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HIGH STAKES BUSINESS:
PEOPLE, PROPERTY AND SERVICES

Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America

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PROJECT LEADER
Laverne Deckert, International Facility Management Association

WRITER
Karen Murphy Colosetti, Writing and Marketing Consultant

GRAPHIC DESIGN
Ashley Sustrich, The Ashley Tree, theashleytree.com

For more information, please contact:
IFMA Research Department
800 Gessner Rd., Suite 900
Houston, TX 77024-4257, USA
E-mail: research@ifma.org
Web: www.ifma.org

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IFMA relies on the willingness and generosity of our members and other industry professionals to help us provide valuable insight into the profession. Our research program is a partnership between IFMA and our members. Ultimately, our program is strengthened by the collective voice of members, which contributes to a deeper understanding of the underlying themes and trends of the global FM industry.

We'd like to express our appreciation to the survey participants as well as the following individuals:

- Forum participants (listed on the following page)
- Forum moderator, **Mark Sekula**, IFMA Fellow, CFM, FMP, LEED AP, President, Facility Futures Inc.
- Research advisor, **Isilay Civan**, MSc, PhD[2], SFP, LEED AP O+M, GGP, GPCP Senior Associate, Specialist, Consulting, HOK

Additionally, we would like to thank our Silver Level Corporate Sustaining Partner and IFMA research principal sponsor, **RLE Technologies**, for their support of and contribution to this report and our research program. RLE Technologies is a leading provider of facilities monitoring and leak detection products globally.

IFMA 2014 Research Forum on Emergency Planning and Business Continuity Participants

Mike Boroviak, CFM
Director, Facilities Operations Building and Maintenance Operations, University of Colorado Denver | Anschutz Medical Campu**s**

William Broome, CFM, SFP, LEED Green Associate
Director of Facilities, The Westminster Schools

Eric Connery
Facility Administrator Connecticut General Assembly, State of Connecticut

Paul Doughty, CFM, SFP
Facilities Manager, Pinnacol Assurance

Michael Dozal, CFM, WPS
Facility Manager, Polycom, Inc.

David Dunn, CFM
Division Manager, City of Orlando Office of Business & Financial Services

Byron Edwards, FMP
Building Management Specialist, Western Area Power Administration / U.S. Department Of Energy

Newman Forrester
Facilities Management Supervisor, University of Colorado Denver | Anschutz Medical Campus

Ned (Scott) Frank, CEFP
Manager of Training and Certification, Facilities Management, University of Colorado Denver | Anschutz Medical Campus

John (Jay) Henry, CFM
VP, Regional Facility Manager, Fifth Third Bank

Lisa VanderHeyden, CFM, PMP, LEED AP O+M
Manager of Library Facilities Operations, Jefferson County Public Library

Richard Hoopengardner
Senior Manager of Operations, The Kentucky Science Center, Louisville KY

Robert Kleimenhagen
Strategic Planning Coordinator, Pennsylvania Turnpike Commission

Casey Martin, CFM, SFP, AIA, AICP
Project Manager, Chevron

Vimol Mitchell
Assistant Director, Facilities Management, University of Colorado Denver | Anschutz Medical Campus

Debbie Nunnelee, FMP
Sr. Manager Facilities & Security, Terumo BCT

Bill O'Neill, CFM
Associate Director of Facility Management, University of Minnesota

Patricia Reed, CFM
Manager, Facilities and Operations, AAIS Online (American Association of Insurances Services)

Don Rogers, CFM
Director of Facilities, Hillwood Museum

Mike Sherman, CFM LEED Green Associate
Facilities Manager University of Colorado Denver | Anschutz Medical Campus

Dave Stricker
Shipping/Receiving Supervisor, Americas, Polycom, Inc.

Dennis Supple
Facility Manager, KMGH-TV/KZCO-LD

Ron Turner
Facilities Manager, University of Colorado Denver | Anschutz Medical Campus

Jesse Walklett, CEFP
Utility Outage Coordinator, University of Colorado Denver | Anschutz Medical Campus

This report includes anecdotes provided by the forum participants, along with findings available from the survey. Full survey results can be found in the addendum of this report.

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Ⓘ PREFACE

This report is sponsored by RLE Technologies and commissioned by the International Facility Management Association (IFMA) to help its members navigate the challenges, and identify trends and practices in the area of emergency preparedness and business continuity. Discussions and results from the IFMA Emergency Planning and Business Continuity research forums, along with the IFMA 2014 Business Continuity Survey form the basis of this paper. Full survey results can be found in the appendix of this report.

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"Success is not built on success.
It's built on failure. It's built on frustration.
Sometimes it's built on catastrophe."

SUMNER REDSTONE

"Life improves slowly and goes wrong fast,
and only catastrophe is clearly visible."

EDWARD TELLER

II. INTRODUCTION

Catastrophe Happens

Due to the random nature of life, catastrophic change can happen in an instant, without discrimination and without warning. Today, in the United States, our collective memory contains such events affecting our businesses, lives and communities as September 11, the Boston Marathon bombings, anthrax scares, Hurricanes Sandy and Katrina, the BP oil spill, the Sandy Hook school shooting and the Fort Hood Military base attack, among many others.

> *...the majority of risks to businesses often originate from far less dramatic sources, like leaking or bursting pipes.*

But even small, less ominous sources can create business catastrophes. While these headline-grabbers receive the greatest notoriety, facility managers know that the majority of risks to businesses often originate from far less dramatic sources, like leaking or bursting pipes. Take, for example, one federal museum whose undetected leak flooded a bathroom and seeped into an archive room below that contained thousands of Civil War-era documents. When we consider that liquid damage is among the leading causes of property losses,[1] it becomes clear that these somewhat less-than-spectacular threats deserve their rightful place among those that wreak the greatest havoc.

Further adding to our business risk is the rapid progress of technological innovation over the past 20 years. Today's complex web of interconnected services and instant communications has not only created immense business opportunity, but has also created great exposure and dependencies. Businesses must stay connected or risk enormous losses. Estimates of those losses range from the thousands to the millions.[2] The result has been a boom in emergency planning in the past two decades to counteract the risks associated with lost connections in a world where even the smallest of hiccups can be devastating to a company's bottom line and reputations.

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1. *Cure for Water Damage in Offices and Habitational Facilities.* Risk Services: Understanding Risk Across Your Business. Zurich Insurance Company Ltd., 2011.
2. *Blueprints for High Availability: Second Edition,* Average Downtime Cost per Hour (U.S. dollars), Sources: Network Computing, the Meta Group, Contingency Planning Research. Wiley Publishing, 2003.

The Case for Resilience

Given the elevated concern surrounding catastrophes, the increasing financial losses from downtime, the interconnectivity of resources and services and the growing risk of exposure and impact to reputation, the role of facility managers in protecting and continuing businesses has become a highly complex and high-stakes endeavor.

According to a report by Aberdeen,[3] "between June 2010 and February 2012, the cost per hour of downtime increased, on average, by 65 percent."

As the cost of downtime increases, the efforts to avoid and mitigate such instances grow in importance, necessitating that the role of the facility manager be elevated to one of strategic partner to ensure the continued success of the business.

IFMA identifies Emergency Preparedness and Business Continuity as one of its 11 competencies as a response to expectations by businesses for facility managers to impact or lead this effort within their organizations.

...the role of the facility manager in protecting and continuing the business has become a highly complex and high-stakes endeavor.

According to book one of the IFMA Facility Management Learning System, the increasing strategic involvement by facility managers in the emergency preparedness function grows in relation to the growth of the business.

"As the needs of organizations grow in number and complexity, the FM's role also evolves from simply ensuring compliance to one of involvement in strategic activities focused on protecting and continuing functions necessary for business survival," the Learning System states (see chart on the following page).

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3. *Datacenter Downtime: How much does it really cost?* Aberdeen Research Brief. Aberdeen Group, 2012.

FM Role in Emergency Preparedness and Business Continuity

Organizational Experience with Emergency Preparedness and Business Continuity (EP/BC)

Leaders unaware of business continuity.

No planning or budgeting.

Some EP/BC awareness at management and functional levels.

Little planning integration.

Growing awareness of value.

Identification of essential processes and development of continuity plans.

EP/BC plans integrate all functions and are strategically aligned.

Organization may have dedicated EP/BC functions or outsource to professionals.

FM Role in EP/ BC Programs

Ensures facility compliance with local regulations

Identifies and manages facility risks through prevention and mitigation.

Leads FM organization in identifying essential FM processes.

Develops contingency plans.

Participates in risk management and in emergency response planning, testing and training.

Supports implementation of integrated business continuity plans.

Note: *Knowledgeable FM may lend an effort to expand awareness and planning in less mature organizations.*

In other words, when a business matures, it becomes more aware of the value of emergency preparedness and business continuity planning, and thus becomes more proactive in its efforts.

As a result of emergency preparedness and business continuity planning, businesses ultimately find that they are not only able to handle identified risks, but they are also more resilient when recovering from unplanned events.

A Look in the Mirror – Are We Prepared?

The question for the FM profession is, "Are we prepared for these growing demands?" In an effort to provide facility managers with insight and resources to combat this complex topic, IFMA conducted a **Business Continuity Survey** of its members in May 2014 and gathered leading FM experts to share their stories, strategies and lessons learned at the **IFMA 2014 Research Forum on Emergency Planning and Business Continuity** held in both Washington, D.C. and Denver, Colorado, USA in the spring of 2014.

IV. THE CHALLENGE
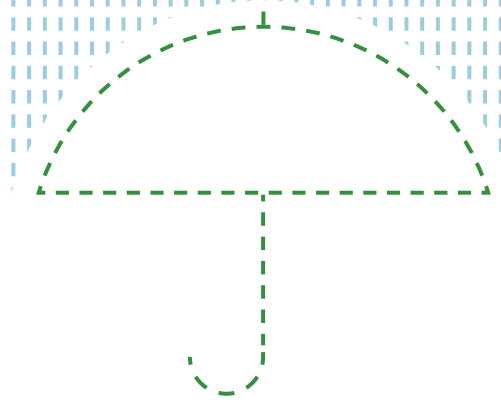
Protecting the Business — The Role of the Facility Manager

If the role of facility managers is to provide a safe, secure, healthy and productive work environment for employees, they must secure their position as a strategic partner. This will allow them to adequately respond to and plan for new and existing threats within an economy where many businesses are still struggling to recover from the Great Recession, sluggish growth and cuts to the bottom line.

A 2011 IFMA survey uncovered that most of the responding facility managers were challenged to find the time, personnel and funding necessary to support emergency preparedness and business continuity planning in their organizations[4] and studies continue to show the often devastating costs (tangible and intangible) of downtime resulting from emergencies and inadequate planning.

- **In the Gulf Coast Back to Business Act of 2007,[5] the U.S. Congress sited its findings that 43 percent of businesses that close following a natural disaster never reopen, and an additional 29 percent of businesses close permanently within two years of a natural disaster.**

- **In January 2013, approximately 30 minutes loss of downtime by Amazon. com was reported to have cost the company US$66,240 per minute – or nearly US$2M.[6] And while not all companies compare to an Amazon.com, the average cost of downtime for facilities such as data centers is nearly US$8,000 per minute.[7]**

43 percent of businesses that close following a natural disaster never reopen

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4. *Emergency Preparedness 2011: 10 Years Later*, IFMA
5. *S. 537 (110th): Gulf Coast Back to Business Act of 2007*
6. Clay, Kelly. "Amazon.com Goes Down, Loses $66,240 Per Minute." *Forbes*. 19 Aug. 2013
7. *Datacenter Downtime: How much does it really cost?* Aberdeen Research Brief. Aberdeen Group, 2012.

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To combat these risks, businesses turn to emergency preparedness and business continuity planning. In fact, the majority (81 percent) of the respondents to the IFMA 2014 Business Continuity Survey said that their organization has an emergency preparedness/business continuity plan created or updated in the last two years.

- **81 percent** of survey respondents in IFMA's 2014 Business Continuity Survey said their organization has a current emergency preparedness/business continuity plan.

NO
19%

YES
81%
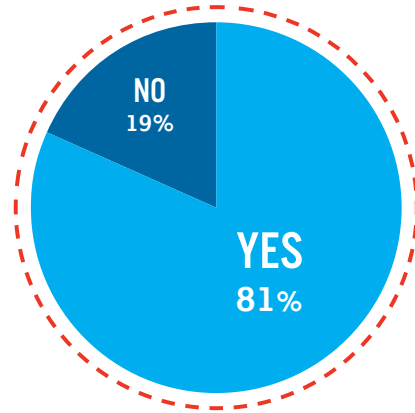
Even so, survey respondents both with and without a current plan indicate their efforts may yet be lacking in the material, data and support necessary for success. Consider that while 81 percent report having a current plan, only 59 percent of respondents believe their plan is adequately funded and only 41 percent say their organization has quantified the cost of downtime.

