

SECTION 7 – RECOMMENDATIONS

7.1 Executive Recommendations

The executive recommendations are incorporated and support the level of services established in the Establishing and Regulating By-law in order to accomplish the departments mandate and mission as approved by Council. Barrie Fire and Emergency Service are committed to the major programs that include, but are not limited to:

- Fire Prevention
- Public Education
- Fire Suppression
- Technical Rescue
 - Control of Hazardous Materials Incidents
 - Extrication and Rescue
 - Land and Vessel Based Ice/Water Rescue
 - High/Low Angle and Confined Space Rescue
 - Tiered Medical Response
 - Trench Rescue
 - Elevator Rescue
- Public Assistance
- Fire Cause and Origin Investigation
- Training
- Communications/Dispatching Services
- Emergency/Disaster Management

The major components that guide and govern Barrie Fire and Emergency Service are the Establishing and Regulating By-law, the Fire Protection and Prevention Act the Emergency Management and Civil Protection Act, and the Occupation Health and Safety Act. There are a host of other municipal by-laws and legislation that affect the operations and business delivery; however, the service delivery of the department is considered appropriate for the community it serves.

Short Term Objectives (1 -3 Years) 2016 - 2018

- **A Records/Data Management System should be integrated into the Fire Prevention Branch as soon as reasonably practicable** – The City of Barrie’s Building Department has an existing database application (AMANDA) which houses comprehensive building and premise information.
 - As part of the requirements of the Fire Protection and Prevention Act, the City of Barrie has to conduct annual simplified risk assessments of the

City, a portion of this assessment examines the current building stock in the City. Currently this is spread between the Building Department and the Fire Prevention Branch that currently uses a different database program. There is a need to conduct a Comprehensive Risk Assessment of the city and this will greatly simplify that data collection.

- There are considerable benefits to the Fire Prevention Branch to be gained through the facilitation of access to this worthy information, including the elimination of duplicate records and redundant work processes. This has been a recommendation since the 2009 Fire Master Plan. Various city departments have been involved in a committee (APLI) and are in the process of implementing a program from Accela. It is a program that provides solutions to automate and streamline civic processes around land, licensing, asset management, environmental health and safety, legislative management, recreation and resource management, and more. This will lead to improved efficiencies and facilitate an increase to the current level of inspections that can be conducted annually.
 - Currently Fire Prevention staff does not have the ability to enter inspections and data in the field and are required to return to the station to enter the data. A Records/Data Management System combined with the use of laptops will allow this automatic transfer.
 - This will also provide a reliable data source for future file searches, eliminate duplication and improve structure and procedures when considering departmental and interdepartmental information and procedure sharing.
 - Fire Prevention Staff will also be able to better communicate risk and safety concerns that are identified in the field when an incident occurs.
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- **Initiate accreditation with the Centre for Public Safety Excellence** - a nonprofit organization that helps local public safety agencies around the world streamline and improve the services they provide their communities.
 - The Centre for Public Safety Excellence (CPSE) supports and encourages agencies and personnel to meet international performance standards through various programs and the work of two commissions: the Commission on Fire Accreditation International (CFAI) and the Commission on Professional Credentialing (CPC).
 - Accreditation is a comprehensive self-assessment and evaluation model that enables organizations to examine past, current, and future service levels and internal performance and compare them to industry best practices. This process leads to improved service delivery.
 - CPSE's Accreditation Program, administered by the Commission on Fire Accreditation International (CFAI) reflects a comprehensive self-assessment and evaluation model that enables fire and emergency service organizations to examine their service levels and performance in a way that allows them

to compare to industry best practices. This process leads to improved service delivery by helping fire departments to:

- Determine community risk and safety needs.
 - Evaluate the performance of the department.
 - Establish a method for achieving continuous organizational improvement.
 - The CFAI accreditation process provides a well-defined, internationally-recognized benchmark system to measure the quality of fire and emergency services.
 - The self-assessment process demands the largest portion of time to achieve accreditation. Although there is a substantial commitment of time and resources, departments nationwide have realized the value of the self-assessment process and accreditation model because you are documenting policies and procedures that you should have in place already. You are simply documenting what you are doing. The benefit of the accreditation process is realized more in the journey, than the destination.
 - The accreditation process results in the development of planning documents, including short-term action and long-term strategic plans, important tools in the budgeting process and a basis for justifying departmental programs and services. Accreditation has the potential to dramatically improve a department, its services, and its vision for the future.
 - The CFAI process is being undertaken in a number of urban fire departments within Ontario and completing this process will assist in BFES remaining a progressive and future focused organization.
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- **Work with City Departments to ensure an all hazards approach to business continuity planning that supports the City of Barrie Emergency Plan** – the Emergency Management and Civil Protection Act states:
 - 3. (1) Every municipality shall formulate an emergency plan governing the provision of necessary services during an emergency and the procedures under and the manner in which employees of the municipality and other persons will respond to the emergency and the council of the municipality shall by by-law adopt the emergency plan. 2002, c. 14 ,s. 5 (1) .
 - The services that the City of Barrie provides to the public and interdepartmental are vast. Disruptions of some of these services could potentially impact public safety and security. Therefore, the City of Barrie must continue providing such critical services and/or limit their disruption as a result of emergencies.
 - Continuity of Operations/Business Continuity is a component of the Emergency Management Program (legislated under the Emergency Management and Civil Protection Act, 1990) that ensures the City of Barrie will be able to provide critical functions and services during an emergency. The Continuity of Operations/Business Continuity process provides a framework for the determination of functions and services that are time-sensitive and critical, and utilizes a risk management approach to assure

the continuity of such critical functions/services by identifying and assessing hazards, risks and the impact of potential disruptions; to develop viable mitigation, response and recovery strategies and plans; to earmark resources; to train personnel and to test and maintain plans. Continuity of Operations/Business Continuity should be an ongoing process that is supported by senior management, properly resourced, integrated into the City of Barrie's emergency management planning framework and reviewed for currency from time to time.

