REVISED AGENDA

AUDIT COMMITTEE

February 13, 2018, 9:30 AM
IN THE COUNCIL CHAMBER
Members

Councillor E. Woolley, Chair
Councillor G. Chahal, Vice-Chair
Councillor J. Farkas
Councillor D. Farrell
Citizen Representative L. Caltagirone
Citizen Representative M. Dalton
Citizen Representative M. Lambert
Mayor N. Nenshi, Ex-Officio

1.   CALL TO ORDER

2.   OPENING REMARKS

3.   CONFIRMATION OF AGENDA

4.   CONFIRMATION OF MINUTES

     4.1   Minutes of the Regular Meeting of the Audit Committee, 2018 January 26

5.   POSTPONED REPORTS
     (including related/supplemental reports)

     (None)

6.   ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

     6.1   New Central Library Readiness Audit, AC2018-0034

     6.2   City Auditor's Office 2017 Annual Report, AC2018-0019

     6.3   Annual Update – Information Technology Risk Management, AC2018-0133
            Attachment 1 held confidential subject to Sections 24 of FOIP

7.   ITEMS DIRECTLY TO COMMITTEE

   7.1   REFERRED REPORTS
         (None)

   7.2   NOTICE(S) OF MOTION
         (None)

8.   URGENT BUSINESS

9.   CONFIDENTIAL ITEMS

   9.1   ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

         9.1.1   Audit Forum (Verbal Report), AC2018-0031
                 Held confidential subject to Sections 24 and 26 of FOIP

         9.1.2   External Auditor (Verbal Report), AC2018-0033
                 Held confidential subject to Sections 24 and 26 of FOIP

         9.1.3   City Auditor (Verbal Report), AC2018-0032
                 Held confidential subject to Sections 24 and 26 of FOIP

   9.2   URGENT BUSINESS

10. ADJOURNMENT

MINUTES

AUDIT COMMITTEE

January 26, 2018, 9:30 AM
IN THE COUNCIL CHAMBER

PRESENT: Councillor E. Woolley, Chair
                     Councillor G. Chahal, Vice-Chair
                     Councillor J. Farkas
                     Councillor D. Farrell
                     Citizen Representative L. Caltagirone
                     Citizen Representative M. Dalton
                     Citizen Representative M. Lambert
ALSO PRESENT: Chief Financial Officer E. Sawyer
                     City Auditor K. Palmer
                     Acting City Clerk L. McDougall
                     Legislative Assistant J. Lord Charest
                     External Auditor T. Nakka

1. CALL TO ORDER

    Councillor Woolley called the meeting to order at 9:32 a.m.

2. OPENING REMARKS

    Councillor Woolley welcomed all present to the first Audit Committee Meeting of 2018.

3. CONFIRMATION OF AGENDA

    Moved by Citizen Representative Caltagirone

    That the Agenda for the 2018 January 26 Regular Meeting of the Audit Committee, be confirmed.

                                                          MOTION CARRIED

4.   CONFIRMATION OF MINUTES

4.1   Minutes of the Regular Meeting of the Audit Committee, 2017 December 14

Moved by Citizen Representative Dalton

That the Minutes of the Audit Committee held on 2017 December 14, be confirmed.

MOTION CARRIED

5.   POSTPONED REPORTS

(None)

6.   ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

6.1   Corporate Credit Card (Data Analytics) Audit, AC2018-0035

Moved by Councillor Farkas

That with respect to Report AC2018-0035, the following be approved:

1.   That Audit Committee receive this Report for information; and
2.   That Audit Committee recommend that Council receive this Report for information.

MOTION CARRIED

6.2   Green Line Engagement Audit, AC2018-0088

CLERICAL CORRECTION

Page 3 of 3, Report AC2018-0088, last line on the page, by deleting Report Number "AC2018-0007" and substituting with Report Number "AC2018-0088".

Moved by Citizen Representative Dalton

That with respect to Report AC2018-0088, the following be approved, **after amendment**:

1.   That Audit Committee receive this **Corrected** Report for information; and
2.   That Audit Committee recommend that Council receive this **Corrected** Report for information.

MOTION CARRIED

6.3   External Auditor 2016 Management Letter Update, AC2018-0026

Moved by Citizen Representative Lambert

That with respect to Report AC2018-0026, the following be approved:

1. Receives this Report and Attachments for information;
2. Recommends that Council receive this Report and Attachments for information.

MOTION CARRIED

6.4   Audit Committee 2017 Year-End Annual Status Report, AC2018-0040

Moved by Citizen Representative Caltagirone

That with respect to Report AC2018-0040, the following be approved:

That Audit Committee receive this Report and Attachment for information.

MOTION CARRIED

6.5   Audit Committee 2018 April Meeting Date Change, AC2018-0027

Moved by Councillor Chahal

That with respect to Report AC2018-0027, the following be approved:

That Audit Committee recommends that the date for their 2018 April 24 Meeting be changed to be held on 2018 April 17 with a start time of 8:30 a.m.

MOTION CARRIED

6.6   Annual Principal Corporate Risk Report, AC2018-0066

Distribution with respect to Report AC2018-0066:

• A PowerPoint presentation entitled "Administration's Annual Principal Corporate Risk Report", dated 2018 January 26.

Moved by Citizen Representative Caltagirone

That with respect to Report AC2018-0066, the following be approved:

1. That the Audit Committee receives this Report for information;
2. That Council receive this Report for information; and
3. That the Attachments remain confidential pursuant to Section 24 of the *Freedom of Information and Protection of Privacy Act* for a period of 15 years.

MOTION CARRIED

7. <u>ITEMS DIRECTLY TO COMMITTEE</u>

   7.1 <u>REFERRED REPORTS</u>

   (None)

   7.2 <u>NOTICE(S) OF MOTION</u>

   (None)

8. <u>URGENT BUSINESS</u>

   (None)

9. <u>CONFIDENTIAL ITEMS</u>

   Moved by Citizen Representative Caltagirone

   That, in accordance with Section 197 of the *Municipal Government Act* and Sections 16, 17, 19, 24 and 26 of the *Freedom of Information and Protection of Privacy Act,* the Audit Committee move into Closed Meeting, in the Council Lounge, at 11:10 a.m., in order to discuss several confidential matters with respect to the following Reports:

   • Item 9.1.1 External Auditor - Provision of Additional Services, AC2018-0064;
   • Item 9.1.2 Audit Forum (Verbal) Report, AC2018-0028;
   • Item 9.1.3 City Auditor 2018 City Auditor (Verbal Report), AC2018-0029;
   • Item 9.1.4 External Auditor (Verbal Report), AC2018-0030; and
   • Item 9.1.5 City Auditor Performance Review (Verbal Report), AC2018-0071.

   MOTION CARRIED

   That the Audit Committee moved into public session at 11:40 a.m. with Councillor Woolley in the Chair.

   Moved by Citizen Representative Caltagirone

   That the Audit Committee Rise and Report.

   MOTION CARRIED

9.1 ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

9.1.1 External Auditor - Provision of Additional Services, AC2018-0064

That, subject to Section 197 of the *Municipal Government Act*, the following members were in attendance, in Closed Meeting:

Administration: L. McDougall (Clerk), E. Sawyer (Advice), C. Male (Advice) and C. Smillie (Advice)

City Auditor: K. Palmer (Advice)

External Auditors: T. Nakka (Advice) and H. Gill (Advice)

Moved by Citizen Representative Dalton

That with respect to Report AC2018-0064, the following be approved:

That the Audit Committee:

1. Approve Administration Recommendation 1 contained in Report AC2018-0064; and
2. Direct that this Report, recommendations and Closed Meeting discussions remain confidential subject to Section 16 and 24 of the *Freedom of Information and Protection of Privacy Act.*

MOTION CARRIED

9.1.2 Audit Forum (Verbal Report), AC2018-0028

That, subject to Section 197 of the *Municipal Government Act*, the following members were in attendance, in Closed Meeting:

Administration: L. McDougall (Clerk), E. Sawyer (Advice), C. Male (Advice) and C. Smillie (Advice)

City Auditor: K. Palmer (Advice)

External Auditors: T. Nakka (Advice) and H. Gill (Advice)

Moved by Councillor Farkas

That with respect to Report AC2018-0028, the following be approved:

That the Audit Committee:

1. Receives the Audit Forum (Verbal Report) for information; and
2. Directs that the Verbal Report and Closed Meeting discussions remain confidential subject to Sections 24 and 26 of the *Freedom of Information and Protection of Privacy Act.*

MOTION CARRIED

9.1.3   City Auditor 2018 City Auditor (Verbal Report), AC2018-0029

That, subject to Section 197 of the *Municipal Government Act*, the following members were in attendance, in Closed Meeting:

Administration: L. McDougall (Clerk) and C. Smillie (Advice)

City Auditor: K. Palmer (Advice)

Moved by Councillor Farrell

That with respect to Report AC2018-0029, the following be approved:

That the Audit Committee:

1. Receives the City Auditor 2018 City Auditor (Verbal Report) for information; and
2. Directs that the Verbal Report and Closed Meeting discussions remain confidential subject to Sections 24 and 26 of the *Freedom of Information and Protection of Privacy Act.*

MOTION CARRIED

9.1.4   External Auditor (Verbal Report), AC2018-0030

No Report was given for this Item.

9.1.5   City Auditor Performance Review (Verbal Report), AC2018-0071

That, subject to Section 197 of the *Municipal Government Act*, the following members were in attendance, in Closed Meeting:

Administration: L. McDougall (Clerk)

Moved by Councillor Chahal

That with respect to Report AC2018-0071, the following be approved:

That the Audit Committee:

1. Receives the City Auditor Performance Review (Verbal Report) for information; and
2. Directs that the Verbal Report and Closed Meeting discussions remain confidential subject to Sections 17 and 19 of the *Freedom of Information and Protection of Privacy Act.*

MOTION CARRIED

9.2   URGENT BUSINESS

(None)

10. ADJOURNMENT

Moved by Councillor Farkas

That this meeting adjourn at 11:45 a.m.

MOTION CARRIED

The following items have been forwarded to the 2018 February 26 Regular Meeting of Council:

Consent:

Item 6.1 Corporate Credit Card (Data Analytics) Audit, AC2018-0035

Item 6.2 Green Line Engagement Audit, AC2018-0088

Item 6.3 External Auditor 2016 Management Letter Update, AC2018-0026

Item 6.6 Annual Principal Corporate Risk Report, AC2018-0066

The next Regular Meeting of the Audit Committee is scheduled to be held on 2018 February 13.

CONFIRMED ON 2018

_____   _____
CHAIR   ACTING CITY CLERK

City Auditor's Report to
Audit Committee
2018 February 13

Item #6.1
ISC: UNRESTRICTED
AC2018-0034
Page 1 of 2

NEW CENTRAL LIBRARY READINESS AUDIT

EXECUTIVE SUMMARY
The City Auditor's Office issued the New Central Library (NCL) Readiness Audit Report to Administration on February 2, 2018. The report includes the Calgary Public Library's (CPL) response to three recommendations raised by the City Auditor's Office. CPL accepted all recommendations and has committed to the implementation of action plans no later than February 28, 2018. The City Auditor's Office will track the implementation of these commitments as part of our on-going follow-up process.

RECOMMENDATIONS

1. That Audit Committee receive this Report for information; and
2. That Audit Committee recommend that Council receive this Report for information.

PREVIOUS COUNCIL DIRECTION / POLICY
Bylaw 30M2004 (as amended) established the position of City Auditor and the powers, duties and functions of the position. Under the City Auditor's Office Charter, the City Auditor presents an annual risk-based audit plan to Audit Committee for approval. The City Auditor's Office 2017/18 Annual Audit Plan was approved on November 10, 2016. The City Auditor is accountable to Council and subject to the oversight of Audit Committee under Bylaw 48M2012 (as amended).

BACKGROUND
This audit was undertaken as part of the approved City Auditor's Office 2017/18 Annual Audit Plan. The objective of this audit was to assess the readiness of CPL to assume responsibility for the NCL. Readiness is defined for this audit as the ability to provide library services in the NCL throughout the first month of operation. This was achieved by assessing CPL's planning, prioritization, and risk management processes that support the effective delivery of the Operational Readiness Plan. We reviewed the transition of existing and new services, staff and facility readiness, and security measures, as these were identified as key components to support CPL's objectives of delivering an attractive facility that performs well and is ready on Opening Day.

INVESTIGATION: ALTERNATIVES AND ANALYSIS
CPL have implemented planning, prioritization, and risk management processes that will assist them in effectively delivering the Operational Readiness Plan and assuming responsibility for the NCL. We evaluated the transition of existing and new services, staff and facility readiness, and security measures. We concluded that CPL are on track to achieving their move-in and usage targets by setting the planning and process to deliver key services/programs, ensuring that key building operations are in place, and managing security incident risks. We raised three recommendations focused on refining transition objectives, and associated monitoring and reporting. These refinements will further assist CPL in ensuring that key services and training goals are fully achieved by Opening Day.

City Auditor's Report to
Audit Committee
2018 February 13

Item #6.1
ISC: **UNRESTRICTED**
AC2018-0034
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NEW CENTRAL LIBRARY READINESS AUDIT

Stakeholder Engagement, Research and Communication
This audit was conducted with CPL acting as the principal audit contact.

Strategic Alignment
Audit reports assist Council in its oversight of the City Manager's administration and accountability for stewardship over public funds and achievement on value for money in City operations. The City provided funding of $175M to the NCL project budget, with the Calgary Municipal Land Corporation contributing $70M.

Social, Environmental, Economic (External)
N/A

Financial Capacity
Current and Future Operating Budget
N/A

Current and Future Capital Budget
N/A

Risk Assessment
The activities of the City Auditor's Office serve to promote accountability, mitigate risk, and support an effective governance structure.

