



**SUBJECT: Updated inherent risk assessment methodology**

**TO: Audit Committee**

**FROM: City Auditor's Office**

Report Number: CA-09-19

Wards Affected: Not Applicable

File Numbers: 430-01

Date to Committee: June 5, 2019

Date to Council: June 17, 2019

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**Recommendation:**

Approve the proposed amendments to the inherent risk assessment methodology as outlined in Appendix B of city auditor's report CA-09-19.

**Purpose:**

Establish new or revised policy or service standard.

An Engaging City

- Good Governance

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**Background and Discussion:**

*Audit Unit/Audit Universe*

An audit unit is a part of the organization that is exposed to sufficient risk(s) that control, including audit, is appropriate. Audit units can be defined according to: business unit, service line, legal entity, regulatory requirement, processes, programs, functions, or systems; a key risk or key control; and/or a combination of all or most of the above.

The total inventory of audit units is referred to as the audit universe. The audit universe is the basis of audit planning. The current audit universe includes all services and sub-services.

### *Inherent Risk Assessment*

The International Standards for the Professional Practice of Internal Auditing require a risk-based audit plan to assist management in ensuring significant risks are addressed. The risk assessment also supports effective use of audit resources through a targeted audit work plan.

The risk assessment methodology supports consistent measurement of inherent risk as all risk factors, criteria, attributes, and weightings are used to assess each audit unit. Each year, the audit unit's inherent risk profile is reviewed and updated by the manager/service owner. For their audit unit, the manager/service owner is asked to reflect on each criterion and select the attribute which best describes the environment or activities in which they operate. Managers/service owners are encouraged to engage supervisors and other staff in the review and update.

Inherent risk assessment is part art, part science. The art involves the judgment in determining both the relevant attribute for each criterion and a ranking for each factor. The science involves the determination of the overall inherent risk score. This score is determined through the translation of each factor's risk ranking into a pre-determined number, when multiplied by the factor's weighting, results in a score for that factor. The sum of all factor scores is the overall inherent risk score.

The inherent risk assessment methodology was established in 2009 with updates applied in 2011 and 2015.

### **Strategy/process**

It is good practice to periodically review the audit units and risk methodologies.

### *Audit Universe*

The current audit universe includes all services and sub-services. A review of the services/sub-services to organizational activities to corporate functions to major projects concluded that corporate functions should be included in the audit universe. Inclusion of these functions will promote a comprehensive assessment of risks and controls and offer more value to City because of breadth of coverage. Examples of corporate functions include Accounts Payable/Purchasing Card Program, Asset Management, Grant Administration, Fraud Management, Information Management, Physical Security, Privacy, Procurement, and Project Management, to name a few.

In some cases, current sub-services are, in fact, corporate functions. In these cases, risk assessment of services/sub-services will be adjusted to reduce likelihood of double counting. E.g. risk assessment of Financial Management – Transactional Services will

reflect investments and charitable donations only as Accounts Payable/Purchasing Card Program, Accounts Receivable, and GL Transactions & Accounts will be assessed as corporate functions. For information and reference, a list of the audit universe including corporate functions is included in Appendix A.

### *Inherent Risk Assessment*

Given the last review of the inherent risk assessment was in 2015, and the decision to include corporate functions in the audit universe, this drives the need to review the risk assessment factors, criteria and attributes to ensure relevance.

Research of other municipalities and public sector agency risk assessment methodologies was performed. As well, review of publications and material from the Institute of Internal Auditors was conducted to determine latest practices.

The revisions to both the audit universe and the inherent risk assessment methodology were reviewed with a sample of managers and the Burlington Leadership Team to assess relevancy, understanding and applicability.

## **Summary of Proposed Amendments**

Major changes to the methodology affect the factors, criteria, attributes and weighting.

### **1. Factor and weighting**

Factors are the major categories used to characterize inherent risk. One new factor was added, and 2 factors were eliminated.

<b>Factor</b>		<b>Weighting</b>	
<b>Current</b>	<b>Proposed</b>	<b>Current</b>	<b>Proposed</b>
Complexity of Operations	Complexity of Service Delivery	30%	No change
Materiality & Susceptibility to Error/Fraud	No change	25%	No change
Public Exposure	Exposure to Scrutiny	15%	10%
Degree of Change (over last 12 months)	Degree of Change (over last 12 months and expected within next 6 months)	20%	No change
Financial Loss/Cost	Eliminate	5%	0%
Non-Compliance	Eliminate	5%	0%
	People Participation (NEW)	0%	15%

## 2. Criteria

Criterion are used to give guidance as to what the factor means; how the factor is to be interpreted. Changes to the criteria are identified in ***bold italics*** and **Text shading** indicates new criterion.

