

Distribution:

Audit Committee	Patrice Impey – General Manager, Finance, Risk & Supply Chain Management/CFO
City Leadership Team	
KPMG	Carolina de Moura – Acting Chief Risk Officer
	Daniel Stevens – Director of Emergency Management
	James Embleton-Forrest – Business Continuity Manager

EXECUTIVE SUMMARY

7 December 2020

This audit's objective was to provide assurance that a comprehensive and coordinated Citywide process is in place to deliver critical services in the event of a business disruption or major disaster, and return to normal operations efficiently and cohesively afterward.

The Business Continuity Program's governance structure, plans and processes should be improved by enhancing communication with executive level (General Managers), formalizing assigned staff's responsibilities, establishing cross-functional coordination and continuing to work with business units to produce Business Continuity Plans (BCP). Currently there are over 70 out of 120 departmental BCP plans completed, with the remaining plans expected to be completed by end of 2021. Management has committed to focus on completing these BCPs as soon as practical in light of the COVID pandemic.

The more significant findings and recommendations are:

E.1 Provide Regular Updates on Business Continuity to Senior Management

Regular and periodic updates to General Managers via the Risk Management Committee (RMC) to keep them apprised of Business Continuity activities would complement the Risk Management Committee reports as not all General Managers sit on this committee and they are responsible for business continuity in their departments.

E.2 Formalize Business Continuity Planning Responsibility

Business continuity planning is a critical component of the City's core business and staff in each department responsible for this function should include this in their performance plan and measure on its achievement.

E.3 Review Cross-Functional Tasks

There is no formalized procedure for managing incidents that fall below the 'city-wide/activate EOC' level but above the level where it can be managed by the business unit or department internally. A cross-functional task review to clarify roles between VEMA, Risk, CMO, REFM and City Protective Services, and HR would help with incident management.

E.4 Establish a VEMA Business Continuity Plan

VEMA does not have a business continuity plan and should start developing one once the pandemic eases. The timeline for the preparation of its Business Continuity Plan could tie to the deactivation of the Emergency Operation Centre and VEMA coordinated COVID-response.

E.5 Coordinate and Update VEMA Response and Recovery Plan with Business Continuity Management

Management has committed to complete the Phase 2 BCPs as scheduled and the Business Continuity Manager is fully integrated into the VEMA effort to update the COV Response and Recovery Plan.



