THE CORPORATION OF THE TOWN OF GEORGINA

REPORT NO. GFRS-2023-0001

FOR THE CONSIDERATION OF COUNCIL
February 15, 2023

SUBJECT: Town of Georgina and Town of East Gwillimbury Joint Fire Services Assessment - Final Report

1. RECOMMENDATIONS:

1. **That Staff Report GFRS-2023-0001 regarding the Joint Fire Services Assessment for Georgina Fire and Rescue Service and East Gwillimbury Emergency and Community Safety Services dated February 15, 2023, be received;**

2. **That the ESCI Consultant final report entitled "Innovation and Modernization of the Fire Service for the Town of Georgina and the Town of East Gwillimbury", dated January 27, 2023, be received;**

3. **That Council endorse the further exploration of the fire services modernization in the Town of Georgina and the Town of East Gwillimbury, with a particular focus on Strategy 2 – Modernized Standalone Departments with Shared Services as identified in the report prepared by ESCI;**

4. **That the Mercury consultant final report entitled "Towns of East Gwillimbury and Georgina - Study for Fire Fleet Services Alternatives", dated January 18, 2023, be received;**

5. **That Council approve staff to review the concept found within the consultant report from Mercury, related to transition of the East Gwillimbury fire fleet maintenance to Georgina's fleet division, and report back on progress in Q3, 2023;**

6. **That the fire chiefs for Georgina and East Gwillimbury, with the support of the CAOs, will further investigate shared service opportunities as identified within the ESCI report; and**

7. **That the refreshed Georgina Fire Master Plan be received.**

2. PURPOSE:

This report provides an in-depth analysis regarding potential service efficiencies for the Town of Georgina Fire and Rescue Service (GFRS) and the Town of East Gwillimbury

Emergency and Community Safety Services (ECSS), including exploration of three strategies for future fire and emergency service delivery:

- Strategy 1 – modernized standalone departments;
- Strategy 2 – modernized standalone departments with shared services; and
- Strategy 3 – a consolidated composite department model delivering fire and emergency services to both communities.

3. BACKGROUND:

Two composite departments with a long history of collaboration providing quality services to their communities

Sharing municipal borders, the Town of Georgina and the Town of East Gwillimbury have a history of working together, in particular with respect to fire and emergency services. Long-standing agreements between the two municipalities have been very effective. Specifically, the two departments work within the York Region Mutual Aid Plan. As well, Georgina provides response to emergencies on Highway 404, via a Response Agreement.

Georgina and East Gwillimbury are at different stages of growth and population. While the operating needs and circumstances of each of the services can differ, the end goal of providing cost-effective quality fire services remains the same.

The Town of Georgina has a denser population and has been effectively served with three (3) fire stations at set service levels. Two (2) of the three (3) fire stations are staffed with both career and volunteer firefighters, and one (1) with solely volunteer firefighters.

The Town of East Gwillimbury has recently experienced major population growth in geographically spaced settlement areas requiring three (3) fire stations to provide effective emergency response at set service levels. Currently one (1) station is staffed with both career and paid-on-call firefighters (aka volunteer firefighters), and two (2) fire stations staffed with solely paid-on-call firefighters.

Notwithstanding the differences, it was agreed that examining the potential to build on department similarities and to develop a future strategy that will effectively manage continued growth in both communities, would be a worthwhile exercise.

Provincial funding provided an opportunity for conducting a joint service review

A Municipal Modernization (Intake 3) grant funding was approved in January 2022 for $356,160 to undertake this assessment for both communities. The provincial funding criteria required that the municipalities retain a third-party expert to conduct the review.

In May of 2022, Emergency Services Consulting International (ESCI) was retained to undertake the technical component of the project. ESCI is an internationally recognized firm offering extensive expertise and experience in the review of related service delivery and modernization evaluations. In addition, other specialized consulting expertise was retained to provide advice on specific areas of the analysis (for example finance, HR, fleet, etc.).

The objectives of the project included determining efficiencies and modernization opportunities under the terms of the Office of the Fire Marshal's Three Lines of Defence:

- Public fire safety education
- Fire safety standards and enforcement
- Emergency response

Each Council is being provided with this report and action will only be taken after both Councils have approved the next steps.

4. ANALYSIS:

A significant amount of research, analysis and engagement has been conducted over the past eight months

An extensive engagement program was conducted to seek input from a number of stakeholders. Key participants included members of both Councils, CAOs, senior managers, Office of the Fire Marshal, paid-on-call/volunteer staff and members of each firefighter association (a listing of participants is identified within the ESCI report - Appendix 1).

ESCI representatives participated for several days in a field trip in early summer to inventory and document East Gwillimbury and Georgina fire halls, equipment and geographical challenges in order to fully assess operational aspects of both departments.

ESCI began their work in May 2022, concluding an extensive investigation by January 2023.

Key deliverables include a comprehensive report and refreshed Fire Master Plans

The anticipated outcome of the assessment was to provide recommendations that could potentially assist with achieving desired efficiencies.

Key considerations and deliverables of the study included:

- Financial impact analysis
- Human resource analysis
- Governance model options
- Level of service assessment
- Potential shared services options
- Modernization opportunities

- Implementation recommendations

The ESCI Report (Attachment 1) was completed in January of 2023 and provides a detailed overview of the potential strategies for consideration. In addition, the Georgina and East Gwillimbury Fire Master Plans were refreshed (Attachment 3).

A particular section within the ESCI report, titled “Reimagination of the Modern Fire Service Organization”, provides enlightened view on the evolving fire and emergency services.

Fire departments of both towns considered three possible strategies

Consultant assessed each of the three strategies as follows:

Strategy 1 – modernized standalone departments

The modernized standalone departments’ assessment began with the Fire Master Plans refresh. Initially, the Georgina and East Gwillimbury Fire Master Plans were developed in 2016. An update was anticipated to take place within the typical 10-year cycle. However, it was determined that current population projections could have a bearing on data accuracy. Therefore, ESCI incorporated current growth data and provided an updated technical base.

As a result of the fire master plan updates, a number of recommendations for modernizing the individual fire and emergency services were developed:

- 20 recommendations were provided for GFRS
- 21 recommendations for ECSS

Strategy 2 – modernized standalone departments with shared services

In addition to the modernization elements of Strategy 1, there are a number of opportunities for Georgina and East Gwillimbury to share services with each other or other organizations. The shared service areas below were identified as having potential and worth investing time to explore further:

- Automatic aid
- Special teams
- Fleet services
- Training
- Fire prevention and education
- Group purchasing
- Fire station sharing
- Emergency management

Strategy 3 – a consolidated composite department model delivering fire and emergency services to both communities

The last strategy option that was considered is a consolidation of both the Georgina and East Gwillimbury composite fire services. ESCI incorporated best practices, assessment and findings in their final report, including but not limited to the following categories:

- Organizational overview (structure and organizational components)
- Financial analysis
- Sustainable community workforce (HR)
- Data collection, visualization and utilization (Technology)
- Implementation recommendations (governance, operations, HR, etc.)
- Evaluation of the three strategies

In evaluating the in-depth results for each of the three strategies, the following was taken into consideration:

- The current climate for municipalities in the fall of 2022 is dramatically different then it was at the time of the project's initiation in the fall of 2021;
- The refreshed Fire Master Plans have reinforced previous recommendations for advances within each of the departments. It would appear that opportunities for continued growth and enhancement of standalone departments are available;
- Georgina and East Gwillimbury fire and emergency departments have a history of collaboration which has proven to be successful. The ESCI study has highlighted further opportunities to explore the relationship with respect to shared services;
- As anticipated, the analysis indicates that a consolidated composite department would not yield cost savings;
- While consolidation should be kept as an ultimate goal for consideration, there are analytical gaps that impede making a decision to proceed. Implementing specific data collection methodologies over the next few years could prove extremely helpful for future assessment;
- As noted earlier, the two municipalities are not quite aligned in their current state (for example population differences and corresponding call volumes);
- Objectives for each department continue to be met;
- There are no unexpected increases in costs for either fire and emergency services department at this time; and
- The time is not right for consolidation. As noted by ESCI, "while some benefits could be gained from a consolidation, they may not be significant enough in comparison to the challenges and losses that would be experienced".

The above is reflected in detail in the ESCI Report (executive summary section), whereby the consultant has expressed their opinion with respect to consolidation: "ESCI did not identify significant value increases in response or financial metrics that could not be reasonably achieved through each department maintaining its own identity and pursuing shared services".

In-depth joint fire fleet services study was undertaken to supplement ESCI assessment

One of the suggested shared services examined in the ESCI report under Strategy 2 (modernized standalone departments with shared services), was fleet services. It was determined early in the work that this proposal had promise and in turn, fleet specialists, Mercury Associates Inc., were retained for an in-depth review. Mercury is the largest dedicated fleet management consulting firm in North America. Its expertise includes helping organizations to improve fleet management practices, increase operational safety and efficiency, optimize asset utilization and reliability, and operate a cost competitive fleet operation. As well, Mercury has some familiarity with Georgina's Operations and Infrastructure Department, Fleet Division, having undertaken work on their behalf in the past.

The study was limited to the maintenance and repair functions for the fire fleet assets in the Towns of East Gwillimbury and Georgina. Currently GFRS vehicles are serviced by Georgina's Operations and Infrastructure Department, Fleet Division, and ESCC vehicles are serviced by a third-party fleet maintenance contractor Dependable, located in Brampton. The question at hand was whether ECSS vehicles could also be serviced under the terms of a performance contract and if so, would there be benefits for both departments.

The study undertaken was extensive and among a number of benefits, highlighted the following:

- Efficiency improvement with clarity of roles and responsibilities for fire services and its clients;
- Increased compliance for preventative maintenance and inspection resulting in improved risk management, reduction in vehicle breakdowns, lower operating costs;
- Ability to service various types of vehicles with potential to reduce vehicle downtime and cost;
- Improved data accuracy and control with one technology platform for fleet – improved data collection, cost transparency and decision making based on data;
- Lower operating cost with a practical multi-year replacement plan;
- Improved pricing with contracts with key suppliers (e.g., volume discounts, rebates, etc.); and
- The opportunity for future expansion of services.

The results of the Mercury study are encouraging and have the potential for benefits in the short-term. Georgina's fleet staff, in collaboration with both fire and emergency services, will work on the service transition planning and a service agreement development throughout 2023. Implementation would follow in 2024, subject to funding approvals through the 2024 budget process.

Shared services is the preferred strategy based on consultant's assessment

Given ESCI's opinion, that reasons to consolidate at this time are not compelling, and in light of the comments listed above, staff are recommending to proceed with the Strategy 2 (modernized standalone departments with shared services). Benefits of this approach include:

- Momentum has been developed through the work of this project. Building on the relationships and collaboration can produce positive results;
- Opportunities remain for each fire and emergency services department to grow individually and modernize service delivery;
- As outlined within the Mercury report, both departments can benefit from a skilled and fully resourced fire fleet service, to be provided by Georgina's fleet services division; and
- According to ESCI, sharing services between two fire and emergency departments has often been the impetus that sets the stage for consolidation.

The fire chiefs have also discussed aligning other areas of business that could eventually lead to efficiencies, access to broader resources and set the stage for future discussion regarding consolidation. For example, areas such as the following, but not limited to, could lead to short-term and long-term benefits:

- Developing common data collection standards that will eventually assist in a revisit to the concept of a consolidated composite department;
- Developing where possible, common measurable performance standards for the three lines of defence;
- Where possible, creating common "trigger points" associated with growth;
- Aligning the municipal fire by-laws with common language, where possible;
- Aligning standard operating procedures, standard operating guidelines, human resource policies and other policies with mutual language, where possible;
- Aligning vehicle and equipment standards, where possible ;
- Exploring harmonization of Community Risk Assessment plans;
- Leverage corporate Equity, Diversity, Inclusion strategy that would be used by both fire services for future recruitment purposes; and
  Identifying further opportunities to align work procedures and service delivery.

5. RELATIONSHIP TO STRATEGIC PLAN:

6. FINANCIAL AND BUDGETARY IMPACT:

Implementation costs, associated with the fleet services transition, will be brought forward as part of the 2024 budget process. All pre-work in advance of implementation will be done by internal staff with no additional budget required.

Exploring potential shared services opportunities will be done by internal staff, with no additional budget required for 2023.

Implementation of the Fire Master Plan recommendations will be considered through future budget processes.

7. PUBLIC CONSULTATION AND NOTICE REQUIREMENTS:

Public information meetings were held for each community (June 28, 2022 in East Gwillimbury and June 29, 2022 in Georgina). The sessions were livestreamed and the recordings have been posted on the Towns' websites.

For the purposes of seeking further public input in a convenient manner, an online survey was prepared and released in advance of the public information meetings. The survey remained open until the end of July and resulted in 100 responses for East Gwillimbury and 137 responses for Georgina being collected.

8. CONCLUSION:

This project identified three strategies to assess the potential for service efficiencies for the Town of Georgina Fire and Rescue Services and the Town of East Gwillimbury Emergency and Community Safety Services. In addition, as part of the project scope, both Fire Master Plans were updated with a focus on the Towns' growth projections. An

in-depth fire fleet services study was also undertaken to supplement the ESCI final report.

The study concluded that both communities are well serviced by their fire and emergency services departments. While the study does not recommend consolidating the two fire departments, it does identify opportunities for shared services. This would potentially bring both municipalities in further alignment regarding their policies, procedures, data management, and other components. A consolidated composite department remains of interest to both municipalities.

A similar report and recommendations will be considered by both Councils.

APPROVALS

Prepared By:	Olga Lawton Manager, Corporate Strategy and Transformation
	Maureen McCauley Consultant
Recommended By:	Ron Jenkins Director of Emergency Services, Fire Chief
Approved By:	Ryan Cronsberry Chief Administrative Officer

Attachments:

Attachment 1 – ESCI Final Report “Innovation and Modernization of the Fire Services for the Town of Georgina and the Town of East Gwillimbury”

Attachment 2 – Mercury Executive Summary and Report “The Town of Georgina and the Town of East Gwillimbury Joint Fire Fleet Services Alternatives Assessment”

Attachment 3 – Refreshed Fire Master Plan

Attachment 1

Emergency Services Consulting International (ESCI) Final Report – Comprehensive Joint Fire Services Review

"Innovation and Modernization of the Fire Services for the Town of Georgina and the Town of East Gwillimbury"

Report No. GFRS-2023-0001
February 15, 2023
Total pages - 180

Innovation and Modernization of the Fire Services

for

the Town of Georgina

and

the Town of East Gwillimbury

Ontario, Canada

January 27, 2023

Emergency Services Consulting International
Providing Expertise and Guidance that Enhances Community Safety

Acknowledgements

Emergency Services Consulting International (ESCI) would like to acknowledge the input and support of East Gwillimbury and Georgina's Mayors and Councils, their senior and administrative staff and the personnel of the East Gwillimbury and Georgina Fire Services.

Project Team

Ron Jenkins, Georgina Fire Chief
Rob McKenzie, East Gwillimbury Fire Chief
Olga Lawton, Georgina Strategic Initiatives
Maureen McCauley, Project Advisor

ESCI would like to recognize other individuals from agencies external to the two towns whose insights were also valuable in our gathering a complete picture of the two organizations; we appreciate their input.

Executive Summary

Fire departments across North America are being challenged to rethink how they approach the services they provide to their communities. Both the Canadian Association of Fire Chiefs (CAFC) and the International Association of Fire Chiefs (IAFC) have identified that cultural, behavioral, and environmental changes over the past few decades have created opportunities for the industry to review, if not rethink, what services they provide to the community and what it takes in resources and finances to provide those services. (Reports from both organizations on these issues are appended to this report.)

In addition, motivations of greater efficiency and cost savings at all levels of government are also catalysts for sometimes difficult evaluations of how government provides services. Lastly, potential demographic growth in both communities, more so in East Gwillimbury, means changes are coming. So how should local fire departments put all of this together in a credible, deliberate manner that provides long-term reliable value to their communities with a modernized fire department?

The Towns of Georgina and East Gwillimbury have acknowledged these issues and have chosen to update their Fire Master Plans as well as examine the opportunities for moving their fire departments into the future. In this report, the fire departments of both towns are considering three possible directions of moving forward:

1) Maintain their individual identities as standalone organizations
2) Maintain their individual identities as standalone organizations and share some services
3) Pursue a consolidation that creates a single fire department organization serving both communities.

Pros, cons, impacts, and expectations of each of the options are comprehensively outlined in the following report along with a simplified pros/cons table at the end of the report breaking down various organizational areas of responsibility that include governance, management, administration and planning, capital assets, finances, operations, education and fire prevention, training, human resources, and corporate shared services.

From a practical evaluation perspective, the report fundamentally uses the primary decision point to be the question of the respective fire departments maintaining their individual identities versus a consolidation of the two organizations. Each of the studied areas were evaluated for both positive and negative impacts of each of the options and compared against the added value that would be received via a consolidated organization.

The main advantage to the first option of each department maintaining its own identity can be summarized in that each department can retain its own values, culture, and community accountability. The fire department retains the character desired by the local community. The main weakness is that the benefits of a larger organization are not as available. In the second option, all of benefits of the first options are retained with the understanding that there could be some financial and efficiency gains through the sharing of services between the two towns. The main weakness is that shared control must be coordinated between the two communities.

In the third option, the primary benefits to a consolidation would be potential economies of scale, efficiency improvements in the service delivery models and functional depth being

increased which could help with future cost avoidance. The main weakness is that loss of local identity and a coordinated shared control that exceeds what would be required in option two.

When ESCI performs studies on departments considering some form of consolidated service delivery, there is hope that a thorough analysis will arrive at a conclusion that would make elected official decision-making fairly straightforward. The analyses would either conclude that it is obvious to consolidate as the value gained would greatly exceed whatever losses would be incurred, or it is obvious to not consolidate, that is, the expected value gain would not exceed perceived losses. There are then those situations where the gains or losses do not significantly outweigh each other. In ESCI's opinion, this is where Georgina and East Gwillimbury find themselves.

During the study, ESCI noted differences between the towns such that it was not clear that the benefits of a consolidated organization would not outweigh what would be perceived as losses. Complicating the decision-making factors that are measurable, such as data, need to be weighed against factors that are not measurable, such as culture change. Differences, such as service prioritization, organizational approaches, and local preferences, while often present in organizations wishing to consolidate, need to be reconciled. These are factors that ESCI noticed between the organizations and would require greater consideration for consolidation. ESCI did not identify significant value increases in response or financial metrics that could not be reasonably achieved through each department maintaining its own identity and pursuing shared services. In summary, while some benefits could be gained from a consolidation, they may not be significant enough in comparison to the challenges and losses that would be experienced.

ESCI does feel that both towns retaining their individuality and sharing services (option 2) is the option that allows for a retention of both town's pasts, cultures, and current philosophies while opening the door to greater interaction between the two departments. When the two organizations are successful in expanding services, they can return to review the benefits of consolidation at a future time.

Table of Contents

Acknowledgements 1
Project Team 1
Executive Summary 2
Introduction 6
Background 6
Project Approach 8
Assumptions 11
Challenges 12
Methodology 12
Three Lines of Defense 13
Re-imagination of The Modern Fire Service Organization 14
Recognition of Industry Evolution 14
Thinking Differently 15
The Composite Organization 19
Adaptation of Workforce 20
Deployment of the Three Lines of Defense 23
Equity, Diversity & Inclusion (EDI) 27
Moving Forward 28
Strategy 1: Modernized Standalone Department 29
Introduction 29
Georgina 30
East Gwillimbury 32
Strategy 2: Modernized Departments with Shared Services 35
Shared Services Summary 35
Opportunities 35
Strategy 3: Modernized Consolidated Composite Department 47
Organizational Overview 47
Organizational Structure 50
Finance 64
Cost Allocation 74
Potential Funding Scenarios 76
Sustainable Community Workforce 80
Organizational needs of a composite department 80

Redefining “Operational” Staffing 84
Modern and Composite Service Delivery 87
Data Collection, Visualization, and Utilization 91
Technology for Improved Community Outcomes 91
Summary Consolidated Fire Service vs Modernized Standalone Departments 93
Community Survey Results 101
Appendices 103
Appendix 1 - Definitions and Abbreviations 103
Appendix 2 - Table of Figures 104
Appendix 3 - Cost Allocation Methodologies 105
Appendix 4 – Implementation Strategy Sample – Consolidated Composite Department 111
Appendix 5 - Graphics 126
Appendix 6 - Canadian Association of Fire Chiefs White Paper 126
Appendix 7 - International Association of Fire Chiefs White Paper 126

Introduction

Background

In spring of 2022, the Town of Georgina ("Georgina") and the Town of East Gwillimbury ("East Gwillimbury") contracted with ESCI to update and develop a report that would provide direction towards the modernization of both communities' emergency services. The work included updates to each community's existing Fire Master Plans (FMPs) as well as exploring innovative ideas as to the modernization of the service. Of particular interest was the assessment of opportunities available for modernization of the two standalone departments, as well as the potential consolidation or amalgamation of the two communities' fire and emergency services.

With some provincial guidance encouraging modernization in general within the municipal sector, the two communities were interested in the feasibility, benefits, and processes for future opportunities.

The final deliverables of this project include:

1) Fire Master Plan Updates with modernization component recommendations for each community
2) A dedicated report on Innovation and Modernization of the Fire Service to target three elements:
    a. The modernization of the individual fire and emergency services departments
    b. A model of the individual and modernized fire and emergency services departments remaining as is while sharing services between them, and
    c. A consolidation or amalgamation of both departments based on a single composite fire and emergency services department between the two communities

Data collection was undertaken by both departments (e.g. asset information, financial data, internal/external agreements, etc.).

In total, more than 50 virtual and in-person interviews and group discussions were arranged for the project consultants to seek input from a wide range of stakeholders:

- 14 members of both Town Mayors and Councils
- 12 senior staff members
- 13 Fire Department management members
- Full-time and paid-on-call/volunteer focus group discussions (four meetings)
- Association representatives
- 9 external agencies

In addition, public information meetings were held for each community (June 28 in East Gwillimbury and June 29 in Georgina). The sessions were livestreamed and the recordings have been posted on the Town's website.

For the purposes of seeking further public input in a convenient manner, an online survey was prepared and released in advance of the public information meetings. The survey remained open until the end of July and resulted in 100 responses for East Gwillimbury and 137 responses for Georgina being collected.

In late June, representatives from ESCI were present for a three-day site visit. This in-person engagement was intended to provide the consultants with an opportunity for site tours to assess first-hand the fire stations, equipment, technology and local geography.

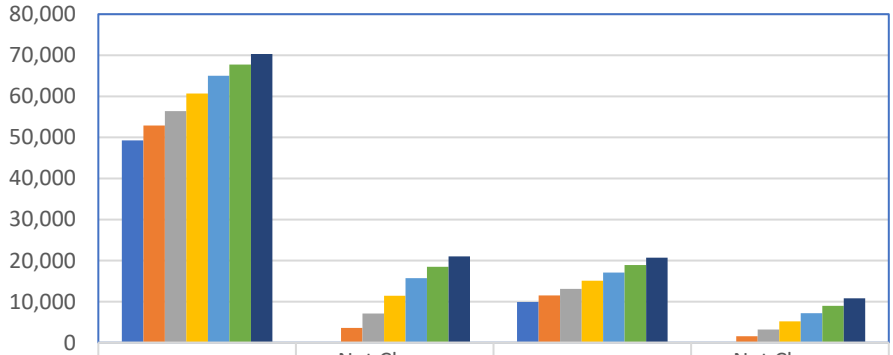
This allowed the consultants to gauge the overall operations of each department.

Project Approach

The project's main objectives were providing direction to both fire and emergency services departments going forward. The York Region Official Plan had recently identified East Gwillimbury's growth potential from its existing population of approximately 37,000 to approximately 125,000 by 2051. Georgina's population (49,000), which is currently larger than East Gwillimbury's, is also scheduled to grow to 70,300 by the same time. The combined population is expected to be near 200,000 by 2051. Given the growth projections for both municipalities, it's critical that fire and emergency services develops a plan to coincide with this growth.

Below are projected population numbers:

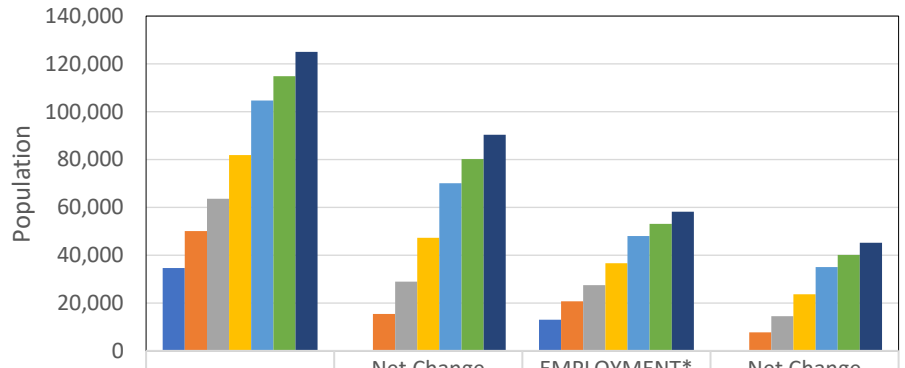
Figure 1: Projected Georgina Population/Employment Growth[1]



	POPULATION	Net Change (2021)	EMPLOYMENT	Net Change (2021)
2021	49,278		9,900	
2026	52,900	3,622	11,500	1,600
2031	56,400	7,122	13,100	3,200
2036	60,700	11,422	15,100	5,200
2041	65,000	15,722	17,100	7,200
2046	67,750	18,472	18,900	9,000
2051	70,300	21,022	20,700	10,800

[1] 2022 York Region Official Plan, https://www.york.ca/york-region/regional-official-plan

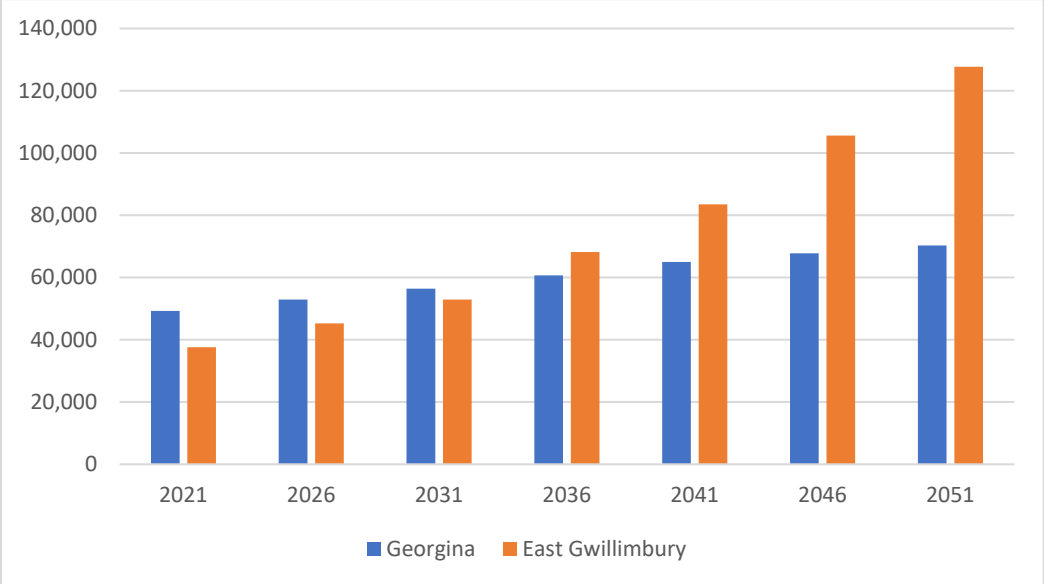
Figure 2: Projected East Gwillimbury Population/Employment Growth[2]



	POPULATION*	Net Change (2021)	EMPLOYMENT**	Net Change (2021)
2021	34,637		13,000	
2026	50,100	15,463	20,732	7,732
2031	63,600	28,963	27,482	14,482
2036	81,900	47,263	36,632	23,632
2041	104,700	70,063	48,032	35,032
2046	114,850	80,213	53,107	40,107
2051	125,000	90,363	58,182	45,182

The chart below represents a comparison between population projections in Georgina and East Gwillimbury based on York Region Official Plan data. The graph indicates that the population of both municipalities could potentially equalize just after 2031.

Figure 3: Combined Population Projections



[2] 2022 York Region Official Plan, https://www.york.ca/york-region/regional-official-plan

While it is often thought that modernization is largely technological or something that is measurable, it can also be something that is intangible and reflects a modernized philosophy of service. There is no question that the number of fires across the country have steadily declined over the past several decades. This is due to increased fire and life safety awareness and new detection and suppression technologies. However, based on the 2017-2021 statistics provided by the Office of the Fire Marshal, Georgina and East Gwillimbury have not seen the same trend.

Georgina and East Gwillimbury fire and emergency services departments have established three possible directions and these three options have been established as objectives to be evaluated. They are:

- remaining as two separate modernized standalone departments;
- remaining as two separate modernized standalone departments with shared services; or
- consolidate into one composite department.

Broadly speaking, the report uses the first possible direction to outline the 21st century approach to fire service modernization as well as the specific applications of these concepts in each department's master plans.

Option 1: Modernized Standalone Departments

In the modernized standalone emergency services department, each department retains its identity as a division of the town's local government overseen by that town's elected officials. The modernization of the emergency services department includes the incorporation of not only modern technology and practices but the incorporation of organizational concepts that reflect the current culture and latest practices of excellence.

Option 2: Modernized Standalone Departments with Shared Services

This option incorporates all the elements of the first option but includes the possibility that sharing some services between the organizations could provide some efficiencies and/or cost savings.

Option 3: Consolidated (Amalgamated) Composite Department

In a consolidated composite department, both organizations combine into a single organization overseen by a joint oversight governing body comprised of representatives from both communities. In this option, both organizations combine and functionally become an independent organization responsible to a single fire chief that is accountable to the joint governing body and each town's elected officials providing formal oversight. Funding support for this new composite department comes from a cost allocation formula agreed upon by both towns.

Assumptions

The Georgina and East Gwillimbury project team provided assumptions that were to be used in ESCI's analysis of the options however, the assumptions were intended to be a guide and not necessarily restrict innovative approaches. Those assumptions were:

- One consolidated composite department would utilize "one employer"
- Fire stations would remain the property of each respective municipality
- The tangible capital assets would be inventoried at the onset and then pooled
- The composite department model would be maintained under a consolidated department analysis
- There would be no job loss for full-time staff, paid-on-call staff or volunteers
- The analysis of a consolidated composite department will have a functional program focus on the three lines of defence (education, enforcement, response)
- Consideration will be given to potential alternate sharing arrangements for localized specialized services
- Other assumptions, as identified by the project team, stakeholders and consultants throughout the project

Challenges

The modernization of emergency services departments is often confined to the evaluation of operations, technologies, and equipment as these tend to be the most tangible and visible. Consequently, they are the easiest attributes to grasp. The fire service has long histories and traditions that are often desired to be preserved as they are one of the few unchanged elements of a community that create links to the cherished past. Consequently, departments often find that operational changes and technology upgrades that are valuable from a service delivery perspective, can be implemented or incorporated while leaving the less tangible organizational culture and its history intact. This long history and traditions should be embraced, but not prevent the organizations from moving forward.

The challenge for the modern fire service is adapting to an expanded mission that will still include its original purpose but due to cultural change and successful fire protection efforts include new purposes, ways of conducting business, and organizational cultures while still being prepared for a fire risk that will never be completely eliminated. The Towns of Georgina and East Gwillimbury are progressive in evaluating options that accomplish this.

Modernization does not include just new tactics, technologies, and equipment but entails organizational adaptation, atypical service delivery models, and making sure adequately trained resources have what is needed to move forward.

Methodology

ESCI's approach to the project was broken down into several steps that began with understanding the existing organizations, soliciting stakeholder input about the general future of the emergency services departments, updating existing master plans, looking at possible options to move forward and then providing a path to consider for moving forward. To begin understanding the existing organizations, ESCI requested numerous organizational documents that included policies, business and operational practices, finances, community demographics, resource inventories, and compliance requirements. In addition, response, financial, and geographic data were also requested. Through the diligent work of staff from both departments all of this documentation, information, and data requests were uploaded to a webserver that the entire project team was able to access in record time.

As a part of the project initiation, ESCI began constructing community survey interviews and scheduling over fifty stakeholder and stakeholder group interview sessions. Community interaction began with evening online presentations to community members and was followed up with online surveys that were open for approximately six weeks. In late June, a team of three ESCI consultants, including one from western Canada, visited both towns for one and a half days of meetings, in-person interviews, and visits to the fire halls.

Once this initial assessment and information uploads were complete, ESCI's next step was to update each community's Fire Master Plans (FMP) last completed in 2016 and 2017. The new FMPs were to include updated figures and updates to recommendations that were part of the prior plan. In addition, ESCI added "modernization" elements to applicable sections that provided suggestions and recommendations on how the emergency services departments could modernize themselves.

Lastly, the project analysis was to also provide information and suggestions on a modern concept of improving service and efficiencies by combining both communities' fire and emergency services departments into a single larger organization.

Three Lines of Defense

Rather than a single focus on fire suppression activities, a foundational element of this study is the Office of the Fire Marshal and Emergency Management (OFMEM), three lines of defense in relation to servicing the community. As communities grow, OFMEM advocates incorporation of all three lines of defense in order to keep communities safe. The three lines of defense include:

Public education is the key to mitigating the fire and life hazards before they start. In addition, changing the community's attitudes and behaviors as it relates to fire safety. This line of defense help Ontarians understand that working smoke alarms save lives.
Examples**:** workshops, open houses and demonstrations, school presentations to children, persistent reminders through signage and local news media, etc.

Inspections and enforcement is a requirement to ensure that community is in compliance with the Ontario Fire Code. The code requirements are there to protect community and firefighters from the impact of fire.
Examples: scheduled inspection of identified occupancies, smoke/carbon monoxide alarm programs, new construction inspections, etc.

Emergency response is there to address all hazards in the community, not just fire. The fire department should be prepared to respond in an efficient and effective manner to mitigate the emergencies.
Examples: fire response, medical calls, motor vehicle collisions, specialized rescue, confined space rescue, etc.

Re-imagination of The Modern Fire Service Organization

The contemporary fire service's rate of change and associated impacts are exponentially growing. What took the industry years to achieve can now be done in months. The changes experienced over the last fifty years will be achieved in a fraction of that time. Change is occurring at a much faster rate than ever before. The leaders of a modern fire service must be proactive and work in an organizational environment ahead of this rapid growth.

To move the industry, leaders must consider the fire service tradition and the modern community firefighters serve. The success and sustainability of modern organizations hinge on the ability to be proactive and future-thinking while mitigating the challenges at the forefront. This creates an opportunity to achieve a primary objective: to create a community perspective that the fire service provides both traditional and non-traditional services in a community-centered way. By executing this objective, fire service organizations can begin breaking down barriers, defeating threats to sustainability, and filling community gaps with measurable and recognizable community outcomes.

Leading organizations both proactively and reactively is not a simple task. It will be essential to address emergency services and response updates while also considering the practices of reducing community risk, establishing a change-minded culture, developing intentional internal and external partnerships, increasing data analysis practices, and implementing new applications of technology. Leaders will need to think differently about how organizations define firefighters, their roles, and their purpose in communities. When departments begin to align cultural changes with a balanced community risk mitigation and emergency response, reimagined modern fire services are born.

Recognition of Industry Evolution

Fifty years ago, defining the fire service was straightforward. The industry was built upon the foundation of activities reactive to the community environment. The industry's participants, mainly firefighters and the citizens they served, were aligned on service-delivery priorities and the needs for the department. When the community called for help, the firefighters responded quickly and mitigated the hazard, primarily fire.

Over the last fifty years, however, the fire service experienced changes. Those changes included the introduction of 9-1-1, improvements in personal protective equipment, firefighters riding inside moving apparatus rather than outside, lack of or reduction in provincial and federal funding organizational structure, different service delivery models and due to aggressive fire safety awareness efforts, a reduction in the number of actual fires. The old fire service adage, "one-hundred years of tradition unimpeded by progress," cannot be farther from the truth anymore. Out of survival, the industry is recognizing the growth and change occurring in the communities they serve and has adopted a culture where tradition and progress now go hand in hand.

The future of the fire services is in the hands of today's leadership generation. The 2022 and beyond leadership generations will likely manage more change than many of the past generations combined. To prepare the organizations for tomorrow, the leaders must address not only the issues presented today but also the issues of tomorrow. They are at a critical intersection for which they must choose to accept a more traditional approach to service delivery or begin thinking differently.

Thinking Differently

As Peter Drucker once said, "The best way to predict the future is to create it." To reimagine the modern fire service organization, we must begin creating it today by thinking differently. Creating sustainability in fire departments requires planning and execution so that future generations of firefighters are not threatened by today's change. However, fire chiefs do not have a crystal ball to provide unwavering insight.

First, thinking differently revolves around matching broader community needs with appropriate and effective resources, not just fire safety. Department and community leaders who think differently will create a sustainable fire service that not only responds to fire emergencies but leverages the fire service brand to view the whole community as an opportunity for prioritizing services.

Second, thinking differently means the fire service can embark on a re-identification to improve deployment. Re-identification does not require breaking away from traditional values and branding. It means rethinking the fire department's mission, purpose, and position. As an example, in 2021, Mesa Fire & Medical Department in Mesa, Arizona, changed its name. The department included "Medical" to account for more than 75% of responses to EMS call types. Additionally, their mission began to creep toward training children on CPR, improving outreach around safe driving and installing safety devices for elderly community members.

Third, to think differently, leaders first need to address the perception of the fire department's value and redefine the firefighter. Fire departments across Canada and the United States are threatened by decreased value perception, lack of provincial or federal funding, and recruitment difficulties, just to name a few. Using elements of community risk reduction programs, fire and emergency services departments can conduct activities that provide community value and recognizable outcomes. Putting redefined firefighters in the forefront of positive change institutionalizes a community's reliance on their community fire service. When communities begin to recognize the added value firefighters provide in addition to emergency response, they create sustainability for the industry.

Fourth, when departments begin identifying community needs and prioritizing resource deployments, challenges arise. These instances are excellent opportunities to explore alternative service-delivery models. When departments and communities collaborate, strategic partnership possibilities become visible. Modern fire service organizations will experience challenges to the full benefits of effectively and efficiently meeting community needs without fostering and leveraging partnerships. These partnerships improve outcomes, decrease duplication of efforts, improve efficiency, and decrease the workload of the fire department staff.

Firefighter Identity

Redefining the firefighter is an essential aspect of creating the future. The demands on today's fire department employees are in stark contrast with the past. The physical, social, technological, and emotional environments are so much different today. Firefighters are no longer primarily fighting fires. Today, firefighters provide social services in conjunction with emergent and non-emergent services. The greatest characteristic of the fire department employee is no longer to be the strongest and bravest man in the community.

The primary requirement of today's firefighters is empathy for their fellow humans. A modern fire service organization will support this environment through updates to facilities, hiring practices, recruitment, and retention efforts needed to align with the reimagined firefighter. People of differing backgrounds, cultures, and professions remain engaged with an organization's mission when they feel included in collective progress.

From emergency medical incidents to aiding a family's rehousing after a fire, social service is a top priority for community needs. When departments work to hire a diverse and inclusive workforce, they experience success in achieving the mission. Community members in need seek out assistance from people with similar backgrounds and communication methods. Gaining community support and future sustainability means redefining the firefighter and placing increased value on soft skills such as compassion, patience, and understanding.

Culture Strategy

To be successful, however, leaders will need to intentionally address the behaviors of the organization. Creating a change-culture is vital to the organization's future. Chief Alan Brunacini once said that firefighters hate two things: change and the way things are. Labor associations, elected officials, department leaders, and the general staff must be aligned on the direction and reason for organizational change. Implementing the reimagination of the modern fire service organization principles will require strong leaders and coordination of change agents at all levels.

Deploying change requires people, and people are the future of the reimagined fire service. Because of today's stresses on diminished value perception, funding uncertainty, and recruitment difficulties, the fire department staff is stressed. The daily exposure to stressors in both administrative and operational environments is now directly tied to increased rates of cancer, behavioral health issues, and other medical challenges. The health and wellness of the workforce is a key component of sustainability.

Today's leaders must address physical and emotional health. From the processes and procedures around firefighting equipment cleaning and transportation to stress-debriefing activities, physical fitness, and routine counseling services, the modern fire service will have to think differently. Additionally, creating a culture of change will also require a cross-organizational culture of open-mindedness, acceptance, and discussions on topics not generally spoken openly about in fire halls.

Technology/Data

Lastly, many of the topics discussed above revolve around change, workload, efficiency, and sustainability. Leveraging technology and data in the reimagined fire service lays this foundation. Using technology and data goes far beyond incident reporting. The topic addresses mobile data sharing, field data collection, community data input, data analytics beyond response performance, and data-driven decision-making. Technology, if planned and deployed appropriately, can reduce operational and administrative workload significantly. Using data analysis in non-traditional ways can provide early indicators for employee stress and burnout. The reimagined modern fire service will use technology and data throughout the organization in meaningful and practical ways.

Community Risk Reduction

Modern fire service organizations can articulate how to think differently and adopt a broader view of the fire service through community risk reduction. Community risk reduction (CRR) is not code enforcement and public education. Instead, it is a whole-organization approach to providing programs and services to best meet community needs. Embracing this broader view and applying the models of CRR, elements such as fire suppression, medical response, technical rescue, recruitment, incident command, and functional fitness all exhibit ties to improved community outcomes.

The real success of a modernized and innovative organization is rooted in data-driven risk assessments. Incremental risk assessments, starting small and growing over time, will provide valuable insight into the community's needs. The risk assessment can guide organizational and community priorities, resource deployment, training academy curriculums, social media, incident command strategies, functional fitness, human resource practice, and policy. A good risk assessment starts small to answer specific questions and then naturally grows over time.

The fire service industry is also beginning to measure everything. From the time staff members spend watching an online training video to the time it takes crews to dress out and roll an apparatus. Slow turnout times and skipped training may have measurable impacts on community outcomes. Thus, departments are entirely on board with the adage, "what is not measured cannot be improved." However, can leaders genuinely articulate why departments use many benchmarks and performance analytics? Can they paint an accurate picture of community opportunities and challenges by visualizing these benchmarks across a timeline?

To transition toward thinking differently, leaders should first consider a simple timeline. In the fire service, many of the timelines start with incident response and include downstream times like "dispatch," "enroute," and "on scene." In most cases, the departments' data stories end with marking a unit back "in-service." There are items, however, on the timeline that contribute to the pre-incident dispatch, which include incident "discovery," "notification," and "hazards and risks." Additionally, after units return to service, there is time for which the staff and community participate in the recovery process.

Department leaders and front-line staff understand that prolonged response times negatively impact the community. For example, a seventeen-minute initial response to a cardiac arrest would likely influence the patient's outcome. Additionally, a delay in incident discovery or a lapse between arriving on the scene and finding the actual emergency will also affect the outcome. The number of scenarios that influence outcomes is overwhelming.

Incident and Recovery

To simplify the thought process and gain a broader view using community risk reduction, modern fire service leaders should think about our communities using only two primary benchmarks. The first is “incident,” and the implications are straightforward. If organizations and community partners institute strategies to mitigate the hazards and risks before an incident occurs, that is called prevention. But unfortunately, loss of control, bad decisions, simple fate, and general human nature will always be excellent incident-generators. No matter how strong the prevention activities are, communities will always require an appropriately sized and reliable emergency response system.

When an emergency happens, the next key benchmark is “recovery.” The list of opportunities and influences for the department and community to successfully move across our timeline and achieve recovery are many. Considering a typical emergent response, an efficient response and move towards recovery is composed of a quick turnout time, a knowledgeable driver/operator, good crew management, and reliable training. In the same example, a delay caused by, a driver unfamiliar with the town park’s primary access points, poor training, missing equipment, and no follow-up will push “recovery” far down the timeline.

Thinking differently and using these two benchmarks, the goal here has a two-fold approach. Either modern fire service leaders prevent an incident’s occurrence or move “recovery” as close to “incident” as possible. In these terms, leaders can look at cardiac arrests, structure fires, pedestrian accidents, falls, and even chronic conditions in a different light. This approach also shows how training and credentials play a unique role, how strategic partners influence the timeline, and how risk reduction in the community is broader than just code enforcement. Additionally, thinking in this manner conveys how incident command, station design, firefighter fitness, and even code enforcement can impact recovery. From the timeline perspective, shrinking or swelling between the incremental benchmarks will push or pull “recovery” to or from the “incident”.

