



Calgary

City Auditor's Office

9-1-1 Call Centre Audit

September 6, 2017

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The City Auditor's Office completes all projects in conformance with the *International Standards for the Professional Practice of Internal Auditing*.

Executive Summary

Calgary 9-1-1 (C9-1-1) is the 9-1-1 call centre for the City of Calgary, acting as the first point of contact for citizens in need of emergency assistance. C9-1-1 answers and evaluates 9-1-1 emergency and non-emergency calls, and dispatches the appropriate agencies to respond: Police, Fire or Emergency Medical Services (EMS).

Quality and promptness of the call handling process are critical factors to ensure successful and efficient emergency responses. Potential delays and errors in call response, evaluation, and dispatch in 9-1-1 call handling pose a critical risk to public health and safety. C9-1-1 tracks and monitors key performance indicators (KPIs) to evaluate operational performance and through follow up actions mitigate risk to citizens of delays or errors in the call handling process.

The objective of this audit was to evaluate the effectiveness of controls in place to support the achievement of call handling KPIs. The audit assessed the design and operation of key controls to mitigate the risk of delays or problems in the call handling process for Police 9-1-1 calls, up to the point the call was passed over for dispatch.

The audit focused on KPIs and associated controls that mitigate the risk of:

1. Unacceptable delay in Emergency Communication Officers (ECOs) response to calls, and
2. Health and safety of citizens and emergency responders is impacted due to errors in relaying critical information to emergency responders.

The design of C9-1-1's key controls supports the achievement of call handling KPIs and mitigates the risk of delays or problems in the call handling process. However, as call duration has increased, C9-1-1 is challenged to do "more" with existing resources, and continue to mitigate risks while being as efficient as possible.

C9-1-1 identified additional staffing growth positions in their 2015-18 Action Plan to maintain service levels as Calgary's population grows and assist in increasing service levels when there is an unexpected surge in calls. However, resourcing remains as an identified concern in addressing service levels. C9-1-1 has not met their KPI target of answering 95% of the Police 9-1-1 calls within 15 seconds in either 2015 (93%) or 2016 (94%), and based on the results of this audit may be similarly challenged to meet their KPI target in 2017.

C9-1-1 acknowledges the risk exposure to Calgarians represented by these missed targets, and continues to apply and develop additional mitigating strategies, including:

- Developing a revised staffing plan following Alberta Health Services (AHS) transition by the end of Q2 2017; and
- Investigating options to reconfigure the call answering process, such as considering changing the first point of answer (PSAP) to Police 9-1-1.

Our testing identified additional associated factors/trends that, if they continue through 2017 and 2018, could further negatively impact call answer times and thus increase the risk to the public's health and safety. From 2015 to 2016, C9-1-1 experienced a 20% increase in the average number of sickness and absence days per employee; a 54% increase in overtime; and a 5% increase in total average call duration for Police 9-1-1 calls. C9-1-1's ongoing mitigation plans will take additional time to be fully executed due to the complexity of process changes and existing resource constraints. Accordingly, we recommended that in addition to on-going long-term mitigation strategies, C9-1-1 should investigate additional short-term initiatives to minimize the risk of continued missed Police 9-1-1 KPI targets, such as, additional workforce wellness initiatives; cross

training additional staff to rebalance staffing between PSAP and Police 9-1-1 teams; and process changes to reduce Police 9-1-1 call duration.

The audit also raised a further recommendation to establish a process to ensure that all abandoned calls receive call back within an appropriate and specified time frame, and raised two recommendations regarding Standard Operating Procedures (SOPs) with the aim of assisting C9-1-1 in maximizing the efficiency of their processes, and enhancing the value of the SOPs as a training tool.

C9-1-1 has agreed to all recommendations and committed to implementing the recommendations by June 28, 2019. The City Auditor's Office will monitor the status of commitments as part of its ongoing recommendation follow-up process.

We would like to thank staff from C9-1-1 for their assistance and support throughout this audit.