59% ARE ADEQUATELY FUNDED

41% KNOWS THE COST OF DOWNTIME

64% HAVE NOTIFICATION SYSTEMS
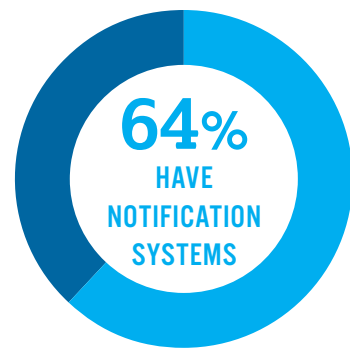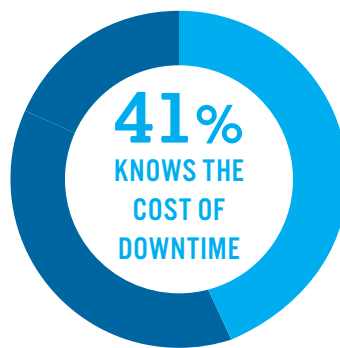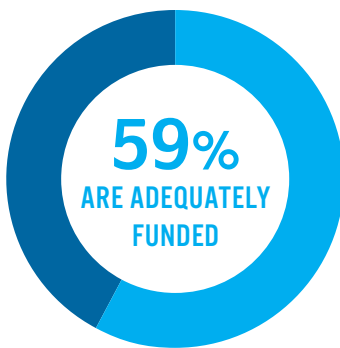
- Only **59 percent** of respondents believe their plans are adequately funded.
- Less than half (**41 percent**) of survey respondents say their organization has quantified the cost of downtime.
- Just **64 percent** said their organization uses proactive practices such as monitoring and early alert systems.

The results point to areas of improvement for both the facility manager and the business to elevate, support and fund these efforts if they wish to adequately prepare for emergencies and continue to operate.

Reliance on an underfunded or unsecured plan leads to the kinds of business risks that keep facility managers up at night and is precisely what they must battle on a daily basis. While the survey uncovers the disparity between having a plan and having a "good" and actionable plan, the challenge remains for facility managers to develop the *right plan*, developed and delivered as a strategic value to the organization:

- Informed through risk assessment,
- Tied to mission-critical functions,
- Monitored appropriately,
- Adequately funded,
- Actionable, and
- Systematically tested and reviewed.

The FM's Role is to Provide Leadership in...

- ✔ Planning
- ✔ Risk Assessment & Mitigation
- ✔ Emergency Response
- ✔ Life Safety Activities
- ✔ Business Continuity
- ✔ Employee Care
- ✔ Repair and Restoration
- ✔ Protection of Corporate Assets

Avoiding Disasters, Mitigating Risks and Lessons Learned

Creating a Plan with Strategic Value

When a plan is developed, informed and managed through value-producing activities, such as tying the plan to mission-critical functions, measuring cost of downtime, risk assessment, drills and testing, monitoring, communication and others, facility managers have greater success at not only securing, but maintaining a working, functional plan.

Survey results support the premise that having such a plan is beneficial for the business and facility manager alike.

Of the 40 percent of survey respondents who say their organization has quantified the cost of downtime, the vast majority are organizations that have a current emergency preparedness and business continuity plan. Forty-seven percent of those with a current plan said they had quantified the cost of downtime, while only a small portion (11 percent) of those that do not have a current plan said they had quantified the cost of downtime.

47%

of those with a current plan said they had quantified the cost of downtime.

Current EP/BC = YES
Current EP/BC = NO

47% 11% 53% 89%

YES NO
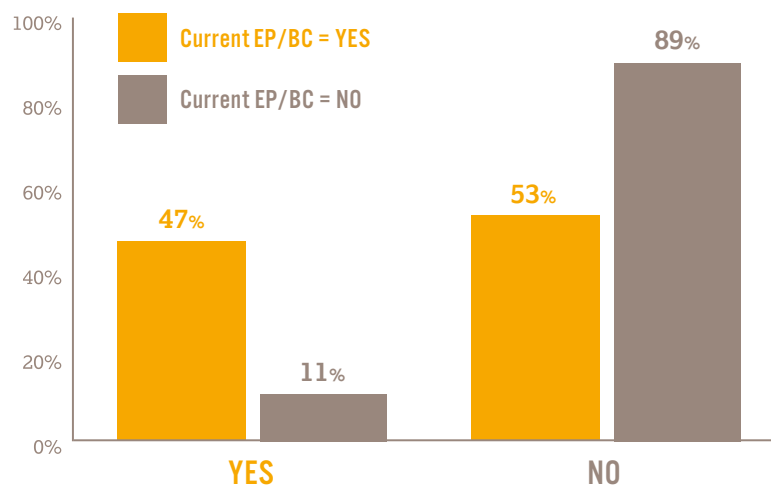
As one might expect, respondents who reported that they have a current plan also were more likely to report proactive practices such as having monitoring and early alert systems in place.

In addition, fully 98 percent of those who reported having a plan that included a risk assessment also reported that they had identified mission-critical functions compared to 59 percent whose plan did not include a risk assessment.

Proactive: *We have monitoring and notification systems with actionable data in place to alert us to potential systems failures.*

74%
17%

Current EP/BC = YES
Current EP/BC = NO

Reactive: *We do not have systems in place that may alert us to potential systems failures.*

26%
83%

0%   20%   40%   60%   80%   100%

98%
59%

RISK ASSESSMENT = YES
RISK ASSESSMENT = NO

41%
2%

100%
80%
60%
40%
20%
0%

YES   NO

98%

of those who reported having a plan that included risk assessment also reported that they had identified mission-critical functions to the organization.
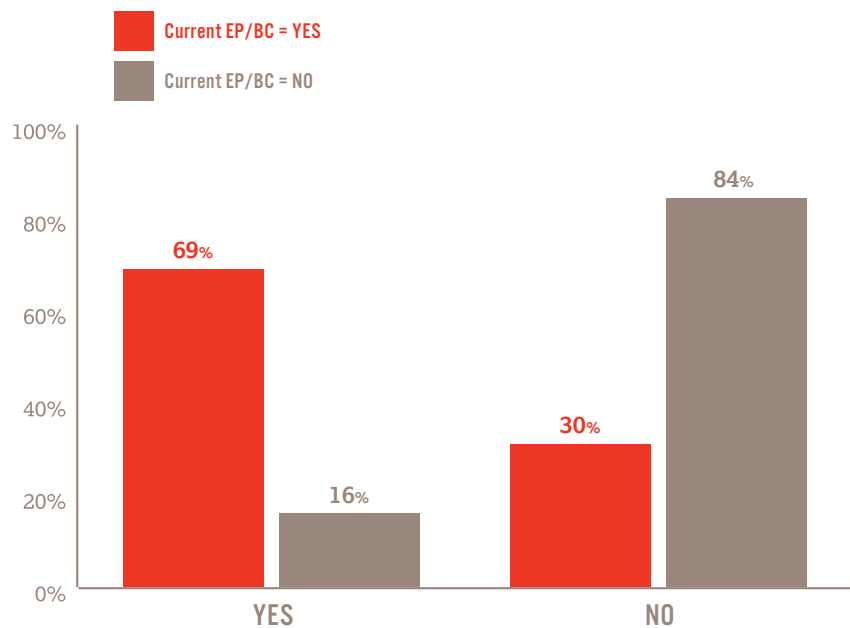
Further, those respondents who reported having a current plan also reported in greater number that their plan is adequately funded. For those with a current plan, 69 percent reported adequate funding compared to 16 percent for those without a current plan.

The argument for the benefits of having an emergency preparedness and business continuity plan begins to develop significant focus when viewed through the lens of this most recent survey, but is also made apparent through the stories and experiences of those in the front lines of facility management.

The following sections of this report discuss the most prevalent challenges and possible solutions identified through IFMA's learning and research endeavors, including topics from the latest IFMA Business Continuity forums attended by leading U.S. facility managers. While these individuals represented only a small portion of facility managers in the U.S., the topics unearthed were among those addressed in IFMA's global competencies for Emergency Planning and Business Continuity and thus apply in varying degrees to the growing international relevance of this subject.

Those respondents who reported having a current plan also reported in greater number that their plan is adequately funded.

Current EP/BC = YES
Current EP/BC = NO

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The economic and noneconomic benefits of emergency preparedness and business continuity planning are clearly laid out by the IFMA Facility Management Learning System as follows:

- Protection of organizational assets (human and property, tangible and intangible)
- Ability to continue mission-essential processes
- Improved compliance with laws and regulations
- Lower insurance rates
- Increased stakeholder satisfaction
- Better communication and teamwork
- Increased efficiency
- Fostering of a proactive orientation
- Decreased vulnerability to litigation

These stated benefits help provide the agility and resiliency businesses need to adequately respond and continue when expected or unexpected disasters threaten the mission of the business.

"Things will adjust and you have to be flexible," advised **Jay Henry**, Regional Facility Manager, Fifth Third Bank. "Plans that had been developed are sometimes re-written in the midst of a disaster, so you must be prepared for both."

Without such planning, facility managers are reactive and at the mercy of unrelated catastrophes, leadership changes, and budgets or lack there of, rather than proactive, strategic partners to their organizations.

- A full **80 percent** of survey participants who **do not** have a current business continuity plan find it more difficult to receive adequate funding for their plans as the time between emergencies lengthens.

- Conversely, only **36 percent** of those who do have a current plan reported difficulty in receiving funding when time passes without an emergency.

80%
WITHOUT PLAN

36%
WITH PLAN
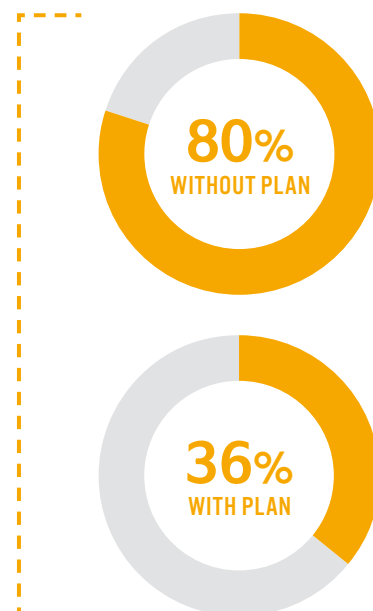
Even after creating a plan, FM professionals can be asked to re-prioritize resources in response to world events and headlines:

- More than half (**62 percent**) of survey respondents who said they have a EP/BC plan, report that after a disaster occurring externally to the business, they are still asked to prioritize resources to address a similar event, even if the likelihood of this event occurring in their facility or area is low.

62%
ARE ASKED TO PRIORITIZE RESOURCES
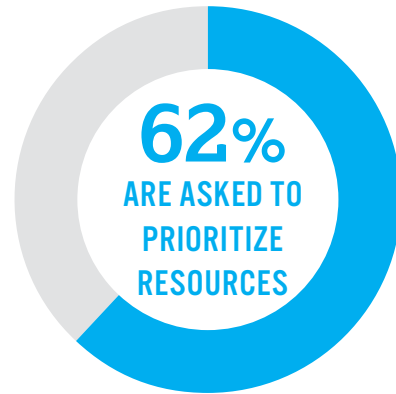
Even so, plans that include long-term, well-informed strategic solutions may have a better chance at bending these outside influences and resulting reprioritizations in their favor.

"Following 9/11, money became available for security," forum participant **Eric Connery,** Facility Administrator, Connecticut General Assembly, State of Connecticut, shared. "We actually already had a plan to upgrade security, so we were a little ahead of the curve. We took any money they could give us. We funded the rest ourselves. Some other agencies took a very short-term approach. The problem is that a short-term approach is not sustainable over time because the money starts dripping away. So, you have to look at the long-term solutions."

Additionally, the act of bringing together the various stakeholders and business units necessary to inform the plan can create greater strength and unity within the business and a greater respect for and a better understanding of the plan's strategic value.

"I think that it's an opportunity for us to look beyond just the 'tried and true' way to run a business and to strategize and to focus on risk management as being very valuable," said **Bill O'Neill**, Associate Director, Facility Management, University of Minnesota. "It's an advantage and a benefit for us all."

"This year, I have started including development and maintenance of an emergency response plan as a strategic priority for our library system to address," said **Lisa VanderHeyden**, Jefferson County Public Library. "I don't have it approved yet, but it is making headway. If you keep getting your decision makers to understand that it has to be strategic priority for the organization, you can get the other stakeholders to participate."

Understand Your Role

In order to develop an emergency plan, facility managers must determine just what constitutes an emergency and clarify their role before, during and after an emergency.
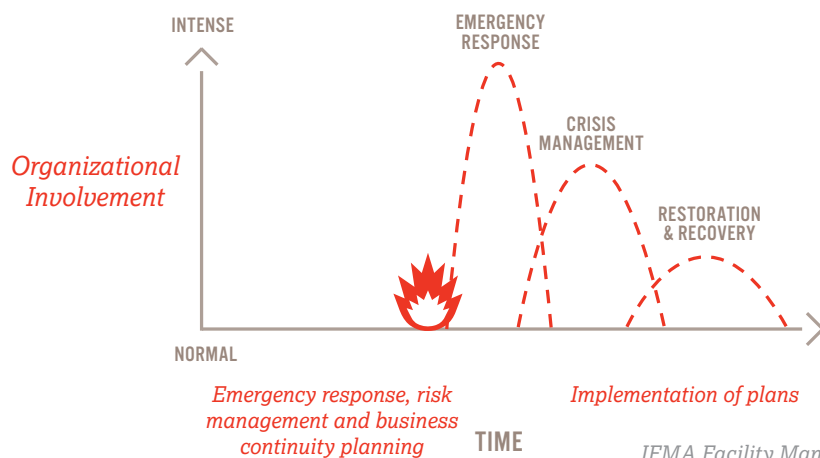
As it relates to the role of the facility manager, an emergency is defined as "an un-planned event that can cause injury or death to the building occupants, or that can disrupt operations, cause physical or environmental damage and threaten the organization's financial standing or public image."

"In order to deal with these emergencies in our businesses, FMs get involved in emergency planning — the process of planning for avoiding risks or dealing with them when they happen," explained forum moderator **Mark Sekula**, IFMA Fellow, CFM, FMP, LEED-AP, president of Facility Futures.