- "CSA Z1600-14 Emergency and Continuity Management Program" is a standard that outlines the requirements for an emergency and continuity program. The standard serves as an effective benchmark to allow organizations to evaluate conformity of their emergency and continuity management program to this Canadian Standard.
- 6.2.6.1 The organization shall implement documented plan(s) that detail how the organization will manage a disruptive event and how it will recover or maintain its critical activities to a predetermined level based on management approval.
- 6.2.6.2 The organization shall establish a continuity management structure that provides for capabilities to:
 - confirm the nature and extent of an incident;
 - implement appropriate actions;
 - have processes and procedures for the activation, operation, coordination, and communication of continuity strategies and plans;
 - have resources available to support the processes and procedures to manage an incident; and
 - communicate with stakeholders.
- The residents of Barrie would expect and anticipate that during any type of emergency the City of Barrie would maintain essential services and bring back all services in a timely manner. City staff needs to prioritize the 80 plus services they provide into categories of how long they can withstand not being delivered. Reallocating staff to maintain essential services and methods of bring services back on-line.
- **Complete a communications service delivery standard between IT and BFES, and develop a communications service delivery standard between BFES and its communications customers** – The communications centre is a complex technical system of multiple varying components and require 24/7 service in case of failure or incidents that hamper the ability of the Branch to operate and receive emergency calls or dispatch fire apparatus to required incidents. In addition, as the Branch has expanded its customer base over several years, there is a need to address these complexities.

- BFES, service partners and IT all play critical roles in this process. It would make for a more seamless process if the levels of service delivery by each partner were well defined and, responsibilities and procedures are in place.
 - Response times for repair, maintenance and trouble shooting incidents need to be established. An on-call structure needs to be included to limit the time required to contact the systems analyst required.
 - The Communications Branch dispatches 19 fire services throughout a large geographical area including Simcoe County and the District of Muskoka. Each fire service has its own uniqueness, levels of service and dispatch requirements. A service delivery standard would outline the responsibilities of BFES and its customers.
 - BFES revised its current contracts with a more compressive option based contract, spelling out each option and the costs associated with each option. This will allow for more revenue based on each individual customers needs and should be included in the service delivery standard.

- **Improve statistical data with improved reporting processes** – There are several legislated requirements on the department for reporting statistical data. There are also several corporate requirements with internal and external partner organizations to report accurate data. Appropriate and accurate data is the cornerstone of reporting and maintaining results based accountability.
 - There is significant manual data entry required across the department to complete all the statistical data. Each process does not align with each other’s reporting requirements or is easily transferable. This consumes considerable staff time. An example is listed above with the use of the records/data management program. This is only one example.
 - Currently, there are approximately 60 personnel that enter data into the provincially required records management system using the FIREHOUSE program. Further education and training is required to ensure that all are entering the data using the same definitions and criteria based on the required standards from the province. Furthermore, a review should be completed in the value of retaining the current data warehouse or transitioning to a different data warehouse compatible with or in conjunction with another corporate solution.
 - Meaningful Key Performance Indicators need to be reviewed and developed to be successful in achieving the previously recommended accreditation. These KPIs have to be consistent with results based accountability and lead to evidence based decision making.

- **Conduct a comprehensive qualitative and quantitative risk assessment for the City of Barrie** - Risk assessment is the process utilized to identify the City of Barrie’s fire protection and other emergency service needs by measuring the probability and consequence of an adverse effect to health, property,

organization, environment, or community as a result of an event, activity or operation. It is the process of examining and analyzing the relevant factors that characterize the City of Barrie and applying this information to identify potential risk scenarios using results based accountability and evidence based decision making. The assessment includes an analysis of the likelihood of these scenarios occurring and subsequent consequences.

- The Office of the Fire Marshal and Emergency Management has two risk assessment tools; the Simplified Risk Assessment model as described above is an annual compliance document that is submitted to the Office of the Fire Marshal and Emergency Management. The second model is a more expansive Comprehensive Risk Assessment model that is one of seven components of the Comprehensive Fire Safety Effectiveness Model. The OFMEM has recently introduced an “Integrated Risk Management Web Tool”. The tool is intended for municipal and fire service decision-makers to determine building risks by taking into account building characteristics and assist municipalities in fulfilling the responsibilities prescribed in Section 2 of the Fire Protection and Prevention Act, 1997.
 - The Emergency Management and Civil Protection Act states: “in developing its emergency management program, every management program, every municipality shall identify and assess the various hazards and risks to public safety that could give rise to emergencies and identify the facilities and other elements of the infrastructure that are at risk of being affected by emergencies.”
 - The risk assessment must not only look at the physical risk assets, but also the demographics of the population in order to effectively deliver public education and fire prevention programs to target audiences.
 - A comprehensive risk assessment will result in improved response times and improved risk-to-resource allocation.
- **Develop a plan to increase the number of pre-incident plans with a focus on high risk buildings by occupancy code** - pre-incident planning is one of the most effective tools a fire department has in controlling or reducing the damage caused by fire. Planning for fire in industrial, commercial and high risk occupancies increases the confidence and ability of the fire service in handling the fires and reduces the risk to the life safety of the fire fighters involved.
 - In the recently completed Fire Underwriters Survey, BFES scored very low in this category.
 - A pre-incident planning program has been developed, however to receive additional credit within fire insurance grading and to help improve fire fighter effectiveness during emergency events, the number of completed pre-incident plans should be increased.
 - As the fire department continues to develop its pre-incident planning program, additional credit up to the maximum can be achieved.