1.0 Background

C9-1-1 ensures public and emergency responders safety by providing 9-1-1 emergency and non-emergency call evaluation and dispatch services. C9-1-1's ECOs answer, assess and dispatch 9-1-1 emergency and non-emergency calls for the Calgary Police Service (CPS), Calgary Fire Department (CFD) and several surrounding Regional Fire Departments.

C9-1-1 formerly delivered call evaluation and dispatch services within Calgary and portions of southern Alberta for AHS. However, the City and AHS revised their service agreement and effective March 14, 2017, EMS calls from outside Calgary city limits are being dispatched by AHS. In the new contract C9-1-1 maintains dispatch services for EMS calls made within Calgary city limits but effective June 28, 2017, use AHS technology, including dispatch software and telephony, to handle those EMS calls.

C9-1-1 is one of the largest emergency call centers in Canada. It serves a region of almost 12,000 square kilometers and answers more than one million emergency and non-emergency calls each year and dispatches events for frontline emergency responders. C9-1-1 had 258.5 full time employees in 2016 with the operating budget of \$29M¹. The operating budget for 2016 had 85 % of funding coming from tax support, and the remaining 15% of funding coming from revenue (external service contracts).

C9-1-1's Board of Governors defines the strategic direction for C9-1-1, monitors its progress to achieve its mission and ensures its operational stability. The Board of Governors has representation from CPS, CFD, City of Calgary Information Technology and The City's Calgary Community Standards Business Unit. The Board of Governors is accountable to Calgary City Council, City Administration and the Calgary Police Commission for matters related to the governance and mandate of C9-1-1.

To support efficient and timely emergency response, C9-1-1's contracted clients (CPS, CFD, AHS and Regional Fire) have specific service expectations regarding call answer, evaluation and dispatch times. These requirements are outlined in their respective Service Level Agreements with Calgary 9-1-1. The percentage of calls that 9-1-1 are able to answer within a targeted time is known as Grade of Service (GOS). GOS forms a critical part of the Service Level Agreements, performance measures and reporting. C9-1-1 tracks, monitors and reports performance measures and follow up action to the Board of Governors on a quarterly basis.

Emergency calls may come simultaneously (random call arrival), rather than on a sequential basis at regular intervals, thus the strategic deployment of resources is a key to ensure that ECOs can answer and evaluate every call without causing a delay to other incoming calls. 2016 call volumes were:

Function (Queue)	Calls Offered
PSAP	413,524
Fire non-emergency	70,038
Medical non-emergency	28,985
Police 9-1-1	213,545
Police non-emergency	352,039
Total	1,078,131

¹ Community Services Action Plan 2015-2018

C9-1-1's systems (phone, radio, Computer Aided Dispatch (CAD)) are important in supporting the call handling process, as these systems can be utilized to confirm caller location, collect information related to the incident, and provide real time updates to front line responders. As of June 2017, C9-1-1 utilizes three CADs, two CAD systems (out of three) are owned by the City of Calgary, one utilized for Police events, the other utilized for Fire events. The third CAD is owned by AHS. All emergency calls are initially answered by the Public Safety Answering Point (PSAP) ECOs. The PSAP function is responsible for answering calls made to an emergency telephone number for Police, Fire, and EMS. Calls requiring Police (approximately 15,000 per month) are transferred to Police ECOs for evaluation (see Appendix). An additional 3,000 calls per month are internally generated from within the 9-1-1 call centre to police ECOs. Calls requiring EMS are transferred to the AHS pod and calls requiring Fire are evaluated by the PSAP ECOs.

2.0 Audit Objectives, Scope and Approach

2.1 Audit Objective

The objective of this risk-based audit was to evaluate the effectiveness of controls in place to support the achievement of call handling KPIs. The objective was achieved by assessing the design and operation of controls that mitigate the following risks:

- Unacceptable delay in 9-1-1 ECO response to calls; and
- Health and safety of citizens and emergency responders is impacted due to errors in relaying critical information to emergency responders.