Tony Hui, CPA, CA, CRMA
Chief of Internal Audit



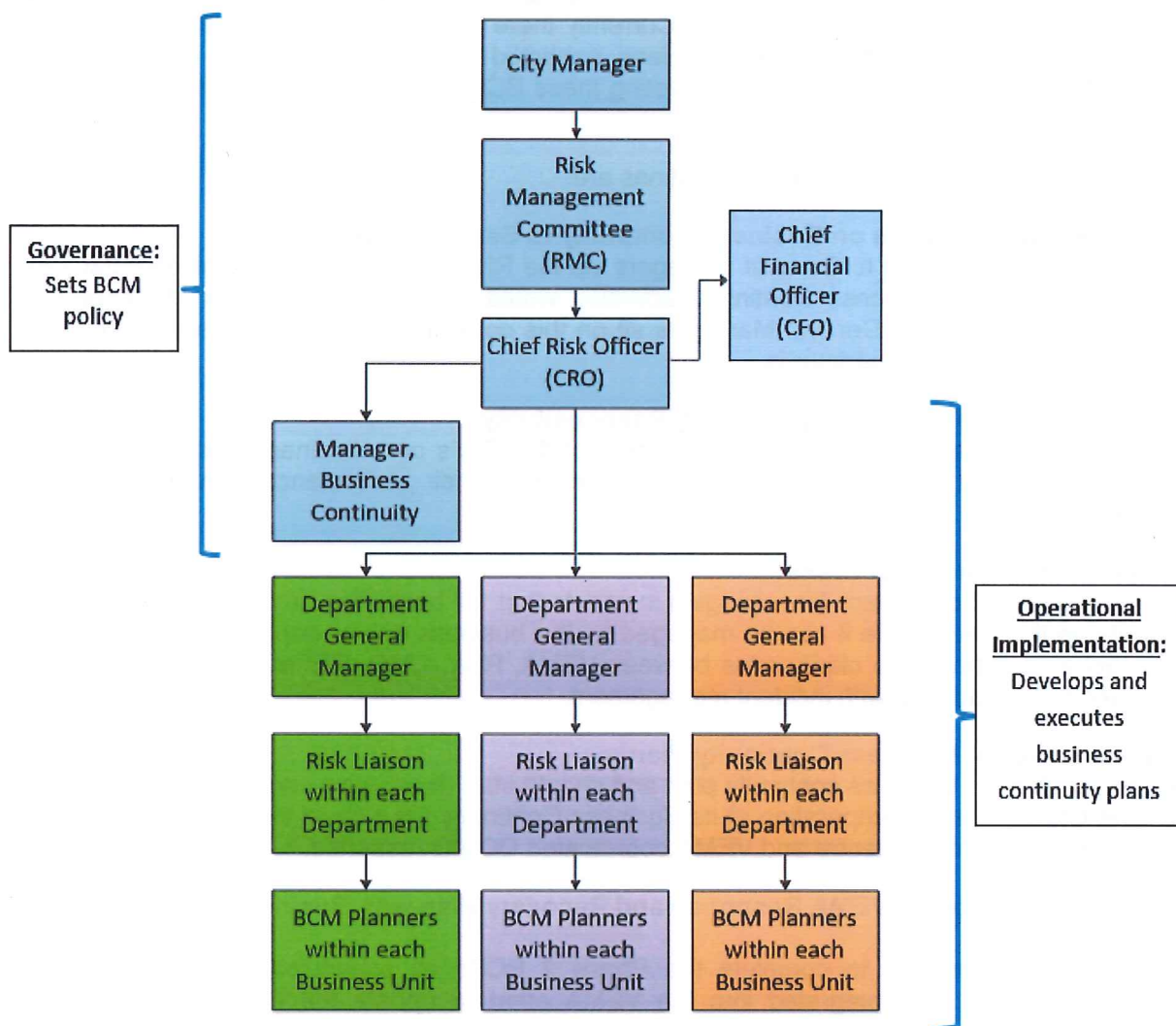
King Wan, MBA, CPA, CMA, CIA, CRMA
Manager, Internal Audit Projects

A. BACKGROUND

General

Responsibility for business continuity planning resides in the Risk Management division of the Finance, Risk and Supply Chain Management department, while Vancouver Emergency Management Agency (VEMA) manages emergency preparedness, which is a division in the City Manager's Office. Both divisions work closely to minimize business disruptions and ensure that critical service delivery could continue in the event of a disruption.

Roles and Responsibilities: Business Continuity Management Program



Source: Business Continuity Handbook

Enterprise Risk Management (ERM)

The ERM group is tasked, among other responsibilities, with developing, maintaining and coordinating the City's business continuity strategy and facilitating the delivery of operational Business Continuity Plans (BCPs). This Business Continuity Management audit was identified, approved and scheduled in the City's audit plan for 2020.

Vancouver Emergency Management Agency (VEMA)

VEMA was established to engage in emergency planning activities internally and with other municipalities, the provincial and federal governments, agencies such as Vancouver Coastal Health, industry and other stakeholders to ensure that regional emergency management activities are coordinated with the City of Vancouver.

Business Continuity

Business Continuity is the capability of an organization to continue the delivery of its critical corporate and public services at an acceptable level following a business disruption. One of the Chief Risk Officer's (CRO) mandates was to facilitate development of BCPs City-wide so that every City department and business unit would be prepared to minimize business disruptions and ensure that critical service delivery could continue.

Departments are Responsible for their Business Continuity Planning

The City's Business Continuity framework specifies that each department is responsible for developing a current and comprehensive Business Continuity Plan. Due to their size and complexity, large departments such as Engineering and Arts, Culture & Community Services (ACCS) may require multiple BCPs for their individual branches and business units. This is scheduled in the Business Continuity Plan development and being rolled out.

