

## Separating Fact from Fiction: Sprinklers Do Prevent Water Damage

By John Breen, Manager, Risk Reduction and Loss Control, CURIE

Hollywood has given automatic sprinkler systems a bad rap. When sprinklers activate in the movies, these systems inevitably expel massive torrents of water, drenching everything and everyone in their path. These chaotic downpours might make for dramatic cinema, but they bear no semblance to reality.

But in part because of Hollywood fiction, many people believe that water from sprinklers causes more harm than water from fire hoses. Such is simply not the case.

Fire hoses often extensively damage property not just in the fire area but beyond. That's because physical barriers and smoke can easily prevent firefighters from aiming high-pressure hose streams directly at a fire. Unlike fire hoses, however, automatic sprinklers operate only over the fire area; sprinklers outside the immediate fire area remain off, minimizing water damage.

Fire hoses discharge vastly more water than sprinklers, too, increasing the likelihood of damage. Sprinklers help control fire by spraying water directly on the flames, restricting the fire's spread, and cooling the surrounding area, thus limiting the number of active sprinklers.

Loss data from insurer FM Global shows that nine or fewer sprinklers will control a fire 73 percent of the time. Based on a water density of 8.2 mm/minute, nine sprinklers would discharge 41,580 litres of water in an hour. During the same period, two fire hoses would discharge 90,840 litres – 119 percent more than the sprinklers.

That's *more than double* the water soaking your drywall, furniture, artwork, carpets, computers, telephones, books, and files.

### Minimizing Fire and Smoke Damage

Sprinkler systems minimize not only water damage, but also smoke and fire damage, enabling your university to quickly resume operations should fire strike. In fact, in a fire's early stages, sprinklers are more effective than fire service response. That's because fire response personnel have to be notified, travel to the site, appraise the situation, and search for and potentially rescue victims before starting to battle the fire. Automatic sprinkler systems go to work *immediately*.

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*“Sprinkler systems minimize not only water damage, but also smoke and fire damage, enabling your university to quickly resume operations should fire strike.”*

Moreover, statistics from FM Global reveal that in 40 percent of fires with losses greater than US\$1 million, fire services were not called promptly. The average delay in these cases? Twenty-four minutes. Some delays stretched as long as two hours. But even when notified promptly, fire services take an average of six minutes to reach sites. Typical fires can become well established within six to eight minutes.

Not surprisingly, FM Global loss statistics consistently show that, on average, fires in sprinklered locations are four to five times less severe than those in unsprinklered locations. In a recent five-year period, the average fire loss to an adequately sprinklered FM Global insured location was less than US\$600,000; the average fire loss at locations without sprinklers was US\$3.2 million.

This data is also supported by a U.S. National Fire Protection Association study of hotel fires: the average property loss at sprinklered hotels was approximately one-fifth the average property loss at unsprinklered hotels. The conclusion: *automatic sprinkler protection is your best defence against fire*. By extension, without sprinklers, you greatly increase the risk of property damage and loss of life.

### **Cost-effective and highly reliable**

But what about the expense of sprinklers? Installing sprinklers costs about the same as installing new carpeting. As a rule of thumb, sprinkler systems run at approximately \$1.50 to \$3 a square foot or \$16 to \$32 a square meter. Consequently, oftentimes the barrier to installing sprinklers isn't cost, but simply a lack of awareness about their benefits.



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Although costs will be slightly higher for existing buildings, retrofitting these buildings need not be disruptive. Good contractors will minimize inconvenience to service staff, faculty, and students.

And once the sprinklers are installed, you don't have to worry about their activating unnecessarily. Sprinklers activate only once temperatures exceed a certain level, typically 74° C or greater.

Moreover, sprinklers are incredibly reliable: only one out of 16 million will leak or accidentally discharge. When a sprinkler does accidentally discharge, human error (e.g., a ladder violently striking a sprinkler) is more often to blame than mechanical failure. Fortunately, leaking sprinklers typically cause minimal damage, whereas fires can cause catastrophic damage to locations without sprinklers.

If even 16 million to one odds get you nervous, you can install a pre-action sprinkler system. By further lessening the likelihood of accidental discharge, these

systems suit rooms full of expensive computer equipment or libraries that house irreplaceable texts.