2.2 Audit Scope

The audit scope focused on C9-1-1's emergency calls from the citizen's 9-1-1 phone call, to the point where the CAD event is generated/sent to dispatcher (indicated through yellow highlighted functions in the Appendix: High Level Process Map). We also examined the prioritization of emergency over non-emergency calls. We tested and analyzed C9-1-1 KPIs and related controls data for the period of July 1, 2016 to December 31, 2016. The audit also used observations during the time of the audit fieldwork (April, 2017) to support our evidence based testing.

Although the focus of the audit was specific to Police 9-1-1 calls, many of the key controls tested also apply to EMS and Fire calls. Detailed testing and validation of the CAD system and call dispatching were not part of the audit scope.

2.3 Audit Approach

The audit approach reviewed:

- Risk related KPIs to evaluate performance and to confirm calculation (accuracy and completeness) of the indicators; and
- The design and operation of key controls that support the achievement of the KPIs through interviews, documentation reviews, testing and analysis.

3.0 Results

The audit evaluated a sample of five KPIs which are utilized by C9-1-1 to mitigate the risk of delays or problems in the call handling process. In our evaluation we noted the sample call handling KPIs are clearly defined and they are calculated through specified formulas that include measurement frequency, scope and data definition. We confirmed that the KPI calculations for Q3-Q4 of 2017 were complete and accurate. The design of C9-1-1's key controls (as discussed further below) support the achievement of call handling KPIs, and effectively mitigate the risk of delays or problems in the call handling process. However, as call duration has increased, C9-1-1 is challenged to maintain service levels and to continue to provide adequate risk mitigation given current finite resources. The operation of controls related to staffing is therefore limited in effectiveness. We recommended that in addition to on-going long term mitigation strategies, C9-1-1 should investigate additional short term initiatives to minimize the risk of missed Police 9-1-1 KPI targets. The audit also raised three further recommendations to better manage the abandoned calls follow up process; and to enhance SOPs revision and training processes.

3.1 Risk of unacceptable delay in ECO response to calls

C9-1-1 utilizes the following KPIs to monitor the risk of unacceptable delay in ECO response to calls (see Appendix):

- KPI # 2.1.1 - 95 % of PSAP 9-1-1 calls answered within 15 seconds
(The call answer time of all PSAP 9-1-1 initiated calls.)
- KPI # 2.1.2 - 95 % of Police 9-1-1 calls answered within 15 seconds
(The call answer time of all Police 9-1-1 initiated calls.)

We reviewed the KPI calculation methodology and confirmed that the calculations completely and accurately captured information in line with the KPI definition. We reviewed the 2015 and 2016 Performance Reports presented to the Board of Governors, and confirmed that the KPI 2.1.1 met or exceeded the target in 2015 and 2016 (95% and 96% respectively against the target of 95%). However, the performance of the KPI 2.1.2 was below the target in 2015 and 2016 (93% and 94% respectively against the target of 95%).

We tested the following key controls which were designed to mitigate the risk and to support the achievement of the related KPIs. The following is the summary of our controls testing:

3.1.1 Staffing Plan

C9-1-1 has a formalized process to prepare the staffing plan annually. The staffing plan incorporates previous year's GOS, call volumes, average call duration and call volume projections for the future year. It outlines total staffing needs including breaks/relief factor (the number of additional staff needed to reasonably assure uninterrupted coverage) for each day and shift. We confirmed, as per call center best practices, C9-1-1 uses a staffing calculator (Erlang C Calculator) to finalize the staffing model. Erlang C Calculator is a tool that considers call volumes and the desired service level, and then determines the minimum resources to achieve the desired service level.

However, our testing of the 2016 staffing plan and interviews indicated that C9-1-1 assign fewer number of staff to receive Police 9-1-1 calls than recommended by the staffing model due to resource limitations. C9-1-1 has a challenge to meet the desired service level for police 9-1-1 calls (to answer 95% of calls within 15 seconds) with finite resources. C9-1-1 is developing mitigating strategies such as revised staffing plan and process changes to achieve Police 9-1-1 call answering KPIs. Our testing identified additional factors such as higher than anticipated sickness and absence which may further impact call answer times. We recommended that in addition to the long-term strategies, C9-1-1 should also investigate short-term actions to address the risk (Recommendation 1).