The figure below (full page in graphic in Appendix) visualizes many of the elements that may influence incident generation or shrink or swell the timeline.

To consider the factors that influence the road to recovery, leaders can start with some of the elements outside of our control. For example, the time of day and day of the week played a crucial role in discovery and notification. Additionally, the social factors, including population density, human behavior, and bystander assistance, pulled recovery closer to the incident.

An analysis can occur with any incident response and will expose opportunities and influences of community risk mitigation. Furthermore, leaders can visualize more of the elements contributing to community risk reduction along the timeline. A good risk-based code enforcement program may prevent incidents by mitigating hazards and risks, but it also shrinks the timeline between the incident, discovery, and notification. Concurrently, tying post-incident fire investigations into firefighter training, public engagement, and code enforcement provides impacts across the spectrum.

The Composite Organization

Innovative and modernized fire service organizations think differently to establish organizational priorities. They visualize the impacts of their activities and response performance to best meet the needs of the community. These fire service organizations use robust risk assessments to identify community needs and prioritize service and program delivery. Focusing on preventing incidents through public education and enforcement is only half the battle. Thinking differently and analyzing the response to identifying strategies to impact recovery is the other equally important half.

Emergency response, however, doesn't particularly mean large fire trucks with lights and sirens. Moreso, from a higher vantage point, a response doesn't need to always be emergent to be considered a response. Fire prevention and public education deal with severe hoarding issues, unsafe structures due to fire code issues, illegal grows, etc. Taking into account the guidance of a community risk assessment, a response can look very differently from community to community, and those filling the response position may not even be fire service personnel.

When modern fire departments develop organization and community priorities using risk assessments, forward-thinkers see the opportunity in alternative service and program models. Paid-on-call personnel can provide not only just-in-time service delivery but also services that meet specific community needs. However, the challenge is many paid-on-call personnel are not available for non-emergent needs, and an innovative fire service organization must look outside the box.

Partnerships

Community partnerships are a vital element of innovative fire service organizations. With limited staffing and resources, community partnerships provide an opportunity to decrease workload, increase efficiency, and avoid service duplication. Creative partnerships come in many forms and can provide a wide range of opportunities. For a moment, think about the reach that food delivery services could offer and, even more importantly, food delivery services that cater to the elderly or at-risk populations.

From a response diversion standpoint, integrating community service organizations and provincial resources into the emergency response framework can have significant impacts on a modern fire service organization. Through technology and policy updates within the emergency communications center, 9-1-1 systems can triage and prioritize emergencies and divert low-priority or non-emergent requests for services.

Using the 9-1-1 system's primary resources for routine needs mismatches resources to needs. Partnering with nonprofit or provincial organizations to begin mitigating frequent 9-1-1 system utilizers can increase the reliability of emergency response. Using data and technology can improve effectiveness and efficiency. Data analysis can provide historical patterns and predict future activity. Embracing mobile technology and simple automation can quickly match resources to community needs.

As an example, fire and paramedic services are called to an unknown problem at a residential address that is familiar to the crews. Upon arrival, and to no surprise, the elderly woman is not experiencing an emergent need. With the permission of the occupant and using that apparatus' mobile tablet, the company officer fills out a simple form outlining the situation and non-medical

needs. Upon submission, the local church's outreach representative, a nonprofit pharmacist group, and the local adult protective services organization are notified. A local fire service representative provides coordination and collaboration, the church provides a routine companion service, pharmacy volunteers make a recommendation around prescription needs, and social service begins oversight.

Matching community response and partnership is a vital part of the modern and innovative fire service organization. Viewing the whole community through the lens of risk-based service delivery, fire service leaders see the opportunities in partnering with organizations more suited to match the needs of individuals understanding that incident prevention and recovery-focused community response generate the greatest opportunities for improved outcomes. Modern, innovative fire service organizations understand the department's and community's priorities and best matches them to program and service delivery.

Adaptation of Workforce

The National Fire Protection Association (NFPA) publishes the standard that defines the knowledge and skills required to be a firefighter. NFPA 1001, *Firefighter Professional Qualifications*, is a standard used throughout Canada to guide recruitment, selection, and training. New firefighter candidates complete training hours and tasks through structured learning that consistently aligns the NFPA 1001. This standard is the foundation of being a firefighter.

Many times a year, ESCI conducts studies that solicit community feedback to develop strategic and master plans for public safety organizations. In that process, ESCI queries the community's expectations and service delivery priorities. Generally, most communities expect fast service, well-trained staff, and priorities focusing on fire suppression and ambulance transport. The community defines firefighters in the traditional sense and in alignment with NFPA 1001.

Furthermore, every child holds virtually the same definition as NFPA, just without the technical jargon. Throughout society, parents and teachers define firefighters as larger than life, brave, and always available for fire emergencies. Many children's books illustrate the same definition and generally include hose lines, pictures of equipment, and other components to drive a child's imagination. Therefore, the general public across both Canada and the U.S. are generally aligned in their perception of how fire departments define firefighters.

In a modern, innovative fire service organization, the leaders think differently and embrace the change while maintaining alignment with appropriate traditions. From recruitment to filling positions to retaining staff to serve the community, it is important to look at staffing in a differently light.

Recruitment

From the whole-organization perspective in the modern fire service, not all firefighters need to extinguish fires, perform emergency medical care, or operate in hazardous environments. Some firefighters are best suited for school-aged education, public engagement, code enforcement, and non-emergent incident response. The use of volunteer, paid-on-call, and part-time staff for emergency operations is well known but capturing the degree of this involvement in public engagement, education, and non-emergency interaction is much less tracked.

Across Canada and the U.S., fire departments struggle to recruit individuals to fill vacant firefighter positions, both career and volunteer. Fire departments are responding partially by discussing the role and definitions of firefighters and its impact on the practice of recruitment. Recruiting both traditional and non-traditional firefighters from the communities is important. Fire department members have more of a connection with the community when they serve familiar neighborhoods. During emergent and non-emergent activities, community members are more receptive to services and react more positively when familiar people are assisting. Furthermore, hiring members from the local community, while expanding diversity, also achieves more buy-in from the public. In one American state, leaders are discussing publicizing what firefighters actually do in the community beyond operations and recruiting both firefighters and the public to fill roles traditionally filled by non-operational staff.

Recruiting paid-on-call, part-time, and full-time staff to work within the non-emergency environment stabilizes workloads and increases progress toward measurable community outcomes. Trained educators from the local school systems, retired healthcare workers, social service professionals, and more can fill voids as modern “firefighters” and take part in the brand while increasing community capital.

Training

When innovative, modern organizations recruit from the community for modern firefighters, the next opportunity is to modernize the organization’s approach to member training. Just as recruiting from the local community achieves buy-in and positive outcomes, training personnel specifically on the community’s risk is equally as important. While a modern and innovative fire service organization uses a comprehensive risk assessment to drive program and service delivery, that program and service delivery is only as good as the training deployed.

As an extreme example, the Georgina and East Gwillimbury fire departments do not train and deploy resources to Lake Simcoe to mitigate rip currents as Florida departments do. Alternatively, Florida fire departments do not train for ice rescue and extreme hypothermia, as seen in Georgina and East Gwillimbury. These two contrasting communities do not need a comprehensive risk assessment to make these decisions however, there are many other elements that create contrast between communities that risk assessments expose.

With a comprehensive risk assessment, the department can better understand how people live, communicate, and travel. Risk assessments can outline the prevalence of certain medical problems, the instances of poverty and government assistance, and identity uniqueness between neighborhoods. Not only does the risk assessment drive the services, but it also drives member training.

Training academies and routine staff education should create a competency foundation based on industry standards, and risk assessment should fill in all the remaining gaps. From language training to guidance on navigating community health care challenges, training firefighters based on a risk assessment is highly recommended. Just as Florida and the Georgina/East Gwillimbury communities' water rescue resources are fundamentally different, so are the outputs of the community risk assessments and thus training requirements.

Once a modern and innovative fire department redefines the firefighter's role and finds firefighters with community connections and training through community-specific guidance, the community becomes a better place. The fire department personnel are working toward goals that they buy into and with a community that trusts them. The training and education the modern department provides incorporate data and perspectives to effectively achieve the best possible outcomes from and for the people we serve.

Community and Social Services Deployment

The modern fire service organization recognizes the changes in service delivery demands that have occurred over the past fifty years. When the fire department was first imagined, the profession's primary mission centered around fire suppression activities. Over the last fifty years, however, a shift in service demands and priorities have occurred pushing to a realignment effort with the community.

In progressive fire departments, leaders recognize the expansion from the traditional mission but continue to utilize the fire department brand to produce community outcomes. As an example, during the COVID-19 pandemic, fire departments across North America took part in community vaccination efforts.

Utilizing the components of community risk reduction, departments are moving forward armed with a risk assessment and continually utilizing data analytics, partnerships, and the new fire department identification to guide service delivery. Reimagined and modern fire service organizations, in addition to fire protection, have the potential to be more involved in community education and social services based on specific community needs.

As another example, the City of Charlottesville (VA) Fire Department embarked on an effort to reduce the reliance of community members on the 9-1-1 system for primary care. Using data to drive decisions, the department identified that a large percentage of responses were from only a few individuals in the city. In an overall effort to match appropriate services with individual needs, the department needed to reduce the emergency response value to incidents that did not require emergency responders. The Frequent 9-1-1 Utilizers Workgroup started off with a chief fire officer, a fire department data analyst, and a director of social services, all of which were city employees.

In the end, the group was comprised more of community partners and special-interest group advocates than city employees. The local hospital, local public health department, police department, volunteer rescue squad, community mental health board, nonprofits focusing on homelessness and hunger, and food delivery services all sent a representative to create community outcomes. It did not take long for the Charlottesville Fire Department to realize the best practice was to develop community and social service programs through partnership and collaboration. Modern fire departments do not do it all but they can foster relationships and work with community partners.

As documented above, the approach of community and social service is not about fire, fire prevention, or traditional deployment of services. The approach uses community risk assessment and reliable data to drive decisions. In many North American fire departments, leaders generally announce their departments respond to 67% medical calls and 33% non-medical. Unfortunately, this misrepresents the actual response performance in most communities. (Non-medical is any call for fire department service that does not require a patient assessment. This includes fires, gasoline leaks, stuck elevators, power lines down, etc. From 2019 to 2021, Georgina's medical/non-medical split was 66/34 and East Gwillimbury's was 53/47.)

In modern and reimagined fire service organizations, it is important to clearly articulate the actual response. Using data, staff hours, incident commitment times, and incident reports, a fire service leader will likely find that less than 1% of responses are actual fires that require extinguishment. This perspective opens up an opportunity to think differently and move beyond traditional fire service activities. Using round numbers as an example, if 10% of an agency's call load is commercial fire alarms, a commercial fire alarm mitigation program, service fee, and updated city policy may be in-store. If 10% of the medical incidents results from three addresses, then a collaborative partnership approach to matching resources with individual needs can gain large decreases in incident response workload.

The key here is that, although the fire department's identification is its greatest asset through branding, fire suppression does not necessarily need to be at the forefront. A good risk assessment and the robust use of data analytics can more appropriately align program and service delivery to reduce community risk. When fire departments begin intentionally working in the community and expanding their services, the organization's perceived community value increases, and in turn, the organization is more sustainable.

Deployment of the Three Lines of Defense

Since 1997, fire service organizations have been balancing the three lines of defense as set forth by Ontario's Office of the Fire Marshal. Ontario's approach establishes the framework that sets forth three measures intended to prevent fire and create safer communities. These provincial measures include public safety education, standards enforcement, and emergency response[3].

Subsection 2.(1) of the Fire Protection and Prevention Act states that every municipality shall participate in two activities. First, every municipality shall establish educational programs for fire safety and prevention. Second, every municipality shall provide fire protection services based on the community's need. The act continues to direct localities in clarifying the intent to provide services without creating an increased cost burden on the community [4].

Utilizing guidance set forth by the National Fire Protection Association (NFPA), localities can bolster their approaches to the three lines of defense. However, if municipalities enhance education and standards enforcement, then the communities may see reduction in fires.

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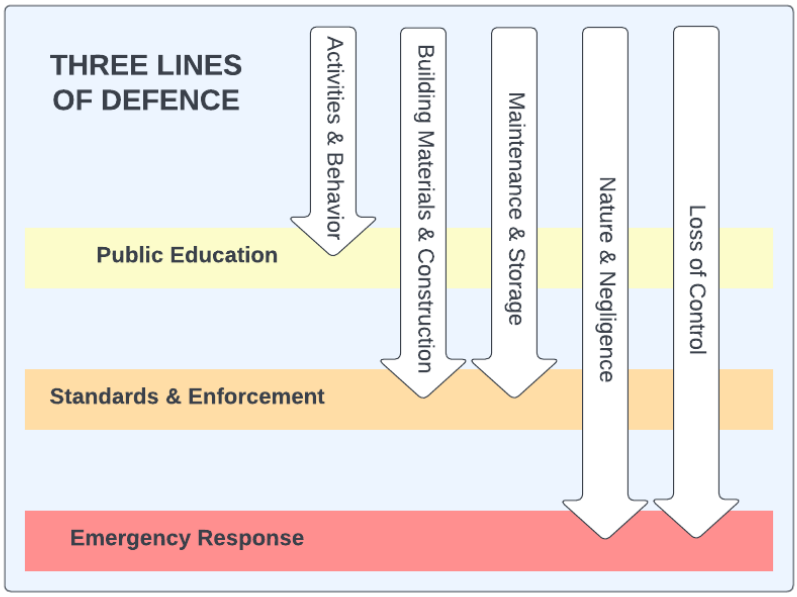
[3] Combining Forces, Maria Church, 1997
[4] Three Lines of Defense, an Integrated Approach to Fire Protection Services, Baines, 2020

Standards such as NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plans Examiner* improve code enforcement. These activities improve the use of building materials during the construction process and address proper storage and building systems maintenance. Additionally, NFPA 1035 *Standard on Fire and Life Safety Educator* creates improvements around initiatives for creating changes in activities and behaviors through public education.

Ontario's approaches to the three lines of defense improve efficiencies. However, there is a critical need to balance the inputs and outputs of lines one and two with the third, emergency response. The balance ensures that the level of effort and resources applied to emergency response balances the measurable mitigation achieved through education and enforcement.

The figure below ties back to Figure 4 which illustrates opportunities and challenges in applying the models of community risk reduction. In the illustration below, the three lines of defense each contribute individually to reducing the reliance on emergency response resources. Additionally, it shows how public education and standards enforcement influence community improvement.

Figure 4: Three Lines of Defense



Public Education (1st Line of Defense)

In modern and innovative fire service organizations, leaders should focus appropriate resources on public education initiatives based on data-driven risk assessments. Identifying community-specific risks can create extraordinary efficiencies in program and service delivery and match resources with needs. Public education is the first line of defense and is intended to change behavior, attitudes and alter activities to create a safer community. Behavior change is difficult but using a risk assessment to drive that change is critical to a department's success. Modern building materials burn hotter and faster and a modern fire service understands that risk of fire is much greater than it ever has been. Residents are required to have early notification of fire and a developed and practiced escape plan for a greater chance of survival.

The City of Charlottesville (VA) utilizes the Neighborhood Risk Assessment (NRA) which identifies critical community challenges in each of the nineteen neighborhoods. In a city of 50,000 residents within ten square miles, the data gathered supports granular analysis. Charlottesville firefighters and company officers consult the online NRA to frame community engagement by referencing the specific neighborhood. Each neighborhood profile exhibits languages spoken, health insurance, households with disabilities, internet availability, vehicle access, and more. Additionally, the neighborhood's risk-based engagement focus documents the educational topics needed to change specific behaviors.

Using data to drive public engagement and education focuses the initiative on the actual community need rather than the generic messaging. The risk assessment also bolsters the impact of the first line of defense by achieving the highest level of influence on human behavior change activity modification. Traditional approaches provide generic outputs that can be achieved with little effort. Modern and innovative approaches improve the effectiveness of public education, thus reducing the reliance on other measures.

Inspection and Enforcement (2nd Line of Defense)

Behavior changes and modifications to daily activities alone will not create the safest community environment. The application of building codes and standards begins to add a second layer of community protection. Building and fire codes address not only building systems design and construction but also the building systems maintenance and the ongoing use of the structure. This adds a high level of protection and guidance for residents, occupants and firefighters.

Code enforcement, guided by NFPA 1031, fills the gap between codes and human behavior. Plans review of new construction and community development ensures the final product will align with provincial guidelines but also allows modern and innovative organizations to identify potential risks and begin mitigation efforts through improved public education, internal training, and resource allocation.

Code enforcement through inspection, again following NFPA 1031, also exhibits opportunities for modern and innovative organizations. With the robust use of data and records management, fire service leaders can identify influential factors that allow emergencies to break through the first two lines of defense and prompt emergency response. The outputs of code enforcement activities should contribute to framing public education and thus improve both lines of defense.

In Henrico County (VA), the department’s fire prevention bureau analyzed reoccurring code violations. In an effort to both capture efficiencies in fire safety inspections and create safer commercial occupancies, the department created the Fire Prevention Associate Program. The program deployed public fire safety education to specific commercial occupancy types throughout the metropolitan area. In the form of a risk assessment, the data analysis and resulting community education reduced fire code violations, increased safety, and decreased the fire prevention bureau’s workload. This is an example of how the first two lines of defense can work together to reduce the reliance on emergency response.

Emergency Response (3rd Line of Defense)

Improved human behavior and addressing building system design and maintenance greatly improve the chances of preventing an emergency response. However, nature, negligence, and the loss of control generate incidents that require firefighter mitigation. No matter the effort applied to the first two lines of defense, communities will always rely on their firefighters' assistance. In Georgina and East Gwillimbury, firefighters not only engage in fire suppression but as an all hazard response agency respond to all emergencies as necessary.

Unfortunately, vehicles will crash, pedestrians will not look both ways before crossing streets, cardiovascular health will fail, residents will leave the kitchen while cooking, and lightning will strike. A well-prepared risk assessment will not only drive programs and services delivery in public education and code enforcement, but also focus emergency response resources typing, location, and availability. When the first two lines of defense fail, a robust third line of defense must be in place to provide emergency response.

Balancing the Lines

The balance of the three lines is also highly dynamic. The introduction of different populations' characteristics, behaviors, developments (such as industry), and practices changes the balance and reliance on individual lines of defense. The rapid growth, changes in demographics, populations' characteristics, behaviors, developments of one community may require an increase in emergency response resources, while the change in demographics in another community may increase the need for code enforcement. Using a risk assessment, however, will always provide insight and allow modern and innovative leaders to make data-driven decisions.

Organizations that inadvertently weigh too heavily on or ignore one single line will ultimately fall short of their community responsibilities. An organization will run inefficiently, damage its brand and credibility, and lose the connection with its community if they only rely on code enforcement and emergency response. Without communicating, educating, and engaging the public, the department's mission will likely fall short. The same holds true with ignoring the enforcement element. Departments can educate and respond, but without enforcement of codes and standards, the department will work beyond its capacity. Lastly, without emergency response, the community will experience unneeded loss when nature, negligence, and simple fate take control.

Ontario's Office of the Fire Marshal three lines of defense are critical elements in creating an efficient fire service in Ontario. Furthermore, the three lines must be balanced to match the community's current environment and also be flexible to adapt to change. When departments build robust first and second lines, there inherently is a lower reliance on emergency response. However, no matter the balance, all three lines are important to a sustainable organization and safe community.

Equity, Diversity & Inclusion (EDI)

A diverse, inclusive, and respectful workplace is one element of helping ensure a psychologically and mentally healthy work environment for all. In addition to creating a place where each member feels safe and valued, a workplace that recognizes difference and values the contributions made by all employees is more likely to attract and retain the best employees available. Within the existing departments, service to citizens does not change based on their race, gender, culture, personality, or lifestyle. The treatment of each other should be no different. The departments have the opportunity to refine their skills and abilities to extend the same compassion and care required of the fire service to those internal members that they work with each day.

A modernized department must integrate equity, diversity and inclusion (EDI) throughout their governance, operations, and programs. Through this, the department will recognize that diversity is an integral experience that includes diverse expertise, experiences, and perspectives. This is expressed in many forms, including, and not limited to culture, career, race and ethnicity, gender and gender identity, sexual orientation, socioeconomic status, language, region, national origin, religion, age, disability, political perspective, and veteran status.

It is critical to ensure that the resultant workplace is one where employees feel safe, protected, and valued. Creating a safe work environment means considering both the physical and mental health of the staff. Over the years, both departments have done much work to refine their processes and practices to protect staff in various firefighting and rescue scenarios. In fact, the fire service profession is unique in terms of what it requires of staff and what it exposes firefighters to. The toll it can take is often much more than physical; there are significant mental health consequences associated with firefighting work and the work environment. It will be essential that modernized departments build out a comprehensive Psychological and Mental Health Safety System so as to better connect the pieces of the organization focused on mental health and bolster the programs and resources to support the psychological wellness of staff.

As a component of an Equity, Diversity and Inclusion implementation plan, a modern department should undertake a process to understand the current state of EDI within the departments and complete a department-wide survey of all staff to identify existing culture and respectful workplace behavior, perceptions, and concerns. Once that is completed, the department should develop a strategy focused on diversity and inclusion as a component of the Health and Safety program. This strategy could act as a guide to incorporate a psychological health and safety approach, and inclusive and respectful workplace principles and goals, into their work, thinking and planning. The work outlined in the strategy would be intended to help the department align with corporate policies and assist in advancing EDI practices, support, and programs over the coming years. A model for an action plan can be found with the Commission on Fire Accreditation International.

Moving Forward

In reimagining the fire service, a modern fire service then needs to think differently about their mission, organization, and purpose. It includes how they approach management, organizational cultures, relationship value, and workforce adaptation. It includes an expanded focus on community risk, not just traditional firefighting, while deploying appropriate resources towards the three lines of defense.

Moving forward, the towns are paying attention to the economics and efficiencies of their fire and emergency services departments. As communities value good services with low costs, it is prudent to evaluate an organization's operations to see where there may be favorable changes that either provide the same service level but at a lower cost or provide a higher level of service at the same cost. Economies of scale, zero-based budgeting, and sharing of services are examples where these benefits may exist. The foremost sharing of service comes through a consolidation of both organizations so that both towns are sharing the same fire department.

The towns are examining three possible strategies for moving forward.

Strategy 1: Modernized Standalone Department

Introduction

In contemporary times, a standalone department must be efficient and cost effective in service delivery. However, measurements of success should also extend to areas such as authority, decision-making, identity, relationships, and effectiveness which carry non-quantifiable value that need to also be taken into consideration.

One possible option for the future is that both fire departments maintain their separate identities and progress individually. The advantages of this option are:

- Local community leaders with community input have final decision on the quality of their fire service
- Local fire department retains community identity
- All expenses are applied to the local community
- No issues to compromise on for the benefit of inter municipal cooperation
- A smaller organization can more easily adapt to unique community attributes
- Organization-wide training is easier to accomplish in smaller departments
- Can be easier to carry out shared services within community than within a region

In general, the disadvantages of this option are:

- Greater communication required for cross boundary cooperation
- Increased standardization challenges
- Less opportunities for employee growth
- Reduced opportunities for economies of scale savings, duplication of work (e.g. technology management, procurement, hiring/onboarding of staff, training, etc.), two CAs and limitations for a stronger response)

As individual departments, they will continue to modernize themselves, maintain their relevance and adapt to changing cultural expectations and demographic character in a way that is distinctive to the needs of each community. Current modernization discussions as set forth below are less about the latest tactics and equipment and more about how the modern fire service conducts itself among an increasingly rapid changing culture and community.

Georgina

In Georgina's updated Fire Master Plan (FMP) which were updates to the 2017 FMP plan, ESCI made the following recommendations for the Georgina Fire and Rescue Services in moving forward independently. See the entire FMP document for complete content:

1. **Service level monitoring:**

   ESCI recommends since GFRS's mission is to provide a service to the community, indicators of when the service models should be assessed are when the services show signs of strain. This is identified further in the report where the National Fire Protection Association (NFPA) recommends response times as the primary indicator of reliable service.

2. **Key Performance Standards development:**

   ESCI recommends that GFRS continue to be proactive in its philosophies of change assuming progressive postures that use data, regular community and staff interaction, and benchmarks that regularly evaluate its service model.

3. **Performance standards approval and adoption:**

   ESCI recommends the Fire Chief, with Town Council approvals, should adopt measurable performance standards for each of the three lines of defence.

4. **NFPA standards monitoring:**

   ESCI recommends the Fire Chief should monitor the progress of the changing NFPA 1710 and 1720 standards to the new NFPA 1750 and see if new applicable standards are produced.

5. **Establish and Regulate Bylaw update:**

   ESCI recommends the current bylaw, which is now 18 years old, should be reviewed and updated, as needed. At the least, the organizational structure outlined in Appendix 'B' of the bylaw should be updated.

6. **Accreditation:**

   ESCI recommends even without pursuing full accreditation, GFRS should strongly consider adopting the Commission on Fire Accreditation International (CFAI) model standard for fire service excellence. This would require staff time to be allocated to begin working towards the accreditation model.

7. **Communication:**

   ESCI recommends the fire chief should continue to keep open communication channels with both the community and workforce. When possible, the fire chief should keep all staff up-to-date on strategic objective timetables and implementation progress as well as continuing to involve the workforce in implementation processes.

8. **Growth monitoring:**

   ESCI recommends the Fire Chief should consider the establishment of organizational change trigger points associated with the growth of the community. When trigger points are met, the fire chief and town council should be aligned as to what the next action steps are.

9. Develop and maintain a Community Risk Assessment (CRA):

As directed by the Office of the Fire Marshal, complete the CRA by July 1, 2024 to replace the existing Simplified Risk Assessment (SRA). Maintain a CRA framework.

10. Preplanning:

ESCI recommends GFRS should continue to strive for including building and preplan data vehicle tablets in pre-fire operations.

11. Residential sprinklers:

ESCI recommends GFRS should continue collaboration with builders to offer residential sprinkler installation as a part of new construction.

12. Performance standards:

ESCI recommends GFRS should adopt performance standards that are consistent with community expectations and costs that would require incremental improvements of service delivery.

13. Annual service review:

ESCI recommends GFRS should continue annual reviews of service provision involving all stakeholders.

14. Tiered response:

ESCI recommends GFRS should do a joint engagement with the York Region EMS and the community to discuss EMS response expectations.

15. Monitor growth and service levels (station 1-8):

ESCI recommends GFRS should establish trigger points in alignment with response performance standards to determine when the Pefferlaw station should consider transitioning to some degree of career response models.

16. Fleet services:

ESCI recommends GFRS should continue previous report recommendations to determine feasibility of expanding fleet service depth or participating in a joint fleet services arrangement with another community or organization.

17. Emergency management:

Continue working with York Region on expanding the Emergency Management Program to address specific contingency plans for various hazards, technology improvements and expanding collaborative processes.

18. Automatic Aid:

ESCI recommends GFRS should expand its automatic aid agreements with the objective of creating an ERF (effective response force) that is compliant with NFPA standards.

19. Fire Underwriters Survey (FUS):

ESCI recommends GFRS should have an updated FUS survey performed.

20. Collaboration:

Continue exploring collaborative services with municipal partners.

East Gwillimbury

In East Gwillimbury's updated Fire Master Plan (FMP) which were updates to the 2016 FMP plan, ESCI made the following recommendations for the Emergency Community and Safety Services (ECSS) in moving forward independently.

1. **Establish standards:**

   ESCI recommends that, since the mission of ESCC is to provide quality service to the community, the fire chief should develop indicators of when the service models should be assessed are when the services show signs of strain. Department growth cannot be based solely on the NFPA response standards (1710 and 1720). Fire suppression triggers, such as turnout and response times, recruiting, retaining and ongoing attendance of paid-on-call staff, etc. are elements to be monitored for the signs of strain.

   In addition, it is recommended that ECSS use a variety of tools and programs, such as the Community Risk Assessment, statistics and data from the Office of the Fire Marshal and local data to determine appropriate Key Performance Indicators (KPIs) for the public education, prevention and training divisions.

2. **Establish a framework:**

   ESCI recommends that ECSS continue to establish a framework for departmental growth that is appropriate for a composite department in East Gwillimbury. It is recommended that ECSS use information gathered from recommendation #1 to assist with this framework.

3. **Obtain Council approval:**

   ESCI recommends the Fire Chief, with Town Council approvals, should adopt measurable performance standards/KPIs for each of the three lines of defence.

4. **Monitoring:**

   ESCI recommends the Fire Chief continuously monitor the department's overall performance based on the established and adopted standards.

5. **Bylaw amendment:**

   ESCI recommends the current Establish and Regulate By-Law, which is now 11 years old, be reviewed and updated as outlined in Section 8.4 of the existing by-law.

6. **Accreditation:**

   ESCI recommends that ECSS consider and pursue full or partial recognition of excellence accreditation with Commission On Fire Accreditation International (CFAI).

7. **Communication:**

   ESCI recommends the fire chief should continue to keep open communication channels with both the community and workforce. When possible, the fire chief should keep all staff up-to-date on strategic objective timetables and implementation progress and involve the workforce in the implementation processes.

8. Develop a Community Risk Assessment (CRA):

As directed by the Office of the Fire Marshal, complete the CRA by July 1, 2024 to replace the existing Simplified Risk Assessment (SRA).

9. Maintain a CRA:

Maintain a CRA framework to be used as a tool for the Town of East Gwillimbury to support the strategies of the organization, determine risk mitigation requirements, and provide justification during annual budget process.

10. Technology:

ESCI recommends that ECSS should continue to equip and upgrade applicable apparatus with adequate technology and data access to engage in preplanning and on scene operations.

11. Residential sprinklers:

ESCI recommends the fire chief and the fire prevention staff continue to work with all stakeholders to promote increased use of residential sprinklers.

12. Staffing:

ESCI recommends that ECSS monitors staffing levels and take a modernized approach to training that includes advanced adult educational principles, course design and development, and oversight of the varied technical skills and abilities required to meet identified performance standards as approved by Council.

13. Certification and development:

ESCI recommends that ECSS should continue to support and develop all staff to ensure service levels are met and adequate succession planning is considered. ECSS should also ensure that all staff complete and maintain relevant certification.

14. Medical response:

ESCI recommends that ECSS continue their engagement with York Region Paramedic Services and the community to discuss medical response expectations and modify as required.

15. Operational review:

ESCI recommends that ECSS should continue to monitor KPIs, in collaboration with all stakeholders, to determine key trigger points for strategic decisions related to operations are made pertaining to the three lines of defence.

16. Space needs analysis:

ESCI recommends that ECSS should conduct a department-wide space needs analysis to identify potential space requirements as the organization expands. These space needs analyses can be accomplished through consultant projects ahead of a project to help determine potential costs or they can be accomplished during the design phase of project in process.

17. Fleet services:

ESCI recommends ECSS should continue previous report recommendations to determine the feasibility of in-house fleet services as well as joint services with other departments.

18. Emergency management:

Continue working with York Region on expanding the Emergency Management Program to address specific contingency plans for various hazards, technology improvements and expanding collaborative processes.

19. Automatic Aid/Fire Protection Agreements:

ESCI recommends that ECSS create an automatic aid agreement with Georgina Fire and Rescue Services along Ravenshoe Road and other appropriate areas. Investigate the potential for agreements with other neighbouring communities, such as Bradford West Gwillimbury and Central York Fire Services.

These agreements create an opportunity for the closest unit to be dispatched and create quicker responses, establishing higher ERF (effective response force).

20. Budget:

ESCI recommends East Gwillimbury continue to develop healthy budgets that are consistent with best practices and identify its financial philosophy for these types of expenditures and do future calculations to determine the least likelihood of future capital expenditure adjustments versus having reserve funds available when expenditures are to be made.

21. Shared services:

ESCI recommends that shared service opportunities be considered, such as:

- Automatic Aid
- Special Teams/Technical Rescue
- Fleet Services
- Training
- Fire Prevention and Education
- Group Purchasing
- Fire Station Sharing
- Emergency Management

Strategy 2: Modernized Departments with Shared Services

Shared Services Summary

In addition to the modernization elements of Strategy #1, there are a number of opportunities for Georgina and East Gwillimbury to share services with each other or other organizations.

Historically, the sharing of services in government organizations has been confined to sharing within a local government. Individual departments may share some of their resources and expertise with other departments. The belief is that people look for government to provide services within their community boundaries, on a broad tax funded basis. This community orientation has generally limited the amount of sharing that takes place between separate communities. Sharing of services beyond the organization can create the perception that taxpayer funds are going outside the organization they are paid too.

Within the past several decades, Ontario municipalities have recognized the advantages that may be available through the sharing of service delivery. Indeed today there are many examples across the province of inter municipal shared services, including fire and emergency services. Benefits vary on a case by case basis, but can include efficiencies, cost savings and opportunities that are available to larger scale operations.

A common example of this to illustrate the point is mutual aid plans between fire departments. In a large-scale incident resources beyond a single community may be required to adequately mitigate. In the case of Georgina and East Gwillimbury, neighboring communities from York Region send their resources to assist with the incident at no expense to the community being affected. They do this with the understanding that if the situation were to reverse, they would be able to receive the same return benefit at no expense. In other words, it does not make economic or practical sense to have enough resources to adequately deal with every situation a fire department may encounter in an independent fashion. It does make sense to share resources where community risk reduction is improved and/or efficiencies can be gained.

Opportunities

Areas where fire departments regularly share services that could be considered by Georgina and East Gwillimbury are:

- Automatic Aid
- Special Teams
- Fleet Services
- Training
- Fire Prevention and Education
- Group Purchasing
- Fire Station Sharing
- Emergency Management

It is important to remember that the likelihood for success of sharing fire and emergency service in a municipal setting is if the fire department can share a service that they alone use. If a fire

department wants to share a service that is already shared with other departments within the town, the sharing complexity increases.

Automatic Aid

When a member of the community calls the fire department for an emergency, they expect that someone shows up to help. Rarely, does a person in need look at the markings on the side of an emergency vehicle to verify that the help is coming from the community they live in. Someone is there to help and a firefighter is a firefighter and a paramedic is a paramedic regardless of where they come from. There may be follow-up questions as to how the operation takes place where a department with a different name shows up but that is more out of curiosity than an issue.

This kind of practice occurs when a department chooses a response philosophy that starts with a mission value that someone must get there as quickly as possible to either begin intervention or assess the scene.

According to the Office of the Fire Marshal's Public Fire Safety Guidelines, automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis. The concept has been practiced for many years in Ontario through what has been known as first response agreements. NFPA 1201 *Standard for Providing Fire and Emergency Services to the Public* defines automatic aid as "a plan developed between two or more fire departments for immediate joint response on first alarms.

While it may sound simple enough to execute, there is complexity to an automatic aid arrangement. Firstly, unless a town is willing to offer their services with no expectation of a tradeoff, most departments establish some form of reciprocity arrangement whereby a benefit of equal value is exchanged. If equal value cannot be established then an impression exists that one department may be subsidizing another town's weakness.

Secondly, both towns must agree to a legal arrangement whereby each town is responsible for its own resources. If equipment is lost or damaged during an incident, the host agency is not responsible for any participating agencies' resources. (Catastrophe reimbursement programs are not part of this obligation.) If a neighboring firefighter is injured, the neighboring fire department handles the injury. In other words, the only obligation an automatic aid town provides to a neighboring one is the ability to assist them at the incident.

Thirdly, staffing and training between the organizations are usually similar especially if strategies and tactics need to be similar. Where there is disparity, automatic aid units may not perform operations similar to that of home units but may end up only being a complement to the operation rather than an active part.

Both Georgina and East Gwillimbury participate in the York Region Mutual and Automatic Aid Plan last updated in 2015. This plan covers all fire departments in the York Region and allows for the fire departments in the region to support each other, via mutual aid, during a large event. The program does allow for automatic aid agreements to be established between local fire departments themselves.

Georgina and East Gwillimbury already have a Highway 404 Response Agreement allowing Georgina to cover a portion of Highway 404 that is located within East Gwillimbury's jurisdiction. In return, East Gwillimbury provides compensation for the coverage.

Georgina and East Gwillimbury can look at two possible objective based options in the consideration of automatic aid agreements that could increase response effectiveness:

Closest Unit

In a closest unit methodology, the philosophy is the sooner a unit can arrive on a scene to commence operations the better, regardless of the town the unit belongs to. For example in the case of Ravenshoe Road, this approach could apply and automatic aid may be of benefit with simultaneous response from both municipalities.

In a composite department though, closest unit is not defined by the geographically closest unit but rather the unit that may arrive first. Since a volunteer/paid-on-call response takes longer to go enroute to an incident, turnout time (time between dispatch, assembly and going enroute) is a factor to be included. Consequently, a unit from a career fire station that is farther away from an incident may get dispatched because their combined response time, turnout time plus travel time, is quicker than a volunteer response time.

Effective Response Force

The second objective for an automatic aid agreement is an effective response force (ERF). An ERF is the number of firefighters it takes to safely conduct operations at an incident plus the appropriate number of firefighters to safely handle all the tasks required on an emergency scene. It also implies elements of a response team that are necessary for all emergencies such as incident commander and command structures.

An automatic aid agreement can be established that allows units from both fire departments to respond to certain types of incidents for the purposes of establishing a timely and adequate response force to maximize the effectiveness of minimizing loss to life and property and as well as the safety of all resources.

This option is worth consideration to explore future opportunities.

Special/Technical Teams

Fire departments are known for their main mission to extinguish fires. Many fire departments also handle other specialized incidents that occur within a community. These incidents are infrequent but when they do occur, they require a unique set of resources to safely mitigate. These unique resources are personnel trained in the unusual situation as well as the unique equipment required for the incident. These specialized events include incidents that involve, but not limited to; hazardous materials, water/ice rescue, above- and below-grade rescues and structural collapses. Trained personnel or teams that deal with these incidents are called special rescue or technical rescue teams.

Large fire departments that have an increased likelihood of experiencing these types of incidents often have round-the-clock on duty units devoted to those special incidents. In regions where these special incidents are rare, it does not make financial sense to have dedicated units. Initial responders are given the basics of how to start intervention on these incidents and wait

for a highly-trained team to arrive. Where a highly-trained team is on-duty, they may be the only special resource to respond.

The York Region Mutual Aid Plan identifies that the closest fire department with technician level training (excluding confined space and water rescue and hazmat) is Richmond Hill - an approximate forty-five minute travel time to East Gwillimbury and one hour travel time to the north end of Georgina. Should they not be available or have an extended response time, Vaughan would be the next closest technician-capable response. This means that rescue intervention, including initial assessment and intervention time could be close to ninety minutes before a rescue is even started.

Each town establishes a regulating bylaw that determines core service delivery as summarized in the chart below:

Georgina Core Services	East Gwillimbury Core Services
Fire Suppression/Emergency Response	Fire Suppression/Emergency Response
Emergency Pre Hospital Care	Emergency Pre Hospital Care
Technical Rescue services: • Confined space • Farm Rescue • Auto Extrication • Water Ice Rescue	Technical Rescue services: • Confined space • Auto Extrication • Water Ice Rescue
Hazardous Materials Response (Operations)	Hazardous Materials Response (Awareness)
Smoke Alarm Program	Smoke/CO Alarm Program
Public Education Programs	Public Education Programs
Inspections (upon complaint and request or annual program)	Inspections (routine/annual and upon complaint/request)

The York Region Mutual Aid Plan identifies the following special rescue capabilities of both fire departments. Skill levels are defined (paraphrasing NFPA standards) as the following from lowest to highest capability:

1. Awareness – responders who in the course of their normal duties could encounter an emergency, recognize the presence of the hazard or rescue, protect themselves, call for trained personnel, and secure the scene.

2. Operations – responders who respond to special rescue situations and are capable of implementing and supporting initial mitigation interventions.

3. Technician – responders who have the knowledge, skills, and equipment to resolve unique and complex incidents that require special training and special equipment.

To summarize skill levels for both departments:

	Georgina	East Gwillimbury
Hazardous Materials	Operations	Awareness
Confined Space	Technician	Technician
High/Low Angle Rescue	Operations	None
Water/Ice Rescue	Technician	Technician

Both departments need to develop a plan that would cover all technical rescue response requirements.

Fleet Services

Fire departments spend a great deal of money on their fleets. Depending on the desired characteristics, a modern day fire engine or ladder truck can cost between $1,000,000 and $2,000,000. Maintaining a fleet that assures an appropriate and adequate response 24x7 is a high benchmark to sustain. Depending on the organizational form of government, there are three main methods that are used in singular fashion or in combination that fire departments and fleet services staff use to maintain their fleets:

1) Vehicle maintenance is undertaken by an internal department, for example an Infrastructure/Public Works-type department with a vehicle maintenance division
2) Maintaining the fleet within their own department
3) Contracting fleet maintenance to a third party vendor

Most in-house fleet maintenance, that is, maintenance conducted by the organization that owns and uses the fleet, is limited to routine care and upkeep and minor fleet problem-solving. Oil changes, tire rotations, safety inspections, bulb replacements, weather adjustments and minor repairs are handled at this level. Major specialty work such as transmission service, motor repair, suspension issues and warranty work are generally contracted out to either the vehicle distributor, manufacturer, or manufacturer's representative.

When assessing the potential for sharing fleet maintenance services, these questions can be asked:

- Are these models available for fleet maintenance sharing?
  - a model where one town contracts for services from the other town
  - a jointly owned/managed facility
  - a model whereby one town rents maintenance space and resources from the other town
- Do we use existing facilities where one town has to travel farther than the other town?
- Is there an option to build a facility that is more suitably located for both towns' operations?
- Where would the actual efficiencies come from?
- Are there any fleet maintenance practices/policies of one town that would conflict with the servicing of another organization's fleet?
- Are there benefits to finances, efficiencies, and effectiveness across the board or does the benefit of one item come at the expense of another item?

In the case of Georgina and East Gwillimbury, Georgina has an Operations and Infrastructure department that provides fleet maintenance service for the entire corporation, including the GFRS department fleet maintenance. East Gwillimbury contracts out these services.

Since the routine maintenance for fleet services is somewhat generic, a potential exists for Georgina to provide fleet maintenance services to East Gwillimbury under a service performance contract.

It is costly for East Gwillimbury both in terms of staff time as well as vehicle service hours when vehicles must travel extensive distances for service, resulting in large maintenance times and in turn are offline for extended periods.

An arrangement with the nearby Georgina Operations and Infrastructure department could conceivably reduce the downtime for East Gwillimbury vehicles and equipment and staff time dedicated to travel.

The opportunity for East Gwillimbury to enter into a services provision arrangement with Georgina has been further explored in a more in depth analysis undertaken by Mercury Associates Inc. This option can be further explored in their report.

Training

Training is one of the core support functions that fire departments provide their staff. The ability to keep staff at a professional skillset level contributes to the effectiveness of the organization.

Most contemporary fire departments use standards that are external to their organization and most likely have a commonality with neighboring fire departments that operate using the same standards. Whether it's a credential/standard offered by the National Fire Protection Association (NFPA) or the Ontario Fire Marshal's office (OFM), fire departments usually have the same or very similar objectives. Consequently, there is potential for sharing training where commonality exists between organizations. In addition, an advanced level of training sharing can begin to develop synergistic organizational practices. Participating towns begin to develop solutions that satisfy both organizations and discussions begin to move towards a jointly approved operational performance standard that enhances both organization's effectiveness.

Some areas of training that are candidates to be shared between organizations are:

- Administration – oversight and training staff can be collaborative between organizations. Leadership rotation, and joint sharing of instructors and teachers has the benefit of routinely getting different perspectives and experiences.

- Schedules – when schedules can be shared or jointly developed, this creates a great deal of opportunity for towns to have shared training experiences. This can be with shared instructors, inter-town company operations as well as possibly having one town cover another while they are in training.

- Training facilities are expensive to construct and challenging to ensure productive use. If a facility was to be explored for the use of both departments, programming to avoid excessive idle time would need to be taken into consideration.