Pre-action sprinkler systems sit dry, so even if a worker or vandal knocks off a sprinkler head, no water will be released. Such a system operates in two stages. In the first stage, should the system detect smoke from a smouldering fire, the sprinkler pipes fill with water. If the fire advances to the flame stage followed instantly by heat, the system activates.

Want even more protection against accidental discharge? Double interlock systems require two events before the pipes even fill with water.

Although movies will likely continue to portray sprinklers unrealistically, the bottom line is that sprinkler systems minimize water damage and save property and lives. And that's a happy ending we can all appreciate.

This article was adapted with permission from an FM Global article entitled "Lack of Automatic Sprinklers."

# Questions & Answers

## Question:

We are entering into a licensing agreement with a commercial company for software and development. In addition to the usual holdharmless, indemnification and insurance clauses, what can we do to protect ourselves from claims arising out of their use of our technology?

## Answer:

When licensing your technology you want to avoid claims that your partners may bring alleging faults with that software. A “Disclaimer of Warranty” and a “Limitation of Liability” clause should be part of these types of agreements.

Listed below are examples of such clauses.

1. Disclaimer of Warranties. UNIVERSITY DOES NOT REPRESENT OR WARRANT THAT ALL ERRORS IN THE SOFTWARE AND DOCUMENTATION WILL BE CORRECTED. THERE ARE NO WARRANTIES RESPECTING THE SOFTWARE AND DOCUMENTATION OR SERVICES PROVIDED HEREUNDER, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF DESIGN, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE, EVEN IF UNIVERSITY HAS BEEN INFORMED OF SUCH PURPOSE. NO AGENT OF UNIVERSITY IS AUTHORIZED TO ALTER OR EXCEED THE WARRANTY OBLIGATIONS OF UNIVERSITY AS SET FORTH HEREIN.
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## Question:

An independently incorporated research company, in which the university holds a minority interest, has among its employees several adjunct professors. Are these adjunct professors covered by CURIE while conducting research on behalf of the incorporated entity (i.e., not university research)?

## Answer:

Coverage would not apply to an adjunct professor doing non-university related ethics reviews or research, even if the research is conducted on your campus. If it is not university research, we treat this research as an outside activity, and coverage for your adjunct professor would not apply.

If you proceed to provide the ethics review, you should obtain a full holdharmless and indemnification agreement from the company and require it to provide at least \$5 million in liability coverage.

## Serving Our Members

*We understand that the increasingly broad and complex scope of university operations can present you and your colleagues with many, and sometimes unusual, risk and claim-related questions. It's most likely, however, that the CURIE staff, through its dealings with the other 55 CURIE subscribers, have encountered issues like yours. If not, we're highly experienced in finding answers through our network of contacts.*

*Don't hesitate to call or email us if you have a question. We are here to help you manage your risks and protect your university – and we are always looking for ways to serve you, our valued members, better.*

# Business Continuity Management Overview

by Gayle Mitcham

## What is Business Continuity Management?

Business Continuity Management (BCM) uses a framework that helps to ensure the continuity of critical services during a disaster or incident. It provides the basis for planning to ensure the long-term recoverability and survivability following a disruptive event. Business Continuity Plans need to be clear, concise and tailored to meet business recovery requirements.

Business Continuity Management in the public sector is referred to as Continuity of Operations Planning (COOP). COOP addresses the recovery of critical and essential operations in the event of an incident or emergency which disrupts service to the public.

The planning processes used in BCM and COOP are essentially the same, with the differences being primarily terminology. Since the BCM framework is more widely used and known, this article will focus on the BCM process.

## Why It is Important to be Prepared

Disasters disrupt thousands of businesses and lives every year. Each disaster has lasting effects both to people and property. Some businesses and services never recover when forced to face a disaster unprepared.

Being prepared can reduce fear, anxiety and losses that accompany disasters. For example, communities, businesses, colleges, universities, schools, families and individuals should know what to do in the event of a fire or where to seek shelter during a tornado. They should be ready to evacuate their offices, school or home and take refuge in a safe location. Likewise

an organization needs to be prepared so that it can protect its employees and continue or recover its critical processes and services.

An effective Business Continuity Management Program will go a long way towards helping address these concerns.

