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**Report on the Cross Government Review of Business
Continuity Management**

Internal Audit & Advisory Services

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Abbreviations

BIA	Business Impact Analysis
BCM	Business Continuity Management
BCP	Business Continuity Plan
BCPSA	BC Public Service Agency
DRII	Disaster Recovery Institute International
DRR	Disaster Response Route
DTS	Desktop Terminal Services
EMBC	Emergency Management BC
GBCMP	Government Business Continuity Management Program Advisory Committee
IEPC	Inter-Agency Emergency Preparedness Council
EPDPs	Employee Performance and Development Plans
IT	Information Technology
MAO	Maximum Allowable Outage
MOCs	Ministry Operations Centres
MOU	Memorandum of Understanding
OSHC	Occupational Safety and Health Committee
PAD	Priority Access Dialing
RMB	Risk Management Branch
SLAs	Service Level Agreements
WTS	Workplace Technology Services

Executive Summary

We have completed our review of Business Continuity Management (BCM) processes and plans across government. The purpose of this project was to evaluate the BC Government's readiness for business continuity of essential services within government and to its citizens in the event of a major emergency.

Business Continuity Plans (BCPs) help to ensure the availability of government services, programs and operations, including all resources involved, and the timely resumption of services in the event of a major failure, emergency or disaster. Good coordination and liaison involving inter-ministry activities and service providers is critical to restoring business operations during and following an interruption.

Under the *Emergency Program Act* and the Emergency Program Management Regulation, each Minister is responsible to "set out, in business continuation plans and procedures, the manner in which and the means by which that minister will continue to provide essential services despite an emergency or disaster"¹.

A number of changes have occurred recently which reflect the increasing importance placed on BCM. During the period of our review, the Risk Management Branch of the Ministry of Finance was responsible for advising ministries on planning, developing, implementing and monitoring business continuity and recovery activities. However, on April 1, 2007, the business continuity management program was transferred to the newly created organizational structure, Emergency Management BC (EMBC), headed by the Associate Deputy Minister, Ministry of Public Safety and Solicitor General. EMBC enables a greater integration and coordination by being directly responsible for:

- Business Continuity Management;
- Provincial Emergency Program;
- Office of the Fire Commissioner; and
- BC Coroner Service.

¹ Emergency Program Management Regulation (BC REG. 477/94), section 3(3)(b).

This organizational structure elevates the profile of BCM and is intended to improve communication and linkages between emergency management response and recovery and business continuity management/planning.

Overall Results

We assessed the relative level of maturity of BCM processes and plans within nineteen ministries across government, characterized by an effective accountability framework and organizational structure in support of BCM, a high level of compliance with core policy, pandemic planning and effective BCPs in place for mission critical and business priority areas. We assessed BCM maturity², rather than just compliance with policy. A key measure of an organization's ability to respond well to an emergency event is whether it possesses a "culture of readiness". Based on this review, one ministry demonstrated a high level of BCM maturity, while nine demonstrated a moderate level of maturity, and a further nine ministries demonstrated a low level.

Overall, we found that, while some key elements of accountability are in place in most ministries, compliance with core policy on BCM is relatively low across government, as few ministries have mostly or fully updated and exercised BCPs. As a result, there is a significant risk to the continuity of key BC Government services in the event of a major emergency or wide area event. Appendix C shows our assessment of each ministry's BCM against a list of standard criteria (compiled from EMBC and Disaster Recovery Institute (DRII) guidelines and shown in Appendix A).

Mission Critical BCPs

As well as assessing BCM across the nineteen ministries, we also examined, in detail, eight BCPs for business areas that are considered mission critical for the government as a whole. Our sample BCPs were chosen from a list created by ministry representatives for the Inter-Agency Emergency Preparedness Council. Among others, our sample included emergency response support, continuity of government payments and support to individuals.

We found in our assessment of the sample of mission critical BCPs that there was a low level of compliance with core policy requirements, most notably around the identification of critical dependencies, development of functional recovery strategies and regular BCP exercising.

² Criteria for maturity assessment are outlined in Appendix B.

We also found that guidelines for developing and maintaining BCPs were not consistently followed and pandemic plans, although considered, have not yet been integrated.

Pandemic
Planning

Awareness of the need to develop pandemic planning scenarios is rapidly increasing across government, along with the coordination and consolidation of planning issues and strategies, although several key policy issues need to be addressed in order to facilitate ongoing, effective planning within ministries.

Wide Area Event

There is no government-wide plan to ensure a coordinated approach to BCM and the business continuity coordination centre may not be adequately resourced to ensure an effective and efficient recovery effort across government.

Work has recently commenced to identify key players and their roles and responsibilities in the event of a wide area disaster, as well as mission critical services, information technology dependent programs and shared services across government.

These activities will help lead to a prioritization of mission critical areas across government, and a coordinated recovery response in a wide area disaster.

The development of a cross-government BCP for mission critical services will help ensure a coordinated approach to recovery in a wide scale disaster. All mission critical business functions need to be coordinated with respect to recovery strategies and prioritized with respect to recovery resources.

Barriers
Impacting
Business
Continuity
Management

We found a number of significant barriers to an effective BCM program, including, in some ministries, the perception of minimal corporate commitment, where BCM is considered “contingency planning” therefore not a high priority, a lack of dedicated resources, and, in some cases, resources not sufficiently classified to have the right amount of influence. Also, there is a lack of clarity on how much time is needed to effectively manage business continuity processes and a shortage of trained staff within the ministries that possess the specific skills required to effectively analyse risks and business impacts, and facilitate the ongoing development and exercising of BCPs.

Recommen-
dations

The body of this report contains 30 recommendations based upon our observations made during the review (see Appendix D for a complete listing). The following are a summary and highlight our recommended strategies to enhance the effectiveness of BCM programs within the ministries:

- strengthening accountability for BCM through executive sponsorship, clearly defined roles, responsibilities and expectations of all staff engaged in business continuity, and resources dedicated to advancing the maturity of BCM and to the development of BCPs for mission critical areas;
- strengthening existing core policy on business continuity and controls to ensure compliance with core policy, in particular recurring risk and business impact analysis reviews and the identification of critical dependencies;
- clear linkages between ministry emergency response and BCPs and procedures to facilitate recovery efforts;
- assessment of the classification level of staff responsible for coordinating ministry-level as well as government-wide BCM programs;
- increased training opportunities for all key staff responsible for BCM and awareness programs for other ministry staff;
- the development of a key personnel strategy as a pandemic planning element; and
- recurring quality assurance focusing on BCP functionality and mandatory plans for ongoing exercising/testing and compliance auditing.

We also encourage government to enhance its ability to respond to a wide area event by identifying a government-wide set of business priorities, developing a cross-government BCP and clarifying the roles, responsibilities and dependencies of inter-ministry emergency response committees.

We wish to express our appreciation to the staff from all ministries for their co-operation and assistance during the course of this review.

Stuart Newton
Executive Director
Audit & Technical Services
Internal Audit & Advisory Services

Introduction

Business Continuity Plans (BCPs) ensure the availability of government services, programs and operations, including all resources involved, and the timely resumption of services in the event of a major failure, emergency or disaster. Good coordination and liaison involving inter-ministry activities and with service providers is critical to restoring business operations during and following an interruption.

The legislation and regulation directing Business Continuity Management (BCM) is the *Emergency Program Act* and the *Emergency Program Management Regulation*. Under the Regulation, each Minister is responsible to “set out in business continuation plans and procedures, the manner in which and the means by which that minister will continue to provide essential services despite an emergency or disaster”³.

During the period of our review, the Risk Management Branch (RMB) of the Ministry of Finance was responsible for advising ministries on planning, developing, implementing and monitoring business continuity and recovery activities. RMB dedicated one staff member to this area, the Senior Advisor for Business Continuity, who reported to the Director, Risk Mitigation, Security and Business Continuity.

As well, each ministry nominates a position as BCM Advisor (predominately at the Administrative Officer level and usually not full-time - see section 1.5 Capacity and Authority). The BCM Advisors have formed the Government Business Continuity Management Program (GBCMP) Advisory Committee, which also includes representatives from government agencies and crown corporations, as a forum for communication and sharing best practises. The GBCMP Advisory Committee is chaired by the Senior Advisor for Business Continuity.

A number of changes have occurred recently which reflect the increasing importance placed on BCM. On April 1, 2007, BCM program was transferred to the newly created organizational structure, Emergency Management BC (EMBC)⁴, headed by the Associate Deputy Minister, Ministry of Public Safety and Solicitor General.

³ Ibid.

⁴ For the sake of simplicity, from this point forward in the report when we speak of these organizations, we will refer to EMBC rather than RMB.

EMBC enables a greater integration and coordination by being directly responsible for:

- Business Continuity Management;
- Provincial Emergency Program;
- Office of the Fire Commissioner; and
- BC Coroner Service.

This organizational structure elevates the profile of BCM and is intended to improve communication and linkages between emergency management response and recovery and business continuity management/planning. EMBC will be the mechanism to provide integrated strategic opportunities for further leverage and partnership both within PSSG, across government, and with external stakeholder agencies.

Another important change is that the Inter-Agency Emergency Preparedness Council (IEPC) has taken on responsibility to provide direction to the GBCMP Advisory Committee. For example, last fall the IEPC reviewed the list of business areas considered mission critical by ministries to help determine which business areas should be considered mission critical to the government as a whole.

The IEPC is set-up under the Emergency Program Management Regulation, Section 5, to recommend to government coordinated emergency prevention, preparedness, response and recovery measures for the Province. IEPC is a senior committee with Assistant Deputy Minister-level membership from ministries, Crown Corporations and other selected provincial agencies, and is co-chaired by the Deputy Solicitor General and the Associate Deputy Minister, EMBC. IEPC develops and promotes policies and procedures for a government-wide integrated emergency management system, oversees the development and maintenance of comprehensive government plans and procedures to deal with emergencies and disasters, and promotes emergency prevention, preparedness, response and recovery programs and awareness to other levels of government, non-government organizations, private sector and the general public.

The Deputy Ministers' Committee on Internal Audit identified BCM and emergency management as critical activities across government. The importance of the BC Government's roles and responsibilities have been highlighted by a number of recent events such as Hurricane Katrina, the 2005 Christmas earthquake and tsunami in Indonesia and South-East Asia, and the growing threat of a pandemic event.

Smaller scale business related events could also have significant impact on government's ability to provide services internally and to the public (i.e. a pipe bursting in a building, viruses in the government information system network). Internal Audit & Advisory Services is conducting a separate review of emergency management but as the two topic areas are inter-related, this review also examines the current integration between emergency management and BCM (see Section 2.8 BCM - Emergency Response Management Linkages).

Purpose

The purpose of this project was to evaluate the BC Government's readiness for business continuity of essential services within government and to its citizens in the event of a major emergency.

Objectives, Scope and Approach

The review assessed whether:

1. there is an accountability framework in place to ensure effective BCM across the BC Government; and
 2. BCM processes within the ministries are in compliance with provincial policy, and should ensure continuity of key BC Government services in the event of a major emergency.
- The scope of the project included an evaluation of BCM processes within government ministries, a sample of BCPs for eight mission critical business areas, and a case study to illustrate lessons learned and best practices. The BCPs were also assessed to determine whether they consider the impact of a wider-scale disaster such as a pandemic.

The assessment of BCM did include determining whether or not each ministry had BCPs prepared for their essential services.

BCPs for eight mission critical business areas were assessed against standard criteria, but the scope of the review excluded testing the actual completeness or effectiveness of those BCPs.

Fieldwork was conducted between October 2006 and March 2007.

Observations and Recommendations

1.0 Program Accountability

We assessed the effectiveness of accountability frameworks in place within the ministries in support of BCM programs (see Appendix C for a summary of results by ministry). We looked for the presence of strategic goals, objectives and performance measures and for supporting operational strategies and the monitoring of progress and results achieved. We also assessed the clarity and meaningfulness of policies, procedures and guidelines amongst key staff responsible for BCM programming and the awareness of roles, responsibilities and expectations of staff involved in business continuity planning and recovery. In addition, we examined issues related to training, awareness and communication as well as those impacting on capacity and authority.