Factor (Weight)	Criteria	
	Current	Proposed
Complexity of Service Delivery (30%)	<ul style="list-style-type: none"> <li>• Nature of technology/ equipment used in service delivery (e.g. sophisticated vs. simple)</li> <li>• Nature of process (e.g. customized vs. routine)</li> <li>• Staff involved in service delivery</li> <li>• Nature of service delivery (e.g. decentralized vs. centralized)</li> </ul>	<ul style="list-style-type: none"> <li>• Nature of technology/ equipment used in service delivery (e.g. sophisticated vs. simple)</li> <li>• <b><i>Degree of customization</i></b> of process (e.g. customized vs. standardized)</li> <li>• <b><i>Number of people</i></b> involved in service delivery</li> <li>• Service delivery <b><i>sites</i></b> (e.g. multi-<b><i>site/counter</i></b> vs. single <b><i>site/counter</i></b>)</li> <li>• <b><i>Level of exposure to hazardous activity</i></b></li> </ul>
Materiality & Susceptibility to Error/Fraud (25%)	<ul style="list-style-type: none"> <li>• Gross revenue (excluding recovery from capital)</li> <li>• Gross operating expenditures (including human resource costs and excluding one-time project costs)</li> <li>• Transparency/openness to scrutiny</li> <li>• Staffing levels</li> <li>• Nature of Assets Used in Service Delivery (i.e. tangible/intangible, convertibility to cash)</li> </ul>	<ul style="list-style-type: none"> <li>• Gross revenue (excluding recovery from capital)</li> <li>• Gross operating expenditures (including human resource costs and excluding one-time project costs)</li> <li>• Transparency/openness to scrutiny</li> <li>• <b><i>Extent of staff complement vacancy</i></b></li> <li>• Nature of Assets Used in Service Delivery (i.e. tangible/intangible, convertibility to cash)</li> </ul>

Factor (Weight)	Criteria	
	Current	Proposed
	<ul style="list-style-type: none"> <li>• Involvement in known risk areas of misconduct</li> <li>• Dollar value of daily cash deposits</li> </ul>	<ul style="list-style-type: none"> <li>• Involvement in known risk areas of misconduct</li> <li>• Dollar value of daily cash deposits</li> </ul>
Exposure to Scrutiny (10%)	<ul style="list-style-type: none"> <li>• Public/customer reaction</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Degree of public/external customer involvement</b></li> <li>• <b>Degree of internal customer involvement</b></li> <li>• <b>History of media attention (e.g. newspapers, blogs, op eds, etc.)</b></li> <li>• <b>Employee Base Involved</b></li> </ul>
Degree of Change (20%) (over last 12 months and expected within next 6 months)	<ul style="list-style-type: none"> <li>• Staff turnover (due to reasons such as retirement, leaves of absence, job rotations, etc.)</li> <li>• Changes to service strategy and/or process (manual and/or automated)</li> </ul>	<ul style="list-style-type: none"> <li>• Staff Turnover - Moved to People Participation factor</li> <li>• Changes to service and/or processes</li> <li>• <b>Technology/equipment change</b></li> </ul>
People Participation (15%)		<ul style="list-style-type: none"> <li>• Staff turnover (due to reasons such as retirement, leaves of absence, job rotations, etc.)</li> <li>• <b>Staff performing “must do” activity(ies)</b></li> <li>• <b>Difficulty in filling positions (beyond normal recruitment timing)</b></li> </ul>

Factor (Weight)	Criteria	
	Current	Proposed
		<b>Difficulty in attracting candidates</b>

### 3. Attributes

Attributes are statements to describe certain features or characteristics of the environment. Each attribute is aligned to a risk ranking and each risk ranking is assigned a pre-determined number. New attributes established for each of the 9 new criteria are provided in the following tables categorized by the factor and criterion to which each relates.

#### Complexity of Service Delivery:

- Level of exposure to hazardous activity

Risk Ranking (Pre-determined Number)				
Very High (100)	High (75)	Moderate (50)	Low (25)	Very Low (1)
Work involves daily exposure to high hazard activity (e.g. use of heavy machinery/ small equipment, working at heights, chemical handling, working in traffic, etc.)	Work involves frequent exposure to high hazard activity (e.g. use of heavy machinery/ small equipment, working at heights, chemical handling, working in traffic, etc.)	Work involves repeated exposure to manual labour (e.g. lifting, pushing, pulling, digging, etc.)	Work involves daily exposure to low hazard activity (e.g. use of computers, desk work, repetitive movement, etc.)	Work involves limited exposure to low hazard activity (e.g. use of computers, desk work, repetitive movement, etc.)

Exposure to Scrutiny:

- Degree of public/external customer involvement

<b>Risk Ranking (Pre-determined Number)</b>				
<b>Very High (100)</b>	<b>High (75)</b>	<b>Moderate (50)</b>	<b>Low (25)</b>	<b>Very Low (1)</b>
Everyday direct involvement of public/external customers	Frequent direct involvement of public/external customers	Periodic direct involvement of public/external customers	Infrequent direct involvement of public/external customers	Rare direct involvement of public/external customers

- Degree of internal customer involvement

<b>Risk Ranking (Pre-determined Number)</b>				
<b>Very High (100)</b>	<b>High (75)</b>	<b>Moderate (50)</b>	<b>Low (25)</b>	<b>Very Low (1)</b>
Everyday direct involvement of internal customers	Frequent direct involvement of internal customers	Periodic direct involvement of internal customers	Infrequent direct involvement of internal customers	Rare direct involvement of internal customers

- History of media attention (e.g. newspapers, blogs, op eds, etc.)