More formally, emergency planning is defined as the efforts to plan for and coordinate all personnel and materials required to either mitigate the effects of, or recover from, natural or man-made disasters. Accordingly, emergencies require an immediate response to deal with the crisis, followed by a plan for long-term continuity, as illustrated by the following graph from the IFMA Facility Management Learning System on the phases — or narrative — of an emergency relative to the organization's immediate response and implementation, or triggering, of the emergency and continuity plans.

"In the case of an emergency, we have to respond," Sekula maintained. "When everyone is running out of the building, we are running the other way, trying to figure out what the emergency is. First, we deal with life saving activities. Next we address business continuity, because when a disaster happens, you have to keep the business running."

The Narrative of an Emergency

INTENSE

EMERGENCY
RESPONSE

CRISIS
MANAGEMENT

RESTORATION
& RECOVERY

*Organizational
Involvement*

NORMAL

*Emergency response, risk
management and business
continuity planning*

Implementation of plans

TIME

*IFMA Facility Management Learning System
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What is Mission-Critical?

In order to increase a company's resiliency, effectively respond to emergencies and continue business operations, emergency preparedness and business continuity plans should identify, quantify and prioritize risks tied to the mission-critical functions of the organization.

- **Ninety-eight (98) percent** of survey respondents who said their organization had a current emergency preparedness and business continuity plan that included a risk assessment also said their organization had identified their mission-critical functions.

Oftentimes, this means working with business units to identify critical aspects of their operations and to identify risks specifically related to those operations. These risks are then compiled, reviewed and prioritized on a regular basis. Business units and stakeholders are informed of the resulting plan and drills are conducted to test the plan.

Identifying risks and knowing the likelihood of occurrence, potential cost and ultimately the impact to the organization's mission-critical functions is no small feat, but this knowledge will inform the overall strategy of your emergency preparedness and business continuity plan.

Identifying Emergencies and Types of Risks

The process of identifying emergencies or risks can take many forms, and can be most valuable when multiple departments are involved in some way. Such an exercise may help open the eyes of various stakeholders creating buy-in for the final plan.

"Our business is 99-years-old and everyone was comfortable that nothing significant was going to happen," said **Paul Doughty**, Facilities Manager, Pinnacol Assurance. "This last year, we did a step-by-step of 'what if this happens' and 'what if that happens.' Everyone walked away with about 10 pages of notes."

"This last year, we did a step-by-step of 'what if this happens' and 'what if that happens.' Everyone walked away with about 10 pages of notes."

PAUL DOUGHTY, FACILITIES MANAGER, PINNACOL ASSURANCE

The most prevalent causes of emergencies are the most easily identified. The following were rated by survey respondents as the top three causes of downtime:

- Power outages (**86 percent**)
- Major equipment failures (**59 percent**)
- Wind/Tornadoes/Hurrican**e**s (**40 percent**)

POWER OUTAGES	**86**%
MAJOR EQUIPMENT FAILURES	**59**%
WIND/TORNADOES/HURRICANES	**40**%
FLOODING	**39**%
FIRES & EXPLOSIONS	**26**%
OTHER	**19**%
EARTHQUAKES	**10**%
ENVIRONMENTAL CONTAMINATION	**9**%
INCLEMENT WEATHER	**8**%
VIOLENCE IN THE WORKPLACE	**5**%
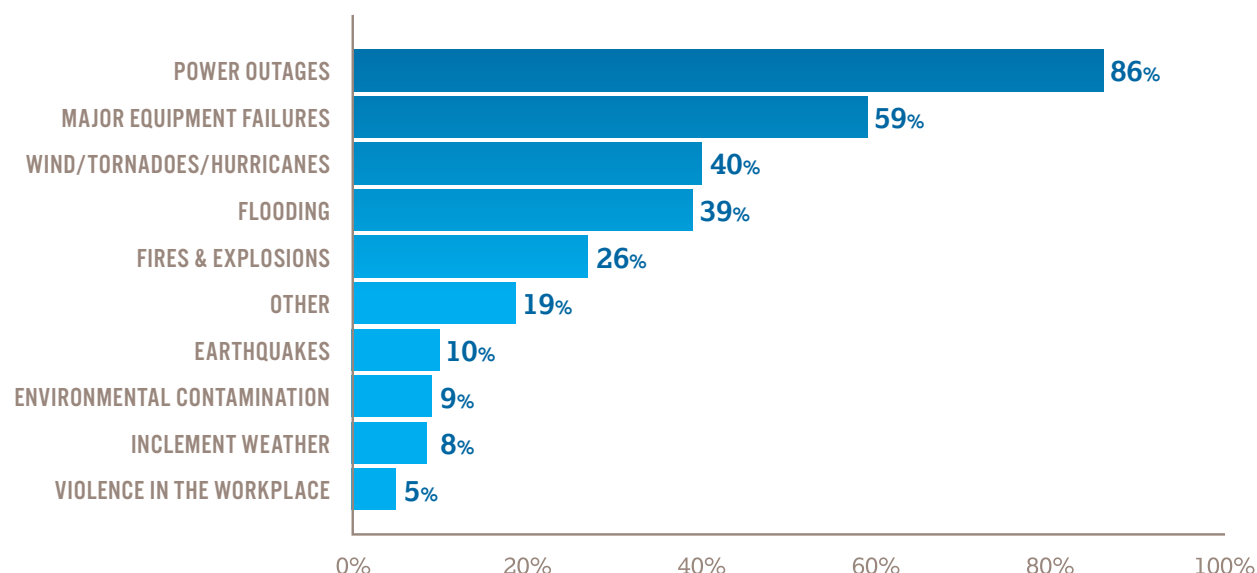
Similarly, the Chartered Management Institute in the United Kingdom reported that from 2002 to 2011, the most common disruptions to businesses were related to severe weather or loss of IT, telecommunications or access to the facility.[8]

While emergencies can be somewhat standard by their very nature (floods, power outages, equipment failures), the described business risks are highly diverse. This is perhaps no more apparent than when forum participants from hospitals, campuses, public broadcasting, government offices, banking, transportation, oil and gas, national treasures, and more gather together to share their concerns and experiences. The risks identified in this gathering and the possible impact to not only the businesses themselves, but also to a nation and its people, were substantial.

"There are so many things that could happen to our facilities at any time," Sekula told participants. "Floods, fire, hail, tornadoes, active shooters — a term we probably didn't banter around 10 years ago. Threats can be internal or external. A flood could be from a river or creek behind your building overflowing after a heavy rain, or by a burst pipe in the building or by a roof leak."

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8. *Managing Threats in a Dangerous World: The 2011 Business Continuity Management Survey.* Chartered Management Institute, March 2011

Examples of potential risks forum participants have to plan for ranged from protecting historical artifacts from water damage, helping lost kids in a science center, keeping waste water flowing, preventing live shooters from entering a building, protecting demonstrators from acts of violence, continuing broadcast services, operating toll gates on major thoroughfares, containing suspicious materials, and protecting 70,000 students on campus, to name a few.

Assessing Risks

In addition to identifying sources of risk, a thorough risk assessment model should consider the chance of occurrence and the resulting effects to people and to profit. This process will ultimately help the business prioritize, fund and manage the risks that are of greatest priority.

RISK MAP

HIGH IMPACT **LOW** LIKELIHOOD	**HIGH** IMPACT **HIGH** LIKELIHOOD
LOW IMPACT **LOW** LIKELIHOOD	**LOW** IMPACT **HIGH** LIKELIHOOD

Impact (vertical axis) — *Likelihood* (horizontal axis)

LIKELIHOOD RATING		IMPACT RATING	
Likelihood & Score		*Impact & Score*	
Almost certain	5	Catastrophic	5
Likely	4	Critical	4
Moderate	3	Serious	3
Unlikely	2	Marginal	2
Improbable	1	Negligible	1
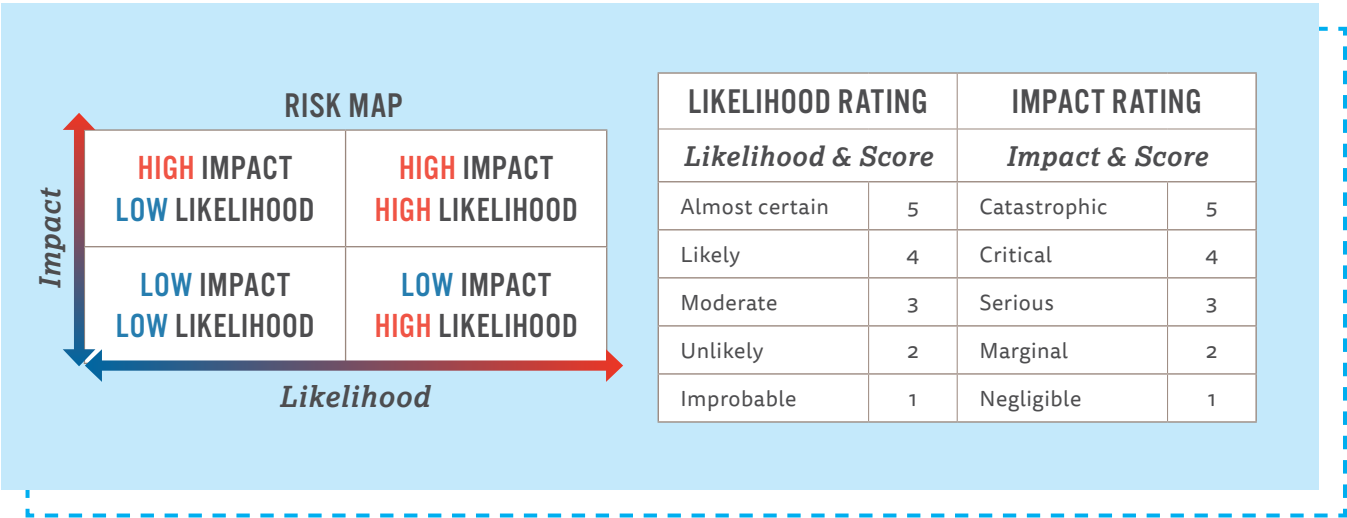
According to the IFMA Facility Management Learning System, risks are traditionally assessed according to two perspectives:

- **Probability or vulnerability** — the degree to which a facility is likely to experience a given risk
- **Impact** — the effect of the event on the organization's assets, occupants and/or processes.

"One of the things we do is basically brainstorm on failure," explained one forum participant. "What could happen? Everything is based on the likelihood of the impact. If it is highly likely to happen, and if there is a high impact if it does happen, we need to address that concern. If it is highly unlikely and has a low impact, it has a lower priority."

"We consider the likelihood of a disaster happening and the impact to the business, whether the risk is to life, financial or image-related, and we build off of that," added Fifth-Third Bank's **Jay Henry**.

Some risks may not be statistically quantifiable. Still, forum participants were quick to point out that while the cost of a risk may be unknown or the chance of occurrence extremely rare, it may still have the potential to cause great damage.

"Some events are purely random," said Connery. "The number of armed intruder attacks is actually very low, but they have extremely high consequences, so you have to plan for them. You don't even have to figure out the probability of incidence; you only have to plan for the event because the consequences are so high."

"We had a complete power outage on the campus because someone let go of a Mylar balloon and it hit the 120 KV line and shorted the substation out momentarily," said **Mike Sherman**, Facilities Manager, University of Colorado Denver. "We were only out for three to four minutes, but sometimes the most inconsequential things can end up causing significant disruptions."

"We consider the likelihood of a disaster happening and the impact to the business, whether the risk is to life, financial or image-related, and we build off of that"

JAY HENRY, CFM, VP, REGIONAL FACILITY MANAGER, FIFTH THIRD BANK

Calculating the Costs

Costs are often highly evident after an event occurs. One Denver forum participant told the story of a hospital's major trauma center closing down due to the placement of a 6-inch water main in an exterior wall without consulting with facility personnel.

> *During a winter where the temperatures stayed below zero for two weeks, a main joint in an office next to the ER blew. Fortunately the appropriate staff was on-site to respond quickly to the incident. But still, the impact was 3-1/2 hours of labor to get the water out of the building, half a million dollars to repair the resulting damage and the loss of three hours of ER services.*

Damages such as these could be even more dramatic if a building is unmonitored and the event in question occurs overnight or on a weekend.

Examples such as this one show why identifying the potential costs before an event occurs is a high value activity for any business. Arguments for equipment and funding are much easier made if tied to a possible substantial loss.

Even so, arriving at downtime costs can be difficult, often much harder than reviewing the cost of damages after an event occurs. To begin, FMs must first recognize that risks come in various forms — those that are tangible, such as lives, revenues, wages, inventory, fees and penalties — and those that are intangible, such as devalued stock, decreased employee morale, damage to reputation or brand and loss of customers.

Thus, calculating costs can be an intricate and complex process, often involving multiple departments and functions. Depending on internal sentiment, the effort runs the risk of derailing due to lack of involvement or support.

- **70 percent** reported that their business continuity plans included a risk assessment model.
- Only **40 percent** of respondents said they knew the cost of downtime.

70%
INCLUDES A
RISK ASSESSMENT
MODEL

$

40%
KNEW THE
COST OF
DOWNTIME

FMs must first recognize that risks come in various forms — those that are tangible, such as lives, revenues, wages, inventory, fees and penalties — and those that are intangible, such as devalued stock, decreased employee morale, damage to reputation or brand and loss of customers.

While not all risks can be quantified, and not all stakeholders may wish to engage in risk planning, knowing the ultimate cost of potential risks to the business is a critical part of having a valuable plan, answerable to the mission of the organization by the degree that it is tied to the core functions of business survival — and can ultimately play in a facility manager's favor.