3.1.2 Monitoring Grade of Service

C9-1-1 monitors GOS (GOS - % of calls answered by PSAP within 15 seconds, and % of Police 9-1-1 calls answered by Police ECOs within 15 seconds) to mitigate the risk of not achieving KPI targets. GOS and call volumes are monitored by Emergency Communications Leads (ECL) in real time. The ECLs proactively adjust staffing levels to the extent possible (e.g., re-assigning duties to provide greater staffing to the impacted function) to address decline in the GOS or increase in call volumes during the shifts. GOS is also tracked for each shift through daily GOS reports. We reviewed 25 daily GOS reports and verified that the GOS reports with the details of follow up actions taken are distributed to C9-1-1 management. The design of controls to monitor GOS is appropriate to mitigate the risk of missing KPI targets.

3.1.3 Business Continuity Plan

C9-1-1 has an established and documented Business Continuity Plan consisting of six Business Continuity Standard Operation Procedures (SOPs). The plan has detailed instructions to support C9-1-1 in responding to unexpected increases in call volumes or to a business continuity event. A customized business continuity e-learning module was completed by 92% of C9-1-1 staff in 2016.

3.1.4 Phone Queue Prioritization

C9-1-1's phone system has been configured to assign high priority to emergency calls. We reviewed an Interface Control Document (a paper document describing the configuration of the phone system), and confirmed that C9-1-1 uses a priority queuing logic to create a system control which assigns a higher or lower priority to a given access number than to other access numbers in the same queue. We confirmed through observing two call center shifts that emergency calls are correctly identified by the phone system and receive appropriate priority service over non-emergency calls. The system controls related to queue prioritization are operating effectively.

3.1.5 Abandoned Calls Tracking

Abandoned calls are tracked in real time through a Computer Telephone Interface (CTI), and the ECOs are directed to follow up on abandoned calls through the CTI, as per the C9-1-1 SOP for abandoned calls. We reviewed a sample of abandoned calls and for five calls (out of the 66) there was no history/evidence of call back in the CTI log. We recommended C9-1-1 design and implement a process to ensure timely follow up on all abandoned calls (Recommendation 2).

3.2 Risk of significant errors in relaying critical information

C9-1-1 utilizes the following KPIs to monitor the risk:

- 2.1.5a - 95 % of PSAP to Police 9-1-1 transfer time within 30 seconds.
(The transfer time, which is defined as the interval between when PSAP receives the call to when the call is transferred to Police – see Appendix).
- 2.2.1 - 90% quality rating for Police calls
(The quality rating on a stratified random sample of calls).
- 2.4.1 - 90% of Police first responders satisfied with the service provided.
(The percentage of responders that report they are satisfied with their overall C9-1-1 experience.)

We reviewed the KPI calculation methodology and confirmed that the calculations completely and accurately captured information in-line with the KPI definition. We reviewed the 2015 and 2016 Performance Reports presented to the Board of Governors, and confirmed that the performance of the KPIs 2.2.1 and 2.4.1 met or exceeded the target in 2015 and 2016.

However, the performance of the KPI 2.1.5a was below the target in 2015 and 2016 (87% and 88% respectively). C9-1-1 will be implementing future changes including revised staffing plan and process changes as a result of the AHS transition, which would significantly impact the call handling process, and associated KPIs. Section 4.1 has further details regarding C9-1-1 initiatives and our recommendation to mitigate the risk of missing Police call handling KPI targets.

The following is a summary of key controls testing related to the above KPIs:

3.2.1 Standard Operating Procedures

C9-1-1 uses Standard Operating Procedures (SOPs) to communicate roles and responsibilities to employees and to ensure consistency in call evaluation process by providing instruction on call taking and evaluation. The SOPs are made available to staff through Policy and Procedure Management (PPM) system.