- Documentation – because of technology, it is much easier to share documentation between organizations and eliminate duplication of effort. Examples: consistent procedures (SOGs), training documentation, data collection, etc.

- Record-keeping – while it's possible to jointly keep records under a shared administration, current software practices are not generally set up to handle a shared record-keeping system however, some vendors are beginning to look at collaborative ways to keep records.

Successful joint training can be one of the initial steps towards larger organizational integrations. Much of what fire departments do is similar, albeit with subtle practice and resources differences. It is not uncommon to develop synergy between two departments and build momentum that can develop into greater support for joint operations or consolidations.

Georgina and East Gwillimbury have one training officer each for their entire staffs including career and volunteer/paid-on-call personnel. These two individuals handle training for almost 200 firefighters.

With both career and volunteer/paid-on-call staff, the development, administration, and evaluation of training for both of East Gwillimbury and Georgina departments can be challenging. Aligning objectives and schedules between the two organizations could allow each department to make a contribution that would be a benefit for the other department as well.

With objectives aligned, the departments could look into the sharing of training resources including the creation of a joint training cache.

Dedicated training facilities are becoming more common as firefighters recognize the value of developing their skillsets through simulated exercises. Neither Georgina nor East Gwillimbury have a dedicated training facility that would include space for fire/smoke simulations, automobile extrications, and driving facilities. A combined one that included all these features plus classroom space would be a premier intergovernmental training asset. Both communities could also benefit by having the facility for rental by other regional fire departments.

The benefits available by coordination described above are worth exploring further to quantify return versus effort.

Fire Prevention

In the Fire Prevention world, there is a fairly unanimous agreement on what fire prevention programs should contain. Particular to Ontario, the Office of the Fire Marshal has embedded such fire prevention programs within the “three lines of defense”.

While there may be resource sufficiency differences, fire prevention programs contain the foundational elements of:

- Public education – public education is about informing the community about fire and safety hazards and efforts they can take to reduce or prevent fires from occurring.
- Inspections and Enforcement – property inspections are undertaken upon complaint, request or as part of an annual inspection program whereby fire prevention members review properties to ensure fire code compliance. This service offers a review by a professional identifying potential areas for hazards that a building occupant may be unfamiliar with or unaware of.

In addition to these foundational services, fire prevention divisions can also assume fire investigation functions for investigating the cause and origins of fire.

Both Georgina and East Gwillimbury have strong fire prevention divisions led by a deputy chief. Both have staffs that handle public education, inspections and code enforcement as well as cause and origin investigation and building plan review.

Since both organizations provide the same services and the same commitment levels, there are opportunities for both departments to build position depth as well as identify the unique strengths of each program so that both organizations may embrace them.

A potential sharing arrangement of resources and harmonization of materials and programs could provide a great deal of depth, share reduced costs of larger printing volumes and create joint community messages to both communities.

Learning each other’s Community Risk Assessment could also provide opportunities for the fire prevention staff to teach operations personnel about hazards and risks that they may be exposed to in the other community.

This alignment appears to have some potential to build on the similarities and strengths of each department and adopt best practices.

Group-Purchasing

Group purchasing is another area of shared services to be explored. Group-purchasing, also called cooperative purchasing or joint procurement practices, are built on the economies of scale proposition that larger procurement volumes, in time or quantity, invite discounted products and services and save money. When organizations come together and create purchasing groups, this allows a seller of goods to be able to discount their goods given the larger customer-base. This requires the individual organizations to agree on a product specification or quality standard the vendor can offer which can be simple or complicated to accomplish.

One other method of group-purchasing that is used is for a vendor to establish a specification for a particular product or service which is then offered for a discounted price. In establishing the specification, a vendor will establish their own internal systems that meet the specification reducing the customization time and their costs to create the product or service. Pre-defined specifications exist for everything from fire apparatus to equipment to consultant reports.

In addition to the benefit of a discounted price, group-purchasing relationships can carry a government's lowest bid recognition. For the purposes of assuring a lowest price on a product or services, most governments have a requirement that for any significant expense (amount varies between communities), multiple bids must be received to assure that the community is purchasing the best quality at the best price. Because of vendor processes in establishing specifications and low pricing for volume purchasing, many communities will forego the costs and time of soliciting multiple bids and automatically accept a group-purchased specification as the best price and desired quality. If a vendor's product in a pre-defined specification can meet the organizations' objectives, municipal officials will ask elected officials to accept the specification without any comparison bids. This creates a significant savings in time and effort by only having to process one bid.

Participation in these group-purchasing options can either be accomplished through simple membership to a purchasing program or multiple organizations can get together, identify themselves as a common purchasing organization and marketing their procurement under a volume purchasing contract.

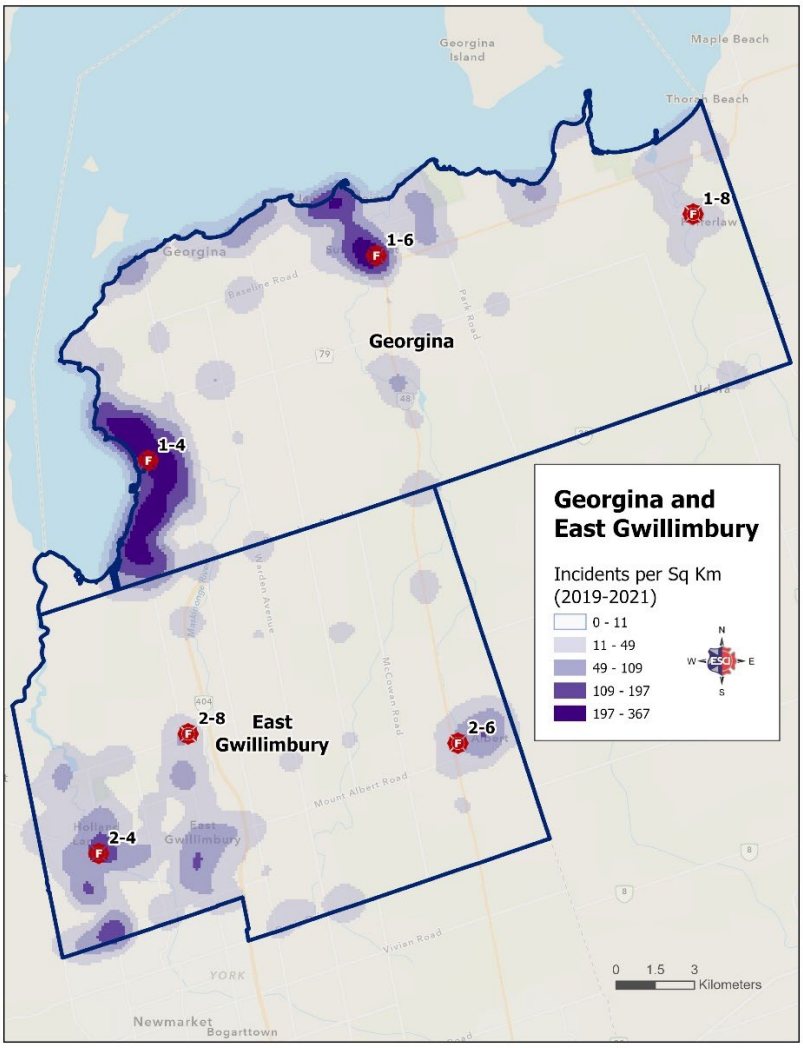
In the case of East Gwillimbury and Georgina, efforts have been made in the past to establish a procurement partnership between various fire and emergency service departments within the N6 collaboration. Disparity in procurement bylaws create challenges with progress alignment.

Eventually group-purchasing by both Georgina and East Gwillimbury could be expanded beyond these two communities. The larger the purchasing group, the greater opportunities there are for scales of economy. However, to make this work, a degree of standardization would need to be accepted by all parties. In some cases, this is fairly simple, in others, it can be quite complicated.

Fire Station Sharing

An ultimate in sharing service is the sharing of a fire station. In the earlier section, it was outlined the different ways that a fire station can be shared but it begins with a look at the existing stations and whether a new station is warranted by either community. Georgina has determined that new stations are necessary and with ESCI's endorsement is pursuing the relocation and split of one of their fire stations into two separate ones. The existing locations of Georgina and East Gwillimbury fire stations are displayed on the map below. The proposed fire stations can be found in the "Fire Station Coverage" section of the report, Figure 9: Fire Station Coverage w/New Georgina Station.

Figure 5: Combined Fire Stations Map



Georgina is pursuing their station relocation based on call density and risk of which the graphic shows most intensely around stations 1-4 and 1-6. The relocation of these two stations also provides greater coverage depth to the southern portion of the town. East Gwillimbury's stations are adequately located near their call volumes but do show long response times to the northeast

section of the town. Both towns show long response times when responding outside of their immediate response districts such as in simultaneous calls and a multi-unit response.

To make final determinations of whether or not additional stations are needed, performance standards approved by election officials need to be developed. While the actual performance numbers in NFPA 1710 are not reasonable, the framework is one that can be adopted. (1710 is the most cited response standard for career departments and 1720 is for volunteer departments. Composite departments are left to determine their own standards as a blend of 1710 and 1720). Performance standards to establish at a minimum would be to include:

- Time from call receipt to dispatch
- Time from call dispatch to unit responding (both career and volunteer)
- Time to travel to the call and arrive on the scene (or time of initial unit on scene)
- Time for 2nd and 3rd units to arrive
- Number of inspections
- Number of households visited
- Public education events (hours)

In the establishment of a performance standard, with the exception of life and death consequences, it is important to recognize that no standard will be met 100% of the time. So in addition to actual performance standards should be the amount of time the standard should be met. NFPA standards are mostly 90% standard but there are some 80% standards as well.

Once standards are established, data can be collected and compared against the standard to determine if standards are met. Then an evaluation takes place to identify the costs associated with meeting the standard. Once the evaluation takes place, a determination can be made of the value of adding an additional fire station to meet a performance standard versus its costs.

Currently, with no formally adopted performance standards to evaluate against in Georgina or East Gwillimbury, current response analyses as outlined in the Fire Master Plans of each communities show that future stations in both communities will be warranted.

Emergency Management

The *Emergency Management and Civil Protection Act* (*EMCPA*), requires each municipality in Ontario to develop and establish, by By-law, an Emergency Management Program that consists of:

- An emergency plan;
- Training programs and exercises for employees of the municipality and other persons with respect to the provision of necessary services and the procedures to be followed in emergency response and recovery activities;
- Public education on risks to public safety and emergency preparedness;
- Hazard Identification and Risk Assessment (referred to as the "HIRA");
- Critical Infrastructure Review; and
- Any other elements required by the standards for emergency management programs.

The Town of Georgina and the Town of East Gwillimbury consistently maintain compliance with the above legislation.

The Emergency Management Program is the responsibility of the Community Emergency Management Coordinator (CEMC), who is also the fire chief.

The N6 municipal CEMCs, in collaboration with York Region, have established a Memorandum of Understanding (MOU) to retain a shared Program Manager position that would ensure annual compliance with the EMCPA for all six municipalities.

The terms of the MOU have expanded over the years as required and the program continues to be successful. In addition to the annual program, in 2019 this Program Manager position assisted greatly with the COVID-19 response. There could be opportunities to expand the terms of the MOU further to assist municipalities with their Emergency Management Programs.

There is an opportunity to continue working with York Region on expanding the Emergency Management Program to address specific contingency plans for various hazards, technology improvements and expanding collaborative processes. Shared services are great opportunities for organizations to increase their effectiveness and efficiencies by trading their strengths with other organization's strengths. This is a possibility between these two communities.

Strategy 3: Modernized Consolidated Composite Department

The last strategy option to be considered is a consolidation of both the Georgina and East Gwillimbury composite fire services. In a consolidation of organizations, the two organizations become one adopting values of both organizations, making compromises between the two organizations and, while under provincial law, the fire chief is still being accountable to both towns.

Organizations consolidate for the purposes of:

- Improving service delivery
- Enhancing firefighter safety
- Reducing community risk
- Eliminating duplication
- Increasing resource depth
- Saving on future costs (cost avoidance)
- Improving efficiency of operations
- Sharing resources

While change is never easy, it is often the case that the long-term benefits of a consolidation outweigh the short-term challenges. In the following sections, ESCI outlines what a consolidated organization of the Georgina and East Gwillimbury fire services could look like.

Two nearby Fire and Emergency Services department consolidations are 1) Central York (established in 2001) and 2) Bradford West Gwillimbury/Innisfil (in initial stages of amalgamation). These two models were examined for their lessons learned.

The N6 northern municipalities of York Region have had a history of exploring ways to become more efficient for almost 10 years. This project is a continuation of discussions surrounding greater collaboration between Georgina and East Gwillimbury fire services.

Organizational Overview

Governance

To oversee the operations of the consolidated fire and emergency services organization, ensure alignment to the needs of both municipalities, and track compliance to defined performance measures and targets, Georgina and East Gwillimbury will need to institute some sort of governance system. Consolidated departments are unique in that they are not a completely independent organization with a single leadership board. Rather, they are a single organization that is accountable to all participating communities which means governance comes from all communities.

In analyzing governance options for a consolidated department, two model options emerge:

- Joint Coordinating Committee
- Service Board

Joint Coordinating Committee

In this model, the two departments would consolidate under a single employer where one town would function as the primary employer. A joint coordinating committee (JCC) comprised of representatives from both municipalities would review fire department issues and provide recommendations for each town's council to consider. In this model, the employer town council (ETC) would officially govern the fire department.

The Fire Chief would simultaneously report to the JCC and the Chief Administrative Officer (CAO) of the town which is the primary employer of the fire department. The Fire Chief would also interact/consult with the CAO of the non-employer town as needed to address municipal specific issues and concerns regarding services. The town that operates as the primary employer for the consolidated fire department shall also provide all the required support functions for the fire department, including corporate services such as communications, finance, human resources, legal, information technology, and purchasing. All corporate policies and procedures of the employer town shall be applicable to the consolidated fire department.

The JCC would be comprised of the fire chief, three representatives from each of the two town councils, and the CAO's of both towns. The JCC would be responsible for overall oversight of the fire and emergency services department and would make recommendations for approval to the ETC on items such as the establishment of service level objectives, priorities, and standards. They would also review performance measures and develop and recommend for approval the department's operating and capital plans and budgets.

In this model, the non-employer town council (NETC) would also review recommendations of the JCC and would provide the ETC with their "support or non-support" of the JCC recommendations. Administrative support for the JCC would be provided primarily by the fire department, with additional support for shared services to be provided by relevant administrative staff of both municipalities. The chairman of the JCC would alternate between the two towns on a predefined interval and tenure of each member of the committee would be pre-defined.

While adhering to the policies and procedures of the employer town, the JCC would be guided by the Fire Protection and Prevention Act, Public Fire Safety Guidelines, each town's Fire Master Plan (FMP), and any applicable bylaws enacted by the towns with regard to fire and emergency services.

In this model, the JCC would need to work collaboratively with the municipalities to:

- Define the roles and responsibilities related to governance and decision making
- Defines the roles and responsibilities of the municipality that would be the primary employer of the consolidated department
- Define the cost sharing agreement that indicates the costs to be expensed to each municipality
- Define the process for budget preparation and approval, and the management of capital assets assigned to the department

This model is similar in structure and function as the governance model adopted in other consolidated fire services such as Central York Fire Services.

Service Board

A second model for consolidation is the two departments would consolidate under an independent “service board” that would be contracted to provide fire protection to the municipalities. In this model, the chief would co-report to the service board and to the councils of each of the municipalities, who would develop and execute a service agreement with the service board that provides guidance and direction for the consolidated department.

This model was considered as a governance model for the Innisfil / Bradford West Gwillimbury fire service consolidation, however, an analysis completed by Ernst and Young (EY) for this review indicated that this option may require legislative changes as an independent board for fire services is not mentioned within Section 2(2)(b) of the FPPA and it is not mentioned within the Municipal Act of Ontario. They concluded that this option would be complex to implement, which would reduce its viability.

Research and discussions with The Office of the Fire Marshall indicated that while they do not endorse or oppose the Service Board concept, they have suggested that a legal review of the relevant legislation would be appropriate to investigate the legality of the model under the Ontario Municipal Act and to ensure that it complies with the FPPA.

Management & Organizational Components

In a modernized and consolidated department, all of the elements of strategy #1 are adopted and many of the features of strategy #2 are present. The composite model of each department is part of the character of both the Georgina and East Gwillimbury departments and is carried over into the consolidated department description. In this case, both communities see the benefits of an organizational model that includes career and volunteer/paid-on-call personnel allocated according to community demand and risk.

Organizational Structure

One of the challenges in blending organizations together is determining how to fit existing personnel within a new organizational structure. The project outline assumptions that needed to be adhered to when addressing this issue. They were:

- One consolidated composite department that would be under “one employer";
- The composite department model would be maintained;
- No job loss for full-time staff, paid-on-call staff or volunteers.

With those assumptions, there were a few management structure best practices that could be considered:

- No supervisor should have only one direct report;
- The organization would be led by a fire chief and would be divided into multiple divisions, each one headed by a deputy chief;
- No supervisor should exceed the recommended span of control standards. Within an emergency scene, this recommended accountability standard for supervisor-to-subordinate ratio is three to five subordinates for one supervisor and for administrative functions it is five to seven subordinates for one supervisor; and
- With an organization that is expected to handle 3000-4000 incidents annually from six fire stations, around the clock supervision will be handled by the on-call rotation of the Deputy Chiefs. ESCI can accept this practice provided there is a formal rotation schedule of qualified on-call supervisors to be available after hours.

Beginning with an organizational structure, the graphic on the next page is a sample suggestion for what the consolidated organization could look like. While it is not a complete one-for-one position correlation with the existing organizational structures, it provides an example of how an organization the size of a consolidated Georgina and East Gwillimbury might be structured.

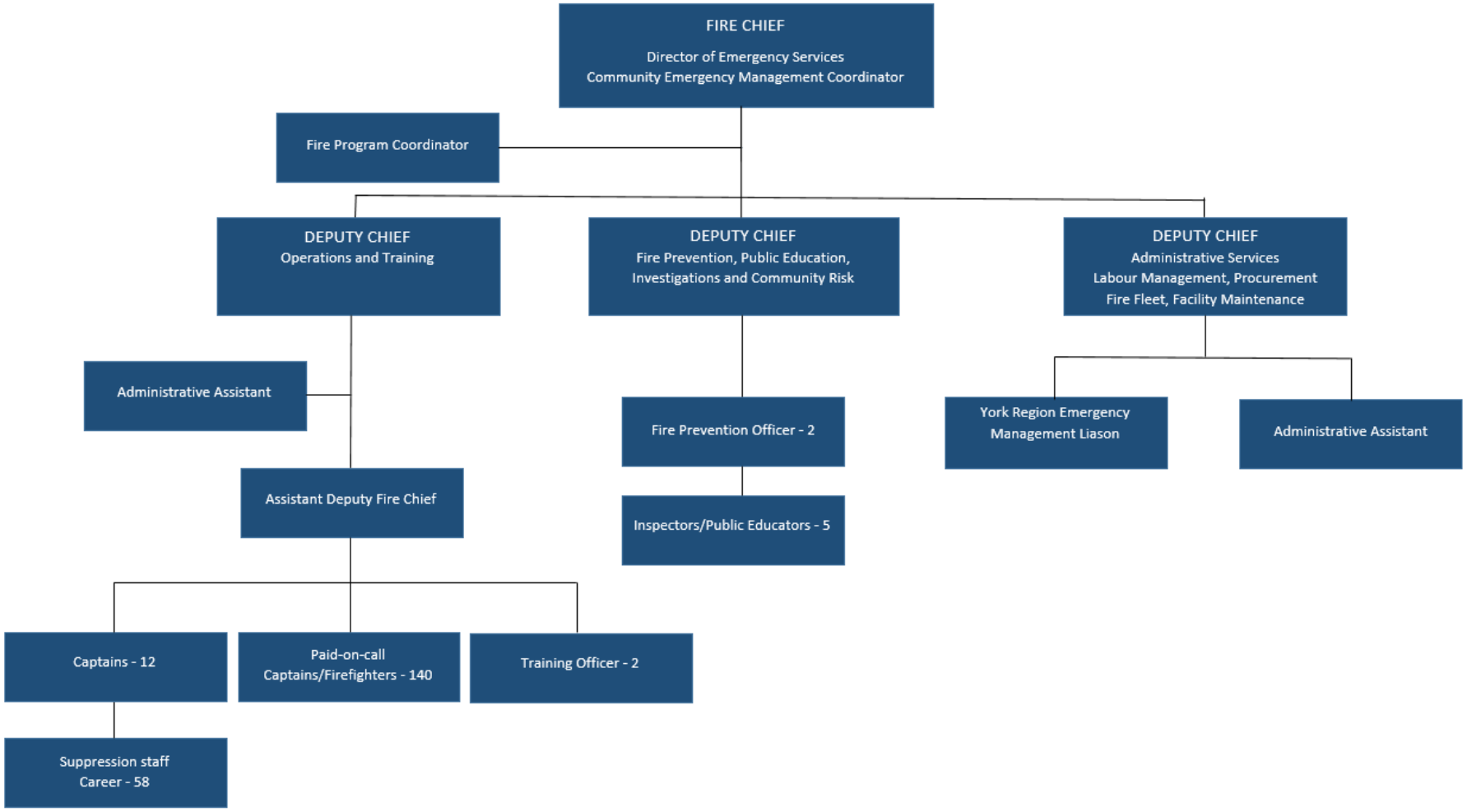
GEORGINA

GEORGINA and EAST GWILLIMBURY

FIRE AND EMERGENCY SERVICES

ORGANIZATIONAL CHART (Sample)

EG East Gwillimbury



General Organization

Both leadership and management are critical for the effective operation of a fire department. It is important to do things right and to do the right things. Having effective management ensures the procedures and appropriate functions are in place to operate successfully. Leadership is the skill to know how to implement these procedures and functions as they interface with people.

The consolidation of organizations requires new baseline management components that allows it to move forward in an organized and effective manner. In the absence of foundational management elements, the organization will tend to operate in a random and generally ineffective manner if not degenerate or revert to individual practices of the original organizations creating confusion, complexity and eventually morale. Required of the new organization would be these foundational management elements: a mission statement, a vision statement in form of broad goals, a values statement, and a strategic plans identifying future objectives.

The mission statement should tell why the consolidated department exists and how the mission will be executed. The mission statement will guide decision-making to do what is necessary to minimize loss both of lives and property. This statement is broad enough to allow flexibility in methods but narrow enough to prevent straying from the mission.

The vision statement is the declaration of what the organization wants to become in the future. It is not always reachable within the resources and abilities that are available today. It recognizes that the organization is not necessarily where the members would like it to be but sets goals that are reachable by accomplishing the objectives. This statement effectively communicates how the organization will accomplish their mission through the three lines of defense providing suppression and rescue services while utilizing education and code enforcement to prevent incidents from happening.

The values statement defines common values that members hold important and is key to understanding internal performance standards, rewards and discipline which can be the foundation for defining excellent performance. It is critical the words or phrases used are well understood in the same way by all members, otherwise there can be confusion on actions, rewards, and disciplines.

There is real value in having the mission, vision, and values statements reviewed by a group that represents a cross-section of the organization. This assures that all can understand, support, and live the messages contained in the statements.

An organization should establish appropriate documentation, policies, procedures, and identification of internal and external issues that affect the agency. Processes must also be established to address the flow of information and communication within the organization as well as with its constituents and both towns' elected officials. Regulatory documents consist of bylaws, policies and procedures, employee handbooks, and standard operating procedures or guidelines. These documents may be called different things.

An on-going review of the procedures and policies should be scheduled. It is recommended to have every policy reviewed within a three-year window. Taking one-third of the policies each year can make this less of a task. Also, utilizing a committee of personnel from within the organization can spread the workload and involve others. This is especially true of standard operating guidelines (SOGs). Since firefighters are expected to know and operate under these

guidelines, it makes sense to have them also review for any changes that may have been implemented in practice but not yet changed in the SOGs.

Capital Assets

Three basic resources are required to successfully carry out the mission of a fire department: trained personnel, firefighting equipment, and fire stations. No matter how competent or numerous the firefighters are, if reliable capital equipment is not available, the department would be unable to safely and effectively execute its mission. The essential capital assets for use in emergency operations are facilities and apparatus (response vehicles). Of course, the agencies' financing ability determines the level of capital equipment it can acquire and make available for use by emergency personnel. The following section assesses East Gwillimbury and Georgina's capital facilities and apparatus.

Ownership

Under a consolidation, the towns of East Gwillimbury and Georgina would maintain ownership of the current capital assets, such as facilities. Maintaining some jurisdictional ownership through this transition creates simplicity and avoids complicated transfers. However, as the cooperative services organization grows and matures, joint capital asset ownership may be appropriate for new facilities and apparatus.

Facilities/Halls

Fire halls play an integral role in delivering emergency services for several reasons. A station's location will dictate, to a large degree, response times to emergencies. A poorly located station can mean the difference between confining a fire to a single room and losing the structure. Fire stations also need to be designed to adequately house equipment and apparatus and meet the organization's and its personnel's needs. It is vital to research needs based on service demand, response times, types of emergencies, and projected population growth before making a station placement commitment.

Consideration should be given to a fire hall's ability to support the department's mission as it exists currently and into the future. The activities that take place within a fire hall should be closely examined to ensure the structure is adequate in both size and function:

- The housing and cleaning of apparatus and equipment, including decontamination and disposal of biohazards
- Residential living space and crew quarters for on-duty personnel (all genders).
- Kitchen facilities, appliances, and storage.
- Bathrooms and showers (all genders).
- Administrative and management offices; computer stations and office facilities for personnel
- Training, classroom, and library areas
- Staff fitness area

Station Assessment

In reviewing the condition of the existing stations relative to the previous factors, the following is a rough criteria used to identify the condition of the existing fire stations.

Figure 6: Criteria Utilized to Determine Fire Station Condition

Excellent	Like new condition. No visible structural defects. The facility is clean and well-maintained. The Interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. No significant defect history. Building design and construction match the building's purposes. Age is typically less than ten years.
Good	The exterior has a good appearance with minor or no defects. Clean lines, good workflow design, and only minor wear on the building interior. The roof and apparatus apron are in good working order, absent any significant full-thickness cracks, crumbling of the apron surface, or visible roof patches or leaks. Building design and construction match the building's purposes. Age is typically less than 20 years.
Fair	The building appears to be structurally sound, with a weathered appearance and minor to moderate non-structural defects. The interior condition shows normal wear and tear but flows effectively to the apparatus bay or offices. Mechanical systems are in working order. Building design and construction may not match the building's purposes well. Showing increasing age-related maintenance but with no critical defects. Age is typically 30 years or more.
Poor	The building appears to be cosmetically weathered and worn with potentially structural defects, although not imminently dangerous or unsafe. Large, multiple full-thickness cracks and crumbling concrete on the apron may exist. The roof has evidence of leaking and/or multiple repairs. The interior is poorly maintained or shows signs of advanced deterioration with moderate to significant non-structural defects. Problematic age-related maintenance and/or major defects are evident. It may not be well suited to its intended purpose. Age is typically greater than 40 years.

Keswick Fire Hall 1-4 (Poor)

The Georgina Fire Hall, known as Keswick Hall 1-4, is located at 165 The Queensway South, Keswick. The building was built in the late 1980s and operated as a car dealership and service center for several years before the Town of Georgina purchased and renovated the property in the late 1990s. The large parking lots, raised concrete patio, multiple bays, and general layout keeps the building's resemblance to the former car dealership.

Georgina Fire Department utilizes the building as the department's headquarters. Inside, the department made modifications to form a front reception area, captain's office, chief's office, two fire deputy offices, one administration office, and an open-area fire prevention office space. Also included in the previous dealership's showroom is a large classroom area with multimedia and various training props. In addition, there is an emergency standby generator on the premises.

From an operations standpoint, the fire hall uses four forward-facing apparatus bays for frontline units. On the opposite side of the building, other bays serve as storage areas and apparatus shelters for non-essential equipment as well as an active response bay. All the bays at Keswick 1-4 are back-in and the station's primary bays utilize a diesel exhaust filter system. Georgina deploys one engine, staffed by full-time employees, and three volunteer-staffed apparatuses from the Keswick station. The fire hall also houses a physical fitness area in a portion of the apparatus bay, gear storage, a turnout gear extractor, and a breathing-air compressor.

For living quarters for the operational staff, the department uses a variety of rooms on different levels to achieve its housing objective. The department provides male and female bathroom facilities, an open kitchen, a large day room, and storage facilities.

Structurally, the building is primarily constructed of concrete and blocks walls, a steel-truss roof, and some areas with metal siding. The structure and property show signs of heavy use with structural deficits. There are cracks in the walls where the building is settling, signs of roof leaks, and multiple repairs of the apparatus apron. Additionally, the building's layout for a fire hall is awkward and inefficient for the mixed administrative and operational workforce. There are offices located throughout the building adjacent to living quarters, and some administrative areas are only accessible from separate exterior pathways. Also, there are low ceilings in the dayroom and signs that the room was once a tire storage room.

This station is approximately 14,000 square feet

The following pieces of apparatus are assigned to this hall:

- R149 – Full-time staffing
- T144 – Volunteer
- PL147 – Volunteer
- Engine 141 – Volunteer
- Marine 1 – Full-time

Sutton Fire Hall 1-6 (Fair)

The Georgina Fire Hall, known as Sutton 1-6, is located at 37 Snooks Road in Sutton. The building was built in the early 1970s as a volunteer fire station. The station is primarily constructed with masonry exterior walls, steel structure, and wood roof. According to the 2016 facilities report, portions of the walls are likely constructed with wood. The office area was added to the building later.

Overall, the agency rates the building in poor condition. According to ESCI's facilities rating sheet, Georgina states the building appears to be cosmetically weathered and worn with potentially structural defects, although not imminently dangerous or unsafe. Large, multiple full-thickness cracks and crumbling concrete on the apron may exist. The roof has evidence of leaking and/or multiple repairs. The interior is poorly maintained or shows signs of advanced deterioration with moderate to significant non-structural defects. Problematic age-related maintenance and/or major defects are evident. It may not be well suited to its intended purposes. Age is typically greater than 40 years.

Observations made by ESCI are not as harsh. The building does appear to be well-used, but the condition is fair. Both full-time stations faced difficulties during Covid-19 meeting public health measures with regards to the physical distancing. The building appears structurally

sound, with a weathered appearance and minor to moderate non-structural defects. The interior condition shows normal wear and tear but flows effectively to the apparatus bay or offices. Mechanical systems are in working order. Building design and construction may not match the building purpose well. Showing increasing age-related maintenance but with no critical defects.

The building has 1,350 square feet of living space, three back-in apparatus bays, and is equipped with an emergency power generator. Five personnel can sleep in the facility. The sleeping quarters double as a locker, workout, and training room. There is one shower room, and staff can use in-house laundry equipment. Personnel can wash PPE in an extractor located off the apparatus bay. Additionally, the apparatus bays utilize an exhaust removal system. The facility is equipped with fire suppression sprinklers and smoke alarms.

The following pieces of apparatus are assigned to this fire hall:

- R169 – Full-time Staffing
- T164 – Volunteer Staffing
- A166 – Volunteer Staffing
- Marine 2 – Cross-staffed by Duty Crew

Pefferlaw Fire Hall 1-8 (Excellent)

The Georgina Fire Hall, known as Pefferlaw 1-8, is located at 270 Pefferlaw Road in Pefferlaw. The building was first occupied in April 2021. The facility is a brick and concrete building with a renovated church attached. The new structure replaced an aging and small two-bay facility next door.

Overall, the agency rates the building in excellent condition. According to ESCI's facilities rating sheet, Georgina states the building appears to have a like-new condition. There are no visible structural defects, and the facility is clean and well-maintained. The interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. There is no significant defect history. The building's design and construction match its purposes. Age is typically less than ten years.

ESCI's observations are consistent with the condition of the building. However, the design of the building, though aesthetic, does not particularly provide efficiency in the staff's movement. Although there is no full-time staff, provisions have been made for future full-time staffing.

The building is 10,690 square feet, has three back-in apparatus bays, and is equipped with an emergency power generator. There are gender-specific shower rooms, and staff can use in-house laundry equipment. Personnel can wash PPE in an extractor located off the apparatus bay. Additionally, the apparatus bays utilize an exhaust scrubber system. The facility is equipped with fire suppression sprinklers and smoke alarms.

The following pieces of apparatus are assigned to this fire hall:

- E181 – Volunteer Staffing
- E182 – Volunteer Staffing
- T184 – Volunteer Staffing
- T185 – Volunteer Staffing

Holland Landing Fire Hall 2-4 (Good)

The East Gwillimbury Fire Hall, known as Holland Landing 2-4, is located at 19314 Yonge Street, Holland Landing. The building was built in 2002. The facility has a brick facade and non-combustible construction. This paid-on-call fire hall is the headquarters and provides a work location for all administrative staff.

Overall, the agency rates the building in good condition. According to ESCI's facilities rating sheet, East Gwillimbury states the exterior has a good appearance with minor or no defects. Clean lines, good workflow design, and only minor wear on the building interior. The roof and apparatus apron are in good working order, absent any significant full-thickness cracks or crumbling of the apron surface or visible roof patches or leaks. The building's design and construction match its purpose. Age is typically less than 20 years.

ESCI's observations are consistent with the condition of the building. Although there is no full-time staff, the building's design will support the potential transition to 24-hour staffing, however interior modifications will be required and relocation of administrative staff. There is a full kitchen, training room, and individual lockers.

The building is 6,650 square feet, has two drive-through apparatus bays, and is equipped with an emergency power generator. There are gender-specific shower rooms, and staff can use in-house laundry equipment. Personnel can wash PPE in an extractor located off the apparatus bay. Additionally, the apparatus bays utilize an exhaust removal system. The facility is equipped with fire suppression sprinklers and smoke alarms.

The following pieces of apparatus are assigned to this fire hall:

- P241 – paid-on-call Staffing
- T244 – paid-on-call Staffing
- A246 – paid-on-call Staffing
- Technical rescue trailer

Mount Albert Fire Hall 2-6 (Good)

The East Gwillimbury Fire Hall, known as Mount Albert 2-6, is located at 22 Princess Street, Mount Albert. The building was built in 2015. The facility is of brick facade, non-combustible construction. This is an all-paid-on-call fire hall.

Overall, the agency rates the building in excellent condition. According to ESCI's facilities rating sheet, East Gwillimbury states the building appears to have a like-new condition. There are no visible structural defects, and the facility is clean and well-maintained. The Interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. There is no significant defect history. The building's design and construction match its purposes. Age is less than ten years.

ESCI's observations are consistent with the condition of the building. This fire hall is the third of its kind on the lot. There was an original station, a station that burned, and then this facility. Although there is no full-time staff, the building's design will not support the potential for future 24-hour staffing. There are no bunk rooms or overnight facilities. There is a full kitchen, training room, and individual lockers.

The building is 4,924 square feet, and has two drive-through apparatus bays and one back-in bay. The fire hall is equipped with an emergency power generator. There are no gender-neutral facilities or female restrooms or showers. The one non-public restroom and shower is labeled "men." Personnel can wash PPE in an extractor located off the apparatus bay. Additionally, the apparatus bays utilize an exhaust removal system. The facility is equipped with fire suppression sprinklers and smoke alarms.

The following pieces of apparatus are assigned to this fire hall:

- P261 – paid-on-call Staffing
- T264 – paid-on-call Staffing
- R269 – paid-on-call Staffing
- UTV and trailer

Queensville Fire Hall 2-8 (Excellent)

The East Gwillimbury Fire Hall, known as Queensville 2-8, is located at 1590 Queensville Sideroad Rd, Queensville. The building was built in 2015. The facility is of brick façade, non-combustible construction. This is a composite fire hall with paid-on-call and full-time staff.

Overall, the agency rates the building in excellent condition. According to ESCI's facilities rating sheet, East Gwillimbury states the building appears to have a like-new condition. There are no visible structural defects, and the facility is clean and well-maintained. The Interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices. There is no significant defect history. The building's design and construction match its purposes. The age is less than ten years.

ESCI's observations are consistent with the condition of the building. This fire hall is a renovated community center that was completed in 2016. The facility supports full-time staff, and the building's design supports future growth. There are bunk rooms and overnight facilities. There is a full kitchen, training room, and individual lockers.

The building is 6,650 square feet and has two drive-through apparatus bays. The fire hall is equipped with an emergency power generator. There are male and female restrooms and showers. Personnel can wash PPE in an extractor located off the apparatus bay. Additionally, the apparatus bays utilize an exhaust removal system. The facility is equipped with fire suppression sprinklers and smoke alarms.

The following pieces of apparatus are assigned to this fire hall:

- P281 – Full-Time Staffing
- T284 – paid-on-call Staffing
- R289 – paid-on-call Staffing

Station Maintenance

Station and facilities maintenance in the consolidated organization does not change from the stand-alone organizational model. Facilities within the jurisdictional borders are maintained and funded by that jurisdiction. Each local government will maintain the current and future facilities within their respective geographical areas.

Fleet

No piece of mechanical equipment or vehicle can be expected to last indefinitely. As apparatus age, repairs tend to become more frequent and more complex. Parts may become more difficult to obtain, and downtime for repair and maintenance increases. Given that fire protection, EMS, and other emergencies prove so critical to a community; downtime is one of the most frequently identified reasons for apparatus replacement.

Additionally, Georgina's fleet maintenance shop provides a central location for the repairs and preventative maintenance for the consolidated organization. The facility's staff maintain NFPA standards alignment and have the capacity to expand if East Gwillimbury vehicles join the shop's fleet responsibility. Additionally, the on-call road-side mechanics can be formalized and economies of scale improved with services to a consolidated organization.

Both Georgina and East Gwillimbury have fleet replacement schedules through the capital improvement plan. As one innovative approach to monitoring maintenance and replacement, the agencies can monitor the maintenance-to-acquisition ratio. Specific benchmarks can be developed over time using maintenance and downtime data. As an example, when the total maintenance costs reach 60-70% of the acquisition price, the apparatus should move from a frontline service position to a reserve. Before reaching 90%, the agency should liquidate the apparatus asset.

Additionally, an important consideration when evaluating the feasibility of consolidating fire departments into a combined organization is the cost associated with the future replacement of major equipment. NFPA 1901: Standard for Automotive Fire Apparatus recommends that fire apparatus 15 years of age or older be placed into reserve status, and apparatus 25 years or older should be replaced. This is a general guideline, and the standard recommends using the following objective criteria in evaluating fire apparatus lifespan:

- Vehicle road mileage
- Engine operating hours
- The quality of the preventative maintenance program
- The quality of the driver-training program
- Whether the fire apparatus was used within its design parameters
- Whether the fire apparatus was manufactured on a custom or commercial chassis
- The quality of workmanship by the original manufacturer
- The quality of the components used in the manufacturing process
- The availability of replacement parts

Figure 7: Criteria & Method for Determining Apparatus Replacement

Evaluation Components	Points Assignment Criteria	
Age:	One point for every year of chronological age, based on in-service date.	
Miles/Hours:	One point for each 10,000 miles or 1,000 hours	
Service:	1, 3, or 5 points are assigned based on service-type received (e.g., a pumper would be given a 5 since it is classified as severe duty service).	
Condition:	This category takes into consideration body condition, rust interior condition, accident history, anticipated repairs, etc. The better the condition, the lower the assignment of points.	
Reliability:	Points are assigned as 1, 3, or 5, depending on the frequency a vehicle is in for repair (e.g., a 5 would be assigned to a vehicle in the shop two or more times per month on average; while a 1 would be assigned to a vehicle in the shop an average of once every three months or less.	
Point Ranges	**Condition Rating**	**Condition Description**
Under 18 points	Condition I	Excellent
18–22 points	Condition II	Good
23–27 points	Condition III	Fair (Consider Replacement)
28 points or higher	Condition IV	Critical (Immediate Replacement)

The following tables provide an outline of the available fleet of the consolidated fire service organization.

Figure 8: Apparatus Inventory

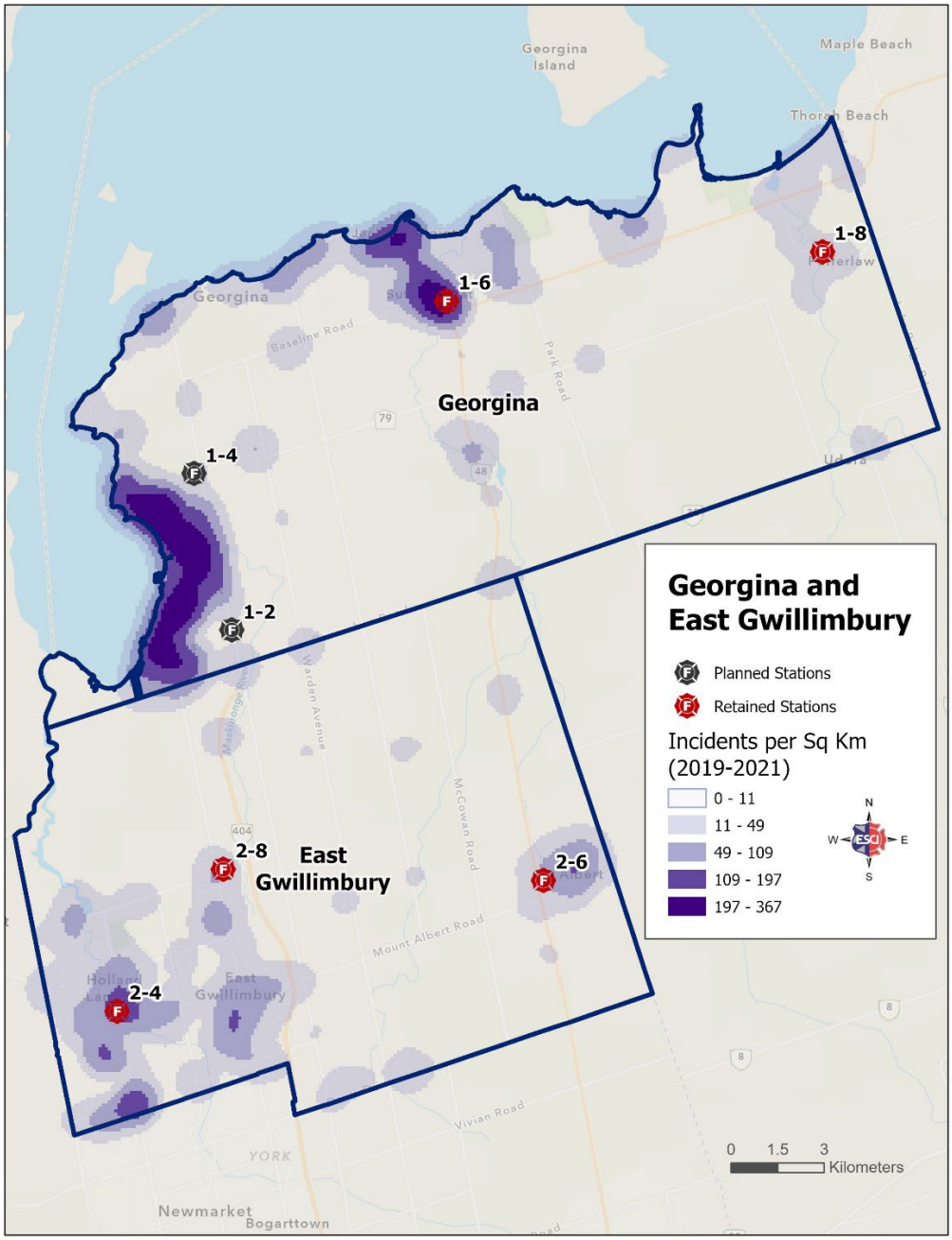
Unit	Apparatus Type	Manufacturer	Year	Condition	Original Cost	Mileage	Station
PL147	Platform	HME 104' Platform	2019	Excellent	$1,300,000	14,109	1-4
R149	Rescue/Pumper	Carrier	2021	Excellent	$850,000	17,300	1-4
T144	Pumper/Tanker	Spartan MetalFab	2018	Excellent	$709,000	15,967	1-4
E141	Pumper (Engine)	International Engine	1999	Fair	$210,000	65,207	1-4
Marine 1	Ice/Water Rescue	Husky	2008	Fair	$180,000	N/A	1-4
Marine 2	Boat & Trailer	Stanley	2020	Excellent	$325,000	N/A	1-4
CH1-1	SUV	Durango	2022	Excellent	$65,000	0	1-4
CH1-2	SUV	Tahoe	2019	Excellent	$49,000	130,000	1-4
CH1-3	SUV	Durango	2015	Good	$63,000	235,000	1-4
FP1401	SUV	GMC Terrain	2016	Excellent	$34,400	59,109	1-4
FP1402	SUV	Ford Escape	2019	Excellent	$28,000	21,715	1-4
S 1-4	Pick Up	Ford Super Duty F250	2019	Excellent	$46,000	15,002	1-4
A166	Aerial	Spartan Metrostar	2009	Good	$650,000	216,639	1-6
T164	Pumper/Tanker	Spartan Metro Star	2016	Good	$644,000	27,775	1-6
R169	Pumper/Rescue	Spartan Metrostar	2018	Good	$600,000	117,692	1-6
U160	Pick Up	Ram	2014	Good	$34,100	54,467	1-6
T184	Tanker	GMC 1600	1998	Fair	$136,000	28,092	1-8
T185	Tanker	GMC 1600	2002	Fair	$151,500	42,298	1-8
E181	Pumper (Engine)	Spartan Force	2011	Fair	$300,000	202,670	1-8
E182	Pumper (Engine)	Freightliner FL80	2003	Fair	$597,000 (replacement cost)	310,637	1-8
A246	Aerial/ladder	HME Specter 111'	2017	Excellent	$1,223,000	18,563	2-4

Unit	Apparatus Type	Manufacturer	Year	Condition	Original Cost	Mileage	Station
T244	Tanker	Spartan Metro Star	2011	Good	$450,000	39,249	2-4
P241	Rescue/Pumper	Spartan Advantage	2008	Good	$400,000	90,404	2-4
Car 3	Pickup Truck	Chevrolet Silverado	2014	Fair	$40,000	85,297	2-4
Car 4	Pickup Truck	Ram	2013	Fair	$35,000	69,845	2-4
Car 5	Pickup Truck	Chevrolet Silverado	2015	Good	$40,000	42,375	2-4
Car 7	Pickup Truck	Chevrolet Silverado	2016	Good	$60,000	104,909	2-4
T264	Tanker	Spartan Gladiator	2012	Very Good	$500,000	82,668	2-6
R269	Rescue/Pumper	Freightliner FM2	2016	Very Good	$400,000	5,801	2-6
P261	Rescue/Pumper	Spartan Metro Star	2014	Very Good	$450,000	11,614	2-6
Car 6	Pickup Truck	Chevrolet Silverado	2015	Good	$40,000	28,222	2-6
T284	Tanker	Spartan	2015	Very Good	$500,000	16,528	2-8
R289	Rescue/Pumper	Freightliner FM2	2016	Very Good	$400,000	21,873	2-8
P281	Rescue/Pumper	Spartan	2021	Excellent	$1,000,000	15,024	2-8

Fire Station Coverage

This section provides an overview of the existing stations coverage. Georgina has determined that new stations are necessary and with ESCI's endorsement, is pursuing the relocation of one station further north and an addition of a south station. The existing locations of fire stations and proposed ones are in the next graphic.