<b>Risk Ranking (Pre-determined Number)</b>				
<b>Very High (100)</b>	<b>High (75)</b>	<b>Moderate (50)</b>	<b>Low (25)</b>	<b>Very Low (1)</b>
Subject of regular and sustained media attention	Subject of frequent media attention	Subject of minimal or short-lived media attention	Subject of infrequent media attention	Never been subject of media attention

– Employee Base Involved

Risk Ranking (Pre-determined Number)				
Very High (100)	High (75)	Moderate (50)	Low (25)	Very Low (1)
Every employee involved	More than three-quarters of employees involved	Half of employees involved	More than one-quarter of employees involved	Less than one-quarter or one group of employees involved

Degree of Change:

– Technology/equipment change

Risk Ranking (Pre-determined Number)				
Very High (100)	High (75)	Moderate (50)	Low (25)	Very Low (1)
Implemented new software/hardware/equipment to support service	Major upgrade or update to <u>all</u> software/hardware/equipment to support service	Major upgrade or update to <u>some</u> software/hardware/equipment to support service	Minor upgrade or update to all or some software/hardware/equipment to support service	No changes to software/hardware/equipment to support service

People Participation:

– Staff performing “must do” activity(ies)

Risk Ranking (Pre-determined Number)				
Very High (100)	High (75)	Moderate (50)	Low (25)	Very Low (1)
Only one person knows how “must do” activity(ies) are performed. i.e. <u>OR</u> key person dependency	2 people know how “must do” activity(ies) are performed	3 people know how “must do” activity(ies) are performed	4 people know how “must do” activity(ies) are performed	5 or more people know how “must do” activity(ies) are performed



- Difficulty in filling positions (beyond normal recruitment timing)

<b>Risk Ranking (Pre-determined Number)</b>				
<b>Very High (100)</b>	<b>High (75)</b>	<b>Moderate (50)</b>	<b>Low (25)</b>	<b>Very Low (1)</b>
Takes 8 or more months longer	Takes 6 – 7 months longer	Takes 4 – 5 months longer	Takes 2 – 3 months longer	Takes less than 1 month longer

- Difficulty in attracting candidates

<b>Risk Ranking (Pre-determined Number)</b>				
<b>Very High (100)</b>	<b>High (75)</b>	<b>Moderate (50)</b>	<b>Low (25)</b>	<b>Very Low (1)</b>
Had to go back to market > 2 times after original recruitment <u>OR</u> > 2 offers made and declined	Had to go back to market 2 times after original recruitment <u>OR</u> 2 offers made and declined	Had to go back to market 1 time after original recruitment <u>AND</u> 1 offer made and declined	Had to go back to market 1 time after original recruitment <u>OR</u> 1 offer made and declined	Filled position from original recruitment <u>OR</u> no offers declined

A complete version of the updated inherent risk assessment methodology is available in Appendix B.

### **Next Steps**

The updated inherent risk assessment will be applied to each audit unit to create an inherent risk profile and each audit unit risk profile will be updated annually. As an example, Internal Audit's risk profile (contained in Appendix C) demonstrates how the inherent risk assessment is applied.

An annual work plan and a rolling 3-year work plan (with a base of 2020) will be developed in consultation with service owners and senior management based on:

- Higher inherent risk audit units subject to audit earlier than lower inherent risk audit units.
- Audit units related to the same service or delivered by the same staff will be subject to internal audit in different years.
- Other factors as required.

As per existing practice, the City Auditor will seek approval of the annual audit work plan from the Audit Committee.

**Financial Matters:**

Not applicable.

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**Connections:**

Not applicable.

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**Public Engagement Matters:**

Not applicable.

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**Conclusion:**

The audit universe is a practical way to categorize the operations of the City and the inherent risk methodology is a key component in developing a risk-based audit work plan. The proposed amendments to the inherent risk assessment bring the methodology up to date and tailor it to the City and its operating environment.

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Respectfully submitted,

Sheila M. Jones, CIA, CFE, CGAP, CRMA, CCSA

City Auditor

905-335-7600 ext. 7872

**Appendices:**

- A. CA-09-19 Appendix A: City of Burlington Audit Universe
- B. CA-09-19 Appendix B: Inherent Risk Assessment Methodology for City of Burlington
- C. CA-09-19 Appendix C: Example of Inherent Risk Assessment – Internal Audit Risk Profile

**Report Approval:**

All reports are reviewed and/or approved by Department Director, Director of Finance and Director of Legal. Final approval is by the City Manager.