Business Continuity Manager's Role

The City of Vancouver Business Continuity Manager's role is to facilitate plan development and exercises, provide advice, and monitor compliance with the standards established in business continuity documents (e.g. Business Continuity Handbook, related plans, Business Impact Analysis, etc.). This position reports to the Chief Risk Officer. The BCM program is part of the wider Enterprise Risk Management (ERM) program. As such, BCM definitions and methodologies are harmonized with the existing ERM structure and processes.

Business Continuity Handbook – a City Departmental Guide

The Business Continuity Handbook developed by the Business Continuity Manager is intended to provide guidance for the General Manager within each department, who ultimately 'owns' the BCP process for their organization. It provides guidance to the departmental Risk Liaisons and BCM Planners who lead on plan design, maintenance and validation for their respective department.

Vancouver Emergency Management Agency (VEMA)

Under the Emergency Response By-Law No. 5654, the VEMA (formerly Office of Emergency Management) is responsible for:

- Establishing an Emergency Program for the City of Vancouver;
- Coordination and/or preparation of local emergency plans;
- Coordination of regional emergency planning activities;
- Instituting training of city staff to respond to an emergency or disaster; and
- Maintaining Public Information programs.

Complex and Multi-Event Emergencies

VEMA has functional-based plans that address complex and multi-event emergencies. However, this hinges on how severe and complex such multiple events will be and what resources are

available should that occur. VEMA is dealing with COVID/EOC/ESS responses at this time. As COVID response has been a prolonged event, VEMA/EOC's ability to handle another concurrent emergency would be strained. In terms of the EOC going forward into next year, VEMA staff will be taking a significantly larger role and this is going to impact their ability to handle multi-event emergencies. Plans are in place for such contingencies but resources will be the key that will constrain VEMA's ability to react.

B. SCOPE

The objectives of the audit were:

- to determine the adequacy of the current corporate governance structure and coordination of business continuity planning (BCP) and disaster recovery planning for the City's operations, critical systems and applications;
- to determine if business resumption plans exist and were developed based on a risk analysis to determine the criticality of each operation;
- to assess the adequacy of the business continuity plans and processes in place to ensure that critical operations continue and are restored in the event of a significant business disruption; and
- to assess the ability of the City to manage and adapt to work plan changes such as working from home or remote processing due to COVID-19 response.

Our work included:

- Conducted interviews with staff in Risk Management within the Finance, Risk and Supply Chain Management Department to gain an understanding of the corporate governance structure and guidance that is provided to departments regarding the development of business resumption plans.
- Interviewed staff in Risk Management to determine the plans and procedures in place to restore the City's critical services in case of a disruption to the City's operations.
- Reviewed business resumption planning guidelines, standards, procedures, and other relevant background documentation on business resumption planning, disaster recovery, and business continuity planning.
- Conducted interviews with the Vancouver Emergency Management Agency to gain an understanding of the City Emergency Plans that have been developed and utilized during the pandemic initiatives. Reviewed these plans to identify any work that could be leveraged for the development of business resumption plans in future development.
- Reviewed a sample of department Business Continuity Plans.

The audit is not designed to detect fraud. Accordingly, there should be no such reliance.

C. CONCLUSION

The Business Continuity Program's governance structure, plans and processes should be improved by enhancing communication with executive level (General Managers), formalizing assigned staff's responsibilities, establishing cross-functional coordination and continuing to work with business units to produce Business Continuity Plans (BCP). Currently there are over 70 out of 120 departmental BCP plans completed, with the remaining plans expected to be completed by end of 2021.

Findings and recommendations have been discussed with appropriate management members and responses incorporated into this report.

D. RISK ANALYSIS

Potential risks, if adequate business continuity plans, processes, and governance were not in place, include:

- inability to effectively provide essential services that support the health and safety of staff and the public due to the failure to resume critical functions within an acceptable time period;
- negative impacts to the reputation of the City due to increased costs and delays in restoring critical City services;
- increased financial costs to restore IT systems and related processes that support the delivery of City services;
- inability to handle new emerging risks such as cyberattacks that have become more prevalent against businesses;
- the risk of legal or regulatory non-compliance;
- loss of revenue during a disruption; and
- delays in communication with the public and employees.