## Understanding the Threats, Vulnerabilities and Risks

- A **threat** is something with the intent and/or capability to exploit a vulnerability in an asset. Threats can be natural disasters or man made disasters such as terrorism.
- A **vulnerability** is a weakness in an asset that can be exploited. An unsecured data centre would be vulnerability.
- A **risk** is the probability of harmful consequences resulting from interactions between threats and vulnerable assets.

One of the first steps in the development of an effective Business Continuity program is to understand the threats, vulnerabilities and risks your organization is facing. Typical threats may include blackouts, natural disasters, computer viruses, chemical spills, labour strikes, shooting incidents, pandemics etc. As

well there may be unique threats to your university that should also be considered.

Each threat needs to be assessed to determine the probability of its occurrence and the impact should it occur. This will help you determine what threats or risks you can live with and which ones you need to prepare for. Risk is commonly expressed using the following formula:

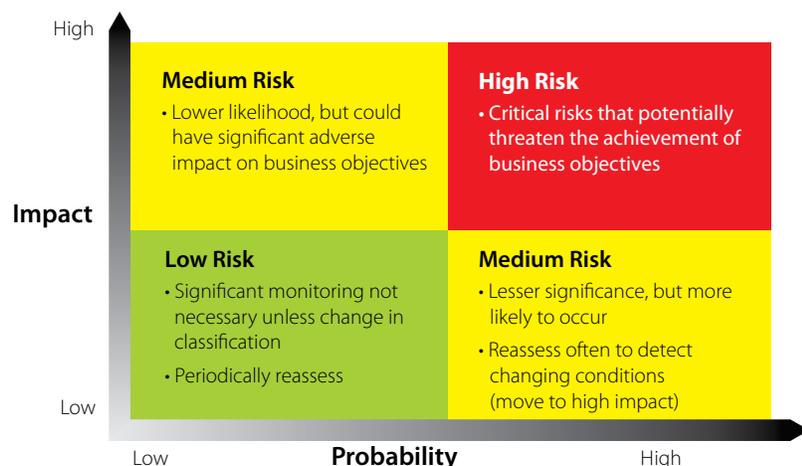
$$\text{Risk} = \text{Impact} \times \text{Probability}$$

For the purposes of this formula, impact and probability are defined as follows:

**Impact:** Impact on critical services resulting from or caused by a threat such as a natural disaster.

**Probability:** The likelihood that this threat will occur. For example, those organizations in hurricane zones would have a higher likelihood of this threat occurring. Those threats with a higher risk score should be addressed as part of your Business Continuity Management planning.

Plotting the threats on a graph similar to the one below may also be helpful in making the determination of which threats/risks you need to prepare and plan for.



## Components of a Business Continuity Program



### Overview

Business Continuity Management framework is made up of four main components. Each of them represents an important part of an effective Business Continuity Program.

Very recently another area of Business Continuity Management has come to the forefront – that is Pandemic Planning. Pandemic planning is a threat that must be identified as part of the risk assessment process. From a planning perspective Pandemic can be treated as part of both the Crisis Management and Business Continuity Planning Components. However, due to the projected severity of its impact and the high probability that is being placed on it, most organizations have chosen to look at Pandemic Planning as a separate or fifth component of the BCM framework.

### Crisis Management and Crisis Communications

Effective crisis management requires proactive planning to ensure that the appropriate threats are addressed and planned for. Crisis management in the face of a crisis requires the identification of the nature of the crisis, intervening to minimize damage and moving forward with recovering critical services and processes. Crisis management

