

**CITY OF HAMILTON
AUDIT SERVICES REPORT 2018-01
HAMILTON FIRE DEPARTMENT RISK ASSESSMENT**

**FIRE RISK ASSESSMENT
DETAILED REPORT**

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HAMILTON FIRE DEPARTMENT RISK ASSESSMENT**

FIRE RISK ASSESSMENT – DETAILED REPORT

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EXECUTIVE SUMMARY

In 2018 Audit Services facilitated a risk assessment with the Hamilton Fire Department. This risk assessment allowed the Fire Department to proactively identify, assess and form responses to potential risks that were considered and incorporated into the Fire Department's newly developed ten-year Fire Service Delivery Plan.

Through a series of interviews, participants from the Hamilton Fire Department, Human Resources Division, Communications Division and union representatives identified 22 risks. A risk is an event that may impact or prevent the Fire Department from providing timely quality service in a safe manner. A variety of risks were identified which included strategic, operational, financial, compliance, information and organizational matters.

Through one large workshop and several one-on-one workshops, participants assessed the likelihood and impact of each risk and Audit Services mapped these scores onto a heat map to see how critical each risk was in relation to the other. The most significant risks related to staffing, recruitment, unsustainable costs, employee skills, emerging technology, legislative changes and critical infrastructure disruption.

Management accepted the risks related to legislative changes and critical infrastructure disruption as several controls and other actions are currently in place to prevent negative impacts and continue providing high quality services.

Management decided to take additional steps to further manage the risks related to staffing, recruitment, unsustainable costs, employee skills and emerging technology. Action plans have been developed and have been incorporated into the Fire Department's newly developed ten-year Fire Service Delivery Plan where appropriate.

Audit Services believes the risk assessment process with the Hamilton Fire Department was successful and remains optimistic that management will use this information to improve operations and to integrate proactive risk assessments into future strategic planning and decision-making processes.

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INTRODUCTION & RISK CONTEXT

Project History

The Audit Services Division broadened its portfolio of services in 2016 to include risk assessments. A risk assessment identifies risks proactively, so they can be managed, mitigated or accepted. This process involves working collaboratively with a department/division and facilitating discussions to ensure risks are appropriately identified and addressed.

The Fire Chief and Director of Audit Services met in early 2018 to discuss the Fire Department developing and presenting a ten-year Fire Service Delivery Plan to Committee and Council in the near future. Both the Director of Audit Services and the Fire Chief saw this as an opportunity to facilitate a risk assessment with the Hamilton Fire Department to ensure risks are formally identified and considered while developing the Fire Service Delivery Plan. This approach will present a more fulsome picture for City Council of the Fire Department's operations, risks and constraints, and linkage to action items in the newly developed Fire Service Delivery Plan.

The 2016-2018 Audit Services Work Plan presented to the Audit, Finance and Administration Committee on April 25, 2018 contained a combined value-for-money and compliance audit related to the Fire Department. Audit Services performed the risk assessment in lieu of the audit outlined in the Work Plan to broaden the impact of its work in the Fire Department and take advantage of this unique opportunity.

Scope

Audit Services' role was to facilitate a risk assessment with the Hamilton Fire Department. Each operational group within the Fire Department was included in the scope of this project and risks were compiled, analyzed and reported on a department-wide basis. As facilitator, Audit Services guided the Hamilton Fire Department through the risk management process and ensured faithful representation of the information obtained from, and decisions made by, participants. Audit Services did not corroborate or formally validate participant evaluation of risk for accuracy or completeness. However, Audit Services applied professional judgement in ensuring due diligence was applied to risk identification and evaluation, and synthesized and correlated the risk information with its understanding of operations.

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Background Information About the Fire Department

The Hamilton Fire Department is a division within the Healthy and Safe Communities Department. In 2018, the Hamilton Fire Department managed an operating budget of about \$91 million and capital projects totaling approximately \$6 million.

There are eight unique operating divisions within the Hamilton Fire Department. These include: firefighting and rescue operations, training, communications, city wide trunked radio, mechanical, fire prevention, emergency management and the leadership team. Detailed descriptions of the main activities carried out by each operating division is included in Appendix 1 to the Fire Risk Assessment – Detailed Report.

The Hamilton Fire Department operates out of 30 locations across the City which includes both administrative locations and fire stations. The Hamilton Fire Department is a composite fire service made up of 586 career fulltime personnel and 270 volunteer paid-on-call firefighters. Depending on their location, emergency response stations are composed of either full time career firefighters, on-call volunteer firefighters or a mix of career and volunteer firefighters.

Risk Context

Audit Services identified the following internal and external parameters unique to the Hamilton Fire Department that must be considered when managing risk in their environment.

Internal Parameters

- History – The current Hamilton Fire Department was formed in 2001 when the fire departments from Hamilton, Ancaster, Dundas, Glanbrook, Flamborough and Stoney Creek amalgamated. The type of fire service varies across the amalgamated City, depending on where fire stations are located, area rating and the amount of property taxes levied for fire services. As the Fire Department is funded largely from the tax levy, significant changes to the fire service requires Council approval and may impact property taxes.
- Objectives – The Fire Department’s objective to “protect and promote quality of life and public safety” was adopted after amalgamation in 2001. The Fire Department’s purpose statement “dedicated to preserving life, property and the environment in Hamilton through an integrated program of fire protection and rescue services and emergency management” was part of the Hamilton Fire Department’s service profile in the Trust and Confidence Report.

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For the purposes of this risk assessment, a risk is defined as an event that may impact or prevent the Fire Department from meeting its objectives. To translate the above objective and purpose statements into something that could resonate with any participant, Audit Services used the concepts of safety and timely, quality service to facilitate discussions with interviewees to identify risks.

- Strategy – The Hamilton Fire Department is currently developing a ten-year Fire Service Delivery Plan. There has not been a service delivery plan in place in the recent past.
- Risk Appetite – Council is ultimately responsible for the determination and establishment of levels of fire protection service. By-Law No. 19-034 To Establish, Maintain and Operate Hamilton Fire Department, approved by Council on February 27, 2019, identifies services provided by the Hamilton Fire Department. The newly developed ten-year Fire Services Delivery Plan will provide additional clarity to existing service levels and bring service-related changes to Council for consideration.
- Environment – The majority of the Hamilton Fire Department consists of essential service unionized employees belonging to two predominant unions – the Hamilton Professional Fire Fighters Association (HPFFA) Local 288 and the Greater Hamilton Volunteer Firefighters Association, CLAC Local 911. Both unions play an active role in labour negotiations and other activities.
- Culture – The Hamilton Fire Department has a paramilitary command structure in which a chain of command exists. There are clear lines of authority and responsibility within the fire service and orders are passed along within a team or unit to achieve outcomes.
- Tone at the Top – The Fire Chief has demonstrated an encouraging and positive attitude toward risk assessment and innovation. The Chief's message in the 2017 Hamilton Fire Department Annual Report stated "moving forward, we remain committed to finding ways to continually improve. Our focus will be to gain a better understand(ing of) the level of risk and needs of the City so that we can optimize the utilization of our resources while delivering the required level of service." The Hamilton Fire Department was the first City division to publish performance information on the newly created citizen dashboard. Also, the Fire Chief requested that Audit Services perform a risk assessment on the service to incorporate the findings with the ten-year Fire Service Delivery Plan. These actions show constructive tone at the top regarding risk management.

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- Capability – Certain Hamilton Fire Department management members and staff are familiar with risk management concepts. For example, the Hamilton Fire Department completed a community risk assessment which involved identifying emergency-related risks and hazards to public safety in various communities and occupancies, assessing the likelihood and impact of these risks, and deciding what action will be taken for which risks. The Hamilton Fire Department can apply these concepts to this risk assessment which is focused more on the service's operations as opposed to the emergency response situations that arise in the community. In addition, senior leadership has demonstrated understanding of risk management concepts in discussions with Audit Services throughout this risk assessment process.

External Parameters

- Key Business Drivers – Growth within the City as well as an aging population has increased the demand for services provided by the Fire Department.
- Regulations – The Hamilton Fire Department operates in a highly regulated environment. The Fire Protection & Prevention Act, 1997 (FPPA) legislates fire prevention, public education and fire protection mandatory responsibilities of municipalities and is overseen by the Office of the Fire Marshal. The Ontario Fire Code is a regulation under the FPPA that governs fire safety standards for equipment, systems, building structures, land and premises. The Fire Department is responsible for enforcing requirements under the Ontario Fire Code as well as municipal by-laws dealing with open air burning, fireworks and fire routes. The Ministry of Transportation regulates the Hamilton Fire Department with respect to driver training and vehicle safety inspections performed in-house. Emergency Management maintains the City's emergency management program which is mandated by the Emergency Management and Civil Protection Act and Ontario Regulation 380/04.
- Political, Economic, Socio-Cultural & Technological Factors – The Hamilton Fire Department receives direction from City Council with respect to service levels and budgetary commitment. Council may change this direction at any time. Those elected may have varying levels of knowledge about the Fire Department, the services it provides and the risks it faces. The Fire Department depends on a multitude of systems and other technology to carry out its operations. Advancements in technology may impact the service's ability to perform its activities in an efficient manner.