A mature BCM program has the following attributes (compiled from EMBC and Disaster Recovery Institute (DRII) guidelines – see Appendix A for a more detailed list of criteria):

- executive sponsorship;
- dedicated resources;
- formal training and awareness programs;
- a high level of compliance with core policy resulting from:
 - controls to ensure compliance with core policy;
 - compliance auditing;
- effective BCPs characterized by:
 - recurring risk and business impact reviews;
 - recurring quality assurance focusing on BCP functionality; and
 - a plan for ongoing exercising/testing.

Overall, we found that some key elements of accountability are in place in most ministries, although steps can be taken to increase the effectiveness of processes and activities and enhance the level of maturity of BCM programs.

1.1 Program Objectives, Performance Measures and Strategies

80% of ministries had included BCM objectives and indicators of performance in either divisional or branch plans; however BCM strategies tend to be informal and ad hoc with no real assessment of needs and prioritizing of activities and resources to meet those needs.

The presence of a well-defined BCM program, characterized by goals, specific objectives, and measurable indicators of performance, increases the potential for the organization to make progress in advancing the level of maturity of BCM, thereby ensuring the continued delivery of essential services and the protection of critical government infrastructure and assets.

We found that those ministries that had incorporated objectives and performance measures in internal plans, job descriptions and/or employee performance plans had, on average, achieved a higher level of BCM maturity as well as stronger compliance with core policy.

Some ministries have a less structured approach and tend to fit BCM wherever and whenever possible, which limits the ability of the organization to achieve a higher level of maturity. Ad hoc planning impacts the ability to make real progress to ensure that:

- business impacts and risks are adequately assessed;
- key internal and external linkages are identified;
- recovery team members are fully aware of their roles and responsibilities; and
- recovery strategies are functional.

Executive Support

We found that executive support for BCM is mixed and varies in relation to the criticality of ministry business functions. For example, BCM tends to be regarded as a low priority in those ministries with no or few mission critical areas, and executive support may fluctuate in response to the situation. In these ministries, BCM may be considered secondary to their main responsibility (i.e. business function). Lack of executive support creates real risks including ineffective recovery strategies, insufficient recovery resources and the absence of alternate recovery sites.

All ministries need to ensure appropriate business continuity processes are developed and updated. To facilitate this, ministries should consider establishing a BCM Steering Committee made up of senior management to demonstrate commitment, provide guidance and oversight of activities, and to ensure real progress is made towards a higher level of maturity.

Recommendation:

(1) To establish an accountability framework for BCM, it is recommended that ministries:

- **incorporate BCM objectives and performance measures in all ministry business plans, and ensure they have updated BCPs for all mission critical areas;**
 - **develop strategies in support of BCM objectives and establish formal BCM workplans to achieve those objectives;**
 - **ensure appropriate business continuity processes are developed, exercised and updated annually; and**
 - **establish a senior management committee to oversee BCM in their ministry.**
-

1.2 Policies and Procedures

Core policy and procedures are based on international standards and are comprehensive, however given the current level of maturity of most ministries, they may be too far-reaching, and in some cases, excessive, to allow ministries to attain a high level of compliance. There are some policies that are unclear and some guidelines that are considered overly complex. In addition, there may be an opportunity to strengthen existing policy.

Many of the tools and resources (still located on the RMB website) are derived from DRII and are considered by ministry staff to be very good and helpful.

We did find however, that there is a need to keep BCM requirements simple and straightforward in order to engage staff. For example, there may be a need to streamline or simplify the risk analysis and business impact analysis (BIA) processes. Many ministries consider them too complex and time consuming and present a real barrier to progress.

Further, policy requiring an annual risk analysis and BIA may be excessive and it may be more realistic and achievable to substitute a less rigorous process or conduct these only after a significant change, including organizational change. BIAs are discussed in more detail in Section 2.2.

Policy on risk mitigation strategies and treatments is unclear (discussed in Section 2.4). There is confusion as to what constitutes risk mitigation strategies, treatments and recovery strategies. Policy clarification is needed.

There is insufficient understanding of critical dependencies: defining and understanding internal and external dependencies may assist branches in strategizing and better managing these critical linkages.

We found instances where alternate site arrangements were not supported by formal agreements creating the risk that required resources may not be available in the event of a business interruption. A formal Memorandum of Understanding (MOU) outlining alternate site arrangements and necessary recovery resources should form part of the BCP and could be included as a policy requirement to mitigate recovery risks.

BCP exercising is essential to ensuring an efficient and effective set of recovery strategies. Ministries should have a formal exercise/test plan and this should be required in policy.

Recommendation:

(2) To clarify policies and procedures, it is recommended that EMBC:

- **clarify policy as to what constitutes risk mitigation strategies, treatments and recovery strategies;**
 - **provide additional guidelines on the identification and management of critical dependencies; and**
 - **add policy requirements for:**
 - **ministries to enter into a formal MOU detailing all alternate site arrangements and the necessary recovery resources; and,**
 - **ministries to have a formal exercise/test plan for mission critical business functions.**
-

1.3 Roles, Responsibilities and Expectations

The clarity of BCM roles, responsibilities and expectations is highly varied across ministries which impacts on the consistency of programs and BCPs across ministries, and on the overall level of maturity of a ministry's BCM program. Greater clarity of the roles and responsibilities of ministries and emergency management committees and working groups in the event of a wide area interruption is needed. In addition, the advisory role of the EMBC may not be adequate to ensure consistency of BCM across government.

The status of BCM across the ministries is varied with respect to organizational structure and formality of roles, responsibilities and expectations, from formal job descriptions and Employee Performance and Development Plans (EPDPs) to informal verbal directions. As well, in some ministries, recovery team members may not be aware of their roles and responsibilities as outlined in a BCP or recovery strategy which compromises effective and efficient business recovery. To ensure a greater understanding and effective and efficient business recovery, the roles and responsibilities for BCM should be outlined in job descriptions for those positions which have a defined BCM role and expectations could be stated in EPDPs for all recovery team members.

Also within each ministry, management needs to be accountable for ensuring business continuity plans are in place and exercised for their business units. This can be accomplished through inclusion of the responsibilities in EDPDs and annual performance reviews.

Wide Area Event

While clarity of roles and responsibilities in the event of a site specific interruption is necessary, it is critical in a wide area disaster, particularly at the senior management levels where cross-government response and coordination is required. However, we found there are numerous committees and working groups engaged in a variety of activities related to emergency response management and BCM whose mandates may be unclear to or misunderstood by ministry staff responsible for BCM management, and their roles may not be well coordinated. This creates the risk that overlapping or conflicting activities may be occurring and that responses may not be well-coordinated and prioritized. Clarity around what each group is responsible for would raise awareness within the ministries as to who is doing what. In addition, a side benefit may be identification of any duplication or gaps in emergency planning and business continuity planning.

There is no government-wide BCP that sets out clear roles and responsibilities in order to ensure a coordinated approach. For example, a government-wide set of business priorities and the sequencing of related Information Technology (IT) applications that must be recovered, has not been developed.

Work is recently underway to identify key players and their roles and responsibilities in the event of a wide area disaster, as well as mission critical services, IT dependent programs and shared services across government. These activities will help lead to a prioritization of mission critical business areas across government, and a coordinated recovery response in a wide area disaster. All mission critical business areas need to be coordinated with respect to recovery strategies and prioritized with respect to recovery resources.

The identification of strategies for the deployment of staff in non-mission critical areas to mission critical areas in the event of a wide area disaster is another cross-government element that has not yet been developed (i.e. a staff register to facilitate recovery efforts across government).

Central
Co-ordination of
BCM

Members of the GBCMP Advisory Committee feel the EMBC does an excellent job of communicating BCM issues and in supporting BCM through the provision of advice and guidance.

However, the advisory role of the EMBC may not be adequate and the current capacity of the branch may be insufficient to ensure the consistency of BCM across government.

The current status of BCM across the ministries is highly varied with respect to organizational structure, formality of roles, responsibilities and expectations, capacity, training and awareness, and tools and templates in use. In addition, processes for the development of BCPs are mixed and BCPs for mission critical and business priority areas vary from one ministry to the next. This creates the risk that mission critical areas may not be accurately assessed in terms of relative priority, and that recovery strategies may not be efficient or effective. As well, ministry staff are unclear of the role of EMBC in a wide area event. As responsibility for central co-ordination of BCM was transferred from the RMB to EMBC on April 1, 2007, this may be an ideal opportunity to review and revise the mandate and capacity of the central coordinating function.

Recommendations:

(3) To enhance response to wide area events, it is recommended that EMBC:

- **develop a government wide business continuity strategy to continue mission critical government programs operating;**
- **clarify the roles and respective mandates of the inter-ministry committees, ministry staff and business recovery team members; and**
- **develop and communicate a set of roles and responsibilities for mission critical staff.**

(4) It is recommended that EMBC review, and if appropriate, revise the mandate and capacity of the central BCM coordinating function to support the achievement of BCM objectives across government.

(5) It is recommended that ministries outline roles, responsibilities and expectations for management and staff with direct BCM responsibilities in job descriptions and in EPDPs for all recovery team members. These should be consistent with roles defined by EMBC (see recommendation #3).

1.4 Training, Awareness and Communications

Most ministries do not have formal BCM training plans and any training that does take place is usually ad hoc and is facilitated by the ministry BCM Advisor. These Advisors have usually attended the DRII ten-day training. DRII training is highly regarded, is based on international standards and can result in certification.

The training is offered at least once a year, but ministries have not filled all of their allotted seats.

The DRII training includes skill development for leading risk analysis and BIA within the ministries, two essential components leading to the identification of mission critical business areas and the development of effective BCPs. This skill set helps avoid the risk that mission critical business functions may not be accurately identified and recovery strategies may be deficient. Ministries should include a BCM training strategy as part of the overall corporate training plan.

BCM should be considered a preferred competency, and BCP training and orientation sessions should be standard offerings through the BC Public Service Agency (BCPSA) Learning Fund. To facilitate the participation of ministry staff, the current DRII ten day course could be re-configured; either streamlined or perhaps offered in phases over the course of several months.

The role of the GBCMP Advisory Committee is one of communication and the BCM Advisors do a good job of communicating best practices, training opportunities and events across their respective ministries. BCM Advisors work closely with EMBC and other BCM Advisors so that communication issues are minimized. However, there is still a general lack of awareness among staff within ministries about BCM and the status of BCPs and recovery strategies.

A communication gap may also exist with respect to plans, processes and procedures in the event of a wide area disaster. We found that key mission critical staff may be unaware of their roles and responsibilities in the event of a wide area disaster. A strategy, and the communication of it, is essential.

An overall BCM communications plan can help raise the general level of awareness of BCM procedures and activities for all ministry employees in the event of both site specific and wide area emergencies. Orientation or awareness workshops can raise the level of awareness and understanding of ministry staff.

For example, the annual BCM Awareness Week and ministry web pages are good opportunities to increase awareness and understanding of BCM and emergency response management.

Recommendations:

(6) It is recommended that EMBC, in conjunction with BCPSA Learning Services:

- **include a BCM training strategy as part of the overall corporate training plan; and**
- **establish BCM as a preferred competency and consider re-configuring the DRII ten-day course.**

(7) It is recommended that ministries draft a ministry level communication strategy which could include:

- **BCM/emergency response management orientation or awareness workshops in conjunction with BCM Awareness Week;**
 - **the awareness of the roles and responsibilities of recovery team members; and**
 - **guidance to key ministry staff in the event of a wide area disaster.**
-

1.5 Capacity and Authority

Classification

Staff assigned as BCM Advisors, typically classified from R18 to R24 in the Administrative Officer series (please see Table 1), may not be placed high enough to have the right amount of influence. Having responsibility for this key area at lower levels increases the risk that plans do not meet the actual needs of the business area; and may also contribute to turnover which impacts on continuity and the achievement of progress.