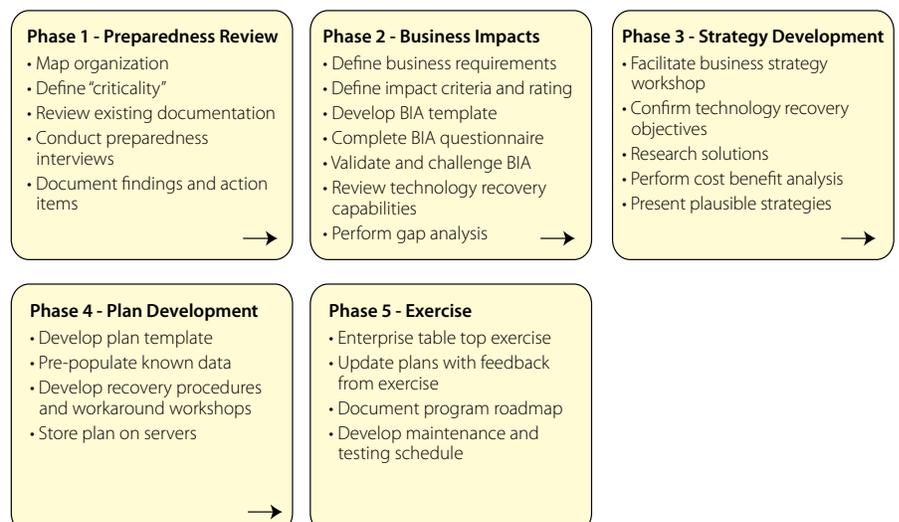
also includes a strong focus on public relations to recover any damage to public image and assure stakeholders that recovery is underway.

### Business Continuity and Recovery

Business Continuity and Recovery is a critical component in the BCM framework Critical services need to be identified, recovery strategies developed, and business continuity plans developed and exercised.

While this may be a large undertaking, it can be managed in phases, broken down as follows:

### Business Continuity Project Phases



## Disaster Recovery Plans for Infrastructure and Applications

The Information Technology Department is a key part of all Business Continuity Management Programs. Most critical services rely heavily on IT infrastructure and applications and therefore their recovery will require an IT component. IT recovery strategies need to be developed that will meet the needs of the business and then detailed step-by-step IT recovery plans should be developed.

### Pandemic Planning

Health and Safety are the number one priority when developing a Pandemic Response Plan. Proactive pandemic response activities include identifying vital processes and functions that need to be sustained for as long as possible during a Pandemic, review of HR policies that may be impacted by loss and illness of employees and infection control procedures required to minimize and control the spread of the Pandemic where possible. Crisis Management and Business Continuity Plans are updated to reflect the Pandemic strategies and plans that are identified.

*Watch for the next newsletter in which Business Continuity and Recovery, including all phases of the Business Continuity Project will be reviewed in more detail.*

\* Gayle Mitcham is an Assistant Vice President in the Business Continuity Practice for Marsh Consulting. If you have questions about this article or would like a quote from Marsh to provide assistance with your program, Gayle can be reached at 416-868-2748.

## CURIE Update

### Second Quarter Claims Highlights

Claims Incurred	Liability	Property
First Quarter	\$3,345,668	\$3,677,917
Second Quarter	\$4,742,639	\$827,321

The number of new liability claims remained slightly below average for the quarter. We had several trials, and several significant claims settled which are reflected in the financial results.

With the exception of one large water loss - \$2,750,000, the property program is doing quite well.

### STATEMENT OF INCOME AND EXPENSES

For the six months ended June 30, 2007

	2007	2006
Written Premium	\$ 19,717,694	\$ 19,754,189
Earned Premium	9,858,846	9,875,161
Less Reinsurance Costs	281,535	824,617
Net Earned Premium	9,577,311	9,050,544
Net Incurred Claims	12,593,547	6,502,613
<i>Net Loss Ratio</i>	131.49 %	71.85 %
<b>Underwriting Profit (Loss) Before Operating Expenses</b>	<b>(3,016,236)</b>	<b>2,547,931</b>
Operating Expenses	1,341,899	1,211,436
<i>Net Operating Expense Ratio</i>	14.01 %	13.39 %
<i>Combined Ratio</i>	145.50 %	85.23 %
<b>Underwriting Profit (Loss)</b>	<b>(4,358,135)</b>	<b>1,336,495</b>
Income from Investment	1,295,319	1,011,288
Other Income	1,500	1,500
Other Comprehensive Income (Loss)	(109,756)	0
<b>NET PROFIT (LOSS)</b>	<b>(3,171,072)</b>	<b>2,349,283</b>

# SportRisk Program Pinpoints Athletics and Recreation Risk Vulnerability

Are your university's sports programs designed to minimize injuries? There's one way to find out: you can take part in the SportRisk Program offered by Ian McGregor and Associates.

