Administration asks all unit leaders to participate in the plan drafting process or send substitutes to ensure broad university support and awareness. The Emergency Preparedness Advisory Committee (EPAC) adopts provincial government disaster management and recovery protocols and approves the comprehensive plan.

## Plan Maintenance

EPAC members disseminate plan information to their respective university units and encourage staff and students to familiarize themselves with disaster protocols. Emergency management administrators collect unit sub-plans to include in the university-wide plan. EPAC must approve all changes or additions to the university-wide plan.

## Information Technology Initiatives Complement DR/BC Planning

Disaster management administrators at all profiled institutions identify computing services (e.g., database access, enterprise applications, servers) as a critical university-wide business operation and report that IT departments help university units develop DR/BC protocols.

The Director of Computing Infrastructure at Institution D publishes information security recommendations for university units that include periodic database backups, migration to cloud-based or remote servers, and the installation of blade servers. Contacts report that regular data backups and the use of server technology less vulnerable to physical interference can allow departments to restore full computing functionality within minutes.

## Risk Assessments Guide DR/BC Protocols for Likely Disaster Types

Disaster management administrators at all profiled institutions encourage unit leaders to consider the disaster types most likely to impact business continuity to identify departmental vulnerabilities. The DR/BC plan and unit sub-plans at Institution B provide risk matrices that evaluate the likelihood and severity of potential disasters. Contacts report that risk matrices facilitate the development of business impact assessments but do not prescribe specific responses to particular disasters.

### Disaster Rankings at Institution B

- **High Likelihood, High Severity:** Tornado, civil disorder, extreme weather, hazmat, active shooter
- **High Likelihood, Moderate Severity:** Hostage situation
- **High Likelihood, Low Severity:** Air crash, public assembly emergency
Disaster management administrators at Institution B and Institution E require unit leaders to develop and approve unit sub-plans. Contacts report that mandatory participation in sub-plan development familiarizes unit leaders with the university-wide disaster recovery plan and encourages unit leaders to consider unit vulnerability to likely business interruption scenarios.

Members of Institution F’s Emergency Preparedness Advisory Committee (EPAC) represent all units of the university and distribute copies of the emergency management and DR/BC plans to division staff. Contacts report that EPAC members answer questions posed by division staff and encourage staff to consider vulnerabilities that could disrupt business operations.

Disaster management administrators at Institution F table to raise campus awareness of emergency protocols during Canada’s annual Emergency Preparedness Week in May. Contacts sponsor raffles and trivia competitions to encourage students and staff to learn proper emergency response protocols.

3) Promoting Disaster Recovery/Business Continuity Plans

Effective Awareness Efforts Vary by Constituent Group

Disaster management administrators promote campus awareness of emergency management protocols to faculty, staff, and students throughout the academic year. Contacts at all profiled institutions prioritize awareness of emergency response protocols over awareness of post-emergency DR/BC protocols; contacts report that DR/BC protocols are relevant only to staff who direct university units.

Strategies for Effective Plan Dissemination

- **Require Unit Leaders to Complete DR/BC Sub-Plans**
  - Disaster management administrators require mandatory participation in sub-plan development for unit leaders. This familiarizes them with the university-wide disaster recovery plan and encourages consideration of unit vulnerability to business interruption scenarios.

- **Recruit Plan Developers to Promote Plans to Department Staff**
  - Members of the Emergency Preparedness Advisory Committee (EPAC) distribute copies of the emergency management and DR/BC plans to division staff. EPAC members answer questions and encourage staff to consider vulnerabilities.

- **Capitalize on National Emergency Awareness Weeks**
  - Disaster management administrators at Institution F use Canada’s annual Emergency Preparedness Week to raise campus awareness of emergency protocols. They sponsor raffles and trivia competitions to encourage learning.

### Low Likelihood, High Severity
- Train accident, utility failure, power failure, telecomm failure, terrorist threat, earthquake

### Low Likelihood, Moderate Severity
- Structural collapse, major fire

### Low Likelihood, Low Severity
- Flood, disease outbreak
Plan Testing

No Profiled Institution Maintains a Formal Testing Schedule

Most profiled institutions perform emergency response simulations at least once annually; disaster management administrators at Institution F report that recent on-campus emergencies have taken the place of simulations.