Table 1 – BCM Advisor Classification Levels

Number of Ministries	BCM Advisor Classification Level	Current Salary Range⁵
6	AO - R18	\$45,000 - \$51,200
6	AO - R21	\$49,100 - \$56,000
2	AO - R24	\$53,600 - \$61,300
5	ML3/4	\$66,300 - \$73,000

We also found there is a trend for BCM Advisors to take on a greater role in risk management, security and emergency response management. These expectations should be clarified, and guidelines, training and support should be offered. In addition, where appropriate, these expectations should be reflected in the scope, impact and responsibilities of the job description and be commensurate with the classification.

Resources

In most ministries, resources targeted to BCM, (see Table 2), are not sufficient given the scope, expectations and policy requirements, combined with the labour intensive nature of BCM activities. Inadequate resources impact on the level of BCM maturity that an organization can achieve and can lead to non-compliance with core policy.

Table 2 – Estimated Percentage of BCM Advisor Time Allocated to BCM

Number of Ministries	Est. % of BCM Advisor Time Allocated to BCM
3	=< 10%
11	11% to 50%
5	> 50%

There is a need to define how much time is needed to adequately manage BCM, in particular, the resources needed for BCP development, exercising and updating.

⁵ Effective April 1, 2007

We found that ministries with at least one dedicated staff member demonstrated a higher level of maturity. All ministries should consider dedicating at least one full time equivalent to BCM coordination. Ministries with one or more mission critical areas should have even greater capacity to ensure effective and efficient recovery strategies are in place.

Common BCM

There are limited opportunities to achieve economies of scale when each ministry is managing BCM independently. An alternative approach could involve a centralized services model where BCM resources are coordinated, similar to IT and real estate services. This could allow development of a higher level of specialized knowledge.

As well, a basic BCP template could be developed for finance, administration, human resources, IT and other “generic” functions. A moderate amount of ministry customizing could then ensure appropriateness. This could streamline and standardize the process and enhance efficiency and effectiveness.

Recommendations:

(8) It is recommended that EMBC, in conjunction with the BC Public Service Agency and ministries:

- **define and analyse the time needed to adequately manage BCM; and**
- **assess the classification level of staff responsible for coordinating ministry-wide BCM programs.**

(9) It is recommended that EMBC assess the potential and practicality of:

- **coordinating BCM resources following a centralized model; and**
 - **developing a common BCP for “generic” activities that take place in all ministries.**
-

1.6 Monitoring Progress

Within the majority of ministries, monitoring of BCM activities is largely informal and carried out in response to the requirement to report a few key activities semi-annually to the EMBC.

In some cases, status reports are prepared for ministry executive on a regular basis. Activities monitored tend to be limited to reporting requirements.

Regular and routine monitoring provides control, direction and guidance and serves to promote real progress towards the achievement of objectives. Implementing a monitoring approach also decreases the risk that issues influencing BCM activities may not be dealt with in a timely way. A formal monitoring strategy should be part of the overall BCM program within all ministries.

Recommendation:

(10) It is recommended that ministries establish and implement a structured approach to the monitoring of BCM progress.

2.0 Policy Compliance

We reviewed the level of compliance of BCM processes within the ministries with government core policy.

We determined whether ministries had identified and prioritized their essential services following the completion of annual risk analysis and BIA, if risk mitigation strategies and treatments had been developed and critical dependencies had been identified as elements of business continuity. We also examined whether BCPs had been exercised and updated. Finally, we reviewed the status of reporting of BCM activities and whether results are being used to evaluate ministry level BCM programs leading to improvements and higher maturity levels across government.

Overall, we found that compliance with core policy on BCM is relatively low across government and there is a risk to continuity of key BC Government services in the event of a major emergency. The criteria used in our assessment are shown in Appendix A. In our assessments, summarized in Appendix C for each ministry, we scored situations where there was only partial compliance, as not met. However, we have provided, under separate cover, more detailed information about our maturity assessments, the strengths and areas for improvements to each ministry.

2.1 Risk Analysis

Core policy requires that an annual strategic risk analysis of ministry business objectives be conducted to identify business, program and operational risks that could be impacted by a business interruption.

We determined that six of the 19 ministries have completed a strategic risk analysis of ministry programs and services as part of the identification of essential services.

All ministries recently completed an informal ministry-wide risk ranking based on current knowledge, resulting in an updated BCP ranking, using EMBC criteria for the identification of essential services. A true risk analysis has not been conducted in most cases. However, we found that a level of consultation involving key ministry staff has taken place resulting in a good “feel” for ranking based on knowledge of the business area and experience.

As stated in Section 1.2, the requirement to conduct an annual risk analysis may be excessive. It may be more meaningful to review key risks annually and complete a risk analysis following a significant change. These reviews should consider, at a minimum, risks/threats, validating existing controls, determine management’s risk tolerance and recommending additional mitigation strategies.

Recommendation:

(1) It is recommended that ministries review key risks annually and conduct risk analysis following significant changes. These reviews should consider, at a minimum, risks/threats, validating existing controls, determine management’s risk tolerance and recommending additional mitigation strategies.

2.2 Business Impact Analysis

Core policy requires that a comprehensive ministry-wide BIA be completed on an annual basis as well as when significant change has taken place.

The purpose of the BIA is to ensure that critical services are identified and prioritized in order to reduce the likelihood and impact of a business interruption. The BIA differs from risk analysis which is used to identify issues that may arise and the controls in place to mitigate those issues.

BIA serve as the foundation for the development of functional BCPs as they assist in determining key business functions and in identifying critical dependencies, recovery time objectives, key recovery resources and requirements.

Seven of the nineteen ministries are in the process of carrying out, or have completed, a BIA. We were advised most ministries considered BIAs too onerous and overly complex. Given this feedback, an abbreviated version of BIA may be considered more efficient and effective.

The streamlined BIA could focus on the identification of key business functions, worst case impacts, and the critical interdependencies of business functions, leading to recovery timelines and minimum acceptable resource requirements. Another option is to conduct BIAs only after a significant change, including organizational change. Ministries should ensure that business impact reviews take place by establishing controls: assigned responsibility, targets, plans, dates, outcomes and upward reporting of results achieved.

Recommendations:

(12) It is recommended that EMBC streamline the BIA process (to focus on the identification of key business functions, worst case impacts, and the critical interdependencies of business functions) or require that they be completed only after significant change.

(13) It is recommended that ministries establish controls to ensure business impact reviews are conducted when required.

2.3 Essential Services

Core policy requires that essential services, programs and operations within all ministries are priority-ranked based on the results of both the risk and business impact analysis. Further, relevant criteria should be used to identify key business processes and services and mission critical business areas.

As stated earlier, seven of the 19 ministries are conducting, or have completed, either a comprehensive risk analysis and/or BIA leading to the identification of essential services.

Within the majority of the balance of the ministries, essential services, including mission critical and business priorities, have been identified, although through a consultation process and not through detailed risk analysis or BIA. This creates the risk that the identification of mission critical functions and business priorities may not be accurate or complete for all ministries.

We did find that ministries are aware of relevant risk criteria, (i.e. loss of life, personal hardship to citizens, major environmental damage, significant loss of revenue, loss of a major business function), although the interpretation of these criteria may be varied. The ministry BCM committee meetings, ministry executive and IEPC oversight act as controls to mitigate against the risk that non-relevant criteria or different interpretations of criteria are used.

2.4 Risk Mitigation Strategies and Treatments

Core policy requires that risk mitigation strategies be developed as part of the risk assessment exercise to reduce the probability of a business interruption, and risk treatments be developed to support timely and effective business recovery.

While eight ministries have taken steps to mitigate risks to business interruption, we found that policy requirements are confusing and the BCM Guidelines are unclear, leading to a lack of understanding of this policy. Most staff interviewed believes risk mitigation is integrated in BCP recovery strategies, rather than strategies to reduce the risk of an interruption.

We found that risk mitigation strategies need to be formalized, (except for one instance where disaster recovery plans for IT systems have been drafted to mitigate risks to interruption). At this point, the majority of strategies entail key staff having Desktop Terminal Services (DTS) access at home, and blackberries or cell phones to facilitate working from home.

Risk plans are typically integrated in BCP recovery strategies that may vary in adequacy depending on the business function ranking and experience within the business unit, and level of exercising or testing they have undergone.

EMBC may need to further clarify this policy and provide examples or guidelines for ministries to follow. Please see our recommendation on this topic in Section 1.2 Policies and Procedures.

Wide Area Event

We were advised that in a wide area disaster, major roadway routes, or any network-type road, may be closed to traffic except for the restricted and limited use by pre-authorized personnel and responders. Some routes are pre-designated as a “Disaster Response Route” (DRR) and only authorized personnel having specific access badges will be allowed use (although any route, at the time of disaster, may be restricted).

Similarly with telephones, authorized personnel require “Priority Access Dialling” (PAD), which gives them priority access to available phone line dial-tones. Those without PAD may experience loss of dial tone and phone use.

We were advised a few ministries have been working toward updating and securing PAD privileges for communications, (however, as it is an older technology, an alternative to PAD may also have to be found), although the same is not being done for DRRs, other than for emergency personnel and some government officials.

In a wide area event, physical access to Ministry Operations Centres (MOCs) and to 4000 Seymour may be impacted and recovery might be delayed should the DRRs be closed to general use. To address this risk, there should be a coordinated effort to secure access badges for MOC members and other key government personnel.

Recommendation:

(14) As part of risk mitigation, it is recommended that EMBC undertake a coordinated effort to secure DRRs access badges for MOC and other key government personnel, such as key staff at Workplace Technology Services (WTS).

2.5 Critical Dependencies

Core policy requires that internal and external dependencies that will be involved in the delivery of essential services be identified and management strategies be developed.

We determined that seven of the 19 ministries have identified and updated the critical internal and external dependencies necessary to ensuring an effective and efficient business recovery.

We also found that current guidelines for identifying critical internal and external dependencies and for developing mutually supportive strategies to aid in recovery are inadequate. As a result, ministry staff are unclear as to how to effectively address this policy requirement.

The identification of critical dependencies is an essential component of sound business continuity planning necessary to address recovery requirements. For example, recovery strategies may include arrangements for key contractors to provide ongoing services, key vendors to acquire needed resources from, and ongoing support to high risk clients and agents of government. This component is critical to successful recovery efforts and staff need to ensure key dependencies are accurate and current. Including those upon which the business area is critically dependent in exercises, or by ensuring they have effective BCPs, can assist in this.

Ministry staff may have a good idea of their critical dependencies, however what is less clear is what to do with those dependencies, that is, how to develop mutually supportive strategies that address recovery requirements.

There is some concern that staff in those business areas that are central to a recovery effort (i.e. WTS, Provincial Emergency Program) may have to spend time recovering their own business activities rather than on their emergency role. In these cases, the business areas may want to consider having an alternate or dedicated recovery team to mitigate this risk. Please see our recommendation on this topic in Section 1.2 Policies and Procedures.

Recommendation:

⁽¹⁵⁾ It is recommended that:

- **EMBC develop examples or guidelines for ministry strategies to ensure the functional availability of their identified critical dependencies; and**
 - **Ministries develop mutually supported strategies based on the guidelines developed by EMBC for critical dependencies.**
-

2.6 Business Continuity Plans and Exercising of the Plans

Core policy states that BCPs and procedures to support the availability of essential services be prepared in accordance with provincial standards and guidelines and be exercised and updated at least annually.

We found that only two of the nineteen ministries had mostly or fully updated BCPs in place for essential services and not all ministries have developed BCPs for mission critical or business priority areas, and most BCPs are not based on a wide area emergency. No ministry is fully compliant with the policy requirement to exercise and update BCPs annually. Most have not adequately resourced this activity (see discussion in Section 1.5), some have focused on exercising the MOC and others have chosen to focus on mission critical exercises.