Figure 9: Fire Station Coverage w/New Georgina Stations



Georgina is pursuing their station relocation based on call density and risk of which the graphic shows most intensely around stations 1-4 and 1-6. The relocation of these two stations also provides greater coverage depth to the southern portion of the town. East Gwillimbury's stations

are currently adequately located according to response statistics and data but do show long response times to the northeast section of the town. In addition, the fourth station is proposed in the 10-year capital plan along the Green Lane corridor to address anticipated increased call volumes in that area. Both towns show long response times when responding outside of their immediate response districts such as in simultaneous calls and a multi-unit response.

Data must continue to be monitored in determination of the proposed future stations as outlined in Strategy 2. Once standards are established, data can be collected and compared against the standard to determine if standards are met. Then an evaluation takes place to identify the costs associated with meeting the standard. Once the evaluation takes place, a determination can be made of the value of adding an additional fire station to meet a performance standard versus its costs.

Finance

The purpose of this section is to determine if consolidation could provide any long-term savings due to streamlined operational costs. While many have assumed that consolidation will provide only positive results, there are potential impacts that should also be considered.

There are two perspectives regarding financial benefits in consolidation efforts:

1) There will be anticipated long-term financial savings as a result of the reduction of duplication between the communities and gains from economies of scale. In other words, service levels remain the same but at a lower cost.
2) There is an improvement in service levels with no additional costs. In other words, quality of services go up while avoiding potential future costs to increase that service level that may have been required alone.

Service quality and finances are two of the significant benchmarks for consolidation consideration.

In a consolidation of GFRS and ECSS, the nature of the organizations are such that any consolidation would be more of the second perspective than the first. If benefits were to be experienced, it would likely be service quality improving while avoiding future costs as opposed to a cost savings from duplication elimination. The methodology used for this study is that there will be “no job loss for full-time staff, paid-on-call staff or volunteers”. Since in the 2022 budgets, Georgina’s personnel costs make up 83% of the budget and East Gwillimbury’s 85% of their budget, savings would have to be from non-personnel costs and it is likely they would not be significant.

Analysis Summary

Expenditures for both municipalities are similar to those of other fire departments that ESCI has analyzed. Over the past five years, pay rates between the two organizations are nearly identical with each town occasionally experiencing being the higher of the two. Both towns have nearly the same number of employees when career and volunteer staffs are combined. However, East Gwillimbury has a higher percentage of paid-on-call staff (75.7%) than Georgina’s volunteer staff (55.0%) creating a higher per employee expense for Georgina. However, wage and benefit harmonization and consolidation considerations around payroll classes will need to be made to

ensure equity between the two municipalities. This is likely the area that would have the highest costs of consolidation.

If there are decisions regarding continuing with the composite fire service model, incentives may need to be provided to enhance recruitment/retention, which would be another expenditure that would increase costs. However, with this additional cost, this would still equate to a cost effective service compared to transitioning to an all career department.

There will be one-time cost that would be associated with consolidation efforts, including but not limited to process integration efforts, software integration costs, equipment required to bring either municipality up to a mutually agreed upon standards. There would also be costs associated with the new department “startup”, such as costs of rebranding, uniform standardization, communications (radios), and any necessary fleet and training necessities.

While the budgets of both municipalities were analyzed to determine feasibility of operations, the financial impact to the service area will depend on the structure of the combination of both departments as there would be some nominal savings in individual line items, such as training, etc. These savings, however, could also be offset due to the increased personnel costs that would be necessary for consolidation such as wage harmonization or staffing adjustments that may come about as a result of operations standardization. Overall, while economies of scale can result from the consolidation, it is likely these savings would also be nominal.

Analysis Detail

This section of the study provides a financial impact analysis on capital and operating expenditures, including background information on the historical and current financial conditions of the GFRS and ECSS. The forecasted budget for a consolidated department (2022– 2028) follows after the historical analysis (2018– 2021).

In order to provide an overall understanding and provide an accurate analysis and comparison of the fire services, ESCI reviewed the individual historical expenditures for each respective agency. This review is limited based on the historical information provided to the amount of detail that was included. Individual agency historical trends were used to develop assumptions leading to financial forecasts expenditures for the comparable periods provided. It should be noted that forecasting for either town is not straightforward. A model used for expense forecasting is historical trends. ESCI forecasts took the total difference between the 2018 and 2021 grand totals, translated it into an annual average and used that average to project future expenses.

The historical analysis provides the basis for which a general modeling trend can be projected to help determine the assumed fiscal viability of a consolidation. This analysis relies on documentation provided by the departments, including actual and adopted budget documents and both departments’ annual comprehensive financial reports (ACFRs) and audits as available.

Financial analysis is an important part of determining the potential for fire department consolidation. While the financial analysis, based on currently available data and assumptions, indicates that consolidation of the fire services provides limited financial benefits to both municipalities, specific savings cannot be determined unless there is detailed information as to where streamlined efforts can be made to provide cost savings.

A modeled projection is designed to fairly represent monetary policy and practices used by each agency and to neutralize differences or account for financial oddities. This modeling approach allows for a fair comparison to be made of the departments, affording a realistic public cost for combined operations to provide a means to evaluate the financial impact of effective integration. However, it is not intended to be an exact budget as much greater detail would be needed as well as a reconciliation between the two towns about how to combine their financial organization in a manner that allows line-by-line comparisons.

Historical Expenses

The following analysis reviews historical expense for each department. For a quick revenue perspective, each department has different revenue streams, although both rely primarily on property tax revenue.

Georgina Fire and Rescue Services Department

The GFRS is a department of the general fund for the town of Georgina and allows for a comparison of its impact to the general fund. Operating Expense for the purpose of analysis does include reserves and debt service to supply a review as to how much it affects the town's general fund.

The GFRS makes up 21 percent of the town's general fund (GF) budget. There are multiple divisions in the operating budget for Emergency Management, Fire Prevention, Firefighting Force, Fleet, Keswick, Sutton, and Pefferlaw Fire Halls, and Training Officer. The 10-year capital improvement program (CIP) includes fire station repairs, a new fire station, capital equipment and vehicle replacements, which receives primary funding from Development Charges and tax funded capital reserve.

The town collects development charges to raise funds for infrastructure improvements resulting from growth development. Sutton Fire Hall and Keswick Fire Hall are part of the development charge rates that are set for residential and non-residential developments.

The fiscal year for the department starts January 1 and ends December 31. Shown in the following figure is the total taxable assessed value for 2022 for Georgina, along with the GFRS net operating budget.

Figure 10: Georgina Fire Department Budget and Finance Overview, FY 2022

Component	Description
Fiscal Year	Jan 1 – Dec 31
Total Taxable Assessed Value[1]	$9,479,199,259
Total Budgeted Property Tax Revenue (FY 22)	$47,141,340
Net Operating Budget	$9,826,650

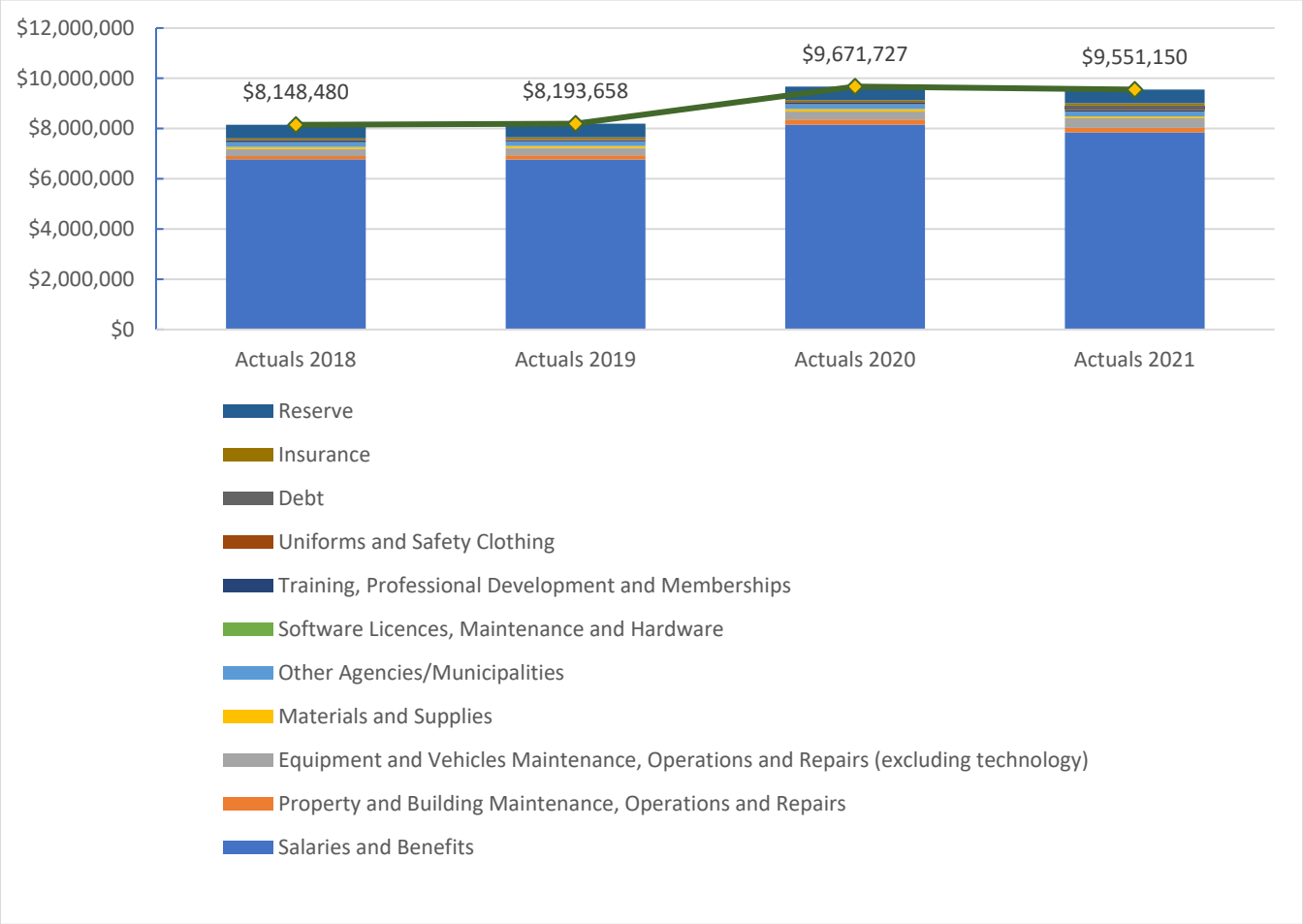
The budget for the GFRS was broken down into different categories. However, some of ESCI's analysis considered the total combined budget for the entire department, in order to provide more comparable analysis with East Gwillimbury.

The following figures show the GFRS expenses by major category for the period FY 2018-2021 actuals. Debt Service and Reserves were considered part of the operating costs. Salaries and benefits increased by 15.9% over the three year time frame or 5.3% annually. Total building maintenance significantly increased in 2020 but was down by 15% in 2021. Equipment and vehicle maintenance has increased a total of 35.9% over the 2018-2021 time period or an average of 11.97% annually. Expenses to other agencies and municipalities has remained unchanged over the period at approximately $193,000 annually.

Figure 11: GFRS Expenses, FY 2018 - FY 2021 Actuals

Categories	Actuals 2018	Actuals 2019	Actuals 2020	Actuals 2021
Salaries and Benefits	$6,771,500	$6,765,900	$8,153,376	$7,850,457
Property and Building Maintenance, Operations and Repairs	$133,051	$165,202	$208,349	$178,994
Equipment and Vehicles Maintenance, Operations and Repairs (excluding technology)	$280,321	$291,171	$313,188	$380,930
Materials and Supplies	$79,422	$79,448	$99,195	$69,265
Other Agencies/Municipalities	$193,865	$187,569	$196,661	$195,534
Software Licenses, Maintenance and Hardware	$1,294	$989	$1,422	$829
Training, Professional Development and Memberships	$58,148	$50,654	$56,745	$56,626
Uniforms and Safety Clothing	$26,179	$37,945	$28,011	$28,096
Debt				$157,869
Insurance	$61,000	$71,080	$71,080	$88,850
Reserve	$543,700	$543,700	$543,700	$543,700
Grand Total	**$8,148,480**	**$8,193,658**	**$9,671,727**	**$9,551,150**

Figure 12: GFRS Expense by Major Category, FY 2018-2021 Actuals



East Gwillimbury Emergency and Community Safety Services

The Emergency and Community Safety Services (ECSS) is a department within the budget for the town. The agency operates on a January 1 to December 31 fiscal year. The total expenditure budget for the ECSS department is approximately $5,342,434 which represents 19% of the budgeted property tax revenue for the Town. The town collects development charges to raise funds for infrastructure improvements resulting from growth development.

Figure 13: ECSS Budget and Finance Overview

Component	Description
Fiscal Year	Jan 1–Dec 31
Assessed Property Value (FY 22)	$8,977,280,217
Total Budgeted Property Tax Revenue (FY 22)	$27,641,080
Operating Budget	$5,342,434

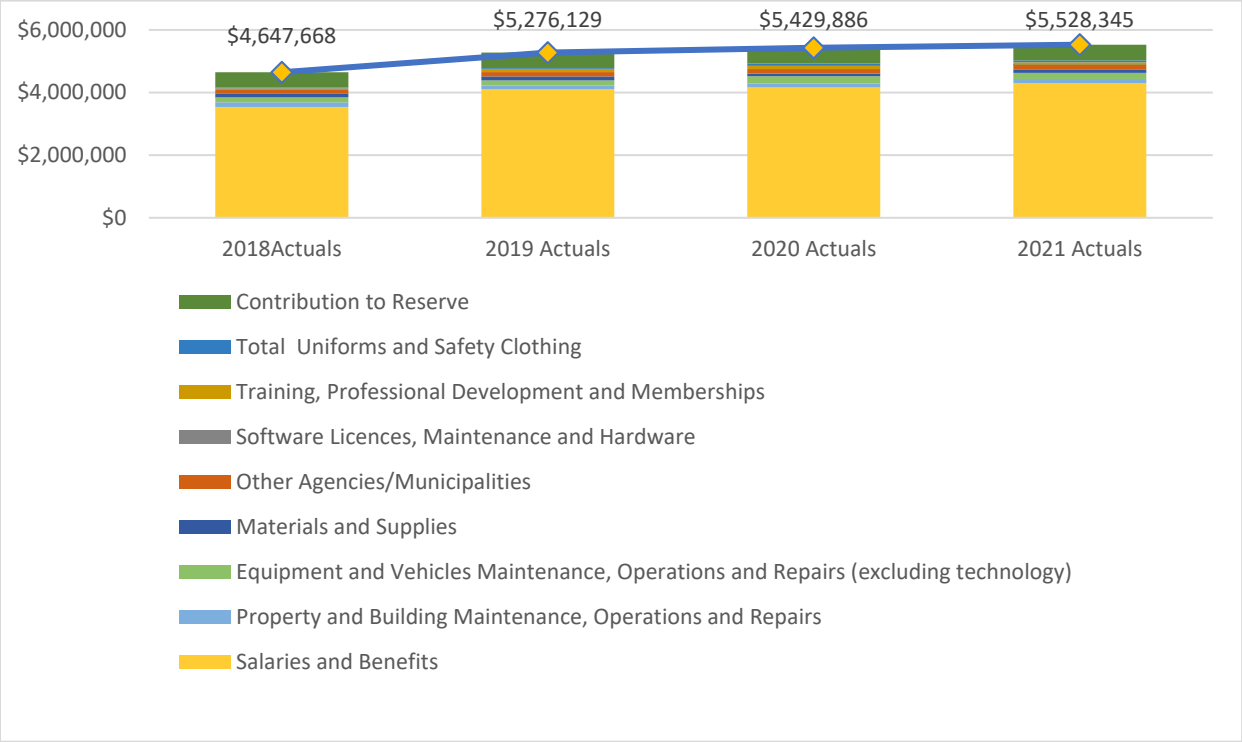
There are multiple divisions in the operating budget for Strategy and Admin, Emergency Management, Community Education and Fire Prevention, Operations, Fleet, and Training. The 10-year capital plan includes land purchase and construction for a new fire station, capital equipment, recruitment training costs for paid-on-call, and vehicle replacements.

The budget for the ECSS was broken down into different categories. The following figures show the ECSS actual expenses by major category for the fiscal years 2018-2021. Reserves are considered outside of the operating costs, while still part of the total fund balance. Salaries and benefits increased by 21.4% over the three year time frame or 7.1% annually. Total building maintenance decreased in 2019 and has slowly increased over the past two years. On average, building maintenance is approximately $132,000 annually. Equipment and vehicle maintenance has increased a total of 20.5% over the 2018-2021 timeframe with 2020 being higher than the average rate. The annual average is approximately 6.85%. Expenses to other agencies and municipalities has slowly increase over the period to approximately $165,000 annually or an increase of 35.7% over the time frame and an average of 11.9% annually.

Figure 14: ECSS, FY 2018-FY 2021 Actuals

Categories	2018 Actuals	2019 Actuals	2020 Actuals	2021 Actuals
Salaries and Benefits	$3,538,253	$4,111,998	$4,163,392	$4,295,458
Property and Building Maintenance, Operations and Repairs	$149,181	$111,263	$126,277	$139,637
Equipment and Vehicles Maintenance, Operations and Repairs (excluding technology)	$158,181	$164,126	$230,308	$190,679
Materials and Supplies	$112,165	$128,095	$80,962	$101,596
Other Agencies/Municipalities	$121,706	$140,507	$150,836	$165,103
Software Licenses, Maintenance and Hardware	$0	$0	$0	$3,760
Training, Professional Development and Memberships	$53,768	$97,631	$103,084	$67,887
Total Uniforms and Safety Clothing	$25,814	$28,909	$72,081	$61,279
Contribution to Reserve	$488,600	$493,600	$502,946	$502,946
Total Expenditures	**$4,647,668**	**$5,276,129**	**$5,429,886**	**$5,528,345**

Figure 15: ECSS Expense by Category, FY 2018-2021 Actuals



Future Consolidation

In this section, ESCI has completed a forecast to identify the financial impact to each of the Towns of having a consolidated department. This forecast considers expenses only. In the consolidation model chosen to be examined where one fire department joins to the other fire department under a primary employer, the consolidated budget becomes a budget within a town's budget and not a completely independent budget. Services such as information technology, human resources, procurement and others may be a part of the primary employer's budget and not part of the fire department budget. Consequently, every line item that could be affected by a consolidation was not necessarily evaluated however, those with the greatest impact were.

While theoretical analysis is being made, exact amounts as to the dollar amount of consolidation cannot be determined as the character of the studied organization had a great level of detail to be worked out that potentially could affect some costs. However, a sample future cost projection is provided for reference and should not be used as fact. Both departments operate on the same fiscal calendar, therefore consolidation would not pose any effect on financial year ends.

Consolidated Expenditures

The projected expenditures combined similar line items in a simple addition formula. Given no loss of staff and the locations of the fire stations, the combined assets of both organizations would not be a great deal different from the sum of the two individual ones as each of the stations would function very similar to the way they do now.

For the consolidated department, the capital impact is expected to be minimal, as there are no requirements assumed for the construction of additional joint fire stations. The finance analysis was done for the purposes of comparison between the two communities and does not include any additional staffing that would be part of Georgina building an additional station. This is because no discussions have taken place regarding how this additional station and its associated expenses would be allocated, if at all, between the two communities. While Georgina is budgeting for two new fire stations (one additional and one replacement), the total construction expense is considered a Georgina expense and not an expense to be shared with East Gwillimbury. Given the potential structure of a consolidated organization with each side (town) potentially remaining very close to how it currently performs, both organizations' 10 year capital investment plans (capital plans) are likely to remain in place even though forms of the plans may change with a primary employer model that holds all of the operating costs. Future one-time purchases that are planned in certain years could be used to enhance the effect of the budget, however, status quo is being used for future projections to provide more conservative annual operational impacts.

Within the analysis, ESCI also assessed whether there would be any one-time costs that might occur as a result of consolidation, for example contract and collective agreement costs. While there is a necessity to undertake a process to streamline polices between the two towns, the responsibility for doing so could be undertaken by the administration of one of the towns or could be folded into the existing roles and responsibilities. Finally, there may be one-time costs expected for software integration as all staff would be added to the existing technology enterprise system of the municipality that is the primary employer.

In the calculations below, ESCI used a combination of provided numbers and historic averages to determine projected costs for 2023, the starting point for projections. Beyond that, ESCI used an average of past trend averages between the two communities for the projected expenditures through 2028. Given the low likelihood of significant total organization expense changes as a result of a consolidation, and to keep salaries and benefits of equal proportion between the communities, the projections for each year were based on the joined averages of the individual line items rather than a single overall budget increase number.

The following figure projects combined expenditures with the listed increase percentages: Salaries & Benefits (5.63%), Property and Building Maintenance (2.36%), Equipment and Vehicle Maintenance (2.22%), Materials & Supplies (3%), Other Agencies/Municipalities (5.51%), Software Licenses and Maintenance (6.82%), Uniforms (5%), and Training (6.76%). Debt and insurance lines are based on Georgina's budget lines provided.

Figure 16: Consolidated Projected Expenses, FY23 - FY27

CATEGORIES	2023	2024	2025	2026	2027
Salaries and Benefits	$12,932,093	$13,659,560	$14,427,950	$15,239,563	$16,096,832
Property and Building Maintenance, Operations, Repairs	$316,784	$334,604	$353,426	$373,307	$394,307
Equipment and Vehicles Maintenance, Operations and Repairs (excluding technology)	$482,475	$509,616	$538,283	$568,563	$600,547
Materials and Supplies	$185,496	$191,061	$196,793	$202,696	$208,777
Other Agencies/Municipalities	$380,967	$402,398	$425,034	$448,943	$474,198
Software Licenses, Maintenance, Hardware	$6,177	$6,525	$6,892	$7,280	$7,689
Training, Professional Development and Memberships	$146,337	$154,569	$163,264	$172,448	$182,149
Uniforms and Safety Clothing	$101,537	$106,614	$111,944	$117,542	$123,419
Debt	$308,887	$326,262	$344,616	$364,001	$384,477
Insurance	$91,516	$96,664	$102,101	$107,845	$113,911
Reserves	$1,213,766	$1,282,044	$1,354,162	$1,430,338	$1,510,798
Total Expenditures	**$16,166,035**	**$17,069,916**	**$18,024,465**	**$19,032,526**	**$20,097,104**

Salary and Benefits will continue to increase as a result of inflation, increases in longevity-oriented compensation and likely increases of benefits due to benefit harmonization between the two communities. Property and Building Maintenance is a line item that will likely decrease in total as a result of Georgina's new stations while at the same time but being offset by higher utility costs as a result of an additional station. Other Agencies which include dispatch expenses should be expected to increase as the population grows as cost formulas for 9-1-1 services are based on population. Materials and Supplies remain unchanged other than inflationary increases. Software and Training will increase as additional technologies are embraced within the organization, equipment needs to be replaced, and more consolidated training develop.

In determining the contribution by each municipality, a cost allocation exercise will need to be held to determine factors such as call volume, service district expenditures, population area served, etc. that will affect appropriations. This is explained in more detail in the Cost Allocation Strategies section.

Summary

In determining cost savings with a consolidation, the bulk of expenditures are within the wages and benefits categories. Consequently, the impact potential of a consolidation is greatest in these budget categories. However, guidelines on the consolidation identify that there will be no personnel losses due to the consolidation which means savings or expenditures would be limited to the differences in the actual wage scales and not changes in quantities of personnel.

Figure 17: Wage Analysis

<table>
<tr><th></th><th>Georgina</th><th>East Gwillimbury</th></tr>
<tr><td colspan="3">Full-time firefighters (based on collective agreement)</td></tr>
<tr><td>Salary Schedule</td><td><table><tr><th>Date</th><th>1st Class FF</th></tr><tr><td>2018</td><td>$99,100</td></tr><tr><td>2019</td><td>$100,983</td></tr><tr><td>2020</td><td>$103,205</td></tr><tr><td>2021</td><td>$105,046</td></tr><tr><td>2022</td><td>$106,839</td></tr></table></td><td><table><tr><th>Date</th><th>1st Class FF</th></tr><tr><td>2018</td><td>$98,296</td></tr><tr><td>2019</td><td>$100,262</td></tr><tr><td>2020</td><td>$102,488</td></tr><tr><td>2021</td><td>$104,435</td></tr><tr><td>2022</td><td>$106,367</td></tr></table></td></tr>
<tr><td>Progression Scale
(based on 1st class)</td><td>• 100% - 1st Class
• 90% - 2nd Class
• 80% - 3rd Class
• 70% - 4th Class
• 60% - 5th Class
• 55% - Probationary</td><td>• 100% - 1st Class
• 90% - 2nd Class
• 80% - 3rd Class
• 70% - 4th Class
• 60% - Probationary</td></tr>
<tr><td>Differentials
(based on 1st class)</td><td>• Fire Prevention Officer (118%)
• Fire Training Officer (118%)
• Captain (118%)</td><td>• Fire Prevention Officer (116%)
• Fire Training Officer (116%)
• Captain (116%)</td></tr>
<tr><td colspan="3">Paid-on-call/volunteer firefighters</td></tr>
<tr><td>Salary Schedule</td><td>• Training: $50.87/hr. (2hr flat rate)
• Training: $29.44 (any additional hours)
• Incident Response: $45.82 (1st hour and 15 minutes)
• Incident Response: $29.44 (any additional hours)</td><td><table><tr><th>Rank</th><th>Response</th><th>Training</th></tr><tr><td>Senior Officer</td><td>60.16</td><td>35.04</td></tr><tr><td>Captain</td><td>55.83</td><td>32.24</td></tr><tr><td>1st Class</td><td>48.13</td><td>28.04</td></tr><tr><td>2nd Class</td><td>43.32</td><td>25.23</td></tr><tr><td>3rd Class</td><td>38.50</td><td>22.43</td></tr><tr><td>4th Class</td><td>33.69</td><td>19.63</td></tr><tr><td>Probationary</td><td>28.88</td><td>16.82</td></tr></table></td></tr>
</table>

Cost Allocation

In a jointly managed department, a key element to be agreed up on is how to finance the single organization. The determination of how to allocate costs to individual communities is called cost allocation. Factors describing various methods for cost allocation strategies are described in detail in the Appendix of this report.

Allocation Summary/Weighting

The information provided in the Appendix serves as a detail of cost allocation factors. Given the lengthy discussion provided with each option, ESCI has compiled the information into a summary figure illustrating the distribution of factors between the two agencies. These examples are for illustrative purposes and may be used as part of a check for fairness of assigning of the cost for service.

Figure 18: Cost Allocation Summary

Town	Area	Assessed Value	Deployment (Total Staff)	Service Demand	Population	**Average**
Georgina	54.7%	51.3%	53.4%	64.6%	58.7%	**56.54%**
East Gwillimbury	45.3%	48.7%	46.6%	35.4%	41.3%	**43.46%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
WEIGHT	20%	20%	20%	20%	20%	**100%**

Cost allocation formulas can use all of the above columns with an average as depicted or any combination of them. In addition, the chart in Figure 9 assumes all the attributes are weighted evenly. With five attributes to consider, each attribute carries a 20% weight. (20% * 5 elements = 100%)

There may be preference that one particular attribute, such as service demand, should carry a higher weight than the other attributes. The figure below displays this preference.

Figure 19: Weighted Cost Allocation Summary

Town	Area	Assessed Value	Deployment (Total Staff)	Service Demand	Population	**Average**
Georgina	54.7%	51.3%	53.4%	64.6%	58.7%	**56.54%**
East Gwillimbury	45.3%	48.7%	46.6%	35.4%	41.3%	**43.46%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
WEIGHT	**15%**	**15%**	**15%**	**40%**	**15%**	**100%**

The next two figures show how costs would change based on weighting assuming an example of a fire department organization with a $5 million budget. The first chart depicts how much a town's contribution goes towards each attribute when they are equally weighted. In the second chart, Service Demand is given a higher weight than the other four. When both charts are compared, Georgina would have a higher than East Gwillimbury net contribution when service demand carries a higher weight. The Central York Fire Service uses a distribution formula that includes population, assessed value, and emergency responses.

Figure 20: Cost Allocation w/Equal Weight Distribution

Town	Area	Assessed Value	Deployment (Total Staff)	Service Demand	Population	**Total**
Georgina	$547,000	$513,000	$534,000	$646,000	$587,000	**$2,827,000**
East Gwillimbury	$453,000	$487,000	$466,000	$354,000	$413,000	**$2,173,000**
Total	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$1,000,000**	**$5,000,000**
WEIGHT	20%	20%	20%	20%	20%	**100%**

The next figure depicts how much a town's contribution goes towards each attribute when service demand carries a higher weight than the other attributes.

Figure 21: Cost Allocation w/Weighted Attribute

Town	Area	Assessed Value	Deployment (Total Staff)	Service Demand	Population	**Total**
Georgina	$410,250	$384,750	$400,500	$1,292,000	$440,250	**$2,927,750**
East Gwillimbury	$339,750	$365,250	$349,500	$708,000	$309,750	**$2,072,250**
Total	**$750,000**	**$750,000**	**$750,000**	**$2,000,000**	**$750,000**	**$5,000,000**
WEIGHT	15%	15%	15%	40%	15%	**100%**

Note that weighing service demand higher than the other four equally-weighted attributes increased Georgina's contributions from $2,827,000 to $2,927,750, an increase of $100,750 or 3.5%. This would be appropriate since Georgina had a higher call volume than East Gwillimbury.

Weighting is not used to correct perceived discrepancies. It is used when there is agreement that one particular attribute has a greater VALUE to be considered than the others.

Potential Funding Scenarios

With the various cost allocation funding identified, below are potential costing scenarios based on the increases in the above consolidated department projections over the next 5 years. These scenarios combine the latest budgets for the purposes of comparison assuming that costs will not increase or decrease relative to standalone department budgets but rather the consolidation provides a service improvement at the same cost. Also, it assumes that proportions between the two communities' funding attributes stays the same for the next five years. It is likely though that attribute proportions, such as assessed value and population would likely change and should be evaluated annually or bi-annually. This should be part of the Terms of Reference Agreement between both towns.

Scenario #1

Equal weighted (20%) measurement across area, assessed value, deployment, service demand, and population attributes.

Figure 22: Cost Allocation Scenario #1

SCENARIO #1		2024	2025	2026	2027	2028
Total Budget		$17,069,916	$18,024,465	$19,032,526	$20,097,104	$21,221,371
GEORGINA	**Pct**					
Area (20%)	54.7	$1,867,449	$1,971,876	$2,082,158	$2,198,623	$2,321,618
Assessed Value (20%)	51.3	$1,751,373	$1,849,310	$1,952,737	$2,061,963	$2,177,313
Deployment (20%)	53.4	$1,823,067	$1,925,013	$2,032,674	$2,146,371	$2,266,442
Service Demand (20%)	64.6	$2,205,433	$2,328,761	$2,459,002	$2,596,546	$2,741,801
Population (20%)	58.7	$2,004,008	$2,116,072	$2,234,419	$2,359,400	$2,491,389
TOTAL CONTRIBUTION	56.54	$9,651,331	$10,191,033	$10,760,990	$11,362,903	$11,998,563
EAST GWILLIMBURY	**Pct**					
Area (20%)	45.3	$1,546,534	$1,633,017	$1,724,347	$1,820,798	$1,922,656
Assessed Value (20%)	48.7	$1,662,610	$1,755,583	$1,853,768	$1,957,458	$2,066,962
Deployment (20%)	46.6	$1,590,916	$1,679,880	$1,773,831	$1,873,050	$1,977,832
Service Demand (20%)	35.4	$1,208,550	$1,276,132	$1,347,503	$1,422,875	$1,502,473
Population (20%)	41.3	$1,409,975	$1,488,821	$1,572,087	$1,660,021	$1,752,885
TOTAL CONTRIBUTION	43.46	$7,418,585	$7,833,432	$8,271,536	$8,734,201	$9,222,808

Scenario #2

Equal weighted (33%) measurement across assessed value, service demand, and population attributes.

Figure 23: Cost Allocation Scenario #2

SCENARIO #2		2024	2025	2026	2027	2028
Total Budget		$17,069,916	$18,024,465	$19,032,526	$20,097,104	$21,221,371
GEORGINA	**Pct**					
Assessed Value (33.3%)	51.3	$2,916,037	$3,079,101	$3,251,307	$3,433,168	$3,625,226
Service Demand (33.3%)	64.6	$3,672,046	$3,877,387	$4,094,239	$4,323,249	$4,565,099
Population (33.3%)	58.7	$3,336,674	$3,523,260	$3,720,307	$3,928,401	$4,148,163
TOTAL CONTRIBUTION	58.2	$9,924,756	$10,479,748	$11,065,853	$11,684,818	$12,338,487
EAST GWILLIMBURY	Pct					
Assessed Value (33.3%)	48.7	$2,768,245	$2,923,046	$3,086,524	$3,259,167	$3,441,491
Service Demand (33.3%)	35.4	$2,012,236	$2,124,760	$2,243,592	$2,369,087	$2,501,618
Population (33.3%)	41.3	$2,347,608	$2,478,887	$2,617,524	$2,763,935	$2,918,554
TOTAL CONTRIBUTION	41.8	$7,128,090	$7,526,692	$7,947,640	$8,392,189	$8,861,663

Scenario #3

Weighted measurement across area and deployment (35%) but equal weight (10%) across assessed value, service demand, and population attributes.

Figure 24: Cost Allocation Scenario #3

SCENARIO #3		2024	2025	2026	2027	2028
Total Budget		$17,069,916	$18,024,465	$19,032,526	$20,097,104	$21,221,371
GEORGINA	**Pct**					
Area (35%)	54.7	$3,268,035	$3,450,784	$3,643,777	$3,847,591	$4,062,831
Assessed Value (10%)	51.3	$875,687	$924,655	$976,369	$1,030,981	$1,088,656
Deployment (35%)	53.4	$3,190,367	$3,368,773	$3,557,179	$3,756,149	$3,966,274
Service Demand (10%)	64.6	$1,102,717	$1,164,380	$1,229,501	$1,298,273	$1,370,901
Population (10%)	58.7	$1,002,004	$1,058,036	$1,117,209	$1,179,700	$1,245,694
TOTAL CONTRIBUTION	56.54	$9,438,810	$9,966,628	$10,524,035	$11,112,694	$11,734,357
EAST GWILLIMBURY	**Pct**					
Area (35%)	45.3	$2,706,435	$2,857,779	$3,017,607	$3,186,396	$3,364,648
Assessed Value (10%)	48.7	$831,305	$877,791	$926,884	$978,729	$1,033,481
Deployment (35%)	46.6	$2,784,103	$2,939,790	$3,104,205	$3,277,838	$3,461,206
Service Demand (10%)	35.4	$604,275	$638,066	$673,751	$711,437	$751,237
Population (10%)	41.3	$704,988	$744,410	$786,043	$830,010	$876,443
TOTAL CONTRIBUTION	43.46	$7,631,106	$8,057,837	$8,508,491	$8,984,410	$9,487,014

Scenario #4

Weighted Measurement on Assessed Value (60%) and Population (40%).

Figure 25: Cost Allocation Scenario #4

		2024	2025	2026	2027	2028
Total Budget		$17,069,916	$18,024,465	$19,032,526	$20,097,104	$21,221,371
GEORGINA	**Pct**					
Assessed Value (60%)	51.3	$5,254,120	$5,547,930	$5,858,212	$6,185,889	$6,531,938
Population (40%)	58.7	$4,008,016	$4,232,144	$4,468,837	$4,718,800	$4,982,778
TOTAL CONTRIBUTION	56.54	$9,262,136	$9,780,075	$10,327,049	$10,904,689	$11,514,716
EAST GWILLIMBURY	**Pct**					
Assessed Value (60%)	48.7	$4,987,829	$5,266,749	$5,561,304	$5,872,374	$6,200,885
Population (40%)	41.3	$2,819,950	$2,977,642	$3,144,173	$3,320,042	$3,505,770
TOTAL CONTRIBUTION	43.46	$7,807,780	$8,244,390	$8,705,477	$9,192,415	$9,706,655

Comparison of all scenarios

The next chart shows a comparison of the four different scenarios. A decision on which attributes should contribute to the determination of the formula as well as whether or not any weighting of the individual attributes should be incorporated once a final decision on consolidation is made. Cost allocation strategies are used to represent organizational differences. These differences may be in local value or priorities, work force disparities, community demographics and valuations, and/or geographical factors which are then translated differences to a representative dollar figure.

Figure 26: Cost Allocation Scenarios Summary

	2024	2025	2026	2027	2028
Total Budget	$17,069,916	$18,024,465	$19,032,526	$20,097,104	$21,221,371
SCENARIO #1					
*** Georgina**	$9,651,331	$10,191,033	$10,760,990	$11,362,903	$11,998,563
*** East Gwillimbury**	$7,418,585	$7,833,432	$8,271,536	$8,734,201	$9,222,808
SCENARIO #2					
*** Georgina**	$9,924,756	$10,479,748	$11,065,853	$11,684,818	$12,338,487
*** East Gwillimbury**	$7,128,090	$7,526,692	$7,947,640	$8,392,189	$8,861,663
SCENARIO #3					
*** Georgina**	$9,438,810	$9,966,628	$10,524,035	$11,112,694	$11,734,357
*** East Gwillimbury**	$7,631,106	$8,057,837	$8,508,491	$8,984,410	$9,487,014
SCENARIO #4					
*** Georgina**	$9,262,136	$9,780,075	$10,327,049	$10,904,689	$11,514,716
*** East Gwillimbury**	$7,807,780	$8,244,390	$8,705,477	$9,192,415	$9,706,655

Sustainable Community Workforce

Organizational needs of a composite department

No organization will survive long-term without the successful use and support of its workforce. Especially in public safety where the staff on the front lines is the face of the organization, it is imperative that employees feel like they have purpose and value, are adequately trained and equipped and are well-informed on the direction of the organization. In addition, having organizational leadership focus on the why and what of an organization's mission while leaving the how, where, and when to the people responsible for its application can provide enormous benefit as employees adopt the standards accountability that they themselves have set forth.

Georgina and East Gwillimbury have similar organizational structures which means in a consolidated organization, overlap with job responsibilities will exist. Some consolidation efforts with a superficial view, might view this as an opportunity to save money by eliminating positions however what is often overlooked is position depth. Position depth is simply the ability to have more than one person able to perform a specific job function. The benefits of position depth are several:

- Relieves pressure to have a single individual with a significant amount of responsibility
- Allows individuals to be away from their jobs for a period of time without having to be concerned with how their job responsibilities will be accomplished while they are away.
- In leadership positions, provides opportunities for succession planning
- Increases personal motivations for people to aspire to higher positions when they can sample the additional responsibilities
- Encourages a team approach to solution development as more experience and perspectives can be evaluated
- Allows multiple functions to take place simultaneously as team members can be distributed reducing the workload on any one individual.

Poor communications, participation or management can take what appears to be a very viable situation and because of the personal impacts of change can delay or defeat the best of efforts. Understanding the impacts of change on people especially when aspects of their secure and stable environment are at risk can be minimized with good communication and involvement. No matter how logical a decision may appear, affected stakeholders will always look at the impact of the change on themselves. This can be hopefully just an initial reaction to proposed change but to some individuals it will be the only response they have and needs to be addressed.

The Towns of Georgina and East Gwillimbury utilize the composite fire services model with career administrative and operational components as well as volunteer/ paid-on-call response components that would be unchanged in a consolidation. Both municipalities' fire and emergency services consolidation requirements and needs analyses, support the maintenance of the composite fire service model.

From the perspective of the first two lines of defense, both towns have strong support for their fire prevention practices and public education programs. They use the same public materials and have the same organizational philosophies. Consolidating these two divisions will require minimal effort. Both towns have indicated that there is a need to increase their staffing in in fire prevention and education portfolios to continue to address the community risks within their communities.

From the perspective of the third line of defense, total call volume is high enough to warrant a degree of career staffing where the risk and call volume are highest. This will remain unchanged. However, lower population densities and associated low call volumes for large parts of the town areas mean career staffing is not justified especially if there is a reliable volunteer/ paid-on-call workforce, which there is in both communities. Summarily, a consolidated workforce would initially include career-staffed stations (1-4 Keswick, future Keswick South, 1-6 Sutton, and 2-8 Queensville) and volunteer/ paid-on-call stations (1-8 Pefferlaw, 2-4 Holland Landing, and 2-6 Mount Albert). Both organizations operate on identical work schedules with career firefighters working 168 hours over 28 day period. Volunteer/ paid-on-call firefighters are called as needed to respond to incidents to support the initial career staff response or to respond to other incidents. A Working Group should be formed to create a plan for transitioning to a consolidated composite response model.

Emergency Response

As discussed in the FMPs, both Georgina and East Gwillimbury are challenged to meet fire response standards set out in NFPA 1710 and 1720. With population growth forecasted to rise by up to 40% in the next 10 years, call volumes are expected to also increase substantially. The towns have both acknowledge that these response time delays have significant risk implications for communities unless staffing levels are reviewed to align with the growing demand for services. To meet this growing demand, both towns may need to invest in improving staffing levels through the addition of more fire suppression personnel, including both full time and paid-on-call/volunteer firefighters. This will improve time for response of the first arriving engine, ensure faster assembly of an effective response force, minimize the time spent alone by the first responding unit at a fire scene, and mitigate some of the health and safety implications for firefighters. Performance standard monitoring can assist with establishing trigger-points of when additional staffing is needed.