Conduct Tabletop Simulations to Test DR/BC Plans and Sub-Plans

Disaster management administrators at Institution E recently completed a tabletop disaster simulation that included post-disaster recovery and business continuity operations. Administrators brought faculty leaders into the simulation room and informed them that a fire had destroyed part of an academic building and asked unit leaders to follow sub-plans and describe the recovery process. Contacts report that the exercise was successful, was completed in one business day, and did not require real-world coordination with outside agencies.

Simulate Likely Disasters

Contacts at Institution B, Institution C, and Institution E simulate disasters that they consider most likely to occur. Disaster management administrators at Institution B plan to simulate several active shooter scenarios in the wake of the Virginia Tech and Sandy Hook Elementary School shootings.

After-Action Reports and Debriefings Evaluate Emergency Response

Disaster management administrators at Institution F complete after-action reports that evaluate the effectiveness of the institutional response to emergency situations. Emergency Operations Center staff review the overall response time, unexpected difficulties, and the material outcomes (e.g., property damage, casualties) of an emergency scenario and lead a debriefing with all unit leaders from departments involved in the response. No profiled institution has implemented DR/BC plan changes following a real or simulated emergency.
Leadership at a member institution approached the Forum with the following questions:

- How did other institutions develop DR/BC plans?
- What administrators or division leaders participated in plan development?
- What external resources or experts did institutions consult?
- How are DR/BC plans structured?
- How do institutions develop business continuity protocols for vital operations (e.g., academic instruction, information technology, student services, communications infrastructure)?
- What functions do disaster recovery and business continuity plans prioritize? How is this value determined?
- What recent changes have institutions made to disaster recovery and business continuity plans? What factors motivated plan adjustments?
- Do plans stipulate appropriate institutional responses by disaster magnitude? How do institutions determine appropriate responses?
- What methods do administrators use to disseminate DR/BC plan protocols?
- Do dissemination methods vary between constituent groups?
- How do administrators test DR/BC plan implementation?
- How often do drills or rehearsals occur?
- What scenarios do administrators test?
- What constituent groups participate in tests or rehearsals?
- How do administrators measure the outcomes of DR/BC tests?
- How do administrators incorporate test outcomes into DR/BC plan reviews?

The Forum consulted the following sources for this report:

- Education Advisory Board’s internal and online research libraries (eab.com)
- National Center for Education Statistics (NCES) (http://nces.ed.gov/)
- Institutional websites

The Forum interviewed administrators responsible for disaster management planning at large, public universities in the United States and Canada.
A Guide to Institutions Profiled in this Brief

<table>
<thead>
<tr>
<th>Institution</th>
<th>Location</th>
<th>Approximate Institutional Enrollment (Undergraduate/Total)</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution A*</td>
<td>Midwest</td>
<td>32,500/43,000</td>
<td>Research Universities (very high research activity)</td>
</tr>
<tr>
<td>Institution B</td>
<td>Mid-Atlantic</td>
<td>27,000/37,000</td>
<td>Research Universities (very high research activity)</td>
</tr>
<tr>
<td>Institution C</td>
<td>Alberta</td>
<td>10,500/12,000</td>
<td>Comprehensive (Maclean's)</td>
</tr>
<tr>
<td>Institution D</td>
<td>Ontario</td>
<td>33,500/37,000</td>
<td>Comprehensive (Maclean's)</td>
</tr>
<tr>
<td>Institution E</td>
<td>British Columbia</td>
<td>18,000/22,500</td>
<td>Comprehensive (Maclean's)</td>
</tr>
<tr>
<td>Institution F</td>
<td>Ontario</td>
<td>46,000/52,000</td>
<td>Comprehensive (Maclean's)</td>
</tr>
</tbody>
</table>

*Information for this institution was obtained through publicly available sources*