Once an SOP is rolled out, employees are required to acknowledge that they have reviewed the SOP. Training on all SOPs is provided to new employees. However, further SOP training where a new SOP is rolled out or significant amendments are made to an existing SOP are provided on an ad-hoc basis as C9-1-1 does not have criteria to define training requirements for new or revised SOPs. We recommended that C9-1-1 establish a process to define training criteria to increase the SOPs value as a training tool (Recommendation 3).

C9-1-1's policy is to review all SOPs every three years. At the time of the audit, 13% of Police function SOPs (12 of 89) had not been reviewed/updated within the three year timeframe. C9-1-1 is working to hire a dedicated resource to ensure that accurate, up-to-date SOPs are maintained. Additionally, given the numbers of SOPs, we recommended using a risk-based process to enhance efficiency of the SOPs review process (Recommendation 4).

3.2.2 Protocol Cards

C9-1-1 uses detailed protocol cards to ensure consistency and efficiency of the calls evaluation process. We observed that the cards are readily available to staff and the ECOs consistently evaluate calls by following the standard questions as outlined in the protocol cards. We tested a sample of 12 Police 9-1-1 protocol cards, and all cards in our sample were updated within C9-1-1's three year revision policy.

3.2.3 Quality Improvement Process

C9-1-1 uses an established Quality Improvement (QI) process to identify and address non-compliance with call handling protocols. Monthly, a sample of calls taken by ECOs are assessed by QI specialists against protocol card criteria. Monthly summary reports of assessment results are distributed to C9-1-1 management and the Board of Governors. Individual instances of non-compliance are followed up on by the relevant supervisor. Any trends in non-compliance identified are considered by C9-1-1 management for incorporation into ECO training. The QI process is designed effectively to support consistency of call handling and therefore mitigate the risk of errors in relaying critical information.

3.2.4 Monitoring of Call Transfers

Calls requiring Police assistance are transferred to Police ECOs by PSAP's ECOs. C9-1-1 utilizes two manual controls to ensure call transfer is complete and timely. Firstly, ECLs conduct real time monitoring of calls in the transfer queue. If the number of calls in the queue increases (which increases the risk that calls are not being addressed in a timely manner), leads take steps to adjust staffing levels (for example putting non-emergency calls on hold) to minimize the queue. Secondly, C9-1-1 utilizes a Supervised Call Transfer SOP which directs that during the transfer of the call, PSAP ECOs stay on the line to ensure that communication with the caller is established, and that key information is relayed such as caller location. The design of these controls is effective to mitigate the risk that call transfer is incomplete or delayed.

3.2.5 System Call Location

ANI (Automatic Number Identification) and ALI (Automatic Location Identification) details are used as a system control to create a CAD event (i.e. caller's and incident details) and to provide caller's details to the dispatch function. We confirmed that ANI/ALI information is recorded and used consistently by C9-1-1 to generate CAD event for dispatch function.

3.2.6 CAD Masks

We tested that C9-1-1's CAD system's address field only accepts a valid Alberta address – a system control known as a CAD mask. However, the telephone number field has no restriction to prevent any invalid manual entry such as incomplete phone number or letters. C9-1-1's SOP for answering incoming calls requires ECOs to verbally confirm and verify phone numbers for every call to mitigate the risk of manual entry of an invalid phone number. Procedural controls are effectively designed to prevent invalid address or phone number entries in the CAD.

4.0 Observations and Recommendations

4.1 Staffing Levels

C9-1-1 identified additional staffing growth positions in their 2015-18 Action Plan to maintain service levels as Calgary's population grows and assist in increasing service levels when there is an unexpected surge in calls. However, resourcing remains as an identified concern in addressing service levels. C9-1-1's KPI #2.1.2 states that 95% of the Police 9-1-1 calls should be answered within 15 seconds. This target was not met in 2015 and 2016 (year-end performance of 93% and 94% respectively).

C9-1-1 recognizes the risk to Calgarians created by these missed targets, and is developing mitigating strategies, including;

- Developing a revised staffing plan following AHS transition by the end of Q2 2017; and
- Investigating options to reconfigure the call answering process, such as considering changing the first point of answer to Police 9-1-1.