In East Gwillimbury, the current staffing model places a high reliance on paid-on-call firefighters to meet service needs. Currently, the Town has one career station. This will have to be continually monitored for sustainability over the long term.

In Georgina, the Town relies on the two career station with a depth of response from volunteers to meet service requirements, along with a fully volunteer station.

The Towns currently have different staffing models that need to be taken into consideration in the event of consolidation.

Administration

Initial analysis and discussions with both Towns indicated that current administrative staffing levels in both towns is insufficient to manage the existing needs and a consolidated department.

The exception to this is that some of the business support roles, specifically in the area of HR, have indicated that they will require additional resources to assist the consolidated department in managing the staffing needs of the employees and to pursue the harmonization of wages, policies, and procedures. That being said, however, it was also acknowledged that the consolidation of fire services may provide quantitative benefits such as economies of scale during activities such as recruitment.

The primary workforce concern then for a consolidation is not whether the consolidation creates an opportunity for reallocation of the workforce but rather how to combine the similar workforce elements between the two organizations. While the two organizations both have composite makeups, the proportion of volunteer/paid-on-call firefighters to career staff and associated values are different; in Georgina they are approximately half the total staff, in East Gwillimbury they are a majority. Since the staffing models are different which means response models are different, a consensus of the models must take place.

Leadership Team

One of the early questions asked in a consolidation is who will be fire chief of the new organization. A joint process conducted by the towns would need to take place. It is also possible the towns could choose someone other than one of the existing chiefs, possibly from outside both organizations to take the new organization into its new direction. Should the two departments merge, there will be a need for a strong leadership team for a new consolidated composite department. The leadership team will consist of a fire chief, supported by deputy chiefs, as required.

Labour Agreements

Both organizations' operational career labour forces have collective bargaining agreements. This report will not go into the detail of what needs to transpire to accommodate both collective bargaining agreements however, as part of the consolidation one collective agreement will need to be developed. The ideal situation would be an agreement that the two unions and the two towns can agree upon. Should this fall short, a dispute resolution process can be utilized.

Some elements that would require reconciliation between the two associations are:

- Different employee classification approaches to non-career staff
- Wage and benefit differences including wages and time-off
- Retirement benefit differences
- Command structure and authority

Currently, Georgina and East Gwillimbury do not have formal associations within their volunteer/ paid-on-call ranks. Collaboration and concessions will be required between all parties in order to transition to an effective consolidated composite department.

Employee & On-Call Resources Work Environment

Both organizations operate on identical work schedules with career firefighters working an average 42 hours per week on 24 hour shifts. Volunteer/ paid-on-call firefighters are called as needed to respond to incidents in their response areas as well as complement career staff response to areas where career firefighters are first to arrive on a scene. Both towns operate similarly. A consolidation though will put the workforces into a single organization and require either adopting one of the existing organization's practices or a compromise of both. This also allows both organizations' staffs, now as a single organization, to be participants in the other's community.

Health & Wellness

Both organizations value the health and wellness of their staffs and actively participate in the evolving fire service organizational priority of well-being. A consolidated organization will continue to make physical and mental health and wellness of its staff their priority. Initially, as change takes place, it should be expected that there will be stressors encountered as members navigate the new environment. The consolidation of the organizations will provide a depth of resources and experience that allows staff to grow as well as share burdens. Employee assistance programs exist in both municipalities to deal with any transitional issues. Fitness areas and equipment are provided as well.

Human Resources Support

Moving from two organizations to one under one employer will mean a significant and immediate increase in employees. Both organizations each have approximately one hundred employees. This will require additional human resources staff for the "one employer" organization, as the workload for the human resource division for fire services will double. Additional resources will be required for the initial consolidated department implementation in order to manage the staffing needs of the employees and to pursue the harmonization of wages, policies, and procedures.

Both a Society of Human Resource Managers 2017 report[5] and a Bloomberg Law 2018 HR report identified an average of two HR employees per one hundred employees. While career employees typically occupy more HR time, it should be expected that the HR staff of the employing organization would need to increase by one or two employees. These additional costs would become part of the cost allocation considerations when financing formulas are considered.

[5] https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/2017-Human-Capital-Benchmarking.pdf

Recruitment & Retention

In meeting the challenges of the three lines of defence, both Georgina and East Gwillimbury need to examine the recruitment and retention of staff that would be available and ready to meet the standards, guidelines, and expectations of their respective community response and targets as identified in the Fire Master Plans.

Redefining "Operational" Staffing

Operations staff in a traditional fire department focus primarily on fire suppression and strategy and tactics training. Modern, innovative fire service organizations use the community's risk and the identified needs to drive the programs and services delivered. The operational staff of the modern organization is accountable to their community both in suppression readiness and the ability to mitigate community-specific risk.

Qualifications

Operational firefighters and company officers work together to deploy services to the community. Within the modern and innovative fire service organization, the staff qualifications establish a baseline for training and education. The Office of the Fire Marshal published, on July 1, 2022, the *Mandatory Certification Information Package for Ontario Fire Services*. The document provides a baseline for firefighter training that generally focuses on traditional emergency operations activities.

In a modern, innovative fire service organization, however, there are qualification that exceed the mandates by the Office of the Fire Marshal. The following are those qualifications:

NFPA 1035 Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist, and Youth Firesetter Program Manager Professional Qualifications: Within the first two years, a firefighter should complete the qualifications and achieve the knowledge base consistent with NFPA 1035. Operational firefighters in the innovative and modern fire service organization have a life safety education opportunity in every interaction with community members. Capitalizing on these opportunities with training firefighters fosters positive outcomes in the community.

Vision 20/20 Community Risk Reduction Modules: The Vision 20/20 Project is hosted by the Institution of Fire Engineers (IFE) – USA Branch (IFE-USA) and is a 501(c) (3) non-profit global organization. Vision 20/20 offers a six-module, free self-study course that covers in-home injury prevention, communications, burn prevention, and more. All firefighters must understand community risk reduction to complement the department's activities.

Blue Card Command: Although firefighters typically don't assume incident command roles, there is value in front-line operational staff being trained in incident command topics. All firefighters should take the introductory modules of Blue Card and participate in continuing education through simulation training.

Emergency Medical Technician: Firefighters in modern, innovative organizations respond to all types of emergencies. Training to the EMT-Basic level achieves baseline knowledge required for all operational staff.

Company Officer Qualifications

In addition to the firefighter qualifications listed, there are officer-specific qualifications required by the modern and innovative fire service organization.

NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner: Within the first two years, an officer should complete the qualifications and achieve the knowledge base consistent with NFPA 1031. Operational officers in the innovative and modern fire service organization have a fire code education and enforcement opportunity during community interactions.

Blue Card Command: Company officers should maintain the requirements for the Blue Card Command training program. The program requires self-study, classroom, and scenario-based training. Maintaining Blue Card will provide consistency in incident command across the combined fire service communities.

Emergency Medical Technician (Paramedic Preferred): Officers in modern, innovative organizations respond and support firefighters at all types of emergencies. Training to the EMT-Paramedic level achieves what has become an industry standard across the fire service.

Bachelor's degree from an Accredited Institution: Higher education degrees do necessarily make firefighters better firefighters. However, a bachelor's degree (or higher) instills certain characteristics required for supervisory personnel in a modern and innovative fire service organization. Reading, writing, critical thinking, analytics, accountability, and dedication are all tested elements of a high-education degree and align with the needs of the organization.

Credentialing

The Commission on Professional Credentialing (CPC) through the Center for Public Safety Excellence (CPSE) offers peer-reviewed professional credentialing model that support continuous personal improvement. The model offers six designations that covers fire service professionals. The following are the six designations:

- Chief Fire Officer – CFO
- Chief EMS Officer – CEMSO
- Chief Training Officer – CTO
- Fire Officer – FO
- Public Information Officer – PIO

Of the six, only the Chief Fire Officer designation requires the applicate to have a "chief" status. The other five designations are available fire service professionals. The one designation that provides exceptional value to the operational staff in a modern and innovated fire service organization is "Fire Officer." FO is available to all junior officers, company officers, and those individuals who service as acting officers.

Submitting to the credentialing process requires the candidate to create a professional portfolio that the candidate self-assesses on a collection of professional competencies. The competencies measure elements consistent with the knowledge base of the modern fire service. Additionally, the candidate sets professional goals and addresses alignment with firefighter safety initiatives.

The Fire Officer professional competencies are:

- Human Resources Management & Employee Engagement
- Health and Safety
- Community Engagement
- Training, Education, and Instructional Design
- Risk Assessment, Resource Deployment, ICS/IMS, IAP
- Department Administration
- Administration of Incident Reporting
- Codes, Inspections, and Pre-Planning
- Origin and Cause Investigations
- EMS Systems, State and Local Protocols, Infection Control
- Emergency Communications

Once the portfolio is completed, the candidate submits the package to the Commission on Professional Credentialing, who assigns a peer-review team. The peer review team conducts a portfolio review and interview then reports their findings to the CPC.

The credentialing process should be embedded in the modern and innovative fire service organization. From an operational staffing standpoint, the Fire Officer credential offers an excellent opportunity for the company officer and acting officer to develop a professional improvement plan. This approach is outside traditional staff development measures and embraces modernization and innovation.

Modern and Composite Service Delivery

Prioritized Community Service

Even the simplest community risk assessment will inform and prioritize community service delivery. Using a risk assessment to service deployment decision-making is a critical piece to transforming a fire service organization's model from traditional to modern and innovative. Building a simple risk assessment into a comprehensive decision-making tool is not an easy task, however, incremental improvements using available data is a great method for success in optimizing the capabilities of the workforce.

Operations Response Capabilities

A modern, innovative operational workforce is highly trained and capable of mitigating a wide range of community risks. Some community risks evolve into emergencies which need an emergent response by specially trained personnel. These emergent risks, however, may benefit from early intervention.

Firefighters and emergency responders in the modern emergency services organization not only respond to emergencies but respond to identified community risks. Using a comprehensive community risk assessment, operational personnel can prioritize emergency response but also work within the whole-community prevention arena.

The organization should embrace modern and innovative best practices to establish response and prevention performance efficiencies. First, the combined organization should implement a triaged and tiered response procedure in the emergency communications center. The center can process calls for service, assign priority, and assign the most appropriate resource within established timeframes. Integrating automation, vehicle location technologies, and the emergency communication center can calculate response times and assign the most appropriate resource.

Operations personnel should always be available for high-priority emergency response. However, using technology and policy, those operations personnel can be more efficiently used for community service. Considering the measured workload of the operations staff, the fire service organization should determine the level of community risk reduction activities expected from each operational resource.

Considering the time for apparatus checks and maintenance, training, report writing, meals, and rest combined with the total commitment time for emergency response, the department leaders can establish expectations. If the department's expectations for Unit X are four combined hours of inspections, education, and public engagement daily, the department should continuously monitor the unexpected workload fluctuations and manage expectations.

The operations staff's primary responsibility is emergency response. However, there is a significant opportunity for complementing community risk reduction efforts with operations personnel. Managing expectations for the additional workload is important, as is capitalizing on technology application and policy change.

Education Capacities

It's the responsibility of the entire workforce to expand and optimize all three lines of defense. Education is an important element of decreasing emergency response and improving community outcomes. The key to successful education is determining the community risks that are best intervened through strategic learning. A comprehensive risk assessment will contribute to improved performance in this line of defense.

Considering the communities and neighborhoods in the area of responsibility, the department should define risk-based engagement topics for education. Internal and external data sources provide insight into community risk, and the data's interpretation exposes the foci for engagement. As an example, the City of Charlottesville in Virginia analyzed its nineteen neighborhoods. Each neighborhood community had some similarities but showed differences in many risk factors. Some neighborhoods showed a high prevalence of structure fire risk, whereas others showed an increased risk of cardiovascular disease, pedestrian accidents, and ground-level falls.

Not all education is fire safety education. Not all communities have a fire problem. Data-driven risk assessments guide community risk reduction activities to provide the right content, in the right location, for the right audience. In Georgina and East Gwillimbury, community risk reduction practitioners should use risk assessment to create canned educational material for specific communities or populations. Company officers and department educators can use the canned material to guide the conversations and outreach.

Capitalizing on technology, the department can use mapping applications to show the engagement topics and links to available materials based on the location of the educator. Cloud-based file storage and web links are powerful tools when deploying information to people outside of a typical office environment. With today's mobile technology, there are few limitations on deploying practical innovations.

Since nearly all of the department members carry a smartphone in their pockets and mobile devices are in frontline apparatus, there is an opportunity to increase efficiency. Using tools such as ArcGIS Survey123 or ArcGIS FieldMaps, field data collection is easier than ever and both fire and emergency departments have been successfully using this technology. Department personnel should easily collect demographic and attendance information during education events and engagements. The collected information and location of the submission will drive future decision-making and can help expose the outcomes of risk-reduction activities in the community.

Prevention Capabilities

When all company officers complete the NFPA 1031 Standard for Professional Qualifications for Fire Inspector and Plan Examiner training, the capabilities for prevention are optimized. Combining the efforts of dedicated prevention staff in the combined organization with operations staff supplementing their efforts, the department can capture improved outcomes.

Operations staff conducting prevention inspections can also achieve economies of scale by combining activities into one visit. Inspections are great opportunities for strategy and tactics discussion, business engagement, and pre-incident planning. Additionally, as mentioned previously, department members can collect inspection, pre-planning, and business

engagement information on mobile devices using mobile technology solutions. The real-time data collection will decrease the administrative workload when they return from the stations.

Dedicated prevention staff should align their inspection activities with a community risk assessment. Again, a good risk assessment can drive efficiency and decrease workload. Fire safety inspections should be prioritized and scheduled based on the risk. Inspections in facilities where visitors sleep, areas of childcare, and housing for the elderly may be of higher priority than off-season retail establishments or non-hazardous storage buildings.

Climate and seasons can affect prevention priorities. In the month preceding the first freeze, the prevention staff should (directly or indirectly) engage with facilities with dry sprinkler systems. A phone call, email, or postcard can remind the maintenance staff to express the collected water in low-point drains, thus reducing the number of alarm activations because of frozen pipes. Furthermore, December each year brings increased stock to retailers, which may block exits and increase fire potential. The increased inspector presence can remind store managers to keep their areas safe for patrons and employees.

Service Delivery Efficiencies Through Partnership

There are common side effects of adopting the models of community risk reduction. The actions of a modern and innovative fire service organization using risk assessments and data will improve efficiency and decreases workload. Additionally, community risk reduction identifies potential strategic partnerships.

Matching community response and partnership is a vital part of the modern and innovative fire service organization. Viewing the whole community through the lens of risk-based service delivery, fire service leaders see the opportunities in partnering with organizations more suited to match the needs of individuals. Understanding that incident prevention and recovery-focused community response generate the greatest opportunities for improved outcomes. Modern, innovative fire service organizations understand the department's and community's priorities and best matches them to program and service delivery.

Strategic partnerships in the fire service are those collaborations with third-party service providers that eliminate duplication of efforts. When fire service personnel identify a service provider working in the same space, there is likely an opportunity for a strategic partnership. Considering the three lines of defense, education is generally the most impacted by the partnership. School teachers, church volunteers, meal service organizations, and more can be a complementary addition to deliver consistent messaging and material. Using risk assessments, the modern and innovative fire service organization can provide insight to the strategic partners and improve their service delivery too.

The University of Virginia Health System is a great example. In 2020, the Charlottesville Fire Department engaged the large health system and provided risk assessment insight. As a result, the health system changed its approach to community health and used the fire department's risk assessment to guide its service delivery. The partnership served as a catalyst for improved health outcomes, decreases in emergency response in specific communities, and increases in community workload efficiency.

As a result, the partnership eliminated service duplication. Now, community health workers from the health system are engaging community members on fire safety topics, checking smoke

alarms, requesting smoke alarms and CO alarm assistance, and increasing the awareness of healthy habits in neighborhoods of specific risk. The reach of Charlottsville's educational line of defense is extended through partnership and, in turn, decreases the department's workload.

Data Collection, Visualization, and Utilization

Data collection, visualization, and utilization in the modern, innovative fire service organization is the foundation for progress and sustainability. The data and resulting analytics drive decision-making throughout a progressive organization. Performance data analytics reaches far beyond simple response times and can encompass unit commitment, quantitative incident weighting, and more. Data drive decision-making, and the robust use of data through storytelling exposes outcomes that change the hearts and minds of policymakers.

However, the decisions and stories are only as good as the data and resulting analytics. Weak analytics or self-guided interpretation can result in negative outcomes and unsustainable progress. Poorly managed data collection and records management quickly results in misinformation. Knowing the organization's data is insufficient or inaccurate and moving forward is just bad practice.

The Towns of Georgina and East Gwillimbury should continue the data collection and management to ensure visualization, and utilization is on point. The policy and continuous staff training will drive clean and complete data collection and retention. Furthermore, modern fire service organizations use quality assurance and management practices to monitor information. For Georgina and East Gwillimbury's consolidated organization, ensuring the quality assurance and data consistency is an appropriate first step.

Currently, Georgina and East Gwillimbury utilize FireHouse software for maintaining their records. In 2024, a new RMS system will be implemented in both municipalities to replace the current system which is the end-of-life. This is an added advantage in the event of the departments'' consolidation. Collecting standardized records across the two communities allows for an environment where community and response data can be compared. The common RMS must be supported and up-to-date. Fire service leaders must monitor and plan for a system's end of life and avoid working in systems that no longer support updates and innovations.

A reliable and efficient RMS should act as a hub and spokes system. Fire inspections, community engagements, fleet management, incident responses, and supplies should all be integrated and related. Daily apparatus checks should inform the fleet manager. Incident reports should inform the logistics officer. Incident response reports should inform fire prevention activities.

Technology for Improved Community Outcomes

Mobile Data Collection

In a modern and innovative fire service organization, the information collection and management process should leverage data from mobile devices. Field data collection is a standard in many industries; however, the fire service has historically lagged behind technology. With nearly every member carrying a smartphone in their pocket, the opportunities are endless. Additionally, utilizing mobile devices in frontline apparatus provides a similar opportunity. Both Georgina and East Gwillimbury currently using mobile devices for this exact purpose.

Since nearly all innovative RMS/software solutions offer cloud-based platforms, integrating smartphones is easier than ever. Staff should be able to use municipal devices to collect and report information. However, they should have the option to use their personal device to do the same. Apparatus checks, pre-incident planning, inspections, and public engagement information are great opportunities for personal devices. Introducing QR codes to provide immediate access to information can be a game changer in a fire hall.

Community Data Collection and Crowd Sourcing

Using the community connect process, placing QR codes on apparatus and literature can improve field data collection. These practices lead to improvement in data collection and decision-making. To take a step further, it is vital to show the outputs of data collection. Providing public-facing dashboards, reports, and interactive tools can increase buy-in by the community and the workforce alike. Both Georgina and East Gwillimbury are using QR codes for various applications.

Software companies, such as First Due, provide tools for community members to interact with their fire service organization. Their community connection tool allows family members to provide care details, business owners to provide after-hours contact information, and more. Gathering information from outside of the organization is important because workforce data collectors are not everywhere.

Outside of the RMS environment, there are times to collect “one-off” data. In the instances of natural disasters and civil unrest, creating and deploying a mobile data collection tool can yield amazing results. ESRI, a global GIS company, offers a host of data products. Using ArcGIS Survey123, the fire service organization can spin up a simple form that collects point data, images, and user-generated information to identify downed trees, closed roads, groups of people, and more. ArcGIS Survey123 is a great tool for both public and workforce collection. Both Georgina and East Gwillimbury have been successfully using this technology.

ArcGIS Field Maps is a tool that can be used to update existing information. For example, if the public used ArcGIS Survey123 to identify the location of a damaged fire department connection, a fire service member can use ArcGIS Field Maps to verify and update the location, condition, or status of the device.

As discussed early in the report, fostering community partnerships increases the reach of the fire service organization and improves outcomes. Innovative fire service organizations should implement measures to collect partner activity and progress information to improve communication with the partnering organizations. Community connections through the RMS, available tools through GIS or other innovative approaches can be used.

Summary Consolidated Fire Service vs Modernized Standalone Departments

As the fire service continues to evolve in response to changes in the community both culturally and demographically, human nature will always require public safety. Change is now one of the few things that is constant. A modernized fire department must get comfortable with the thought that cultural expectations and community adaptation will be a regular part of good strategic thinking. As a result, evaluations like these may be more frequent and talked about more than just occasionally.

As local governments continue to research the best ways of keeping costs low while maintaining levels of service, potential economies of scale and the reduction of duplication will be inviting. However, community expectations will carry weight as measurable costs and efficiencies may not be sufficient against intangibles such as control, tailored community services, and community character. These are also factors elected officials must weigh.

A 21st century fire department modernization effort is not only about determining measurable economics but also the character of the organization. The larger an organization gets through consolidation, the more competing priorities from member communities can create complexity.

Both Georgina and East Gwillimbury are poised to grow significantly over the next few decades, East Gwillimbury a bit more than Georgina. Both fire service organizations recognize the character of their communities are changing and wonder whether a consolidation would make them better prepared for the anticipated growth.

There are pros and cons to both standalone organizations and a consolidated one for Georgina and East Gwillimbury. The pros and cons of standalone versus consolidated oppose each other.

Below is a comparison chart of the three options, comparing them from various perspectives. Since this is a strategic-level report, the three strategies are representations of long-term conditions that reflect the quality of the service long-term. They do not include change management issues that may create a few temporary challenges that are expected to disappear once the change is complete.

	Standalone Department		Standalone Department with Shared Services		Consolidated Department	
	Pros	**Cons**	**Pros**	**Cons**	**Pros**	**Cons**
Governance	Local authority and control stays with local town	Services may appear duplicate Continuation of any existing (e.g. funding, policies, etc.) issues (if any) will continue.	Local authority and control stays with local town	Complexity to some approval processes, such as procurement, etc. Greater coordination and mutual considerations required	Efficiency and consistency in decision making as it affects larger area	More difficult for unique approaches to each community's needs Must address community priority differences Loss of local identify Implementation complexity Multiple reporting channels
Management	Smaller departments usually result in better understanding of staff needs and closer working relationships between leadership and staff	Each fire and emergency service has its own leadership team. Risk of management overload, limited strategic resources, lack of functional depth and specialization for management functions.	Smaller departments usually result in better understanding of staff needs and closer working relationships between leadership and staff Sharing of best practices	Complexity is added to decision-making over services that are shared Necessitates a strong working relationship between each town's leadership Greater coordination and mutual considerations required	Potential functional duplication can be transitioned to depth Potential managerial effectiveness increases Greater potential for streamlining job responsibilities	Larger organizational hierarchy Potential larger workload for management team Competing demands for service and priority make it challenging to find an optimal allocation of time across the priorities of both municipalities

Administration & Planning	Strategic activities focus solely on the needs, expectations and aspirations of the local community	Limited inter-municipal cooperation required for strategic activities (development of a master fire plan, community risk assessment etc.)	Sharing of best practices Alignment of processes between two communities	Complexity of the initial implementation Constant communication and collaboration to prevent disputes Greater coordination and mutual considerations required	Focused effort to optimizing municipal initiatives such as developing strategic and operational plans Common activities such as Key Performance Indicators analysis and reporting, development of continuous improvement programs etc. Consistent data collection	Technology challenges of shared collaboration platforms between the municipalities Ongoing complexity to determine strategic goals, objectives, and service levels
Capital Assets	Sole ownership of assets	Greater asset expense for acquisition and lifecycle maintenance	Shared assets can reduce expenses	Greater coordination and mutual considerations required	Capital can be shared Potential lower capital requirements Potential for asset optimization Greater potential for capital projects to meet the needs of a modernize fire service	Assets may need to be negotiated Since assets will be funded by both organizations, there is potential for a debate on municipal needs The ability to demonstrate the need of one area or another Equalization of assets

Finances	Complete decision-making authority over expenditures Local taxpayers see a direct benefit to their investment	May not be able to take advantage of economies of scale Lower financial resources	Complete decision-making authority while being able to share some expenses	More complexity to financial decision-making and prioritization Greater coordination and mutual considerations required	Some purchasing economies of scale Reduce need for future organizational depth by combining resources Increased depth of operation The capital and operating cost of services can potentially be reduced A larger department creates opportunities to pursue larger scale partnerships and collaboration	Complexity to financial allocations Potential mismatch over funding priorities Complexity to financial allocations Potential mismatch over funding priorities Conflict potential over the earlier allocations of operating or capital reserves Potential disparity in benefits programs for employees coming from the non-primary employer.

Operations	Local community establishes performance standards and priorities Staff are serving their local community and have greater commitments and knowledge of risks Each department continues to operate as a separate municipal department with its own policies and procedures and municipal reporting structure	Cannot meet some performance standards due to organizational size Continued limited initial capacity to respond to large scale or simultaneous incidents	May be able to improve services and performance standards through cooperative agreements Financial impact of fire services is marginally lower Each department continues to operate as a separate municipal department with its own policies and procedures and municipal reporting structure	Some initial expenditures may be required for standardization Greater coordination and mutual considerations required	Higher performance standards potential Member towns gain access to other town's strengths Improved service delivery due to access to a larger pool of resources Broader consistency in training and performance standards	Requirement to agree on minimum attendance requirements and minimum training standards for all staff across the consolidated department Harmonization of processes, procedures and equipment will be required Difference of levels of career staff Harmonization of volunteer/ paid-on-call structure
Education and Fire Prevention	Customized programs to local needs	No economies of scale purchasing and lack of depth	Economies of scale on material purchases Depth or support from counterparts or peers of neighbouring municipality Best practices sharing Greater opportunities for partnerships	Greater coordination and mutual considerations required	Economies of scale on material purchases Depth or support from counterparts or peers Enhanced expertise in specialized areas (i.e. investigations)	Harmonization of processes, procedures and equipment will be required Implementation complexity Workspace capacity, facility needs to accommodate consolidated workforce

Training	Annual training plan to meet local needs Smaller service allows to readily identify individual needs	Limited resources Limited training facilities	Annual training plan to meet local needs Smaller service allows to readily identify individual needs Adoption of best practices Potential for enhanced resources Potential for sharing costs Potential for a shared training facility	Greater coordination and mutual considerations required	Enhanced capacity Consistent training programs Ability to strategically plan and develop future programs and resources	Lack of autonomy – annual training plan is more generic Quality assurance needs increase Transitional interim training complexity (i.e. SCBA, various equipment) Harmonization of recruitment and training approach for paid-on-call/volunteers

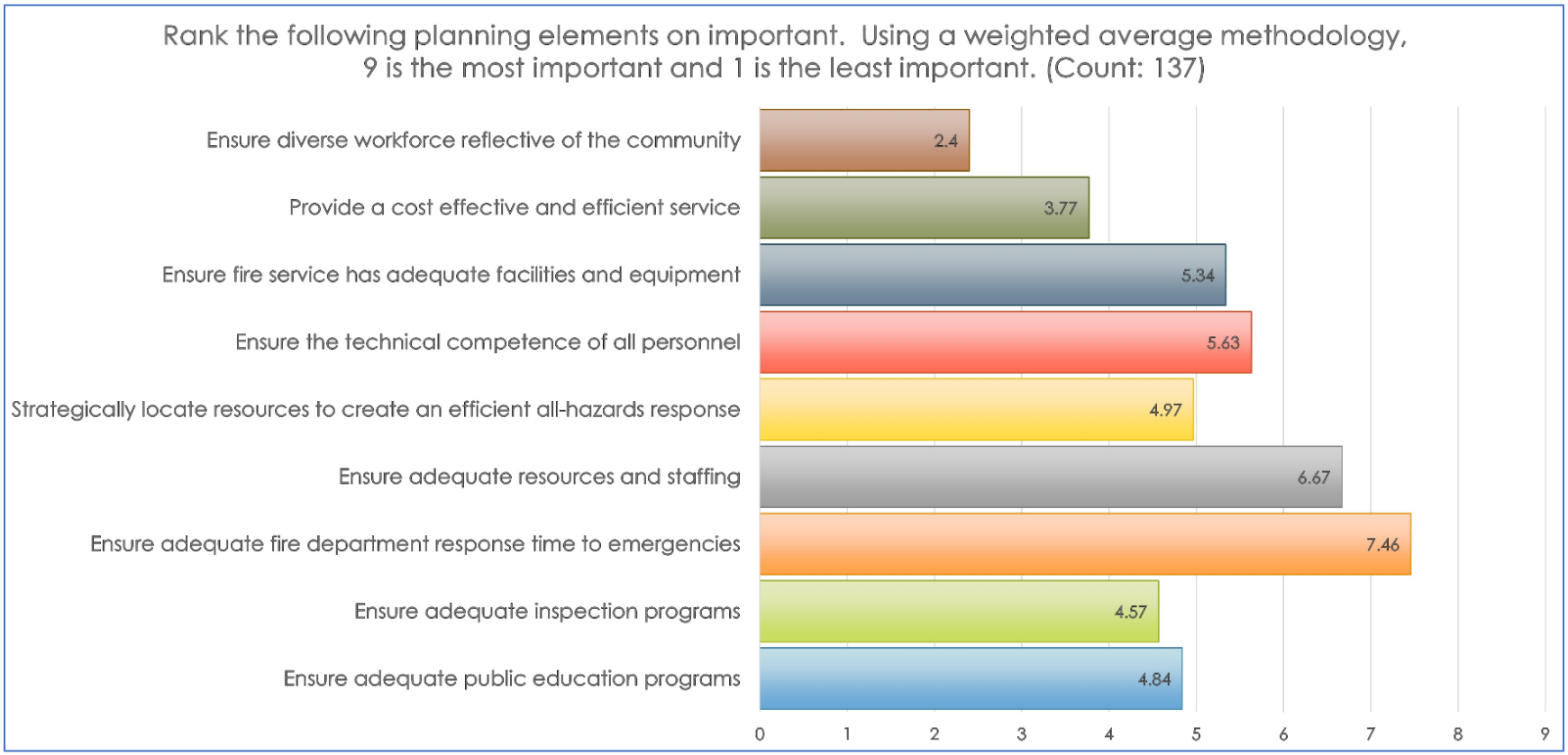
Human Resources	Flexibility on staffing structure, hiring process, salaries and benefits packages	Reduced personnel development opportunities	Nature of sharing services could reduce personnel costs (i.e. emergency management) Shared resources (i.e. fire fleet services) Reduced insurance premiums for volunteer/ paid-on-call Peer support Flexibility on staffing structure, hiring process, salaries and benefits packages	Greater coordination and mutual considerations required	Greater opportunities for personnel development and career enhancement Depth or support from counterparts or peers Enhanced expertise in specialized areas (i.e. health and wellness)	Greater organizational structure requirements Need for enhanced corporate HR functions necessary to manage the larger workforce in the primary employer and carry out tasks related to payroll management and employee development Complexity of implementation and dedicated implementation resources required Harmonization of compensation packages Robust transition and change management plan Collective agreement harmonization Difference of levels of career staff to be addressed Harmonization of volunteer/ paid-on-call structure

One employer corporate services Support (HR, Finance, IT, Procurement, etc.)					Centralizing support functions creates consistency of practice and efficiency of scale Collaborative opportunity to create a comprehensive records management system, with more empirical data, to support evidence based decision making	Relies on shared functions from the primary employer Will require additional capacity for all Corporate Support Services of the primary employer to manage the needs of a larger fire department

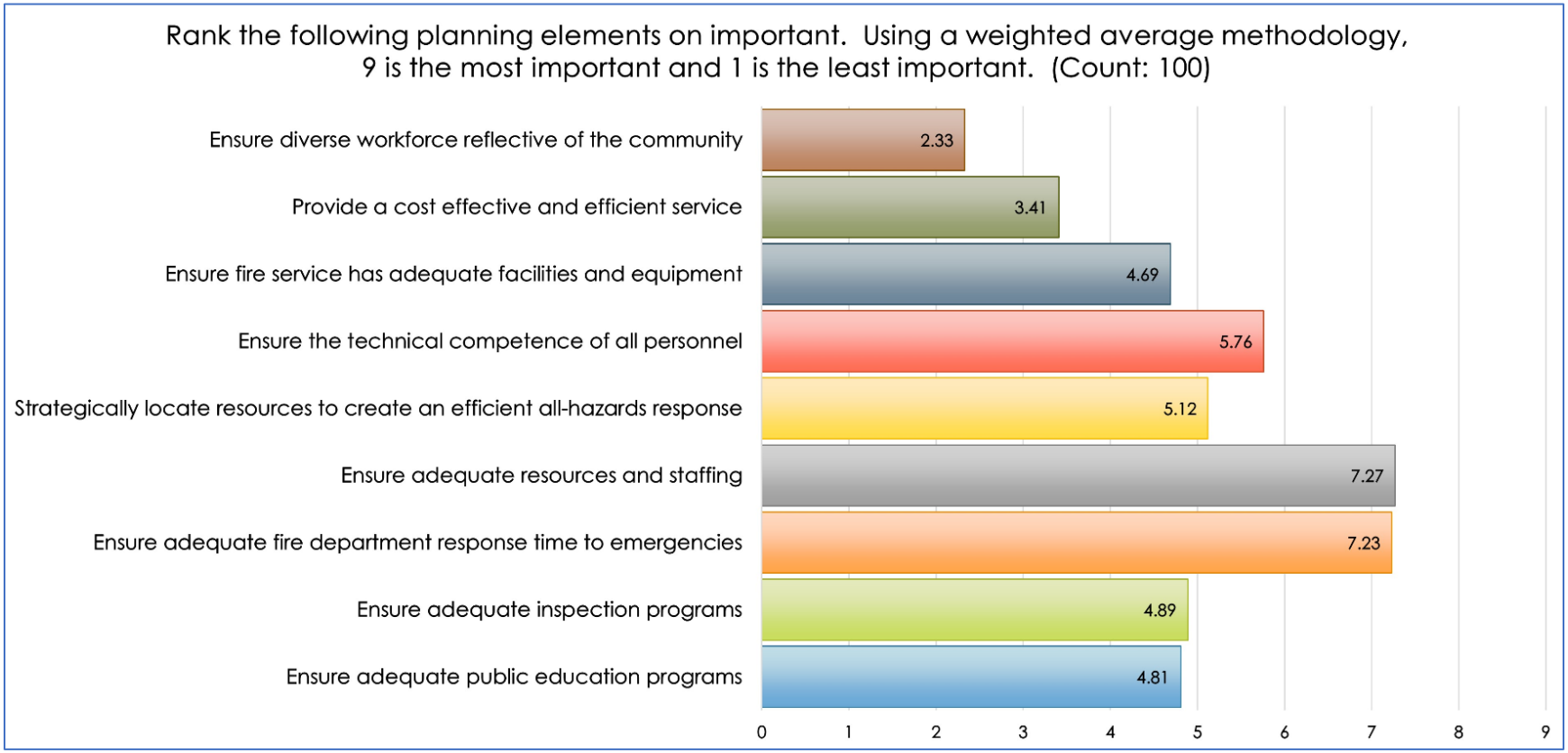
Community Survey Results

For the purposes of seeking further public input in a convenient manner, an online survey was prepared and released in advance of the public information meetings. The survey remained open until the end of July and resulted in 100 responses for EG and 137 responses for Georgina being collected.

The survey results for Georgina are reflected in the chart below:



The survey results for East Gwillimbury are reflected in the chart below:



Appendices

Appendix 1 - Definitions and Abbreviations

	Terms and abbreviations	Description
1	Georgina	Town of Georgina
2	East Gwillimbury	Town of East Gwillimbury
3	ESCI	Emergency Services Consulting International
4	GRFS	Georgina Fire and Rescue Services
5	ECSS	Emergency and Community Safety Services
6	CAFC	Canadian Association of Fire Chiefs
7	IAFC	International Association of Fire Chiefs
8	FMP	Fire Master Plan
9	OFMEM	Office of the Fire Marshal and Emergency Management
10	CRA	Community Risk Assessment
11	NRA	Neighborhood Risk Assessment
12	CRR	Community Risk Reduction
13	NFPA	National Fire Protection Association
14	CFAI	Commission of Fire Accreditation International
15	EDI	Equity, Diversity And Inclusion
16	FUS	Fire Underwriters Survey
17	KPI	Key Performance Indicators
18	OAFC	Ontario Association of Fire Chiefs
19	ERF	Effective Response Force
20	SOG	Standard Operating Guideline
21	EMCPA	Emergency Management and Civil Protection Act
22	HIRA	Hazard Identification and Risk Assessment
23	CEMC	Community Emergency Management Coordinator
24	MOU	Memorandum of Understanding
25	JCC	Joint Coordinating Committee
26	CAO	Chief Administrative Officer
27	ETC	Employer Town Council
28	NETC	Non-Employer Town Council
29	FPPA	Fire Protection and Prevention Act
30	EMT	Emergency Medical Technician
31	CPC	Commission on Professional Credentialing
32	CPSE	Center for Public Safety Excellence
33	CFO	Chief Fire Officer
34	CEMSO	Chief EMS Officer
35	CTO	Chief Training Officer
36	FO	Fire Officer
37	PIO	Public Information Officer
38	QR codes	Quick Response Code
39	CO	Carbon Monoxide
40	RMS	Records Management System
41	GIS	Geographic Information System

42	ICS	Incident Command System
43	IMS	Incident Management System
44	IAP	Incident Action Plan
45	ACFR	Annual Comprehensive Financial Reports
46	GF	General Fund
47	CIP	Capital Improvement Program
48	FY	Fiscal Year
49	GCA	Georgina Collective Agreement
50	EGCA	East Gwillimbury Collective Agreement

Appendix 2 - Table of Figures

Figure 1: Projected Georgina Population/Employment Growth 8
Figure 2: Projected East Gwillimbury Population/Employment Growth 9
Figure 3: Combined Population Projections 9
Figure 4: Three Lines of Defense 24
Figure 5: Combined Fire Stations Map 44
Figure 6: Criteria Utilized to Determine Fire Station Condition 54
Figure 7: Criteria & Method for Determining Apparatus Replacement 60
Figure 8: Apparatus Inventory 61
Figure 9: Fire Station Coverage w/New Georgina Stations 63
Figure 10: Georgina Fire Department Budget and Finance Overview, FY 2022 66
Figure 11: GFRS Expenses, FY 2018 - FY 2021 Actuals 67
Figure 12: GFRS Expense by Major Category, FY 2018-2021 Actuals 68
Figure 13: ECSS Budget and Finance Overview 69
Figure 14: ECSS, FY 2018-FY 2021 Actuals 70
Figure 15: ECSS Expense by Category, FY 2018-2021 Actuals 71
Figure 16: Consolidated Projected Expenses, FY23 - FY27 73
Figure 17: Association Agreement Wage Analysis 74
Figure 18: Cost Allocation Summary 75
Figure 19: Weighted Cost Allocation Summary 75
Figure 20: Cost Allocation w/Equal Weight Distribution 75
Figure 21: Cost Allocation w/Weighted Attribute 76
Figure 22: Cost Allocation Scenario #1 77
Figure 23: Cost Allocation Scenario #2 77
Figure 24: Cost Allocation Scenario #3 78
Figure 25: Cost Allocation Scenario #4 78
Figure 26: Cost Allocation Scenarios Summary 79
Figure 27: Cost Allocation by Area 105
Figure 28: Cost Allocation By Assessed Value 106
Figure 29: Cost Allocation by Engines/Staff (Example) 107
Figure 30: Cost Allocation by Service Demand 108
Figure 31: Cost Allocation by Population 109

Appendix 3 - Cost Allocation Methodologies

What follows is a listing of system variables that can be used (singularly or in combination) to allocate cost between allied communities. Each option is summarized by the concept, its advantages and disadvantages, and other factors that should be considered. Regardless of the option(s) chosen to share the cost of community service, the resulting intergovernmental agreement needs to address the issues of full cost versus marginal cost and should be clear about the inclusion of administrative or overhead cost. In addition, agreements often must reconcile the exchange of in-kind services between the participating agencies.

ESCI has provided this set of cost allocation factors and service delivery options to provide the towns with an accurate and diverse view of a range of allocation possibilities. In addition to this analysis, ESCI has provided a cost-modeling tool that will allow the study participants to build scenarios and assumptions into the model for service options. This modeling tool will allow the changing and weighting of staffing and financial projections as well as a variety of budget and cost assumptions.

The following cost allocation strategies can be adopted in whole or in part to determine appropriate and fair costs to both towns.

Area

The cost of emergency service can be apportioned based on the geographic area served relative to the whole. For instance, the jurisdictional boundaries of the two towns represent approximately 525 square kilometers. The following figure displays the services area in square kilometers and the percentage for each jurisdiction.

Figure 27: Cost Allocation by Area

Cost Allocation by Service Area Jurisdiction	Service Area in Square Kilometers	Percentage of Total
Georgina	287	54.7%
East Gwillimbury	238	45.3%
Total	**525**	**100.00%**

Apportionment founded on service area alone may work best in areas that are geographically and developmentally homogeneous.

PRO: Service area is easily calculable from a variety of sources. Size of service area generally remains constant with few, if any, changes.

CON: Service area does not necessarily equate to greater risk or to greater workload.

CONSIDER: Service area may be combined with other variables (such as assessed value and number of emergencies) to express a compound variable (such as assessed value per square kilometer and emergencies per square kilometer).

Assessed Value

The assessed value (AV) of agencies is established by the Municipal Property Assessment Corporation under laws of the province. Usually, higher-valued structures and complexes carry

a greater risk to the community from loss by fire. Consequently, assessed value also tends to approximate the property at risk within an area. Fire and emergency departments are charged with being sufficiently prepared to prevent property loss by fire. Therefore, the cost of fire protection may be apportioned relative to the assessed value of the allied jurisdictions. Typically, AV is used to apportion cost of shared service by applying the percentage of each partner's AV to the whole. The following figure illustrates the allocation of cost by the assessed value of Georgina and East Gwillimbury.

Figure 28: Cost Allocation By Assessed Value

Cost Allocation by Assessed Value	Assessed Value	Percentage of Total
Georgina	$9,479,199,259	51.3%
East Gwillimbury	$8,977,280,217	48.7%
Total	**$18,456,479,476**	**100.00%**

PRO: AV is updated regularly, helping to assure that adjustments for changes relative to new construction, annexation, and inflation are included. Because a third party (the assessor) establishes AV in accordance with provincial law, it is generally viewed as an impartial and fair measurement for cost apportionment. Fire and emergency services is typically considered a property-related service, thus, apportionment tied directly to property value has merit.

CON: AV may not reflect the property risk associated with certain exempt property, such as schools, universities, government facilities, churches, and institutions. AV may not always represent the life risk of certain properties, such as nursing homes or places of assembly, which might dictate more significant use of resources. In addition, some large facilities may seek economic development incentives through AV exemptions or reductions. Adjustments may need to be made to AV if such large tracts of exempt property in one jurisdiction cause an imbalance in the calculation. Last, AV typically includes the value of land, which is not usually at risk of loss by fire.

CONSIDER: Discounted AV depending on the class of property (commercial or residential), which may skew the overall proportion of those properties compared to risk. As an additional consideration, assessors usually establish the AV in accord with the property tax cycle, which can lag somewhat behind the budget cycle.

Deployment

The cost for service is based on the cost of meeting specific operational goals. Deployment goals may be tied to the physical location of fire stations, equipment, and personnel (strategic deployment) or by stating the desired outcome of deployment (standards of cover). A strategic goal could specify the location of two stations, two engines, and four on-duty firefighters (process). A standard of cover might state the desired outcome as four crews and 15 emergency workers on the scene of all structure fire emergencies within eight minutes 90 percent of the time (outcome). While both strategic and outcome goals can be used effectively

to assist in allocating cost, ESCI views outcome goals to be more dynamically linked to the quality of service and therefore preferable to strategic goals. This alternative is highly variable due to the independent desires of each community in regard to outcome goals.

A weighted scoring system uses a critical task analysis. This type of scoring system for each agency allows the ranking of each area based on the assigned risk as well as the apparatus, manpower, and Needed Fire Flow (NFF).

The following figures illustrate the allocation of cost by the number of resources deployed to serve each jurisdiction, including staff and frontline apparatus and assigned full-time operational personnel.