The NCL project is a significant build with a planned budget of $245M, and an expected opening date of November 1, 2018. The CPL's NCL project Operational Readiness Plan states that in October 2018, the CPL will move the current Central Library operations into the NCL. This is the largest move the CPL has undertaken.

REASON FOR RECOMMENDATIONS
Bylaw 48M2012 (as amended) states: "Audit Committee receives directly from the City Auditor any individual audit report and forwards these to Council for information."

ATTACHMENT
AC2018-0034 NEW CENTRAL LIBRARY READINESS AUDIT

Approval: Katharine Palmer, City Auditor   Author: Andre Cohen

New Central Library Readiness Audit

February 2, 2018

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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

This is the third and last of three sequenced audits of the New Central Library (NCL) project, which is a significant build with a planned budget of $245M, and an expected opening date of November 1, 2018. According to the Calgary Public Library's (CPL) NCL project *Operational Readiness Plan*, in October 2018, CPL will move current Central Library operations into the NCL. The *Operational Readiness Plan* outlines major planning components to ensure a successful transition to the NCL for CPL.

The objective of this audit was to assess the readiness[1] of CPL to assume responsibility for the New Central Library. We assessed CPL's planning, prioritization, and risk management processes that support the effective delivery of the *Operational Readiness Plan*. We reviewed the transition of existing and new services, staff and facility readiness, and security measures, as these were identified as key components to support CPL's objectives of delivering an attractive facility that performs well and is ready on Opening Day.

CPL are well-positioned to assume responsibility for the NCL based on detailed planning, prioritization and risk management processes that support the delivery the *Operational Readiness Plan*. Based on our review, we determined that CPL are on track to achieving their move-in and usage targets by setting the planning and process to deliver key services/programs, ensuring that key building operations are in place, and managing security incident risks. We observed that detailed planning, prioritization, and risk management processes had been undertaken across all three areas we reviewed.

CPL's planning documentation incorporates the transfer of existing services/programs to the NCL. In addition, in preparation for the NCL, CPL completed a *Plan for Innovation*. The *Plan for Innovation* details the offering and trial of new NCL services proposed to meet and exceed the innovation in the building design, and ultimately attract more visitors than the current Central Library. CPL set priority levels for the new services/programs to be offered and created a design guide to test and assess results for the new services/programs. CPL's plans include support for functional and performance testing of individual NCL building components and systems, as well as a detailed plan on staff and volunteers job-specific training to deliver services/programs. NCL training includes safety course sessions. To mitigate the risk of increasing numbers of security incidents, CPL use an incident reporting system to identify and assess security incidents. CPL generate information on the types of security incidents and hold weekly discussions on security.

We raised three recommendations focused on refining transition objectives, and associated monitoring and reporting. These refinements will further assist CPL in ensuring that key services and training goals are fully achieved by Opening Day. CPL have agreed with our recommendations, and have indicated in their responses a commitment to implement action plans no later than February 28, 2018. The City Auditor's Office will follow-up on all commitments as part of our ongoing recommendation follow-up process.

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[1] Readiness is defined for this audit as the ability to provide library services in the NCL throughout the first month of operation.

1.0 Background

The New Central Library (NCL) project has a budget of $245 million, and is expected to be completed by Q4 2018. The project is being managed by the Calgary Municipal Land Corporation (CMLC) on behalf of the City of Calgary's Community Services (CS) and the Calgary Public Library (CPL). In 2015 and 2016, the City Auditor's Office undertook audits of the NCL's project management framework, governance structure, and project management's use of tools and techniques to monitor the project's schedule, cost, and quality performance. The audits resulted in an assessment that a robust governance oversight was established, utilizing a PMBOK[2]-based framework, and the project management team designed and implemented project controls to effectively support project objectives of completing the project within the approved budget, meeting approved quality requirements, and identifying and responding to risks.

The CPL's NCL project *Operational Readiness Plan* states that in October 2018, the CPL will move the current Central Library operations into the NCL. This is the largest move the CPL has undertaken. The project objective is articulated in the *Operational Readiness Plan* as "move in to NCL planned and smoothly executed in sufficient time for full operation on Opening Day, November 1, 2018." The *Operational Readiness Plan* outlines move plan components (Table 1) to ensure that the NCL project is on track for a handover date of October 1, 2018 and an opening date of November 1, 2018. The move to NCL and the handover processes include change management activities, communication among CPL departments and stakeholders involved in the move-in process, and CPL tracking the achievement of deliverables. Metrics for the *Operational Readiness Plan* include staff readiness, facility operations, building security, and Information Technology (IT) systems.

Table 1 – NCL Project Operational Readiness Move Plan Components and Metrics

Move Plan Components	Metrics
NCL staff are in place with required training	NCL staff hired and trained by September 1, 2018
Building security systems in place	Security team familiar with the NCL, trained in Library services, and familiar with NCL systems by September 15, 2018
Handover date	October 1, 2018
IT network infrastructure and building security integration (installation and testing)	Complete by October 1, 2018
Well-prepared volunteers in place and trained	Volunteers recruited and trained by October 3, 2018
All building systems installed, tested and fully functional	All systems tested and operational by October 15, 2018
Plan for Innovation services developed, tested, and implemented in NCL	New services/programs piloted in advance of launch at NCL; all materials and staff training required for new services by October 15, 2018
Opening date	November 1, 2018

Sources: *NCL Project Operational Readiness Plan* and *NCL Move – Project & Change Management Plan*

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[2] The Project Management Institute's Project Management Body of Knowledge

The service strategy component of the *Operational Readiness Plan* is supported by the *Plan for Innovation*, which has been created to build upon the existing CPL programs and services, with the intention that services offered in the NCL meet and exceed expectations. CPL expect to combine the transition and expansion of existing Central Library services and operations with successful test items from the *Plan for Innovation* to achieve their NCL usage targets.

2.0 Audit Objectives, Scope and Approach

2.1 Audit Objective
The objective of this audit was to assess the readiness of CPL to assume responsibility for the New Central Library.

Readiness is defined for this audit as the ability to provide library services in the NCL throughout the first month of operation.

2.2 Audit Scope
The scope of the audit included CPL's planning, prioritization, and risk management processes that support the delivery of the *Operational Readiness Plan*. The content and format of services provided by CPL were not included in the audit scope.

2.3 Audit Approach
Our audit approach included the following:
- Review of the *Operational Readiness Plan*, and supporting documentation including the *Plan for Innovation* and other applicable plans and metrics, to determine whether CPL is mitigating the following risks:
  - Key services/programs are not offered;
  - Occurrence of significant security incidents; and
  - Key building operations and resourcing are not in place.
- Interviews with CPL staff associated with the NCL project.

3.0 Results

CPL have implemented planning, prioritization, and risk management processes that will assist them in effectively delivering the *Operational Readiness Plan* and assuming responsibility for the NCL. We evaluated the transition of existing and new services, staff and facility readiness, and security measures. We concluded that CPL are on track to achieving their move-in and usage targets by setting the planning and process to deliver key services/programs, ensuring that key building operations are in place, and managing security incident risks. We raised three recommendations focused on refining transition objectives, and associated monitoring and reporting. These refinements will further assist CPL in ensuring that key services and training goals are fully achieved by Opening Day.

3.1 Services/Programs offered at the NCL
CPL have detailed plans in place to support the transition of existing Central Library services/programs to the NCL. A cross-functional team meets weekly to discuss overall

preparations and readiness for transitioning services/programs to NCL. There are specific milestones for the existing services/programs to be transitioned. CPL have also created the *Plan for Innovation* to build upon existing services/programs to ensure that the services offered at the NCL meet and exceed the innovation in the building design, and ultimately attract more visitors than the current Central Library. The *Plan for Innovation* lists 87 services/programs to be defined, tested, and, if successful, launched for the NCL. CPL have effectively set priority levels for the services/programs, created a design guide describing the process from concept to testing to assessing results, and tracked progress for the services/programs (Illustration 1).

Illustration 1 – *NCL Plan for Innovation* Design Process
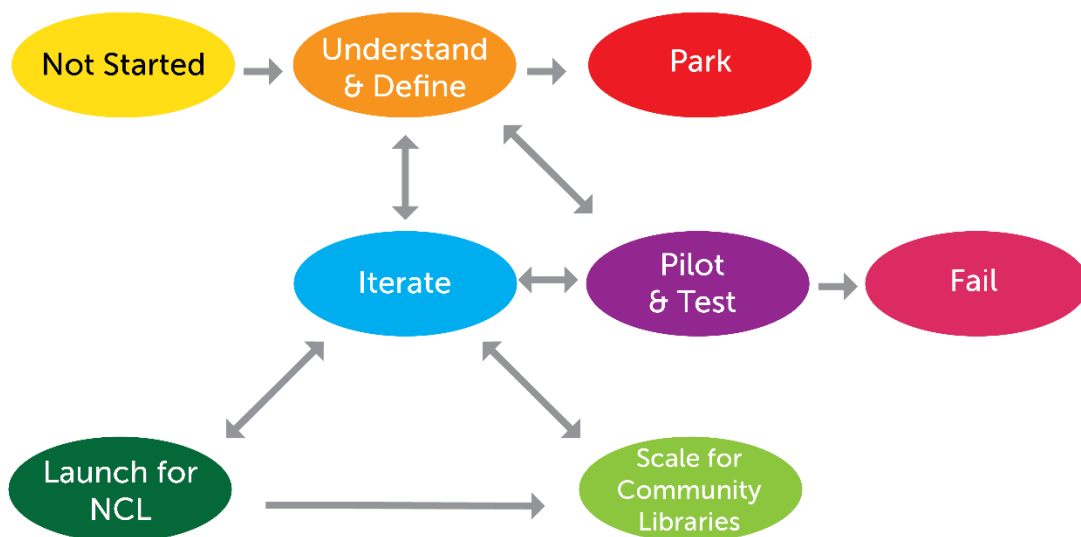
Source: *NCL Plan for Innovation* – July 2017

CPL management plans to have at least 50% of the Priority 1 services/programs offered when the NCL opens, but does not currently set an objective for the prioritization of these services ahead of Opening Day. Focusing on the Priority 1 services/programs will provide enhanced information to assist CPL in meeting their NCL usage targets. We recommended an update to CPL's planning documentation to reflect CPL's projection of at least 50% of the Priority 1 services/programs to be piloted and launched when the NCL opens (Recommendation 1).

3.2   Operational Readiness

We reviewed details of the *Operational Readiness Plan* and supporting planning documentation to determine whether the project is on track to ensure that operations are fully functional on Opening Day. We observed that planning documentation contains detailed information to support a fully functional NCL on Opening Day. To ensure that the NCL building systems (heating, ventilating, water, electrical) are functional on Opening Day, CPL's plans include support for the commissioning work (led by CMLC) by assigning staff to implement functional and performance testing of individual NCL building components and system interactions during construction. To support the completion of IT systems upgrades and equipment installation, CPL have devised an *Information Technology NCL Roadmap* with a

defined timeline, roles and responsibilities to test IT system and application upgrades, and equipment for the NCL. To engage existing users and reach new audiences, and to prepare the NCL for Opening Day celebrations, CPL is finalizing a *Promotional Plan* for the NCL to involve key stakeholders, generate awareness, excitement and promotional opportunities. CPL has also implemented a detailed plan on staff and volunteers job-specific training to deliver services/programs for the NCL, including roles and responsibilities, and delivery dates. As trained staff are key to success in delivering services/programs, we recommended the inclusion of information (timelines, percentage of completion) to monitor and report key staff training milestones in project reporting documentation to assess results and take action if needed (Recommendation 2).

3.3   Security

We reviewed the project's risk management documentation to determine whether the project is on track to mitigate the likelihood and impact of security incidents at the NCL that may impact usage targets. We observed that CPL have established processes to manage security incident risks. CPL use an incident reporting system that allows for the identification and assessment of security incidents. A procedure is in place to capture incidents within 24 hours in CPL's security incident reporting system, and management generates information on the types of security incidents. CPL hold weekly discussions on security which include the presence of The City's Security Advisor. CPL risk management documentation also includes measures to familiarize the team with NCL security systems and security-related training. NCL training includes safety and problem situation course sessions to train staff on how to deal with difficult situations. CPL's planning documentation includes steps to award a security contract and create security patrol procedures for the NCL ahead of the handover date. To further enhance their risk management, we recommended that CPL adjust their security incident objective to align with their objective of increasing visitor numbers to the NCL (Recommendation 3).

We would like to thank staff from CPL and CS for their assistance and support throughout this audit.

4.0 Observations and Recommendations

4.1   New Service/Program Objectives

CPL's Risk Matrix measures progress on all the new services/programs identified in their *Plan for Innovation*, but does not currently set an objective for the prioritization of these services ahead of opening day of the NCL. Well-defined objectives improve management's ability to manage risk, and to allocate resources effectively.

The *Plan for Innovation* "is the next stage in operational readiness for CPL to ensure that services/programs delivered within the NCL empower and connect the community." Management have set a prioritization process[3] for the services/programs in the *Plan for Innovation* where they are categorized into:
- Priority 1 services/programs (NCL doors open, enhanced customer experience)
- Priority 2 (not NCL doors open requirement); and
- Parked/failed (might pursue in the future or will not).

CPL management projects that at least 50% of the Priority 1 services/programs will be offered when the NCL opens. In their Risk Matrix document, management have documented an objective of 50% or more for <u>all</u> *Plan for Innovation* new services/programs to be piloted or launched prior to opening of the NCL. Adjusting the Risk Matrix measure to focus on the Priority 1 services/programs will provide enhanced information to assist CPL in meeting their NCL objectives.