E. AUDIT ISSUES, RECOMMENDATIONS AND MANAGEMENT RESPONSES

E.1 Provide Regular Updates on Business Continuity to Senior Management

Responsibility for BCP rests with Senior Management

A key feature in business continuity planning is clarifying the people who are tasked with its application and where the accountability lies. It must be emphasized that disruptions should be managed at the lowest level possible but that the ultimate responsibility for operational delivery rests with the most senior level. In practical terms, the General Manager in each City department is accountable for business continuity within their department. It would often then be the directors, managers and supervisors who execute the strategies within a business continuity plan during a disruption. Therefore, it is important that General Managers are kept updated on areas where attention is required within business continuity planning.

Periodic updates to Senior Management

Discussion with the Business Continuity Manager revealed that these principles and activities have been developed and put into practice. In the past two and a half years since the Business Continuity Manager joined the City, annual updates are scheduled and provided to RMC and CLT respectively. In addition, the Business Continuity Manager has briefed and met with the General Managers, Deputy General Managers and Operations Directors within most departments on numerous occasions. However, with COVID-19 response overshadowing many City activities, it is important that these principles remain in the forefront of General Managers' focus.

Recommendation

E1.1 The Acting Chief Risk Officer should update the Risk Management Committee at least semi-annually to keep them apprised of Business Continuity activities and/or any areas where their attention might be required. In light of the fact that not all General Managers are members of the Risk Management Committee, updates should also be provided to all General Managers, with Risk Management Committee approval. The periodic updates should be scheduled starting in 2021.

Management Response:

Please check one:

☒ Agree with the findings

☐ Disagree with the findings

Please check one:

☒ Agree with the recommendations

☐ Disagree with the recommendations

Management Action Plan:

The CRO will increase the frequency of updates to the Risk Management Committee on business continuity activities and plan development progress at least bi-annually or as necessary. Furthermore, the CRO will ensure that CLT continues to receive updates bi-annually or as circumstances dictate. In addition, Manager BCM will continue to meet and brief Risk Liaisons (Deputy GM's and Directors of Operations routinely.

It should be noted that the Business Continuity Manager is part of the weekly EOC Executive COVID coordination meeting. There he briefs the Deputy City Manager, Director of VEMA, GM of ACCS and EOC section chiefs on current BCM issues.

E.2 Formalize Business Continuity Planning Responsibility

Business continuity planning is an enduring task. It does not end with the successful completion of a plan. Instead, plans must change as the risk landscape shifts and as the department or business unit evolves over time.

Formalized Responsibility

Business continuity planning and maintenance responsibilities should be formalized for the relevant staff at all levels, in their annual performance plan and review. Where possible, departments should formally assign a staff member or a portion of a staff member's responsibilities to business continuity planning. Departments should not treat business continuity as a 'one-off' project to be completed 'off the side of a desk'. Business continuity should be a part of the department's 'core activity'.

Setting the Example

The importance and efficacy of business continuity planning should be stressed from the highest-levels down. If a GM or Director is seen to be stressing continuity planning, or devoting staff time for planning, training or exercises, that will set the tone for that business unit. It will emphasize that continuity planning is core business and not an afterthought activity.

Recommendation

E2.1 The Acting Chief Risk Officer should advise the General Managers that business continuity planning is a critical component of the core business and that staff tasked with this activity be responsible for this work. Business continuity functions should be included in the assigned staff's performance plan and be measured on its achievement during the review period. This should be an annual procedure to all levels of management with staff responsible for business continuity activities starting with the 2021 performance planning period.

Management Response:

Please check one:

☒ Agree with the findings

Please check one:

☒ Agree with the recommendations

☐ Disagree with the findings

☐ Disagree with the recommendations

Management Action Plan:

Business continuity is included as a responsibility for Deputy GM's and Directors of Operations in their job descriptions. Manager BCM will continue to remind Risk Liaisons and BCM planners to incorporate their BCM responsibilities into their annual performance planning and end-of-year review. Manager BCM will issue reminders at the start and end of each reporting year.