Figure 29: Cost Allocation by Engines/Staff (Example)

Cost Allocation by Engines	Number of Career Staffed Engines	Percentage of Total
Georgina	2	66.7%
East Gwillimbury	1	33.3%
Total	**3**	**100.00%**

Cost Allocation by Career Staff	Number of Career Staff	Percentage of Total
Georgina	40	68.97%
East Gwillimbury	18	31.03%
Total	**58**	**100.00%**

Cost Allocation by POC/Volunteer Staff	Roster of POC/Volunteer Staff	Percentage of Total
Georgina	60	42.86%
East Gwillimbury	80	57.14%
Total	**140**	**100.00%**

Cost Allocation by Total Staff	Number of Total Staff	Percentage of Total
Georgina	100	50.51%
East Gwillimbury	98	49.49%
Total	**198**	**100.00%**

PRO: Deployment and number of personnel is intuitively linked to the cost of overall services required. The outcome of deployment based on a standard of cover can be monitored continuously to assure compliance. Such deployment can be adjusted if standards are not met. This assures the continuous quality of emergency response throughout the life of a joint agreement.

CON: Strategic deployment may not equate to better service because such goals are prone to manipulation wherein resources may be sited more for political reasons and less for quality of

service reasons. Outcome goals require common reporting points and the automatic time capture of dispatch and response activities to assure accuracy. Record keeping needs to be meticulous to assure the accurate interpretation of emergency response outcomes.

CONSIDER: Agreements for deployment-based fire protection should address the inclusion of administrative or overhead cost, as well as capital asset cost, depreciation, rent, and liability insurance.

Service Demand

Service demand may be used as an expression of the workload of a fire and emergency services department or geographical area. Cost allocation based on emergencies would consider the total emergency response of the service area and apportion system cost relative to the percentage of emergencies occurring in the jurisdictions.

Figure 30: Cost Allocation by Service Demand

Cost Allocation by Service Demand	2021 Number of Calls	Percentage of Total
Georgina	2,245	64.6%
East Gwillimbury	1,231	35.4%
Total	**3,476**	**100.00%**

PRO: Easily expressed and understood. Changes in the workload over the long term tend to mirror the amount of human activity (such as commerce, transportation, and recreation) in the corresponding area.

CON: Service demand fluctuates from year to year depending on environmental and other factors not directly related to risk, which can cause dependent allocation to fluctuate as well. Further, the number of alarms may not be representative of actual workload, for example, one large emergency event requiring many emergency workers and lasting many hours or days versus another response lasting only minutes and resulting in no actual work. Last, emergency response is open to (intentional and/or unintentional) manipulation by selectively downgrading minor responses, by responding off the air, or by the use of mutual aid. Unintentional skewing of response is most often found in fire systems where dispatch and radio procedures are imprecisely followed. Further, service demand does not follow a predetermined ratio to land area. As such, the service demand per square mile ratios may produce large variations.

CONSIDER: Using a rolling average of alarms over several years can help to suppress the normal tendency for the year-to-year fluctuation of emergencies. Combining the number of emergencies with the number of emergency units and/or personnel required may help to align alarms with actual workload more closely. However, doing so adds to the complexity of documentation. In a similar manner (and if accurate documentation is maintained), the agencies could consider using the total time required on emergencies as an aid to establish the comparative workload represented by each jurisdictional area.

Fixed Rate

The use of fixed fees or rates (such as a percentage) to calculate allocation of shared cost is more common between municipalities and independent fire districts. Occasionally, fixed-rate contracts involve the exchange of in-kind services.

PRO: The concept is simple and straightforward. A menu of service options and the fees corresponding to those alternatives can be developed by the municipality supplying the service. The municipality can tailor a desired level of service based on risk and community expectation by choosing from the various menu items.

CON: Partnering communities may change (i.e., population, jobs, commerce, structures, and risk) at divergent rates, causing disconnection between the rationales used to establish the fee and the benefit received. A fixed-rate contract may be difficult to coherently link to the services provided and/or received, which can lead to a lack of support by officials and the community.

CONSIDER: Partnering agencies need to assure that provision for rate adjustment is included in the agreement, including inflation. The agreement should address the issue of full cost versus marginal cost. The inclusion or non-inclusion of administrative and/or overhead cost also requires statement, as does the reconciliation of in-kind service exchange. The ownership and/or depreciation of capital assets should be addressed, as should rent, utilities, and liability insurance. In the case of a fixed fee, the agreement should establish how the participation of other public agencies in the partnership would affect cost.

Population

Payment for service can be based on the proportion of residential population to a given service area. The following figure lists the population by jurisdiction and the percentage of the total number of individuals living in each service area.

Figure 31: Cost Allocation by Population

Cost Allocation by Population	2022 Population Estimation	Percentage of Total
Georgina	49,000	57.0%
East Gwillimbury	37,000	43.0%
Total	**86,000**	**100.00%**

PRO: Residential population is frequently used by governmental agencies to measure and evaluate programs. Statistics Canada maintains an easily accessible database of the population and demographics of cities, counties, and states. Estimates of population are updated regularly.

CON: Residential population does not include the daily and seasonal movement of a transient population caused by commerce, industry, transport, and recreation. Depending on the local situation, the transients coming in (or going out) of an area can be very significant, which can tend to skew community risk. Residential population does not statistically link with emergency workload; rather, human activities tend to be the linchpin that connects people to requests for emergency assistance.

For example, if residential population actually determined emergency workload, emergencies would peak when population was highest within a geographic area. However, in many communities where the residential population is highest from about midnight to about 6:00 a.m. (bedroom communities), that time is exactly when the demand for emergency response is lowest. It turns out that emergency demand is highest when people are involved in the activities of daily life traveling, working, shopping, and recreating. Often, the persons involved in such activities do not reside in the same area. Additionally, simply relying on population will not account for the effects that socio-economic conditions have on emergency service response activity.

CONSIDER: By counting the residential households within the area in question, then applying demographic estimates of persons per household, it may be possible to reach a relatively accurate estimate of population within the area in question. Alternately, residential population can be estimated by using information obtainable from some public utility districts by tallying residential electrical meters within a geographic area and then multiplying by the persons per household.

Both study agencies experience a daily or seasonal influx of people who are not counted as residential population. This transient population can be estimated by referring to traffic counts, jobs data, hotel/motel occupancy rates, and, in some cases, park visitor statistics. Residential population plus transient population is referred to as functional population. Where functional population is significantly different from residential population, service agreements based on population should be adjusted to account for it.

Appendix 4 – Implementation Strategy Sample – Consolidated Composite Department

Below are several detail steps to be used in the transition to a consolidated organization. The steps are broken down into functional categories that can be delegated to functional directors or supervisors. This list is to mostly answer the question, “If we’re going to consolidate, what all do we need to do or be aware of?”

The steps are intended to be a “checklist of thought processes” and consequently the specific necessity and application of each step is left to each of the towns to customize. There may be steps that can be deleted and there may be steps a town chooses to add but it should be used as a reminder of the tasks to be done, mostly prior to the actualization of the consolidated organization.

The steps may be used in sequence but that also will vary to how the town chooses to implement its transition processes. The estimated hours are hours that it *may* take to accomplish the task but at the least it is minimal calendar time that should be set aside for the task. This gives ideas of how long certain processes will take and supports scheduling efforts. For example, the establishment of a Fire Chief’s position may not take 150 hours to accomplish but at a work week of 40 hours, it could take almost four calendar weeks (150 hours) at a minimum to work through and complete the task. Also, most of the tasks are intended to be accomplished simultaneously with others and should not be viewed as one needs to be completed before going on to the next.

Lastly, where responsibilities are given to “Fire Chiefs”, depending on how the towns approach the selection of a Fire Chief, whether one of the existing chiefs or a new one, the tasks outlined with “Fire Chiefs” responsibilities, may be given to an incoming fire chief depending on the wishes of the town and the departments.

1	Governance	Estimated Hours	Responsibility
1.1	Both towns elected officials vote to decide to consolidate fire department services. **Output:** Decision to move forward with a consolidation.	160	Elected Officials Chief Administrative Officers
1.2	Decide/establish primary and non-primary employer. Decide on primary and non-primary responsibilities along with accountability processes, and decision-making methodology. **Output:** Decision on who will be primary employer and how towns will make decisions.	160	Elected Officials Chief Administrative Officers
1.3	Decision on conducting a pilot exercise or begin full transition - Pilot would be an evaluation for a set period of time to determine long-term feasibility. **Output:** The extent of the consolidation process may be limited during a pilot phase.	160	Elected Officials Chief Administrative Officers Fire Chiefs
1.4	Select Fire Chief **Outcome:** A decision by both towns on whether to select one of the existing fire chiefs to lead the joint organization or to choose an external candidate.	480	Chief Administrative Officers
1.5	Approve a Governance Model - The primary models for governance are a joint governance council or a service board. The Ontario Fire Marshal has provided an opinion that service boards may not be an option for fire departments. **Outcome:** A governance model is selected.	160	Elected Officials Chief Administrative Officers Fire Chief
1.6	Establish a Joint Transition Committee (administrative staff) and assign a dedicated Transition Manager (Project Manager) to lead the implementation, create the governance model and temporary Terms of Reference. To be approved by elected officials, this function would include: a. Setting formal terms of reference b. Creating selection process and reporting requirements c. Establishing relationships d. Recommending transition plan to move from current to future state e. Determining administrative support, government board logistics (meeting frequency, leadership rotations, etc.) f. Establishing budget approval process **Outcome**: A joint committee that is responsible for establishing the Terms of Reference for the new governance oversight group.	160	Fire Chief
1.7	Inform necessary levels of government (province, fire marshal's office, etc.) of intent to consolidate the fire departments of each community. **Output:** Notification of any necessary government entities of the creation of the new organization.	80	Fire Chief

1.8	Approve a funding mechanism - cost sharing **Output:** An agreement between both organizations that outlines the new organization's funding and allocations between the two communities.	240	Elected Officials Chief Administrative Officers Fire Chief
1.9	Establish organizational Key Performance Indicators (KPIs) **Outcome:** Formalized measureable expectations of the KPIs of the new organizations. This may include response times, education hours, inspection quantities, etc.	160	Fire Chief
1.10	Approve a Joint Advisory Committee **Output:** Formal establishment of the governance committee	160	Elected Officials Chief Administrative Officers Fire Chief
1.11	Determine implementation date **Output:** A date in which the formal transition will take place. This is not the date that preparations begin but rather the date the new organization begins operating.	80	Joint Advisory Committee
1.12	Establish any necessary service level agreements between the Towns **Output:** Formal agreements between the two organizations as to how they will interact and provide accountability with each other.	160	Joint Advisory Committee
2	**Organization and Operations Tasks**	**Estimated Hours**	**Responsibility**
2.1	Joint Transition Committee is to prepare detailed project plan, including a Communication Plan, branding for a consolidated composite department (e.g. naming, logo, etc.), Change Management, Risk Management Plan, etc. Implement a regular meeting schedule and update process. **Outcome:** Transition activities are well coordinated, and all parties are invested in the result.	80	Fire Chief
2.2	Clearly define the level of service expected to be provided by the joint department in a new bylaw. a. Fire suppression b. Medical and other emergency and non-emergency response c. Education and Fire Prevention d. Hazardous materials e. Technical rescue **Outcome**: Level of service is defined allowing joint resources and systems to be developed and acquired to provide that level of service.	80	Fire Chief
2.3	Determine if the current staffing levels can manage the anticipated new workload associated with joint organization. Identify and quantify staff and other resources that will be needed. **Outcome:** Workload is quantified, and the resources required to support the new workload have been identified.	40	Fire Chief Finance Manager Human Resources IT Fleet Procurement

2.4	Implement a Communications and Change Management Plan. Create and regularly distribute information to staff, departments in the area and the public about the transition. Emphasize that service continuity will be preserved. **Outcome:** The staff, departments and public are fully informed of transition activities and its impact on them.	150	Fire Chief Communications Division Project Manager
2.5	Identify location of joint fire prevention personnel. Arrange for space and furnishings. **Outcome:** Co-location with community development departments, if practical, promotes strong interaction.	10	Fire Chief
2.6	Develop a procedure for a joint review of new development proposals for building projects. **Outcome:** Developers experience a seamless transition of services between GFRS and ECSS.	20	Fire Chief Building Department
2.7	Establish a detailed matrix for the construction code elements that are reviewed by the Building and Fire Prevention staff. **Outcome:** Division of authority and responsibility between the Building and Fire Prevention and joint staff is clearly defined.	40	Fire Chief Building Department
2.8	Develop joint policies, procedures, and standard operating guidelines. Review current GFRS and ECSS policies, procedures, and standard operating guidelines for use as a base. **Outcome:** Joint organization policies, procedures, and guidelines are comprehensive and appropriate to achieved defined levels of service.	210	Fire Chief Dedicated staff
2.9	Identify alternative revenue opportunities to support joint operations. Propose revenue opportunities for implementation as appropriate. **Outcome:** GFRS and ECSS are capturing all appropriate revenue to support the delivery of services.	40	Fire Chief Finance Managers
2.10	Establish workflow procedures for the plans review and site inspection process. **Outcome:** Workflow expectations between the joint fire prevention department and the Building and Fire Prevention are clearly defined.	30	Fire Chief Building Department
2.11	Determine the most appropriate source of medical director services and execute agreements to provide that service. Consider using the current GFRS and ECSS medical director(s). **Outcome:** Medical director services are available on the transition date.	30	Fire Chief
2.12	Identify records maintained by GFRS and ECSS that should be transferred to the joint organization. Identify the most appropriate method for transferring the records to new organization and address record transfer costs. **Outcome:** All records maintained by the GFRS and ECSS that are needed by GFRS and ECSS have been identified and transferred.	20	Fire Chief Project Manager

2.13	Determine whether the joint organization can continue to use the GFRS and ECSS Knox Box keys or whether joint area boxes will need to be re-keyed. **Outcome:** The joint organization has access to Knox Boxes installed in its service area.	10	Fire Chief
2.14	Develop effective response forces, response assignments, and station order tables for the computer-aided dispatch (CAD) system. Provide assignments and station order tables to the dispatch provider for implementation. **Outcome:** Dispatch protocols are developed and in place by the transition date, ensuring seamless service delivery to the community.	60	Fire Chief Project Manager
2.15	Develop technology based policies and procedures for administrative functions to be performed by the joint organization. **Outcome:** Joint support staff members have the tools to assist them in performing their work.	70	Fire Chief IT
2.16	Determine the exact date and time for the transition of service delivery from the GFRS and ECSS to the joint organization. Develop a transfer of service process and notify all cooperating and area agencies of the details. **Outcome:** The transfer of service responsibility occurs with no impact on the delivery of fire and emergency services.	20	Fire Chief
2.17	Acquire occupancy and inspection records for the joint organization from GFRS and ECSS. **Outcome:** GFRS and ECSS fire prevention staff has any historic inspection information to use for their work.	20	Fire Chief
2.18	Quantify existing firefighting, EMS, etc., supplies inventory that will become part of the new joint service. Identify and acquire supplies that need to be in-stock. **Outcome:** Supplies are available on the date of transition.	50	Fire Chief Dedicated staff
2.19	Develop a radio communication utilization and deployment plan in conjunction with Richmond Hill Dispatch. **Outcome:** A radio communication and deployment plan are in place by the transition date.	70	Fire Chief
2.20	Determine the mapping system that will be used for the joint organization's mapping mobile data computers and map books. Produce new map systems for all joint apparatus. **Outcome:** Map systems using a common system are available by the date of transition.	120	Fire Chief GIS Representatives
2.21	Revise the station and apparatus numbering system for the joint organization. **Outcome:** The numbering system is established and all stations and apparatus are properly marked by the date of transition.	80	Fire Chief Fleet Manager
2.22	Develop and deliver training for all staff on geography, risks, and target hazards in the service area. **Outcome:** Staff are familiar with the service area.	100	Fire Chief Training Officers

2.23	Purchase, as needed, any new firefighting and EMS equipment to be used by the joint organization. a. Personal Protective Equipment-for all firefighting, EMS activities b. Uniforms, badges, etc. c. Helmets d. Footwear e. Medical Equipment **Outcome:** Equipment consistency is provided to ensure effective operations and minimize training requirements.	120	Fire Chief Deputy Fire Chief
2.24	Develop a list of community fire prevention programs delivered by staff. Determine which of these will be delivered by the joint organization. **Outcome:** The type and level of fire prevention services to be delivered are determined.	20	Fire Chief
2.25	Implement provincial and regional EMS protocols for all levels of EMS service to be provided. Gain approval by the joint organization's medical director. **Outcome:** EMS protocols are developed so that appropriate levels of EMS service can be delivered.	30	Fire Chief
3	**Human Resources Tasks**	**Estimated Hours**	**Responsibility**
3.1	Create and implement a HR management and transition plan. Prepare, refine and finalize the staffing plan and position list for all operations and support positions. Establish positions, including classification specifications. **Outcome:** A comprehensive staffing plan has been developed that fully supports jointly defined service levels.	60	Fire Chief Human Resources
3.2	Review potential new Human Resources workload and determine the staffing needed to effectively manage the workload. **Outcome:** Human Resources workload is quantified and resources required to support that workload have been identified for pay administration, records, employee relations, benefits administration, labour relations, legal, and training.	30	Fire Chief Human Resources
3.3	Work with Human Resources to produce and publish notifications to hire firefighters and staff members fulfilling required staffing as indicated by staffing templates. Set deadlines well in advance of transition for receiving applications, interviews, background checks, and all testing processes. **Outcome:** All requires staff members have been appointed, and are in place prior to transition.	100	Fire Chief Human Resources
3.4	Obtain personnel files from any former GFRS and ECSS employees to determine former class, hire date, promotion dates, certifications, etc. **Outcome:** Information has been gathered regarding former GFRS and ECSS employees.	20	Human Resources

3.5	Develop promotional/classification specifications for all joint organization positions. **Outcome:** Promotional/Classification specifications are available for all positions.	80	Fire Chief Human Resources Labour Association
3.6	Identify wages, benefits, and other considerations for newly hired joint organization employees. **Outcome:** The wage and benefit packages have been identified.	40	Fire Chief Human Resources Labour Association
3.7	Complete a skills, knowledge, and certification inventory for all employees. **Outcome:** The current level of knowledge and capability of all employees is known.	80	Fire Chief Human Resources Training Officers
3.8	Based on the knowledge, and certification inventory, defined job requirements, and skills needed that are unique to each service area, develop a training plan that maintains required personnel capability and develops personnel for succession purposes. **Outcome:** A comprehensive training program is in place and ready to be delivered on the transition date.	80	Fire Chief Human Resources Training Officers
3.9	Develop curriculum and deliver orientation training to all new joint organization personnel. **Outcome:** All joint organization employees have received quality orientation training.	80	Fire Chief Human Resources Training Officers
3.10	Deliver compliance training to all joint organization employees (workplace harassment, substance abuse, etc.) **Outcome:** All joint organization employees have received quality compliance training prior to the transition date.	60	Fire Chief Human Resources
3.11	Identify personnel file information that will be maintained by the joint organization and information to be maintained by Human Resources. Establish procedures to ensure information is routed correctly. **Outcome:** Complete personnel files are maintained.	40	Fire Chief Human Resources
3.12	Negotiate labour association collective bargaining agreements for the new organization. **Outcome:** New joint collective agreement is established.	160	Fire Chief Human Resources Labour Consultants Legal
3.13	Review human resources rules to determine their suitability for the joint organization. Add or modify rules as appropriate to accommodate human resources activities. **Outcome:** Fully developed human resources rules have been established and are in place in the joint organization prior to transition.	40	Fire Chief Human Resources Labour Consultants

3.14	Establish the joint organization and Human Resources functions: a. Employee complaints b. Disciplinary investigations c. Classification process **Outcome:** Responsibilities, authorities, and processes have been defined and acknowledged by all.	20	Fire Chief Human Resources
3.15	Identify sources and costs for contracted EAP and wellness/fitness programs for the joint organization employees. Establish vendor relationships as appropriate. **Outcome:** Wellness/fitness programs are available to the joint organization employees.	40	Fire Chief Human Resources
3.16	Coordinate health benefits coverage with workers' compensation coverage provided to the joint organization employees. **Outcome:** Health insurance and workers' compensation benefits coverage have been coordinated.	30	Risk Management Human Resources
3.17	Provide joint organization employee count and payroll information to Risk Management for insurance application updates. **Outcome:** Information is provided that allows insurance applications to be updated.	20	Fire Chief Human Resources Management Services
3.18	Develop workers' compensation coverage to support joint organization staff members. Identify any alternative coverage for the joint organization as appropriate. **Outcome:** An administrator has been identified with the capacity to support the joint organization workers' compensation processes.	20	Fire Chief Human Resources
3.19	Determine if current staffing levels can manage the anticipated new workload associated with the joint organization. Identify staff and other resources that will be needed. **Outcome:** Risk Management workload is quantified and resources required to support that workload have been identified.	30	Fire Chief Human Resources
4	**Finance Tasks**	**Estimated Hours**	**Responsibility**
4.1	Identify appropriate funding for GFRS and ECSS transition costs. **Outcome:** Sufficient funds are available to complete transition activities.	80	Fire Chief Finance Manager
4.2	Establish and implement a process to ensure active coordination between Finance, Human Resources, and Technology Services as records systems, processes, and labour agreements are being developed and implemented to ensure GFRS and ECSS internal systems can support changes. **Outcome:** All related financial systems support the GFRS and ECSS operations.	10	Fire Chief Finance Manager Technology Services Human Resources

4.3	Identify the type and level of financial administration capability that should exist within the joint administrative staff. Determine if that capability is best provided by contracted services or full-time staff. If full-time staff, ensure that position(s) is included in the joint staffing plan: a. Budget development and reporting b. Annual audit preparation c. Other accounting activities d. Coordination with GFRS and ECSS Finance Department **Outcome:** Fiscal administration capability has been defined and the source of that capability identified.	80	Fire Chief Finance Manager Human Resources
4.4	Administer labour agreements regarding employee compensation with Finance to ensure financial systems and payroll can accommodate accounting requirements. **Outcome:** Financial systems can efficiently support employee compensation processing.	30	Fire Chief Finance Manager Human Resources
4.5	Establish cost centers within the financial accounting system so that costs can be appropriately attributed to functional activities. **Outcome:** Cost centers are established that provide detailed functional area cost accounting information.	20	Fire Chief Finance Manager Technology Services Human Resources
4.6	Develop a 10-year capital improvement plan for the joint organization. **Outcome:** The 10-year capital improvement plan has been developed and adopted.	40	Fire Chief Finance Manager
4.7	Negotiate and enter into a heavy equipment vendor contract. **Outcome:** Heavy equipment is available to support the joint organization response by the date of transition.	30	Fire Chief Finance Manager
4.8	Confirm that joint assets are accurately recorded in an asset management system. Update the system as needed for missing assets. **Outcome:** A complete and accurate list of GFRS and ECSS assets is available.	40	Fire Chief Finance Manager
4.9	Identify and establish open purchase orders needed to support joint organization operations. **Outcome:** Open purchase orders are in place to support joint organization activities.	50	Fire Chief Finance Manager
4.10	Identify the number of purchasing cards that will be needed for the joint organization operations. Establish a policy and procedure for the use of purchasing cards. **Outcome:** Purchasing cards are provided to appropriate employees, procedures are in place for their use, and training on the procedures has been provided.	20	Fire Chief Finance Manager
4.11	Develop and adopt One Employer budget process and strategy for the period of transition. **Outcome:** The joint organization has adopted budgets by the date of transition.	80	Fire Chief Finance Manager

5	Asset Management - Assets and Equipment Tasks	Estimated Hours	Responsibility
5.1	Develop a Fleet Master Plan. Meet with appropriate staff to establish a mutually agreeable fleet transition plan. Evaluate assigned fleet resources for condition and serviceability. Determine minimum standards for fleet acceptance. Evaluate the fleet to determine if surplus apparatus/vehicles exist and if sufficient numbers of apparatus by type are available. Surplus or acquire apparatus/vehicles as needed based on the evaluation. **Outcome:** A Fire Fleet Master Plan listing all apparatus reflecting the most appropriate quantity and type of front line and reserve equipment.	160	Fire Chief Project Manager Fleet Services Manager
5.2	Review workload of new Facilities Management staff and determine if additional staffing and other resources are needed. **Outcome:** Adequate staffing and resources are available to conduct facilities maintenance for the joint organization.	20	Fleet Managers
5.3	Perform a space needs assessment study to identify space requirements for the joint organization administration based on, but not limited to, the following criteria: a. Employee count b. Functional needs c. Connectivity (telephone, computer, radio) d. Parking e. Power f. Growth Planning **Outcome:** Suitable building space is available for the joint organization's administrative personnel.	60	Fire Chief Facilities Manager
5.4	Complete a current condition assessment of the GFRS and ECSS stations: a. Conduct inspection b. Identify maintenance and repair needs c. Determine responsibility for repairs required prior to the transfer of operations. **Outcome:** Facilities staff has a thorough understanding of the current condition of GFRS and ECSS stations and any repair work required prior to the transition.	20	Facilities Managers
5.5	Acquire maintenance and repair records for all apparatus. Retain an outside contractor and complete an evaluation of the condition of the apparatus/vehicles. **Outcome:** Equipment Services fully understands the condition of the fleet, can anticipate ongoing maintenance costs, and all repairs required prior to transition have been completed.	80	Fire Chief Fleet Managers Project Manager

5.6	Develop an accurate inventory of all apparatus and equipment. Evaluate apparatus, equipment, radios, station inventory, and other assets owned by GFRS and ECSS for suitability to the joint service area. Reach an agreement with GFRS and ECSS on inventory transfer to the joint organization. Develop specifications for any necessary apparatus and equipment that is needed or needs to be replaced. Develop an apparatus replacement plan. **Outcome:** The most appropriate apparatus type and configuration for joint operations have been defined. GFRS and ECSS owned assets have been converted by the date of transition.	50	Fire Chief
5.7	Evaluate existing fire stations. Develop a plan for any modifications required. Identify station maintenance that will be provided by the individual towns and the staffing/budget needed by Facilities to support that service. Include appropriate costs in future joint organization facilities budgets. **Outcome:** Fire Stations renovation and replacement plan for a state of good repair. The impact of the additional work is identified and resources are available to maintain facilities.	40	Fire Chief Facilities Managers Project Manager
5.8	Identify outside contracts that will be needed for station equipment and services such as communication/tech services, generator maintenance, alarm system maintenance, appliance maintenance, landscaping, etc. **Outcome:** All outside contracts are in place on the date of transition.	50	Fire Chief Facilities Managers
5.9	Decide how the fleet costs will be managed and planned for as the joint organization responsible for replacement planning. This should include agreement on the use of the one town's fleet in the other town. **Outcome:** The most appropriate method for charging fleet costs has been determined.	30	Fire Chief Fleet Managers
5.10	Set up apparatus and vehicles in a fleet records management system. **Outcome:** Apparatus and vehicle maintenance and repair can be accurately tracked in a fleet records system.	30	Fleet Managers
5.11	Establish preventative maintenance schedules for each apparatus and vehicle. **Outcome:** Schedules are in place on the date of transition.	20	Fleet Managers
5.12	Identify any GFRS and ECSS owned shop equipment, parts, and supplies that are devoted to GFRS and ECSS operations. **Outcome:** GFRS and ECSS owned shop equipment, parts, and supplies devoted to GFRS and ECSS operations have been identified.	10	Fire Chief Fleet Managers Project Manager

5.13	Identify the annual cost of fleet maintenance and repair for a future joint organization budget. **Outcome:** The joint organization has budgeted sufficient funds for fleet repair and maintenance.	20	Fire Chief Fleet Managers Finance Managers
5.14	Identify parts that should be in stock for the joint organization's apparatus. Purchase and/or identify a ready source for the parts. **Outcome:** Parts are readily available to ensure a minimum of apparatus down-time.	30	Fleet Managers
5.15	Acquire fuel cards for apparatus that will need them. Consider the use of an independent system. **Outcome:** The source of fuel for the joint organization apparatus has been determined and made available.	10	Fleet Managers
5.16	Recruit, hire, and train new Equipment Services employees/fleet, if required. **Outcome:** New staff is employed and ready to begin service on the date of transition.	20	Fire Chief Fleet Managers Human Resources
5.17	Transition the fleet to the joint organization's maintenance. **Outcome:** Apparatus are transitioned to GFRS and ECSS maintenance.	10	Fire Chief Fleet Manager
6	**Risk Management Tasks**	**Estimated Hours**	**Responsibility**
6.1	Work with Clerks to develop a property and liability claims database for the joint organization. **Outcome:** A property and liability claims database is in place.	30	Fire Chief Technology Services Clerks
6.2	Conduct inspections of facilities to identify any potential risk issues, such as code compliance, OSHA, etc., that may be present (in conjunction with Facilities). **Outcome:** All risk issues have been identified and resolved by the date of transition.	50	Fire Chief Facilities Manager
6.3	Work with insurance broker/carriers to update all applicable insurance applications: a. Workers' compensation, adding new full-time workers b. Property and equipment c. Motor vehicles d. General liability **Outcome:** Insurance is in effect, providing coverage when needed.	60	Human Resources Risk Management

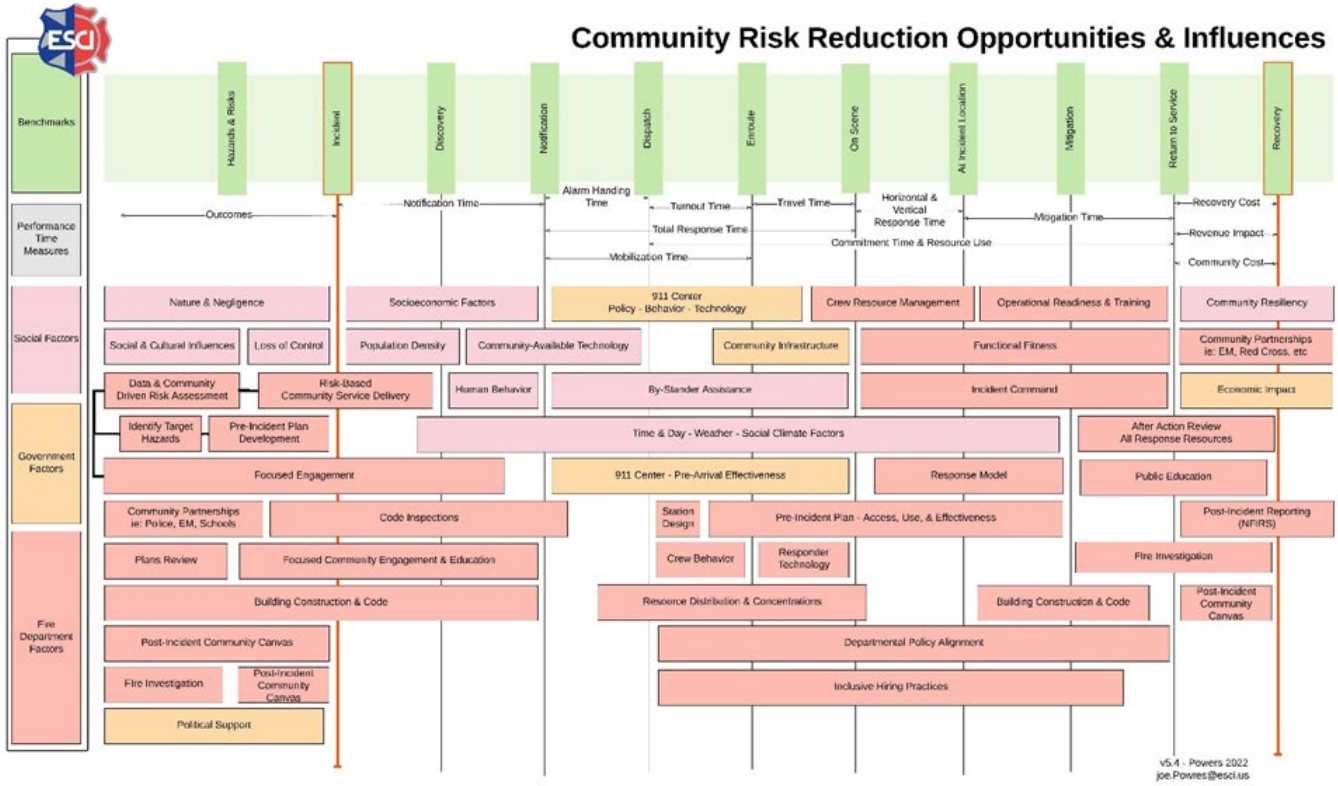
7	Legal Tasks	Estimated Hours	Responsibility
7.1	Identify and implement a dispute resolution process to address disagreements regarding transition issues, costs, and activities. **Outcome:** A dispute resolution process has been implemented and disagreements are resolved through this process.	40	Fire Chief Human Resources Legal Project Manager Joint Governance Committee
7.2	Finalize and execute the transfer of all fleet and facility resources from GFRS to ECSS. **Outcome:** All fleet resources, facilities, and land are the sole ownership of the joint organization.	30	Fire Chief Project Manager Facilities Manager Fleet Manager
7.3	Identify and modify all applicable external service contracts and agreements as required to reflect the transition to the joint organizations operational service delivery. **Outcome:** All contracts and agreements have been modified and re-executed by the date of transition.	60	Fire Chief
7.4	By-law modification **Outcome:** All by-laws have been modified by the date of transition.	40	Fire Chief Legal Project Manager
8	**Technology Tasks**	**Estimated Hours**	**Responsibility**
8.1	Assign a dedicated technology resource to plan/analyze and implement technology needs. Conduct a walk-through of each station to review existing network, computer, and telecom equipment and systems. **Outcome:** A full and accurate inventory of existing IT systems has been developed.	30	Fire Chief Transition Rep Facilities Manager Fleet Manager Technology Services
8.2	Work with GFRS and ECSS Technology Department personnel to identify computer hardware, software, and other system components that need to be installed in joint organization facilities and apparatus. **Outcome:** A full and accurate inventory of existing system components has been developed.	80	Fire Chief Transition Rep Technology Services
8.3	Confirm the type and make of the telephone system used in the fire stations, what phone equipment is in place, and who owns the equipment. **Outcome:** A full and accurate inventory of telecommunications equipment and its ownership has been developed.	30	Fire Chief Transition Rep Technology Services
8.4	Evaluate existing network connectivity and performance. Identify the ideal pathway and configuration options to transition to a joint organizational network systems. **Outcome:** The best solution for network configuration that provides high performance has been identified.	40	Fire Chief Transition Rep Technology Services

8.5	Complete a technology assessment and plan to determine and quantify hardware and software requirements to fully support the joint organization's operations: a. Office use systems b. Communications equipment (cell, radios, tablets) c. Mobile systems (MCT, mobile laptops for operations, etc.) **Outcome:** Technology needs have been thoroughly assessed and a plan for implementation developed.	80	Fire Chief Facilities Manager Fleet Manager Technology Services
8.6	Determine if current technology staffing levels can manage the anticipated new workload associated with the joint organization. Identify and quantify staff and other resources that will be needed. **Outcome:** Technology Services workload is quantified and resources required to support that workload have been identified.	20	Fire Chief Technology Services
8.7	Acquire and implement a staff scheduling software system. **Outcome:** A staff scheduling software system has been acquired and installed prior to the date of transition that communicates with the accounting and payroll system.	20	Fire Chief Technology Services Human Resources
8.8	Based on the inventories and needs assessment, purchase and install new technology equipment, etc., as needed. **Outcome:** Technology systems and equipment have been acquired and installed as of the date of transition.	40	Fire Chief Technology Services
8.9	Evaluate available fire records management systems (RMS). Acquire, implement, and install suitable software. Develop policies and procedures for system use. **Outcome:** A fire records management system has been acquired and installed prior to the date of transition.	100	Fire Chief Technology Services
8.10	Meet with geographic information systems (GIS) staff to determine the capacity of GIS use in the joint organization for administrative and field use. Determine levels of GIS use in the joint organization, acquire and implement needed hardware and software equipment. **Outcome:** Geographic information systems software has been explored, acquired, and installed prior to the date of transition.	60	Fire Chief Technology Services
8.11	Develop a website for the joint organization. **Outcome:** The website is developed and is a useful source of information.	60	Fire Chief Technology Services
8.12	Develop curriculum and deliver training to the joint organization's employees on the use of computer systems and other technology. **Outcome:** All the joint organization's employees have received training on the technology systems they will use during the course of their employment.	120	Fire Chief Technology Services

9	External Relationship Tasks	Estimated Hours	Responsibility
9.1	Identify regional efforts in which the joint organization should be a participant. Determine the joint organization's appropriate participation level and the resources needed. **Outcome:** The regional initiatives GFRS and ECSS will participate in have been identified, and resources are assigned.	20	Fire Chief
9.2	Evaluate opportunities for sharing services between the joint organization and other regional departments for services. **Outcome:** Service-sharing opportunities are identified and evaluated.	70	Fire Chief
9.3	Determine EMS incidents by priority level that are appropriate for a joint organization response. Continue to focus on the use of tiered dispatch procedures. **Outcome:** Point of dispatch and response protocols have been developed that provide the most effective level of service to the community.	90	Fire Chief Tiered Response Committee
9.4	Work with EMS and base hospital to develop internal Continuous Quality Improvement program to measure the joint organization's EMS effectiveness and quality. **Outcome:** The way the joint organization will conduct CQI programs has been identified and implemented by the date of transition.	20	Fire Chief Tiered Response Committee

Appendix 5 - Graphics

Community Risk Reduction Opportunities and Influences



Appendix 6 - Canadian Association of Fire Chiefs White Paper

Appendix 7 - International Association of Fire Chiefs White Paper

Redefining Fire: The Evolving Role of Fire Departments in Canada

Prepared for the CAFC by the Redefining Fire Committee and District Chief Don Enns

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From the CAFC President and the Redefining Fire Committee Chair

It is our pleasure to present a CAFC report entitled *"Redefining Fire: The Evolving Role of Fire Departments in Canada"*. This report puts in words, many of our experiences in a rapidly changing and evolving sector. Our goal is simply to do what we do best: avert, plan for, and if necessary, respond to the changing pressures of the future.

We have much to be proud of, however we also have much to consider as we look ahead. Our goal in presenting this report is to help administrators, policy makers, and members of the public who are less versed in what we do, take stock of the current status of the sector and what is needed.

By drawing on case studies and advice from members across all provinces and territories, and across all types of departments, we have tried to put evidence behind the anecdote.

We hope you will find this report interesting. Our thanks to the members of the Redefining Fire Committee, to Winnipeg District Chief Don Enns who held the pen, and to our reviewers for their helpful comments on this paper. If you have any questions, please do not hesitate to contact CAFC's Executive Director, Dr. Tina Saryeddine, at tsaryeddine@cafc.ca.

Thank you for your support of our sector. We look forward to discussing these issues further together.

CAFC President
John McKearney

Redefining Fire Chair
Michael Boyle

Redefining Fire: The Evolving Role of Fire Departments in Canada

Executive Summary

While the name fire department, suggests the obvious role of dealing with fires, today's fire departments have become all hazard respondents - ranging from climate disasters to active shooter incidents, from train derailments to hazardous material response, from high angle technical rescue to water and ice rescue, and from opioid, addiction, and social issues to emergency medical response and heavy urban search and rescue. It would also talk about social innovation, caring for vulnerable positions, changing value systems, data analytics, and increasingly complex construction and building product materials.

While we hope all communities are secure in the knowledge that fire departments will do more than put out the flames, the operating assumptions and business models that accompany this knowledge have not kept up in all communities. Canada operates a major public safety service on the auspices of 126,650 volunteers or paid on call staff. This accounts for about 83% of fire departments and firefighters. These individuals train continuously and are ready to put themselves into danger in the service of safety for their communities. The value systems and generational influences that have motivated their participation in the fire service may not be those of tomorrow. Now is the time to consider the future.

Without due consideration to the changing nature of firefighting, we risk insufficient community risk assessment, insufficient resources, and tragically, insufficiently trained and equipped individuals to respond when disaster strikes. Training and equipment are the vehicle to what Canadian Association of Fire Chiefs Past President Ken Block terms "intentional calmness" in the capacity to respond safely and efficiently to disaster, mitigate mental health injury, and reduce the incidence of presumptive illnesses. These concerns discourage individuals from entering the fire service and could compound future issues. By contrast, well trained, prepared, and resourced fire departments bring reward at the personal, professional, social, technical and economic level.

The issue becomes more pronounced when we compound with emergency, the economic and environmental impacts of innovation and disaster. The conversation is not about the cost of the fire department but the cost of inaction when we consider the lives, jobs, productivity, and revenues lost, and the consequences of for example carbon emissions.

Recruitment, resources, training, and community risk assessment are four requirements in the modern fire service. This report will help to contextualize this. It will tell the story of how fire departments used education, prevention and training to reduce the incidence of fire, while being prepared to manage and respond to other emergencies when needed using similar skills sets.

We hope this report will shed a light on the fire service of the future so that Canada is better prepared.

Table of Contents

Preface from the CAFC President and Redefining Fire Committee Chair 2

Executive Summary 3

1. Introduction 5

- 1.1 What's in a Name... 6
- 1.2 The Evolution of the Canadian Fire Service Paradigm 6
- 1.3 Present State of the Canadian Fire Service 7
- 1.4 Canadian Fire Service EMS Response 8
- 1.5 Specialty Rescue Services 10
- 1.6 Community Emergency Preparedness and Management 11

2. So, What Does the Data Tell Us? 12

- 2.1 The Economic Ramifications of Operating a Fire Department 12
- 2.2 The Three Dominant Services Provided 13
- 2.3 The Recruitment and Retention Challenge 14
- 2.4 Physical and Mental Health 15
- 2.5 Operating Budgets 16

3. The Consequences of Inaction 17

- 3.1 Small Risk or Catastrophic Impact? 17
- 3.2 Canada's First Line Response to the Consequences of Innovation 17
- 3.3 Fire Departments During the Pandemic 17
- 3.4 Protecting Local Economies 18
- 3.5 Managing the Carbon Footprint of Communities 18

4. What can be Done Municipally, Provincially and Federally? 19

5. Conclusion 19

Committee Members 20

Acknowledgements 20

1. Introduction

The purpose of this report is to describe the evolving role of Canada's fire departments from organizations historically built for fire suppression to ones relied upon for all hazard type responses in their communities.

When most people discover a grease fire in their kitchen or find their vehicle engulfed in flames, most automatically dial 911 and ask for the fire department. However, who do they call when they see children playing in the vicinity of a fast-moving river or when the residential carbon monoxide detector sounds an alarm, or when a dam bursts, or when a rail car derails, or when dangerous goods are spilled?

Most people are secure in their knowledge that they can call their local fire department twenty-four hours a day, seven days a week and the fire department will respond to the extent possible to any or all hazards as reported.

However, while the term fire department is universally known, it is not fully indicative of the many services they provide on a daily basis. This is not surprising given the history. When the majority of fire departments were formed, they were established to fight fires that threatened homes, businesses, and communities. For many years, most operated with the sole mission of fighting fire through fire suppression strategies, fire education and fire prevention.

Through many years of effective public education and community fire prevention, fire suppression activities began to decrease. At the same time, due to a renaissance in building construction, new materials, transportation modalities, climate change, and changing social conditions and societal norms, the need for all hazard response capacity increased. Fire departments of the past came to the realization that the valuable resources contained within their respective departments were needed in new contexts and situations. The question is whether the operating and resourcing structures of these organizations have kept up with their evolutions.

> *"We need to adapt to the ever changing dynamics and pressure put on our fire fighters."*
>
> **Chief Cameron Abrey, Fire Chief, Dauphin Fire Department**

1.1 What's In a Name…

There is a subtle disconnect between the all hazard work of fire departments and the operational supports dedicated to these organizations. This may be in part because of the prominence of the word fire in their respective departmental names. Over the last two decades several fire departments have been renamed to better reflect the expanded range of services they are called upon to deliver. Examples include *Vancouver Fire & Rescue Service, or Edmonton Fire Rescue, or Regina Fire & Protective Services, or Brandon Fire & Emergency Services, or Winnipeg Fire Paramedic Service, or Toronto Fire Services, or Halifax Regional Fire & Emergency*.