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METHODOLOGY

Enterprise Risk Management

Audit Services used the enterprise risk management (ERM) model to carry out this risk assessment. A risk is an event that may impact a business in meeting its objectives. ERM is a process to identify business risks and how these risks will be controlled further or eliminated to reduce the impact on business objectives.

Effective risk management requires that all risks that could negatively impact the achievement of a business' objectives be recognized. The range of potential risks falls into seven broad categories and result from:

The business that you are in (volatility of external factors)	Environmental Risk		
The direction that you plan on going	Strategic Risk	Organizational and Cultural Risk	Systemic issues, culture and values, organizational capacity, commitment, and learning management systems, etc.
Carrying out your objectives	Operational Risk		
Obtaining, committing and using economic resources	Financial Risk		
Having to comply with laws, regulations, standards and policies	Compliance Risk		
Relying on information	Informational Risk		

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Risk Management Process

The following risk management process was used to carry out this risk assessment:

Risk Management Process Step	Procedures
1. Establish the Context <i>Define objectives, values and environmental factors.</i>	Audit Services will perform research and carry out interviews to establish context and understand Fire Department operations.
2. Identify Risks <i>What can go wrong? How can it happen?</i>	Audit Services will conduct interviews to identify risks, contributing factors to the risk, and existing controls and mitigations.
3. Assess Risks <i>Review existing controls. Determine the likelihood and impact of each risk.</i>	Audit Services will facilitate a workshop for participants to assess the likelihood and impact of each risk.
4. Evaluate and Prioritize <i>Establish the level of risk. Decide on acceptance or action. Set action priorities.</i>	Audit Services will plot assessment information on a heat map to visualize the criticality of risks. Audit Services will present the heat map to management to allow them to decide which risks will be selected for a risk response.
5. Take Action <i>Identify treatment strategies. Prepare action plan. Implement action plan.</i>	Management will identify what actions may be taken to address the risks they have selected. Management will implement action plans.
6. Monitor and Review	Management will monitor the progress of action plans and environmental factors that may identify new risks or how existing risks were previously assessed. Audit Services will perform a follow up exercise to check in on management's actions and monitoring of the risk universe.

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RISK IDENTIFICATION

Audit Services conducted interviews to facilitate the identification of risks facing the Hamilton Fire Department, internal and external factors contributing to those risks, and controls and mitigations currently in place to manage those risks.

The Fire Chief and Deputy Chief provided Audit Services with a list of 26 individuals (covering 24 positions) who would participate in the risk assessment process. A list of participants is included in Appendix 2 to the Fire Risk Assessment – Detailed Report. Audit Services agreed with management that the list of participants was adequate and represented a good cross section of stakeholders from the Fire Department, other City departments and union representatives who would positively contribute to the risk assessment process.

Audit Services analyzed interview responses and compiled a list of 22 risks facing the Hamilton Fire Department. Interviewees identified an assortment of strategic, operational, financial, compliance, information and organizational risks.

A list of these risks, including each risk category and risk statement, is included in Appendix 3 to the Fire Risk Assessment – Detailed Report. Additional details and information pertaining to these risks, including more extensive risk descriptions, contributing factors and existing controls and mitigations, are included in Appendix 4 to the Fire Risk Assessment – Detailed Report.

Audit Services agreed with participants that the list of risks captures the main events and conditions that may impact the Hamilton Fire Department in providing safe and timely quality services.

RISK ASSESSMENT

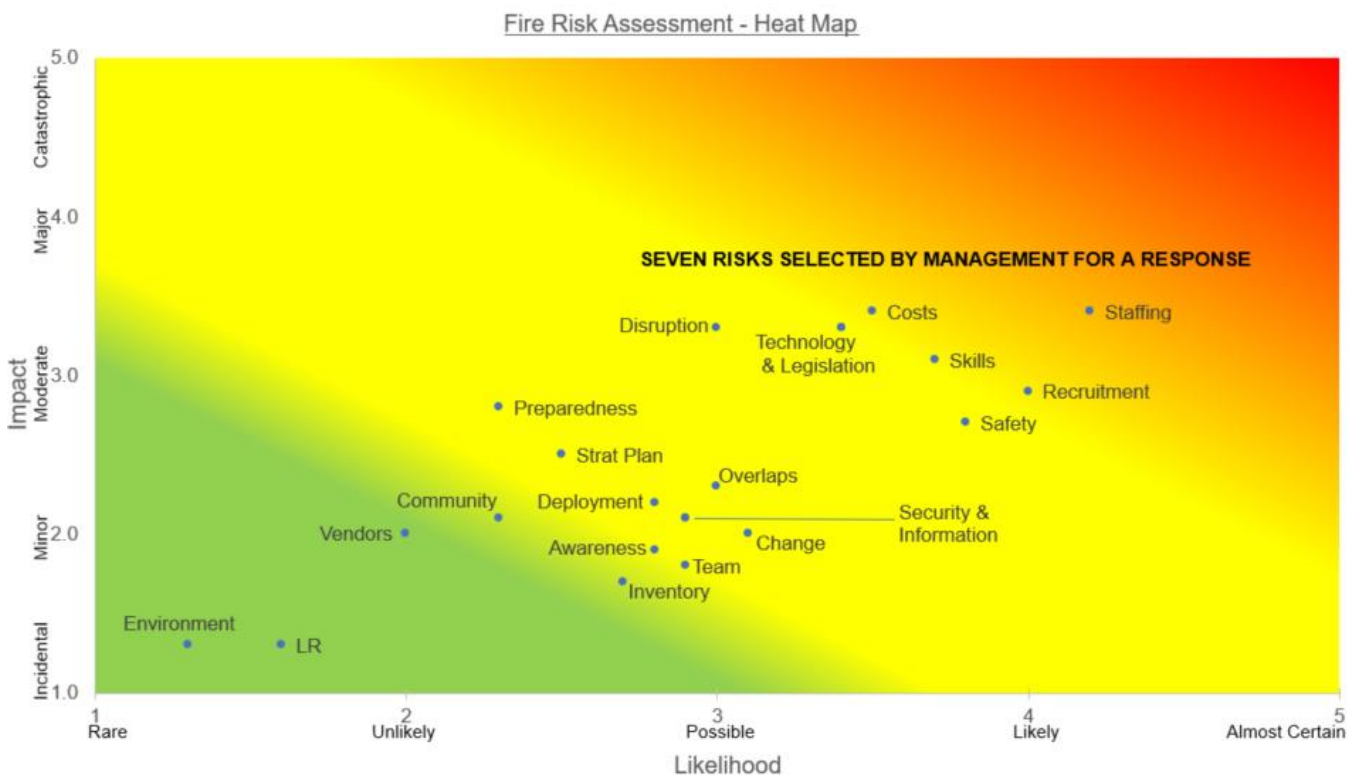
Audit Services used two criteria – likelihood and impact – to assess the level of risk or criticality of the 22 risks identified. Likelihood is an indication of how often the potential risk may occur or what may be the chances of it happening. Impact is an indication of how severe a potential loss or negative outcome may be for a risk event. Audit Services and the Hamilton Fire Department developed a five-point scale describing a progression from low to high likelihood and impact. These likelihood and impact scales are included in Appendix 5 to the Fire Risk Assessment – Detailed Report.

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Audit Services facilitated one large workshop and several one-on-one workshops with interviewees to present the identified risks, contributing factors and existing controls and mitigations. Participants were provided an opportunity to discuss the risks and identify additional factors and mitigations before voting on the likelihood and impact of each risk. Participants were asked to vote on the residual risk – the degree of likelihood and impact remaining after considering the controls and other mitigations currently in place to manage the risk. Audit Services collected each participant’s votes in an anonymous manner to encourage individual responses without fear of undue influence by management or union representatives.

Audit Services combined the votes from the workshop and smaller sessions to calculate an overall likelihood and impact score for each risk. These scores were plotted on the following heat map to create a visual representation of how critical each of the 22 risks were assessed in relation to each other.



See Appendix 3 of the Fire Risk Assessment – Detailed Report for a legend indicating which risks correspond to the labels in the heat map.

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Audit Services was satisfied with the spread of risks across the heat map. Based on information obtained from participant interviews and discussions during the workshop, the risk rankings on the heat map (e.g. green = low risk, yellow = medium risk, red = high risk) appear consistent with and reflective of participants' feedback.

RISK RESPONSE

Audit Services met with the Fire Chief and Deputy Chief to present the heat map and decide which risks will require further response. A risk response describes what management plans on doing about the risk. Management may choose to avoid, accept, manage or share/transfer the risk defined as follows:

- Avoid the Risk – Withdrawing from, or not performing, an activity that could contribute to the risk.
- Accept the Risk – Accepting the loss, or benefit of gain, from the risk when it occurs; no further action to be taken.
- Manage the Risk – Reducing the severity or likelihood of the loss by putting more controls in place or reducing/eliminating the source of the risk.
- Share/Transfer the Risk – Sharing the burden of loss, or benefit of gain, from a particular risk with another party.