<u>Recommendation 1</u>
The Director, Service Delivery, to recommend to the CPL Board's Audit and Finance Committee, an update to the Risk Matrix document to reflect the objective of at least 50% of the Priority 1 services/programs to be piloted and launched when the NCL opens.

<u>Management Response</u>

Agreed.

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[3] *NCL Innovation Plan Work Plan* October 2017

Action Plan	Responsibility
As work has progressed on the 2016 *Plan for Innovation* services and programs, monitoring metrics will narrow to focus on Priority 1 services/programs. Recommendations will be brought to the January 2018 CPL Board's Audit and Finance committee meeting and Library Board meeting. The suggested adjustment to the Risk Matrix metric is outlined as follows: Delivery of services/programs in the NCL (# of items within the Priority 1 Plan for Innovation services/programs that are being piloted or launched prior to the opening of NCL). • Insignificant: Greater than 55% • Low/Minor: 50-54% • Moderate: 30-49% • High/Major: 20-29% • Catastrophic: Less than 19% CPL administration has prepared strategies to address each level of risk.	<u>Lead</u>: Director, Service Delivery <u>Support</u>: CPL Board; CPL Board's Audit and Finance Committee; Director, Service Design <u>Commitment Date</u>: February 28, 2018

4.2 Project Change Management Plan – Staff Training

Project milestone reporting documentation should incorporate detailed information on the status of key training sessions offered to staff.

CPL management uses a Public Service Training Plan to assess detailed progress monthly, towards completion of professional learning modules by staff. The overall *NCL Move – Project and Change Management Plan* is a multi-departmental working document to ensure that the project is on track for a handover date of October 1, 2018 and an opening date of November 1, 2018. Effective change management that results in a successful transition to NCL, including Staff Readiness (i.e. all staff have successfully completed job-specific training) is a critical objective of the plan.

Each month, management uses the *NCL Move – Project & Change Management Plan* to report on the status of key project milestones to the Operational Readiness Committee and the NCL Steering Committee. The *NCL Move – Project & Change Management Plan* references broad training milestones, but does not include detailed information from the Public Service Training Plan such as key training timelines, milestones, responsibilities, and percentages of completion. Including this information in the *NCL Move – Project and Change Management Plan* would provide enhanced monitoring to identify risks or emergent issues related to staff training that could impact the project's objectives.

Recommendation 2

The Director, Service Delivery to include more detailed information (timelines, associated milestones, responsibilities, and percentages of completion) to monitor and report key staff training milestones in the *NCL Move – Project & Change Management Plan*.

Management Response

Agreed.

Action Plan	Responsibility
The Service Delivery Managers at the Central Library will be responsible to incorporate and regularly update the detailed timelines, milestones, responsibilities, and percentages of completion of three key professional learning opportunities for public service staff in the *NCL Move – Project and Change Management Plan*. These three key professional learning opportunities include Early Literacy Professional Learning, Guide on the Side, and Communicating Through Materials, all modules that will assist in ensuring that public service staff have the skills and competencies required to deliver service in the new building. The inclusion of these detailed milestones will ensure thorough monitoring and assessment, and reporting through the NCL Operational Readiness Committee and the NCL Steering Committee.	Lead: Director, Service Delivery Support: Service Delivery Managers, Central Library Commitment Date: December 1, 2017

4.3   Security Incident Performance Measures

CPL's current Risk Matrix uses a constant growth model in the percentage of security incidents (e.g. 5% to 65% increase in incidents year over year from 2015-2017) as a performance measure. This model does not take into account the growth in visits that is anticipated with the opening of NCL.

According to the *Plan for Innovation*, the Central Library recorded over 1.1 million visits in 2016, and delivered community programs with over 40,000 participants, a number that is anticipated to more than double at the NCL. As total visits increase, the potential for security incidents will also increase.

Performance measures help an entity operate within established risk tolerance, achieve objectives, and provide the basis for effective monitoring. Risk tolerance is the acceptable level of variation in performance relative to the achievement of objectives. Operating within risk tolerance provides management with greater confidence that the entity will achieve its objectives.

A performance measure that is a ratio of incidents to visits provides a more realistic picture of the impact security incidents are having towards the Library's stated goals of a welcoming and safe experience for visitors.   In 2017, the percentage of security incidents compared with visits has fluctuated between 0.02% and 0.04%, that is, one incident for every 2,500 to 5,000 visits. A performance measure that includes both the number of security incidents and the number of visits ensures that context is considered when analyzing and assessing the risk that is present.

 Recommendation 3
The Director, Service Delivery recommend, to the CPL Board's Audit and Finance Committee, an update to the Risk Matrix document that demonstrates a specific security incident objective, such as 1 incident for every 5,000 visitors (0.02%), to take into account the expected increase in the number of visitors in the NCL, and articulate associated risk tolerances (acceptable variations for the objective) and planned responses.

 Management Response

 Agreed.

Action Plan	Responsibility
As visits at Calgary Public Library continue to increase, along with the corresponding increase in interactions with the public, the potential for incidents increases.	Lead: Director, Service Delivery
	Support: CPL Board, CPL Board's Audit and Finance Committee
Recommendations will be brought to the January 2018 CPL Board's Audit and Finance committee meeting and Library Board meeting. The suggested adjustment to the Risk Matrix metric is outlined as follows:	Commitment Date: February 28, 2018
Insignificant: 0 – 0.50 (incidents) / 10,000 (visits) Low/Minor: 0.51 – 1.50 (incidents) / 10,000 (visits) Moderate: 1.51 – 4 (incidents) / 10,000 (visits) High/Major: Greater than 4.01 (incidents) / 10,000 (visits)	
CPL administration has prepared strategies to address each level of risk, including continuing collaboration with City of Calgary Corporate Security.	

City Auditor's Report to
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CITY AUDITOR'S OFFICE 2017 ANNUAL REPORT

EXECUTIVE SUMMARY
This report presents the City Auditor's Office 2017 Annual Report. The report provides an overview of the activities undertaken by the City Auditor's Office from January 1, 2017 to December 31, 2017.

RECOMMENDATIONS

1. That Audit Committee receive this Report for information; and
2. That Audit Committee recommend that Council receives this Report for information.

PREVIOUS COUNCIL DIRECTION / POLICY
Bylaw 30M2004 established the position of City Auditor and the powers, duties and functions of the position. The City Auditor is subject to the supervision of and accountable to Council, and reports to Council through Audit Committee.

Bylaw 48M2012 states that Audit Committee is responsible for:
- Overseeing the performance of the City Auditor;
- Overseeing, through the City Auditor, the Whistle-blower Program.

Section 7 (b) of Schedule A of Bylaw 48M2012 states that Audit Committee receives for information an annual audit report on the Whistle-blower Program and forwards to Council for information.

Section 1 (f) of Schedule C of Bylaw 48M2012 states that Audit Committee: "reviews and forwards to Council for information, the City Auditor's Office quarterly and annual status reports."

Section 2 (b) of Schedule C of Bylaw 48M2012 states that the City Auditor: "must submit the annual status report to Council for information after review by the Audit Committee."

Council Policy CC026, *Whistle-blower Policy*, states that the City Auditor "will report, at least on an annual basis, information related to reports received and investigations conducted during the year to Council through the Audit Committee."

BACKGROUND
The 2017 Annual Report summarizes the activities of the City Auditor's Office (CAO) in 2017. The report highlights significant activities carried out by the CAO and is presented to assist the Audit Committee in its oversight responsibilities of the CAO. The mission of the CAO is to "Provide independent and objective assurance, advisory and investigative services to add value to The City of Calgary and enhance public trust". This Annual Report demonstrates how the CAO is fulfilling its mission through delivering these services across The City of Calgary (The City) during 2017.

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CITY AUDITOR'S OFFICE 2017 ANNUAL REPORT

In 2017, utilizing a complement of 15 staff and a budget spend of $2.7M, the CAO:

- Carried out audit, advisory and investigative activities across approximately 80% of all City Business Units;
- Completed ten audits and initiated a further eight audits;
- Raised 48 audit recommendations resulting in 69 action plans, and monitored the closure of 79 action plans to support positive change;
- Conducted advisory work at both a Business Unit and corporate level to address emerging City risks and opportunities; and
- Closed 38 investigations.

INVESTIGATION: ALTERNATIVES AND ANALYSIS
N/A

Stakeholder Engagement, Research and Communication
The CAO collaborates with the relevant teams from Administration in completing all audit and advisory projects. The final deliverable or audit report is shared with Administration prior to presentation to Audit Committee.

The Whistle-blower Policy assigns responsibilities to the City Auditor and the City Manager to develop, implement and maintain an effective program. The results of all investigations are reported to the responsible General Manager and/or City Manager for action as appropriate. Any disciplinary action resulting from a substantiated report is the responsibility of management and shall be taken in accordance with Administration Policy HR-LR-002, *Labour Relations Policy.*

Strategic Alignment
The CAO Annual Report provides Audit Committee and Council with information to support their oversight responsibility of the CAO. The activities of the CAO assist Council in its oversight of the City Manager's administration and accountability for stewardship over public funds and achievement on value for money in City operations.

Social, Environmental, Economic (External)
N/A

Financial Capacity
Current and Future Operating Budget:
N/A

Current and Future Capital Budget:
N/A

Risk Assessment
The activities of the CAO serve to promote accountability, mitigate risk, and support an effective governance structure.

Approval: Katharine Palmer, City Auditor

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CITY AUDITOR'S OFFICE 2017 ANNUAL REPORT

REASONS FOR RECOMMENDATIONS:
1. Audit Committee has oversight responsibilities of the City Auditor's Office.
2. Bylaw 48M2012 states the Audit Committee "reviews and forwards to Council for information, the City Auditor's Office quarterly and annual status reports."
3. Bylaw 48M2012 states that Audit Committee "receives for information an annual audit report on the Whistle Blower Program, and forwards to Council for information."

ATTACHMENT
AC2018-0019 CITY AUDITOR'S OFFICE 2017 ANNUAL REPORT

Approval: Katharine Palmer, City Auditor

City Auditor's Office
2017 Annual Report

Calgary

City Auditor's Office

Message from The City Auditor

It is my ongoing pleasure, since 2013, to serve City Council and Calgarians as your City Auditor. I am privileged to lead a City Auditor's Office (CAO) of highly experienced and effective professionals, who year over year have provided added value to The City of Calgary (The City) through the consistent delivery of independent and objective assurance, advisory and investigative work.

The work we do is critical to Audit Committee, a Committee of Council, as it supports their increasingly important role of providing effective City governance through effective oversight and risk management. We also continue to provide a comprehensive Whistle-blower Program that operates with high integrity, and is available to both City employees and citizens.

Results of our work are brought in the form of recommendations and action plan commitments that support The City's common purpose to make life better every day for the citizens of today and tomorrow. Our success is visible in supporting positive change, both in immediate improvements as well as year over year gains. It is these positive change success stories that I am pleased to share with you.

In 2017, we delivered 48 valued recommendations from our audits, and monitored the closure of 79 action plans. We completed 38 Whistle-blower investigations which in turn generated 48 corrective actions. In addition we provided ongoing advisory services focused on fostering best practices, innovation, and efficiency. We accomplished these positive changes with a staff of 15 and a budget spend of $2.7M.

We continue to hold ourselves accountable to delivering our work in accordance with our approved Audit Plan and our professional and internal performance standards. In April, 2017, our audit practices were formally confirmed with the external assessment report of 'Generally Conforms' to the Institute of Internal Auditors' International Standards for the Professional Practice of Internal Auditing by the Institute of Internal Auditors. We are pleased to share details of these positive results in this report.

As we move ahead into 2018, we will continue our valued work in accordance with our approved 2017/2018 Audit Plan. In sync with the next four year service based budgetary process, we will reassess and revise our audit universe and establish a 2019/2020 audit plan that reflects current risks associated with Council Priorities, service strategies, capital projects and other significant initiatives. We remain steadfast in our commitment to include in our audit plan as much as we can, as efficiently and effectively as we can, within the budget we are provided.

The CAO is your independent and objective body and is committed to delivering the highest standards and best practices of a high performing audit office in the public sector.