Our audit testing confirmed the risk through evaluating the accuracy of the KPI calculation. Our audit testing also confirmed that while C9-1-1 uses a staffing calculator (Erlang C Calculator, commonly used by call centers to calculate a baseline number of staff required to meet service levels) to prepare staffing models, numbers of staff available to receive Police 9-1-1 calls fall short of those levels set through the Erlang calculator. Police 9-1-1 call handling is impacted by staffing shortages to a greater degree than PSAP call handling.

Our testing identified additional associated factors/trends that could further impact call answer times and thus increase the risk to the public's safety. In 2016 the average number of sickness and absence days per employee was 14.9 compared to a 2018 target of 8 days (an increase of 2.5 days from 2015's 12.4 days per employee). Overtime increased by 54% from 2015 to 2016. Total average call duration for Police 9-1-1 calls (time spent on incoming calls plus clerical/wrap up time) has increased over time (9.3 minutes in 2012 to 11.7 minutes in 2016). The clerical time/wrap up time represents roughly half amount of total average call duration. If these trends continue into 2017, call answer times for Police 9-1-1 calls may fall further.

While we support the mitigation strategies underway, due to current resource limitations and the complexity of proposed process changes, these strategies will take time to be fully implemented. C9-1-1 should also consider approaches which address the risk in the short term.

C9-1-1 implemented health and wellness initiatives in 2016, and are considering further workforce wellness initiatives to support sickness and absence. An additional short term initiative C9-1-1 could consider is cross training additional staff to allow them to work in Police 9-1-1 as well as in PSAP. During 2016, PSAP targets have been met, and staffing levels are closer to the Erlang model than in Police 9-1-1. Currently, only eight PSAP and Police 9-1-1 ECOs out of 237.5 9-1-1 Services employees are cross-trained. Reviewing the call processes for handling Police 9-1-1 calls may identify potential process changes that could reduce call duration, allowing staff to handle greater call volumes during a shift.

Recommendation 1

Alongside on-going long-term mitigation strategies, the Deputy Commander should investigate additional short term initiatives to minimize the risk of not meeting Police 9-1-1 KPI targets, which could include:

- Exploration of additional workforce wellness initiatives;
- Analyzing the possibility of cross training additional staff to rebalance staffing between PSAP and Police 9-1-1 teams; and
- Investigate process changes to maintain or reduce Police 9-1-1 call duration.

Management Response

Agree.

Action Plan	Responsibility
<p>1. Wellness Initiatives and Cross Training A Psychological Health and Safety program has been implemented in 2016 to assist employees with managing the stressful nature of work. It is anticipated that the long term impact of this program will improve sickness and absence time. C911 will continue to implement further workforce wellness initiatives and cross training of additional staff, as outlined below:</p> <p>1.1. Exploration of additional workforce wellness initiatives:</p> <ul style="list-style-type: none"> • Managers receive daily S&A reports and verbally follow up with employees who have been off sick and have overtime booked; • When appropriate cancel overtime shifts to ensure employee wellness and ability to attend regular scheduled shifts; • Renovate quiet rooms to enhance utilization and wellness associated with the rooms; and • Host family nights for existing employee’s families to enhance understanding of work stress as it relates to home life and teach strategies. <p>1.2. Cross training additional staff to rebalance staffing between PSAP and Police 9-1-1 teams:</p> <ul style="list-style-type: none"> • Eight Fire/Medical on call staff and three full time staff began cross training class on June 19; • A second class is planned for Sept. 2017 pending General Manager approval; and • Current crossed trained employees will have the majority of their shifts scheduled on the Police function. 	<p><u>Lead:</u> Deputy Commander of 9-1-1 Services</p> <p><u>Support:</u> General Manager</p> <p><u>Commitment Date:</u> December 15, 2017</p>

Action Plan	Responsibility
<p>2. Investigate process changes to maintain or reduce Police 9-1-1 call duration</p> <ul style="list-style-type: none"> • Calgary 9-1-1 has agreement with CPS to disconnect from callers during the day on business 9-1-1 hang-up calls; and • Identify work processes that have increased call duration to identify possible efficiencies. 	