One forum participant described a situation where funding was approved for a generator at a US$3 million cost because he was able to demonstrate the potential loss of US$1 million per hour of downtime of a site critical to his organization's core business.
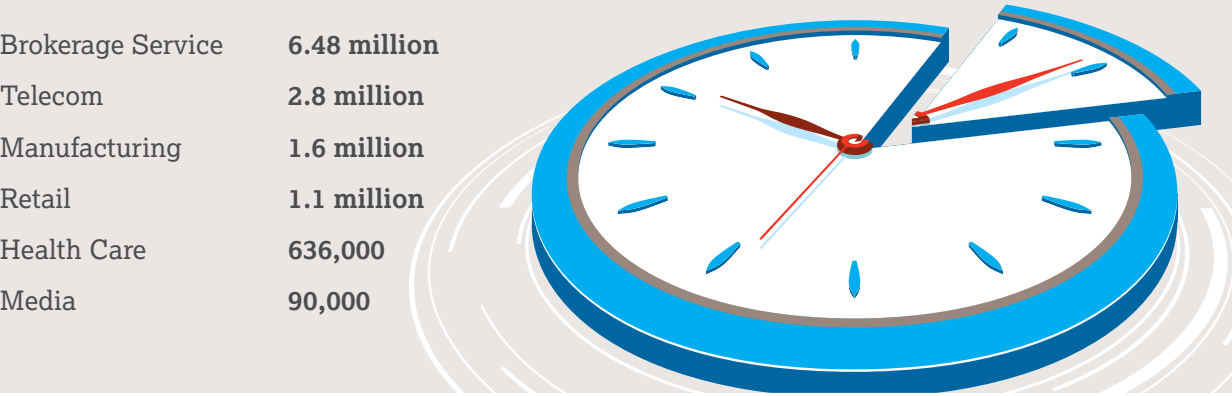
Another example of using costs to justify strategy included a bank that moved its entire operation center because it was able to quantify what the risks would be if its checks did not arrive at the federal government on time.

"That justified a US$8 million dollar project to move the building 40 miles," Connery shared. "They knew exactly what the downtime was for that facility."

...knowing the ultimate cost to the business is a critical part of having a valuable plan...

Typical Hourly Cost of Downtime by Industry (in U.S. Dollars)
Source: Blueprints for High Availability: Second Edition, Average Downtime Cost per Hour (U.S. dollars), Sources: Network Computing, the Meta Group, Contingency Planning Research. Wiley Publishing, 2003

Brokerage Service	**6.48 million**
Telecom	**2.8 million**
Manufacturing	**1.6 million**
Retail	**1.1 million**
Health Care	**636,000**
Media	**90,000**

Monitoring Equipment

After identifying and assessing the risks that will inform emergency preparedness and business continuity plans, facility managers should help shape the overall strategy with specific tactics to avoid these risks.

One such tactic that proves necessary is monitoring equipment. According to a study and a report published in 2012 by the Aberdeen Group,[9] those companies that the group categorized as "laggard" performers could decrease their downtime losses over US$3 million per year simply by moving up to the category of "industry average" performers by reducing the number of interruptions, the length of time of an interruption and the time to recover from an interruption. Based on this study, one could argue the type and quality of monitoring equipment to keep the length of interruptions at a minimum could potentially play a role in saving a company with associated services thousands if not millions.

"At a minimum, every data center or decent-sized server room should have temperature, humidity and leak detection..."

NICK BETTIS, DIRECTOR, MARKETING, RLE TECHNOLOGIES

Survey respondents indicated their businesses rely on the following systems to track and/or alert them to equipment failure:

- Temperature sensor (**82 percent**)
- Humidity sensor (**53 percent**)
- Fluid leak detection (**49 percent**)
- Airflow sensors (**46 percent**)
- Other monitoring types (**33 percent**)

"Having the technology to monitor all of the relevant risks to your facility is critical and it is encouraging to see that many respondents have a good representation of monitoring sensors in place," commented **Nick Bettis**, Director, Marketing, RLE Technologies and our report sponsor. "What is even more important is assuring that the data or alerts from these various sensors ends up in the hands of the people that resolve a problem before damage occurs. Audible and visual notification is helpful but what if nobody is around or happens to be looking? Truly reliable monitoring

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9. *Datacenter Downtime: How much does it really cost?* Aberdeen Research Brief. Aberdeen Group, 2012.

will notify the right people no matter where they are or what time it is. Text message, email, even pager alerts can make the difference between a small repair and millions of dollars in downtime."

The Cleveland Indians narrowly avoided a data center meltdown when its former data center cooling controller failed in the middle of the night, according to Bettis.[10] The fast action of the facility manager saved the day, but the lesson prompted a move by the team to secure a more comprehensive monitoring solution.

Continuing the Business

When disasters can't be avoided, facility managers must turn their attention to keeping the business running, which includes tactics like back-up generators and equipment, alternative data storage, cloud computing, satellite phones, and more to keep services and people safe and working.

While many businesses have a plan for getting people out of a building, the question may remain what to do with those employees once they are out of the building.

"We have always taken it one step further," said Connery. "What happens when a building really is on fire? We have places where we can move our people. We have plans to actually take people out of harm's way if necessary."

For some, business continuity means keeping people inside the building whenever safely possible.

"We can't be off the air, so we have to plan for emergencies like snow emergencies," said Dennis Supple, Facility Manager, KMGH-TV / KZCO-LD. "We have beds, blankets, water, food and showers, so if it's bad enough and the people on the shift can't get out, they're staying. When the Aurora shooting happened two years ago, people were there for 36 to 40 hours straight."

If the building is destroyed or damaged, organizations with a current plan once again hold the advantage over those that do not in the event that the facility has to be closed for an extended period of time.

- **Seventy-eight (78) percent** of those with a plan indicate that employees would be able to work remotely if their facility were to close for an extended period versus **50 percent** of those who do not have a plan.

- - - - - - - -
10. http://rletech.com/blog/falcon-facility-monitoring-system-hits-a-grand-slam/

Communication is King

Communicating the plan before an emergency and maintaining adequate communication during and after an emergency are essential elements of the planning process, as well as a much-needed measure for employee safety.

According to survey respondents, their organizations use the following methods to communicate the emergency preparedness/business continuity plan to employees:

- Written documents — **71 percent**
- Practice/drills — **59 percent**
- No formal training — **21 percent**
- Other — **13 percent**
- Webinars — **10 percent**

13%
OTHER

59%
PRACTICE/
DRILLS

71%
WRITTEN
DOCUMENTS

21%
NO FORMAL
TRAINING

10%
WEBINARS
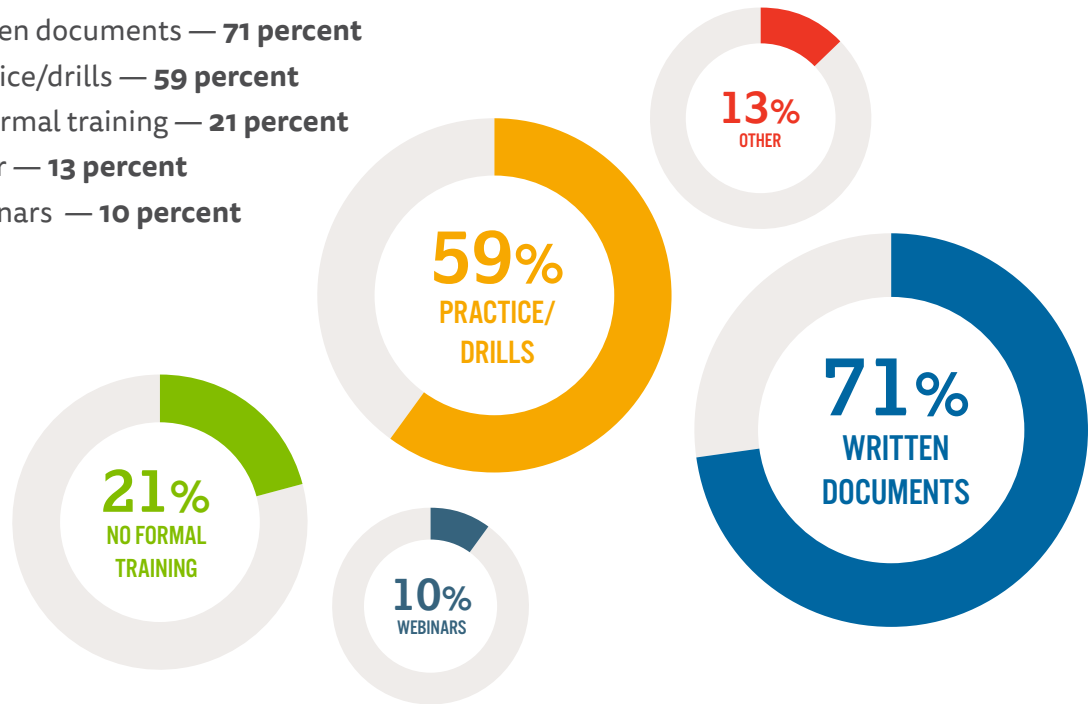
An integral part of the plan is that multiple people can respond," shared one Denver forum participant. "Every building shows all the shut-off valves for every floor, the wet vacs — where everything is. Even those not familiar with the building can see where things are and can respond."

Communicating plans after an event and keeping communication open during an event is more challenging as key communication channels may be obstructed.

"Our difficulty in a major disaster is that emergency response units who take priority will override us for access to the cell tower, if they are even available," said **David Dunn**, Division, City of Orlando. "Dependencies on outside services to support our plan, such as cell phones, must be backed up to prepare for those contingencies. It's difficult and challenging to plan for."

Many plans include funneling all information or contact through one department or individual. However, the potential that the individual, or individuals, may not be available should be considered a potential risk.

"Part of the planning process has to include the folks who have to carry out the actions," Henry said, "because it is quite possible that they or their families could be affected."

One tactic for combating a single source situation is to have an entire process or dispersed operations dedicated to communicating when emergencies happen.

One forum participant in Denver, Colorado, stated that the emergency preparedness plan at his organization included an emergency operations center. The decision to open the center or not is determined by the size of the emergency.

One tactic for combating a single source situation is to have an entire process or dispersed operations dedicated to communicated when emergencies happen.

Testing for Failure

Perhaps the greatest potential to learn is when testing the plan — whether the test involves a review of the facilities, a desktop scenario, a live drill, or is the result of a genuine emergency.

"The worst thing any of us could ever do is develop a plan and put it on the shelf," said Henry. "It gathers dust until the next event. Testing the plan will help you identify weaknesses, help you make people aware of what is going on and, as new experiences occur that we have to deal with, have a methodology in place to deal with those new threats."

"The worst thing any of us could ever do is develop a plan and put it on the shelf."

JAY HENRY, FIFTH-THIRD BANK

Live Drills

Drills are a highly useful way to test a plan and can be especially important when people are involved. Live drills have the added value of providing accurate and actionable data.

"You really do need real, accurate response times," said Doughty. "You need to know how long it's going to take to get out of the building. You need to know where people are."

Due to the varied responses of people under stress, the results of live drills can often be surprising or unexpected.

"In order to assess how well we respond to a real event, fire drills have to be a surprise," said Sherman. "We can give them a time period — the drill will happen sometime in the next two weeks, so you better have your contingencies together. It took us a while to get that across and we still get push back on it."

Despite their importance, many FMs find scheduling live drills and finding support for surprise drills difficult to achieve due to their disruptive nature. Insistence and persistence, most forum participants agreed, tends to pays off.

"We tell [the employees] if we don't make it in this timeframe and if everyone isn't at the meeting point, we'll do it again next week," Sherman continued. "We'll do it until we get it right, until we think the response time is appropriate."

TESTING TAKES MANY FORMS:

"We do a tour usually quarterly with the director of engineering," said Supple. "We look at problem areas or potential problems. We check every room and look for missed factors, popped ceiling tiles, valves."

"From an environmental standpoint, one of the scenarios we use is a truck tipping over with hazardous materials because we're so close to the interstate," Connery shared. "So we'll plan for that. But how do you test it? With the fire drills, you're testing every time you do it, but with the hazmat, it's a table top exercise."

"We blocked doors and said, 'I'm a fire. You have to find a way around.' This caused great confusion," shared Debbie Nunnelee, Sr. Manager of Facilities and Security, Terumo BCT. "It was scary even though we told people that some exits would be blocked. We shut down the elevator but some people stood by the doors waiting for them to come, even though there are three stair wells."

Adjusting the Plan

Even great plans require adjustment in response to new threats, budget changes, new staff or departments, new equipment installation or a myriad of pressures that affect or change the nature of the business.

- According to survey respondents, **66 percent** say their plan is reviewed annually or twice a year.

66%
REVIEWED
ANNUALLY OR
TWICE A YEAR

Forum participants indicated that if plans are consistently strategic, the ability to adjust to new threats may be an easier endeavor. Agility and buy-in from management is key to addressing new threats and can help an organization become more resilient.

"In most cases, we plan for the obvious, the things that all of us think about," said Dunn. "When there is a crisis of any kind, we all go back and look at the plan and see if that scenario is covered or if we need to make adjustments."

"We had great focus on keeping a shooter out," said **Robert Kleimenhagen** of the Pennsylvania Turnpike Commission . "All of a sudden, after a close-to-home incident, the question became what to do if someone is in the building with a knife. We had a meeting the next day."

Agility and buy-in from management is key to addressing new threats and can help an organization become more resilient

Network of Resources

In order to develop plans, create buy-in for those plans and respond effectively to threats, facility managers should consider using their network of resources.

The IFMA Facility Management Learning System's Emergency Planning and Business Continuity section provides the training and foundation necessary for developing and justifying plans and IFMA's network of members, conference sessions and forums are helpful resources for best practices and advice.

Other resources identified by participants included their network of colleagues, service providers and contractors, insurance agencies, and the standards and resources developed by various government agencies and departments.