CA-09-19 Appendix A: City of Burlington Audit Universe

Public Safety	Maintenance	Roads and Transportation	Leisure	Design and Build	Customer Relations and Citizen Representation	Internal Support and Administration
<ul style="list-style-type: none"><li>• <b>Animal Control</b><ul style="list-style-type: none"><li>• Adoption and Care</li><li>• Animal By-laws Enforcement and Education</li><li>• Dog Licensing</li></ul></li><li>• <b>By-law Enforcement</b><ul style="list-style-type: none"><li>• By-law Enforcement Complaints and Inspections</li><li>• By-law Licensing</li><li>• By-law Lottery Licensing and Liquor Licensing</li><li>• By-law Permits</li></ul></li><li>• <b>Emergency Management</b><ul style="list-style-type: none"><li>• City Emergency Planning</li><li>• Business Continuity</li></ul></li><li>• <b>Fire Communications</b></li><li>• <b>Fire Emergency Response</b><ul style="list-style-type: none"><li>• Fire Emergency Response</li><li>• Fire Volunteer</li><li>• Fire Administration</li><li>• Fire Maintenance</li><li>• Fire Training</li><li>• Fire Station Operations</li></ul></li><li>• <b>Fire Prevention &amp; Public Education</b><ul style="list-style-type: none"><li>• Fire Public Education</li><li>• Fire Prevention</li></ul></li><li>• <b>Halton Court Service</b><ul style="list-style-type: none"><li>• Halton Court Service Prosecution</li><li>• Halton Court Service Administration</li><li>• Halton Court Service Courtroom Support</li><li>• Halton Court Service Collection of Unpaid Fines</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>Cemetery</b><ul style="list-style-type: none"><li>• Customer Service and Sales</li><li>• Interment Services</li><li>• Grounds Maintenance</li></ul></li><li>• <b>Environment and Energy</b><ul style="list-style-type: none"><li>• Community Energy Plan</li><li>• Energy Management Plan (City Operations)</li><li>• Sustainability Initiatives</li></ul></li><li>• <b>Parks and Open Space Maintenance</b><ul style="list-style-type: none"><li>• Parks and Open Space Maintenance</li><li>• Horticulture</li><li>• Playground and Irrigation Maintenance</li></ul></li><li>• <b>Roadway and Sidewalk Maintenance</b><ul style="list-style-type: none"><li>• Road and Sidewalk Inspection</li><li>• Roadway Routine Maintenance</li><li>• Sidewalk Maintenance</li><li>• Winter Maintenance</li></ul></li><li>• <b>Surface Water Drainage</b><ul style="list-style-type: none"><li>• Surface Water Drainage Project Management</li><li>• Surface Water Drainage Maintenance</li><li>• Resident Drainage Customer Service</li><li>• Storm Water Management Design Review</li><li>• Site Alteration Permitting and Administration</li></ul></li><li>• <b>Tree Management</b><ul style="list-style-type: none"><li>• Tree Maintenance</li><li>• Tree Planting</li><li>• Urban Forest Health and Pest Management</li><li>• Public Tree Bylaw Administration &amp; Enforcement</li><li>• Private Tree By-law Pilot</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>Parking</b><ul style="list-style-type: none"><li>• Parking Space Management</li><li>• Parking Revenue Management</li><li>• Parking By-law Enforcement</li></ul></li><li>• <b>Roads and Structures – Design and Construction</b><ul style="list-style-type: none"><li>• Survey</li><li>• Design</li><li>• Construction Administration</li><li>• Construction Inspection</li><li>• Municipal Consent</li></ul></li><li>• <b>Specialized Transit</b></li><li>• <b>Traffic Operations Management</b><ul style="list-style-type: none"><li>• Traffic Operations</li><li>• Traffic Signals</li><li>• Crossing Guard Program</li><li>• Streetlighting</li></ul></li><li>• <b>Transit</b></li><li>• <b>Transportation Planning</b><ul style="list-style-type: none"><li>• Developer Application Review</li><li>• Long Range Transportation Planning</li><li>• Active Transportation</li><li>• Active &amp; Sustainable School Travel</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>Arts and Culture</b><ul style="list-style-type: none"><li>• Festivals and Events</li><li>• Public Art Collection Management</li><li>• Art &amp; Cultural Programs &amp; Services</li><li>• Cultural Mapping and Community Liaison</li><li>• Relationship Liaison with Arts &amp; Culture Boards</li></ul></li><li>• <b>Recreation</b><ul style="list-style-type: none"><li>• Aquatic Programs</li><li>• Ice Programs</li><li>• Golf Course and Program</li><li>• Food and Beverage Services</li><li>• Parks and Trails</li><li>• General Recreation Programs</li></ul></li><li>• <b>Organized Sport Support</b><ul style="list-style-type: none"><li>• Sport Organization Relationships</li><li>• Sport Venue Operations</li><li>• Sport Organization Granting</li><li>• Sport Organization Allocation of Space</li><li>• Sport Joint Venture Contract Management</li><li>• Sport Venue Renovations</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>Building Code Permits and Inspection</b><ul style="list-style-type: none"><li>• Application Process</li><li>• Plans Review</li><li>• Building Inspections</li></ul></li><li>• <b>Community Design and Development Review</b><ul style="list-style-type: none"><li>• Official Plan Amendments and Zoning By-law Amendments</li><li>• Site plan/Minor Development/Zoning Certificates</li><li>• Subdivision/Condo/Part Lot Control</li><li>• Variances, Consent and Other City Tribunals</li><li>• Policy and Research</li><li>• Data Management</li></ul></li><li>• <b>Facilities and Buildings – Design and Construction</b></li><li>• <b>Parks and Open Space – Design and Development</b><ul style="list-style-type: none"><li>• Park and Open Space Planning</li><li>• Parks and Open Space Design and Construction</li><li>• Parks and Open Space Asset Management</li><li>• Landscape Architecture</li><li>• Community Garden Program</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>Council and Citizen Committee</b><ul style="list-style-type: none"><li>• Council and Committee</li><li>• Citizen Advisory Committee</li><li>• Election</li></ul></li><li>• <b>Service Burlington</b><ul style="list-style-type: none"><li>• Cashiering &amp; Inquiries</li><li>• Vital Statistics</li><li>• Records Management</li><li>• Access and Privacy</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>Asset Management</b><ul style="list-style-type: none"><li>• Asset Management Oversight</li><li>• Long-Range Financial and Operational Planning</li></ul></li><li>• <b>Corporate Legal</b><ul style="list-style-type: none"><li>• Insurance/Risk Management</li><li>• Real Estate Service (Property &amp; Land)</li><li>• Legal Service</li></ul></li><li>• <b>Corporate Management</b><ul style="list-style-type: none"><li>• Corporate and Strategic Planning</li><li>• Enterprise Risk Management</li><li>• Board Liaison</li><li>• Corporate Project Management</li><li>• Corporate Culture Leadership</li></ul></li><li>• <b>Financial Management</b><ul style="list-style-type: none"><li>• Procurement Process</li><li>• Insurance Claims Management</li><li>• Transactional Processing</li><li>• Financial Reporting and Business Planning</li><li>• Property Tax Billing, Collection and Payment Processing</li></ul></li><li>• <b>Fleet Management</b><ul style="list-style-type: none"><li>• Vehicle and Equipment Maintenance</li><li>• Vehicle Procurement</li><li>• Vehicle and Equipment Operator Training</li></ul></li><li>• <b>Geographic Information and Mapping</b><ul style="list-style-type: none"><li>• Property/Land Information Service</li><li>• Data Management Service</li><li>• Map Production Service</li></ul></li><li>• <b>Government Relations &amp; Strategic Communication</b><ul style="list-style-type: none"><li>• Government Relations</li><li>• Strategic Communications</li></ul></li><li>• <b>Human Resources</b><ul style="list-style-type: none"><li>• Compensation and Benefits</li><li>• Corporate Learning and Development</li><li>• Recruitment</li><li>• Employee &amp; Labour Relations</li><li>• Succession Management</li><li>• Health, Safety and Wellness</li></ul></li><li>• <b>Information Technology</b><ul style="list-style-type: none"><li>• IT Support Service</li><li>• IT Consulting Service</li><li>• IT Solution Delivery</li></ul></li><li>• <b>Internal Audit</b></li><li>• <b>Sign Production</b><ul style="list-style-type: none"><li>• Sign Design</li><li>• Sign Production</li><li>• Sign Installation</li></ul></li></ul>
Where services/sub-services contain corporate functions, these services/sub-services will be adjusted accordingly.						
Corporate Function						
<ul style="list-style-type: none"><li>• Accounts Payable/Purchasing Card Program</li><li>• Accounts Receivable</li><li>• Asset Management</li><li>• Budget Development &amp; Monitoring</li><li>• Business Performance</li><li>• Cash Handling</li><li>• Change Management</li><li>• Compliance</li><li>• Contract Development &amp; Management</li><li>• Customer Service</li></ul>		<ul style="list-style-type: none"><li>• Employee Performance Management</li><li>• GL Transactions &amp; Accounts</li><li>• Internal/Administrative Governance (not Council)</li><li>• Grant Administration</li><li>• Fraud Management</li><li>• Information Management</li><li>• Information Security</li><li>• Innovation</li><li>• Inventory Management</li><li>• IT Application Support</li><li>• IT Network Operations</li></ul>		<ul style="list-style-type: none"><li>• IT Security</li><li>• Payroll &amp; Benefits Administration</li><li>• Payroll Processing</li><li>• Physical Security</li><li>• Privacy</li><li>• Procurement</li><li>• Project management</li><li>• Property Management</li><li>• Records Management</li><li>• Recruitment</li><li>• Risk Management</li><li>• Strategy Development &amp; Monitoring</li></ul>		