All ministries are aware of the need for BCPs for mission critical functions and top business priorities at a minimum, although progress is mixed. Some mission critical BCPs are fully prepared and updated, others are in need of updating, and some are yet to be developed.

In other cases, the BCP is lacking the identification of an alternate site, recovery team members may not be aware of their roles and responsibilities, and recovery strategies may not be adequate. As well, Service Level Agreements (SLAs) between ministries and WTS which include recovery requirements for key IT systems have not been developed.

Most recently, ministries are engaged in a process of updating BCPs to match the new template introduced by EMBC in 2006 and most ministries plan on having new or updated BCPs in line with the new template this fiscal year for all mission critical and/or business priority functions.

We found there is a need to keep the business continuity planning process simple and streamlined in order to increase buy in across government. In addition, ministries need to focus on mission critical areas first, then key business areas, and then their other business areas.

Exercises

Where BCPs have been prepared, not all are reviewed annually or even regularly, creating the risk that the plans may not be functional. BCP exercising is essential to ensuring an efficient and effective set of recovery strategies by incorporating “lessons learned”. Ministries should have a formal exercise/test plan that consists of tabletop exercises, simulations, alternate site tests and communications (contact list) tests.

Wide Area Event

Most BCPs are not based on a wide area emergency or all-hazards approach, rather they tend to be predicated on the basis of a site specific interruption. As a result, the recovery strategies may not be adequate or even feasible in a wide area event situation. For example, the primary alternate site may be in too close proximity to the normal operation. Current literature on business continuity strategy suggests that alternate sites should be as far away as necessary from the principal operating site so as to avoid being subject to the same set of risks.

Also in the event of a wide area event, there may be lack of available alternate sites in Victoria and/or the Lower Mainland. A coordinated approach to identifying and securing alternate sites across government is needed and reinforces the need for a government wide BCP.

We also determined that information systems recovery timelines, as currently identified in mission critical BCPs, may not be achievable in the event of a wide area disaster. For example, in the event of a wide area disaster, the WTS’ recovery time objective for IT systems may be six to seven days, which may be different from what the ministries’ plans assume.

Recommendations:

(16) It is recommended that ministries:

- **in developing BCPs, focus efforts on mission critical areas first, business priority areas second, and then their other key business areas in order of priority;**
- **develop BCP recovery strategies based on worst case scenarios;**
- **establish a formal exercise/test plan that consists of tabletop exercises, simulations, alternate site tests and communications (contact list) tests; and**
- **ensure exercise results are incorporated and used to update BCPs.**

(17) It is recommended that EMBC identify a government wide set of critical business priorities and the order in which related IT applications must be recovered, along with alternate sites and resource requirements, to ensure effective and efficient recovery.

2.7 Reporting of Progress and Results

Core policy requires that the number and type of exercises completed, the training conducted and the status of ministry-wide BCPs be reported semi-annually to EMBC. Furthermore, the results reported should clearly indicate the status of BCM progress and should be used to evaluate the program and inform necessary program modifications.

We found that there is a high level of compliance with the semi-annual requirement to report BCM activities. However, most ministries' reporting processes are informal and ad hoc creating the risk that information is inaccurate and incomplete. In addition, most ministries follow a minimalist approach and activities monitored and reported tend to be limited to EMBC reporting requirements: training, exercising and BCP status. Further, there is no quality assurance on this information.

Currently the results reported indicate the status of the following activities:

- whether essential services, that are mission critical and business priority areas, have been identified;

- the percentage of current BCPs developed for those business areas;
- percentage of BCPs that have been tested or exercised in the previous six months;
- whether an MOC has been established and exercised in the previous six months; and
- whether a BCM Advisor to provide guidance to business areas has been assigned.

Data Analysis

Semi-annual reports compare previous period results of each ministry with the current period. The reports are aggregated by the EMBC and used to identify issues, priorities and recommendations which are submitted to ministry executive across government.

For example, previous period results identified the priority for ministries to develop and/or update BCPs for essential services, current results identify the need to exercise and evaluate those plans, and next year the priority may be on assessing the functionality of BCPs, focusing on key elements such as alternate sites arrangements, critical dependencies and recovery strategies.

We were advised that EMBC is unable, due to resource constraints, to conduct follow up or quality assurance of results being reported by the ministries and agencies, and the information is not verified. For example, the percentage of BCPs updated and exercised may be overstated.

Inaccurate information paints an inaccurate picture of BCM status and results in a false sense of security. For example, ministry executive may be under the impression that BCPs are functional when they are not.

As recommended in Section 1.6, it would be beneficial for ministries to have a process to monitor BCM activities and progress, which should also enhance the accuracy of the information reported.

2.8 BCM – Emergency Response Management Linkages

Core policy requires that BCPs be coordinated with security management and emergency preparedness and response plans.

MOCs are a key linkage between business continuity management and emergency management. Under the BC Emergency Response Management System, each ministry has a MOC organization and plan providing for an overall ministry-wide response to a crisis, including business disruptions. MOC plans describe roles and responsibilities of key personnel, key actions to be carried out, and checklists to enable ministry staff to fill a critical position. MOCs also provide central support to BCPs by obtaining and allocating resources to support activated BCPs.

Linkages between emergency management and business continuity include disaster recovery plans, common Occupational Safety and Health Committee (OSHC) representatives, building evacuation and building security committee representatives and BCM Advisors who are also responsible for emergency management activities. In some ministries, the MOC Director is also the Recovery Manager which further facilitates the linkage.

We determined that 15 of the 19 ministries have, or are developing, MOC structures and plans that can serve to provide a direct linkage to BCP recovery efforts. Inadequate linkages between emergency management and business continuity create the risk of communication gaps between emergency management representatives and recovery managers which could impact on the security of staff and assets, on coordinated recovery efforts and may result in a delay in the recovery response.

Recommendation:

(18) It is recommended that ministries ensure BCPs and MOC plans contain clear and direct lines of communications and coordination between MOC representatives and recovery team members.

3.0 Pandemic Planning

We assessed the level of pandemic awareness and whether BCM programs and plans across government incorporate pandemic planning to mitigate the impacts of a pandemic hazard (see Appendix C for a summary of results by ministry).

Overall, we found that the awareness of the need to develop pandemic planning scenarios is rapidly increasing across government, along with the coordination and consolidation of planning issues and strategies. However, several key policy issues need to be addressed in order to facilitate ongoing, effective planning within ministries.

Eight of the nineteen ministries have not considered pandemic scenarios as yet. Any existing pandemic related activities are typically driven by the OSHC and are limited to increasing general awareness and prevention.

Generally speaking, ministries have not prioritized pandemic planning as a unique and critical activity. As a result, key staff have not been identified and supporting strategies such as cross-training and redeployment are not yet developed. However, the awareness of the importance of pandemic planning is increasing and most ministries intend to undertake pandemic planning over the next year.

Pandemic
Policies

The Emergency Program Act compels ministries to consider all-hazards planning, including pandemic planning. The new Public Health Act, not yet enacted, has been created to address public health issues related to the prevention and control of pandemic outbreaks. The Act provides the health sector with tools and other measures to effectively respond to an emergency such as a pandemic outbreak. While directed more towards local government and the general public, under the Act, the Minister now has the power to order Ministries to have a pandemic plan, to deliver on that plan, and to modify that plan.

The Provincial Pandemic Steering Committee has been created and leads all aspects of pandemic preparedness in BC. There are also a number of working groups and subcommittees working on various pandemic issues. With the efforts of these groups, the awareness of pandemic impacts is increasing and materials have been produced to advance the development of pandemic plans. However, there are still many unknowns that impact on the scope and elements of an effective pandemic plan. For example, there is no accepted estimate for forecasting probable staff absences - estimates range from as high as 80% to as low as 20%. We were advised that ministries are awaiting direction from central agencies on strategies for incorporating pandemic plans within BCPs, and on the procurement of supplies and in dealing with sick staff in the workplace.

The capability for staff to work from does exist, for example through Desktop Terminal Services, DTS, however there are a number of policy issues that must be addressed to enhance recovery strategies in the event of a pandemic. Policies and procedures around staff leave, compensation and working from home are not yet established. These policies should be identified in advance, and in so doing can perhaps “pave” the way for further pandemic planning.

Pandemic plans which include, at a minimum, a loss of key personnel strategy and the identification and deployment of staff in non-mission critical areas to mission critical areas should be included as an appendix to the BCP template, to encourage their development and standardization.

Recommendation:

(19) It is recommended that EMBC:

- **work with other key stakeholders to address the significant policy issues (i.e. staff leave, compensation for leave, working from home) that will enable ministries to develop meaningful plans;**
 - **provide guidelines and examples to assist ministries in developing pandemic plans (i.e. examples of key personnel strategies, deployment of staff from non-critical areas, etc.); and**
 - **include pandemic plans as an appendix in the existing BCP template.**
-

4.0 Mission Critical BCPs

While Sections 1 to 3 of this report looked at the overall accountability and processes in place for BCM, this section examines, in detail, eight BCPs for business areas that are considered mission critical for the government as a whole. Some of the topic areas are the same (i.e. roles and responsibilities, interdependences, BCP exercising, pandemic planning). However, this section evaluates to what extent the eight mission critical BCPs adequately address those topic areas.

Our sample BCPs were chosen from a list, created by ministry representatives for the IEPC, of the business areas considered as mission critical for the government. As a result of security and confidentiality concerns expressed to us, and the refusal of one area to allow us access, we were unable to review two of the ten selected BCPs, therefore, our findings are based on the following sample of eight mission critical services:

- Ministry of Agriculture and Land's Animal Health Centre;
- Ministry of Children and Family Development's Children in Care/Child Protection Program;

- Ministry of Employment and Income Assurance's Payments to Clients;
- Ministry of Finance's Provincial Treasury Operations;
- Ministry of Forest's Fire Control Operations;
- BC Ambulance Dispatch Centre;
- Ministry of Public Safety and Solicitor General's Provincial Emergency Program; and
- Ministry of Transportation's Highways Maintenance Program.

We assessed whether these BCPs for mission critical business services are in compliance with core policy and meet accepted guidelines and standards (see Appendix A for list of criteria). We examined the level of coordination with emergency response plans and procedures, the clarity of roles and responsibilities of key recovery team positions, and the functionality of recovery strategies.

We also determined whether plans had been exercised and updated. Lastly, we assessed standardization and if plans contained adequate information in the form of tools, appendices and checklists.

Overall, we found there was a low level of compliance with core policy requirements, guidelines for developing and maintaining BCPs were not consistently followed, and pandemic plans, although considered, have not yet been integrated. We have provided, under separate cover, more detailed information about our assessments, the strengths and areas for improvements, to each ministry to help them focus their efforts for improved compliance where it is most needed.

4.1 BCP - Emergency Response Management Linkages

Core policy requires that BCPs be linked to and coordinated with ministry security management and emergency response processes such as MOC plans and procedures. In addition, BCPs should also consider wide scale emergencies.

We found that neither functional linkages between business continuity and emergency response nor consideration of wide scale emergency scenarios were adequately addressed in the sample of plans reviewed.

Four of the eight plans did not demonstrate clear linkages to MOC plans and procedures. We found that MOC Directors and alternates were not always identified in BCPs, and in some cases, there was no clearly defined communication channel between evacuation and recovery.

Clear BCM – emergency response management linkages ties business continuity to broader emergency management program goals and objectives, links business continuity to the immediate and short-term effects of an emergency (response/recovery), and helps to ensure that recovery managers have an understanding of the emergency response procedures. The recommendation in Section 2.8 addresses this issue.

The high risk of earthquakes and tsunamis on the west coast require a wide scale emergency approach to business continuity planning, however four plans did not consider wider-scale emergencies within their recovery strategies. In addition, five of eight BCPs identified alternate sites within a close proximity to the business unit's facilities.

As discussed in Section 2.6, site specific plans could impact the effectiveness and efficiency of recovery operations in the event of a wide-scale emergency as they may fail to address wide area interruptions. For example, primary alternate sites located within a few blocks of the normal operation and the accessibility of key recovery staff are likely to be impacted by a major earthquake.