"As a facility manager, I call the people in my network first, asking, 'Have you ever...?' Usually by the third call, one of my guys in my network says yes," said Supple.

"Our service providers are the experts," said **Byron Edwards**, Facility Manager, Building Management Specialist, Western Area Power Administration, U.S. Department of Energy. "We just went through a fire pressure systems test in one of our client's data centers and, for some reason, two years in a row, the panels were going off after inspection. It turned out they needed to replace the panel. There was no additional cost to the owner, because of the service contract they have. The providers replaced that panel because they want that contract next year."

RLE Technologies Nick Bettis agrees, "You should always view a hardware or service vendor as a partner and a resource. If you are not getting the sense that your vendor is viewing the relationship the same way during the sales process, it should be a red flag. In today's business world, you should have high expectations of your vendors to behave as a partner and not just a sales organization."
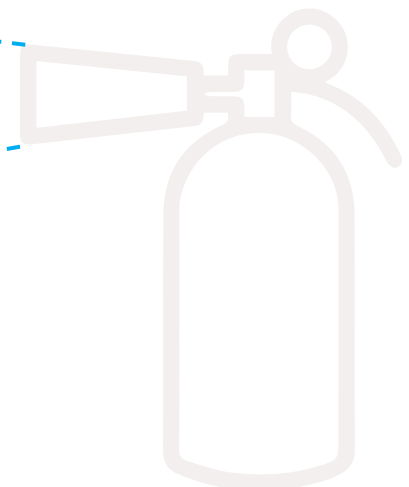
Many insurance companies provide detailed requirements as well as guides for compliance and the help of representatives to advise and protect against risks.

"As far as the insurance companies, that is their job," added Supple, "They know what the risks are. When it comes to boiler safety, my guy does not cut any corners. He expects to see results. We have to give him proof that it is done. They pick up on a lot of things in our building — horizontally between rooms, vertically between floors. They are trying to cut their risk factors. We have to give them a set plan, what happens in an emergency, where and how are we going to continue."

In addition, the **National Incident Management System (NIMS)**, developed after 9/11, is a well-defined and highly integrated resource for structure and standards in emergency preparedness and response.

"Every first responder, uniformed, paid, volunteer, fire, medical and law enforcement, in the state of Connecticut is trained in NIMS now," said Connery.

"It's a great structure," added Henry. "It's generic enough that you can apply it to almost anything."

"Every first responder... in the state of Connecticut is trained in NIMS now."

ERIC CONNERY, STATE OF CONNECTICUT

VI. SUMMARY

Scott Adams once wrote that facility management "was one of three areas that are vital to many projects, shallow in substance and spectacularly uninteresting."[11] However, this report illustrates the enormous responsibility that sits on the facility managers' shoulders and the impact to the business if it is ignored.

As business continuity risks become increasingly more costly and complex, and as businesses continue to mature, facility managers will experience increased opportunities to share strategic roles. They will support the ultimate resiliency of their companies as protectors of the people, services, structures and profit that allow their businesses to function and thrive.

Facility managers must adapt to these new pressures and accept more strategic roles within their organizations in order to keep up with growing demands. By recognizing the strategic nature of these demands, facility managers will begin to form long-term visions for the continuity of their organizations, informed by risk assessment and analysis, as well as a keen understanding of mission-critical functions and a respect for cross-departmental cooperation and communication.

Survey results indicate that there is opportunity for growth and improvement in these areas, but with the help of resources such as service provider partners and organizations like IFMA, facility managers have access to education, networking opportunities and best practice information necessary to continue to improve the overall effort and ultimate results.

Having identified this function as one of the facility manager's 11 competencies, IFMA is committed to the continued focus on business continuity and emergency planning through research and educational offerings to keep the facility management professional informed and positioned as a strategic business partner.

11. *The Dilbert Principle, A Cubicle's-Eye View of Bosses, Meetings, Management Fads & Other Workplace Afflictions*

APPENDIX: Resources

HIGH STAKES BUSINESS:
PEOPLE, PROPERTY AND SERVICES

Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America

IFMA™
International Facility Management Association
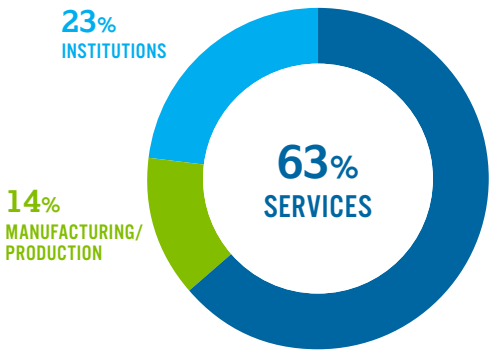**Empowering Facility Professionals Worldwide**

Methodology

This survey was drafted as a complement to IFMA's 2014 Emergency Planning and Business Continuity Research Forums held in both Washington, D.C. and Denver, Colorado. The survey was released in late May 2014 and was posted to IFMA's LinkedIn and Twitter sites with an invitation to participate. In addition to these channels, the survey link was sent to a global sample of IFMA members. A total of 4,494 email recipients opened the e-mail. By the survey close out day of June 16, 2014, 348 responses were received. Upon data clean-up, 292 responses were considered suitable for reporting purposes.

With a 6% response rate (292 out of 4494) achieved, survey findings detailed in the following sections have a +/- 5.55% margin of error in its accuracy at a 95% customary confidence level.
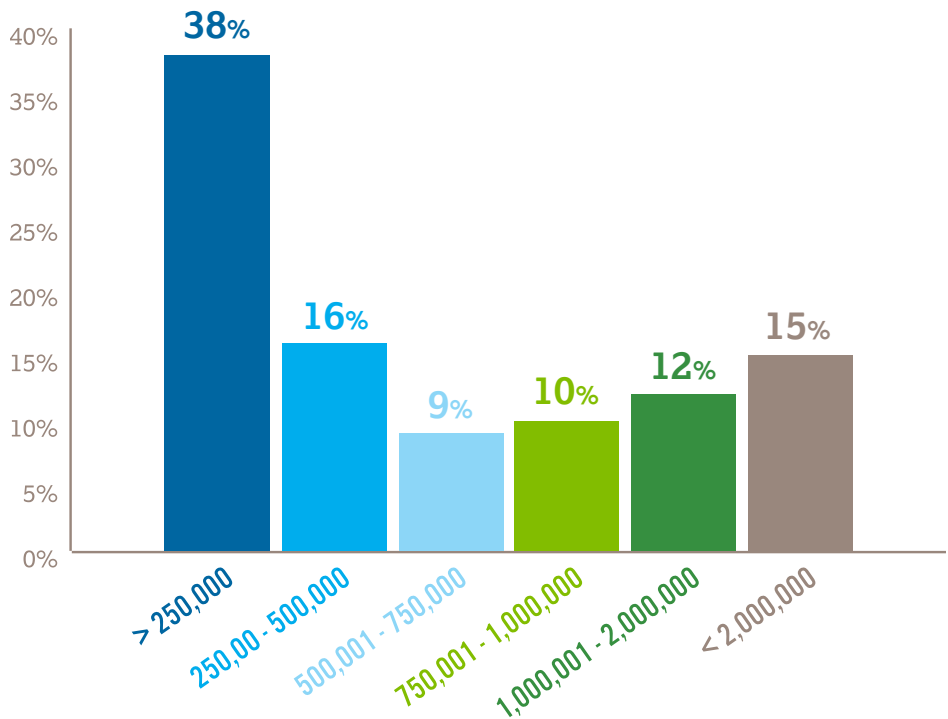
Demographics

Which of the following best describes your industry?

23% INSTITUTIONS

14% MANUFACTURING/ PRODUCTION

63% SERVICES

Please tell us the total exterior gross area (SF) of the facility you manage:

Category	Percentage
> 250,000	38%
250,00 - 500,000	16%
500,001 - 750,000	9%
750,001 - 1,000,000	10%
1,000,001 - 2,000,000	12%
< 2,000,000	15%

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America

37

Emergency Preparedness/Business Continuity Planning in Practice

My organization has a current (created or updated in the last two years) documented emergency preparedness/business continuity plan (EP/BC).
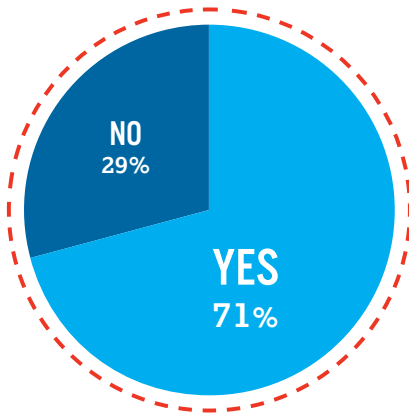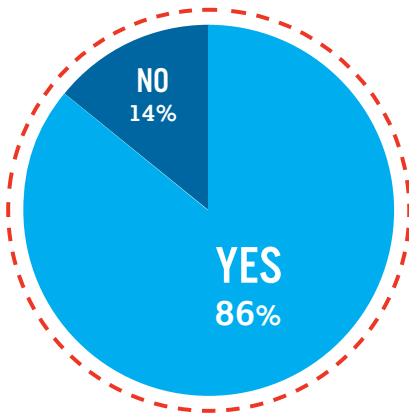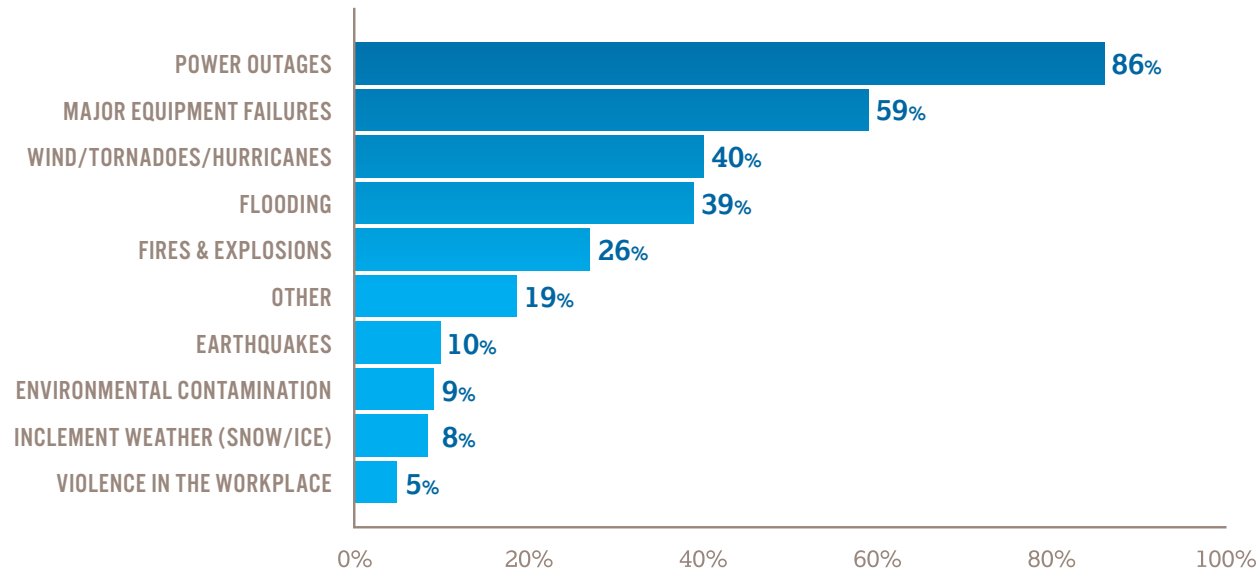
NO
19%

YES
81%
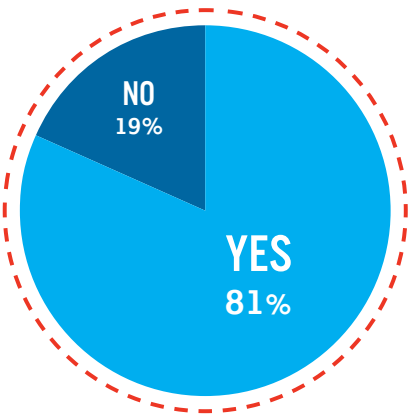
A risk assessment matrix is included in my organization's EP/BC plan.
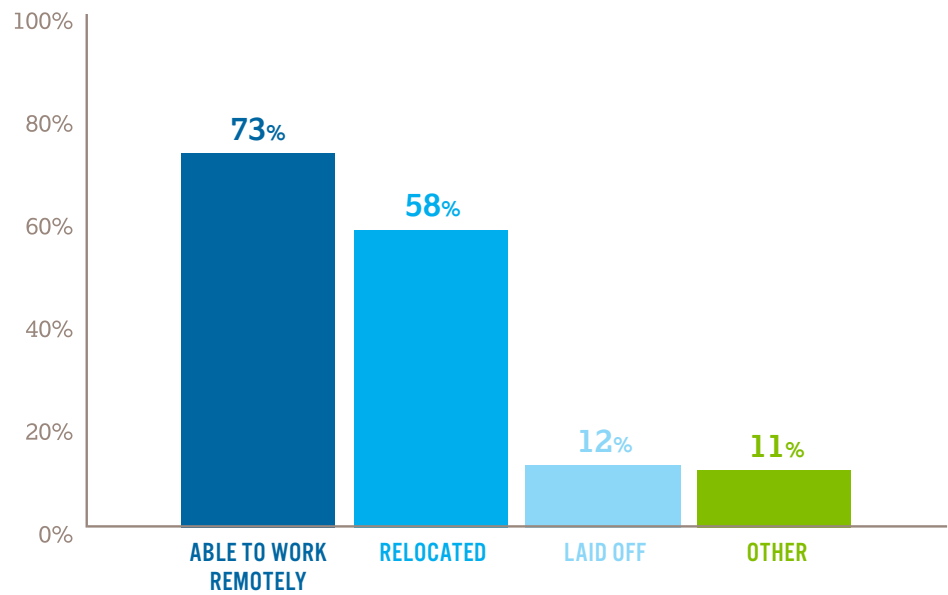
NO
29%

YES
71%

My organization's mission-critical functions have been clearly identified and prioritized in a EP/BC plan.