4.2 Abandoned Calls

There is no oversight control in place to ensure that expected call backs occur. Non-performance of a call back increases the risk of delayed or insufficient emergency assistance which could ultimately jeopardize the safety and welfare of citizens.

C9-1-1’s SOP for abandoned calls states that ECOs should treat all abandoned calls as emergency calls according to established procedures until or unless it can be determined that there is no emergency. Abandoned calls (an emergency phone call that has disconnected before the call can be answered by an ECO) are tracked in real time through a CTI. The CTI log saves the call history and allows the ECOs to follow up on abandoned calls. Once the follow up on an abandoned call is completed, call details are saved in the CTI log.

For five calls out of sample of 66 abandoned calls (7.5%) that were reviewed, there was no history/evidence of call back in the CTI log. There is no control currently in place to allow C9-1-1 to confirm that all abandoned calls have been called back by utilizing the CTI or through manual call backs.

Recommendation 2

The Deputy Commander –Technical Services design and implement a process to provide reasonable assurance that all abandoned calls receive call back within an appropriate and specified time frame.

Management Response

Agree.

Action Plan	Responsibility
<p>Part1: Process Review CTI is being decommissioned in 2018. C9-1-1 has implemented a new ANIALI management system (Komutel) that will track and manage abandoned calls.</p> <p>Implementing an automated abandoned call management study Q3 2017. Komutel will immediately send text message to abandoned wireless calls. ECOs will continue process of manual call-back. ECOs will track disposition of each call in Komutel, to produce report with recommendations for the Board of Governors for possible automation of call backs.</p> <p>Evaluate whether a standard exists for timelines to service abandoned calls.</p> <p>Part2: Design and Implementation of the Process: Subject to Board of Governors approval, design and implement a process to ensure that all abandoned calls meet the abandoned call timelines standard identified through the call management study.</p>	<p><u>Lead:</u> Deputy Commander Technical Services</p> <p><u>Support:</u> N/A</p> <p><u>Commitment Dates:</u> Part 1: June 29, 2018 Part 2: December 28, 2018</p>

4.3 SOP Training

C9-1-1 does not have criteria to define training requirements for new or revised SOPs. C9-1-1 has a formal Business Continuity Plan consisting of 6 SOPs to support C9-1-1 in responding to an unexpected increase in call volume or to a business continuity event. However, formal training has not been developed or provided to all impacted staff on a new Business Continuity SOP (Business Continuity Strategies).

This SOP provides critical guidance to implement mitigating strategies against various types of risks that could impact the health, safety and security of citizens and employees during a business continuity interruption, such as:

- Percentage reduction in baseline staff levels; including pandemic and labor action risks;
- Facility access risks;
- Percentage increase in call volumes; and
- Medical, Fire and Police resource overload.

ISO 9001(the International Quality Management Standard) recommends developing employees' knowledge and skills through training in order to ensure service consistency. SOPs are an important tool used by C9-1-1 to assist in providing a consistent GOS and to reduce risks such as disruption to call handling.

New employees are required to read all existing relevant SOPs. All employees are required to acknowledge through Policies and Procedure Management (PPM) system that they have

reviewed newly distributed SOPs, but there are no criteria to define SOP training needs for new or revised SOPs – for example to determine whether all staff, given the importance of a new SOP or SOP changes, should receive training either electronically or in person. Formal SOPs training is conducted on ad-hoc basis.

Absence of training criteria increases the risk of ineffective delivery of critical instructions, such as business continuity strategies, which may result in extended business disruption and associated potential impact on emergency response times.

Recommendation 3

The Learning and Development Manager establish criteria to outline SOPs training needs for staff, including:

- Establishing a process to determine training participants based on the importance of a new SOP or SOP changes; and
- Identifying appropriate training methods (electronically or in person) given the importance of a new SOP or SOP changes.

Management Response

Agree.