E.3 Review Cross-Functional Tasks

Effect from the COVID-19 Pandemic

The COVID-19 pandemic and associated response efforts have tested the ability of the City to manage a full range of incidents. Staff and business units are managing more activities at their level because COVID-related disruptions / changes are occurring frequently. Nevertheless, there is no formalized procedure for managing incidents that fall below the 'city-wide/activate EOC' level but above the level where the incident can be dealt with by a business unit or department internally.

Ranges of Incidents

Examples would be a power outage, fire alarm or sprinkler malfunction at a City site being managed between REFM, Security, Business Continuity Management and the City Manager's office. It is not defined as to what type or level of incident gets managed at which level and which business unit would take the lead. To resolve this and clarify roles would require a cross-functional task review between VEMA, Risk, CMO, REFM and City Protective Services, and HR, as they represent core elements in most emergencies.

Formalized Process and Methodology

There should be a formalized process improvement methodology initiated by Risk Management to manage longer-term standalone issues, and act as a linkage to the executive for oversight of real-time issues. Their role could be to help coordinate the response to an incident that falls below the level of EOC/VEMA activation and also to coordinate the necessary COV elements (REFM, BCP, HR, CPS etc.), ensuring that any response is managed at an appropriate level (i.e. not over or under-escalated).

Recommendation

E3.1 The Acting Chief Risk Officer, should initiate a process via the Risk Management Committee (RMC), to:

- scope out and implement an incident management methodology on the management of longer-term standalone problems; and
- act as a coordination point to identify a core team to manage real-time issues.

This should be started as soon as possible and completed by December 31, 2021.

Management Response:

Please check one:

☒ Agree with the findings

☐ Disagree with the findings

Please check one:

☒ Agree with the recommendations

☐ Disagree with the recommendations

Management Action Plan:

First Recommendation - Risk Management created a comprehensive 'Issues Management' procedure in 2018 (updated in 2019) that addresses the recommendation to "scope out and implement an incident management methodology on the management of longer-term standalone problems". An Issue Manager position was approved in 2020 however due to budget constraints we were unable to initiate recruitment. Risk Management will ensure that this procedure is updated in 2021 and review the framework with Risk Management Committee by December 31, 2021.

Second Recommendation – Risk Management supports the need for COV to scope-out, establish and implement a procedure for managing real-time incidents. The person or organization to coordinate with the executive during a real-time issue should be determined during the process of scoping-out, establishing and implementing an incident management procedure within COV. It may be a dedicated crisis manager, a rotation executive duty officer etc. Designing an incident management methodology and assigning responsibilities should be done deliberately and initiated by the Risk Management Committee. CRO will bring this issue forward to RMC to be addressed.

E.4 Establish a VEMA Business Continuity Plan

VEMA Lacks a Formal BCP

Currently, VEMA does not have a business continuity plan. However, VEMA has conducted business impact assessments in its Emergency Response and Recovery Plan 2014, implemented redundancies for a number of critical processes, and procured tools with multiple-levels of redundancy to support its critical processes. VEMA has not gone through the City of Vancouver's formal business continuity planning process yet as there has not been capacity within VEMA.

Redundant/Contingency Plans

Some of the redundancy VEMA has implemented over the past few years include:

- VanORCA, an information and records management system to support business continuity for VEMA and the EOC;
- paper-based and manual processes for technology in the event of systems failure;
- mobile Operations Centre kits so VEMA can relocate to other facilities;
- several layers of communications redundancy (satellite, radios, phones, mobile data);
- ensuring more staff are trained and experienced in Emergency Support Services incident coordination and Emergency Management incident coordination; and
- cross-training additional staff in technology administration.

Maximum Allowable Outages in some Processes

VEMA also has a number of business processes for non-critical functions that can be delayed for relatively long periods of time (such as public education workshops) but today has not yet prioritized them in the operational ranking. VEMA will need to start developing a business continuity plan, working with BC Management once the pandemic eases.