NO
14%

YES
86%

Our top three leading causes of downtime are:

Cause	Percentage
POWER OUTAGES	86%
MAJOR EQUIPMENT FAILURES	59%
WIND/TORNADOES/HURRICANES	40%
FLOODING	39%
FIRES & EXPLOSIONS	26%
OTHER	19%
EARTHQUAKES	10%
ENVIRONMENTAL CONTAMINATION	9%
INCLEMENT WEATHER (SNOW/ICE)	8%
VIOLENCE IN THE WORKPLACE	5%

If my facility closed for an extended period as a result of an environmental disaster, the employees would be:

Category	Percentage
ABLE TO WORK REMOTELY	73%
RELOCATED	58%
LAID OFF	12%
OTHER	11%

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America

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I believe my organization's EP/BC plan is:

Proactive: We have monitoring and notification systems with actionable data in place to alert us to potential systems failures.

PROACTIVE **65**%

Reactive: We do not have systems in place that may alert us to potential systems failures.

REACTIVE **35**%

0%   20%   40%   60%   80%   100%

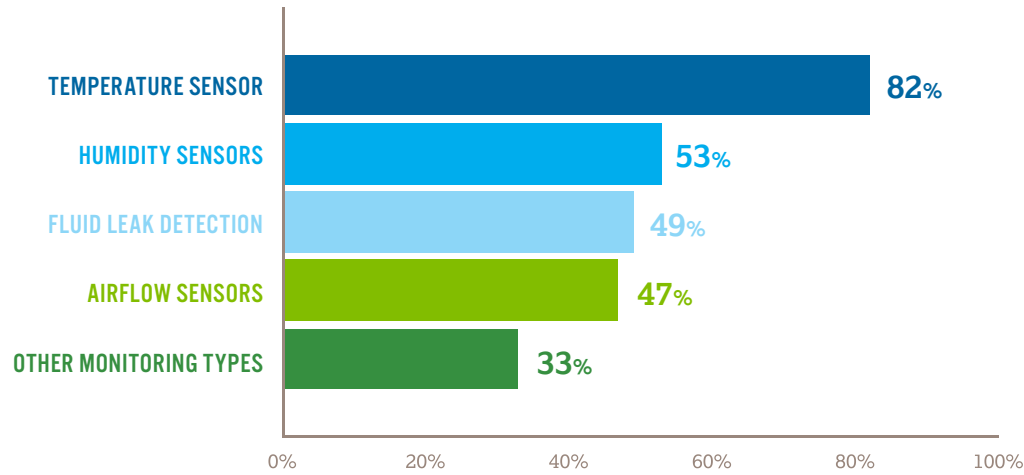*The EP/BC plan in my organization is reviewed:*

Responses in the "Other" category include: quarterly, as needed, every two years.

100%

80%

60%

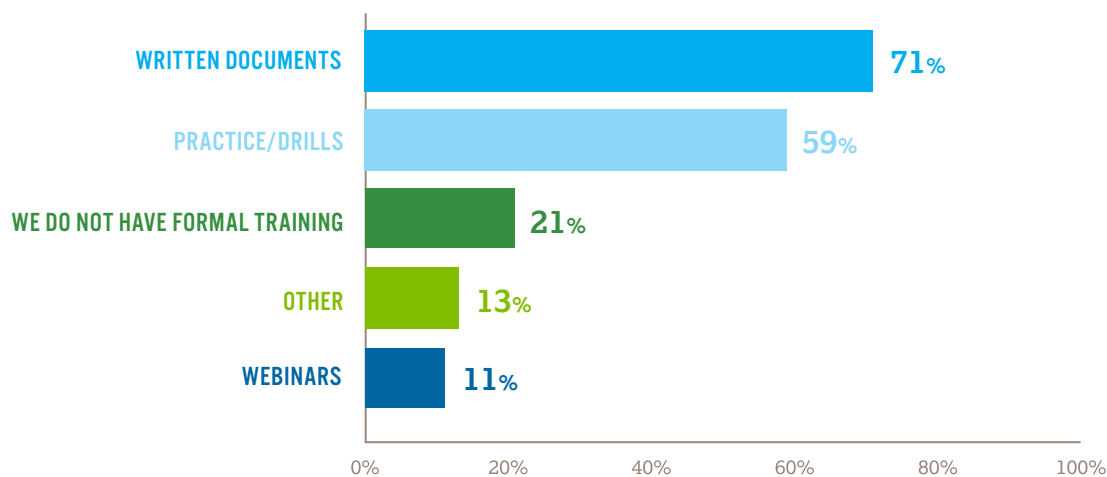40%

20%

0%

66% ANNUALLY

21% OTHER

13% TWICE A YEAR

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America

40
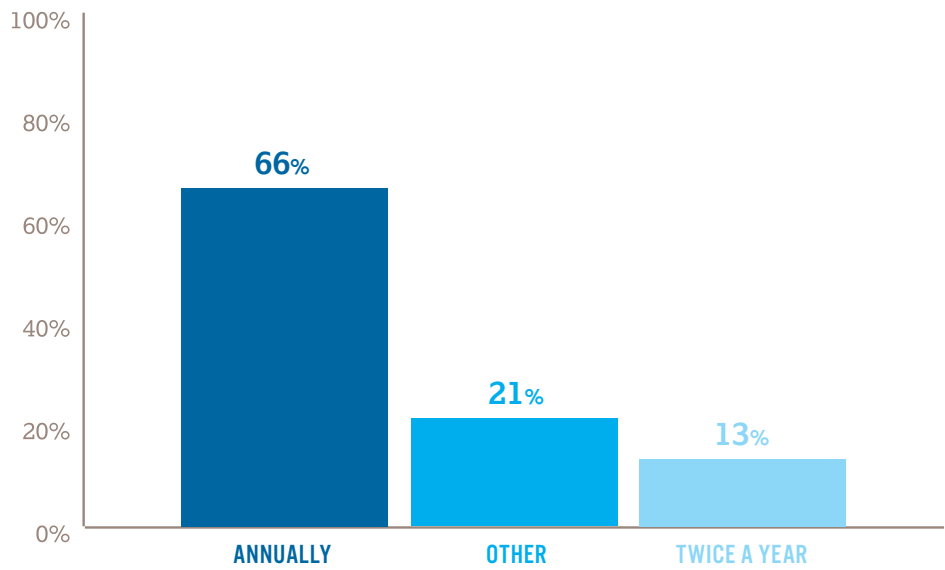
Please tell us what monitoring/notification systems you have in place.

|	
TEMPERATURE SENSOR	82%
HUMIDITY SENSORS	53%
FLUID LEAK DETECTION	49%
AIRFLOW SENSORS	47%
OTHER MONITORING TYPES	33%

Other Monitoring Types:

- Annunciator Panels
- Building Information systems
- Building Management System
- CCTV
- Carbon monoxide detection
- Civil defense alerts
- Communication loss
- Email alerts for power outages
- EMS
- Fire Life Safety
- Flow
- Gas leak detection
- Generator battery monitoring
- Genset status alarms
- HAZMAT
- Live site monitoring
- Offsite monitoring
- Outsourced meteorologists
- Power quality
- Pressure sensors
- O2
- Refrigerant
- Security system
- Smoke detectors
- Toxic Gas Monitoring System (TGM)
- Vibration sensors
- Water detection
- Water pressure for pump and sprinkler system
- Weather Monitoring

My organization uses the following method(s) to communicate the emergency preparedness/business continuity plan to employees.

WRITTEN DOCUMENTS	71%
PRACTICE/DRILLS	59%
WE DO NOT HAVE FORMAL TRAINING	21%
OTHER	13%
WEBINARS	11%

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America
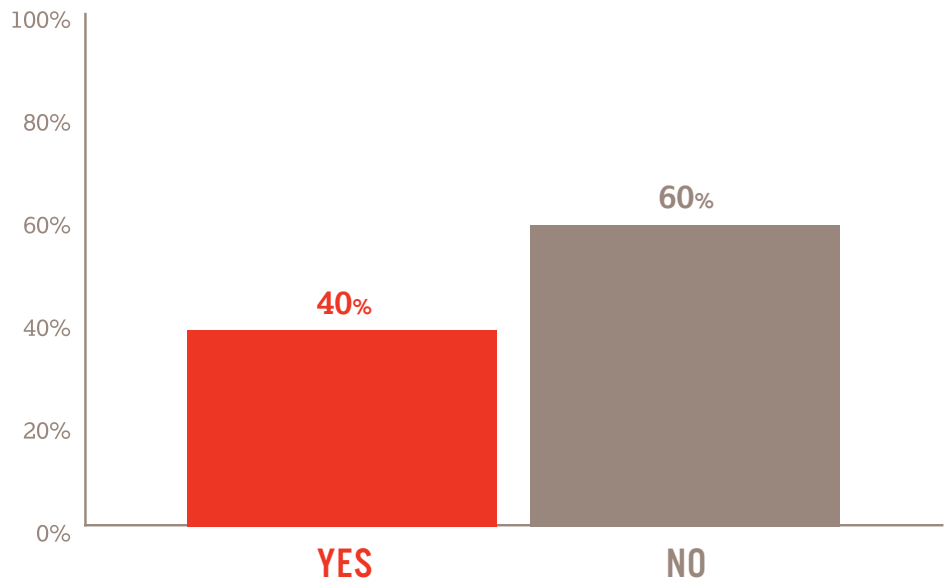
41

Observations from the survey results:

My organization's mission-critical functions have been clearly identified and prioritized in a emergency preparedness/business continuity plan.

86% YES

14% NO

■ RISK ASSESSMENT = YES
■ RISK ASSESSMENT = NO

98% / **59**% YES

2% / **41**% NO
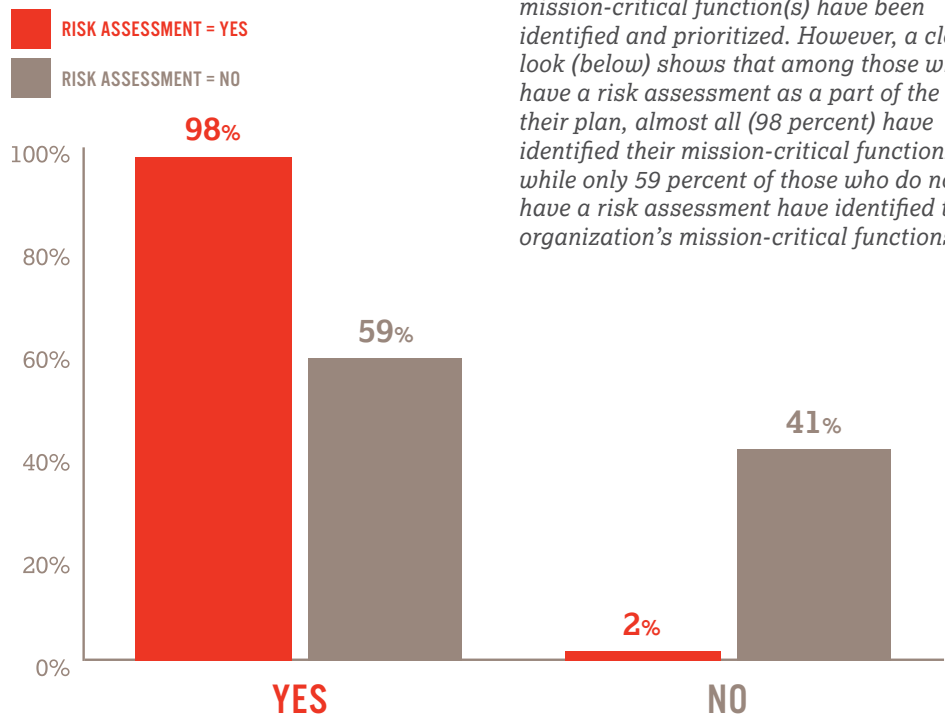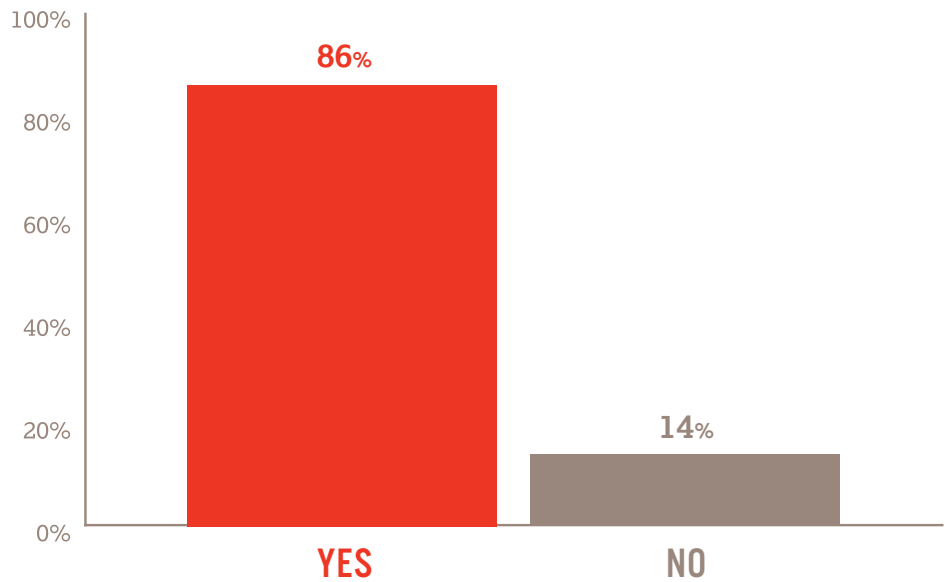
(Above) Eighty-six percent of survey participants have said the organization's mission-critical function(s) have been identified and prioritized. However, a closer look (below) shows that among those who have a risk assessment as a part of the their plan, almost all (98 percent) have identified their mission-critical functions while only 59 percent of those who do not have a risk assessment have identified their organization's mission-critical functions.