- It is strongly recommended that the pre-incident plan continue to expand and should be developed in accordance with NFPA 1620, Recommended Practice for Pre-Incident Planning, or a similar standard/guideline.

- **Land acquisition and design for a station in the south-east quadrant consistent with the Genivar Station Location Study (2013)** – The Genivar Station Location Study is attached in Appendix “E” and sets variable modelling that was conducted to reach the preferred station modelling with an outlook to 2031.
 - The preferred model combined with projected roadway geometry and projected population demographics forecasting demonstrate a need for a station in the south-east quadrant as the area is developed. The need to have services available during development is a Council approved direction with proposed development in the annexed lands.
 - The Genivar report was published in 2013 and recommended that Station 6 be operable by 2016. The short term objectives in the 2014 Fire Master Plan recommended operational in 2017. Since then reviews and revisions to the timing and development in the south-east now lead to the recommendation that consideration be given to operational in late 2018, or early 2019.
 - The preferred model shows the best location to be in the Prince William Way and Mapleview Drive area.
 - The proposed new fire station should be operational in late 2018 or early 2019 in order to accommodate projected growth in this area. Station 6 is the first expansion of current coverage that BFES should implement due to the need to ensure proper coverage. As 2018 is fast approaching, the fire service must secure the land and start planning for construction in the short term.
 - As population grows on the eastern side of the annexed lands, Station 3 will be covering too many residents and workers for the station to offer proper response times and the new Station 6 is required. The industry standard is one pumper for every 20,000 – 25,000 population based on response times and other variables.
 - The Fire Station Location Study takes into account that the proposed location will be available for implementation in 2018. Construction and planning of the new location should be planned accordingly. Construction could take 12 or more months depending on the site and design.

- **Renovations and alterations to Stations 3 and 4 to increase functionality of both stations** – Both stations need renovations to increase the functionality and increase capacity for apparatus, meet legislative requirements for accessibility and health and safety requirements.
 - Add a third apparatus bay to the east of the existing structure at Station 3 and remove the existing hose tower which is cosmetic. Also increase the

kitchen and lounge area to accommodate 2 crews of up to 10 firefighters including the appropriate accommodations for male and female firefighters.

- For Station 4 renovate and expand existing structure for female quarters and the ability to house 2 crews of up to 10 firefighters including the appropriate accommodations for male and female firefighters.
- **Develop an inspection schedule where the frequency of inspections is appropriately suited to the risk profile of each occupancy/target group** – In conjunction with the above mentioned comprehensive risk assessment, an inspection schedule based on the outcomes of the evidence based risk assessment should be developed to reduce the risk or impacts of incidents.
 - This will lead to improved fire code compliance by targeting occupancies or target groups that have been identified through a risk assessment as being non-compliant or lacking knowledge of the regulations.
 - There will be improved risk-to-resource allocation focusing on the occupancies or target groups where we can make a larger difference.
 - This is a recommendation of the Fire Underwriters Survey and could lead to higher rating, thus reducing insurance premiums for citizens and businesses in Barrie.
 - The Fire Protection and Prevention Act require inspections based on “complaint and request”, which take up a considerable amount of current resources of the Branch. The development of an inspection schedule will assist in directing available remaining resources to concentrate on the targets with the most significant life safety and hazards first then each occupancy of the same type should be inspected to remain fair and consistent. Thus, leading to results based accountability.
 - An aggressive routine inspection schedule may result in reduced complaints and improved fire safety in our highest risk occupancies.
- **BFES, the Engineering Department, Corporate Asset Management and Water Operations recently concluded a Fire Protection and Water Supply Survey in conjunction with Fire Underwriters Survey** – The value of a Fire Protection and Water Supply Survey is multi-functional and will assist the departments listed and the residents and businesses in Barrie.
 - A Fire Protection and Water Supply Survey are used by the named departments to plan new infrastructure and improve existing infrastructure that needs replacing and upgrading. The survey considers; fire service delivery, fire prevention, and water delivery for firefighting operations and communications.
 - The last survey was conducted in 2004 by Fire Underwriters Survey (FUS). Since that time there have been major changes to the fire service and water supply throughout the city. As a result of the 2009 Fire Master Plan, some

work was completed on certain areas of the city where there is under-sizing of the current watermains.