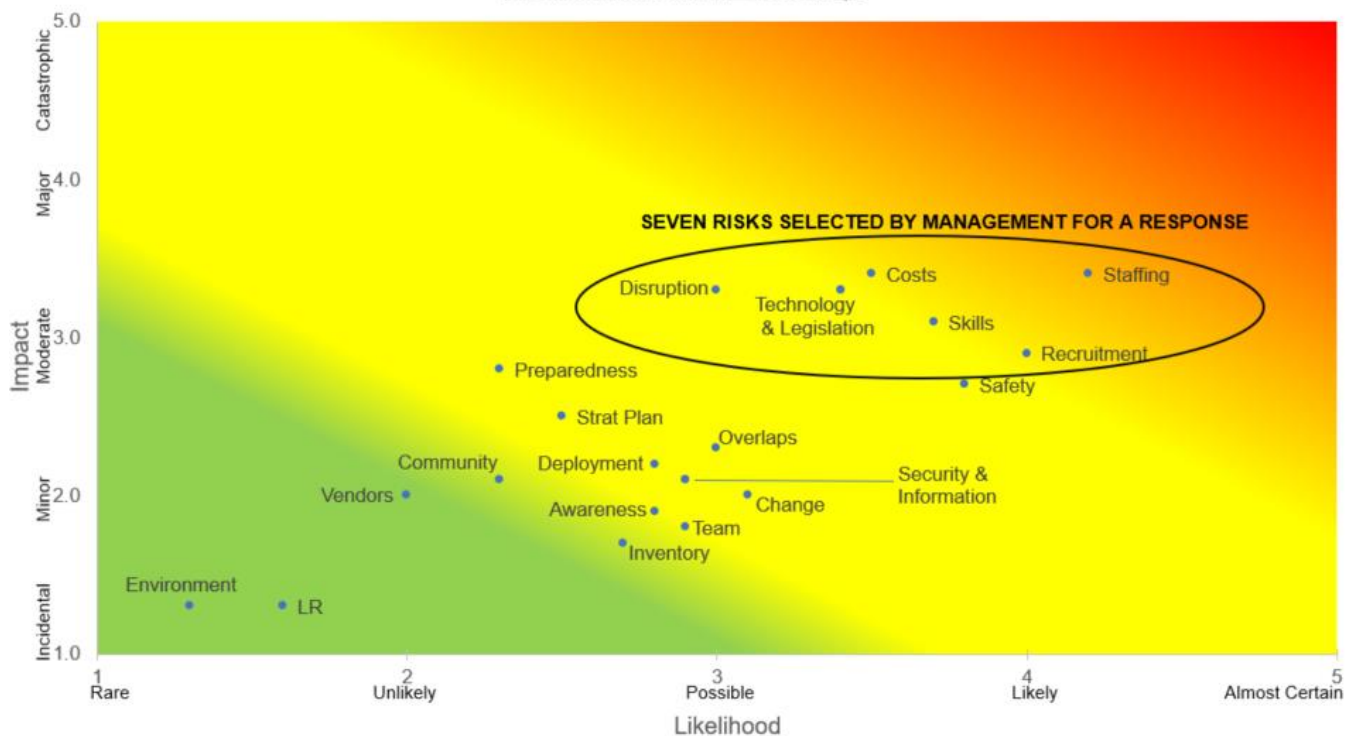
Audit Services would like to note that the Fire Chief was in agreement with the risk assessment levels in the heat map with the exception of having some concern for the risk ranking related to resource deployment. This is the risk that the Fire Department may not have the necessary resources to affect the convergence of an effective fire and rescue force. As a group, participants assessed this risk as moderate (possible with minor impact). However, the Fire Chief considers deployment to be a high-risk item based on his knowledge and strategic focus. Discussions about resources and convergence have been held at a very high level in the Fire Department. In addition, some aspects of deployment relate to staffing which ranked very high. Accordingly, management included reference to resource deployment and its inclusion in the newly developed ten-year Fire Service Delivery Plan in the staffing risk response as the ability to deploy resources depends on staffing levels.

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The Fire Chief and Deputy Chief chose to respond to the seven risks assessed as likely and moderate impact as shown in the following heat map. This doesn't mean that the remaining 15 risks are unimportant. Management selected the top seven risks to focus their efforts and resources on the most critical risks facing the Fire Department today. Management may decide to respond to these other risks in the future once the more critical risks are addressed or if circumstances change making the other risks more significant.

Fire Risk Assessment - Heat Map



Of the seven risks selected, the Fire Chief and Deputy Chief decided to accept two of these risks and further manage the remaining five risks.

Management accepted the risks related to legislative changes and critical infrastructure disruption. Management believes that the controls and other mitigations currently in place are adequate to continue providing high quality service. The cost to implement additional controls would be greater over time as compared to any incremental benefit.

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The Fire Chief and Deputy Chief decided to further manage the risks related to staffing, recruitment, unsustainable costs, employee skills and emerging technology. Management believes that additional cost-effective steps can be taken to further reduce the likelihood or impact of these risk events. Several of these steps are linked to action items in the Hamilton Fire Department's newly developed Fire Service Delivery Plan.

The detailed risk responses and action plans provided by management, including estimated timelines, are included in Appendix 4 to the Fire Risk Assessment – Detailed Report.

CONCLUSION

The Hamilton Fire Department provides vital services that contribute to creating and supporting healthy and safe communities in all areas of the City.

As with all City operations, the Fire Department is not immune to risks or possible events that may impact providing timely, quality service to our citizens in a safe manner. Participants in this risk assessment exercise did an excellent job identifying 22 risks that may impact the Fire Department and assessing how significant those risks are to operations.

Management has chosen to mitigate five of the more significant risks pertaining to staffing, recruitment, unsustainable costs, employee skills and emerging technology. Additional steps and projects will be carried out in the short, medium and long term to reduce the likelihood and impact of these risks to further minimize potential obstacles to service delivery. The Fire Department has integrated some of these action items in their newly developed Fire Service Delivery Plan. Audit Services is optimistic that management will use this risk assessment process and results in the future to monitor their environment and integrate insights into their strategic planning and decision-making processes.

Audit Services would like to thank the Hamilton Fire Department and other participants for their positivity, openness, enthusiasm and contributions throughout this risk assessment exercise. We look forward to following up with the Hamilton Fire Department in the future to see how their risk response actions are coming and their impact on fire services.

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Operating Division	Main Activities
Firefighting and Rescue Operations	Responds to various incidents (e.g. life threatening medical calls, alarm investigation, rescue, fires, explosions, gas and carbon monoxide leaks, open air burning, hazardous materials, trapped victim, etc.). Attends community events and teaches the public about fire prevention and the Fire Department. Performs certain inspections and other activities for the Prevention division. Provides peer-to-peer in-station training and communications coverage.
Training	Trains career, volunteer and recruit firefighters including specialties (e.g. high angle rope rescue). Develops, researches and updates training procedures and manuals for compliance with legislated standards and new technology matters. Trains other divisions within the Department as required.
Communications	Intake of emergency and non-emergency calls. Dispatches and relocates apparatus and resources. Assigns radio frequencies and monitors radio transmissions. Monitors and inputs hydrant status, road closures and alarm system testing into the Computer Aided Dispatch system. Processes non-emergency requests for service from the public, emergency agencies and other public safety services.
City Wide Trunked Radio	Plans, maintains and procures services for the corporate radio infrastructure (e.g. system, towers, radio units) used by Fire, Police, Public Works and Hamilton Airport. Maintains paging system infrastructure used to page out volunteer firefighters to emergency calls. Maintains the fire station alerting system and mobile computing hardware installed in fire apparatus. Provides ongoing consultation and support to end users.
Mechanical	Maintains, repairs and tests vehicles, breathing apparatus, ancillary equipment and firefighting clothing. Orders, delivers and stocks operating supplies, personal protective equipment, uniforms, clothing and large capital items (e.g. apparatus and vehicles). Maintains and repairs the Paramedic fleet.

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Operating Division	Main Activities
Fire Prevention	Enforces the Fire Protection and Prevention Act, Ontario Fire Code and various municipal by-laws. Inspects for fire safety compliance. Issues open air burn permits, file search response letters, incident response reports and approval of fire safety plans. Runs programs and public education initiatives for school children, citizens, community service organizations, building staff and at-risk groups. Witnesses fire drills in all vulnerable occupancies annually.
Emergency Management	Prepares the organization to respond to emergencies and disasters through training, exercises, plans and procedures. Performs a hazard identification risk assessment and identifies critical infrastructure. Maintains two emergency operations centres. Educates citizens on emergency preparedness. Assists City departments and external agencies develop and implement their emergency management and business continuity programs.
Leadership Team	Supports, administers and maintains technology and databases used by the Fire Department. Overall responsibility for day-to-day operations of the Fire Department. Oversight of policies and procedures, budget preparation and monitoring. Participates in collective bargaining, labour relations and staffing activities. Interacts with Council, unions, other City divisions and the media.