Katharine Palmer, CIA, CFE, MBA
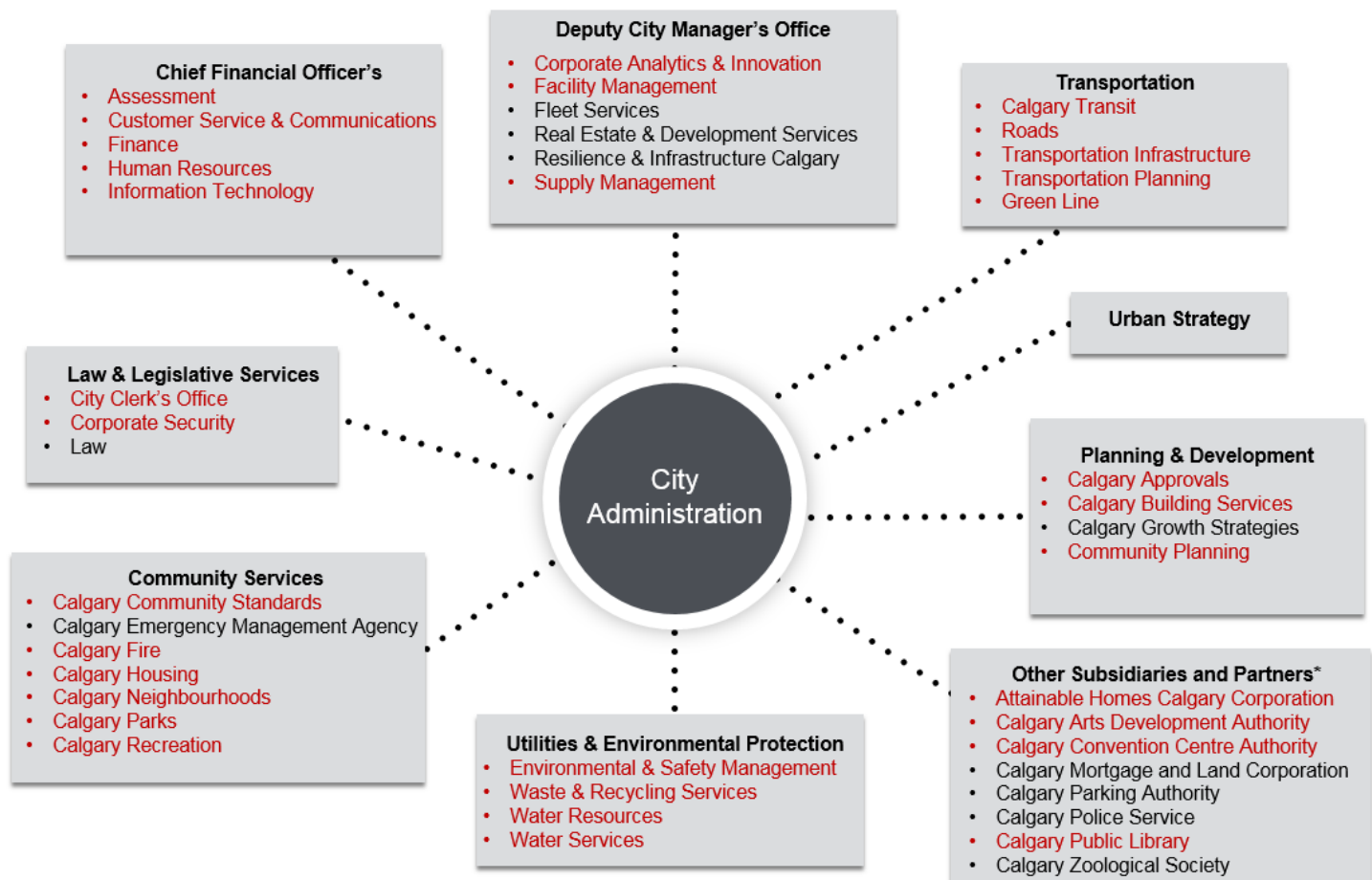City Auditor

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1.0
Our Coverage

1.1 Annual Activities

During 2017, the City Auditor's Office (CAO) audit, advisory and investigative services provided significant interaction with 80% of the Business Units within The City of Calgary (The City). Additionally, due to the nature of our audit work, there were many touch points with several of our City subsidiaries and partners. Our extensive coverage, as highlighted in red text, provided us with greater insight into challenges and opportunities faced by the corporation, and increased our agility to provide valued advice in response to key risks.

The CAO was able to achieve this coverage due to the effective collaborative relationship that exists with Administration and the office's team of 15 professional staff. During Q1 2017, the CAO also reviewed and made changes to both the City Auditor's and Whistle-blower's internal and external websites.

Chief Financial Officer's
- Assessment
- Customer Service & Communications
- Finance
- Human Resources
- Information Technology

Deputy City Manager's Office
- Corporate Analytics & Innovation
- Facility Management
- Fleet Services
- Real Estate & Development Services
- Resilience & Infrastructure Calgary
- Supply Management

Transportation
- Calgary Transit
- Roads
- Transportation Infrastructure
- Transportation Planning
- Green Line

Urban Strategy

Law & Legislative Services
- City Clerk's Office
- Corporate Security
- Law

City Administration

Planning & Development
- Calgary Approvals
- Calgary Building Services
- Calgary Growth Strategies
- Community Planning

Community Services
- Calgary Community Standards
- Calgary Emergency Management Agency
- Calgary Fire
- Calgary Housing
- Calgary Neighbourhoods
- Calgary Parks
- Calgary Recreation

Utilities & Environmental Protection
- Environmental & Safety Management
- Waste & Recycling Services
- Water Resources
- Water Services

Other Subsidiaries and Partners*
- Attainable Homes Calgary Corporation
- Calgary Arts Development Authority
- Calgary Convention Centre Authority
- Calgary Mortgage and Land Corporation
- Calgary Parking Authority
- Calgary Police Service
- Calgary Public Library
- Calgary Zoological Society

*This is not intended to be an exhaustive list of all subsidiaries and partners.

1.2 Audits Completed

The CAO is focused on optimizing audit efficiency through increased utilization of tools, and review and revision of practices and processes. Data analytics is an integral part of the CAO. Analytics provides insight into process anomalies, trends and risk indicators through the extraction and analysis of transactional or unstructured data. The initial objective was to expand the use of existing audit data analytics to create a bank of 20-30 analysis reports that could be utilized to monitor compliance to policies (HR, Finance, Legal and others) and to assess risk indicators across the organization. Looking forward, we plan to embed more data analytics into our audit work and increase the use of data analytics and Computer-Aided Audit Tools (CAATs) to make our audits more efficient.

During 2017, the CAO finalized ten audits and initiated an additional eight audits. Full details of the status of all audits at year-end can be found in Appendix A. Summaries of finalized audits are set out below.

Deputy City Manager's Office

Corporate Structures List
The Corporate Structures List (CSL) initiative is constructing a comprehensive repository of structures by Business Unit, along with basic attributes for each structure. The objective of the audit was to assess the effectiveness of the CSL as a tool to manage the facility portfolio at a corporate level. This was achieved by assessing time frames and criteria for moving the initiative to a sustainment phase, and the design of controls that ensure information quality. As the list was under development, and subject to ongoing additions and alternations, we did not test its accuracy.

The CSL tool provides a foundation for managing The City's facility portfolio at a corporate level. However, the initiative does not have formal objectives to provide clarity of purpose and balance the different stakeholder needs. The information quality controls in place provide sufficient checks at the CSL's current development phase. As the initiative moves into sustainment, preventative controls are needed, and the detective information quality controls Facility Management are currently implementing will need to be formalized. We raised six recommendations to support CSL as the initiative moves into sustainment phase.

Chief Financial Officer

Human Resources – Succession Planning
Effective succession planning helps to build The City's resiliency by addressing continuity risk for critical positions while also increasing leadership capacity, employee engagement, retention, and productivity. The objective of the audit was to assess the effectiveness of the succession planning process across the organization by assessing the established process for General Manager and Director positions and processes utilized in a sample of Business Units addressing Manager, Supervisor and technical/professional positions.

Overall, our audit testing determined that The City's succession planning process is designed and operating effectively. We identified two areas where processes could be improved. Firstly, although Business Units are encouraged to customize succession planning to meet their needs, we noted inconsistent awareness and use of Human Resources (HR) succession management guidance and tools. Secondly, the process is manual and not integrated with other HR systems. In addition, we brought forward opportunities for improvement related to development opportunities, candidate readiness and inclusion, and cross-departmental sharing of best practices. Four recommendations were raised to improve efficiency of the succession planning process, strengthen the talent pool available to The City, and help identify and develop early and diverse talent.

Information Technology (IT) Follow-Up Audit
The objective of this audit was to assess the effectiveness of management's actions to mitigate business risks in response to CAO IT audit recommendations raised over the last five years. We evaluated the effectiveness of current status implementation of management actions through the assessment of risk mitigation approaches, residual risk exposure, and, where appropriate, raised opportunities to mitigate undesired risks. This audit conducted a follow-up of nine management actions that were deemed high risk due to the nature of changing or new technology, recently established IT investment governance model and IT security governance. We assessed five of the nine management actions as effectively implemented to mitigate the business risks. For the remaining four management actions, five recommendations were raised to support further timely risk mitigation.

> **Adding Value: HR Succession Planning**
>
> "The audit was helpful for us in getting validation and prioritization of this work, and was helpful for us to move it forward". – Manager, Talent Management, HR

Community Services

Calgary Neighbourhoods' Support of Community Associations
The City engages in partnerships with Community Associations (CAs) as a way to increase the quality of life for Calgarians and provide them with a means of formal representation and advocacy to The City. The City plays a role in contributing to their success, which is demonstrated through investment of land and resources. The Calgary Neighbourhoods (CN) Business Unit is responsible for providing a central line of support to CAs as well as performing critical risk assessment and risk mitigation work to protect The City's interest. The audit objective was to assess the design of key controls in place to identify, assess, communicate and support timely mitigation of risks to CAs' sustainability, including the reporting and escalation process.

We reviewed the design of controls based on the COSO Internal Control Framework related to CN's Review Process to assess CA sustainability. We determined that the design of the process to identify CAs at risk and allocate resources is effective and includes the key components of an internal control system related to a CA's control environment, control activities and risk assessments.

Annually, Community Services reports to Audit Committee and Council on the status of CAs operating on City owned land (Annual Status Report) and provides additional details and risk mitigation strategies for CAs that have a financial status of "Organization of Concern".

The audit identified that the communication and monitoring components of the internal control system should be strengthened to support common understanding of CA challenges and better equip oversight bodies in creating
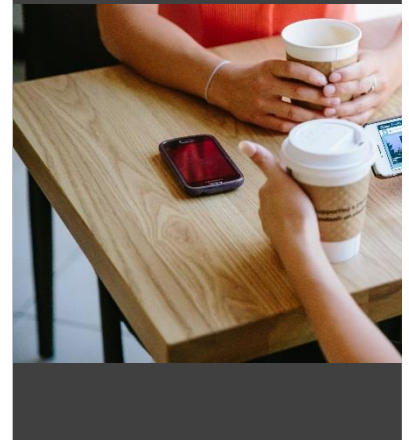
policy and allocating resources. We raised two recommendations to improve the Annual Status Report which will direct attention to areas of high risk and provide oversight bodies with relevant information identified through the Review Process, including aging facilities, life-cycle costs and organizational health.

9-1-1 Call Centre

Calgary 9-1-1 (C9-1-1) is the 9-1-1 call centre for The City, 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). The objective of the audit was to evaluate the effectiveness of controls in place to support the achievement of call handling key performance indicators (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. We concluded that the design of C9-1-1's key controls support the achievement of call handling KPIs and mitigate the risk of delays or problems in the call handling process. However, as call durations have increased, C9-1-1 has not met their KPI target for answering 95% of the Police 9-1-1 calls within 15 seconds in either 2015 or 2016 and will likely have similar challenges for 2017. Audit made four recommendations to further enhance the controls that facilitate the achievement of call handling KPIs to mitigate the risk of delays or problems in the call handling process.

> **Adding Value: 9-1-1 Call Centre**
>
> "It was a pleasure working with all members of the Audit team. They were professional, prepared and helpful throughout the process." – Commander, Calgary 9-1-1

Utilities and Environmental Protection

Landfill

Disposal & Processing Services (DPS), a division within the Waste & Recycling Services (WRS) Business Unit, manages the operations of The City's three active landfills. The objective of the audit was to evaluate the effectiveness of landfill processes and associated controls to ensure transactions are accurate, complete and monitored. DPS have implemented processes that are designed to ensure that vehicles are inspected, and their weight recorded with associated payment made as required. Key data is entered for each transaction, and processes have been established to process payments received and follow up on payments owed. However, our audit work identified that supporting IT systems and adherence to internal procedures required improvement to mitigate the risk of inaccurate or inappropriate transactions. We also identified opportunities to improve the efficiency and effectiveness of the operation of landfill processes. Seven recommendations were raised to further enhance DPS's operations to maximize the efficiency and effectiveness of landfill processes.

> **Adding Value: Landfill**
>
> **"I was very impressed with [the audit team's] capabilities and willingness to understand our business." – Leader,** Operational Performance, Waste and Recycling

Utility Billing
The Water Utility (the Business Units of Water Services and Water Resources) is responsible for managing the quality and delivery of Calgary's water supply. Responsibility for billing water consumers has been contracted to ENMAX, although The City has overall accountability for complete and accurate water billing. The objective of this audit was to provide assurance on the completeness and accuracy of the utility billing process. The audit determined the Water Utility's current controls and processes provide only partial effectiveness in supporting the business objective that the water billing conducted by ENMAX is complete and accurate. Controls conducted by the Finance Department, which include review of daily and monthly water revenue and annual rate change process, are designed and operating effectively. However, these process are not designed to ensure accuracy or completeness of billing on an individual customer accounts basis. Over the past two years, the Water Utility has developed new technological tools and processes relating to billing that provide improvements, however further enhancements and additional controls to increase billing confidence on an individual customer accounts basis were recommended by our audit. We raised three recommendations to support the Water Utility in their accountability to Calgarians and provide The City with assurance that water billing is accurate and complete.

Other Subsidiaries and Partners

New Central Library
The New Central Library (NCL) project is a significant build with a planned budget of $245M and expected completion by Q4 2018. The objective of this audit was to provide timely assurance that the NCL project is on track to meet business objectives of time, cost and quality. The project management team have designed and implemented project controls to effectively support project objectives of completing the project within the approved budget, meeting approved quality requirements, and identifying and responding to risks. Schedule management represents the current highest uncertainty to the achievement of the project's objectives. Quality inspections identified material and fabrication defects. The subsequent impact and resolution assessment has delayed the project's estimated date for obtaining the occupancy permit. The project management team deliver project status reports to the project's Steering Committee monthly. However, project status reports do not identify the status of the project's activities relative to the project's master schedule. We raised two recommendations to mitigate the risk to the project schedule.

Adding Value: New Central Library

"After 2 audits on the Library, I find that the observations and recommendations have been useful and improved our performance to deliver good results." – Civic Partnership Consultant, Calgary Neighbourhoods


Planning and Development

POSSE
The Public One Stop Service (POSSE) system is a business process management tool, used predominately for land management. It is The City's definitive source of parcel data. The audit objective was to provide assurance on the data integrity and sustainability of the POSSE system.