**CA-09-19 Appendix B:**  
**Inherent Risk Assessment Methodology for City of Burlington**  
Updated 2019

**Risk Factors and Associated Criteria**

The audit work plan is established based on the assessment of risks and exposures in City services. The assessed risk is “inherent risk”; that is, the total risk without controls or raw risk. The level of inherent risk (as determined through risk factors) is used to ensure significant risks are addressed and there is effective use of audit resources.

**Inherent Risk Factors**

Risk factors include quantitative and qualitative criteria and attributes used to identify areas of City operations that would benefit most from an internal audit. Inherent risk is determined by considering all the factors; not just an individual factor. However, not all factors are considered equal. A weighting is applied to each factor to reflect their relative importance (which is a matter for judgment) based on business practices, legislation and regulations, and the strategic plan. Also, criterion that does not apply to areas will not be considered in the overall factor ranking.

There are many risk factors that can be used in assessing inherent risk. For example, quantitative criteria may include: size of the budget and payroll, number of employees, value of capital equipment, the time elapsed since the last audit, client satisfaction, and extent of partnering/alliances. Qualitative criteria may include: areas of concern to management, possibility of adverse publicity, complexity of IT infrastructure, the effect of governmental or other regulations, technological innovation and information integrity.

The inherent risk factors must be tailored to the City and its operating environment.

**Calculating the Overall Inherent Risk Ranking**

The overall inherent risk ranking is calculated using the following formula:

$$\text{OVERALL INHERENT RISK RANKING SCORE} = \Sigma(\text{INHERENT RISK ATTRIBUTE RANKING SCORE} \times \text{FACTOR WEIGHTING})$$

Risk assessed audit entities will be listed from highest to lowest score.

# Inherent Risk Assessment for Audit Units

The following table contains the factors and a set of attributes for each criterion to assist in assessing the inherent risk of the service and/or sub-service.