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APPENDIX 2 – RISK ASSESSMENT PARTICIPANTS**

No.	Name	Position
1	Dave Cunliffe	Fire Chief
2	John Verbeek	Deputy Fire Chief
3	Randy Moss	Deputy Fire Chief
4	Dan Milovanovic	Assistant Deputy Chief
5	Shawn DeJager	Assistant Deputy Chief
6	Stephen Miller	Assistant Deputy Chief
7	Carla MacDonald	Assistant Deputy Chief
8	Yvette McCormick	Division Chief of Administration
9	Mark Hommerson	Platoon Chief
10	Mark Middleton	Platoon Chief
11	Wayne Pryde	Platoon Chief
12	Mark Hodge	Platoon Chief
13	Ron Jeffries	Area Commander
14	Darrell Hicks	Chief of Training
15	Trish Schweitzer	Chief Communications Officer
16	Brian Keenan	Chief Mechanical Officer
17	Bob Simpson Pete DeBoer	Chief Fire Prevention Officer Assistant Chief Fire Prevention Officer
18	Connie Verhaeghe	Emergency Management Coordinator
19	Stan Double	President of HPPFA Local 288, Captain
20	Paul Leggatt Paul Osborne	President of CLAC 911, Volunteer Firefighter
21	Linda Button	Senior Project Manager
22	Allison Jones	Communications Officer
23	Bonnie MacPhail	Labour Relations Officer
24	Jackie Ross	Recruiter

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APPENDIX 3 – LIST OF IDENTIFIED RISKS**

No.	Risk Category	Risk Statement	Heat Map Label
1	Workforce Planning & Staffing	The Fire Department's staffing levels (non-union management and unionized front line staff) may be too lean.	Staffing
2	Recruitment & Retention	The Fire Department may face challenges in their ability to fill positions in a timely manner.	Recruitment
3	Unsustainable Costs	The Fire Department may face budgetary pressures to be able to fund unexpected or rising financial obligations and maintain current service levels.	Costs
4	Employee Skills & Aptitude	Fire Department employees may lack the skills or experience to be successful in their roles.	Skills
5	Emerging Technology	The Fire Department may be unable to utilize technology to make processes more efficient or effective.	Technology
6	Legislative Changes	The Fire Department may not have the capacity to react to regulatory changes made by third parties with jurisdiction over the Fire Department.	Legislation
7	Critical Infrastructure Disruption	The Fire Department may experience loss of functionality of critical systems.	Disruption
8	Employee Safety	Fire Department employees may experience physical or mental injury on the job.	Safety
9	Service Overlaps	Shared resource constraints between the Fire Department, Paramedic Service and Police Service may not be addressed.	Overlaps
10	Change Management	Employees may not have the desire to support or participate in change and improvement initiatives.	Change
11	Preparedness for Certain Emergencies	The Fire Department may face challenges responding to different types of emergency situations.	Preparedness

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No.	Risk Category	Risk Statement	Heat Map Label
12	Availability & Reliability of Information	Fire Department employees may not have the information necessary to perform their duties.	Information
13	Asset Security	Fire Department assets may be damaged, lost or stolen.	Security
14	Resource Deployment	The Fire Department may not have the necessary resources to affect the convergence of an effective fire and rescue force.	Deployment
15	Strategic Planning & Performance	The Fire Department may not anticipate future needs and proactively prepare for change.	Strat Plan
16	Team Atmosphere	Given the composite nature of the Fire Department, there may be challenges on different cultural attitudes.	Team
17	Stakeholder Awareness & Public Perception	There may be a difference in understanding between the services and level of service provided and the minds of Council and the Public.	Awareness
18	Inventory Controls	The Fire Department may have too much or too little inventory or supplies on hand.	Inventory
19	Community Response	The Fire Department may face challenges communicating with citizens.	Community
20	Third Party Vendors	The Fire Department may be unable to procure necessary goods and services.	Vendors
21	Labour Relations & Disruption	The Fire Department may not resolve labour relations issues in a timely manner.	LR
22	Environmental Damage	Through Fire Department activities, there is a potential to impact the environment.	Environment

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APPENDIX 4 – DETAILED RISK SUMMARIES**

RISK 1 – WORKFORCE PLANNING & STAFFING

The Fire Department's staffing levels (non-union management and unionized front line staff) may be too lean.

Risk Description

The Fire Department's workforce size has seen limited growth since amalgamation. Meanwhile, the City continues to grow in population and geography which places greater demand for both public-facing and internal services provided by the Fire Department. There is a risk that the Fire Department's staffing levels, including the non-union leadership team, are too lean which may negatively impact its ability to sustain current service levels, meet additional demand, maintain employee morale and well-being, and control overtime-related costs.

While all Fire Department divisions expressed concerns over staffing levels, of concern to many interviewees was the size of the Training division. The Training division is primarily responsible for training both career and volunteer firefighters. This division is currently overwhelmed training double the usual volume of firefighter recruitment classes and meeting the training needs of existing staff.

In addition, Audit Services would like to highlight the significant workloads carried by the leadership team.

Contributing Factors

- Growth – A growing and aging population, an increase in personal and commercial transportation, and more development across the City has placed more demand on Fire suppression, prevention and communication services. More traffic and various hazardous materials are transported through the City via road, water and rail. This intensification increases the probability of an emergency event.
- Legislation – Earlier in the risk assessment process, proposed legislation was in front of the provincial legislature that would have required everyone in the Fire Department to be accredited in their field of expertise. This would have placed additional demand on all divisions to find coverage while staff carried out necessary training and certification testing. More strain would have been placed on the Training division to ensure all Suppression personnel received training to meet this higher standard. This legislation has been repealed. However, there is a chance that it may resurface.

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- Resources – City Council continues to strive toward minimal tax levy and staffing increases which result in management making few changes to current resources.
- Workforce Planning – Lack of strategic planning and key performance drivers makes it difficult for management to assess and communicate workforce size requirements and build a business case for additional resources.
- Collective Agreements – The Hamilton Professional Fire Fighters Association Local 288 collective agreement does not allow non-union leadership team positions to be backfilled by union members in an acting capacity.
- Responsibilities – Non-union leadership team members are responsible for handling front-line performance-related issues as staff and supervisors are part of the same union.
- Workforce Planning – Certain areas (e.g. dispatch, volunteer firefighters) are normally staffed at minimal levels.

Current Controls

- Suppression Coverage – The Suppression division has the largest full-time equivalent count in the Fire Department. Suppression staff provide in-station training, perform certain fire inspections and provide coverage for dispatch. This alleviates some workload and staffing pressures in other divisions.
- Overtime – Staff are asked to work additional shifts and are paid overtime premiums.
- Training – Cross training is underway for certain positions to ensure duties can be carried out by another staff member in the event of an extended absence.

Risk Response

The Hamilton Fire Department will **Manage the Risk** by:

- Establishing performance metrics for all aspects of service delivery. (ST)
- Addressing human resource challenges through implementing actions identified in the 10 Year Fire Service Delivery Plan (2019-2028). (ST,MT)

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- Ensuring the optimization of resources (apparatus, equipment and personnel) and deployment through implementing actions identified in the 10 Year Fire Service Delivery Plan. (ST,MT,LT)
- Continuing with training programs in compliance with the various National Fire Protection Association standards. (ST,MT,LT)
- Cross training Hamilton Fire Department personnel in various disciplines (e.g. firefighters more involved in inspection activities and public education). (MT)
- Cross training Hamilton Fire Department personnel within a Division to ensure when absences occur, the required work continues. (MT)

Risk Response Timelines: ST – Short Term – Within 1 Year

MT – Medium Term – Within 2-4 Years

LT – Long Term – Within 5+ Years

RISK 2 – RECRUITMENT & RETENTION

The Fire Department may face challenges in their ability to fill positions in a timely manner.

Risk Description

The Fire Department is finding it challenging to recruit candidates to the leadership team and volunteer firefighters. There is a risk that the Fire Department may not be able to fill leadership team and volunteer firefighter positions in a timely manner which may negatively impact its ability to maintain current service levels, employee morale and control overtime-related costs.

Contributing Factors

- External Events – Changes in demographics and the housing market has made it more difficult for potential volunteer firefighter recruits to live in the communities where the Fire Department needs volunteer firefighters.
- Diversity – Lack of diversity may inhibit different types of candidates to show interest in the leadership team.
- Succession Plan – There is no internal succession plan or other way to foster and build interest in non-union management positions.

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- Lifestyle – Non-union leadership team positions come with significantly higher levels of responsibility and time commitment as compared to what is expected from frontline Fire Department staff. Necessary lifestyle changes may inhibit staff from showing interest in leadership team roles.