The change in operational realities of fire departments over the last few decades, have called for an expansion of the beloved but worn title of fire department to a service name that perhaps so much better identifies the multitude of services these respective departments now provide. In the coming decade we expect these departments to continue to evolve to better represent the "all hazards" type of response that they currently provide. As they do so, it's important that citizens and all levels of government understand that this shift is occurring and that the resources and policies required will need to keep pace with demand.

> *"The Canadian Fire Service is and should be one of the highest respected professions. With this the service of both management and union must be very respectful of adapting to the needs of our communities. I assume others are in a similar state of balancing budgets and community needs. The time is now to take a large step and evolve to be the next level All Hazard Service."*
>
> **Chief Morgan Hackl, Fire Chief, Saskatoon Fire Department**

1.2 The Evolution of the Canadian Fire Service Paradigm

As many jurisdictions began facing increased demand for a wide range of services, fire departments and the individuals within them demonstrated capacity towards meeting them. The nature of firefighting requires constant training. As demands shifted, the willingness to train continued.

At the same time, the mission of suppressing and preventing fires in the community also improved through effective firefighting operations, enhanced fire education and dedicated fire prevention practices, while other demands increased. The same skills proved necessary and viable in all hazard circumstances.

The same communities were increasingly making less traditional demands, such as emergency medical intervention and advanced specialty rescue services. Fire departments responded with the pragmatic response of training to meet them. As competencies evolved, the expectations became

ensconced in the structure. Municipal governments also recognized the need for an agency capable of providing a multitude of differing services and the fire service, already positioned to protect their community's citizenry, enthusiastically accepted the challenge.

> *"Generally speaking, our culture binds us to an outdated model of fire protection that is no longer sustainable or defensible. We need to focus on gathering data, sharing information, adopting best practices and matching our resources to identified risks if we want to effectively and efficiently serve our customers in the future."*
>
> **Chief Bill Ireland, Fire Chief / Chief Executive Officer, Kennebecasis Valley Fire Department Inc.**

While all departments maintained the expertise to fight fire through suppression, education, and prevention, the fire suppression effort itself has also seen substantial improvements through enhanced fire mitigation training based upon scientific research supplemented by superior fire apparatus, firefighting tools, personal protective equipment augmented by federal and provincial legislation focused entirely upon firefighter and public safety. Virtually every Canadian fire service provider improved upon their capability to fight fire as technology improved.

Three other areas of service expertise need consideration: Emergency Medical Service (EMS) response, the offering of specialty rescue and emergency mitigation services, and overall management of the community emergency management response. The mission of most Canadian fire service providers evolved to include a much greater response program dedicated to protecting their citizens not only from fire, but from a multitude of emergency situations that could easily have a huge impact upon their personal lives, and perhaps an even bigger impact upon the communities in which they reside.

1.3 Present State of the Canadian Fire Service

In February 2018, the National Fire Protection Agency (NFPA) issued a report entitled the "Canadian Fire Department Profile" which indicated that in the years 2014 to 2016 Canada had approximately 152,650 firefighters of which 17% or 26,000 were classified as Career Firefighters while 83% or 126,650 were classified as Volunteer Firefighters and/or Paid On Call Firefighters (POC).

During the same time period, Canada had approximately 3,672 fire departments providing fire protection of which 66 departments were composed entirely of Career Firefighters, while 44 departments were composed mostly of Career Firefighters, and 501 departments were classified as comprised of mostly Volunteer Firefighters, while the balance of 3,061 departments were composed entirely of volunteer firefighters and/or paid on call firefighters.

About 1.8% of Canadian fire service providers are All Career Firefighter departments which protect 40.9% of the population of approximately 37,250,000 Canadians, whereas 83.4% of departments are

classified as being All Volunteer Firefighter departments which subsequently protect 17.7% of the Canadian population.

Of the 3,672 Canadian fire departments, 682 departments protect a population of 5,000 or more residents, while 412 departments protect a population of 10,000 or more, while 179 departments protect a population of 25,000 or more, while 104 departments protect a population of 50,000 or more, while 61 departments protect a population of 100,000 or more, while 22 departments protect a population of 250,000 or more, and while 10 Canadian fire departments protect a population of 500,000 or more residents.

The vast majority of Canadian fire departments are municipal fire response services. However, 28 of the largest Canadian airports have separate aviation fire service providers or have agreements in place by which Aircraft Rescue Firefighting (ARFF) is contracted or augmented by a local municipal fire department. Each Canadian provincial and territorial government manage their respective wildlands fire response with overall coordination through the Canadian Interagency Forest Fire Centre, and the Canadian Government generally through the Canadian Forces employs firefighters that engage in aircraft rescue, structural, wild land and shipboard firefighting.

Finally, there exists many industrial fire departments in Canada protecting the employees and assets of many of Canada's larger private enterprise corporations.

1.4 Canadian Fire Service EMS Response

A significant number of Canadian fire service providers presently offer various levels of EMS response as part of the many services they provide. Many departments offer Basic Life Support (BLS) response while other departments offer a paramedical response ultimately providing Advanced Life Support (ALS). Many departments work alongside their local EMS provider to ensure prompt response times are achieved when answering requests from those these fire departments strive to protect.

The Winnipeg Fire Paramedic Service (WFPS) operates upon the largest Canadian fire-based EMS delivery model platform with about half of WFPS firefighters licensed as Primary Care Paramedics (PCP). The Red Deer Emergency Services (RDES) is classified as a dual service department that provides fire, rescue and emergency medical services to the residents of Red Deer, but provides the local ambulance response staffed by firefighters. For many Canadian fire service providers, the EMS response accounts for the majority of the department's annual call volume.

In terms of a more recent detrimental phenomenon to impact upon the fire service is the emergence of the opioid crisis to strike the Canadian fire service as highlighted in a report originating from the Public Health Agency of Canada. The opioid crisis has had a huge negative influence upon virtually every region in Canada and especially in British Columbia, Alberta, the Yukon and the Northwest Territories. Canada recorded 2,861 opioid related deaths in the year 2016, and this death rate is steadily increasing and with 16 opioid related hospitalizations each day. Consequently, the adverse effect upon the Canadian fire service performing as EMS providers has been extremely noticeable. Across Canada, most of the opioid related deaths involved males at a rate of 74% with 28% of opioid related deaths occurring amongst males aged 30 to 39 years of age.

During 2016 EMS providers in British Columbia attended 190 illicit drug overdoses per 100,000 residents resulting in one illicit drug overdose death for approximately each ten overdose events. In Alberta EMS providers responded to 1,600 opioid related events in 2016, resulting almost three opioid related overdose events for each apparent opioid related death, and 80% of these events occurred in the non-central urban cores of Calgary and Edmonton. In Manitoba, EMS response for opioid related events between 2015 and 2016 increased by 70%. The majority of these cases involved males between the ages of 20 to 29 years.

In 2018, Vancouver Fire & Rescue Services (VF&RS) Fire Chief Darrell Reid released a comprehensive report entitled City of Vancouver's Response to the Opioid Crisis detailing many of the operational, logistical, and economic ramifications to the EMS providers based in Vancouver. The report, which focused upon a $ 3.5 million civic investment for first responders and for the community in response to the crisis, indicated that the VF&RS administered Naloxone 141 times in 2016 and 215 times in the year 2017. One fire station responded to 1,500 calls in just one month ultimately a major impact on the Vancouver's fire service resources.

Public Health Ontario developed an Interactive Opioid Tool to track the effects of the opioid crisis in Ontario. Data from this interactive tool indicates a steady increase in opioid related deaths in Ontario for more than a decade and since the year 2003, the number of opioid related deaths has increased 246% with more than 1,250 Ontarians in the year 2017 having died from opioid related causes. The effects upon Ontario, and subsequently upon all EMS providers is enormous and represents one of the most pressing issues the Canadian fire service-based EMS providers face at the present time.

"Both Fire Departments and EMS units provide a vital service to people in their time of need. Imagine what the benefits could be if these two entities combined their efforts and reduced redundancy. Their common goals now aligned all in the name of improving patient care, and overall departmental efficiencies for the better."

Chief Dustin Curry, Director of Protective Services,
District of Tumbler Ridge

1.5 Specialty Rescue Services

The past three decades has also brought a change in the type of service most Canadian fire departments provide. Many Canadian fire service entities now include Hazardous Materials (HazMat) response, Water and Ice Rescue, Vehicle Extrication, High Angle Rescue, Trench Rescue, and Urban Search and Rescue (USAR), plus a multitude of other specialty rescue service occasionally specific to the demographical or geographical characteristics of the region in which the department operates. That said generally most fire departments engage in one of more of the following specialized rescue disciplines such as:

HazMat Response – Hazardous Materials / Dangerous Goods

Vehicle Extrication – Rescue of motor vehicle collision occupants

Wildlands Firefighting – Forestry, bush, scrub, and grasslands fires

ARFF – Aircraft Rescue and Fire Fighting

Marine Firefighting – Shipboard fire and rescue on water

Industrial Firefighting – Fires on commercial properties

Water & Ice Rescue – Persons and animals trapped on water and ice

Fast Water Rescue – Flood waters and river rescue operations

High Angle Rescue – Rescue operations above ground level

Trench Rescue – Rescue operations below ground level

Technical Rescue – Specialty rescue operations for unique situations

USAR – Urban Search and Rescue

HUSAR – Heavy Urban Search and Rescue

Each of these rescue disciplines represent a distinctive rescue technology requiring generally a large commitment of financial resources, training, and discipline governance based upon promoting firefighter and public safety.

Canada's Heavy Urban Search and Rescue Teams:

Canada has 6 Heavy Urban Search and Rescue teams. In Montreal, Toronto, Vancouver, and Halifax, these teams are head-quartered in the fire department. The teams are multi-disciplinary. They have very high skill sets and capacity to set up and operate a stand-alone village in the event of a disaster. Police, fire, paramedic engineering, medicine, nursing and other professions form part of the team.

1.6 Community Emergency Preparedness and Management

Based upon the availability of the invaluable skillsets readily contained by most fire service providers, many Canadian fire departments now manage, or substantially contribute to their respective community's emergency preparedness program. Reflecting upon that relationship, many Canadian fire departments routinely respond to emergencies associated with:

- Tornadoes
- Hurricanes
- Earthquakes
- Tsunami
- Floods
- Snow Storms
- Ice Storms
- Lightning Strikes
- Dam Breaches
- Active Shooter Response
- Terrorist Acts
- Civil Unrest
- Electrical Outages
- Forest Fires
- Gas Leaks
- Chemical Spills
- Airplane Crashes
- Train Derailments

In many Canadian jurisdictions, the municipal fire department plays a prominent role every time a community plans for an emergency response, and every time a community opens their Emergency Operations Centre to mitigate a situation endangering the residents of their community.

"We are maxed out with what we can do."

Chief Bo Moore, Deputy Fire Chief, Leduc Fire

2. So, What Does the Data Tell Us?

The Canadian Association of Fire Chiefs (CAFC) used eighteen fire departments as case studies for this report. The cases were selected to include large metropolitan departments, medium sized urban departments, smaller urban departments, and rural departments and career, paid on call, and volunteer departments. The departments were located in Montreal, Ottawa, Tumbler Ridge, Morden, Saskatoon, Simonds, Leduc, Winnipeg, Toronto, Kennebecasis Valley, Kelowna, Flin Flon, Calgary, Renfrew, Regina Beach, Dauphin, Fredericton, and County Forty Mile.

The data for the cases was collected by survey and through interviews. Individual departmental operating and capital budgets and annual service response totals over the last five-year period were examined. Additionally, departments provided responses to important issues such as current and future fire service challenges, significant and anticipated departmental changes, and current pressure points having a major impact on departmental operations. Also, eight department representatives from Montreal, Ottawa, Tumbler Ridge, Morden, Saskatoon, Simonds, Leduc, and Winnipeg participated in a more intensive interview to specifically discuss pertinent Canadian fire service issues.

> *"We are being pushed more and more into a data world, and I think that is a good thing."*
>
> **Chief Kim Ayotte, Fire Chief, Ottawa Fire Service**

2.1 The Economic Ramifications of Operating a Fire Department

The data collected from all four groupings, that being rural, small urban, urban, and metropolitan, examined the annual per capita costs of operation for each department in terms of the operating budgets and capital budgets for the time frame of the five-year period of the years 2014 to 2018. The results are shown in Table 1.

Table 1: Fire Service Providers Average Costs of Operation

Item	Rural	Small Urban	Urban	Metropolitan
Per Capita Operating Budget Cost	$ 94.10	$ 211.58	$ 155.65	$ 166.32
Percentage of Operating Budget	3.57%	10.54%	11.71%	5.03%
Per Capita Capital Budget Cost	$ 38.03	$ 9.54	$ 12.61	$ 11.01

When examining the data derived from Canada's fire service providers, the function of population is a major consideration. Smaller departments generally have considerably lower wage costs because these departments generally consist of a volunteer and/or paid-on-call (POC) fire fighter composition,

while larger departments generally consist of career firefighters with the associated substantial wage and benefit costs. However, for jurisdictions with larger populations, these substantial wage and benefit costs are easily absorbed on a per capita basis. The end result is that the average per capita annual operating budget cost is $ 156.91 for each Canadian citizen. Fire department operating budgets usually derive funding from their respective municipality's annual operating budget, and the average percentage for the fire service operating costs is 7.71% of the average Canadian municipal annual operating budget. In terms of capital budget, CAFC data found smaller jurisdictions face larger per capita annual capital budget costs simply because again these smaller communities do not have the depth of population to share capital budget expenditures that are dependent upon the locality's population. Consequently, while the average per capita capital budget cost is $ 17.80, it is the rural grouping which dramatically drove up that average figure as the other three groupings had significantly lower average per capita annual capital budget costs.

2.2 The Three Types of Dominant Services Provided

Examination of the data emanating from within the CAFC data collection group determined that Canadian fire service providers respond mainly to three distinct call classifications, those being to Fires, to EMS calls, and to Other calls which includes specialty rescue, HazMat, false alarms, and miscellaneous incident responses. The breakdown in service demand is as displayed by the data in Table 2:

Table 2: 2018 Annual Call Volume Responses Percentage Breakdown

Group	Fire	EMS	Other
Rural	22.96%	31.68%	45.36%
Small Urban	16.62%	61.21%	22.17%
Urban	16.44%	52.51%	31.05%
Metropolitan	14.43%	46.91%	38.66%

While the percentage for Canadian fire service providers' response to active fire events constitutes the original historical response criteria, a five-year average of 17.61% of all calls can be attributed to this type of response. Conversely, Canadian fire service providers responded to EMS calls for an average

of 48.08% of the total calls generated. And in terms in the annual increase for service based upon call volumes, on average and based upon data collected by the CAFC, Canadian fire service providers saw an increase of 4.31% in their total call volumes from the year 2017 to the year 2018, an upward five-year trend that continues from the year 2014.

2.3 The Recruitment and Retention Challenge

Based upon interviews conducted by the CAFC with member fire service providers, the single most constantly recognized challenge that most, if not all, Canadian fire departments face moving forward is staff recruitment and retention. This is especially pertinent in an industry where 83.36% of fire departments are completely volunteer. However, the problem also exists in career departments for other reasons.

To operate an effective fire service provider, communities must develop a department composed of well trained and appropriately certified firefighters. As the service demand paradigm changes and as the educational and practical workload steadily increases, the need to train and certify staff in effective firefighting practices and in the maintenance of EMS designations requires a considerable

time and effort commitment by not only cross trained firefighter EMS practitioners, but by all firefighters. Simultaneously for fire services to provide the specialty rescue services for example such as hazardous materials response, auto extrication, water and ice rescue, fire fighters must attain rescue technician status to ensure they can effectively provide the expertise necessary to engage in various rescue operations in a safe manner not only for those being rescued, but also for the benefit of the rescue team. The time commitment required today of Volunteer and POC firefighters cannot be over emphasized.

Interviews conducted by the CAFC also found that departments that initiate a strong and viable program to attract and retain volunteers and/or POC firefighters through various incentive strategies have been successful to developing pools of a dedicated and ultimately content firefighter pool.

The issue of firefighters attaining the training and certification to enhance their capabilities only to leave the department shortly thereafter to move to a different department is also an issue presently

facing many Canadian fire departments. There are many fire colleges in Canada offering programming by which firefighter candidates can acquire the skillsets required to apply for many of Canada's career fire departments. Consequently, many Volunteer and/or POC fire departments as well as smaller and medium Career or Composite departments also offer the training required to attain the necessary certifications. Unfortunately, on many occasions once a firefighter has acquired these certifications, these firefighters apply to larger fire departments travelling on differing career path. The problem then becomes a continuous cycle whereby smaller departments become a resource for larger fire department staffing requirements incurring considerable cost and unfair financial loss to these smaller communities.

2.4 Physical and Mental Health

While insistence upon more rigid firefighter training requirements by the appropriate authorities of most provincial jurisdictions has ultimately created a better trained firefighter skilled in effective fire mitigation strategy while simultaneously operating more safely in an incredibly dangerous environment, the topic of firefighter wellbeing has certainly taken to the forefront as one of the most important issues the Canadian fire service presently faces. This focus upon firefighter wellbeing has taken two distinctly different routes in the attainment of the ultimate goal of ensuring the vibrant and healthy wellbeing of Canada's firefighters.

> *"Not any one department can afford to do it all. Sharing in cooperation of abilities and equipment will benefit who we serve and not be self-serving."*
>
> **Chief Brian Hunter, Fire Chief, Simonds Fire - Rescue**

With the growing recognition of occupational cancer awareness, most Canadian fire service providers have adopted fire hygiene protocols to protect firefighters from prolonged exposure to the carcinogenic materials found on the fire ground scene. Many departments have adopted or are in the process of adopting safer working practices to protect their firefighters through innovative industrial hygiene practices to minimize exposure. The Canadian fire service leads the world in the protection of all firefighters through fire related cancer research and most importantly in the creation and implementation of cancer presumption legislation to protect all Canadian firefighters. The expertise demonstrated by prominent leaders of the Canadian fire service in conjunction with the International Association of Fire Fighters in the education of government officials throughout the world on cancer awareness and protection is unparalleled with Canada exhibiting leadership as one of the first and only country to have presumptive legislation in all provincial and territorial jurisdictions.

A more recent phenomenon centres upon the high rates of post-traumatic stress disorder (PTSD) found within membership ranks of the fire service and the ramifications of the subsequent treatment strategies presently being developed to combat this issue. Without a doubt, firefighters similar to

police officers and members of the Canadian military, are constantly exposed to horrific events that eventually build and affect the wellbeing of the individual firefighter. Many fire departments are committing considerable resources to recognizing and then combatting this issue which has a major impact upon the fire service. Hence the reason for including this very real major issue in this report to promote further awareness.

"When referring to financial demands, we are just chasing our tails."

Chief John Lane, Fire & Paramedic Chief, Winnipeg Fire Paramedic Service

2.5 Operating Budgets

Without a doubt, the most prominent pressure point as indicated by 87% of all Canadian fire service providers interviewed by the CAFC centers upon the harsh realities surrounding their respective Fire Department Annual Operating Budget. The recent economic downturn predominantly in the resource sector has had a gigantic impact upon the economy of many Canadian provinces and especially that of the province of Alberta and in the Canadian Maritimes. Maintaining budgets to a relatively constant annual inflationary rate of approximately 2.00% has serious economic ramifications if the price of Canada's natural resources is under attack. The severity of this issue is compounded by the fact that service demand for all Canadian fire service providers submitting data to the CAFC found a trending five year cumulative increase of 16.88% in the annual demand for service. Past practices to counter lower than realistically required budgetary increases has resulted in a situation whereby fire service assets such as apparatus and rescue equipment has not been effectively and efficiently replaced to meet the steadily increasing demand for service. Consequently, an era of tax austerity has had a cumulative effect that many fire service providers cannot easily recover from especially as departments are expected to "do more for less". To succeed in an era where service demand is constantly evolving and subsequently continuously growing especially in the essential delivery of such services of EMS to an aging population, budgets must keep pace with demand or eventually the system could fail. Hence the reason why so many leaders in Canada's fire service have found shrinking Operating Budgets in relation to service demand to be their primary Pressure Point.

3. The Consequences of Inaction

The working environment firefighters face on a daily basis has dramatically changed over the last few years with a heavy infusion of firearms coupled with the emergence of more powerful drugs such as methamphetamine. This generation of Canadian firefighters are routinely being exposed to hazards once never imagined, and fire service providers have had to react. Consequently, it is not unusual to see firefighters responding to emergency incidents wearing body armour, another predicament of a changing world.

3.1 Small Risk or Catastrophic Impact?

Communities often hope and expect that disasters and emergencies won't occur with any frequency. This can lead to confounding small risk with catastrophic impact. If we do not plan and resource response capacity, the consequence can be disastrous from a human, financial, social, emotional, and moral perspective. It can shut down a community. As such, perhaps rather than planning on the size of risk, we need to plan on the size of impact. To this end, several best practices in community risk assessment are available. This requires municipalities to listen and hear what their local experts are recommending. The National Fire Protection Agency has an important guideline for community risk assessment. We encourage anyone responsible for public safety to become familiar with it.

3.2 Canada's First Line Response to the Consequences of Innovation

As Canada invests in social, technological, chemical, and construction innovations, it's essential to keep in mind that firefighters or all hazard responders, will be the first to experience the consequences of these innovations if and when they fail. The Canadian Association of Fire Chiefs is asking the federal government to ensure that there are adequate and sufficient training considerations in Canada's innovation agenda. This can apply to anything from agriculture to construction, and rail safety to hazardous materials.

3.3 Fire Departments During the Pandemic

During the current COVID-19 pandemic, as during the previous SARS, H1N1 and MERS pandemics, it remains particularly important to understand that firefighters are part of a tiered medical response. They need the same personal protective equipment and vaccine considerations as healthcare workers. The risk of this blind spot is important to note because healthcare planning and negotiation with the federal government is done provincially, where the majority of provincial healthcare workers are accounted for. Firefighters are most often under municipal jurisdiction.

3.4 Protecting Local Economies

Several studies have been completed in major cities such as Montreal, Phoenix, Sherbrooke, Levis, and Edmonton tracing the number of jobs and financial loss preserved by rapid fire service response to commercial business fires. For example, in Phoenix, the fire department's response to 42 commercial fires saved the potential loss of 6,951 jobs, $650M in revenues, and $30M in potentially lost state taxes. In Levis, the fire departments' response to 11 commercial fires, saved 695 jobs and $63.5M in economic impact. In Sherbrooke, 11 fire responses saved 1,917 jobs and $368M in revenues. These studies are available. Each has strengths and weakness in the methodology. However, the message is the same. While commercial fires will account for only a small percentage of a fire department's response, the economic impact is easily quantifiable and far greater than the cost of the fire service itself.

3.5 Managing the Carbon Footprint of Communities

The National Fire Protection Association, a major source of international best fire service industry practices, has developed a tool called ENCANA which can be used to assess the carbon footprint of various types of fires. Edmonton tested the usage of this tool and was able to demonstrate that in response to 10 fire events, there was a savings of 66,514 tonnes of carbon dioxide (CO^2) which is approximately 63.2% of the total risk of greenhouse gases emissions due to no intervention. In the case of these 10 events that were evaluated during this project, it was found that the economic value of the associated environmental damage, specifically CO^2 equivalent had a potential of $3,151,725 at risk of which Edmonton was able to theoretically save $1,989,123 when considering a $30 per tonne price for CO^2.

4. What Can Be Done Municipally, Provincially and Federally?

We believe that all levels of government must recognize that fire departments are more than just about the flames and consider appropriate risk assessment. They are all hazard respondents, including as part of a tiered medical response under normal and pandemic conditions. Many fire departments contain the region's emergency management response capacity. Since they are local, they are often on scene before industrial, federal, military or provincial resources. They are national resources.

The CAFC continues to recommend that the federal government consider a structure like the US Federal Emergency Management Administration and its US Fire Administration that can systems approach to fire sector planning in Canada. This might include everything from data, to training to recruiting, keeping up with innovation, to priority vaccine administration.

5. Conclusion

Ironically, the fire service has been fondly teased with the overused expression *"150 years of tradition unimpeded by progress"*. This couldn't be further from the reality of a sector that is called upon to respond to the issues of the day. When the call for diversity, water and ice rescue, incident command, EMS provision, HazMat response, community emergency preparedness, technical rescue, and innovation are added to the more traditional mixture of community fire education, effective fire prevention, risk assessment, and operational firefighting capacity, the Canadian fire service Likewise, when faced with budgetary pressure, recruitment and retention matters, economic conditions, firefighter wellbeing considerations and the paradigm of global warming, the Canadian fire service leadership must prove to be nimble, adaptive, and quickly responsive. By aligning mandates, resources and looking further into the future.

Members of the Redefining Fire Task Group

Members	Department	Location
Broderick Moore	City of Leduc Fire Services	Leduc, AB
Rob Evans	Redwood Meadows Emergency Services	Redwood Meadows, AB
Chad Cooper	The City Of Flin Flon	Flin Flon, MB
Michael Boyle	Kennebecasis Valley Fire Department	Rothesay, NB
Ihor Holowczynsky	Winnipeg Fire Paramedic Service	Winnipeg, MB
Daniel Perron	MRC de Marguerite d'Youville	Verchères, QC
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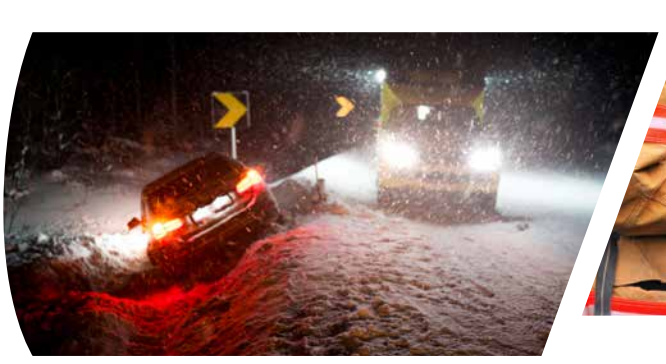

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Acknowledgments

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Table of Contents

Introduction 2

White Paper Development Process 4

Critical Issue A: RE-IDENTIFICATION 9

Critical Issue B: CULTURE 11

Critical Issue C: ROBUST USE OF DATA 13

Critical Issue D: HEALTH AND WELLNESS 16

Critical Issue E: PARTNERSHIPS 19

Critical Issue F: SUSTAINABILITY 21

Critical Issue G: TECHNOLOGY 25

Critical Issue H: INCLUSIVENESS 27

What the Future May Hold 29

Next Steps 30

Introduction

The changing role of local government and its impact on the 21st Century Fire and Emergency Services

As the role of the federal government shifts away from responding to everyday needs, local governments have also begun addressing such issues as climate change, affordable housing, homelessness, immigration, the opioid epidemic, and behavioral health. This reality has led local fire and emergency services to become the health and safety net for communities. The DNA of fire departments is to respond to EVERYTHING and help EVERYTIME. While fires may be diminishing due to better engineering, codes, and enforcement along with an increased focus on community risk reduction activities, calls for service are up for every department. These calls are for help, and the calls received today are much boarder in scope. The services required often fall outside the traditional scope of fire and emergency services. Yet these departments are uniquely positioned to respond to such calls. This paper outlines several critical issues that are impacting local governments today and others that will have an effect over the course of the next three decades. Additionally, it outlines initiatives that local government and the local response agency will need to consider to remain viable in the future. The objective is to remain relevant for our jurisdictions, have the greatest impact in a rapidly changing environment, be sustainable, and address the needs of the whole community — its residents, businesses, governing body, and the personnel who will be tasked with carrying out the mission.

The speed of change

Regardless of how long you have been a part of a community – whether serving in local government, living there, or owning a business there – if you reflect on the changes you have witnessed, you will agree that the speed of life has transformed dramatically. A reflective look shows just how much the fire and emergency services have evolved in just the last two decades. From the equipment in use, new applications in technology, changes in the workforce, use of social media, the speed of information, and the shift and

> *"The whole 20th century, because we've been speeding up to this point, is equivalent to 20 years of progress at today's rate of progress, and we'll make another 20 years of progress at today's rate of progress equal to the whole 20th century in the next 14 years, and then we'll do it again in seven years. And because of the explosive power of exponential growth, the 21st century will be equivalent to 20,000 years of progress at today's rate of progress, which is a thousand times greater than the 20th century, which was no slouch to change."*
>
> Ray Kurzweil, American Author, Inventor, and Futurist

increase in the calls responded to -- all have made for a dramatic difference as we transformed into the 21st century fire and emergency services.

The political dynamic at all levels of government in the past, while still challenging, was less polarized and much more collegial than exists today. This shift has resulted in organizations needing to position their efforts at times as much to address political dynamics as to do what is best for the community.

In the 21st century fire and emergency services are destined to experience much more change than the last several generations. Along with this rapid change, there are several critical global issues that will have long-term impact not only on the fire and emergency services but on local government as well. Thus, the purpose of this white paper is to not only spur dialog around these critical issues, but also to motivate local government to prepare and position their organizations for these anticipated changes. If organizations hope to maintain their effectiveness and remain sustainable in the future, they must act today to address these issues and develop the organizational bandwidth needed to resolve them.

Co-Chairs Statement

It has been our honor to co-chair the 21st Century Fire and Emergency Services White Paper on behalf of the International City/County Mangers Association and the Center for Public Safety Excellence. With more than 70 years of experience in local government between us, we bring a depth of perspective in the role and the importance of local government to every resident, visitor, and those passing through a local community. In the course of our careers, we have experienced a significant amount of change and realize the importance of this white paper to the future of the fire and emergency services.

This white paper is a culmination of several years of discussion between our two organizations and more than two years of work that included seven focus groups at national and regional conferences and two online surveys. Combined these efforts provided more than 1,200 responses from labor, fire department leadership, and city/county managers. That information was coalesced by a group of subject matter experts (SME) comprised of city managers, fire chiefs, and associated industry professionals to provide the structure for this white paper.

It is our hope that this white paper stirs debate, creates dialogue, and promotes the critical conversations needed about the changes facing our next generation of leaders -- not only in the fire and emergency services but also in the entirety of local government. While local government leaders have always faced change, it has never been greater, more rapid, or occuring within an more unforgiving political environment.

This white paper outlines eight emerging issues that will have either positive or negative impacts on local government and the fire and emergency services, depending on how they are handled now and in the future. Two critical themes have emerged that must be addressed today to provide a healthy and sustainable environment for the future.

- First, the past strategies of deferring conclusive action on critical issues with short-term solutions and leaving them for the next set of leadership is not a sustainable strategy for the future. To continue to do so will worsen the eventual correction(s) that will have to be made.
- Second, we must begin recruiting talent with the mindset, skill sets, and resolve to help build a core organizational culture that can adapt and respond to rapid changes and that are not vested in a 20th century fire service paradigm or antiquated local government bureaucracy.

While there are challenges, the next 30 years hold great potential to refine and improve how services are provided at the local level. It is our hope that this white paper will help achieve that result.

Representing the Center for Public Safety Excellence

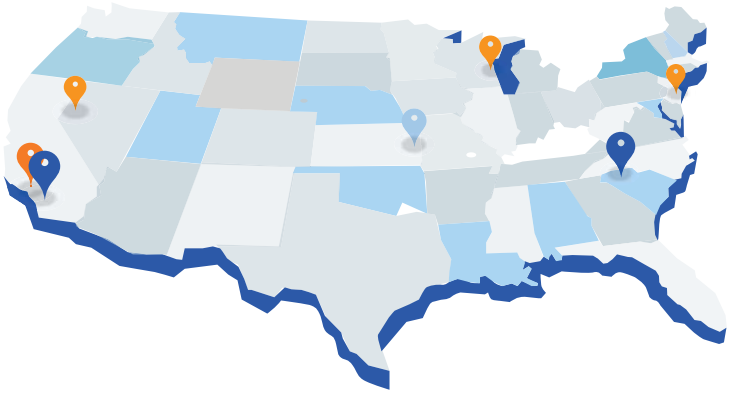
Chief Randy R. Bruegman (Retired), CFO, FIFIReE

Representing the International City/County Management Association

City Manager Pat Martel (Retired), ICMA-CM

White Paper Development Process

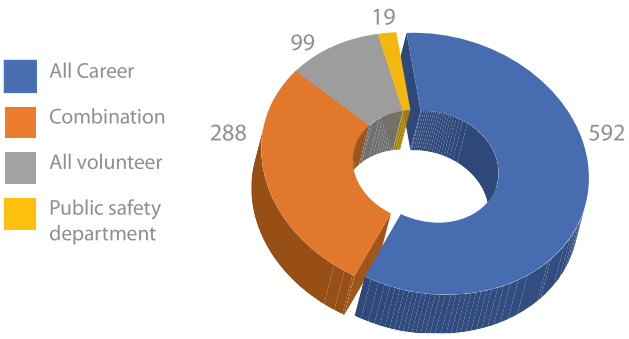
The SME group did not work in a vacuum in developing the white paper. From the onset, the importance of engaging numerous and diverse voices was repeatedly expressed. Seven in-person feedback sessions were held between January and May 2019. Coupled with the two web surveys, this generated feedback from more 1,200 fire and emergency services professionals and local government management professionals.



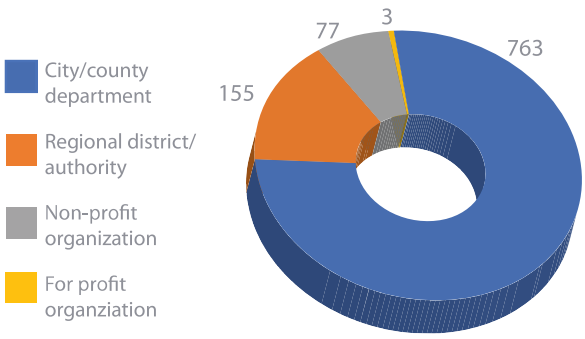
- January 2019 – International Association of Fire Fighters Affiliates Leadership Training Symposium, Los Angeles, CA
- February 2019 – ICMA Southeast Regional Conference, Greenville, SC
- March 2019 – CPSE Excellence Conference, Garden Grove, CA
- March 2019 – ICMA West Coast Regional Conference, Reno, NV
- March 2019 – ICMA Mountain Plains Regional Conference, Omaha, NE
- April 2019 - ICMA Northeast Regional Conference, New Brunswick, NJ
- May 2019 – ICMA Midwest Regional Conference, Evanston, IL

In the web surveys administered by both CPSE and ICMA, identical patterns for fire and emergency services organization and staffing models emerged.

Staffing model | *all respondents*



Organization model | *all respondents*

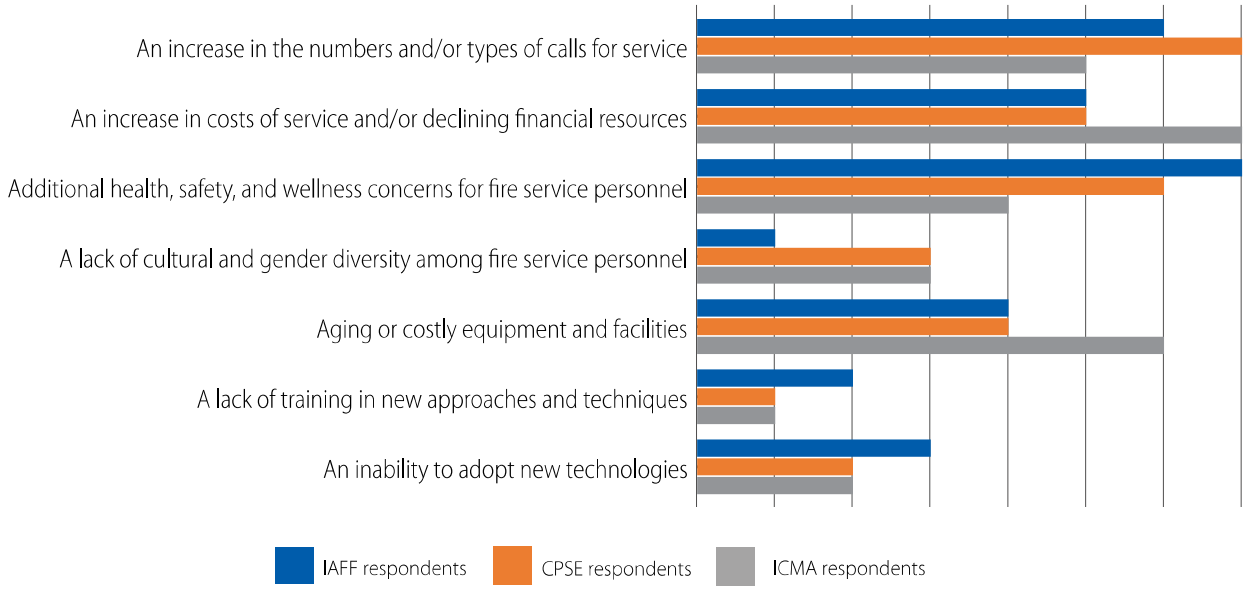


Expected future challenges for the fire and emergency services

Attendees at the IAFF feedback session were asked the same question as CPSE and ICMA survey respondents: Thinking about the fire and emergency services in your community, what are some of the major challenges that you expect your department to face in the future? While the exact order of the provided challenges differed among the groups, three expected future challenges rose to the top for ICMA groups – an increase in the number and/or type of calls for service, an increase in costs of service and/or declining financial resources, additional health, safety, and wellness concerns for fire and emergency services personnel.

The SME group saw an interesting connection between the highest rated future challenge of all three groups. CPSE respondents noted increased demand for services as the top future challenge, while ICMA respondents were most concerned with how to continue to supply fire and emergency services in an era of increased costs and declining financial resources. The IAFF respondents indicated that health, safety, and wellness of fire and emergency services personnel would be most impacted in the future.

Comparison of expected future challenges



How can the fire and emergency services innovate and be sustainable?

The three most important ways to facilitate a culture of innovation in the fire and emergency services were the same for both CPSE and ICMA respondents. During the IAFF feedback session, attendees were asked what changes in skills would be necessary for the fire and emergency services in the future. An overall increase in training emerged as a major theme during the in-person feedback session. Specific examples of training varied from enhanced medical training focused on new drugs and techniques, to increased decontamination training, and training with and on new technologies (e.g. virtual reality-based scenarios, unmanned aerial vehicles, and electric/hybrid vehicles). A frequent response for necessary future skills were leadership skills -- ranging from public speaking, program development, strategic thinking, and research.

Three most important ways to facilitate a culture of innovation in the fire and emergency services

Encouraging greater use of data to assess and use of analytics to solve complex community problems	Ensuring that the services are up to date on the latest professional education, training, and credentialing	Creating a spirit of partnership between the fire and emergency services and local government management

Given the unique perspectives of IAFF, CPSE, and ICMA respondents, the SME group was not surprised to learn that, when asked to select the three most important changes the fire and emergency services must implement to remain viable in the future, responses from the three groups began to diverge. While the environments they work in are identical, the changes impacting them are similar, and they agree on the ability of the fire and emergency services to innovate, their specific solutions were very different.

Most important changes to be implemented

	IAFF	CPSE	ICMA
1	Increasing awareness and resources dedicated to personnel health and wellness	Identifying and implementing community risk reduction efforts	Researching and implementing alternative service delivery options
2	Increasing professional development opportunities for personnel	Increasing usage of data and data analytics	Identifying new partnership opportunities with neighboring jurisdictions and private and/or nonprofit organizations
3	Researching and implementing time and life-saving technologies	Fostering a culture of innovation in the department and among personnel	Fostering a culture of innovation in the department and among personnel

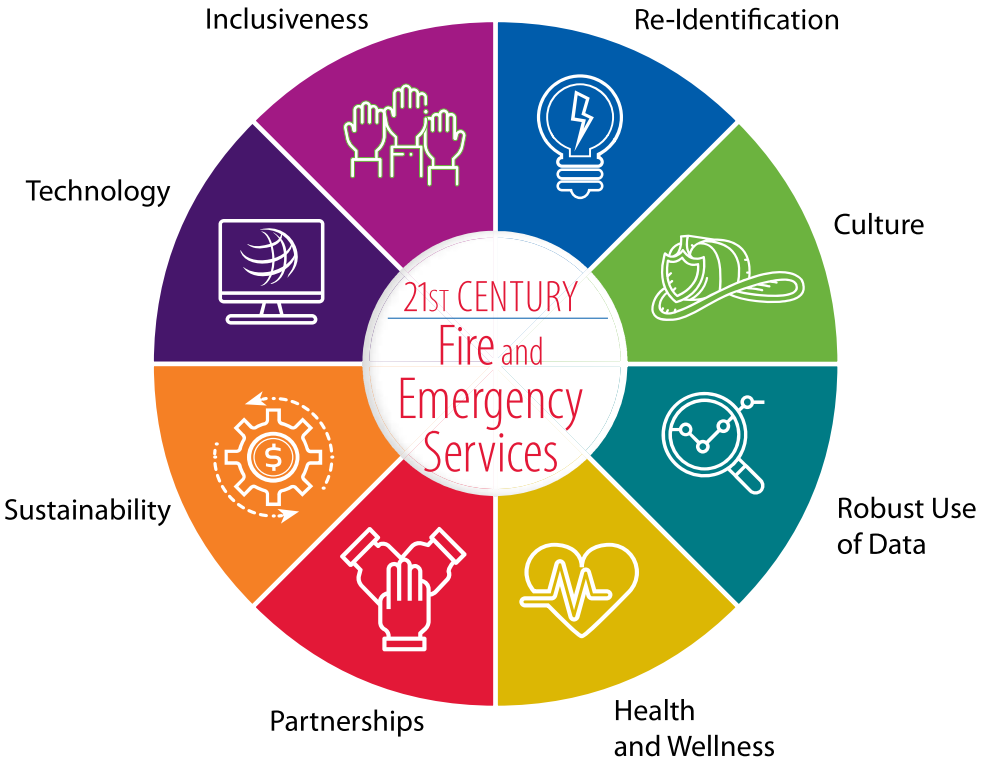
Forces Impacting the 21st Century Fire and Emergency Services

When we began the process of creating a vision for the fire and emergency services in 2050, the SME group began to brainstorm the specific factors having significant impacts today and how they could change the profession's appearance in 30 years. Over the last decade, local governments have witnessed an emerging set of issues including changing political dynamics within the community we serve, new expectations from the electorate, a demand for greater transparency, and a continual shifting of services from the federal and state level to local government. These dynamics have realigned the services we provide. The following graphic illustrates the initial brainstorm of factors that are impacting the 21st century fire and emergency services today and will continue to do so into the foreseeable future. While each will individually impact the fire and emergency services of the future, collectively these create the most change this profession has ever seen.

As the SME group investigated each area of influence, eight overarching themes emerged. These are areas of such importance that each individually, or collectively, will create significant stresses and shocks within the existing fire and emergency services. The SMEs reviewed the survey and in-person sessions feedback and determined that the feedback could be categorized into eight critical issues for the fire and emergency services in the next 30 years. These critical issues demand attention if the fire and emergency services is to thrive in the future:

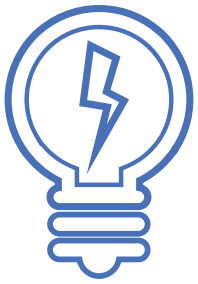
1. Re-identification of the fire and emergency services
2. Culture of the profession
3. The robust use of data
4. Health and wellness threats
5. Opportunities for partnerships
6. Sustainability challenges
7. Technology advancements and adoption
8. Inclusiveness of the fire and emergency services

Initial brainstorm of factors



Forces impacting the 21st Century Fire and Emergency Services

CRITICAL ISSUE A:
RE-IDENTIFICATION



Re-identification is the action of establishing a new identity for the fire and emergency services. Today, most agencies that respond to medical emergencies, fires, rescues, and many other types of calls still carry the legacy name "fire department." The fact is that for most agencies, fire response is less than 5 percent of the call types to which they respond. As the fire and emergency services begin to expand their services into mobile integrated health care, and many other related service deliveries, the legacy name fire department may no longer be relevant. While reidentification is not uncommon in the corporate world, this will be an emotional issue for this profession. Even so, creating a new identity is essential for the service to remain relevant and sustainable.

Initiative 1: Celebrate the heritage of the fire and emergency services while recognizing that services provided have evolved and will continue to experience significant changes over the next 30 years.