- The water supply for fire protection has increased dramatically since the 2004 Survey. The upgrade in watermains, the addition of the Surface Water Treatment Plant and the recently commissioned Sunnidale Reservoir are some of the improvements over the years.
 - The 2004 FUS noted on the lack of growth of the fire service compared to the growth of the city. Recent growth of the fire service in staffed apparatus and the addition of Station 5 will no doubt bring the service to a more sustainable position in going forward with a current survey.
 - The results of a Fire Protection and Water Supply Survey are communicated to insurance companies in Canada and are used to base the fire insurance premiums on residential and business insurance ratings. A positive report could result in lower fire insurance premiums for the City of Barrie taxpayers.
 - The report contained several recommendations for the City of Barrie to consider in an effort to improve its overall ratings.
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- **Explore partnerships with other municipalities to provide technical rescue disciplines on a total cost recovery basis and possible source of revenue through response and/or training initiatives** – A joint objective of Council and City departments is to try and reduce the dependency on tax based revenue through increased revenue and cost recovery.
 - There is a growing trend in the fire service to look at regionalization for certain services, to try and help reduce fire service costs of providing an ever increasing number of disciplines that can tax the service with expensive training and equipment costs.
 - Barrie Fire and Emergency Service is the largest fire service in the geographical area of Simcoe County. The current full-time staff exceeds the total full-time staff of all fire services in the county. Barrie currently has more full-time staff than any municipality to the north of Barrie.
 - BFES has the ability to provide those services to other municipalities that do not have the ability to provide those technical rescue services. The Municipal Act and the Fire Protection and Prevention Act allow municipalities to enter into agreements for this type of service delivery. This is based on full recover costs of response and contributing to the ongoing training requirements to maintain annual training requirements and certification.
 - BFES currently has an agreement with the County of Simcoe and all municipalities to provide Hazardous Materials response to life threatening situations on a cost recovery basis, some ongoing annual training requirements and equipment purchasing for the delivery of the service.
 - BFES should continue looking at entering into legal agreements to provide technical rescue capabilities with other municipalities on a cost recovery

basis for delivery of services and an annual contribution to the ongoing training and maintenance of training and equipment.

- **Implement a sustainable back-up communications location consistent with best practices and standards** – With today’s technology, there is always an inherent risk of failure, system slow-downs, cyber-attacks, natural disaster, or human caused interruptions to the technology. The one most effective resolve is to create dynamic redundant systems.
 - Current, redundancy in the Communications Centre is being addressed by BFES and IT.
 - Currently, the back-up location in case of failures or the need to evacuate BFES Headquarters is located at the Barrie Police Facility on Sperling Drive. BFES Headquarters could need to be evacuated for any number of reasons.
 - The capability of the back-up location is primitive considering today’s technology and available redundant solutions. Even a system failure of the Barrie phone exchange would create an outage in both locations. Consideration must be given to have outside Barrie exchange capabilities to ensure all emergencies services can continue to operate at a desired level of service.
 - With the pending new Police Facility in the plans, strategic planning for the requirements for both services and the costs associated with a sustainable back-up for both agencies should be undertaken as part of the process.
 - The Police Back-up is at Headquarters and is basically in the same condition as Fire’s. A viable alternative might be to consider a joint back-up location that could serve both services at another location. With the planned construction of Station 6 or the permanent Station 5, these may have additional space added to them to accomplish this.
- **Explore partnership opportunities with academic institutions, organizations and government agencies where BFES can contribute to relevant and current projects** – there are partnership opportunities that exist that can help BFES in becoming more effective and efficient and contribute to advancements of new and improved methods of service delivery.
 - There is an ever increasing reliance on the fire service to become more results based accountable and make evidence based decisions. The best way to achieve this is through data collection and analysis. This can be extremely time consuming and would be based on the expertise level in the fire service to determine the accuracy of the results. Partnership with other experienced organizations would lead to more accurate and accountable results.
 - There is a vast array of “industry best practices” in the fire service and are for the most part generalized. Partnerships would be tailored to the local

needs and circumstances in Barrie and reflect a more contextual result based on the City of Barrie.

- Partnerships can lead to improved research and knowledge in BFES and also the possibility of external funding to assist.
- **Review the service levels provided to maintain and repair the growing fleet balanced against capital costs of replacement** – One of the biggest capital outlays for BFES is apparatus, whether it be new fleet or fleet replacement. Combined with significant maintenance and repair costs, there needs to be a systematic approach to weighing the cost of repair against the value and replacement cost of apparatus.
 - The size of the department's fleet is going to increase with the growth of the city and the fire service. The cost of apparatus has increased significantly with new legislated emission controls in Canada, the technological advancements of the apparatus and new requirements under the National Fire Protection Association Standards.
 - A fleet replacement schedule should be developed based on the criteria established by both the Capital Asset Management criteria and industry standards for replacement or refurbishment. Although the fleet for the most part is considered adequate, there are a number of apparatus that are well past life cycle and costly to repair. The 75ft ladder truck is in need of being replaced, the Technical Rescue truck needs replacing and the Command Centre (decommissioned in 2013) is well beyond its life cycle and is all but unreliable to operate.
 - The Fleet Services Technicians that maintain and repair the fire apparatus need to be Emergency Vehicle Technician Certified. The increasing size and complexities of the fleet is creating a strain on Fleet Services to maintain, repair and schedule regular maintenance of apparatus. Fleet Services should review current staffing levels, services levels and training combined with the required facilities to maintain the apparatus. The current Fleet Services Branch location is in an older building that may require renovations or replacement to be able to properly maintain the fire fleet.
- **Begin implementation of a Computer Aided Dispatch, Automated Dispatch, Automated Vehicle Locator and GPS traffic pre-emption link project to enhance response times throughout the city** – traffic pre-emption is the ability of responding fire apparatus to change the traffic lights to respond and allow for the ability to make changes to traffic lights to speed up response times.
 - The current system employs 1970's technology that uses line of sight opticom process to see the apparatus coming and then turns the traffic signal green as the apparatus approaches. There is considerable cost and upkeep to this system for every set of traffic lights in Barrie.
 - This is problematic with current road design and the geographical nature of the City of Barrie, often pre-emption is not successful by the time the