Current Controls

- Succession Plan – The Fire Department has consulted with Human Resources about creating an internal succession plan and rolling out a general communication campaign to generate interest. This initiative has not yet commenced.
- Outreach – The Fire Department is doing some outreach to recruit volunteer firefighters.
- Transfer of Personnel – Within the first six years of a firefighter's career, the Fire Department transfers personnel to various stations throughout the City to ensure they experience all facets of fire service delivery.

Risk Response

The Hamilton Fire Department will **Manage the Risk** by:

- Addressing human resource challenges through implementing actions identified in the 10 Year Fire Service Delivery Plan. (ST,MT,LT)
- Exploring and enhancing diversity through implementing actions identified in the 10 Year Fire Service Delivery Plan. (MT,LT)

Risk Response Timelines: ST – Short Term – Within 1 Year

MT – Medium Term – Within 2-4 Years

LT – Long Term – Within 5+ Years

RISK 3 – UNSUSTAINABLE COSTS

The Fire Department may face budgetary pressures to be able to fund unexpected or rising financial obligations and maintain current service levels.

Risk Description

The Fire Department has or may face budgetary pressure due to:

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- Sick time and absenteeism;
- WSIB payments;
- Overtime costs;
- Upgrades to or replacement of the radio system;
- Repairs to aging fire trucks not yet due for replacement;
- Retroactive pay once new collective agreement interest arbitration is settled;
- Payment or lieu time for accumulated banked sick days; or
- Demand for more service without additional resources.

Without adequate budgets or reserves to fund the above items, there is a risk that the Fire Department may reduce service levels or cancel/delay improvement initiatives to find short term budgetary resources.

Contributing Factors

- Collective Agreements – The length of time to proceed through interest arbitration is out of the Fire Department's control.
- Collective Agreements – Collective agreements dictate terms surrounding overtime, sick time and accumulated banked sick days.
- Workforce – An aging workforce and significant number of retirements is driving sick time, overtime and payout of banked sick time. This is following the standard 30-year cycle for fire services across Canada.
- Resources – City Council continues to strive toward minimal tax levy increases which results in management making few changes to current resources.
- Strategic Planning – Lack of strategic planning and related funding make it difficult to stay focused on initiatives meant to improve service in the long term.
- Policies – A fire truck may not be replaced before the end of its useful life.

Current Controls

- Return to Work Specialist – A Return to Work Specialist is assigned to assist the Fire Department with sick time and absenteeism.
- Strategic Plan – The Fire Department is developing a ten-year Fire Service Delivery Plan to be presented to Council in 2019.

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- Reserves – Reserves exist and are used to fund equipment and apparatus replacement.
- Maintenance Program – The Fire Department has established preventative maintenance programs for vehicles, apparatus and equipment to avoid unexpected failures.

Risk Response

The Hamilton Fire Department will **Manage the Risk** by:

- Ensuring the Development Charge By-law is updated every five years which addresses fire needs (facilities, apparatus and equipment) based on future growth. (LT)
- The newly established temporary position of Executive Officer will be responsible for monitoring budgets, enhancing financial efficiencies and exploring and implementing revenue generation activities as identified in the 10 Year Fire Service Delivery Plan. (ST,MT)

Risk Response Timelines: ST – Short Term – Within 1 Year
MT – Medium Term – Within 2-4 Years
LT – Long Term – Within 5+ Years

RISK 4 – EMPLOYEE SKILLS & APTITUDE

Fire Department employees may lack the skills or experience to be successful in their roles.

Risk Description

The Fire Department is experiencing a high degree of turnover at all levels in all divisions, largely due to mass retirements. Successful candidates filling vacant staff positions are not always suited or have the right skills for the job. Staff being promoted to acting or permanent officer positions through an expression of interest process may not have the experience or leadership skills to be successful in the role. Staff and officers lacking the right skills for their role increases the risk of:

- Decline in productivity, quality, consistency and service levels;
- Reduction in morale of competent, engaged employees; or

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- Inadequate or unsafe decisions being made during emergency responses resulting in injury or legal liability.

Contributing Factors

- Legislation – Earlier in the risk assessment process, proposed legislation was in front of the provincial legislature that would have required everyone in the Fire Department to obtain certification for their role. This requirement could have weeded out candidates who are not qualified for the position. This legislation has been repealed. However, there is a chance it may resurface.
- Collective Agreements – Firefighters must retire from Suppression at 60 years old. Some firefighters will seek out another position in the Fire Department to continue working until they are ready to retire. Hamilton Professional Fire Fighters Association Local 288 job vacancies must be posted internally to other union members before the position is posted within the City or externally. The most senior union member is selected for the position. In some cases, internal positions are filled with those seeking age accommodation who may not have the necessary skills and aptitude for the position.
- Succession Plan – No succession plan exists.
- Officer Training – There is no skills syllabus, formal training or mentorship program for new officers.

Current Controls

- Training – Each division has a training program for new employees. Also, some divisions take extra steps to support their new recruits. For example, new Prevention Inspectors are assigned smaller, easier files first and gradually move up to more complex cases and are paired with a "buddy" for on-the-job assistance and advice.
- Debriefs – When there is a "close call" or subpar emergency response, senior officers and those involved in the response may decide to critique or debrief the event to understand what happened and what can be done better in the future. These debriefs are discretionary and not carried out in all cases.
- Certification – Mechanics have a Red Seal which indicates their achievement of interprovincial qualification skilled trade standards.

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- Probationary Period – A minimum 12-month probationary period exists for employees entering a new role.

Risk Response

The Hamilton Fire Department will **Manage the Risk** by:

- Ensuring the required training and certification is completed that will qualify personnel for their roles. (ST)
- Implementing a new foundational training model to provide personnel with the competencies required throughout their career. (MT,LT)

Risk Response Timelines: ST – Short Term – Within 1 Year

MT – Medium Term – Within 2-4 Years

LT – Long Term – Within 5+ Years

RISK 5 – EMERGING TECHNOLOGY

The Fire Department may be unable to utilize technology to make processes more efficient or effective.

Risk Description

The Fire Department relies on various systems and technologies in performing its daily activities. Opportunities exist where technology can be used to allow employees to perform their jobs in a more efficient and effective manner. For example:

- Fire Prevention completes manual inspection forms which are later entered into the electronic database system. Tablets and portable printers may be used to complete work online in real time, eliminating travel back to the office to manually enter data.
- An eLearning online platform may be able to alleviate some capacity constraints in the Training division.

As service demands continue to rise, without additional staff, there is a risk that service levels may decline if technology is not adopted to make processes more efficient or effective.

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Contributing Factors

- Obsolescence – Certain technologies change, evolve and become obsolete rapidly.
- Resources – Budgetary pressures exist which limit the ability to purchase new technology.
- Policies – Technology may not be replaced before the end of its useful life.
- Employee Participation – Employees have many ideas on how existing or emerging technologies may be utilized to streamline and improve operations.
- Priorities – Prioritization and implementation of corporate-wide technology (e.g. SkyHawk Global Positioning System Automatic Vehicle Location) is determined by the Information Technology Division.

Current Controls

- Strategic Plan – The ten-year Fire Service Delivery Plan being developed by the Fire Department contains provisions related to technology.

Risk Response

The Hamilton Fire Department will **Manage the Risk** by:

- Improving technology across the Department through the implementation of actions identified in the 10 Year Fire Service Delivery Plan. (MT)
- The Application Analysts will be directed to investigate opportunities and implement solutions to increase efficiencies. (ST,MT,LT)
- IT Centralization will consolidate IT resources and systems across the City. IT Centralization will ensure that Departments continue to meet their priorities and improved allocation of resources for the benefit of the Corporation. (ST,MT,LT)

Risk Response Timelines: ST – Short Term – Within 1 Year

MT – Medium Term – Within 2-4 Years

LT – Long Term – Within 5+ Years

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RISK 6 – LEGISLATIVE CHANGES

The Fire Department may not have the capacity to react to regulatory changes made by third parties with jurisdiction over the Fire Department.

Risk Description

The Fire Department is required to comply with various regulatory and legislative requirements mandated by the Ministry of Transportation, Ministry of Community Safety and Correctional Services, Ministry of Labour, Ministry of Municipal Affairs and Housing, the Environmental Protection Agency and the City of Hamilton. Changes to regulatory and legislative requirements may occur at any time. There is a risk that the Fire Department may not have the capacity to implement change in a timely manner which may negatively impact its ability to achieve regulatory/legislative compliance. Lack of compliance may be accompanied by penalties, fines or lawsuits which may increase budgetary pressures, and providing inaccurate or incomplete services to citizens.

Contributing Factors

- External Events – The Fire Department has no control over when, how and what legislative/regulatory changes are passed.
- Guidance – The Ministry of Community Safety & Correctional Services and the Ontario Fire Marshall publishes compliance guidance notes when there are legislation changes.
- Responsibilities – Responsibility to interpret, understand and implement change to meet new requirements is decentralized throughout the Fire Department. Without adequate oversight or resources, the Fire Department's response may not be timely.
- Resources – The Fire Department may not have the financial resources and time to meet unexpected needs as they arise.