## Inherent Risk Factors and Criteria for Services

Factor (Weighting) & Criteria	Inherent Risk Attribute Ranking (Score)				
	Very High (100)	High (75)	Moderate (50)	Low (25)	Very Low (1)
<b>Complexity of Service Delivery (30%)</b> <ul style="list-style-type: none"> <li>Nature of technology/equipment used in service delivery (e.g. sophisticated vs. simple)</li> <li>Degree of customization of process (e.g. customized vs. standardized)</li> <li>Number of people involved in service delivery</li> <li>Service delivery sites (e.g. multi-site/counter vs. single site/counter)</li> <li>Level of exposure to hazardous activity</li> </ul>	<ul style="list-style-type: none"> <li>Requires sophisticated technology/equipment with multiple interfaces</li> <li>Customized process for each transaction</li> <li>More than 30 people involved in delivering the service</li> <li>Multi-site/counter service delivery (&gt;5) sites/counters <u>AND</u> contracted services</li> <li>Work involves daily exposure to high hazard activity (e.g. use of heavy machinery/small equipment, working at heights, chemical handling, working in traffic, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Requires sophisticated technology/equipment with minimal interfaces</li> <li>Specialized process for majority of transactions; standardized process for less than a quarter of transactions</li> <li>22 - 29 people involved in delivering the service</li> <li>Multi-site/counter service delivery (&gt;5) sites/counters <u>OR</u> contracted services</li> <li>Work involves frequent exposure to high hazard activity (e.g. use of heavy machinery/small equipment, working at heights, chemical handling, working in traffic, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Requires standalone sophisticated technology/equipment</li> <li>Standardized process for half of transactions; remaining transactions require exceptions to process "rules"</li> <li>11 - 21 people involved in delivering the service</li> <li>Multi-site/counter service delivery (from 3 – 4 sites/counters)</li> <li>Work involves repeated exposure to manual labour (e.g. lifting, pushing, pulling, digging, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Requires simple technology/equipment with few interfaces</li> <li>Standardized process for three quarters of transactions; minimal exceptions to process "rules" required</li> <li>6 - 10 people involved in delivering the service</li> <li>Multi-site/counter service delivery (from 2 - 3 sites/counters)</li> <li>Work involves daily exposure to low hazard activity (e.g. use of computers, desk work, repetitive movement, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Requires standalone simple technology/equipment</li> <li>Standardized process for all transactions (same process each time; no exceptions)</li> <li>1 - 5 people involved in delivering the service</li> <li>Single site/counter service delivery (from one site/counter)</li> <li>Work involves limited exposure to low hazard activity (e.g. use of computers, desk work, repetitive movement, etc.)</li> </ul>

# Inherent Risk Assessment for Audit Units

Factor (Weighting) & Criteria	Inherent Risk Attribute Ranking (Score)				
	Very High (100)	High (75)	Moderate (50)	Low (25)	Very Low (1)
<b>Materiality &amp; Susceptibility to Error/Fraud (25%)</b> <ul style="list-style-type: none"> <li>Gross revenue (excluding recovery from capital) <ul style="list-style-type: none"> <li>– &gt; \$400,000</li> <li>– Between \$250,001 and \$399,999</li> <li>– Between \$100,001 and \$250,000</li> <li>– Between \$25,001 and \$100,000</li> <li>– &lt; \$25,000</li> </ul> </li> <li>Gross operating expenditures (including human resource costs and excluding one-time project costs) <ul style="list-style-type: none"> <li>– &gt; \$2,000,000</li> <li>– Between \$1,000,000 and \$1,999,999</li> <li>– Between \$500,000 and \$999,999</li> <li>– Between \$250,000 and \$499,999</li> <li>– &lt; \$250,000</li> </ul> </li> <li>Transparency/openness to scrutiny <ul style="list-style-type: none"> <li>– One person responsible for tracking, reporting and monitoring</li> <li>– Limited number (1-2) of people involved in tracking, reporting and monitoring</li> <li>– Small group (3-4) of people involved in tracking, reporting and monitoring</li> <li>– Group (5-6) of people involved in tracking, reporting and monitoring</li> <li>– Larger number of people (6+) involved in tracking, reporting and monitoring</li> </ul> </li> <li>Extent of staff complement vacancy <ul style="list-style-type: none"> <li>– Staffing level at less than 65% of full complement</li> <li>– Staffing level between 65% and 75% of full complement</li> <li>– Staffing level between 76% and 89% of full complement</li> <li>– Staffing level between 95% and 99% of full complement</li> <li>– Staffing level at full complement</li> </ul> </li> <li>Nature of Assets Used in Service Delivery (i.e. tangible/intangible, convertibility to cash) <ul style="list-style-type: none"> <li>– Liquid (e.g. cash includes cheques and debit/credit card, bonds, etc.)</li> <li>– Easily converted to cash (i.e. &lt; 14 days); readily available market; highly liquid</li> <li>– Can be converted to cash (i.e. between 15 days and 29 days); market is specialized; somewhat liquid</li> <li>– Difficult to convert to cash (i.e. 30 days); small market</li> <li>– No cash value; not liquid</li> </ul> </li> <li>Involvement in known risk areas of misconduct <sup>1</sup> <ul style="list-style-type: none"> <li>– Involved in more than one of procurement/contracting, approvals/permits and licensing, by-law enforcement</li> <li>– Involved in any of procurement/contracting, approvals/permits and licensing, by-law enforcement</li> <li>– Not involved in any of procurement/contracting, approvals/permits and licensing or by-law enforcement</li> </ul> </li> </ul>					