apparatus reaches the intersection because of curves, hills and apparatus turning onto roads in close proximity to the traffic signals. The pre-emption system must receive the signal from the responding apparatus and then go through a full cycle of turning lights in the opposite direction, yellow then red and allow for pedestrians to clear the intersection.

- The new system links the Computer Aided Dispatch system (CAD), automated vehicle locator (AVL) and GPS to determine the route the apparatus is going to take and enhance pre-emption thereby decreasing response times and does not rely on line of sight. This would allow for a safer cycling as referred to above and allow the traffic signal to be green when the apparatus reaches the intersection.
 - Some of the systems are already in place such as the CAD and AVL. This modern technology is actually cheaper to install and operate than the current system and will increase firefighter and public safety.
 - This project will require a coordinated project involving BFES, Roads, Roads Engineering and IT.
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- **Work with the Building Department and IT to develop a bidirectional antenna strategy** – bidirectional antennas are antennas built into new or existing buildings to increase firefighter and public safety by enhancing firefighter communications in buildings.
 - The need for adequate and reliable in-building communication in emergency situations has gained momentum across the nation in recent years. It requires new buildings to adequately ensure first responder communications.
 - First responders, including fire, police and emergency medical services often cannot effectively use their radios in larger structures. It is crucial to implement properly designed fire repeater systems; improperly installed systems can create interference either to the fire department channels or to other public safety radio systems.
 - With the anticipated intensification that will occur in Barrie there is a need to ensure Barrie enacts by-laws that require builders ensure radio communications in these buildings meet the requirements of emergency service agencies. The use of modern building components and construction methods are limiting communications in these buildings.
 - Georgian College agreed to install a bidirectional antenna in their newly built Sadlon Centre for Health and Wellness. Testing has confirmed great radio communications within the complex.
 - In 2015, Royal Victoria Regional Health Care Centre installed a bi-directional antenna that serves both BFES and Barrie Police for radio communications within the hospital.

- Some U.S. cities have passed a by-law requiring newly constructed buildings, or buildings modified affecting the fire alarm system with levels below grade shall be tested for fire department radio signal strength. Any building that is two stories or greater below grade or greater than 70 feet in height will automatically be required to have a BDA.
- **Review staffing levels consistent with an organizational review of service delivery needs and anticipated growth in conjunction with the annual business planning process** – the City of Barrie is poised to experience substantial growth in the next decade with development of the south-end lands and future intensification in the established growth nodes.
 - In the past few years, the province has changed several pieces of legislation and downloaded responsibility on the municipalities without any funding and limited support. Changes to the Propane Handling Act, the Fire Prevention and Protection Act, and Vulnerable Occupancies have added workload to the municipal fire services. This trend is expected to continue.
 - As the City of Barrie enters into another anticipated growth expansion, one of Council's directions is to develop city services in conjunction with the growth.
 - A review of the anticipated future service delivery needs should be conducted considering the anticipated growth of the department and the city and possible efficiencies. Business cases should be developed to be considered during the annual business planning process.
- **Annually review and revise as necessary the Fire Master Plan** – Master Plans are living documents and must be reviewed on a constant and consistent basis to guide the department in reaching its strategic priorities.
 - Every year the department builds its business case for both operating and capital projects and processes. The Business Plan sets the direction and objectives for the upcoming year. After Council passes the Business Plan, it would be an opportune time to review and revise the Fire Master Plan based on what has been accomplished over the past year and review expectations for the coming year.
 - Changes must also be reviewed that affect the department and include but not limited to:
 - Growth
 - Changes in Legislation
 - Increased demands on the department
 - Efficiencies and effectiveness initiatives
 - Technology advancements
 - Fiscal responsibility
 - Any major changes to the Fire Master Plan should be presented to Council for review and acceptance before implementation.

Intermediate Term Objectives (3 -5 Years) 2018 – 2020

- **Construction of Station 6 in the South-East** – construction of a station could take as long as 12 - 16 months to completion, depending on site and design. The population growth expectations and preferable station location are contained in the Genivar Station Location Study attached in Appendix “E”.
 - The current population and employment density expectations in 2017 show that the current Station 3 would be required to protect a population density of 47,445 and employment of 12,991. This far exceeds the industry best practice of 20,000 – 25,000 population (dependent on geography, building type, age of the buildings and response times) for each responding apparatus.
 - By 2021, Station 6 would be responding to a population of 25,938 and employment of 2,964. This again is pushing limits as there are several growth nodes that this station would respond to.
 - The need to have services available during development is a Council approved direction with proposed development in the annexed lands. This station will also provide secondary coverage to Station 3 and provide coverage when Station 3 is on a call or backing up other Stations at multiple Station response calls.
 - All new stations in Barrie should be constructed to house a minimum of two apparatus, have facilities for at least two operating crews and provisions for additional Fire Prevention Officers to work out of reducing the travel requirements and lead to efficiencies in the future.