Current Controls

- Lobbying & Open Dialogue – The Fire Chief maintains dialogue with the Ontario Association of Fire Chiefs, Association of Municipalities Ontario and the Emergency Services Steering Committee and keeps open dialogue with political groups to understand and shape future legislative changes.

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- Accountability – Ultimate accountability for compliance rests with the Fire Chief. Work is delegated down as needed.

Risk Response

The Hamilton Fire Department will **Accept the Risk**.

The Hamilton Fire Department is working closely with the Office of the Ontario Fire marshal and other Fire Departments across the Province to ensure the sharing of resources and information in order to address any regulatory changes.

RISK 7 – CRITICAL INFRASTRUCTURE DISRUPTION

The Fire Department may experience loss of functionality of critical systems.

Risk Description

The radio and dispatch system, paging system, Fire Department management database, mechanical equipment and emergency operations centre are critical pieces of infrastructure for the Fire Department's operations.

These systems may be interrupted by a power outage, physical security threats, incorrectly installed updates or lack of vendor support. There is a risk that the Fire Department may lose functionality of critical systems which may negatively impact its ability to maintain service levels and respond to emergencies in a timely manner.

The Police Department, Public Works Department and the Hamilton Airport use the radio system as well. Therefore, a system disruption would impact more services than just those provided by the Fire Department.

Contributing Factors

- Vendors – The financial security and strategic direction of external vendors is out of the Fire Department's control. If some vendors discontinued their systems, the Fire Department would have little recourse.
- External Events – The Fire Department has no control over the occurrence of weather events and acts of terrorism which may cause disruption.

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Current Controls

- Backups – Backup systems and locations are in place to mitigate disruptions.
- Alternate Equipment – Other communications devices are available to mitigate disruptions.
- Virtual Server – Critical software operate on a virtual server maintained by the City's IT Division. Information on this server may be recovered and accessed at different locations. There are system and secondary backups.
- Vendor Services – System updates are installed by the vendor.
- Physical Security – Physical security measures are in place at Fire facilities.
- Align Responsibility – The Fire Department is working with IT to classify the radio system as a corporate asset so those with expertise will oversee the software, upgrades and maintenance.
- Maintenance – Preventative maintenance is performed on systems to proactively detect and prevent issues.

Risk Response

The Hamilton Fire Department will **Accept the Risk**:

Adequate back-up systems and contingency plans are in place which will allow the Hamilton Fire Department to maintain service levels and respond to emergencies in a timely manner.

RISK 8 – EMPLOYEE SAFETY

Fire Department employees may experience physical or mental injury on the job.

Risk Description

Staff across the Fire Department face a variety of events that pose a threat to their personal health, safety and wellbeing. Firefighters face many physical threats when responding to an emergency event. Prevention staff perform inspections and respond to complaints alone in varied environments. Mechanics may be injured in the shop from many items including slips,

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trips, noises and vehicle exhaust. All staff may experience post-traumatic stress, anxiety and other mental injury associated with their work.

Without adequate equipment and supports to perform their duties, there is a risk that Fire Department employees may experience a physical or mental injury on the job which may result in higher turnover, extended medical leaves and absences, death, higher WSIB claims or lawsuits.

Contributing Factors

- Legislation – The Fire Department must abide by the Ontario Health and Safety Act.
- Policies & Collective Agreements – The Fire Department must abide by health and safety provisions contained in City policies and collective agreements.

Current Controls

- Equipment – Staff are provided personal protective equipment to carry out their jobs in a safe manner. Firefighters receive bunker gear which is tested and maintained on a regular basis. Mechanics receive safety footwear. Prevention staff receive safety glasses, hard hats, vests, ear plugs and cell phones.
- Environment Changes – Air quality testing was performed in the shop and hoses were installed to draw exhaust out of the building.
- Inspection – People leaders will inspect work areas and point out possible safety issues to staff.
- Employee Assistance – All employees have access to the City's Employee and Family Assistance Program.
- Peer Support – A peer support team was created to help others deal with disturbing events and difficulties associated with their job.
- Training – Employees receive ongoing health and safety education and training.
- Screening – Employees participate in the Occupational Health & Exposure Program intended to prevent, detect and monitor job-related illnesses.

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RISK 9 – SERVICE OVERLAPS

Shared resource constraints between the Fire Department, Paramedic Service and Police Service may not be addressed.

Risk Description

The Fire Department has a tiered response agreement with the Paramedic Service to respond to life threatening (Code 4) medical calls (e.g. cardiac arrest, unconscious, trauma, burns, paramedic response will exceed 15 minutes). The Fire Department provides fleet maintenance and stores services to the Paramedic Service under a service level agreement. The Multi Agency Training Academy facilities are shared between Fire, the Paramedic Service and the Police Service. As service demands continue to rise without additional staff or resources, there is a risk that service levels will decline if shared resource constraints are not addressed.

Contributing Factors

- Growth – A growing and aging population has placed more demand on emergency medical services.
- Provincial Funding – There is a 50/50 cost recovery from the Province for Paramedic Service costs. Provincial funding is not available for stand-alone fire resources.
- Corporate Values – A tiered medical response is meant to provide the best possible care for a patient and embodies the City's cultural values of collective ownership and sensational service.
- Code Zero Events – Code zero events, which indicates one or fewer available ambulances to respond to emergency calls, will impact the Fire Department's volume of medical calls.

Current Controls

- Coordination – In response to space constraints at the Multi Agency Training Academy, Fire staff coordinate training dates with Paramedics and Police.
- Agreement – The service level agreement between the Fire Department and Paramedic Service, relative to mechanical and stores, was updated in the last 12-18 months. The two Chiefs discuss on a regular basis whether the terms are working.

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RISK 10 – CHANGE MANAGEMENT

Employees may not have the desire to support or participate in change and improvement initiatives.

Risk Description

In the past, the Fire Department has implemented new technology without consulting user groups, managing expectations or providing training to ease the transition. Several initiatives are undertaken at the same time with no guidance on priorities. Without proper change management, there is a risk that employees may not have the desire to support and participate in future initiatives, no matter how beneficial they may be, which may jeopardize achievement of desired outcomes from the initiative.

Contributing Factors

- Demographics – The demographics of Fire Department employees and management may impact the need and reception to change management.
- Para-Military Structure – The Fire Department's paramilitary command structure may limit the amount of feedback from user groups.
- Collective Agreements – Wording in collective agreements or direction from the unions may influence how employees participate in a change initiative.

Current Controls

- End User Groups – In the past year, end user working groups were established during the truck procurement process to provide input into the process.
- Training – The new Senior Project Manager has been trained in the City's change management approach.
- Communication Plan – The Fire Department has developed internal and external communication strategies in the past 12-18 months.

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RISK 11 – PREPAREDNESS FOR CERTAIN EMERGENCIES

The Fire Department may face challenges responding to different types of emergency situations.

Risk Description

The Fire Department responds to different types of emergencies, including medical calls, hazardous materials, trapped victim, structural hazards, fires and rescues. If the Fire Department is not prepared for such emergencies, there is a risk that its response is not timely which may result in additional injury and property damage.

Contributing Factors

- Other First Responders – Larger scale emergencies often involve participation with other groups, including the Police, Paramedics and other community partners. During an emergency, there is not a lot of integration – each group has specific duties and their own task forces.
- External Events – Changes to climate, demographics, growth and aging infrastructure make it difficult to predict the types and severity of potential emergency responses.
- Resource Deployment – Dispatch of resources is based on geographic location as opposed to closest available unit. These parameters have not changed since amalgamation.
- Resource Deployment – Depending on the type of emergency, the City may not have enough resources (e.g. people and money) in the short term to respond to a large event and/or several smaller events.
- Other First Responders – Two large-scale mock events have been conducted in the past ten years involving a broader network of emergency responders. Smaller scale inter-agency training occurs on a more periodic basis.

Current Controls

- Training – The Fire Department conducts regular training sessions to ensure that firefighters' skills and emergency personnel's knowledge remain current.
- Coverage – The Fire Department has addressed the majority of risks identified in the City's hazard identification risk assessment and community risk assessment.

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- Provincial Support – Provincial mutual aid would allow the Fire Department to pull resources from other communities to assist with emergency events.
- Strategic Plan – Council has approved the Fire Department perform ice and shore-based water rescues. The ten-year Fire Service Delivery Plan will address the training and resources required to build on the ice program to include full water rescue.

RISK 12 – AVAILABILITY & RELIABILITY OF INFORMATION OVERVIEW

Fire Department employees may not have the information necessary to perform their duties.

Risk Description

The Fire Department's daily activities generate a significant amount of information that must be stored, shared and retrieved at any time. The Fire Department uses a radio and dispatch system, Fire Department management database and an intranet site to store this information. If information is inaccurate or not easy to access, there is a risk that staff are uninformed which may negatively impact their ability to perform their duties in an efficient and safe manner. Legal repercussions may also exist if data supporting legislative or legal requirements is not available.