Data integrity testing focused on controls to ensure the accuracy and completeness of key elements of parcel data and controls over the accuracy of address, licensing and permit data transferred to the assessment Business Unit to support property tax assessments. Based on our testing, the majority of controls to ensure the integrity of parcel data were effective and sample testing of parcel data did not identify any errors. However, responsibility for resolving ownership data exceptions identified during data transfer was assigned to a single IT resource, rather than a business user. The audit raised two recommendations to improve the integrity of POSSE ownership data and to decrease reliance on a single IT resource.

Sustainability testing focused on controls to ensure the ongoing ability to support POSSE including interface and customization documentation, effective vendor management and system availability. Testing of sustainability controls identified areas in which further improvements should be made to enhance control effectiveness and improve overall process efficiency. Eight recommendations were raised that focused on improving interface documentation, formalizing processes to manage vendor performance and contract compliance, and improving the effectiveness of the existing Helpdesk, change management and interface failure monitoring processes.
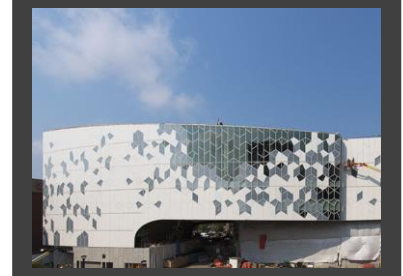
Transportation

Transit Fare Revenue
Calgary Transit collects more than $180M in fare revenue annually. The objective of this audit was to assess the effectiveness of controls over the safe keeping of fare revenue. The audit focused on controls providing assurance over the completeness of fare revenue collected from vendor sales of tickets and passes, cash collected in Ticket Vending Machines (TVMs), and cash and single ticket fares collected on buses. The audit also assessed Calgary Transit's monitoring of fare revenue received. While effective controls supported the collection of fare revenue from vendors, we raised one recommendation to further increase the efficiency of this process. We raised three recommendations to improve the effectiveness of cash collection and processing. Calgary Transit monitors revenue received daily, weekly and monthly. Ridership was estimated based on historical surveys, as well as revenue information. Enhanced information started to become available during 2017 as automated counters were introduced to selected buses and CTrain cars. We raised one recommendation supporting enhanced ridership monitoring.

Adding Value: Transit Fare Revenue

"I appreciate the collaborative approach to the recommendations. Our business is better off for the work that audit has done." – Director, Calgary Transit

1.3 Advisory Services

The CAO provides advisory services on an ad hoc or project basis as requested by Administration. The intent of our advisory services is to provide an independent view and best practice insight on current, new or emerging risks and opportunities facing The City. During 2017, the CAO provided these services to a number of areas including:

- The City's Infrastructure Calgary Steering Committee as an advisory member;
- The City's Corporate Project Management Framework Steering Committee as an advisory member;
- A City Business Unit by providing advice on draft delegations of authority; and
- A City Business Unit by providing advice on internal controls to mitigate the risk of conflict of interest.

As an independent group, without affiliation to a particular Business Unit or Directorate, The CAO is uniquely positioned to provide value add advice. We do this by combining our knowledge of best practice on risks, controls and governance frameworks along with our deep understanding of City strategies, culture and organization to provide practical and cost effective advisory services.
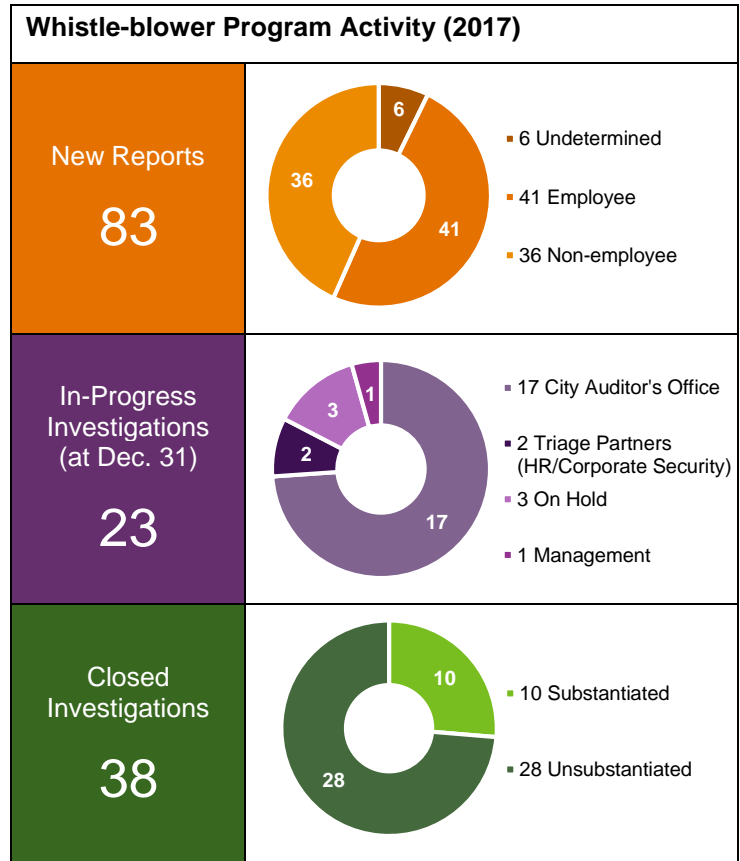
1.4 Investigative Services

During 2017, the Whistle-blower Program (WBP), which is independently operated through the CAO, received Whistle-blower reports from employees and Calgarians pertaining to concerns regarding City employees and/or operations at a volume level consistent with prior years. Report activity is positively regarded as an indication that awareness of the WBP, and employee confidence to report concerns, is widespread across the organization.

Procedural enhancements and efficiencies applied in 2016 continued to support more timely assessment and response to reported concerns during 2017, resulting in:
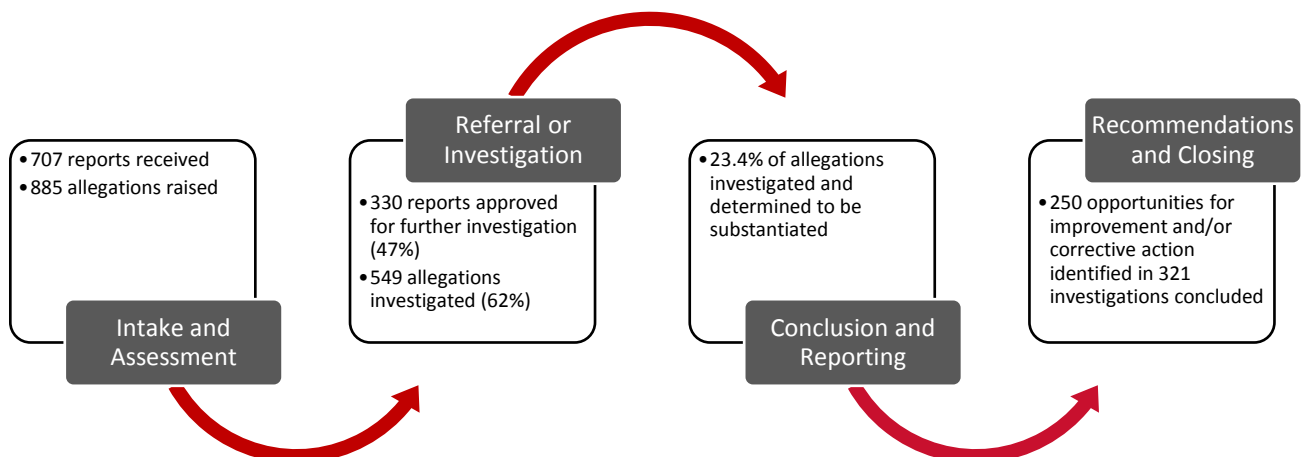
✓ 81% decrease in outstanding WBP files from prior years

✓ 38% decrease in open files carried forward to 2017 compared to prior year

2017 also presented the WBP an opportunity to reflect on ten years of operation since its implementation by Council policy. This retrospective look of the program's operations and activities confirmed that:

✓ The WBP is operating effectively
✓ Key phases/outputs of the WBP process are aligned and trending with recognized best practices
✓ The WBP provides added value to The City and to Calgarians

Whistle-blower Program Activity (2017)

New Reports **83**	▪ 6 Undetermined ▪ 41 Employee ▪ 36 Non-employee
In-Progress Investigations (at Dec. 31) **23**	▪ 17 City Auditor's Office ▪ 2 Triage Partners (HR/Corporate Security) ▪ 3 On Hold ▪ 1 Management
Closed Investigations **38**	▪ 10 Substantiated ▪ 28 Unsubstantiated

As illustrated below, WBP activity during the 10-year period ending June 30, 2017 has resulted in:

- Intake and Assessment
  - 707 reports received
  - 885 allegations raised

- Referral or Investigation
  - 330 reports approved for further investigation (47%)
  - 549 allegations investigated (62%)

- Conclusion and Reporting
  - 23.4% of allegations investigated and determined to be substantiated

- Recommendations and Closing
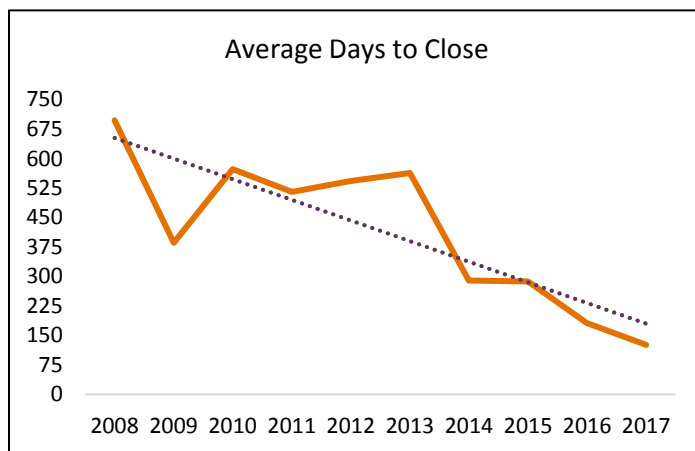 - 250 opportunities for improvement and/or corrective action identified in 321 investigations concluded

Some key highlights of the 10-year review include:

✓ **Effective Decision Tree**. Utilization of a comprehensive Decision Tree is an instrumental reference tool in the WBP assessment process, driving a consistently applied objective approach to each concern reported and ensuring prompt attention on priority concerns.

✓ **Strong Employee Utilization.** Over the last 10 years employees reported the majority of concerns received. This is a positive trend indicating a speak-up culture exists, confidence in our safe reporting channel, and is a reflection of City values. Further, we noted that reports received from employees were assessed and approved for further investigation at a higher percentage and were more frequently substantiated. This result aligns with NAVEX Global[1] data and supports that employees with greater working knowledge of the WBP, complemented by training and awareness of The City's Code of Conduct, are more likely to report concerns associated with suspected acts of waste and/or wrongdoing.

Source	# of Reports	% Investigated	Substantiation Rate (concluded investigations)	Corrective Actions (concluded investigations)
Employee	364 (51.5%)	57.4% (209 of 364)	30.6% (64)	166 (66.4%)
Non-employee	277 (39.2%)	33.6% (93 of 277)	22.6% (21)	67 (26.8%)
Undetermined	66 (9.3%)	42.4% (28 of 66)	21.4% (6)	17 (6.8%)

✓ **Trending Categorization.** The categorization and classification of each concern reported to the WBP has provided the ability to identify and benchmark trends to issues raised, and their origins, allowing Administration to focus on opportunities for corrective action. As reported to Audit Committee in July 2017, the WBP utilized NAVEX Global data as a benchmark to compare its categorization, which identified strong alignment to the top reporting categories *HR, Diversity and respectful Workplace; Business Integrity;* and *Misuse, Misappropriation of Assets.* This alignment reinforces the value and effectiveness of the Whistle-blower Policy encouraging and supporting employees to safely report a broad range of wrongdoing concerns.

✓ **Dedicated Investigators.** Originally supported by audit staff, WBP resources now include dedicated investigators who support the WBP with diverse professional accreditation and broad work experience attained from a variety of investigative roles within private and public environments. This work experience includes nearly 30 years directly related to managing and/or working within confidential and anonymous reporting programs. Dedicated resources enable the WBP to conduct investigations with less reliance on Administration resources, and ensures standardization and consistency in investigation approach and reporting.

Improvements and rigour applied to the WBP process and approach to investigations over the last 10 years have been instrumental in improving case closure timelines, as illustrated.

In addition to the operational efficiencies and improvements applied during the past 10 years, the WBP has also enhanced its methods of communicating WBP activity to its various stakeholders: a number of informative messages are provided in communications with program users throughout the processing of a reported concern; Calgarians are provided with procedural information via the WBP website; and Administration and members of

Average Days to Close

[1] The NAVEX Global 2017 Ethics & Compliance Hotline & Incident Management Benchmarking Report comprises data (2012-2016) from over 927,000 individual hotline reports disclosed by more than 2,000 organizations representing 26 industries and 38.5 million employees globally.

Audit Committee are updated through a number of communication and reporting channels. These communications serve to increasing awareness of the WBP process and what to expect when a Whistle-blower report is submitted. The sharing of process and aggregate data does not compromise confidentiality and is regarded as a positive approach to building greater understanding of the WBP and value provided.

✓ **Improved Internal Communication.** Communication on WBP activities includes quarterly meetings with General Managers and City Manager (through the Whistle-blower Oversight Group), which supports timely and appropriate discussions on results of investigations, corrective actions, trends and related analysis of WBP activity. When appropriate, ad-hoc meetings are held to discuss specific concerns.