- **Hire staff for Station 6 based on service delivery standards and legislated requirements** – with the construction of Station 6, there needs to be the additional staffing required operating the station and ensuring staffing requirements for the entire city meet with best industry practices.
 - It is anticipated that a pumper will be located in the new Station 6, which will require the recruitment of an additional 20 firefighters.
 - Lead time before the station opens is required to allow for 12 weeks of training for the recruits. The recruits would be blended into the existing staff complement to ensure the new Station is staffed with a blend of experienced firefighters.
 - A recruit class of 20 firefighters has been a challenge in the past for the Training Branch. As previously discussed, the anticipated retirement and recruitment could exceed 20 firefighters adding increased demand on the Training Branch.
 - A review should be conducted to determine if a phasing of recruitment can benefit the Training Branch and the department by splitting the recruitment over two years and the benefits of possible overtime avoidance, pre-opening of the new Station.

- **Acquisition of a Pumper for Station 6** – a pumper is the basic apparatus utilized by the fire service to respond to a variety of incidents that require multiple disciplines and is staffed with a Captain, Driver and 2 Firefighters.
 - With the opening of Station 6, there will be the additional need for an additional pumper apparatus for the station.
 - Currently, BFES has a sole source agreement passed by Council for specific body type and manufacturer of apparatus in order to enhance the safety of firefighters by all apparatus being the same.
 - Pumpers are custom built according to the specifications desired by each department and can take 12- 14 months to build.
 - There will also be the need to equip the apparatus with the appropriate supplementary equipment carried on BFES pumpers.

- **Review staffing levels consistent with an organizational review of service delivery needs and anticipated growth in conjunction with the annual business planning process** – the City of Barrie is posed to experience substantial growth in the next decade with development of the south-end lands and future intensification in the established growth nodes.
 - In the past few years, the province has changed several pieces of legislation and downloaded responsibility on the municipalities without any funding and limited support. Changes to the Propane Handling Act, the Fire Prevention and Protection Act, and Vulnerable Occupancies have added workload to the municipal fire services. This trend is expected to continue.
 - As the City of Barrie enters into another anticipated growth expansion, one of Council's directions is to develop city services in conjunction with the growth.
 - A review of the anticipated future service delivery needs should be conducted considering the anticipated growth of the department and the city and possible efficiencies. Business cases should be developed to be considered during the annual business planning process.

- **Upgrade communications equipment and associated systems consistent with current and advanced technology** – a dispatch centre is only as effective and efficient as the equipment and systems allow it to be.
 - Firefighter and public safety are reliant on this communications equipment and systems to operate fully, and be technically advanced to allow for the department to meet Council's and legislated service delivery standards.
 - The technology surrounding communications is in a constant state of advancements and upgrades that requires constant monitoring and research. Failure to stay current with technological advancements and upgrades could jeopardize and increase the chance of system failures.

- A life-cycle analysis should be conducted by BFES and the IT Department on all systems in communications to assist with future asset management and plan for capital and operating expenditure that will be required during the business planning process.
 - Service Level Agreements should be reviewed to stay current with upgrades to the communications equipment and associated systems both with internal and external business partners.

- **Land acquisition and design for a Permanent Training Facility to meet fire department training requirements and support other city and regional requirements** – constant training is not only a necessity for firefighter and public safety, but is legislated through the Occupational Health and Safety Act.
 - Under the Occupational Health and Safety Act is the Section 21 Fire Service Advisory Committee with representation from the Ministry of Labour and the various fire service stakeholders. This committee produces guidelines for the fire service that deal with the overall health and safety of the firefighters and the public. Although these are guidelines, they are considered regulations under the OH&S Act by inspectors and the courts. They also set certain requirements for firefighter training.
 - The National Fire Protection Association Standards also has requirements for annual training to maintain certification in multiple disciplines both for firefighting operations and the specialty rescue disciplines. Some with minimum requirements that require 40 or more hours of annual training in order to remain current. These require props and facilities designed specifically for the desired outcomes
 - The 2003 inquest into the death of Barrie Fire Fighter Bill Wilkins recommended the development of a training facility in Barrie, and would enhance the health and safety of the firefighters and the public. This realistic training is irreplaceable for this profession as was determined by the Coroner's Inquest into Bill Wilkins death.
 - The solution would be for Barrie Fire and Emergency Service to a permanent facility in the city limits, where on-duty crews could train without the reliance on bringing in overtime staffing. There would also be the benefit of BFES revenue by offering the facility when not in use to other municipalities or agencies. The goal would be to have a multi-purpose, multi-scenario station concept that could be used by various City of Barrie Departments and could be used simultaneously by different users.

- **BFES, the Engineering Department, Corporate Asset Management and Water Operations recently concluded a Fire Protection and Water Supply Survey in conjunction with Fire Underwriters Survey** – The value of a Fire Protection and Water Supply Survey is multi-functional and will assist the departments listed and the residents and businesses in Barrie.