In addition to data generated internally, the Fire Department relies on information from other City systems, such as Hansen, for fire hydrant status, maps and infrastructure details. The risk identified above holds true to information obtained and required from other City departments.

Contributing Factors

- Systems – The Fire Department management database is customizable so staff may create personalized forms and reports to enter and retrieve whatever information is required by divisions. Use of this database has grown to all divisions in the Fire Department.
- Systems – The dispatch system may make alternative recommendations due to the layers of previous changes and updates.
- Employee Participation – Data quality is dependent upon many people entering information into the system.

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- Strategic Planning – Data has been collected to show how much work has been done. Conversations about performance and supporting data are beginning.

Current Controls

- Email & Bulletin Boards – Procedural memos are emailed to staff and posted in fire stations; however, it is difficult to ensure staff have received, read and understood these communications.
- Training – In person training and instructional videos are available showing staff how to enter data into the Fire Department management database and other systems.
- Backups – System backups are performed every five minutes to minimize possible data loss.
- Control Levels – The Fire Department management database contains user input and supervisor approval levels to help ensure data is entered consistently and accurately.
- Intranet – The Fire Department’s intranet site has been redesigned to be more user friendly and easier to find information.

RISK 13 – ASSET SECURITY

Fire Department assets may be damaged, lost or stolen.

Risk Description

The Fire Department has a variety of assets which includes vehicles, equipment, buildings, gear, stores and electronic equipment. There is a risk that these assets may be damaged, lost or stolen which may negatively impact the Fire Department’s ability to maintain service levels.

Contributing Factors

- External Behaviour – One cannot predict individual motivations which makes it difficult to know whether certain assets are more susceptible to vandalism, damage or theft than others.
- Internal Behaviour – Staff behaviour and feelings of ownership and responsibility may impact how assets are handled or whether protocols are followed.

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- Replacement – It may be difficult to replace specialized vehicles and equipment in the short term.

Current Controls

- Physical Security – Measures are in place to secure assets. Each station is accountable for its equipment.
- GPS/Tags – Assets are labelled with identification tags or outfitted with a global positioning system (GPS) so Fire may locate lost assets. A new corporate GPS will be implemented soon.
- Insurance Coverage – The City has insurance coverage for damages exceeding a certain amount. All other costs are funded from operations.
- Procedures & Training – Policies, procedures and/or training exist on how staff are to handle assets. This may help reduce the amount of damage. A system is in place to track lost and damaged assets, so management may identify opportunities for individual attention.

RISK 14 – RESOURCE DEPLOYMENT

The Fire Department may not have the necessary resources to affect the convergence of an effective fire and rescue force.

Risk Description

Response boundaries existed before amalgamation dictating which town's fire service responded to calls. These boundaries are embedded in maps coded into the radio and dispatch system. As a result, the nearest available resource may not be dispatched to an emergency.

Certain emergency situations require crews with expertise in that kind of rescue operation (e.g. high angle rope, hazmat, etc.). Depending on where the emergency occurs, it may take time for that crew, and additional resources supporting that crew, to arrive to the location.

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If resources are not strategically located or dispatched in an efficient manner, there is a risk that the Fire Department may not be able to converge resources efficiently and achieve the best possible response times. This may increase the extent of property damage and injury to victims and staff during an emergency.

Contributing Factors

- Geography – The City’s geographic features (e.g. escarpment, bay and valley) and access routes contributes to travel and response times.
- Systems – The dispatch system is currently programmed with pre-amalgamation road boundaries.
- Collective Agreements – Provisions may impact which resources are considered “the best” for certain areas of the City.

Current Controls

- Override – Dispatchers are aware of the locations where pre-amalgamation boundaries impede a response. Dispatchers can override the dispatch system to dispatch the nearest available resource.
- Strategic Plan – The Fire Service Delivery Plan will contain a project related to eliminating station-based primary response areas in the dispatch system and using global positioning system units to identify and dispatch closest units.

RISK 15 – STRATEGIC PLANNING & PERFORMANCE

The Fire Department may not anticipate future needs and proactively prepare for change.

Risk Description

Strategic planning is an organizational management activity that is used to set priorities, focus energy and resources, strengthen operations, ensure that employees and other stakeholders are working toward common goals, establish agreement around intended outcomes/results and assess and adjust the organization’s direction in response to a changing environment. Without a strategic plan and related performance measures, there is a risk that the Fire Department may not envision the future needs of the community, anticipate service level

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changes, be prepared for such changes and obtain the necessary resources to meet future constraints.

Contributing Factors

- External Events – Community needs and types of emergency responses will change and evolve over time.
- Reactive Focus – In the past, management’s focus has been largely reactive as opposed to proactive. A proactive focus is needed for strategic planning.
- Skills – The Fire Department may lack necessary business-related skills such as reporting writing, project management and business case writing.

Current Controls

- Strategic Plan – The Fire Department is developing a ten-year Fire Service Delivery Plan to be presented to Council in 2019.
- Risk Assessment – The Fire Department completed a community risk assessment. This assessment will be reviewed annually and updated every five years to feed into operational and strategic decisions.
- Senior Project Manager – A part-time project manager (shared with the Paramedic Service) was hired to develop the Fire Service Delivery Plan.
- Work Plans – Areas of the Fire Department prepare annual work plans which are linked to leadership team members’ performance accountability and development plans.

RISK 16 – TEAM ATMOSPHERE

Given the composite nature of the Fire Department, there may be challenges on different cultural attitudes.

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Risk Description

Amalgamation brought career and volunteer firefighter divisions together under one Fire Department. Since amalgamation, management has taken steps to reduce perceptions of inequality between the career and volunteer divisions, and mistrust between front line staff/supervisors and the non-union leadership team. If the above challenges are not kept in check, there may be a risk of a divided team which may negatively impact the culture and outcome of department-wide initiatives.

Contributing Factors

- Workforce – Due to work schedules, it may be inherently difficult to bring the career and volunteer firefighter groups together for team building, training and other events.
- No Change – There has been little significant change in structure or operational objectives/processes since amalgamation.
- Collective Agreements – Wording in collective agreements or direction from the union may influence cultural attitudes.

Current Controls

- Steps to Eliminate Differences – The Fire Chief and management continue to take steps to ensure equality is maintained between career and volunteer divisions.
- Time – Over time, these cultural attitudes may continue to decline as personnel turnover and retire.

RISK 17 – STAKEHOLDER AWARENESS & PUBLIC PERCEPTION

There may be a difference in understanding between the services and level of service provided and the minds of Council and the Public.

Risk Description

The Fire Department tries to build awareness with the Public, Councillors and other community stakeholders of what the Fire Department does and the services it provides. Despite these efforts, there may still be misperceptions about the Fire Department.

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There is a risk of an expectation gap between the services provided by the Fire Department and what is expected by Councillors and the Public. This difference in understanding may negatively impact the Fire Department's ability to gain trust and cooperation with fire prevention and emergency preparedness initiatives and secure additional resources from Council.

Contributing Factors

- Reach – It is difficult to reach all members of the community and to change pre-formed perceptions of the service.
- Social Media – Social media is changing how the story of an event unfolds and how quickly it unfolds. This makes it challenging to manage the message.
- Conduct, Opinion & Brand – Fire personnel's conduct in the community impacts public opinion, media coverage and the Fire Department's brand. In turn, events shaping the City's overall brand impacts the Fire Department's brand.
- Service Levels – There are no stipulated expectations or goals that describe what the service levels are for the Fire Department which may fuel misunderstanding.

Current Controls

- Good News Stories – The Fire Department informs Council and the Public of services and good deeds when the opportunity arises.
- Community Involvement – Firefighters contribute to the community through charitable fundraising and attending public events.
- Media Relations Personnel – A Corporate Communications Officer is assigned to advise the Fire Department on media relations. The Fire Chief or a Deputy Chief is responsible for speaking to the media on scene during or after an event.
- Training – Platoon Chiefs and above have received public relations training.
- Relationship Building – Emergency Management fosters a rapport with community partners through involvement in meetings and presentations.
- Strategic Plan – The Fire Service Delivery Plan will help explain what the Fire Department currently looks like, identify gaps and identify what is required to fill these gaps.

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- Citizen Survey – A citizen satisfaction survey was carried out in 2018. This survey will be conducted every three years to gauge the Public's satisfaction with services.
- Communication Plan – The Fire Department has mapped out messaging and branding initiatives for the year.
- Annual Report – The Fire Department submits a report annually to Council outlining services and achievements.
- Dashboard – The Fire Department was the first city division to post performance metrics on a public-facing dashboard. These metrics are updated at least annually.

RISK 18 – INVENTORY CONTROLS

The Fire Department may have too much or too little inventory or supplies on hand.