4.2 Roles and Responsibilities

BCP guidelines suggest that roles and responsibilities for recovery team and MOC members be clearly defined and that BCPs contain contact lists and notification processes to communicate with key personnel to ensure timely sharing of information.

In our review, we determined that roles and responsibilities for key recovery personnel were not always clearly defined or properly designated, however five of the eight BCPs did include adequate notification processes necessary to communicate with key personnel in the event of a business interruption.

Specifically, we found the following examples:

- the MOC director and/or alternate were not identified and, as a result, the recovery manager may not know who to contact if the MOC is activated;
- some cases where recovery team members were identified, however roles and responsibilities were not clearly laid out; conversely, cases where roles and responsibilities were clearly defined but recovery team members were not identified and assigned to a role;
- the recovery team was based on the available personnel at the time of the business interruption; and
- due to staff changes, recovery team positions may not be current.

Poorly defined roles and responsibilities impact on the effectiveness and efficiency of recovery. For example, key personnel may not be contacted on a timely basis informing them of a business interruption and the need to initiate recovery strategies.

Recommendation:

⁽²⁰⁾ It is recommended that ministries ensure the roles and responsibilities of the recovery team are clearly defined and staff are assigned to recovery team positions and are aware of their roles and responsibilities.

4.3 Functionality of Recovery Strategies

Policies and guidelines state that recovery strategies identify mission critical business processes and identify key recovery objectives and the resources necessary to ensuring their timely and successful recovery. Further, multiple copies of BCPs should be maintained in a secure, offsite location.

We found that recovery strategies within the BCPs that were reviewed were incomplete and did not include adequate documentation and detail, potentially limiting their functionality for both site specific and wide area events. However, the majority of areas reviewed did maintain extra copies of the BCPs offsite in a secure location.

Mission Critical Processes

Five of the eight plans identified and prioritized essential business processes.

Prioritization of business functions is an integral part of business strategic planning, mitigating the risk of a business interruption. The identification of essential business processes aids the business unit in effectively responding to a business interruption and efficiently restoring business operations. In addition, the recognition of essential business processes ensures continuation of essential programs, services and operations for its stakeholders, mitigating the loss of public trust and confidence.

Recommendation:

(21) It is recommended that ministries ensure business functions are identified and prioritized in BCPs.

Maximum Allowable Outages

Four of eight BCPs defined the maximum allowable outage (MAO), or recovery time objective, for their mission critical business processes.

The objective of the MAO determination is to understand the point in time when an interruption creates a significant negative impact on the organization and/or its users. A MAO defines the time that mission critical processes must be recovered after an interruption in order to mitigate the consequences. MAOs thus are an integral element in recovery planning.

Recommendation:

(22) It is recommended that ministries ensure MAOs are identified and assigned for each mission critical business process in the BCP.

Alternate Sites

Five of the eight plans identified alternate sites. Two of those plans identified alternate sites located outside the lower mainland to accommodate business continuity in the event of a widespread disaster. Most alternate sites were not outlined in a MOU between the mission critical business area and the alternate site.

Identification of alternate sites supports timely recovery of business activities. Primary alternate sites close to the normal operation, facilitates the timely relocation of recovery staff in site specific or limited area disaster. However, plans should also consider a wider emergency and should identify a secondary alternate site located a distance from the normal operation. As well, as discussed in Section 1.2, alternate site arrangements should be outlined in an MOU which is incorporated within the BCP.

Recommendation:

(23) It is recommended that ministries:

- **ensure primary and secondary alternate sites are identified within BCPs; and**
 - **identify a secondary alternate outside their geographical area to mitigate risks to recovery in a wide area event.**
-

Critical
Dependencies

It is important for business groups to understand who their key partners are in order to clearly define the business unit's recovery requirements and what their working relationships with others are, as well as to ensure that alternate sites will work for them.

Only one of eight BCPs demonstrated a current and comprehensive listing of critical dependencies. The remaining BCPs failed to adequately identify key internal and external dependencies such as critical government contacts, IT partners, Federal and local authorities, emergency responders (police, fire), contractors, clients and suppliers.

Recommendation:

(24) It is recommended that ministries ensure critical dependencies are identified, included in BCPs and included in exercises (or tested by other methods).

Recovery
Resources

Three of the eight plans reviewed contained highly functional recovery strategies to ensure business continuity. However, the remaining five plans did not contain adequately documented recovery strategies necessary to ensuring business continuity of the mission critical business. Minimum recovery resources such as staff, supplies, equipment, vital records and hardware/software were not adequately specified or quantified, potentially impacting the timeliness of recovery strategies. We also found inadequate documentation of specific actions and steps necessary to recover from a business interruption.

The identification and documentation of specific resource requirements and procedures for recovery from a business interruption are essential to ensure that the BCP will function.

Recommendation:

(25) It is recommended that ministries ensure minimum recovery resource requirements and procedures are identified and addressed in BCPs.

Re-establishing
Systems and
Data

Three of the eight BCPs reviewed contained adequately documented procedures for the re-establishment of computer systems and subsequent data. Procedures for one area were documented, while another has procedures in place that include a back-up server outside the Lower Mainland, but neither were integrated into the BCP.

Six mission critical services rely on WTS for the re-establishment of all or some of their IT systems while one relies on it's own IT service provider. The eighth mission critical business area has a backup server in place and relies only minimally on WTS. However, there are no SLAs in place between ministries and WTS to ensure the timely and effective recovery of critical systems. See also the discussion about wide area events in Section 1.3.

Well documented strategies, including the back up of data, help to ensure the timely restoration of IT systems leading to business recovery.

Recommendation:

(26) It is recommended that ministries:

- **prioritize, identify and document procedures/processes in BCPs on how to restore IT systems; and**
 - **develop SLAs between ministries and IT service providers, and incorporate these into the BCPs.**
-

Multiple Copies

Of the BCPs reviewed, six business units maintained copies off-site in a secure location in the form of hard copy, discs or memory sticks. In addition, we found that copies of BCPs are being placed on shared drives for accessibility.

Recovery team members require access to the BCP in order to contact key personnel and interdependent stakeholders when an event occurs after business hours. Plans should be kept off-site to ensure they are readily accessible if access to the business unit building is denied. Also, plans should be adequately secured. For example, plans stored on memory sticks should be encrypted.

In addition, plans should contain a distribution list to identify individuals who have a copy of the plan and who should receive updates.

Recommendation:

⁽²⁷⁾ It is recommended that ministries:

- ensure all recovery team members maintain a copy of the BCP off-site in a secure location;
 - encrypt copies of BCPs contained on memory sticks or other media; and
 - ensure up-to-date distribution lists are contained in BCPs.
-

4.4 Exercising and Updating

Core policy requires BCPs to be exercised annually to confirm effectiveness as well as to ensure recovery staff are familiar with strategies and procedures. The BCP should outline responsibilities and processes for exercising, and should specify when it was last exercised, what type of exercising was conducted as well as a critique and recommendations for changes arising from the exercise.

We determined the majority of BCPs reviewed were not recently exercised or updated and recovery strategies may not be effective, as only one of the eight BCPs contained a maintenance program that identified exercise strategies, timelines, exercising and revision logs.

Ministries should establish a maintenance program to ensure their BCPs are valid and effective.

Recommendation:

⁽²⁸⁾ It is recommended that ministries:

- ensure BCPs are exercised annually and results are used to update the BCP; and
 - incorporate an exercise log and a Record of Amendments into BCPs.
-

4.5 Pandemic Component

Of the eight BCPs reviewed, none contained a pandemic plan component, creating a risk to effective recovery in a pandemic event.

Two of the eight business units have a draft pandemic plan. Another two have identified pandemic planning within work plans and as part of their BCP updating process.

As discussed in Section 3.0, pandemic planning should be undertaken, pandemic scenarios should be considered in the development of recovery strategies, and pandemic plans should be developed and integrated within BCPs to ensure mission critical services continue to be available in the event of a pandemic outbreak.

Recommendation:

⁽²⁹⁾ It is recommended that ministries develop and incorporate pandemic plans within BCPs.

4.6 Standardization

Guidelines developed by EMBC suggest that BCPs contain standard tools and formats such as key procedures, appendices and a common format in order to ensure quality, consistency and adequacy of details.

Overall, the majority of BCPs reviewed did not follow EMBC guidelines and standards necessary to ensure consistent and comprehensive approaches to BCP development across government. This may be due primarily to the relatively recent introduction of the new model, however we were advised some ministries may find it too onerous to update.

Two of eight BCPs adapted to the EMBC template, one is in the process of updating and revising its existing BCP into the EMBC template, while two ministries have identified strategies which include revising their BCPs to the EMBC template.

The standard approach encouraged by EMBC can assist effective decision making and minimize service disruption. As well, standardization encourages exercising and development and promotes continuous improvement.

Recommendation:

⁽³⁰⁾ It is recommended that ministries develop or update BCPs to follow the EMBC standard template.

5.0 Case Study – Sussex Building Flood

To evaluate the practical effectiveness of a BCP, we reviewed an incident involving a business interruption and recovery effort. We have highlighted the operational issues and lessons learned to illustrate the importance of BCM and of having a functional BCP in place.

The incident involved the Ministry of Attorney General in the Sussex Building on January 11, 2004, where a flood occurred as a result of a burst pipe on the 11th floor.

5.1 Summary

Timing and preliminary response/impact: at 6:30 am, the security patrol found no problem. At 8:15 am, water was reported dripping in the lobby. At 8:40 am, after checking all 11 floors, the ministry BCP advisor and Assistant Deputy Minister were phoned. Action was taken to contact restoration contractors. The MOC Director called a meeting for 1:00 pm to review actions, assess progress and determine next steps. Some staff had to be physically relocated for one or two days. Wet files were not available for two weeks.

Damage: pipe fittings, carpets, ceiling tiles, walls, baseboards, furniture, two computer monitors, one phone and one copier were damaged by water. Over 20 boxes of records had to be freeze dried. Related costs for repairs and replacement, including staff overtime, were \$21,100.

Successes noted:

- effective decisions made;
- key support groups called out;
- branch staff notified;
- branch recovery teams activated;
- alternative space found;
- records sent for freeze drying;
- information sharing and status meetings organized; and
- MOC Director prepared for the media.

The following lessons were learned and have been integrated within the ministry's BCP template and/or incorporated into practice:

- leadership – define roles and responsibilities clearly and educate staff on the MOC structure and BCP procedures;
- detection – increase the scope of night patrol rounds and install water flow detection monitoring;
- contact lists – keep information up to date for staff, key support groups and related resources;
- health and safety – develop procedures for reporting unsafe conditions and ensuring the workplace is safe;
- critical records (pre-event) – identify applicable records, prepare a floor plan, store securely (close cabinets, clean desk and clean floor policy) and back up vital information;
- critical records (post-event) – assign staff to search for wet records, document records going offsite and reconcile to documents returned;
- furniture and equipment – assign staff to assess damage, do not touch phones, computers and equipment, and lift furniture off the floor as soon as possible;
- access – ensure all offices are keyed to a master key and test access cards for after hours access;
- managing contractors/visitors – assign staff to monitor contractors work and have check-in/check-out procedures; and
- general – personal items are not covered for loss, take photos.

This case study illustrates three points relevant to this review:

1. even small events can be disruptive and costly – i.e. wet files were not available for two weeks, direct costs were \$21,100;
2. having a BCP in place allowed key support staff to be notified and effective decisions to be made quickly; and

each emergency presents new lessons that can be incorporated into BCPs to reduce damage and enhance recovery efforts during future emergencies.