- A Fire Protection and Water Supply Survey are used by the named departments to plan new infrastructure and improve existing infrastructure that needs replacing and upgrading. The survey considers; fire service delivery, fire prevention, and water delivery for firefighting operations and communications.
 - The last survey was conducted in 2004 by Fire Underwriters Survey (FUS). Since that time there have been major changes to the fire service and water supply throughout the city. As a result of the 2009 Fire Master Plan some work was completed on certain areas of the city where there is under-sizing of the current watermains.
 - The water supply for fire protection has increased dramatically since the 2004 Survey. The upgrade in watermains, the addition of the Surface Water Treatment Plant and the recently commissioned Sunnidale Reservoir are some of the improvements over the years.
 - The 2004 FUS noted on the lack of growth of the fire service compared to the growth of the city. Recent growth of the fire service in staffed apparatus and the addition of Station 5 will no doubt bring the service to a more sustainable position in going forward with a current survey.
 - The results of a Fire Protection and Water Supply Survey are communicated to insurance companies in Canada and are used to base the fire insurance premiums on residential and business insurance ratings. A positive report could result in lower fire insurance premiums for the City of Barrie taxpayers.
 - The report contained several recommendations for the City of Barrie to consider to improve its overall ratings.
- **Review and revise the Fire Master Plan** - Master Plans are living documents and must be reviewed on a constant and consistent basis to guide the department in reaching its strategic priorities.
 - Every year the department builds its business case for both operating and capital projects and processes. The Business Plan sets the direction and objectives for the upcoming year. After Council passes the Business Plan, it would be an opportune time to review and revise the Fire Master Plan based on what has been accomplished over the past year and review expectations for the coming year.
 - Changes must also be reviewed that affect the department and include but not limited to:
 - Growth
 - Changes in Legislation
 - Increased demands on the department
 - Efficiencies and effectiveness initiatives
 - Technology advancements
 - Fiscal responsibility

- Any major changes to the Fire Master Plan should be presented to Council for review and acceptance before implementation.

Long Term Objectives (5 -10 Years) 2020 – 2025

- **Phased construction (Phase 1) of the Fire Training Facility based on balancing demand and the Business Planning Process** – as previously recommended there is a need for the Training Facility in the City of Barrie to train and maintain the required training for members of the department.
 - It is proposed to construct a number of buildings and props, over a three year period, which will facilitate the training of firefighters to meet current recommended standards for firefighter certification and NFPA 1402 – Guide to Building Fire Service Training Centres.
 - It is suggested that the acquisition of an appropriately sized property of 12 -14 acres would meet the requisite needs of a Fire Training Facility and provide for possible future expansion.
 - It is proposed that if a site can be found in a location appropriate for the proposed permanent Station 5, the two projects could be linked on one site to reduce financial costs by co-habiting the two projects.
 - It also recommended that this facility contain areas for all fire attack classes including Class A and Class B burns, as well as other training props including a Driver Training Course, all of which have the possibility of being used to generate on-going income to recover operating costs.
 - Phase 1 would consist of:
 - Driver Training Course
 - Fire Tower (Class B burns – natural gas or propane)
 - Residential Burn House (Class A burns – wood, combustible materials)
 - Auto Extrication Area
 - Storage and Ancillary Shelter plus Parking and Road Facilities
- **Construction of the permanent Station 5 in the south-west quadrant** – the current Station 5 is in a leased commercial facility with a lease agreement that expires in 2021.
 - There was a demonstrated need in 2010 to proceed with a temporary Station 5 to enhance response times in the south-west quadrant of the existing boundaries and infrastructure at that time.
 - As the city develops the annexed lands and consistent with the Genivar Station Location Study conducted in 2012, a permanent Station 5 should be constructed in the recommended area.
 - As stated above, it is proposed that if a site can be found in a location appropriate for the proposed permanent Station 5 and the Training

Facility, the two projects could be linked on one site to reduce financial costs by co-habiting the two projects.

- Construction of a station could take as long as 12 - 16 months to complete, depending on site and design. All new stations in Barrie should be constructed to house a minimum of two apparatus, have facilities for at least two operating crews and provisions for additional Fire Prevention Officers to work out of, reducing the travel requirements and lead to efficiencies in the future.

- **Upgrade communications equipment and associated systems consistent with current and advanced technology** – as reflected in the Intermediate Objectives, advancing technology plays an important aspect of a modern Communications Centre.
 - One notable and evident aspect of today's technology is the shortened life cycle expectancy of the technology and the manufacturers support for these systems once newer systems and hardware are developed.
 - As new technology is launched, there will be increased dependency on the city to keep abreast of the changes and the effects on current operating systems.
 - Along with the above, will be the requirement to review and amend the service level agreements with all stakeholders.

- **Review staffing levels consistent with an organizational review of service delivery needs and anticipated growth in conjunction with the annual business planning process** – the City of Barrie is posed to experience substantial growth in the next decade with development of the south-end lands and future intensification in the established growth nodes.
 - In the past few years the province has changed several pieces of legislation and downloaded responsibility on the municipalities without any funding and limited support. Changes to the Propane Handling Act, the Fire Prevention and Protection Act, and Vulnerable Occupancies have added workload to the municipal fire services. This trend is expected to continue.
 - As the City of Barrie enters into another anticipated growth expansion, one of Councils directions is to develop city services in conjunction with the growth.
 - A review of the anticipated future service delivery needs should be conducted considering the anticipated growth of the department and the city and possible efficiencies. Business cases should be developed to be considered during the annual business planning process.