<sup>1</sup> International Centre for Criminal Law Reform and Criminal Justice Policy, *Municipal “Best Practices”: Preventing Fraud, Bribery and Corruption* (Vancouver: ICCLR 2013) < <http://icclr.law.ubc.ca/sites/icclr.law.ubc.ca/files/publications/pdfs/Municipal%20Best%20Practices%20-%20Preventing%20Fraud,%20Bribery%20and%20Corruption%20FINAL.pdf>>

# Inherent Risk Assessment for Audit Units

Factor (Weighting) & Criteria	Inherent Risk Attribute Ranking (Score)				
	Very High (100)	High (75)	Moderate (50)	Low (25)	Very Low (1)
<ul style="list-style-type: none"> <li>Dollar value of daily cash deposits</li> </ul>	– greater than \$5,001	– between \$2,501 and \$5,000	– between \$1,501 and \$2,500	– between \$251 and \$1,500	– less than \$250
<b>Exposure to Scrutiny (10%)</b> <ul style="list-style-type: none"> <li>Degree of public/external customer involvement</li> <li>Degree of internal customer involvement</li> <li>History of media attention (e.g. newspapers, blogs, op eds, etc.)</li> <li>Employee Base Involved</li> </ul>	<ul style="list-style-type: none"> <li>Everyday direct involvement of public/external customers</li> <li>Everyday direct involvement of internal customers</li> <li>Subject of regular and sustained media attention</li> <li>Every employee involved</li> </ul>	<ul style="list-style-type: none"> <li>Frequent direct involvement of public/external customers</li> <li>Frequent direct involvement of internal customers</li> <li>Subject of frequent media attention</li> <li>More than three-quarters of employees involved</li> </ul>	<ul style="list-style-type: none"> <li>Periodic direct involvement of public/external customers</li> <li>Periodic direct involvement of internal customers</li> <li>Subject of minimal or short-lived media attention</li> <li>Half of employees involved</li> </ul>	<ul style="list-style-type: none"> <li>Infrequent direct involvement of public/external customers</li> <li>Infrequent direct involvement of internal customers</li> <li>Subject of infrequent media attention</li> <li>More than one-quarter of employees involved</li> </ul>	<ul style="list-style-type: none"> <li>Rare direct involvement of public/external customers</li> <li>Rare direct involvement of internal customers</li> <li>Never been subject of media attention</li> <li>Less than one-quarter or one group of employees involved</li> </ul>
<b>Degree of Change (20%)</b> (over last 12 months and expected within next 6 months) <ul style="list-style-type: none"> <li>Changes to service and/or processes</li> <li>Technology/equipment change</li> </ul>	<ul style="list-style-type: none"> <li>Totally new service and/or delivery process(es)</li> <li>Implemented new software/hardware/equipment to support service</li> </ul>	<ul style="list-style-type: none"> <li>Multiple/major changes to service and/or delivery process(es)</li> <li>Major upgrade or update to <u>all</u> software/hardware/equipment to support service</li> </ul>	<ul style="list-style-type: none"> <li>Small number changes to service and/or delivery process(es)</li> <li>Major upgrade or update to <u>some</u> software/hardware/equipment to support service</li> </ul>	<ul style="list-style-type: none"> <li>Infrequent/minor changes to service and/or delivery process(es)</li> <li>Minor upgrade or update to all or some software/hardware/equipment to support service</li> </ul>	<ul style="list-style-type: none"> <li>No changes to service and/or delivery process(es)</li> <li>No changes to software/hardware/equipment to support service</li> </ul>



**Inherent Risk Assessment for Audit Units**

Factor (Weighting) & Criteria	Inherent Risk Attribute Ranking (Score)				
	Very High (100)	High (75)	Moderate (50)	Low (25)	Very Low (1)
<b>People Participation (15%)</b>					
<ul style="list-style-type: none"><li>• Staff turnover (due to reasons such as retirement, leaves of absence, job rotations, etc.)</li></ul>	<ul style="list-style-type: none"><li>– More than 50% of all staff has changed in last year</li></ul>	<ul style="list-style-type: none"><li>– Between 30% - 50% of all staff have changed in last year</li></ul>	<ul style="list-style-type: none"><li>– Between 20% - 30% of all staff have changed in last year</li></ul>	<ul style="list-style-type: none"><li>– Between 10% - 20% of all staff have changed in last year</li></ul>	<ul style="list-style-type: none"><li>– Less than 10% of all staff has changed in last year</li></ul>
<ul style="list-style-type: none"><li>• Staff performing “must do” activity(ies)</li></ul>	<ul style="list-style-type: none"><li>– Only one person knows how “must do” activity(ies) are performed. <u>OR</u> key person dependency</li></ul>	<ul style="list-style-type: none"><li>– 2 people know how “must do” activity(ies) are performed</li></ul>	<ul style="list-style-type: none"><li>– 3 people know how “must do” activity(ies) are performed</li></ul>	<ul style="list-style-type: none"><li>– 4 people know how “must do” activity(ies) are performed</li></ul>	<ul style="list-style-type: none"><li>– 5 or more people know how “must do” activity(ies) are performed</li></ul>
<ul style="list-style-type: none"><li>• Difficulty in filling positions (beyond normal recruitment timing)</li></ul>	<ul style="list-style-type: none"><li>– Takes 8 or more months longer</li></ul>	<ul style="list-style-type: none"><li>– Takes 6 – 7 months longer</li></ul>	<ul style="list-style-type: none"><li>– Takes 4 – 5 months longer</li></ul>	<ul style="list-style-type: none"><li>– Takes 2 – 3 months longer</li></ul>	<ul style="list-style-type: none"><li>– Takes less than 1 month longer</li></ul>
<ul style="list-style-type: none"><li>• Difficulty in attracting candidates</li></ul>	<ul style="list-style-type: none"><li>– Had to go back to market &gt; 2 times after original recruitment <u>OR</u> &gt; 2 offers made and declined</li></ul>	<ul style="list-style-type: none"><li>– Had to go back to market 2 times after original recruitment <u>OR</u> 2 offers made and declined</li></ul>	<ul style="list-style-type: none"><li>– Had to go back to market 1 time after original recruitment <u>AND</u> 1 offer made and declined</li></ul>	<ul style="list-style-type: none"><li>– Had to go back to market 1 time after original recruitment <u>OR</u> 1 offer made and declined</li></ul>	<ul style="list-style-type: none"><li>– Filled position from original recruitment <u>OR</u> no offers declined</li></ul>