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America
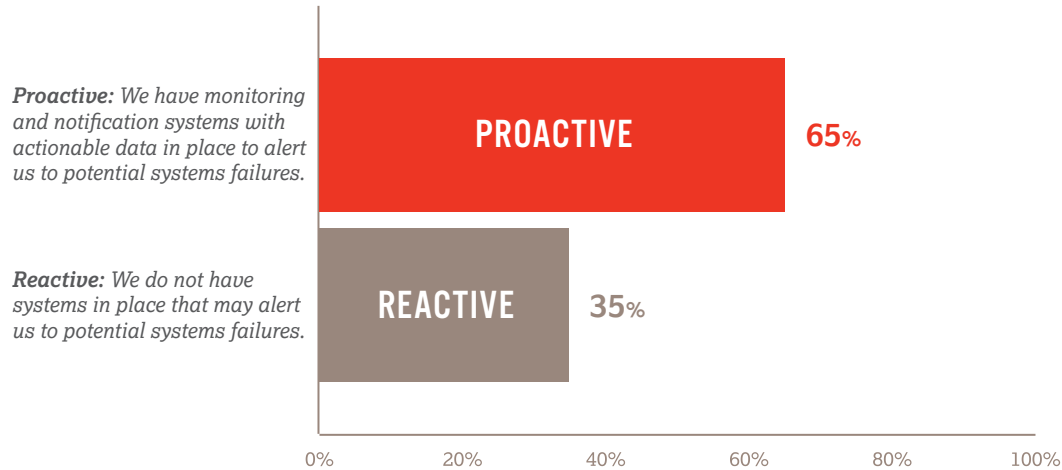
42

We have quantified the cost of downtime:

While the majority of respondents (60 percent) have not quantified the cost of downtime for their organizations, when we consider those organizations that have a current EP/BC plan versus those that do not, 47 percent of participants who have a current plan know the cost or financial impact of downtime to their organization compared to only 11 percent of participants who do not have a current plan.
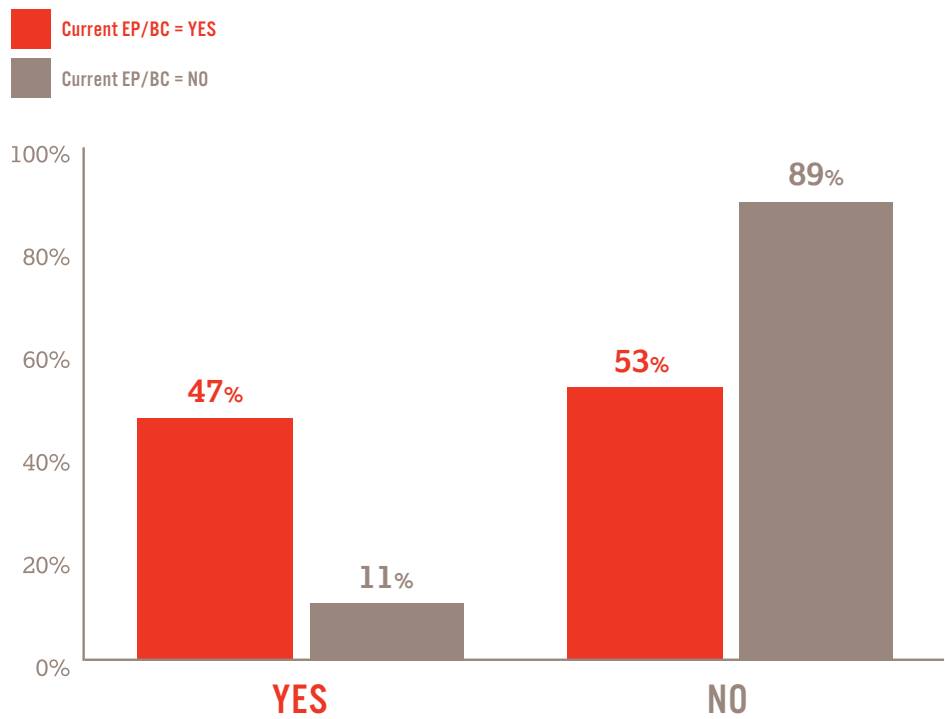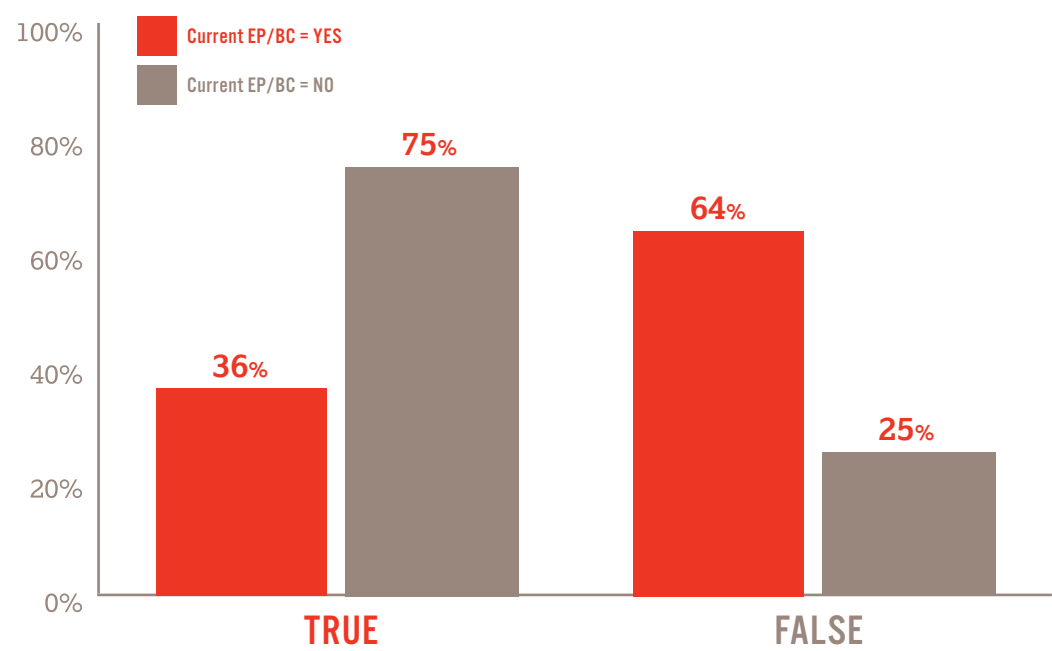
■ Current EP/BC = YES
■ Current EP/BC = NO

I believe my organization's emergency preparedness/business continuity plan is:

Proactive: We have monitoring and notification systems with actionable data in place to alert us to potential systems failures.

PROACTIVE **65**%

Reactive: We do not have systems in place that may alert us to potential systems failures.

REACTIVE **35**%

0% 20% 40% 60% 80% 100%

As one might expect, respondents who reported that they have a current EP/BC plan also were more likely to report proactive practices such as having monitoring and early alert systems in place.

■ **Current EP/BC = YES**
■ **Current EP/BC = NO**

Proactive: We have monitoring and notification systems with actionable data in place to alert us to potential systems failures.

74%

17%

Reactive: We do not have systems in place that may alert us to potential systems failures.

26%

83%

0% 20% 40% 60% 80% 100%

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America

44
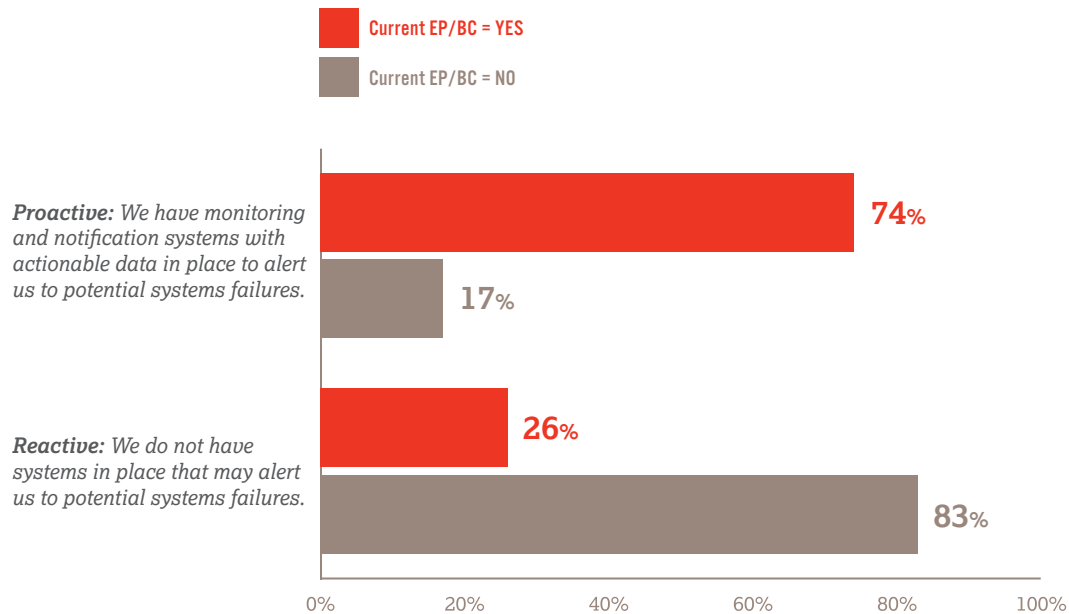
The longer the period of time without experiencing an emergency, the more difficult it is for me to receive adequate funding for my emergency preparedness/business continuity preparedness plan.
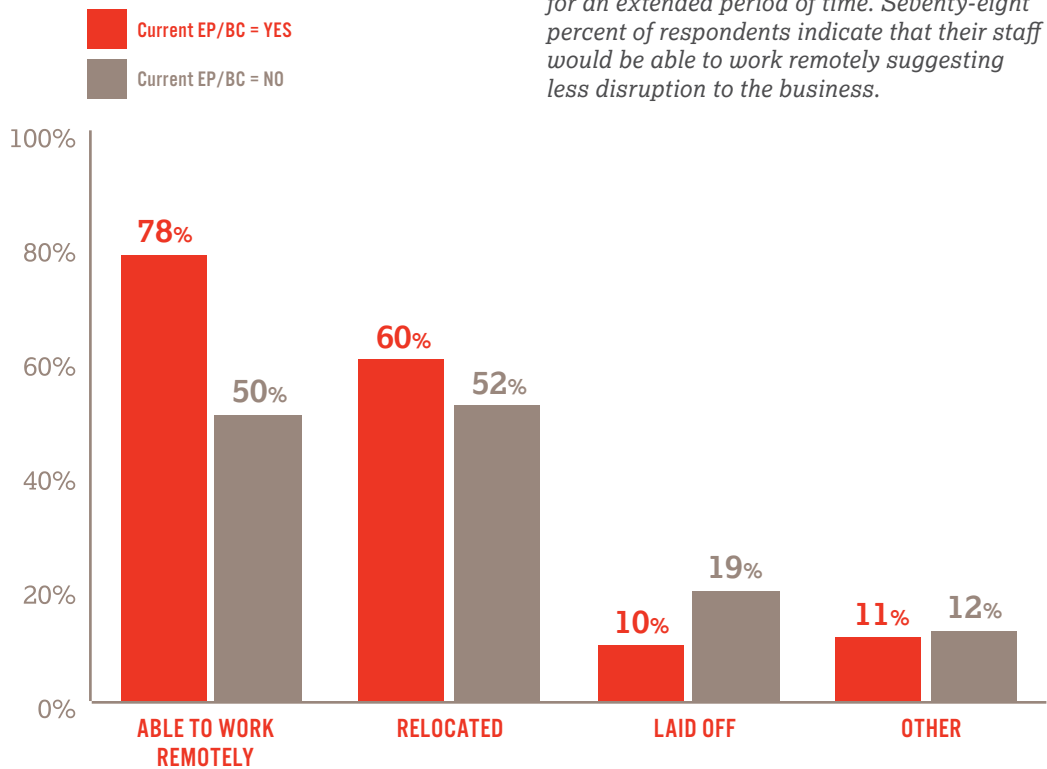

A solid argument for preparing an emergency preparedness/business continuity plan: Respondents who report having a current EP/BC plan also report that it is less difficult to receive funding as the time without experiencing an incident lengthened.