- **BFES, the Engineering Department, Corporate Asset Management and Water Operations completed Fire Protection and Water Supply Survey in conjunction with Fire Underwriters Survey in 2014** – The value of a Fire Protection and

Water Supply Survey is multi-functional and will assist the departments listed and the residents and businesses in Barrie.

- A Fire Protection and Water Supply Survey are used by the named departments to plan new infrastructure and improve existing infrastructure that needs replacing and upgrading. The survey considers; fire service delivery, fire prevention, and water delivery for firefighting operations and communications.
 - The last survey was conducted in 2004 by Fire Underwriters Survey (FUS). Since that time there have been major changes to the fire service and water supply throughout the city. As a result of the 2009 Fire Master Plan some work was completed on certain areas of the city where there is under-sizing of the current watermains.
 - The water supply for fire protection has increased dramatically since the 2004 Survey. The upgrade in watermains, the addition of the Surface Water Treatment Plant and the recently commissioned Sunnidale Reservoir are some of the improvements over the years.
 - The 2004 FUS noted on the lack of growth of the fire service compared to the growth of the city. Recent growth of the fire service in staffed apparatus and the addition of Station 5 will no doubt bring the service to a more sustainable position in going forward with a current survey.
 - The results of a Fire Protection and Water Supply Survey are communicated to insurance companies in Canada and are used to base the fire insurance premiums on residential and business insurance ratings. A positive report could result in lower fire insurance premiums for the City of Barrie taxpayers.
 - The report contained several recommendations for the City of Barrie to consider to improve its overall ratings.
 - A business case needs to be developed to recommend an updated Fire Underwriters Survey be conducted to upgrade the ratings for the City of Barrie.
- **Develop a deployment strategy based on service delivery standards and legislative requirements with a full review scheduled for 2020** – a full review should be conducted in 2020 of the department’s deployment based on realistic population growth, intensification, building stock and legislative changes.
 - This current Fire Master Plan is based on assumptions of growth and intensification projections in 2013. A full review should be conducted every 5 years to keep the plan current and sustainable.
 - A comprehensive risk and gap analysis should be conducted to ensure effectiveness and efficiencies in the department branches are current and realistic.
 - Adjust the objectives consistent with the deployment strategy using current data and report to Council.

- **Continued phased construction of the Fire Training Facility** - as previously recommended there is a need for the Training Facility in the City of Barrie to train and maintain the required training for members of the department.
 - It is proposed to construct a number of buildings and props, over a three year period, which will facilitate the training of firefighters to meet current recommended standards for firefighter certification and NFPA 1402 – Guide to Building Fire Service Training Centres.
 - Phase 2 would consist of:
 - Drafting Pond and ponds for settlement and storm management
 - Trench Rescue Prop
 - Structural Collapse Prop
 - Confined Space Prop
 - Storage plus Road and Parking Facilities
 - Stretched Fabric Covered Structure
 - Tanker/Railcar Prop
 - Spill Containment Prop
 - Ring Road and Fire Hydrant Loop

- **Review and Revise the Fire Master Plan** - Master Plans are living documents and must be reviewed on a constant and consistent basis to guide the department in reaching its strategic priorities.
 - Every year the department builds its business case for both operating and capital projects and processes. The Business Plan sets the direction and objectives for the upcoming year. After Council passes the Business Plan, it would be an opportune time to review and revise the Fire Master Plan based on what has been accomplished over the past year and review expectations for the coming year.
 - Changes must also be reviewed that affect the department and include but not limited to:
 - Growth
 - Changes in Legislation
 - Increased demands on the department
 - Efficiencies and effectiveness initiatives
 - Technology advancements
 - Fiscal responsibility
 - Any major changes to the Fire Master Plan should be presented to Council for review and acceptance before implementation.

Outlook to 2031

- **Continued phased construction of the Fire Training Facility** - as previously recommended there is a need for the Training Facility in the City of Barrie to train and maintain the required training for members of the department.
 - It is proposed to construct a number of buildings and props, over a three year period, which will facilitate the training of firefighters to meet current recommended standards for firefighter certification and NFPA 1402 – Guide to Building Fire Service Training Centres.
 - Phase 3 would consist of;
 - Teaching and Administrative Centre
- **Upgrade communications equipment and associated systems consistent with current and advanced technology** - as reflected in the Intermediate and Long Term Objectives, advancing technology plays an important aspect of a modern Communications Centre.
 - One notable and evident aspect of today's technology is the shorten life cycle expectancy of the technology and the manufacturers support for these systems once newer systems and hardware are developed.
 - As new technology is launched there will be increased dependency on the city to keep abreast of the changes and the effects on current operating systems.
 - Along with the above, will be the requirement to review and amend the service level agreements with all stakeholders.
- **Replacement of Station 2 – Bell Farm Rd.** – end of life cycle for this facility.
 - This facility was built in 1972 and underwent a renovation in the early 2000s. This facility will be 50 years old in 2022 and is not considered the best design for a fire station.
 - Built under the building code of the day, it does not meet modern day building code requirements for fire stations, that are required to meet post-disaster building standards and requirements.
 - A review should be conducted at that time on possible relocation or rebuild on the current site.