Action Plan	Responsibility
<p>Part 1: Process Review Assessment criteria and impact categories for SOPs defined. This will also include identification of the different communication/training options available:</p> <ul style="list-style-type: none"> • Communication process and assessment criteria reviewed with Operational Effectiveness Team and approved by Executive • Pilot go live • Review period– Note: Whether there is enough opportunity to thoroughly review the process will be dependent on the number of SOP changes made during this period. <p>Part 2: Process Adjustments and Roll Out</p> <ul style="list-style-type: none"> • Adjustments made to process based on pilot phase feedback • Roll out of process following adjustments. 	<p><u>Lead:</u> Learning & Development Manager</p> <p><u>Support:</u> Operational Effectiveness Team</p> <p><u>Commitment Dates:</u> Part 1: June 29, 2018 Part 2: December 14, 2018</p>

4.4 SOP Update Process

C9-1-1 SOPs are not effectively reviewed within the three year guideline to ensure they remain relevant and support expected staff operation knowledge requirements. Outdated SOPs could jeopardize the effectiveness of 9-1-1 Services.

C9-1-1's Policy Review Guidelines states that "C 9-1-1's policies shall be reviewed every three years, from date of last approval, to ensure they are current and support Calgary 9-1-1's vision." ISO 9001 (International Quality Management Standard) also recommends to develop a comprehensive system to ensure that all policies and procedures are continually reviewed and updated.

In total, at the time of the audit, the Police call handling function had 89 published SOPs, of which 87% had been updated within the three year timeframe. Of a sample of 12 SOPs that we reviewed, three (CAD Event Entry, Police Reports and Missing Person, 25%) had not been updated within the three year timeframe as per the C9-1-1 Policy Review Guidance. The current SOP revision process contains multiple (up to four) review cycles and associated approval levels which impact the timeliness of the update process, and create additional burden on C9-1-1 resources which are typically needed to prioritize call handling. The review process for these three SOPs has been in progress for between 6-24 months.

SOPs provide step by step call handling/evaluation guidance and instructions regarding all aspects of C9-1-1 operations, and are a critical tool to assist with consistency of services. Absence of updated and detailed instructions to perform functions poses the risks of inconsistent practices and declining levels service delivery. Inefficient processes also utilize valuable staff resources.

During 2016, a C9-1-1 internal resource was assigned to focus on updating SOPs, and by the end of 2016, 65% of all C9-1-1 SOPs had been updated within the three year timeframe. The resource has since returned to their base position, and C9-1-1 is awaiting approval to externally post a position to recruit a full time Policy Coordinator. We see an additional opportunity to utilize a risk-based approach in reassessing the priority and frequency of review of SOPs.

Recommendation 4

The Manager of Reporting and Compliance consider a risk-based approach to further streamline the SOPs review and update process, including the consideration of:

- Identifying critical SOPs and non-critical SOPs (through a risk-based approach) and assigning individual revision frequency for each category to mitigate resource constraints; and
- Identifying non-value added components of the SOPs revision process by using value stream mapping or other process management tools, and reduce or eliminate non-value added components as necessary.

Management Response

Agree.

Action Plan	Responsibility
<p>Part 1: Dedicated Resource Work on the recommendations can commence with the hiring of a Policy Coordinator. Currently finalizing Policy Coordinator posting. Once approval is received, will commence the competition process.</p> <p>Part 2: Process Improvement Once hired, the Policy Coordinator will have an objective of implementing a risk-based approach to updating SOPs, including the following steps:</p> <ul style="list-style-type: none"> • Create a risk-based matrix and garner Executive approval on the methodology. Populate the matrix with existing SOPs. • Create a value mapping process and garner Executive approval on the methodology. 	<p><u>Lead:</u> Manager of Reporting and Compliance</p> <p><u>Support:</u> HR Advisor & Finance</p> <p><u>Commitment Dates:</u> Part 1: December 15, 2017 Part 2: June 28, 2019</p>

Appendix: C9-1-1 High Level Process Map, with Overlay KPIs Indicated

Process map created by C9-1-1 staff: reflects call handling processes prior to AHS Transition