If my facility closed for an extended period as a result of an environmental disaster, the employees would be:

73% ABLE TO WORK REMOTELY
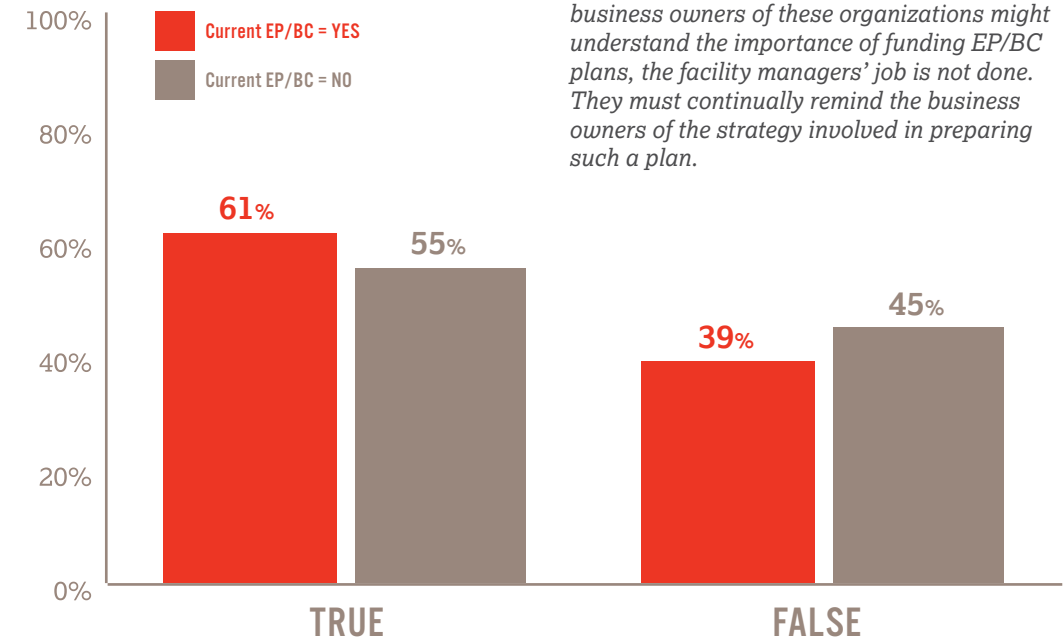58% RELOCATED
12% LAID OFF
11% OTHER
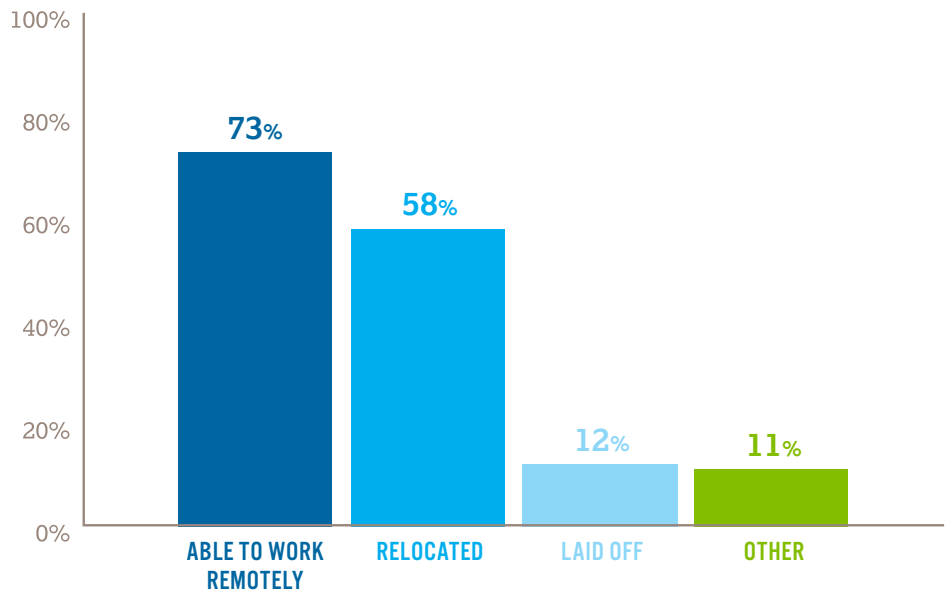
The results here suggest that organizations with a current EP/BC plan have an advantage in the event that the facility has to be closed for an extended period of time. Seventy-eight percent of respondents indicate that their staff would be able to work remotely suggesting less disruption to the business.

Current EP/BC = YES
Current EP/BC = NO

ABLE TO WORK REMOTELY: 78% / 50%
RELOCATED: 60% / 52%
LAID OFF: 10% / 19%
OTHER: 11% / 12%

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America

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When external disasters happen, I am asked to prioritize resources to address a similar event even if the likelihood of this event occurring in my facility/area is low.
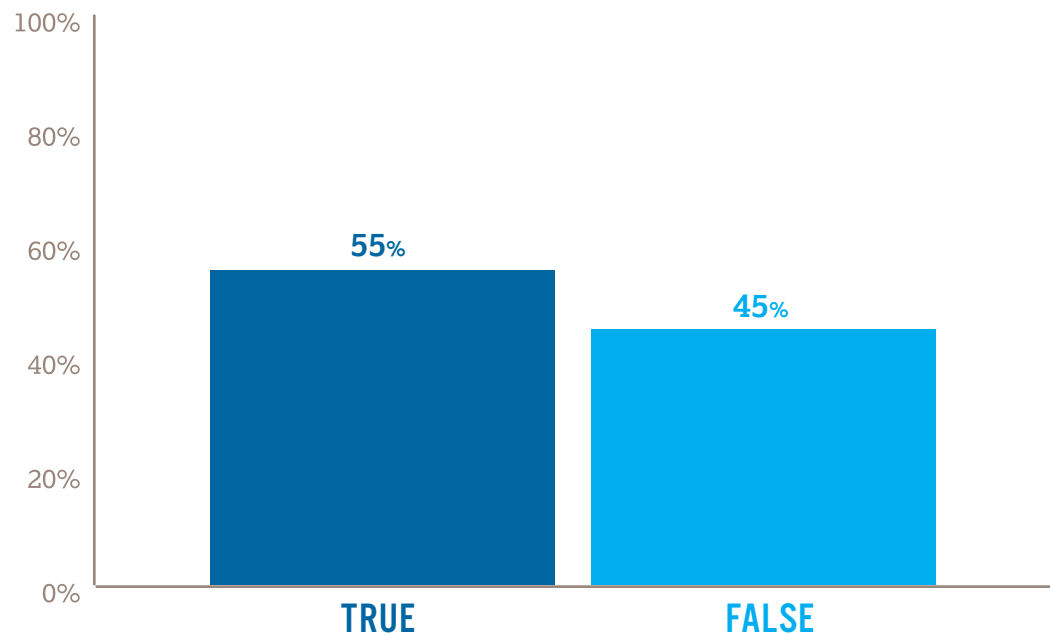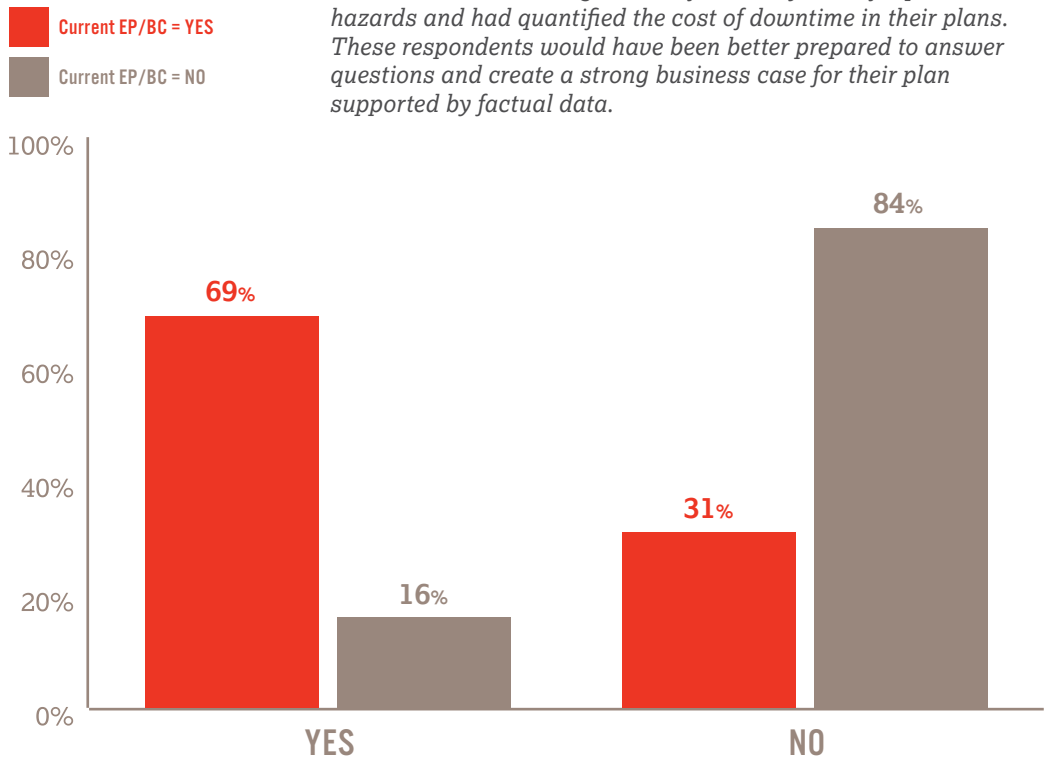

In the event of a disaster occurring, organizations that have a current EP/BC plan report that they are more likely to be asked to prioritize resources to address a similar potential situation, regardless of the likelihood of impact to their facility. This surprising result suggests that although the business owners of these organizations might understand the importance of funding EP/BC plans, the facility managers' job is not done. They must continually remind the business owners of the strategy involved in preparing such a plan.

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
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I believe my organization's emergency preparedness/business continuity plan is adequately funded.

59% YES
41% NO
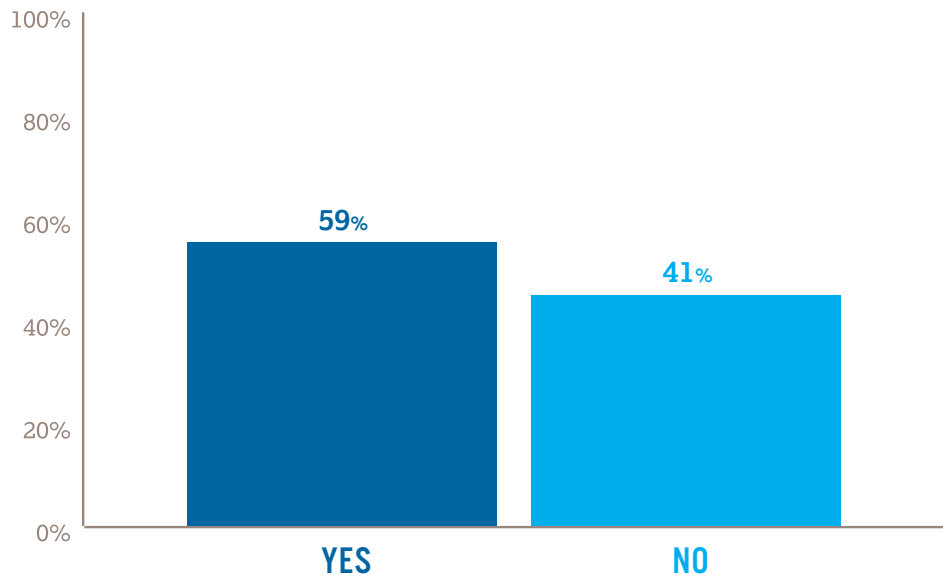
Unsurprisingly, those respondents who reported having a current EP/BC plan also reported in greater number their belief that their plan is adequately funded. This makes sense considering that these same respondents more often included a risk assessment, had identified mission-critical functions, had proactive plans that included monitoring and notification systems for potential hazards and had quantified the cost of downtime in their plans. These respondents would have been better prepared to answer questions and create a strong business case for their plan supported by factual data.

■ Current EP/BC = YES
■ Current EP/BC = NO

69% / **16%** YES
31% / **84%** NO

HIGH STAKES BUSINESS: PEOPLE, PROPERTY AND SERVICES
Facility Management Perspectives on Emergency Preparedness and Business Continuity in North America

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Resources:

- Network of:
  - Professional colleagues
  - Service Providers
  - Contractors
  - Insurance agencies

- International Facility Management Association (IFMA)
  www.ifma.org
- Learning System on Emergency Planning and Business Continuity
  www.ifmacredentials.org/cfm/ls

- Government agency standards and resources
  - Department of Homeland Security
    www.dhs.gov
  - Ready.gov
    www.ready.gov
  - Federal Emergency Management Association
    www.fema.gov

- National Incident Management System (NIMS)
  www.fema.gov/national-incident-management-system

- National Preparedness System
  www.fema.gov/national-preparedness-system

- International Organization for Standards
  www.iso.org/
  - ISO 22320:2011, Societal security – Emergency management – Requirements for incident response

- The Infrastructure Security Partnership
  www.tisp.org

- The Emergency Information Infrastructure Partnership
  www.emforum.org

- International Association of Emergency Managers
  www.iaem.com

- National Memorial Institute for the Prevention of Terrorism
  www.mipt.org/

- The National Security Institute
  www.nsi.org

- Sandia National Laboratories
  www.sandia.gov/media/NewsRel/NR2000/ccfp.htm

- RAND
  hwww.rand.org

- Contingency Planning & Management Magazine
  contingencyplanning.com/

- Association of Contingency Planners
  www.acp-international.com/

About IFMA

Founded in 1980, IFMA is the world's largest and most widely recognized international association for facility management professionals, supporting more than 24,000 members in 94 countries.

The association's members, represented in 130 chapters and 17 councils worldwide, manage more than 37 billion square feet of property and annually purchase more than US$100 billion in products and services.

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For over 30 years, RLE has delivered reliable, cost effective facility monitoring and leak detection technologies with the sole purpose of preventing disasters, providing peace of mind, and preserving our customer's reputation. Thousands of customers world-wide rely on RLE products to detect environmental threats, notify stakeholders, and mitigate risks to their critical sensitive facilities. RLE products are manufactured in the US. www.RLETech.com

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