Appendix A – Criteria Used in Assessment

BCM Accountability and Compliance with Core Policy within ministries were assessed based on the following criteria:

Criteria	Report Section
Established BCM Objectives and Performance Measures	1.1
BCM Strategies / Action Plans in Place	1.1
Awareness of Core Policy and Procedures	1.2
Clearly Defined Roles and Responsibilities	1.3
Training / Awareness / Communications Strategies in Place	1.4
Capacity / Authority Issues Addressed	1.5
Monitoring of BCM Activities	1.6
Annual Ministry-Wide Risk Analysis Conducted	2.1
Annual Ministry-Wide Business Impact Analysis Conducted	2.2
Essential Services Identified	2.3
Risk Mitigation Strategies/Treatments Developed	2.4
Internal/ External Dependencies Identified/Updated	2.5
Business Continuity Plans Prepared/Exercised	2.6
Reporting of BCM Results and Assessment of Outcomes	2.7
BCM / Emergency Response Management Linkages	2.8
Pandemic Planning Undertaken	3.0

BCPs for Mission Critical Business Areas were assessed based on the following criteria:

Criteria	Report Section
Clear BCP / Emergency Response Management Linkages	4.1
Clearly Defined Roles and Responsibilities	4.2
Essential Business Processes Identified / Priority Assigned	4.3
Maximum Allowable Outages Determined	4.3
Identified Alternate Site(s) / Recovery Site(s)	4.3
Critical Interdependencies Identified	4.3
Recovery Resources / Strategies /Procedures Identified	4.3
Procedures for Re-establishing Mission Critical Business Areas Identified	4.3
Multiple Copies of BCPs / Kept Offsite	4.3
Contact List and Notification Process	4.3
BCP Exercising and Updating	4.4
Pandemic Planning Element	4.5
Standardization	4.6

Appendix B – Criteria for Maturity Assessment

High Maturity

The ministry with a high maturity ranking, demonstrated strong executive support for BCM, the establishment of a ministry-wide structure supporting the activity, and staff responsible for BCM had a strong awareness of and compliance with core policy requirements, guidelines and procedures for business continuity planning. BCPs for mission critical processes and business priority areas were developed and updated, and testing/exercising was ongoing, with results used to make changes. Monitoring and reporting processes were effective and efficient, and pandemic planning had been undertaken.

Moderate Maturity

Ministries with a moderate maturity ranking also demonstrated strong executive support and a level of coordination within the ministry to ensure progress is made towards BCM objectives, although roles and responsibilities may not be consistently or adequately defined to ensure all recovery staff were clear on their expectations in a business interruption. Compliance with core policy was low, and BCPs for mission critical processes and business priority areas were either under construction or in need of updating. Monitoring and reporting processes were largely ad hoc and pandemic planning may have commenced.

Low Maturity

Ministries with a low maturity ranking typically had a lower level of executive support and BCM may not have been considered a high priority. These ministries exhibited a low level of awareness of policies and guidelines and of roles and responsibilities. Compliance with core policy was also low, and BCPs were either not developed or in need of significant updating. Pandemic planning may have been initiated, although activities to date were limited to those driven by existing Occupational Safety and Health Committees.

Appendix C – Summary of Results by Ministry as at March 2007

MINISTRY:		ARR	AVED	AL	AG	CFD	CSERV	ECDEV	EDUC	EIA	EMPR	ENV	FIN	FOR	HLTH	LCS	PSSG	SBR	TSA	TRAN	COMPLY	NON-COMP	
Report	Business Continuity Management Criteria																						
Section																							
1.1	BCM Objectives and Measures	X	X	✓	✓	✓	✓	✓	X	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	15	4
1.1	BCM Strategies / Action Plans	✓	X	✓	✓	X	X	X	X	✓	X	✓	X	X	✓	✓	✓	✓	X	✓	✓	10	9
1.2	Core Policy and Procedures	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	18	1
1.3	Defined Roles and Responsibilities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	19	0
1.4	Training / Awareness / Communications	X	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	17	2
1.5	Capacity / Authority	X	X	✓	X	X	X	✓	X	✓	✓	✓	X	X	✓	X	X	✓	X	✓	✓	8	11
1.6	Monitoring	X	X	✓	X	✓	X	X	X	✓	X	✓	X	X	✓	✓	X	✓	X	✓	✓	8	11
2.1	Ministry-Wide Risk Analysis	X	X	X	✓	X	X	X	X	✓	X	X	X	X	✓	X	✓	✓	X	✓	✓	6	13
2.2	Ministry-Wide Business Impact Analysis	X	X	X	✓	X	X	✓	X	✓	✓	X	X	X	✓	X	✓	✓	X	X	✓	7	12
2.3	Essential Services Identified	X	X	X	✓	X	X	✓	X	✓	✓	X	X	X	✓	X	✓	✓	X	X	✓	7	12
2.4	Risk Mitigation Strategies/Treatments Developed	X	X	X	✓	✓	X	X	X	✓	X	✓	X	✓	✓	✓	✓	✓	X	X	✓	8	11
2.5	Internal/ External Dependencies Identified/Updated	X	X	X	✓	X	X	✓	X	X	✓	X	✓	X	X	✓	✓	✓	X	X	✓	7	12
2.6	Business Continuity Plans Prepared/Tested	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓	✓	X	X	✓	2	17
2.7	Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	19	0
2.8	BCM / Emergency Response Mgt Linkages	✓	X	✓	✓	✓	✓	✓	X	✓	✓	X	✓	X	✓	✓	✓	✓	✓	✓	✓	15	4
3.0	Pandemic Planning Undertaken	✓	X	✓	✓	✓	X	X	X	✓	X	✓	✓	X	✓	X	✓	✓	X	✓	✓	11	8
	Maturity Level	Low	Low	Low	Mod	Low	Low	Mod	Low	Mod	Mod	Low	Mod	Low	Mod	Mod	Mod	High	Low	Mod			
	Low / Moderate / High																						

For definitions of Low, Moderate and High, please see Appendix B

Appendix D: Recommendations in Priority Order

Priority #	Rec. #	Recommendation
1	4	It is recommended that EMBC review, and if appropriate, revise the mandate and capacity of the central BCM coordinating function to support the achievement of BCM objectives across government.
2	1	To establish an accountability framework for BCM, it is recommended that ministries: <ul style="list-style-type: none"> - incorporate BCM objectives and performance measures in all ministry business plans, and ensure they have updated BCPs for all mission critical areas; - develop strategies in support of BCM objectives and establish formal BCM workplans to achieve those objectives; - ensure appropriate business continuity processes are developed, exercised and updated annually; and - establish a senior management committee to oversee BCM in their ministry.
3	2	To clarify policies and procedures, it is recommended that EMBC: <ul style="list-style-type: none"> - clarify policy as to what constitutes risk mitigation strategies, treatments and recovery strategies; - provide additional guidelines on the identification and management of critical dependencies; and - add policy requirements for: <ul style="list-style-type: none"> ➤ ministries to enter into a formal MOU detailing all alternate site arrangements and the necessary recovery resources; and ➤ ministries to have a formal exercise/test plan for mission critical business functions.
4	15	It is recommended that: <ul style="list-style-type: none"> - EMBC develop examples or guidelines for ministry strategies to ensure the functional availability of their identified critical dependencies; and - ministries develop mutually supported strategies based on the guidelines developed by EMBC for critical dependencies.
5	3	To enhance response to wide area events, it is recommended that EMBC: <ul style="list-style-type: none"> - develop a government wide business continuity strategy to continue mission critical government programs operating; - clarify the roles and respective mandates of the inter-ministry committees, ministry staff and business recovery team members; and

Priority #	Rec. #	Recommendation
		- develop and communicate a set of roles and responsibilities for mission critical staff.
6	17	It is recommended that EMBC identify a government wide set of critical business priorities and the order in which related IT applications must be recovered, along with alternate sites and resource requirements, to ensure effective and efficient recovery.
7	29	It is recommended that ministries develop and incorporate pandemic plans within BCPs.
8	19	It is recommended that EMBC: <ul style="list-style-type: none"> - work with other key stakeholders to address the significant policy issues (i.e. staff leave, compensation for leave, working from home) that will enable ministries to develop meaningful plans; - provide guidelines and examples to assist ministries in developing pandemic plans (i.e. examples of key personnel strategies, deployment of staff from non-critical areas, etc.); and - include pandemic plans as an appendix in the existing BCP template.
9	12	It is recommended that EMBC streamline the BIA process (to focus on the identification of key business functions, worst case impacts, and the critical interdependencies of business functions) or require that they be completed only after significant change.
10	16	It is recommended that ministries: <ul style="list-style-type: none"> - in developing BCPs, focus efforts on mission critical areas first, business priority areas second, and then their other key business areas in order of priority; - develop BCP recovery strategies based on worst case scenarios; - establish a formal exercise/test plan that consists of tabletop exercises, simulations, alternate site tests and communications (contact list) tests; and - ensure exercise results are incorporated and used to update BCPs.
11	11	It is recommended that ministries review key risks annually and conduct risk analysis following significant changes. These reviews should consider, at a minimum, risks/threats, validating of existing controls, determining management's risk tolerance and recommending additional mitigation strategies.
12	21	It is recommended that ministries ensure business functions are identified and prioritized in BCPs.
13	24	It is recommended that ministries ensure critical dependencies are identified, included in BCPs, and included in exercises (or tested by other methods).

Priority #	Rec. #	Recommendation
14	22	It is recommended that ministries ensure MAOs are identified and assigned for each mission critical business process in the BCP.
15	25	It is recommended that ministries ensure minimum recovery resource requirements and procedures are identified and addressed in BCPs.
16	26	It is recommended that ministries: <ul style="list-style-type: none"> - prioritize, identify and document procedures/processes in BCPs on how to restore IT systems; and - develop SLAs between ministries and IT service providers, and incorporate these into the BCPs.
17	20	It is recommended that ministries ensure the roles and responsibilities of the recovery team are clearly defined and staff are assigned to recovery team positions and are aware of their roles and responsibilities.
18	23	It is recommended that ministries: <ul style="list-style-type: none"> - ensure primary and secondary alternate sites are identified within BCPs; and - identify a secondary alternate outside the geographical area to mitigate risks to recovery in a wide area event.
19	18	It is recommended that ministries ensure BCPs and MOC plans contain clear and direct lines of communications and coordination between MOC representatives and recovery team members.
20	13	It is recommended that ministries establish controls to ensure business impact reviews are conducted when required.
21	10	It is recommended that ministries establish and implement a structured approach to the monitoring of BCM progress.
22	27	It is recommended that ministries: <ul style="list-style-type: none"> - ensure all recovery team members maintain a copy of the BCP off-site in a secure location; - encrypt copies of BCPs contained on memory sticks or other media; and - ensure up-to-date distribution lists are contained in BCPs.
23	28	It is recommended that ministries: <ul style="list-style-type: none"> - ensure BCPs are exercised annually and results are used to update the BCP; and - incorporate an exercise log and a Record of Amendments into BCPs.
24	8	It is recommended that EMBC, in conjunction with the BC Public Service Agency and ministries:

Priority #	Rec. #	Recommendation
		<ul style="list-style-type: none"> - define and analyze the time needed to adequately manage BCM.; and - assess the classification level of staff responsible for coordinating ministry-wide business continuity management programs.
25	5	It is recommended that ministries outline roles, responsibilities, and expectations for management and staff with direct BCM responsibilities in job descriptions and in EPDPs for all recovery team members. These should be consistent with roles defined by EMBC (see recommendation #3).
26	6	<p>It is recommended that EMBC, in conjunction with BCPSA Learning Services:</p> <ul style="list-style-type: none"> - include a BCM training strategy as part of the overall corporate training plan; and - establish BCM as a preferred competency and consider re-configuring the DRII ten-day course.
27	7	<p>It is recommended that ministries draft a ministry level communication strategy which could include:</p> <ul style="list-style-type: none"> - BCM/emergency response management orientation or awareness workshops in conjunction with BCM Awareness Week; - the awareness of the roles and responsibilities of recovery team members; and - guidance to key ministry staff in the event of a wide area disaster.
28	30	It is recommended that ministries develop or update BCPs to follow the EMBC standard template.
29	14	As part of risk mitigation, it is recommended that EMBC undertake a coordinated effort to secure DRRs access badges for MOC and other key government personnel, such as key staff at WTS.
30	9	<p>It is recommended that EMBC assess the potential and practicality of:</p> <ul style="list-style-type: none"> - coordinating BCM resources following a centralized model; and - developing a common BCP for “generic” activities that take place in all ministries.