Based out of Vancouver, Ian McGregor is an expert in assessing how well university athletics and recreation programs manage risk. His SportRisk Program comprises three stages.

In the first stage, you produce a risk profile for your university by answering 11 surveys—each pertaining to a different athletics and recreation program (e.g., varsity, intramurals, aquatics, sport clubs, weight room, etc.). The surveys ask questions concerning five key risk areas: emergency response, facilities and equipment, supervision, training, and documentation. For instance, the surveys might ask respondents whether they regularly inspect their facilities and equipment.

By compiling answers to the surveys, Dr. McGregor is able to compare your programs not only with one another, but with those of more than 70 other universities throughout North America. "This is a useful perspective for athletics and recreation directors," said Dr. McGregor. "They can see why one program perhaps is performing less well than others."

CURIE will pay for these surveys, too, so they don't cost your university anything but a bit of well-spent time (each survey takes roughly 15 to 20 minutes to complete.)

During the second stage of the SportRisk Program, Dr. McGregor visits your campus for two days and analyzes your operation. For instance, in its survey response, a program might state that it has a risk-management plan. In his on-site inspection, Dr. McGregor will assess the quality of that plan.

"At the end of stage two, I recommend in detail what the university needs to do to address its specific risk-management shortcomings," he said.

In the final phase, should you want, Dr. McGregor will return roughly three years later to assess how well your university implemented its recommendations. You can even fill out another survey, and use your first as a benchmark for comparison. "In general," said Dr. McGregor, "progress is excellent."

CURIE will pay for up to 50 percent of the second-stage consulting fee and for 100 percent of the third-stage consulting fee. In both cases, universities are responsible for all travel and living expenses.



## Online Sport-Risk Training Free to CURIE Members

If you'd like to learn more about reducing sports risk, enroll in the upcoming four-week online course entitled *Risk Management for Recreation Professionals*. Designed and conducted by Dr. McGregor, this course provides professionals with the knowledge and skills needed to help reduce the risk of injury to recreation participants. CURIE will pay your \$350 fee as long as you complete the course.

Expect to devote eight to ten hours a week to the online workshop, which runs from November 12 to December 7, 2007.

The first two weeks will introduce you to the concept of "negligence" and reveal how your university can be held liable. In the second two weeks, you apply what you've learned to problems or issues at your university and develop the tools and skills to implement a risk management plan. "This course is not an academic exercise," said Dr. McGregor. "It's very practical!"

For more information, visit the following McGregor and Associates webpage: [www.studentliferisk.com/course/index.php](http://www.studentliferisk.com/course/index.php).

To register for this workshop, please send an email to John Breen at CURIE at [jbreen@curie.org](mailto:jbreen@curie.org). Space is limited to 16 participants, and many spots are already spoken for, so if you're interested, register now.

# CURIE Risk Management Newsletter



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## Lessons Learned

A recent fire at a university underscores the importance of a hot work permit program. This program should be followed by anyone conducting hot work such as welding, torch cutting, grinding, and torch soldering.

The fire started after a worker cut a metal bolt with a torch. Sparks from the cutting torch fell into a trashcan but did not ignite immediately. The worker then left the room, and eventually the trash ignited. Luckily, someone else in the area smelled smoke, spotted the burning trashcan, and

doused the flames with a fire extinguisher before the fire caused any damage.

This fire perfectly illustrates the risks associated with hot work. Hot work creates heat, sparks, and hot slag that can ignite flammable and combustible materials. To minimize the risk of a hot work fire, follow the requirements of a hot work permit program.

If you are interested in hot work information, please contact John Breen at CURIE at [jbreen@curie.org](mailto:jbreen@curie.org).



## Events to Mark in Your Calendar

### Ontario Universities Risk Management Workshop

November 20 - 21, 2007

Queen's University

For more information contact Bob Weisnagel

[bob.weisnagel@queensu.ca](mailto:bob.weisnagel@queensu.ca)

### Atlantic Universities Risk Management Workshop

November 22, 2007

Atlantic Universities Risk Management Workshop

Lord Nelson Hotel, Halifax, N.S.

For more information contact David Foley

[david.foley@interuniversity.ns.ca](mailto:david.foley@interuniversity.ns.ca)