✓ **Transparent Public Reporting.** Reporting on WBP activity has evolved and matured from a single annual report of statistics and summaries of substantiated investigations to quarterly reporting statistical activity to Audit Committee, consolidated quarterly corrective action reporting on our website, as well as a comprehensive summary provided as a key component of the CAO Annual Report. Additional information regarding recommendations can be found at Section 2.2 below.

Submitting a Whistle-blower Concern?

Where possible:

- Verify that your allegation is related to waste and/or wrongdoing as defined in the Whistle-blower Policy. If uncertain, contact the WBP and speak with an investigator;
- Ensure that your allegation is clearly communicated;
- Verify that your concern is related to a City employee or operation;
- Provide specific and factual detail of the event including dates, times, locations, people involved;
- Provide available supporting documentation and other evidence;
- Identify individual(s) and/or Business Unit implicated in your allegation;
- Avoid reporting concerns based on hearsay, speculation, opinions or conclusions;
- Stay involved. All concerns reported online allow for ongoing anonymous and confidential communication with WBP investigators to whom additional clarification and information can be provided; and
- **New in 2017:** When reporting online through the independently operated reporting tool, consider selecting the option to leave your email in order to receive timely activity notifications related to your report. Information provided with this option will not be shared with the WBP.

www.calgary.ca/whistle

2.0
Our Impact

2.1 Audit Recommendations

The CAO takes a risk-based approach to the planning and execution of audits. Each audit focuses on key risks to the achievement of Administration's objectives, which supports meeting Council Priorities. During planning, we work with staff to gain a thorough understanding of the area, project or process being audited and key risks.

With Administration's input, risks are ranked high, medium or low based on the impact and likelihood should the risk event occur. The fieldwork plan is designed to test successful risk mitigation.

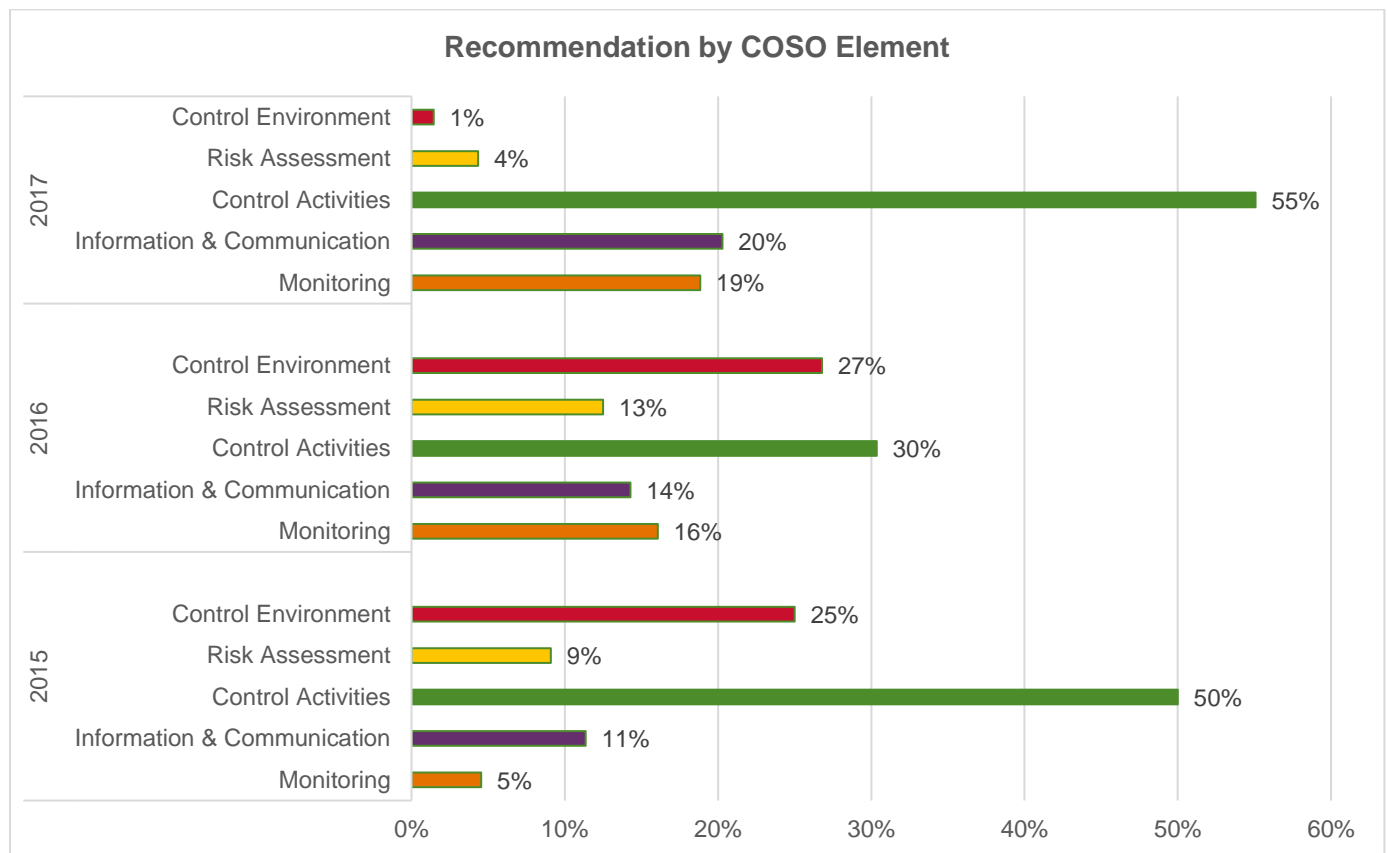### Action Plans by Risk Level

- High: 26
- Medium: 37
- Low: 6
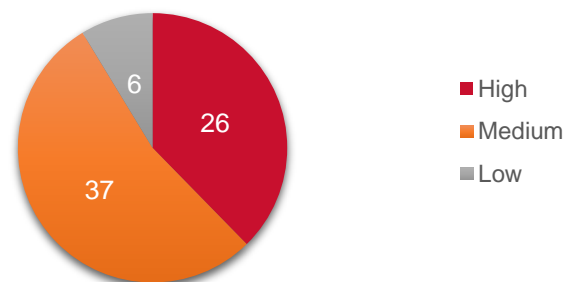
In 2017, the majority of action plans (69 in total) to address recommendations raised (48 in total) related to high and medium risks, which supports our approach and demonstrates that the audits have an impact.

2017 Action Plan Risk Level By Department

Department	High	Medium	Low
Chief Financial Officer's Department	3	8	4
Community Services	3	7	2
Deputy City Manager' Office	2	5	
Law & Legislative Services	6		
Planning & Development		5	
Transportation	4	3	
Utilities & Environmental Protection	8	9	

Through our expanded use of software we began tracking the level of risk by recommendation raised. By providing levels of prioritization, Administration is able to identify recommendations that require prompt action.

The CAO provides independent assurance regarding the effectiveness of governance, risk management, and internal control. The COSO Internal Control Framework is a widely accepted framework that outlines the principles and components necessary for an organization to effectively manage its risks by implementing internal controls. The CAO categorizes recommendations into the five fundamental COSO components to identify potential trends and provide Administration with additional insight into the effectiveness of internal controls. Over the last three years the CAO has consistently raised recommendations focused on enhancing operating control effectiveness.

Recommendation by COSO Element

2017
- Control Environment: 1%
- Risk Assessment: 4%
- Control Activities: 55%
- Information & Communication: 20%
- Monitoring: 19%

2016
- Control Environment: 27%
- Risk Assessment: 13%
- Control Activities: 30%
- Information & Communication: 14%
- Monitoring: 16%

2015
- Control Environment: 25%
- Risk Assessment: 9%
- Control Activities: 50%
- Information & Communication: 11%
- Monitoring: 5%

2.2 Investigation Recommendations

The WBP investigative process has been designed to look beyond the specific action under investigation, with a focus to identify the root cause for the concern raised. Recommendations for improvement are not limited to correcting substantiated allegations and can be localized to a specific work area or more broadly applicable to the entire organization. Identifying root causes and remediation of identified deficiencies is widely recognized as essential to operating an effective employee reporting program, and is aligned with policy.

This approach applied to each allegation investigated during the 10-year period ending June 30, 2017 has identified opportunities for improvement or corrective action in 77.9% of all concluded investigations. In 2017, a formalized process, scheduled to begin in 2018, was added to follow-up with Administration to confirm implementation of corrective actions self-identified by Management or recommended by the WBP directly resulting from investigation of allegations raised to the WBP.

During 2017, the more prevalent root causes identified by investigation were associated with reinforcement of policies and procedures related to theft of time, acceptable use of City technology resources, and inefficient use, or misuse, of City resources, representing a different series of issues than those most prevalent in 2016, as shown below.

Reporting Category	Classification	2017	2016
Misuse, Misappropriation of Assets	Theft of Time	6	-
Misuse, Misappropriation of Assets	Acceptable Use of City Technology Resources	6	-
Misuse, Misappropriation of Assets	Inefficient Use, or Misuse of City Resources	3	1
Business Integrity	Conflict of Interest	2	4
HR, Diversity and Respectful Workplace	Recruiting & Employment	-	6
HR, Diversity and Respectful Workplace	Respectful Workplace	-	9
Other	Other	5	8
		22	**28**

With the support of the City Manager and beginning in 2017, a summary of each investigation resulting in corrective action is now posted to the WBP website (www.calgary.ca/whistle) on a quarterly basis. Summary information provided excludes personal or identifying information in support of the WBP's adherence to WB protection and confidentiality. The publishing of allegations and the corresponding investigative findings and corrective actions is a positive practice in support of transparency of investigation actions, accountability and commitment for appropriate response and action. Each summarized corrective action provided on the WBP website may incorporate multiple specific actions.

3.0 Our Commitment to Value Add

3.1 Key Performance Indicators

As part of our commitment to continuous improvement, we track our added value based on the following key performance indicators of efficiency, effectiveness, quality delivery, and staff proficiency. We are pleased to report that overall we exceeded four targets set for 2017.

Measure Area	Performance Indicator	Target	2017	2016	Comments
Efficiency	On Track to Annual Plan	100%	92%	98%	Slightly below target reflecting vacant auditor roles during Q3 and Q4, partially alleviated by contract audit support.
Efficiency	Project Budget Variance	+/-10%	-17%	-1%	Decrease in average hours reflects CAO's ability to adapt and narrow the scope of audits to provide focused assurance.
Effectiveness	Recommendation Agreement	95%	100%	98%	All recommendations were agreed to which reflects knowledge and buy-in on risk mitigation strategy.
Effectiveness	Timely Implementation of Recommendations	N/A	61%	71%	Results may be attributed to increased demand on resources and/or optimistic implementation dates.
Quality	Client Satisfaction	75%	98%	94%	Eleven client surveys were received during 2017 covering ten audits with a response rate of 70%.
Staff	Training Plan Achieved	80%	98%	93%	Professional training included a cost effective mix of internal/external and self-study activities.
Staff	Average Years of Service	3.50	4.26	4.13	An investigator and a data analyst joined the team in Q2. Two auditors left the team in Q2/Q3, another auditor joined the team in Q4.

3.2 Professional Work Standards

Professional work standards across all audit, advisory and Whistle-blower investigations are key to adding value in day to day CAO work.

The CAO conducts its audit activities in adherence with the Institute of Internal Auditors' (IIA) International Standards for the Professional Practice of Internal Auditing (*Standards*). The *Standards* require that an internal quality program is established and maintained to monitor adherence to *Standards*, and that an external quality assessment be conducted at least every five years. An external assessment occurred in March, 2017, by the Institute of Internal Auditors (IIA) to provide independent assurance to Council and Administration on the professional practice and quality of the CAO. The CAO received an overall opinion of generally conforms (the highest possible rating) to *Standards*.

Our internal quality program was conducted throughout the year, and included the completion of:
- Quarterly audit file peer reviews (by an auditor not involved in the audit);
- Quarterly KPI monitoring;
- Post-audit lessons learned exercises and client surveys; and
- Periodic review and update of key audit processes, which in 2017 included updates to internal templates to continually improve efficiencies and effectiveness of audit processes.

The internal quality activity did not identify any instances of non-conformance to *Standards*, and any identified potential process improvements have been incorporated into on-going updates of procedures and practices. The activity also allows the CAO to confirm the organizational independence of its operation.

Whistle-blower investigations are carried out in alignment with best practices and the codes of conduct of the Association of Certified Fraud Examiners and Association of Certified Forensic Investigators. Quality reviews are conducted on all completed investigations.

The foundation of the CAO is the professional skills and knowledge of the staff. To run effective audits, advisory projects and investigations, a range of complementary designations enhances the team's effectiveness. All staff conducting audits, advisory and Whistle-blower investigations have at least one (or are studying towards gaining) of the Certified Internal Auditor, Certified Information Systems Auditor, Certified Fraud Examiner or Certified Forensic Investigator designations. To further enhance certifications and to keep current on best practices, all staff participate in on-going professional training. The CAO supports 40 hours of training per year, however many staff engage in additional continuous learning on their own personal time.

Throughout 2017, certain staff members from the CAO have also contributed to their external peer community in the following ways:
- Member of the Canadian national board of the Institute of Internal Auditors;
- Sub-committee Chair of the Association of Local Government Auditors; and
- Member of the Association of Local Government Auditors' judging panel for the annual Knighton Awards (exceptional performance audit reports).

3.3 Budget

The CAO strives to provide the highest level of independent and objective assurance, advisory and investigative services within Council–approved budget. Our approved 2017 annual budget includes costs associated with completing audit, advisory and investigative services.

Operating Budget

The CAO maintains funding within its budget to enable the office to hire subject matter experts to evaluate specialized risk areas or provide specific knowledge. During 2017 the CAO utilized contract audit resources to assist with the Transit Fare Revenue, Green Line LRT and Treasury Management audits.