Risk Description

The Mechanical Division maintains a store containing parts, supplies, equipment and other consumables used by the Fire Department. There are few controls in place over inventory ordering, recording, tracking and security. There is a risk that too much or too little inventory may be on hand to meet the Fire Department's needs. This may result in delays repairing or maintaining vehicles and equipment or tying up financial resources in excess inventory.

Contributing Factors

- Systems – The Fire Department management database has an inventory tracking module which includes the ability to assign asset tags, track the location of assets and set inventory reordering triggers.
- Audit – An inventory audit was performed. Issues were identified and brought to management's attention.

Current Controls

- Manual Ordering System – Reliance is placed on staff to inform the Chief Mechanical Officer when items need to be ordered.

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- Order Entry – The Administration Clerk enters parts data into the Fire Department management database as documentation is received.

RISK 19 – COMMUNITY RESPONSE

The Fire Department may face challenges communicating with citizens.

Risk Description

The reaction of citizens is a significant contributing factor to the success of an emergency response. There is a risk that the Fire Department may be unable to reach all citizens to inform them of an emergency and provide instruction. In addition, there is a risk that citizens may not be capable of understanding or responding to the message due to apathy, lack of preparedness, cultural constraints, literacy or special needs. These factors may impact the Fire Department's ability to assist the community during an emergency event.

Contributing Factors

- Alert Ready System – The Alert Ready system will send out notifications to TV, radio, highway signs and cell phones to alert the public of an event with pertinent instructions.
- Behaviour – The ability to change human behaviour is limited.

Current Controls

- Community Outreach – The Fire Department performs community outreach through training sessions and presentations about emergency preparedness. Outreach initiatives are undertaken with vulnerable populations (e.g. deaf community, seniors) to address their specific needs.
- Advertisements – The Fire Department posts advertisements via TV, radio and internet to remind citizens of their responsibilities before and during an emergency.
- Partnerships – The Fire Department has partnered with community agencies to gain access to translators when required.

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RISK 20 – THIRD PARTY VENDORS

The Fire Department may be unable to procure necessary goods and services.

Risk Description

The Fire Department uses third party vendors to procure various goods and services. The possibility exists that these vendors may go out of business, may not deliver the goods and services as agreed upon, or may not carry out their work in a competent manner. There is a risk that the Fire Department may not be able to obtain the necessary goods and services which may negatively impact its ability to sustain current service levels.

Contributing Factors

None identified.

Current Controls

- Due Diligence – The Fire Department ensures vendors are reliable, have good performance, have proof of insurance and provide a warranty period before entering into a contract.
- Contracts – The Fire Department works with the City's Procurement and Legal divisions to ensure contracts are adequate and enforceable.

RISK 21 – LABOUR RELATIONS & DISRUPTION

The Fire Department may not resolve labour relations issues in a timely manner.

Risk Description

The majority of the Fire Department consists of a unionized workforce. Grievances may be filed by employees or their unions. There is a risk that grievances may not be resolved in a timely manner, which may negatively impact morale.

Although most of the unionized workforce is considered an essential service, there are six Canadian Union of Public Employees (CUPE) Local 5167 positions that may participate in strike or other labour action. There is a risk that certain tasks may not be completed in a timely

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manner in the event of a strike, which may negatively impact the Fire Department's ability to sustain current service levels in those support divisions.

Contributing Factors

- Essential Service – Most unionized employees belong to the Hamilton Professional Fire Fighters Association Local 288 and the Greater Hamilton Volunteer Firefighters Association Local 911. Members of each of these unions are considered an essential service and cannot strike or take labour action.
- Responsibilities – CUPE 5167 labour negotiations are handled by the City's Labour Relations division. The Fire Department may provide input into these negotiations.
- Workforce Planning – The Fire Department has a lean workforce. The duties performed by CUPE 5167 positions are unique and may not be carried out by others in the service.
- Collective Agreements – Grievances and employee performance issues are escalated to non-union leadership team members because front line supervisors belong to the same union as most of their staff. This may make it difficult to effectively manage the workforce.

Current Controls

- Legislation – The Province has deemed firefighting to be an essential service. Most of the unionized workforce falls under this classification.

RISK 22 – ENVIRONMENTAL DAMAGE

Through Fire Department activities, there is a potential to impact the environment.

Risk Description

The Fire Department uses certain materials in its operations that may cause environmental damage (e.g. firefighting foam, oils, lubricants, diesel, etc.). If improperly handled, there is a risk that these chemicals may escape and contaminate the environment which may negatively impact the Fire Department's public image and result in punitive financial penalties and fines.

Contributing Factors

None identified.

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Current Controls

- Processes & Equipment – Processes and equipment are in place in the shop to handle and contain specific chemicals and waste in a safe manner. Processes are in place to contain foam and contaminated water from entering the wastewater and sewer system.
- Vendors – The Fire Department uses approved vendors to dispose of hazardous materials in a safe manner.

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Likelihood Scale

Indication of how often the potential risk event may occur (frequency) or what may be the chances of it happening (probability).

Rating	Descriptor	Definition
1	Rare	May occur in exceptional circumstances. Frequency: No incidents in the past 15 years. Probability: Less than 5% chance of occurrence.
2	Unlikely	Could occur at some time, especially if circumstances change. Frequency: One incident in the past 5-15 years. Probability: 5% - 34% chance of occurrence.
3	Possible	Might occur under current circumstances. Frequency: One incident in the past 5 years. Probability: 35% - 64% chance of occurrence.
4	Likely	Will probably occur at some time under current circumstances. Frequency: Multiple or recurring incidents in the past 5 years. Probability: 65% - 89% chance of occurrence.
5	Almost Certain	Expected to occur in most cases unless circumstances change. Frequency: Multiple or recurring incidents in the past year. Probability: 90% or greater chance of occurrence.

Impact Scale

Indication of how severe a potential loss or negative outcome may be for a risk event. Loss or negative outcome may be encountered in the following areas:

- Financial – Negative financial burden borne by the City through additional expenses, cost overruns and/or lost revenue.
- Reputational – Negative perception or image of the City fueled through media coverage.
- Regulatory – Monetary loss and actions required relating to regulatory or compliance breaches.
- Employee – Level of employee satisfaction and voluntary/involuntary turnover stemming from the work environment.
- Safety – Injury or loss of life to first responders and citizens from exposure to life threatening situations.
- Property Loss – Monetary loss relating to private and public buildings, property content, irreplaceable assets, significant historic/symbolic landmarks and critical infrastructure.

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- Economy – Monetary losses associated with property income, business closures, downturn in tourism, tax assessment value and employment layoffs.
- Environmental – Harm to human and non-human (e.g. wildlife, fish and vegetation) species of life and general decline in quality of life within the community due to air, water and/or soil contamination.

Rating	Descriptor	Definition
1	Incidental	<ul style="list-style-type: none"> • Cost overrun / revenue loss up to \$100K. • Minor local media coverage, quickly remedied. • Not reportable to regulator. • Isolated staff dissatisfaction. • No safety issues (zero fatalities or injuries). • Limited or no property loss or damage. • No impact to local economy and/or no effect on general living conditions.
2	Minor	<ul style="list-style-type: none"> • Cost overrun / revenue loss of \$100K up to \$1 million. • Minor local media coverage, not remedied. • Reportable incident to regulator; no follow up. • Increase in turnover overall; general staff morale problems. • Potential threat to safety (0 fatalities or less than 5 injuries). • Minor property loss or damage. • Minimal disruption to business activity and/or minimal impact on general living conditions.
3	Moderate	<ul style="list-style-type: none"> • Cost overrun / revenue loss of \$1 million up to \$4.5 million. • Short term local and/or regional media coverage. • Report of breach to regulator; immediate correction to be implemented. • Some turnover of experienced staff; widespread morale problems. • Threat to safety (less than 5 fatalities or 5-10 injuries). • Moderate property loss or damage. • Poses a threat to small local businesses and/or could pose a threat to quality of the environment. Reversible disruption.

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Rating	Descriptor	Definition
4	Major	<ul style="list-style-type: none"> • Cost overrun / revenue loss of \$4.5 million up to \$9.5 million. • Mid-term local and/or regional media coverage. Short term national media coverage. • Report to regulator requiring major project for corrective action. • High turnover of experienced staff; some senior leaders leave. • Threat to safety (5-10 fatalities or 10-25 injuries). • Significant property loss or damage. • Poses threat to large businesses, economy and tourism and/or impact to the environment resulting in short term, partial evacuation of residents and businesses. Long term effects.
5	Extreme / Critical / Catastrophic	<ul style="list-style-type: none"> • Cost overrun / revenue loss of \$9.5 million or more. • Significant long term local, regional and/or national media coverage. • Significant prosecution and fines, litigation including class actions, incarceration of leadership. • Multiple senior leaders leave voluntarily or involuntarily. • Significant loss of life (greater than 10 fatalities or 25 injuries). • Multiple property damage to significant portion of the municipality. • Long term disruption of businesses, economy and tourism and/or environmental damage resulting in long term evacuation of residents and businesses. Permanent damage.