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
2.	1.	<p>To establish an accountability framework for BCM, it is recommended that ministries:</p> <ul style="list-style-type: none"> incorporate BCM objectives and performance measures in all ministry business plans, and ensure they have updated Business Continuity Plans (BCPs) for all mission critical areas; develop strategies in support of BCM objectives and establish formal BCM workplans to achieve those objectives; ensure appropriate business continuity processes are developed, exercised and updated annually; and establish a senior management committee to oversee BCM in their ministry. 	<p>Standards/Guidelines:</p> <ul style="list-style-type: none"> EMBC to communicate BCM objectives and performance measures to Ministry Executives through the Ministry BCMP Advisors. <p>Ministry Operational:</p> <ul style="list-style-type: none"> Ministry Executive to ensure BCM objectives and performance measures are incorporated in all business plans. Ministry Executive to confirm ADM signoff. BCP status in all mission critical areas to EMBC through existing semi-annual reporting process. Ministry Executive to approve Ministry initiative(s) to establish ongoing BCMP for mission critical areas (i.e. develop, exercise and maintain BCPs). Ministry mission critical business areas to establish and document (in BCPs) mature all-hazard recovery strategies (processes) and exercise to ensure functionality of continued business. Ministry Executive to incorporate BCMP as a standing (at least quarterly) agenda item for executive team meetings. 	<p>EMBC</p> <p>Ministries</p>	<p>July 2008</p> <p>Oct/Nov. 2008</p> <p>Ongoing Next report June 2008</p> <p>Sept 2008</p> <p>March 2009</p> <p>Oct 2008</p>

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
3.	2.	<p>To clarify policies and procedures, it is recommended that EMBC:</p> <p>2.1 clarify policy as to what constitutes risk mitigation strategies, treatments and recovery strategies;</p> <p>2.2 provide additional guidelines on the identification and management of critical dependencies; and</p> <p>2.3 add policy requirements for:</p> <ul style="list-style-type: none"> ➤ ministries to enter into a formal MOU detailing all alternate site arrangements and the necessary recovery resources; and ➤ ministries to have a formal exercise/test plan for mission critical business functions. 	<p>Policy:</p> <ul style="list-style-type: none"> • EMBC to review the policy and clarify: <ul style="list-style-type: none"> ➤ risk mitigation strategies; ➤ (risk) treatments; and ➤ recovery strategies. <p>Standards/Guidelines:</p> <ul style="list-style-type: none"> • EMBC to define terminology and criteria for ministries to identify 'critical dependencies'. • EMBC to develop guidelines to address coordinated management of critical dependencies. • EMBC to develop and communicate standards for portable and off-site BCP storage and distribution. <p>Policy:</p> <ul style="list-style-type: none"> ▪ EMBC to develop and implement policy requirements to formalize explicit agreements for alternate site and recovery resources. ▪ EMBC to develop and implement progressive exercise policy statement document for Ministry mission critical BCPs. 	EMBC	<p>July 2008</p> <p>July 2008</p> <p>June 2008</p> <p>July 2008</p>

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
5.	3.	<p>To enhance response to wide area events, it is recommended that EMBC:</p> <p>3.1 develop a government wide business continuity strategy to continue mission critical government programs operating;</p> <p>3.2 clarify the roles and respective mandates of the inter-ministry committees, ministry staff and business recovery team members; and</p> <p>3.3 develop and communicate a set of roles and responsibilities for mission critical staff.</p>	<p>Strategies:</p> <ul style="list-style-type: none"> • EMBC to identify and develop business continuity strategies to leverage inter-provincial commitments and/or agreements (i.e. Alberta). • EMBC to consult with stakeholders (i.e. Shared Services BC, public utilities) to develop cross government strategy to ensure coordinated management of shared critical dependencies • EMBC to complete Concept of Operations document outlining the government wide-area response to major disruption of critical government services. • IEPC to continue their role of priority ranking for cross government mission critical services. Initial rankings have been approved and released to EMBC. • EMBC to develop a review and maintenance process for IEPC submissions for cross government priority ranking. • EMBC and Shared Services BC to communicate that Business Continuity and Disaster Recovery expectations are incorporated in any Alternative Service Delivery (ASD) or contracted options related to provincial IT services. • EMBC to work with Shared Services BC to complete the development of an interim expanded Minimum Acceptable Resource Requirements (MARR) document and provide the new format to ministries to include in BCP updates. 	EMBC	<p>June 2009</p> <p>June 2009</p> <p>June 2008</p> <p>Ongoing next update Dec 2008</p> <p>July 2008</p> <p>July 2008</p> <p>Completed Dec 2007</p>

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
5.	3.	Continued	<ul style="list-style-type: none"> EMBC and Shared Services BC to develop and implement electronic BCM resource management tool (i.e. Emergency Management Information System (EMIS)) to capture and summarize resource requirements for mission critical services. Further development of the tool will allow government-wide roll-up of ministry BCPs. Shared Services (LCS) to incorporate IEPC ranking and critical dependencies into the electronic BCM resource management tool. EMBC and Shared Services BC to develop formal sequencing of related information technology (IT) and accommodation resource requirements that must be recovered to ensure continuance of mission critical services in a wide area event. EMBC to use approved Concept of Operations document to develop and communicate roles and responsibilities for government-wide response teams and members. EMBC to work with BCPSA to update, modify or develop job descriptions to reflect expectations of new roles and responsibilities for government-wide response. EMBC to work with ministries to ensure government-wide response roles and responsibilities are reflected in job descriptions and/or EPDPs as appropriate. EMBC to update BCMP Advisory Committee Terms of Reference and develop Team Charter. EMBC to identify other related inter-ministry committees and clarify their mandates, roles and responsibilities in the scope of government-wide emergency management. 	<p>EMBC and Shared Services BC</p> <p>Shared Services BC</p> <p>EMBC and Shared Services BC</p> <p>EMBC</p> <p>EMBC/BCPSA</p> <p>EMBC & Ministries</p> <p>EMBC</p>	<p>April 2009 (LCS)</p> <p>April 2009 (LCS)</p> <p>Sept 2009</p> <p>Sept 2008</p> <p>Mar 2009</p> <p>June 2009</p> <p>June 2008</p> <p>Sept 2008</p>

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
5.	3.	Continued	<p>Standards/Guidelines</p> <ul style="list-style-type: none"> EMBC to ensure existing provincial expectations (i.e. onus for individual preparedness for 72 hours following a wide-area event), life safety notwithstanding, are accepted and considered in government-wide mission critical recovery time objectives and strategies. EMBC continues to be responsible for updating, maintaining, and corporate release of BCP Template and related components. <p>Ministry Operational:</p> <ul style="list-style-type: none"> Ministries to ensure existing provincial expectations (i.e. onus for individual preparedness for 72 hours following a wide-area event), life safety notwithstanding, are accepted and considered in mission critical continuity recovery time objectives and strategies. Ministries to develop, communicate and incorporate in job descriptions and/or EPDPs as appropriate, the roles and responsibilities of staff required to perform mission critical functions in the event of a disruption. Ministries to identify and report to EMBC their critical dependencies based on the EMBC criteria. Ministries to ensure changes in assignments of roles and responsibilities are updated in BCP documentation in a timely manner. 	<p>EMBC</p> <p>Ministries</p>	<p>Aug 2008</p> <p>Ongoing</p> <p>Nov 2008</p> <p>June 2009</p> <p>Sept 2008</p> <p>Ongoing</p>

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
9.	12.	It is recommended that EMBC streamline the BIA process (to focus on the identification of key business functions, worst case impacts, and the critical interdependencies of business functions) or require that they be completed only after significant change.	Policy: <ul style="list-style-type: none"> • EMBC to review the policy and clarify: <ul style="list-style-type: none"> ➤ Business Impact Analysis (BIA) processes and frequency Standards/Guidelines: <ul style="list-style-type: none"> • EMBC to review and update the comprehensive BIA process. • EMBC to develop and approve an efficient and effective abbreviated version of the BIA process. • EMBC to establish criteria for the application of the comprehensive and abbreviated BIA processes. 	EMBC	July 2008 Sept 2008 Sept 2008 Sept 2008

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
10.	16.	<p>It is recommended that ministries:</p> <p>16.1 in developing BCPs, focus efforts on mission critical areas first, business priority areas second, and then their other key business areas in order of priority;</p> <p>16.2 develop BCP recovery strategies based on worst case scenarios;</p> <p>16.3 establish a formal exercise/test plan that consists of tabletop exercises, simulations, alternate site tests and communications (contact list) tests; and</p> <p>16.4 ensure exercise results are incorporated and used to update BCPs.</p>	<p>Strategies:</p> <ul style="list-style-type: none"> Ministries to further develop BCPs to include relocation and recovery strategies to address all hazards (including wide-area events). EMBC and Shared Services BC to develop and implement electronic BCM resource management tool (i.e. Emergency Management Information System (EMIS)) to capture and summarize resource requirements for mission critical services (i.e. alternate work locations, IT and communications infrastructure, skilled personnel). Further development of the tool will allow ministry and government-wide roll-up of BCPs. EMBC and Shared Services BC to further develop the BCM resource management tool to include additional components of BCP such as critical dependencies and vital records. EMBC to develop detailed exercise logs (exercise date, type and scenario) to accompany and align with the Records of Amendment in BCP and MOC Templates. <p>Ministry Operational:</p> <ul style="list-style-type: none"> Based on BIA results, ministries to incorporate documented details in the BCP to recover essential business processes. Ministry critical business areas to establish and document (in BCPs) mature all-hazard recovery strategies (processes) to ensure functionality of continued business in a wide-area event. Ministries consider redeployment of resources (including personnel) from less critical business areas to support mission critical response and recovery. 	<p>Ministries</p> <p>EMBC and Shared Services BC</p> <p>Ministries</p>	<p>Mar 2009</p> <p>April 2009 (LCS)</p> <p>Apr 2011</p> <p>Aug 2008</p> <p>March 2009</p> <p>March 2009</p> <p>Ongoing</p>

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
10.	16.	Continued	<p>Ministry Operational continued:</p> <ul style="list-style-type: none"> • Ministries to implement a roll-out priority strategy to ensure BCPs are in place based on the criticality (i.e. mission critical and business priority) of the business functions. • Ministry critical business areas to comply with EMBC exercise policy and establish a formal progressive exercise plan and schedule. • Ministries to document exercise results and to update BCPs with appropriate changes. 	Ministries	<p>Dec 2008</p> <p>Dec 2008</p> <p>Dec 2008</p>
11.	11.	It is recommended that ministries review key risks annually and conduct risk analysis following significant changes. These reviews should consider, at a minimum, risks/threats, validating of existing controls, determining management's risk tolerance and recommending additional mitigation strategies.	<p>Policy:</p> <ul style="list-style-type: none"> • EMBC to review the policy and clarify: <ul style="list-style-type: none"> ➢ risk analysis (assessment) process and frequency; and ➢ (risk) treatment review. <p>Standards/Guidelines:</p> <ul style="list-style-type: none"> • EMBC to develop and approve definitions and standards related to risk assessment (i.e. clarify risks/threats, controls, risk tolerance and mitigation strategies). <p>Ministry Operational:</p> <ul style="list-style-type: none"> • Ministries to conduct a comprehensive risk assessment and repeat the assessment following significant change in core business or organizational structure. • Thereafter, ministries to conduct annual reviews of key risks and treatments based on comprehensive risk assessment. 	<p>EMBC</p> <p>Ministries</p>	<p>July 2008</p> <p>July 2008</p> <p>Mar 2009</p> <p>Ongoing</p>
12.	21.	It is recommended that ministries ensure business functions are identified and prioritized in BCPs.	<p>Ministry Operational:</p> <ul style="list-style-type: none"> • In keeping with action items for recommendations 13 and 16, ministries to ensure business functions are identified, prioritized and detailed in BCPs. 	Ministries	Ongoing (next rpt June 2008)