Critical Support and Service Delivery

VEMA's operation is critical in support of other City departments, external emergency agencies, and the community, it is important that VEMA creates a business continuity plan that is capable to continue its delivery of critical corporate and public services at an acceptable level following a business disruption. This would minimize its own business disruptions and ensure that critical service delivery to other stakeholders would continue.

Recommendation

E4.1 The Director of VEMA should develop a business continuity plan, working with Business Continuity Management. This will enable VEMA to fully support other business units and the community while carrying out its mandate. The timeline for the preparation of its Business Continuity Plan could tie to the deactivation of the EOC and VEMA coordinated COVID-response. As the date of deactivation of the EOC and VEMA coordinated COVID-response is uncertain at this time, this should be reviewed and reported in June and December 2021 if the BCP development has not started by those dates.

Management Response:

Please check one:

☒ Agree with the findings

☐ Disagree with the findings

Please check one:

☒ Agree with the recommendations

☐ Disagree with the recommendations

Management Action Plan:

Manager BCM met with VEMA to discuss development of a VEMA BCP in early 2019. Unfortunately, capacity issues within VEMA and competing operational priorities prevented VEMA from embarking upon plan development. COVID understandably compounded this delay further.

As stated in the audit report section E.4, VEMA has assessed business impacts and implemented a range of business continuity measure as a component of our core operations. VEMA agrees with the need to update and formalize our business impact assessment and continuity plans in line with the City of Vancouver's new BCP program, along with approximately 58 other business units who continue to work on their plans. As mentioned above, VEMA staff critical to the business continuity planning process are engaged in COVID-19 coordination operations and/or have been seconded to other departments to support incident management outside VEMA's core mandate. We can commit to finalizing the VEMA business-continuity plan within one year of VEMA's COVID-19 coordination accountability ending. This will likely be sometime in 2022.

It should be noted that during COVID, Manager BCM worked alongside VEMA to virtualize the EOC in order to lessen the pandemic threat. This major project will potentially change EOC working practices significantly moving forward and enhance operational efficiency and resiliency for the EOC when activated in the future.

E.5 Coordinate and Update VEMA Response and Recovery Plan with Business Continuity Management

BCM Plan Development Program

When the BCM program began in its current form, a requirement for a total of approximately 120 business continuity plans was identified citywide. Those plans were divided into two phases: the first 62 plans were completed in the period January 2019 to June 2020. The second group of 58 plans are to be completed in the period July 2020 to December 2021. The focus for this first iteration of plans was on localized disruptions that were limited in scope and duration (up to 72-hrs). This restricted scope was selected to make the planning process more manageable as many business units were working from a 'blank slate'. In addition, this restricted scope was used as VEMA had been intending to update the City's 2014 Response and Recovery Plan in 2021-21, and therefore it made sense to wait for that update before expanding the scope of departmental BCPs to include wide-area events. VEMA's update has understandably been put on hold due to COVID.

The Risk Management Committee approved the approach.

How COVID affected the BCM Program

At the onset of the COVID pandemic, the BCM plan development program was nearing the end of Phase 1 and roughly half of the 120 targeted business continuity plans for the City were complete. Those plans were quickly re-visited and fine-tuned for use during a pandemic. The critical services identified were modified to adapt to the new working conditions in view of lock-down orders and pandemic precautions.

Currently there are over 70 out of 120 departmental BCP plans completed, with the remaining plans expected to be completed by end of 2021. During COVID, the development plan for business units who had not yet embarked upon the BCM plan development program was accelerated but the focus was narrowed significantly to cater to the pandemic threat.

Evolution of the City's Response and Recovery Planning

As part of the COVID response effort, VEMA has identified numerous additional critical services that need to be delivered such as food security tasks, enhanced hygiene and drinking water capacity for marginalized communities. These extra tasks are being coordinated during the pandemic by VEMA and potentially may become 'standard' response activities for a widespread emergency or possibly even enduring services the City provides under non-emergency conditions. The lessons learned will enhance the updating by VEMA of the City's 2014 Response and Recovery Plan making it more relevant in the changing emergency and recovery planning landscape.