($'000's)	Annual Budget	Actual	Variance*
Salary	2,619	2,304	315
Contracts	135	201	(66)
Training	65	71	(6)
Other	131	114	17
Total	2,950	2,690	260

* Variance due to staff vacancies and delays in filling vacant Whistle-blower, Data Analytics and Senior Auditor positions.

4.0 Appendices

Appendix A – Audit Activity Status as at December 31, 2017

	2017/2018 Approved Audit Plan		
#	**2016 Carry Forward Audits**		**Status**
1	Landfill	An operational audit assessing the effectiveness of processes established to meet business objectives.	Complete: Reported March
2	POSSE System	An IT audit focusing on the data integrity and sustainability of the business application.	Complete: Reported March
3	New Central Library	An operational audit to provide assurance the project is on track and will meet business objectives of time, cost and quality.	Complete: Reported January
4	Community Associations	An operational audit on Calgary Neighbourhoods' support of Community Associations.	Complete: Reported June
5	Human Resources – Succession Planning	An operational audit assessing the effectiveness of succession planning strategies conducted across the organization.	Complete: Reported June
#	**2017 Audits**		**Status**
1	Transit Fare Revenue	An operational audit assessing the effectiveness of controls over the safe keeping of fare revenue.	Complete: Reported April
2	IT Follow-up	A follow-up audit focused on management actions in response to previous CAO audit recommendations raised over the last 5 years.	Complete: Reported July
3	911 Call Centre	An operational audit evaluating the efficiency of tools and resources employed in the emergency call handling processes.	Complete: Reported September
4	Green Line LRT	An operational audit on the effective utilization of citizen engagement to support the objectives of the capital project. This is the first in a series of audits on Green Line LRT to be conducted over the lifespan of the project.	Reporting
5	Utility Billing	A follow-up audit focused on management actions in response to control improvement recommendations raised in a 2012 CAO advisory activity.	Complete: Reported September
6	Corporate Facilities/Asset Management	An operational audit which continues an original CAO audit conducted in 2013.	Complete: Reported December

2017/2018 Approved Audit Plan			
#	**2017 Audits**		**Status**
7	Treasury Management	An operational audit of treasury (cash flow) management.	Fieldwork
8	Procurement	A follow-up audit which will focus on management actions to address recommendations raised in previous CAO audits (from 2009 to current).	Reporting
9	Cyber Security Incident Response	An IT audit assessing the effectiveness of response processes established to support and protect critical data from cyber-attacks.	Fieldwork
10	New Central Library Project	An operational audit on the readiness of Calgary Public Library and The City of Calgary to assume hand-off from the Calgary Municipal Land Corporation of the New Calgary Central Library.	Reporting
11	Corporate Credit Card (Data Analytics)	A compliance audit utilizing data analytics to assess the effectiveness of related Corporate Credit Card compliance and fraud prevention controls.	Reporting
#	**2018 Audits Initiated in 2017**		
1	Employee Expenses	A compliance audit of employee expenses utilizing data analytics	Fieldwork
2	2017 Election Day	A management request (City Clerk's Office) to conduct a root cause analysis review of the issues which occurred on the 2017 election day and to evaluate proposed strategies to improve the election day process.	Planning

Appendix B – Audit Recommendation Follow-up

There were 62 outstanding recommendation action plans at 2017 year end. Of these, 74% were not yet due and classified as pending audit review, 26% were in-progress and are being tracked to a revised implementation date.

|	**2017 Recommendation Action Plan Turnover**					
Status	**Opening- January 1, 2017**	**Revised Date Required**	**Reported in 2017**	**Closed-Risk Mitigated**	**Closed-Risk Accepted**	**Ending December 31, 2017**
Pending	61	(19)	69	(63)	(2)	46
In-Progress	11	19		(13)	(1)	16
Total	**72**	**0**	**69**	**(76)**	**(3)**	**62**

Follow-up results continued to be positive this year. Of the 69 recommendation action plans reported in 2017 (56 in 2016), 23 (33%) were closed (29% in 2016), 6 (26%) of which were closed in advance of the implementation date in the audit report (20% in 2016). The remaining 46 were either pending (38) or in-progress (8) at year-end.

Of particular note all of the action plans from the following 2017 audits were implemented in 2017:
- Ten action plans from the POSSE audit (AC2017-0253); and
- Both action plans from the New Central Library audit (AC2017-0054).

As well, all action plans from the Landfill (7) and HR Succession Planning (1) audits that were due for follow-up in 2017 were implemented. Additional results are included in the charts below:

The overall number of overdue action plans has increased slightly from 11 to 16 in 2017. There were no action plans that were more than two years past their original commitment date.
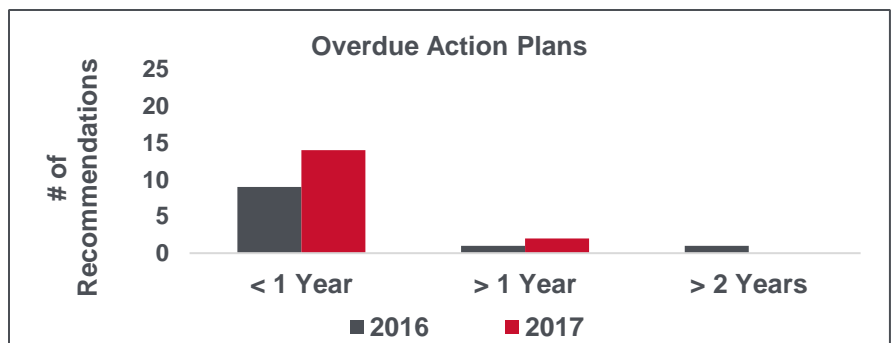
In 2017, we received 19 (14 in 2016) requests to revise action plan implementation dates, all of which were first time revisions. The 16 in-progress action plans at year end are all first time revisions.
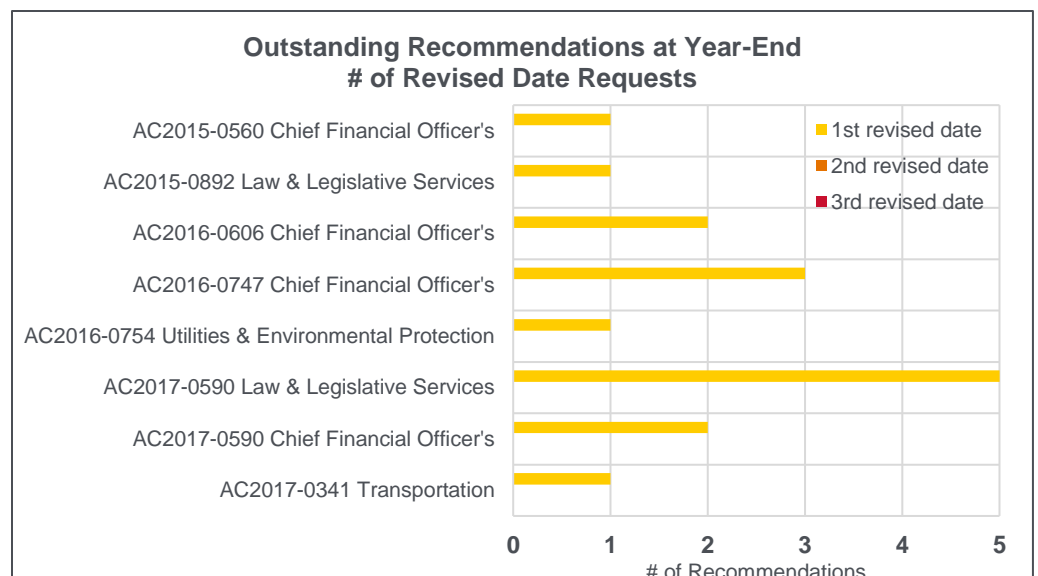
Annual Update – Information Technology Risk Management

EXECUTIVE SUMMARY

This annual report of Information Technology (IT) Risk Management provides an overview of technology-related risks, including measures being taken to mitigate their likelihood and/or impact. IT manages strategic, project, and operational risk in a manner to ensure the systems that support all City services are functional, secure, and resilient. A detailed description of each IT risk and associated mitigation techniques can be found in Attachment 1.

ADMINISTRATION RECOMMENDATION:

That Audit Committee:

1. Receive this Report for information; and
2. Keep Attachment 1 confidential pursuant to Section 24 of the *Freedom of Information and Protection of Privacy Act* until the identified risks have been mitigated.

PREVIOUS COUNCIL DIRECTION / POLICY

Per direction received at the 2011 January 20 meeting of Audit Committee, and in accordance with the Audit Committee Terms of Reference (Bylaw Number 48M2012), IT is to provide an annual update on information technology risk management and controls. This report provides an overview of IT's risk management strategies and demonstrates how risk management has been embedded into IT's Action Plan.

BACKGROUND

The IT business unit serves City employees, civic partners, and citizens by provisioning, managing, and governing the use of technology solutions and associated infrastructure. IT uses the Corporate Risk Management Framework as mandated by the Integrated Risk Management Policy (CC011) to properly manage the risks associated with City technology.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

Our world is changing dramatically, and no sector is affected more by the fast rate of change than technology. Recent years have seen unprecedented advancement in the fields of machine learning, artificial intelligence, virtual reality, augmented reality, and robotics. Leveraging new technologies while maintaining existing systems and securing The City's assets against new and emerging cyber threats remains a constant challenge for IT.

Every service provided to citizens and City employees includes a technology component in some form. In accordance with IT industry best practices, The City's hardware and software solutions are designed with resiliency, redundancy, and sustainability as top considerations. The City collects, processes, and stores many terabytes of data on behalf of citizens, so protecting our reputation and maintaining the public's trust is a high priority for IT. Effective management of technology-related risks is critical to The City's business continuity plans.

IT's Risk Register, including risk likelihoods, impacts, and planned mitigation strategies, is reviewed by the IT Management Team on a quarterly basis. The IT Risk Register is one of several departmental and business unit risk registers that was rolled up into the Annual Principal Corporate Risk Report (AC2018-0066) presented to Audit Committee on 2018 January 26.

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Annual Update – Information Technology Risk Management

In consultation with the IT Management Team and the Chief Security Officer, the Chief Information Technology Officer has determined that existing controls and work plans for improvement activities described in Attachment 1 are manageable. Ongoing mitigation techniques for strategic and operational risks are integrated into IT methodologies, work plans, budgets, and staffing resources. IT's capital investments are driven, in part, to address strategic risks that were identified during the development of Action Plan 2015-2018.

Stakeholder Engagement, Research and Communication

IT invites City of Calgary employees from all levels of the organization to provide performance feedback via the annual IT Client Satisfaction Survey. Overall satisfaction has remained high for several consecutive years, with 91 per cent of respondents to 2016's survey indicating they were either "Very Satisfied" (44 per cent) or "Somewhat Satisfied" (47 per cent) with the products and services delivered by IT. Data collection for the 2017 Client Satisfaction Survey was completed in 2018 January, and the final report is expected in 2018 February.

IT uses an industry-leading benchmarking service to compare its business, functions, and associated costs with other public and private sector organizations of similar size and complexity. The results are used to highlight areas where The City compares favourably to our peers and to identify opportunities to improve service delivery and cost efficiency. IT is also a contributing member to the Municipal Benchmarking Network Canada expert panel. These benchmarking activities serve as inputs into IT's current Zero-Based Review.

Strategic Alignment

Technology security remains one of the top concerns of The City. In recent years, there have been several high-profile cyber security attacks targeting Canadian organizations such as the University of Calgary (ransomware), MacEwan University (phishing), and Bell Canada (breach of customer data). Protecting The City against these and other technology security threats is a shared responsibility of IT and Corporate Security, as described in the 2018 Annual Principal Corporate Risk Report (AC2018-0066). The Chief Information Technology Officer and the Chief Security Officer routinely meet to review The City's cyber security systems and make plans to protect against emerging threats. Continuous research and education is necessary to understand the changing nature of this risk exposure and the likelihood and impact to The City's technology environment and reputation should a successful attack occur. IT and Corporate Security work closely together to monitor, test, and improve The City's cyber defences. An IT Crisis Management plan is in place and regularly tested. Staff are trained and prepared to put the plan into action in the event of a large system outage or security incident.

It is the responsibility of every employee to follow the policies and guidelines outlined in the Code of Conduct to safeguard The City's hardware, software, and information assets. An update to the Acceptable Use of City Technology Resources Policy was approved in 2016, and an update to the Information Management and Security Policy was approved in 2018 January. Employee education and awareness related to information management and security is essential. Code of Conduct training is currently being updated and will be rolled out to City employees in 2018.

The 2015 Technology Governance Model (ALT 2014-0936) balances the desire of The City's departments and business units to make technology investment decisions with IT's ability to efficiently and effectively manage technology investments. As the Technology Governance

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Annual Update – Information Technology Risk Management

Model matures, lines of business will have a greater understanding of the strategic alignment, risk, and operational costs their technology requests have on IT and The City. Most City departments have already established or are in the process of establishing technology committees and developing terms of reference for guiding technology investments. This work is being done in preparation for prioritizing technology investments during the One Calgary 2019-2022 business cycle. The Corporate Technology Committee (CTC) provides strategic leadership for this work which is targeted for completion by the end of 2018. CTC recently approved the Corporate Technology Plan and Enterprise Platform to set standards and guide decision-making.