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
13.	24.	It is recommended that ministries ensure critical dependencies are identified, included in BCPs and included in exercises (or tested by other methods).	Ministry Operational: <ul style="list-style-type: none"> In keeping with action items for recommendations 2, 13 and 15, ministries to identify, document and arrange for availability of critical dependencies. In keeping with action items for recommendation 16, ministries to incorporate critical dependencies availability in progressive exercise scenarios. 	Ministries	Mar 2009 Mar 2009 Ongoing
14.	22.	It is recommended that ministries ensure MAOs are identified and assigned for each mission critical business process in the BCP.	Ministry Operational: <ul style="list-style-type: none"> In keeping with action items for recommendations 13 and 16, ministries to ensure MAOs are identified to determine and document RTOs for each mission critical business process in BCPs. 	Ministries	Mar 2009
15.	25.	It is recommended that ministries ensure minimum recovery resource requirements and procedures are identified and addressed in BCPs.	Ministry Operational: <ul style="list-style-type: none"> In keeping with action items for recommendations 3 and 16, ministries to identify and ensure documentation in BCPs of the MARR, contacts and processes for acquisition of those resources. 	Ministries	March 2009

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
16.	26.	<p>It is recommended that ministries:</p> <p>26.1 prioritize, identify and document procedures / processes in BCPs on how to restore IT systems; and</p> <p>26.2 develop SLAs between ministries and IT service providers, and incorporate these into the BCPs.</p>	<p>Strategies:</p> <ul style="list-style-type: none"> In keeping with action items for recommendation 17, EMBC and Shared Services BC to develop formal sequencing of related IT resource requirements that must be recovered to ensure continuance of mission critical services. <p>Ministry Operational:</p> <ul style="list-style-type: none"> Ministries will be encouraged to document critical IT resources in the new interim MARR format to facilitate government-wide priority ranking of IT recovery. In keeping with action items for recommendation 15, ministries to ensure the functional availability of their identified critical dependencies by confirming in <ul style="list-style-type: none"> explicit agreements with WTS; or contractual arrangements with external service providers. Ministries to develop strategies for alternate work methods in the absence of IT availability. 	<p>EMBC / Shared Services BC</p> <p>Ministries</p>	<p>Sept 2009</p> <p>Feb 2009</p> <p>Mar 2009</p> <p>Sept 2009</p>
17.	20.	<p>It is recommended that ministries ensure the roles and responsibilities of the recovery team are clearly defined and staff are assigned to recovery team positions and are aware of their roles and responsibilities.</p>	<p>Ministry Operational:</p> <ul style="list-style-type: none"> In keeping with action items for recommendations 3, 5, 7, 15, 16 and 18 ministries to establish, document and communicate linkages between Emergency Response Teams, BCPs and MOCs; to ensure roles and responsibilities are clearly defined; and employees assigned to positions are aware of their roles and responsibility. Ministries to ensure plan administration procedures include regular update and maintenance provisions (i.e. contact lists, recovery team changes). 	<p>Ministries</p>	<p>June 2009</p> <p>Oct/Nov 2008</p>

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
18.	23.	It is recommended that ministries: 23.1 ensure primary and secondary alternate sites are identified within BCPs; and 23.2 identify a secondary alternate outside the geographical area to mitigate risks to recovery in a wide area event.	Ministry Operational: <ul style="list-style-type: none"> In keeping with action items for recommendations 2, 16 and 17, ministries to develop, establish and formalize alternate site strategies for critical business areas For mission critical business areas, ministries to establish secondary sites outside normal geographic location for wide-area events. 	Ministries	Mar 2009 Mar 2009
19.	18.	It is recommended that ministries ensure BCPs and MOC plans contain clear and direct lines of communications and coordination between MOC representatives and recovery team members.	Training and Awareness: <ul style="list-style-type: none"> Ministries to include in orientation presentations for BCP and Ministry Operations Centre (MOC) team members, the established lines of communication between recovery team members and the MOC. Strategies: <ul style="list-style-type: none"> Ministries to develop and document in BCPs clear linkages and coordinated transfer from emergency response teams (i.e. Chief Wardens) to BCP/MOC representatives (i.e. Site Representatives) and recovery team members. EMBC to work with BCPSA to develop and document corresponding linkages in Emergency Response Team documents to coordinate transfer from emergency response teams (i.e. Chief Wardens) to BCP/MOC representatives and recovery team members. Training and Awareness: <ul style="list-style-type: none"> Ministries to communicate and exercise (i.e. orientation) the documented linkages to BCP, MOC and Emergency Response teams. 	Ministries EMBC / BCPSA Ministries	Sept 2008 Dec 2008 Jan 2009 Mar 2009

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20.	13.	It is recommended that ministries establish controls to ensure business impact reviews are conducted when required.	<p>Standards/Guidelines</p> <ul style="list-style-type: none"> EMBC to review and update existing ministry status reporting methods to incorporate additional details such as BIA, QAP and exercise status. <p>Ministry Operational:</p> <ul style="list-style-type: none"> Ministries to conduct a BIA process based on the approved EMBC criteria and use documented results to identify and prioritize critical business functions, critical dependencies, Maximum Allowable Outages (MAOs) and the respective Recovery Time Objectives (RTOs). Thereafter, ministries to conduct annual reviews of the BIA findings in compliance with approved policy. Ministries to implement new status reporting methods and requirements established by EMBC. 	EMBC Ministries	Sept 2008 Oct - Dec 2008 Ongoing Jan 2009
21.	10.	It is recommended that ministries establish and implement a structured approach to the monitoring of BCM progress.	<p>Strategies:</p> <ul style="list-style-type: none"> EMBC to establish and approve a structured quality assurance program (QAP) monitoring standard for Ministry BCMP. <p>Ministry Operational:</p> <ul style="list-style-type: none"> Ministries to implement formal QAP monitoring strategy using the EMBC standard. <p>Quality Assurance Program:</p> <ul style="list-style-type: none"> EMBC to incorporate QAP monitoring standards into existing reporting requirements. 	EMBC Ministries EMBC	Sept 2008 Oct/Nov 2008 Jan 2009

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
22.	27.	<p>It is recommended that ministries:</p> <p>27.1 ensure all recovery team members maintain a copy of the BCP off-site in a secure location;</p> <p>27.2 encrypt copies of BCPs contained on memory sticks or other media; and</p> <p>27.3 ensure up-to-date distribution lists are contained in BCPs.</p>	<p>Standards/Guidelines:</p> <ul style="list-style-type: none"> In keeping with action item for recommendation 2, EMBC to communicate to ministries standards for off-site and portable electronic formats for BCP storage and distribution. <p>Ministry Operational:</p> <ul style="list-style-type: none"> In keeping with action item for recommendation 2: <ul style="list-style-type: none"> ➤ Ministries to comply with EMBC standards to ensure proper distribution and storage of BCPs. ➤ Ministries to complete and maintain updated distribution lists (Appendix B of the BCP Template). 	<p>EMBC</p> <p>Ministries</p>	<p>June 2008</p> <p>Dec 2008</p>
23.	28.	<p>It is recommended that ministries:</p> <p>28.1 ensure BCPs are exercised annually and results are used to update the BCP; and</p> <p>28.2 incorporate an exercise log and a Record of Amendments into BCPs.</p>	<p>Standards/Guidelines:</p> <ul style="list-style-type: none"> In keeping with action item for recommendation 16, EMBC to develop an exercise log to accompany and align with the Record of Amendments in the BCP and MOC Template. <p>Ministry Operational:</p> <ul style="list-style-type: none"> In keeping with action item for recommendations 2, 13 and 16, ministries to comply with EMBC exercise and reporting policies to establish a formal progressive exercise plan and schedule. Ministries to document exercise and related plan amendments in the BCP Template logs. 	<p>EMBC</p> <p>Ministries</p>	<p>Aug 2008</p> <p>Dec 2008</p> <p>Jan 2009 Ongoing</p>

Priority	Rec. #	Recommendations	Management Comments to be Included in Report (Action Planned or Taken)	Assigned To	Target Date (add'l resources)
27.	7.	<p>It is recommended that ministries draft a ministry level communication strategy which could include:</p> <p>7.1 BCM/emergency response management orientation or awareness workshops in conjunction with BCM Awareness Week;</p> <p>7.2 the awareness of the roles and responsibilities of recovery team members; and</p> <p>7.3 guidance to key ministry staff in the event of a wide area disaster.</p>	<p>Training and Awareness:</p> <ul style="list-style-type: none"> EMBC will coordinate ongoing awareness workshops in conjunction with BCM Awareness Week. <p>Strategies</p> <ul style="list-style-type: none"> EMBC to deliver to ministries approved Concept of Operations document outlining roles and responsibilities of key ministry staff (i.e. wide-area mission critical roles and Operation Centres). EMBC, BCPSA and PAB to develop wide-area event communications plans (i.e. earthquake, pandemic, snowfall, transit strike, terrorist event, IT loss) for delivery to Deputy Ministers and equivalents in the broader public sector. Deputy Ministers to share with employees for improved awareness. <p>Ministry Operational:</p> <ul style="list-style-type: none"> Ministries to develop a local event (site-specific) communication plan and demonstrated linkage with Building Emergency Response Teams. <p>Training and Awareness:</p> <ul style="list-style-type: none"> Ministries to develop and incorporate BCP training and awareness for recovery team members and all staff including new hire orientation. 	<p>EMBC</p> <p>EMBC</p> <p>EMBC / BCPSA / PAB</p> <p>Ministries</p>	<p>Sept 2008 Ongoing</p> <p>Sept 2008</p> <p>Dec 2008</p> <p>Sept 2009</p> <p>Ongoing</p>
28.	30.	<p>It is recommended that ministries develop or update BCPs to follow the EMBC standard template.</p>	<p>Ministry Operational:</p> <ul style="list-style-type: none"> In keeping with action item for recommendation 3, ministries to develop or update BCPs using the current EMBC standard BCP Template. 	<p>Ministries</p>	<p>Ongoing</p>

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29.	14.	As part of risk mitigation, it is recommended that EMBC undertake a coordinated effort to secure DRRs access badges for MOC and other key government personnel, such as key staff at Workplace Technology Services (WTS).	<p>Standard/Guidelines:</p> <ul style="list-style-type: none"> EMBC to develop guidelines and criteria for ministries to determine assignment of Disaster Response Route (DRR) authorization. <p>Ministry Operational:</p> <ul style="list-style-type: none"> Ministries to establish a list of key response/recovery personnel (primary and alternates) and develop process to manage and provide DRR authorization to ensure arrival to the workplace or alternate site. 	EMBC Ministries	May 2008 Oct - Dec 2008
30.	9.	<p>It is recommended that EMBC assess the potential and practicality of:</p> <p>9.1 coordinating BCM resources following a centralized model; and</p> <p>9.2 developing a common BCP for "generic" activities that take place in all ministries.</p>	<p>Strategies:</p> <ul style="list-style-type: none"> EMBC to develop and evaluate options for the central BCM coordinating function including: <ul style="list-style-type: none"> current EMBC mandate with independent ministry delivery (i.e. no change); current EMBC mandate with enhanced ministry program delivery (additional FTEs); enhanced EMBC program delivery (additional FTEs); enhanced EMBC and ministry program delivery (additional FTEs for both); EMBC shared services delivery model for government-wide and ministry delivery (no ministry Advisor); and Other options. Recommendation decision note to be reviewed by Associate Deputy Minister, EMBC. <p>Standards/Guidelines:</p> <ul style="list-style-type: none"> EMBC to work with Ministry Corporate Services areas to enhance existing BCP template to include strategies for generic business functions (i.e. finance and administration, records management). 	EMBC EMBC EMBC and Ministries	June 2008 June 2008 Mar 2009