Recommendation

E5.1 The Acting Chief Risk Officer should ensure that the Business Continuity Manager completes the remainder of the BCPs in Phase 2 as soon as practical in light of the COVID pandemic response activities and in accordance with the scheduled date of December 31, 2021.

E5.2 The Acting Chief Risk Officer should ensure that the Business Continuity Manager is fully integrated into supporting VEMA effort to update the COV Response and Recovery Plan. Due to the fluid nature of the current COVID response, it is not clear when that plan update, led by VEMA will occur. The preparation should, however, be started in the first quarter of 2021 for a seamless transition when VEMA updates the COV Response and Recovery Plan and where Business Continuity Management can provide the appropriate support.

Management Response:

Please check one:

☒ Agree with the findings

☐ Disagree with the findings

Please check one:

☒ Agree with the recommendations

☐ Disagree with the recommendations

Management Action Plan:

E5.1 - Risk Management agrees with recommendation E5.1 and will continue development of COV BCPs in accordance with the BCM program, adjusting for COVID as necessary.

E5.2 VEMA is responsible for updating the COV Response and Recovery Plan. At this point VEMA's update has been put on hold due to COVID-19 response. Once activity is resumed, the CRO will ensure that VEMA will have full support from Business Continuity.

E.6 Update VEMA Technology to Support its Operation and Management

Key VEMA responsibilities with the most critical business impact are the EOC and Emergency Support Services (ESS) functions, and have multiple levels of redundancy, including staff, facilities,

and tools. However, some components of EOC technology are beyond end-of-life and are at risk of failure. These technologies require upgrading, especially the audio-visual and some backup communications systems. The COVID pandemic response has highlighted some areas of VEMA that have worked well and some areas that require improvement, especially for a long, drawn out response like a pandemic.

VEMA's operation is critical in support of other City departments, external emergency agencies, and the community. It is important that VEMA has the technologies that are capable to continue its delivery of critical corporate and public services at an acceptable level following a business disruption.

Recommendation

E6.1 The Director at VEMA should assess which EOC technology and/or equipment are beyond end-of-life that require immediate attention. Although the City budget will be strained during the COVID pandemic, VEMA should be preparing a priority list of equipment that would require an upgrade to continue its service delivery. By having this ranked list, it will facilitate funding once the budget is available to support this critical operation. The list should be completed by March 31, 2021 and should be readily available should there be an opportunity to obtain funds during 2021 or in the next budget cycle in 2022.

Management Response:

Please check one:

☒ Agree with the findings

☐ Disagree with the findings

Please check one:

☒ Agree with the recommendations

☐ Disagree with the recommendations

Management Action Plan:

VEMA Director agrees with the recommendation, but cannot commit to the timeline given ongoing COVID response. VEMA has a list of core systems that need upgrading/replacement, this includes its Information Management System (VanORCA), the audio-visual system at the EOC, and Public Safety CCTV system. In order of criticality:

1. *Information Management system (VanORCA) – underway*
VanORCA is undergoing a significant version upgrade in 2021. Until the upgrade is complete, the current version continues to meet existing needs, but we're unable to leverage new functionality or implement needed enhancements identified throughout the COVID response until the upgrade is complete.
2. *EOC audio-visual system – requires funding*
This system is beyond end-of-life. Due to the interconnection with other technology systems and continued advancements in technology solutions, a coordinated effort needs to be undertaken with Technology Services to refine requirements, confirm budget, and select and implement a solution. This requires expertise and capacity beyond VEMA, and is therefore dependent on both VEMA and Technology Services. VEMA and Technology Services expect to have a needs assessment/requirements completed by end of 2021, but unlikely before March 31, 2021, due to COVID response.
3. *Public Safety CCTV system – requires funding*
The Public Safety CCTV system is in the process of being migrated to a new corporate platform. This is a multi-year process. Future phases of this work require additional scoping and funding which is deferred to 2022 due to COVID response.