The City's Enterprise Architecture principles have been established to guide technology decisions and actions. Adherence to these principles helps reduce risk when making technology-related decisions. The Enterprise Architecture principles include, but are not limited to, the following:

- Flexible, modular components and artifacts shall be designed and built for re-use and shall be re-used when developing solutions;
- Preference shall be given to "re-use before purchase" and "purchase before building", taking into account business and technical requirements;
- Solution delivery shall be driven by accepted industry standard practices and methods with priority given to open system architecture characteristics;
- Systems, data, transactions, and networks shall be secured based on industry good practice and business requirements and shall conform to all applicable laws, regulations, and policies; and,
- The enterprise strategy and architecture shall be designed to reduce diversity and minimize complexity.

In accordance with the Corporate Project Management Framework, technology projects managed by IT have their own dedicated risk registers maintained by the assigned project manager. These are regularly reviewed by IT's Project Management Office, project sponsors, steering committees, and IT managers to ensure appropriate actions are taken when necessary to mitigate risks to each project's quality, schedule, and budget.

IT created the Software Solutions Methodology (SSM) for software development projects. The SSM is a set of best practices and guidelines to ensure stakeholders across the organization are effectively engaged throughout all stages of the project lifecycle. Adherence to the SSM enables quality solution delivery on a consistent basis, and it is scalable to suit projects of many different sizes and scopes.

Item #6.3

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Annual Update – Information Technology Risk Management

Social, Environmental, Economic (External)

No implications to this report.

Financial Capacity

IT's budget is developed and reported as part of The City's overall financial reporting practices.

Current and Future Operating Budget:

No implications to this report.

Current and Future Capital Budget:

No implications to this report.

Risk Assessment

The risks identified in Attachment 1 may affect the achievement of Council's Priorities and Action Plan over the course of the 2015-2018 business cycle. Effective risk management reduces the likelihood and/or the impact of these.

Internal Audits by the City Auditor's Office

Over the past few years, the IT business unit has been the subject of multiple audits and control reviews initiated by the City Auditor's Office. Four recommendations are currently open as of 2018 January. One recommendation (AC2013-0446 Recommendation 14.1) concerns enhanced security of the PeopleSoft system and will be resolved by mid-2018. The remaining three recommendations (AC2017-0590 Recommendations 1, 4, and 5) are follow-up activities from previously completed audits and are expected to be closed by the end of 2018.

External Audit of Year-End Financial Statement

The Corporation's financial statements and records are audited by the external auditor each year. A prerequisite of this audit is an assessment of the internal processes and controls related to the technology systems used to manage and report The City's finances. The external auditor observes IT operations, conducts interviews with IT subject matter experts, and tests our actual practices against our approved and documented procedures. While this is not intended to be a comprehensive audit of The City's entire technology environment, the external auditor may identify opportunities to improve the processes and controls used to manage and secure The City's financial systems. The fiscal year 2017 assessment is currently in progress, and assessment findings are expected in 2018 February.

Integrated Risk Management

IT works within the Corporate Integrated Risk Management program parameters to capture and monitor business and technology risk. Identified risks are assessed, managed, and communicated in the IT Risk Register. The top risks in the IT Risk Register are then rolled into the Chief Financial Officer's Department Risk Register and Annual Principal Corporate Risk Report.

Annual Update – Information Technology Risk Management

Control Environment Assessment

Audit Committee Bylaw 48M2012 assigns responsibility to the Audit Committee for overseeing the integrity of The City's system of internal controls. The annual assessment is based on the COSO Internal Control – Integrated Framework. For The City's system of internal controls to be deemed effective, all components and principles must be present and functioning as designed. IT is either solely or jointly responsible for several of these components and principles and is contributing extensively to the current assessment which is scheduled for presentation to Audit Committee on 2018 April 17.

Highlighted Risks

In accordance with Integrated Risk Management best practices, the IT Management Team reviews and updates the IT Risk Register on a quarterly basis and ensures that appropriate actions are being taken to manage identified risks. As of the last management review (2018 January), IT has identified two risks with an assessment rating of High/Red. Information regarding all IT risks and the on-going and planned actions to mitigate likelihood and impact can be found in Attachment 1.

REASON(S) FOR RECOMMENDATION(S):

Audit Committee has internal control and risk management oversight responsibilities of Information Technology.

ATTACHMENT(S)
1. Information Technology Risk Register (Confidential)
2. Information Technology Risk Management Presentation

AC2018-0133
Information Technology
Risk Management Annual
Update

2018 Feb 13

IT's Direction

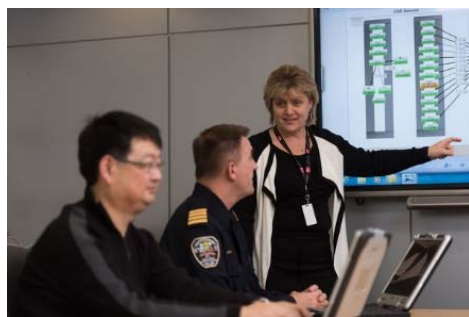"As a leader in municipal information technology, we will evolve our business *relationships* and *services*, strengthen our *infrastructure* and improve our *agility*."

V03

IT Solutions and Support

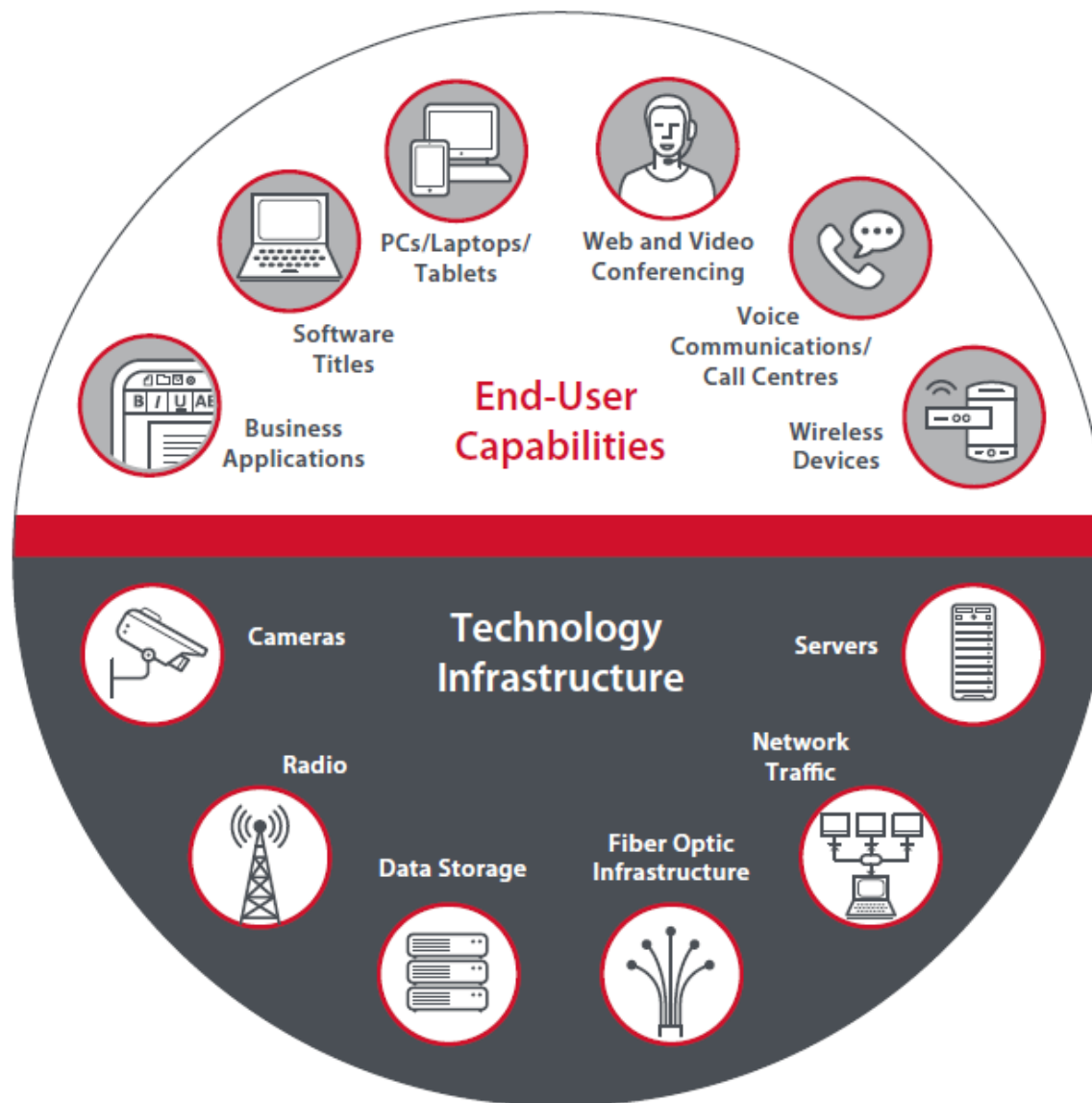Workforce Productivity

Infrastructure and Platforms

Business Systems and Consultation

Technology Landscape Overview
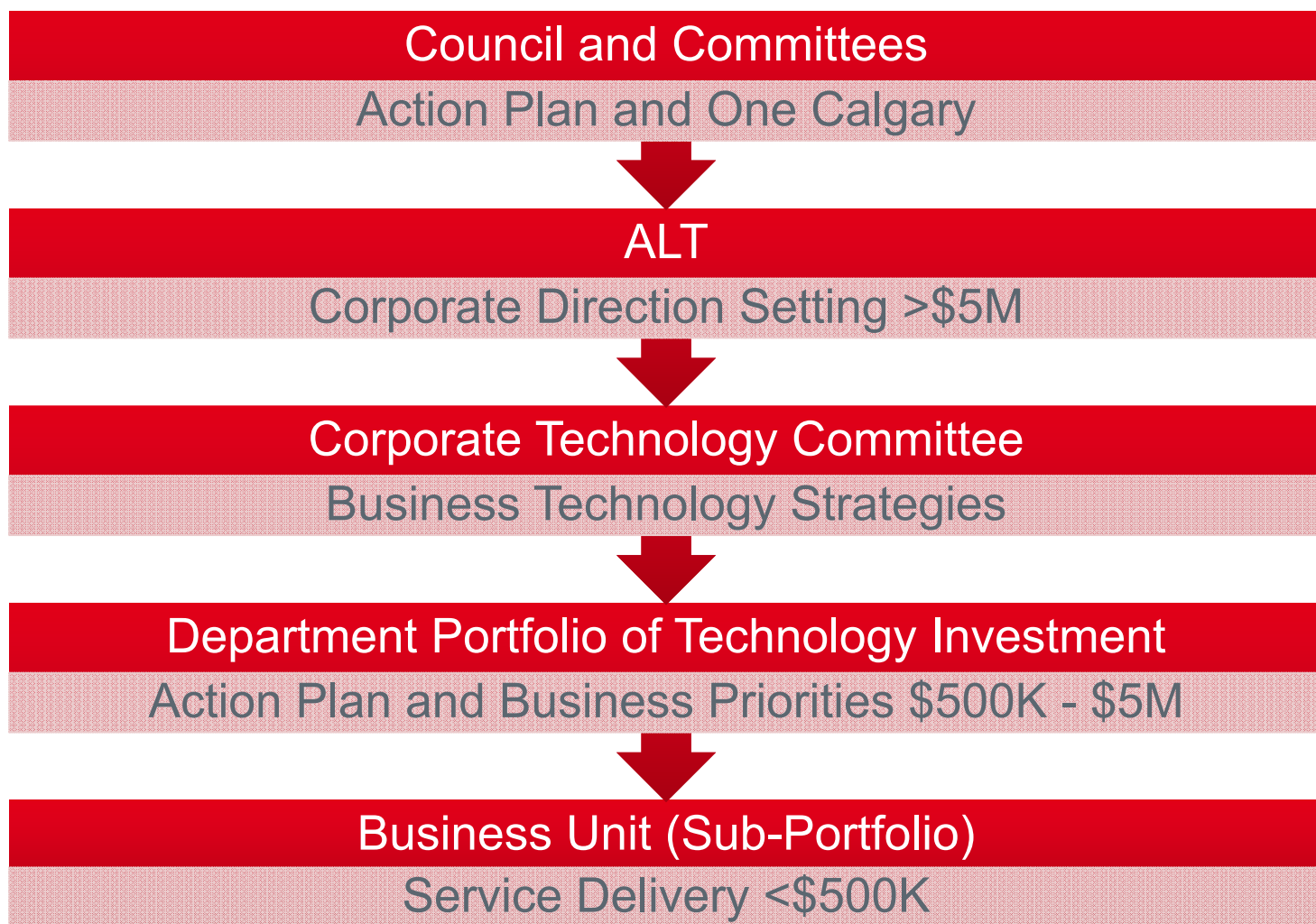
Multiple Layers of Risk Management

Resiliency, Redundancy, Sustainability

Strategic Risks

Project Risks

Operational Risks

Technology Governance Model

Council and Committees
Action Plan and One Calgary

ALT
Corporate Direction Setting >$5M

Corporate Technology Committee
Business Technology Strategies

Department Portfolio of Technology Investment
Action Plan and Business Priorities $500K - $5M

Business Unit (Sub-Portfolio)
Service Delivery <$500K

IT Risk Trending

Risk	2017		2018	
	Risk Rating	Trend	Risk Rating	Trend
Technology Security	🟥	↑	🟥	↔
Loss of Data	🟥	↔	🟥	↔
Funding	🟩	↓	🟨	↑
System Failure	🟨	↓	🟨	↔
Information Management	🟥	↔	🟨	↔
Capacity	🟨	↔	🟨	↔
Business Continuity	🟥	↑	🟨	↔
Service Interruption	🟥	↓	🟨	↓
Third-Party Services	🟥	↔	🟩	↔
Contract Compliance	🟨	↔	🟩	↔

Detailed risk descriptions can be found in Attachment 1 - IT Risk Register

Questions?