CA-09-19 Appendix C: Example of Inherent Risk Assessment

	Audit Unit:	Service:	Service Category:	Service Owner:		
	Internal Audit	Internal Audit	Internal Support and Administ Sheila Jones			
Factor	Criteria	Attributes (Ranking)	Attribute			Overall Risk
			Weighting	Rank	Score	Score
Complexity of Service Delivery	Nature of technology/equipment used in service delivery (e.g. sophisticated vs. simple)	Requires standalone simple technology/equipment (VL)	30%	Moderate	50	15
	Degree of customization of process (e.g. customized vs. standardized)	Customized process for each transaction (VH)				
	Number of people involved in service delivery	1 - 5 people involved in delivering the service (VL)				
	Service delivery sites (e.g. multi-site/counter vs. single site/counter)	Single site/counter service delivery (from one site/counter) (VL)				
	Level of exposure to hazardous activity	Work involves daily exposure to low hazard activity (e.g. use of computers, desk work, repetitive movement, etc.) (L)				
Materiality & Susceptibility to Error/Fraud	Gross revenue	< \$25,000 (VL)	25%	Moderate	50	12.5
	Gross operating expenditures (including human resource costs and excluding one-time project costs)	Between \$250,000 and \$499,999 (L)				
	Transparency/openness to scrutiny	One person responsible for reporting and monitoring (VH)				
	Extent of staff complement vacancy	Service is supported with full complement (VL)				
	Nature of Assets Used in Service Delivery (i.e. tangible/intangible, convertibility to cash)	No cash value; not liquid (VL)				
	Dollar value of daily cash deposits	< \$250 (VL)				
	Involvement in known risk areas of misconduct (procurement/contracting, approvals/permits, licensing, by-law enforcement)	Involved in any of procurement/ contracting, approvals/permits and licensing, by-law enforcement (M)				
Exposure to Scrutiny	Degree of public/external customer involvement	Rare direct involvement of public/external customers (VL)	10%	Low	25	2.5
	Degree of internal customer involvement	Frequent direct involvement of internal customers (H)				
	History of media attention (e.g. newspapers, blogs, op eds, etc.)	Never been subject of media attention (VL)				
	Employee Base Involved	Less than one-quarter or one group of employees involved (VL)				
Degree of Change (over last 12 months and expected within next 6 months)	Changes to service and/or process (manual and/or automated)	No changes to service and/or delivery process (VL)	20%	Very Low	1	0.2
	Technology/equipment changes	No changes to software/hardware/equipment to support service (VL)				
People Participation	Staff turnover (due to reasons such as retirement, leaves of absence, job rotations, etc.)	Less than 10% of all staff has changed in last year (VL)	15%	Low	25	3.75
	Staff performing “must do” activity(ies)	Only one person knows how “must do” activity(ies) are performed. i.e. OR key person dependency (VH)				
	Difficulty in filling positions (beyond normal recruitment timing)	Takes less than 1 month longer (VL)				
	Difficulty in attracting candidates	Filled position from original recruitment OR no offers declined (VL)				
			100%	33.95		

		Most Recent	Previous	Previous	Previous
Past Audit Experience:	No	When:			
Area of Focus:					

Summary of Adjustments for Current Year's Assessment		2019
Complexity of Service Delivery		
Materiality & Susceptibility to Error/Fraud		
Exposure to Scrutiny		
Degree of Change (over last 12 months and expected within next 6 months)		
People Participation		

#### Description of Audit Unit

This service is delivered to: City senior management, for comfort that appropriate internal controls are in place to manage risk and City staff, for understanding risks and the internal controls required to minimize risk. Results of this service are conveyed to the Audit Committee/Council to provide information regarding the effective management of processes in place to mitigate risk.

Existing service delivery includes independent, objective audits and consulting services to evaluate and improve the effectiveness of risk management, internal control and the practices that ensure accountability, fairness and transparency. In addition, external resources (e.g. accounting firms or consulting firms) may be used to deliver the audit service.