Strategies:

1. Explore changes to agency names to better reflect the services provided.
2. Engage storytellers and fire and emergency services experts who can provide a modern perspective of the adaptability of the fire and emergency services.
3. Recognize that the fire and emergency services are well positioned to be the hub of service delivery outside the typical emergency response system.
4. Establish focus on the community as the organizational priority.
5. Implement risk reduction, medical and injury prevention, and related social service support efforts for their community.

Actions

- Exalt and reward internal and external activities that support risk reduction and medical and injury prevention efforts.
- Establish messaging strategies for clarifying and supporting the role of first responders in addressing risk reduction, medical and injury prevention, and social services support.
- Set agency goals and strategies to reduce the number of 911 emergency calls, which reduces risk to the community and the first responder.

6. Provide for better service to the customer, through the deployment of personnel with the appropriate skills needed for the service(s) to be provided. For example, use advanced medical providers, social workers, mental health professionals, and other support service providers as a component of an agency's resource deployment.

Case Study: Mesa Fire & Medical Department (MFMD)

Location: Mesa, AZ

Coverage Area: 511,000 residents over 138 square miles

No. of Employees: 561

Annual Calls for Service: 68,000

With more than 75 percent of calls for service being medical in nature, in 2012 the department re-identified itself by changing its name to Mesa Fire & Medical Department. Building from this name change, MFMD began reidentifying itself in additional ways. These include deploying smaller medical response units, partnering with crisis counselors to staff a behavioral health unit, and coordinating regular immunization clinics that provide free vaccinations to the insured. MFMD has developed a community outreach division focused on reducing non-emergency 911 calls by providing education and social services. This division conducts such varied functions as training children on CPR, safe driving, and installing grab bars in homes.

CRITICAL ISSUE B:
CULTURE

Culture is often defined as the learned behavior patterns of people – including what they think, say, do, value, and feel. Professional culture is the pervasive values, beliefs, and attitudes that characterize a profession and influence how it operates. The culture of the fire and emergency services is built upon a strong legacy and is steeped in tradition. These traditions are deeply engrained in the way services are provided, the image of the fire and emergency services, beliefs about how it should look, and in many cases, who should be included. The culture often drives decisions that are counter intuitive to what is best for the long-term health of the organization or the provision of better services to the customer. At its worst, the focus on tradition results in resistance to change, adaptation, and/or innovation. This creates a tremendous risk for the emergency services over the next 30 years, as we are entering a period of time which will undoubtably be an era of rapid change. Successful organizations will be able to adapt quickly, try new things, be willing to fail, and be accountable for the outcomes the organization needs to achieve.

In the private sector or local government, agility will be the new capital for organizations as we move into the next three decades. As W. Edwards Deming once stated, "It is not necessary to change. Survival is not mandatory." This is a great reminder that all organizations are vulnerable if they fail to adapt to their changing environment. As we look to the future, the rate of change will be faster than ever, and culture will play a significant part in an organization's ability to sustain through such a period of rapid change.

Initiative 1: Enhance alignment between community, elected officials, management, labor/volunteer representatives, and overall workforce.

Strategies:

1. Create a process that allows for goal setting, strategic planning, and periodic feedback by all stakeholders of the community and the members of the organization.
2. Encourage regular communication between all stakeholders on strategic issues, while continuing to address operational issues through the established chain of command.
3. Embrace the differences in generational understanding and approach to issues to be successful in addressing the opportunities and challenges that will face organizations in the future.
4. Foster alignment between the community, elected officials, management, labor/volunteer representatives, and the overall workforce to create a culture of inclusion, adaptability, and innovation.
5. Establish a mechanism within the agency to monitor and promote cultural awareness and sensitivity reflective of the culture of the community served.

Initiative 2: Promote an organizational environment that is adaptable, open to change, innovative, and focused on continuous improvement.

Strategies:

1. Select and promote leaders and managers in the organization who model the desired organizational behavior of self-assessment and continuous improvement.
2. Encourage members of the organization to be engaged in outside organizations, both professional and community based.
3. Adopt a philosophy that promotes seeking out the best industry practices of other professional organizations and establish a process by which the organization can evaluate those practices and implement those that are relevant in their own organization to improve performance.
4. Develop an organizational culture that embraces continuous improvement for the organization and its employees.
5. Recruit and hire employees who demonstrate the necessary knowledge, skill sets, and abilities to develop an effective and innovative organizational environment.

Initiative 3: Establish organizational expectations for employee education, credentialing, and continued professional development.

Strategies:

1. Encourage and provide incentives for personal growth through a comprehensive organizational professional development plan that includes training and education, that is incorporated into the requirements for promotion to leadership positions, and that results in the increased professionalism of the fire and emergency services.
2. Develop a professional mentoring process to assist individuals in creating and achieving their professional development plan.
3. Develop a reverse mentoring program where new employees engage with senior leadership to familiarize them with the latest technologies and thought processes of the emerging workforce and community.
4. Establish a process to continually assess the skills, knowledge, and abilities needed by the organizational workforce to meet the changing community demands for service, to meet the external challenges placing pressures on the organization, and to help address the changes and innovation that are occurring or will need to occur in the agency.

Case Study: Charleston Fire Department (CFD)

Location: Charleston, SC

Coverage Area: 150,000 residents over 104 square miles

No. of Employees: 401

Annual Calls for Service: 24,000

Serving one of the most historic cities in the United States, CFD is steeped in a rich history and tradition. An unfortunate part of its history is the 2007 Sofa Super Store fire that resulted in the line of duty deaths (LODD) of nine CFD firefighters. Since then CFD strategies have taken two distinct paths: those that advance the modern fire department and those that reinforce what it means to be a CFD firefighter. A recent recruit class was tasked with researching every LODD in the department's history, CFD has become a leader in incident command, fire tactics, and regional partnerships through strong strategic planning and a focus on constant improvement. Such traditions as company pride and badge pinning ceremonies remain integral to CFD's culture.

CRITICAL ISSUE C:

ROBUST USE OF DATA

Data are individual units of information. In analytical processes, data are represented by variables. Although the terms data, information, and knowledge are often used interchangeably, each has a distinct meaning. While there have been significant improvements in data use during the last 20 years, the fire and emergency services have just scratched the surface of the full potential of using data effectively to manage daily operations and make decisions based on an agency's desired outcomes. Available data is often limited due to the poor documentation of an incident by the officer responsible for filling out the report. The exception to that is medical response, which requires substantially greater documentation due to medical and legal oversight. Therefore, establishing systems to ensure collection and management of quality data is critical if it is to be used effectively. Over the next 30 years, the amount of data available to the profession will transform the way the service operates, not only in emergencies, but in all the services provided. Smart cities, smart buildings, medical biometrics, artificial intelligence, predictive analytics, and real-time streaming insights into data are all on the horizon along with many others not yet imagined. Just think of where data use was 30 years ago and where it is today. We can only imagine what it will be like in 30 years. However, if the fire and emergency services hope to harness the true power of data, there has to be a transformation of mindset and culture to leverage data for effective decision making.

Initiative 1: Utilize quality data for evidence-based decision making to assess and produce the best outcomes.

Strategies:

1. Educate and develop accountability for company officers, field inspectors, educators, and others deployed to capture the appropriate data at the incident to provide information that can be analyzed to achieve the organization's desired outcomes.
2. Champion a federal requirement that all fire and emergency services agencies regardless of size and structure be required to complete a National Fire Incident Reporting Systems (NFIRS) report for each call and submit to the state or federal government.
3. Champion a substantial update to NFIRS to become a more relevant and technologically robust system or replace it with another system capable of integrating with new innovative data systems to provide advance analytics, and support evidence-based decision making, built upon the receipt of quality data for local agencies.
4. Leverage technology(s) to assure real-time data capture and analytics that provide insights for use by fire departments at the local level.
5. Assure a process is in place to track physical and traumatic event exposure(s) for all response personnel.

Initiative 2: Implement advanced data analytics to make informed decisions.

Strategies:

1. Employ advanced analytics to assist in making predictive and prescriptive decisions that are focused on the outcomes the agency is trying to achieve.
2. Cultivate a data-driven culture that utilizes data insights to modify strategies, deployment models, and programs.
3. Ensure departmental personnel are aware of public disclosure laws, rules, and best practices in providing data to other organizations, the media, and the general public.
4. Establish best practices for data cleansing and for tracking data access to safeguard its integrity.
5. Establish clear roles and responsibilities among city data managers, private-sector data collection entities, and records management software (RMS) companies.
6. Establish a clear definition of the data ownership the agency produces.

Initiative 3: Develop comprehensive records management systems (RMS) to collect and analyze data effectively.

Strategies:

1. Urge RMS vendors to design systems that bring together all data needs in the agency into an integrated platform, that can provide analytical evaluation for the data collected toward the outcomes trying to be achieved by the agency.
2. Establish data warehousing best practices for collecting data from multiple data sources, including RMS, for complete and faster data analysis.
3. Require department IT managers to use best practices and transmission law(s) relevant to cybersecurity, data collection, and storage.

Initiative 4: Focus on developing outcome-based data for all measurable operations and functions within the organization.

Strategies:

1. Develop an outcome-based performance measurement system consisting of four elements:
    - The goals of the agency to support the health and welfare of the community.
    - The performance metrics relevant to the goals the agency is trying to achieve
    - The benchmark level of performance the agency is striving to achieve.
    - The consequences for the agency and the community being served if the goals are not met.
2. Use aggregated data to inform and improve system performance.
3. Champion legislative changes to allow for sharing of patient data between hospitals and responding agencies and encourage interagency cooperation to promote the evaluation of patient outcomes based upon the entirety of the response to that patient.

Case Study:
Edmonton Fire Rescue Service (EFRS)

Location: Edmonton, AB

Coverage Area: 972,000 residents over 303 square miles

No. of Employees: 1,300

Annual Calls for Service: 55,000

Combining incident data with non-fire databases (such as census and other demographic information) EFRS has harnessed insights to guide planning, development, and community risk reduction. EFRS conducted longitudinal analysis of river rescue operations before and after the closure of a station located along the North Saskatchewan River. Highlighting the negative impact on the outcomes of the rescues following the closure compelled the City Council to reopen the previously closed station. Cross referencing of response data with fire investigator's data has determined the locations for EFRS' smoke alarm program. EFRS robust use of data has aided other governmental entities namely the geocoding of overdose events and naloxone administration by firefighters for the provincial government showing the impact of recently opened supervised consumption services.

CRITICAL ISSUE D:

HEALTH AND WELLNESS

The increase in emergency responder health concerns including post-traumatic stress (PTSD/PTSI), and other health related problems is a critical issue for the profession. Daily exposures in the fire and emergency services include sleep disruption and deprivation, the continual witnessing of tragic events, and exposures to toxic environments. These exposures are all contributing factors to the increased cancer rates in firefighters and their predisposition to many health-related issues and psychiatric disorders, including suicide. To understand the interrelationship of all these factors and their impact on response personnel will require research specifically directed at fire and emergency personnel, necessitated by the fact that similar research conducted in other professions will likely be discounted and not be accepted by the 21st century fire and emergency services. While use of battle-worn gear has been a source of pride for many in the service and is embedded in the tradition and culture of the profession, it has contributed to extended exposure to toxins and many of the health-related issues experienced by fire and emergency services personnel. As such, decontamination plays a vital role in protecting fire and emergency services personnel and their long-term health. The focus for decontamination goes beyond the emergency scene and includes all the transport mechanisms (e.g., personal protective equipment (PPE), hand tools, hose, and apparatus) and facilities where exposure is intensified because of extended time frames and other exposure pathways (e.g., respiratory, dermal, and digestive). Further, there is a real concern that personnel are bringing contaminants outside of fire stations and exposing friends and family members. A prime example is the volunteer firefighter who, because of limited agency resources, takes gear home to be cleaned, cross contaminating their personal vehicles and home washing machines.

Initiative 1: Champion research on the health impacts specific to the fire and emergency services to evaluate the health risk of consecutive hours worked, sleep disruption, and the impacts on employee health.

Strategies:

1. Conduct research on the impacts of current work cycles on the health of the workforce and the impacts of sleep deprivation and sleep hygiene on the long-term health of the individual and their cognitive abilities while on duty.
2. Utilize the results of that research to make any needed operating policy changes, incorporate research results into appropriate standards, and pursue potential legislative changes to protect the health of the workforce.

Initiative 2: Proactively address the increased mental health challenge(s) facing the fire and emergency services.

Strategies:

1. Engage outside professional assistance to allow employees a confidential process to seek assistance for themselves or family members who may be struggling with mental health concerns.
2. Embrace an organizational atmosphere that removes the stigma and barriers for those seeking mental health assistance while safeguarding employee confidentiality.
3. Develop organizational processes that protect the confidentiality of what an employee is being treated for, while alerting the agency to any recommended restrictions to the employee's essential job functions and assignments. .
4. Develop a comprehensive plan to address the need for employee assistance in those situations that warrant immediate intervention.
5. Develop on-going mental health assessments for emergency responders to promote early recognition of developing mental health issues aligned with a mental health assistance process if issues are detected.
6. Develop pre-employment hiring processes that provide for professional mental health pre-screening of candidates to avoid exposure for those that are highly susceptible to post-traumatic stress.

Initiative 3: Adopt and support fitness and wellness best practices throughout the whole organization and incorporate this philosophy in every aspect of operations.

Strategies:

1. Institutionalize employee wellness and fitness into the culture, practices, operational procedures, and training practices of the organization.
2. Provide structured support to maintain a healthy workforce.
3. Evaluate the level of fitness of each employee, and for those found to be unfit, assist employees in attaining a proper fitness level. If unsuccessful, address the issue with the employee.

Initiative 4: Ensure ongoing physical fitness and wellness requirements are standardized, adopted, and used within every department.

Strategies:

1. Adopt physical performance and annual fitness testing requirements for fire and emergency services employees to ensure the responder can safely do the job without injury or risk to their health.
2. Once these policies are developed, engage the workforce to adopt and implement strategies that will be employed by the agency.

Initiative 5: Continue research toward the development of comprehensive decontamination procedures for the fire and emergency services.

Strategies:

1. Address the traditional culture of the profession that promotes the wearing of soiled gear and transform it to one that sees it as contamination.
2. Conduct continued research to develop a comprehensive approach to reducing exposures, the best method(s) for decontamination, and periodic testing to help ensure a safer environment for the workforce.
3. Use research to develop best practices, comprehensive standards, and potentially, new legislation to protect the workforce.

Initiative 6: Urge personal protective equipment (PPE) manufacturers to develop new PPE and bio-metric sensors to ensure effectiveness, reduce equipment weight, and provide for the enhanced ability to monitor the physiologic health and stress markers for personnel during response to an incident.

Strategies:

1. Urge the PPE manufactures to develop a more effective ensemble that offers the protection needed and reduces the weight.
2. Champion the research and development of technologies to monitor the physiological health indicators of personnel during incident response and to determine when those indicators indicate personnel are at risk.
3. Urge PPE manufactures to design a more comprehensive ensemble for wildland firefighting that provides for better protection of personnel.
4. Provide recognition awards to manufacturers and vendors that make meaningful improvements to PPE.
5. Challenge the existing practice of allowing the PPE manufacturing industry to vote on standards that affect their business while recognizing their input is critical to the design of the PPE.

Case Study: Broward Sheriff Fire Rescue and Emergency Services Department (Broward)

Location: Fort Lauderdale, FL

Coverage Area: 1.95 million residents over 1,323 square miles

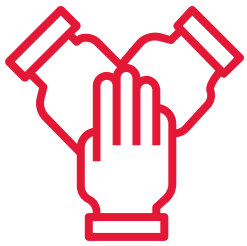
No. of Employees: 775

Annual Calls for Service: 50,000

Broward formalized its health and wellness initiatives under a division chief of health and safety. A departmental joint occupational safety and health committee meets bi-monthly to discuss safety issues and concerns. Broward conducts mandatory biannual Life Scan physicals for all personnel. Numerous exposure reduction steps, such as use of particulate filtration/blocking structural firefighting protective hoods and synthetic radio straps, issuance of post exposure reduction decontamination kits, and deployment of "healthy cab" initiatives, have been implemented by Broward. All front-line personnel have been issued ballistic protection. Working with the local University of Miami Sylvester Cancer Center, Broward has participated in a research project for the education and reduction of cancer exposures.

CRITICAL ISSUE E:
PARTNERSHIPS

A partnership is often thought to be a form of business, where two or more people come together to share ownership, responsibility, and profits from a given business venture. In every community across our nation, a partnership exists between the fire and emergency services and the general public that is built upon a shared commitment to the health and safety of its residents. The fire and emergency services are in an enviable position in communities, as they are well positioned to be the hub of service provision for many supporting services already found within their community, and that align with organization's core mission. The importance of this has been clearly proven during homeland security threats, through the interagency cooperation, intelligence sharing, and joint response to those events by law enforcement and the fire and emergency services. There are significant opportunities to create partnerships with allied health care, mental and behavioral health providers, and various social service agencies to leverage the talents of each agency with a focus on improving service to the community. Too often agencies respond multiple times to the same individual who calls 911 as their only known access for assistance, when the need is truly not an emergency, but could be met by another service provider in the community. Over the next 30 years, the fire and emergency services will need to partner with related service providers to create a local response network that can provide a host of services under the umbrella of a multifaceted organization, if it hopes to meet the needs of the community served.



Initiative 1: Acknowledge the need to work with a wide range of partners to serve the community and develop local strategies to create new approaches to providing services more effectively.

Strategies:

1. Inventory and leverage the allied services (law enforcement, health, social services, non-governmental organizations) in the community to provide more effective and efficient services.
2. Partner with insurers and health providers to innovate existing response strategies, improve patient outcomes, and reduce system costs.

Initiative 2: Promote a symbiotic relationship with other internal departments and outside agencies that are routinely allied responders to an incident.

Strategies:

1. Routinely meet, train, develop standardized operational response plans, and share real-time intelligence of what is happening in communities with allied responders to increase response capability and coordination during a homeland security event.
2. Develop goals and outcomes with a wide array of agency stakeholders, both internally and externally, to meet the objective of providing for a safe and healthy community.
3. Promote regular communication between all stakeholders on strategic issues, while continuing to handle operational issues through the established chain of command.
4. Develop opportunities for stakeholders to appreciate the roles and responsibilities of all other stakeholders toward better alignment of service delivery.

Initiative 3: Continue to expand community emergency response capabilities.

Strategies:

1. Promote individual and neighborhood self-sufficiency though existing programs (e.g. community emergency response teams, the radio amateur civil emergency service, volunteers in patrol, and senior Medicare patrol volunteers) to create greater resiliency in the community.
2. Focus on creating personal accountability in preparation for community-wide emergencies.
3. Identify and support community functions that are critical for recovering from and adapting to community-wide disasters.

Case Study: Rockford Fire Department (RFD)

Location: Rockford, IL

Coverage area: 147,000 residents over 65 square miles

No. of Employees: 318

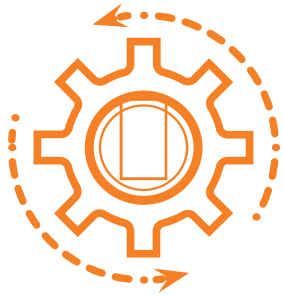
Annual Calls for Service: 29,000

Identifying the increase in EMS calls and understanding that collaboration would benefit the department and community, RFD partnered with Swedish American Health System to develop a mobile integrated health (MIH) program. Twelve patients with chronic illnesses were selected for the 2015 pilot. As a result, ER visits were reduced by 54 percent, hospital admissions by 28 percent, and ambulance transports by 38 percent for this group. Enrollment in the program has grown with visits, admissions, readmissions, and transports continuing to be reduced. The MIH program scope expanded through a partnership with Winnebago County Health Department to train community members to recognize opioid overdoses and treat with them naloxone kits. In a one-year period, 1,500 people were trained, and more than 1,200 naloxone kits were distributed.

CRITICAL ISSUE F:

SUSTAINABILITY

Sustainability is often defined as meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability has three pillars: economic, environmental, and social. If we look through the lens of local government today, there are reasons to be concerned that local government may not be sustainable in the future. Many agencies across the United States are struggling with the cost to provide services at the levels needed to meet a growing population, an aging population, and a population with changing service demands. Those cost pressures are exacerbated by unfunded pension costs along with and the cost to maintain and replace aging infrastructure and response vehicles. Shifting responsibilities from federal and state governments to the local level have forced many local governments to provide new services. These factors have placed tremendous strain on local government to balance ever growing service demands with funding available within their jurisdiction. This will be an on-going issue and will necessitate doing business differently in the future, not only in the fire and emergency services but throughout all services provided by local government as well.



The volunteer fire service has struggled in the last decade in many parts of the United States to recruit and retain enough volunteers to provide adequate services. With the mission of providing services to more than 70 percent of U.S. jurisdictions, volunteer recruitment and retention is becoming a national problem.

Today business, government, and society are learning from the science of change that they must recreate themselves even when they would like to believe the old way of business will go on forever. As Peter Drucker put it, "the best way to predict the future is to create it." The future of the fire and emergency services will rest upon those who are in it. If the fire and emergency services hope to sustain itself in the future, it must be willing to redesign itself and address the issues that are having a negative impact on the service today. Failure to address these issues will lead to what author Max Bazerman calls "predictable surprises." Predictable surprises are those events or outcomes that catch us by surprise, yet both were predictable and preventable. If this occurs, the fire and emergency services will be placed at risk to continue to be the community's safety net. Ultimately, local government will be faced with making difficult choices about how to provide the services needed and the level of services to be provided. That is why the issue of sustainability is so important and must be addressed now, rather than being left to the next generation of leaders to resolve.

Initiative 1: Address aging fire and emergency services vehicles and building structures.

Strategies:

1. Establish a comprehensive building renewal and replacement plan and provide the needed funding to address the short- and long-term community needs.
2. Urge the architectural profession and equipment manufacturing industry to anticipate and plan for the future designs needed by the fire and emergency services to address changes in response and deployment methods, building constructions, building densities, road infrastructure, and SMART cities and SMART building design.

Initiative 2: Reconsider and revamp current deployment methods.

Strategies:

1. Ensure response protocols and opportunities for consolidation are explored to ensure effectiveness of service delivery is balanced with cost efficiency.
2. Adopt staffing models based on statistically known call demand factors, such as time of day, special events, and seasonal changes while maintaining an adequate baseline deployment required to meet the health and safety needs of the community and employees.
3. Evaluate consolidation of seldom used specialty and single-purpose pieces of equipment to maintain effective cost management and capacity of those services for the threat environment that exists within the jurisdiction.
4. Develop a better understanding of community needs and their changing demands for services so as to modify the service delivery model(s) to meet them.

Initiative 3: Develop sustainable pension model.

Strategy:

1. Promote collaboration between labor groups, local government, and state government to ensure existing pension financial commitments are met while ensuring adequate service levels within the communities being served.

Initiative 4: Adopt and implement a community risk reduction strategy

Strategies:

1. Embrace a comprehensive strategy to minimize incidents and, if an incident does occur, to minimize the impact on the people, the community, and the emergency responder.
2. Adopt the concepts outlined in "Vision 20/20 – National Strategies for Fire Loss Prevention," and incorporate these recommendations into the daily agency operation to minimize the impacts to the community and emergency responders.
3. Develop strategies locally and nationally that reduce risk through proper vegetation management, designing new fixed fire protection systems that can be used in wildland urban interface, and zoning changes that prohibit building in the wildland urban interface.
4. Embrace the use of fire sprinkler technology in all buildings through the rapid adoption of codes and ordinances at the federal, state, and local government levels to dramatically reduce the incidence of deadly and costly fires. .
5. Urge the sprinkler industry to develop a more cost-effective means to retrofit existing buildings with sprinklers or other fire suppressant technology.
6. Develop standards and a tiered code methodology that would support a phased in retrofit plan for existing buildings.

Initiative 5: Improve resource allocation by focusing on the outcomes trying to be achieved.

Strategy:

1. Evaluate resource allocation using department response data.
2. Alter deployment methods to assure better outcomes and desired services levels for communities including EMS, community paramedicine, or increased prevention efforts.

Initiative 6: Examine fixed costs associated with current delivery models and associated contracts.

Strategy:

1. Negotiate labor contracts with the flexibility to promote innovation in service delivery and servicing models, while still providing a fair and equitable wage, benefit, and pension package for the workforce that is economically sustainable.

Initiative 7: Explore public/private partnership opportunities.

Strategies:

1. Solicit success stories and best practices of effective public/private partnerships related to capital investments and operating costs.
2. Create, maintain, and regularly update a national repository of best practices available to all agencies at no cost.

Initiative 8: Research strategies to assist communities in sustaining their volunteer fire and emergency services or, if needed, how to transition to a new model.

Strategy:

1. Champion the establishment of a federal commission to develop a national plan of action to ensure volunteer fire and emergency services agencies remain viable in the future.

Initiative 9: Dramatically revamp the fire and emergency services education and training model to provide the needed skill sets, knowledge, and abilities required for the anticipated changes in the future and to remain current with the application of emerging technologies.

Strategy:

1. Urge academic institutions to develop the means to speed up their course development model and to be able to quickly adapt and develop new courses that will be required to sustain the needed workforce skill sets.
2. Encourage academia to use of state-of-the-art technology to meet the educational learning styles of future generations.

Case Study: South Metro Fire Rescue (SMFR)

Location: Centennial, CO
Coverage area: 540,000 residents over 287 square miles
No. of Employees: 716
Annual Calls for Service: 45,000

Serving 12 municipalities and unincorporated areas of three counties, SMFR has addressed the critical issue of sustainability. A 2016 merger with Parker Fire Protection District lowered the mill levy saving taxpayers $11.2 million over 3 years. An upcoming merger with Cunningham Fire Protection District will result in additional savings of $4.7 million. Consolidating dispatch centers and adopting more efficient coverage models has delivered better service to the community with SMFR rated as an ISO Class 1. Funding is now available for staffing community risk reduction efforts that in turn lead to a reduction in demand for service. Enhanced community connectivity and less susceptibility to changing politics has permitted SMFR to adopt long-term strategic initiatives furthering its sustainability.

CRITICAL ISSUE G:
TECHNOLOGY

Futurist Ray Kurzweil's predictions about trends in technological advance, which have been correct 86 percent of the time, are widely used by governments and large companies to prepare for the future. He has predicted that every 12 to 18 months computers will double their capabilities along with the information technologies that use them. Among his predictions are that in five years, we will experience 32 times more technological advancement, and in 10 years, a thousand times more. It is hard to imagine what that will translate to for the 21st century fire and emergency services, but it will undoubtedly change the way the local response agencies are doing business today.

Initiative 1: Adapt to and leverage rapidly evolving technology to improve service delivery.

Strategies:

1. Anticipate that artificial intelligence, smart technology, and robotics will shape future service delivery dramatically in the next 30 years and will change response methods requiring a new skill set and strategic processes for fire and emergency services agencies.
2. Leverage technology developed for other applications, professions, and purposes for use by emergency responders (e.g., robotics for the military, training simulation tools for the gaming industry, aviation flight simulation) to provide for better response and training.
3. Develop data sharing between departments/agencies that could benefit from shared applications and hardware, thus reducing the silos of data information in order to improve services.

Initiative 2: Develop a change mindset to help anticipate and support appropriate use of emerging technology and encourage the development of new technologies.

Strategies:

1. Champion the United States Fire Administration, in concert with other national organizations, to develop a fire advanced research challenge to promote application of technology developments for use in the emergency services through proof of concept and competitive challenges, similar to the Defense Advanced Research Projects Agency (DARPA) challenge utilized by the Department of Defense.
2. Coordinate national organizations to recognize and celebrate successful applications of emerging technology and help to spur future innovation at a more rapid pace for the fire and emergency services.

Case Study: City of Lenexa Fire Department (LFD)

Location: Lenexa, KS

Coverage Area: 50,000 residents over 34 square miles

No. of Employees: 96

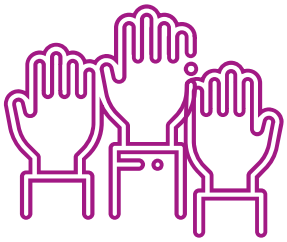
Annual Calls for Service: 6,300

On the cutting edge of technology adoption, LFD received a FAA Certificate of Waiver or Authorization (COA) for Unmanned Aircraft Systems (UAS) in 2014. The COA permits LFD to use several UAS for aerial viewing and videography of both apparatus and personnel. LFD has utilized UAS for such varied activities as wildland hot-spot recognition, fire investigation, incident mission, and recruit training review. LFD requires interconnected smoke detectors in all new home-based day cares and permits Bluetooth detectors in older properties. Both configurations result in faster alerting of LFD to fire incidents in these high-risk properties. To protect its personnel, LFD has experimented with a waterproof arm band transmitter for its recruits monitoring their biometrics and pushing notifications during adverse situations.

CRITICAL ISSUE H:

INCLUSIVENESS

Communities served have continued to become more diverse in their culture, languages spoken, and norms. The workforce of many fire and emergency services agencies no longer reflect the people they serve. A workforce demographic that mirrors the community make-up helps to build trust with the community and promotes a better understanding by the agency. While firefighting is now a relatively small part of what agencies do, it is the most technically and physically demanding. Many fire departments are working with underrepresented groups to prepare them for the rigorous testing processes of joining the fire and emergency services. If the fire and emergency services hope to attract the right workforce to deliver the services conducted, then changes in culture and current perceptions are necessary to achieve more representative service.



Initiative 1: Make it an organizational priority to recruit, select, and promote members who reflect the demographic makeup of the community they serve.

Strategies:

1. Remove economic barriers to candidates desiring to participate in the fire and emergency services.
2. Remove social barriers to candidates desiring to participate in the fire and emergency services.
3. Remove non-validated physical ability barriers for candidates desiring to participate in the fire and emergency services.
4. Create pathways to attract, prepare, and hire underrepresented personnel into the fire and emergency services.
5. Establish an agency goal for the optimal demographic make-up of the agency.
6. Develop a plan to achieve that optimal goal for the agency within a specified time period.

Initiative 2: Understand the community characteristics, culture, and diversity that exist and determine the most appropriate way to serve and interact with all community members.

Strategies:

1. Provide opportunities for employees to engage with various community groups.
2. Promote cultural understanding and humility within the workforce to increase the quality of interactions and the services provided to the community.
3. Engage the community in helping to develop cultural humility within the agency.
4. Involve the community in agency decisions that affect them.

Case Study: Hartford Fire Department (HFD)

Location: Hartford, CT

Coverage Area: 124,000 residents over 17 square miles

No. of Employees: 361

Annual Calls for Service: 30,000

A majority-minority community, Hartford's residents are 44 percent Hispanic, 35 percent African American, 15 percent White, and 3 percent Asian. Striving to be a more inclusive fire department to better serve their diverse community, HFD has adopted strategies focused on enhanced two-way communication, team building, and fostering a department identity while permitting individuality. Meetings with all affinity groups allowed the chief to discuss challenge and concerns. These groups included the Emerald Society (Irish), Latin Society of Firefighters (Latino/Hispanic), Phoenix Society (African American), St. Florian Society (Italian), and Women in Fire & Emergency Services. Wide department representation on health and safety, strategic planning, and apparatus committees along with involvement of members in the development of HFD's first professional development program led to a greater sense of inclusion. Custom-designed company logos are permitted on apparatus while intra-mural activities bring together the entire department.

What the Future May Hold

The responder of the future and how agencies deploy available resources will likely differ significantly from today's fire and emergency services system of response. While the system will have to rely on a strong core response team to adequately respond to emergency situations, the responder of the future will likely come from a variety of disciplines, with varying education, certifications, and training to provide the array of needed services to their community.

Calling 911 may result in dispatching units to an emergency response or deploying an advanced medical provider, a social worker, a behavioral health specialist, community risk reduction officer, or other specialist who can provide the most appropriate set of skills needed by the caller. The fire and emergency services must be prepared to play a much larger role in the health and welfare of the community and anticipate that there will be a variety of specialists that make up the response team, creating a larger network of professionals that are deemed first responders.

Technologies and robust data analytics will have dramatic impacts on society, the workplace, and the fire and emergency services and will create a time of substantial organizational transformation. As smart cities develop during the next 30 years, the amount of data readily available to local government, the response agency, and the citizen will be substantial. Data will drive decisions as local governments focus to deliver better services, promote economic growth, and provide for a safe and healthy community. But to do so will require a new way of thinking for most local governments and the agencies that work with in them. The quickly advancing fields of automation and artificial intelligence will most certainly revolutionize every aspect of human life and are already making an impact on everything from military strategy to medical procedures. As robots take over increasingly complex tasks, new forms of human-machine interaction will emerge, and the structure of both industry and society will evolve to accommodate this emerging and symbiotic relationship.

For this first time in history, we have five generations in the workforce. Two new generations are just entering: Gen Z and Gen Alpha. Gen Z is the first that is a true digital generation. This generation has been exposed to the internet, mobile systems, and social media from a very young age. They are hypercognitive, comfortable multitasking, and often have multiple devices in operation at the same time. Generation Alpha, also known as the iGeneration, are the first entirely born in the 21st century. This generation is set to be the most transformative generation yet. Alphas haven't just grown up with technology, they've been completely immersed in it since birth.

During the next 30 to 50 years, a nearly equal distribution of population bands will emerge. This will be a shift in global demographics and will undoubtably have dramatic impacts on the workplace and the workforce.

Whether it's a more diverse workforce, a more demanding community, a more complex response system, or a shift caused by societal changes, as we look to 2050, the fire and emergency services will look vastly different that it does today.

Next Steps

If you have been working in local government during the last decade, you have experienced some of the most dramatic shifts in how it operates. Whether it's the political dynamic, the elevated threshold for transparency, the lack of civility, or the demands placed on local government to provide more services, it has been a time of real change. As we look to the future, those dynamics may continue, but other forces of change will emerge, making the leading and managing of tomorrow's governmental system very exciting, very challenging, and very fast.

The more than 1,200 people that shared their vision for the 21st Century Fire and Emergency Services all agreed that the fire and emergency services is an integral local government function. However, they felt that changes will be needed in how these vital services will be provided. The subject matter experts and the CPSE and ICMA boards indicate that a collaborative effort will be needed to address the rapid societal changes coming and should include city/county managers, elected officials, community members, fire and emergency response leadership, and the representative workforce. The changes foreseen and the rate at which change may occur will undoubtably accelerate the transformation of the fire and emergency services. Thus, it is critical that we address the issues outlined in this white paper. We must begin today to position our agencies to be able to create an organizational DNA that can adapt quickly, embrace new technologies, and be open to unforeseen changes. These will need to be critical organizational characteristics if local government hopes to sustain the fire and emergency services so it can continue to serve as the health and safety net for our communities.

We invite local governments and institutions to begin addressing the initiatives and research efforts outlined in this white paper. It is our hope that national organizations, such as CPSE, ICMA, and others, will address the topics outlined in the critical issues and prepare their members to meet these challenges going forward.

CPSE

Center for Public Safety Excellence®

ICMA

Leaders at the Core of Better Communities

Attachment 2

Mercury Executive Summary and Report - Joint Fire Fleet Services

"The Town of Georgina and the Town of East Gwillimbury Joint Fire Fleet Services Alternatives Assessment"

Report No. GFRS-2023-0001
February 15, 2023
Total pages - 74

Executive Summary

Georgina and East Gwillimbury Joint Fire Fleet Services Alternatives Assessment

Background:

The purpose of this document is to provide a summary of the Town of Georgina and the Town of East Gwillimbury Joint Fire Fleet Services Alternatives Assessment, undertaken in collaboration with the Mercury Associates Inc.
Mercury is the largest dedicated fleet management consulting firm in North America. Mercury's expertise includes assisting organizations with improving their fleet management practices, increasing operational safety and efficiency, optimizing asset utilization and reliability, and operating a cost competitive fleet operation. Mercury has some familiarity with Georgina's Operations and Infrastructure Department, Fleet Division, having undertaken work on their behalf in 2020.

The details to support this Summary are provided in Mercury's report entitled, "Towns of Georgina and East Gwillimbury, Study for Fire Fleet Services Alternatives Full Report" and dated, January Jan 17, 2023.

Current state:

- Georgina Fire and Rescue Services (GFRS) fleet is starting to be serviced by Georgina's Operations and Infrastructure Department, Fleet Division and by third-party fleet maintenance and repair providers; and
- East Gwillimbury Emergency and Community Safety Services (ECSS) vehicles are serviced by a third-party fleet maintenance provider.

Objectives:

The purpose of the study was to determine whether ECSS vehicles could also be serviced by Georgina's Fleet Division, and if so, would there be benefits for both departments. The study is limited to the maintenance and repair functions for the fire fleet assets in the Town of East Gwillimbury and the Town of Georgina, while the Towns' overall fleets are considered for context. The main objectives include the exploration of cost efficiency through economies of scale and improved service levels and quality.

Key project components are:

- Establish the current mode of operation (CMO) for both Towns;
- Develop options or scenarios for future mode of operation (FMO);
- Compare and contrast the FMO options and identify the most optimal option;
- Identify impacted areas highlighting the critical success factors for the FMO option; and
- Provide conclusions and recommendations for the FMO.

Staffing Requirements for Fire Fleets:

- Workforce (number of technicians) determined by calculating total required demand hours (workload) based on Vehicle Equivalent Unit (VEUs) and projected technician tolerance levels (i.e., annual demand hours per technician):

	Georgina Fleet Including Fire Fleet	Georgina Fire Fleet	East Gwillimbury Fire Fleet	Subtotal for Two Fire Fleets	Total for Three Fleets
Number of active assets	268	24	25	49	293
Number of VEUs	406	103	89	192	495
Demand hours	4,872	1,236	1,062	2,298	5,934
Number of required technicians	3.4	0.9	0.7	1.6	4.1

- Currently, Georgina Fleet Services has two technicians and with the GFRS fleet migration to Fleet Division, there is a staffing shortage;
- It was indicated by Georgina that budget has been requested for one additional technician in 2023;
- Fire fleet maintenance and repair work migration to Georgina fleet services has just begun and a significant amount of work is still being sublet to external commercial vendors;
- Some maintenance and repair work for the Town fleet (i.e., not fire fleet) is also sublet; and
- The calculation indicates that at least two more technicians will be required for maintenance and repair work for the two fire fleets for work in-house.

Options for fire fleet maintenance and repair – Future Mode of Operation:

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
1. Status Quo	• Continue with migration of Georgina fire fleet maintenance into the Operations and Infrastructures, Fleet Division • Continue to utilize external vendors • Continue with asset specifications that facilitate in-house maintenance and repairs	• Continue with external vendors for fire fleet	• One additional mechanic requested in 2023 budget • No process or procedural change	• Long downtimes • Service quality not optimized and quality uncertainty • Cost uncertainty • Two drivers and long travel time to sublet vendor • Time to empty asset/refill asset
2. Sublet Contract	• Leverage both fire fleet asset quantities to contract external vendor(s) through a procurement process • Ensure contract includes service level agreement, e.g., turnaround times for work type, corrective measures, service quality, right to inspect and audit, etc. • Develop and conduct vendor work quality assurance methodology		• Potential for higher priority with contracted vendor • Cost certainty • Service quality optimized	• Up-front effort for the procurement process for contract • Additional effort for quality assurance • Active contract management required • Long downtimes continue if established service levels cannot be met • Time to empty asset/refill asset

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
3. Transition	• Georgina Fleet Division manages East Gwillimbury maintenance and repairs • Georgina Fleet Division uses some in-house and largely sublet vendors for East Gwillimbury fire fleet	• Migrate East Gwillimbury fire fleet maintenance and repairs to Georgina Fleet Division - similar process to Georgina's fire fleet • Use Work Order management system for maintenance and repairs workflow	• Cost consistency and potential for reduction, if combined with Option 2 above • Potential for reduced vehicle downtime especially for small and running repairs • Downtime improvement • Reduction in 2-drivers for delivery and pick-up • Reduction in time to empty asset/refill asset	• Additional mechanic and admin staffing • System of Record and FMIS establishment • Cost transfer process establishment • Operating guidelines establishment
4. In-house maintenance and repairs (Final Future State)	• Largely in-house work at Georgina Fleet Division facility with some sublet work for specialty repairs • Stocked parts inventory and management for commonly used fire fleet parts	• Provides vehicle and information for maintenance and repairs work • Arranges for asset transportation to/from Georgina facility	• Much more influence and control over work quality, prioritization, and scheduling • Cost control • Ability to set maintenance and repair priorities • Downtime improvement • Increased subject	• Enhanced facility – significant modification or careful work planning for mix of light and heavy vehicles in facility at the same time. Facility enhancement is important for long-term efficiency. • Additional mechanic and admin staffing • System of Record and FMIS establishment

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
			matter expertise for Fire apparatus	• Cost transfer process establishment • Operating guidelines and service level establishment

Key success factors for in-house fire fleet maintenance and repair at Georgina fleet services:

Governance	Staffing	Facilities	Maintenance and Repairs Work Design and Management	Fleet Management Information System
Oversight, operating guidelines, service level agreements, business reviews and issue resolution	Bandwidth - need more technicians and a parts person at Georgina Fleet Division	Modifications to facility and/or work planning to accommodate Fire Fleets M&R. Facility enhancement is required for long-term efficiency	Preventative Maintenance program, Legislated Inspections – CVOR and NFPA; garage process and procedure improvement	One system of record for assets and enabling fleet workflows
Cost transfer (e.g., chargeback method and rate) from Georgina to East Gwillimbury, and invoicing (e.g., accounts payable and accounts receivable)	Technician - training, fire fleet knowledge and Emergency Vehicle Technician (EVT) qualifications	MTO certification for maintenance and repairs	Quality Assurance	Maintenance and repairs parts, labour, and sublet cost capture for rate plan development

Governance	Staffing	Facilities	Maintenance and Repairs Work Design and Management	Fleet Management Information System
Insurance considerations - East Gwillimbury vehicles at Georgina garage	Labour Union and Collective Agreement implications		Parts inventory and management	Management reports, ad-hoc reports, key performance indicators (KPIs) and maintenance and repairs performance management and metrics
Liability considerations, i.e., who is liable if vehicle is unsafe due to deficient maintenance and repairs			Warranty and recall management	Cost capture and billing for East Gwillimbury fire fleet

Significant cost elements for final future state:

1. <u>One-time costs:</u>

   - Fleet Maintenance Information System (FMIS) selection and implementation as the system of record for all fleets that Georgina Fleet Division maintains and repairs, and to facilitate garage workflows – cost will depend on the chosen system and fleet functions to be implemented;
   - Facility enhancement for long-term efficiency;
   - Process and procedure improvement for Georgina's garage services;
   - Training for mechanics to have their EVT certification – current cost for a 4-day course is $650 USD per person; and
   - Parts management process development.

2. Ongoing costs:

- Additional technicians – cost of 2 FTE of which budget has been requested for 1 FTE in 2023;
- Addition of a parts person at 0.5 FTE – the same individual would do sublet management, service writing, and admin tasks for a full FTE role;
- Subscription or licence cost for the FMIS; and
- Ongoing training and professional development cost.

Anticipated Benefits:

- More control over work scheduling and quality when Fire Fleet work is done in-house.
- Economies of scale with both Fire Fleets and Georgina Town Fleet using the same garage services, the same external vendors and the same FMIS.
- Asset downtime reduction.
- Reduction in time to empty asset/refill fire asset.
- Improved negotiating position with external vendors due to larger quantity of assets to establish higher priority and service levels.
- Potential for external vendor cost reduction for both Town Fire Fleets.
- Reduction in time to empty/refill fire assets and for driving assets to an external vendor.

Next Steps:

- A stepped approach is recommended, and the four options provided herein are building blocks that ensure a migration path to the final future state in which Georgina Fleet Services largely does the M&R in-house for both Towns' Fire Fleets.
- A deeper dive for each step is required to develop the detailed implementation and transition plan. Key Performance Metrics (KPIs) and detailed Service Level Agreements between the two Towns can only be developed thereafter.
- Key success factors or enablers need to be developed and implemented as the Towns move towards the final future state. The core enablers such as staffing, FMIS implementation, and facility enhancement are time consuming and therefore, the planning work needs to be started well in advance.

Implementation Steps, Timeline and Level of Effort for Final Future State:

- The table below depicts a conceptual timeline and level of effort as Low (less than 3 months), Medium (3 to 6 months) and High (more than 6 months).
- Task details need to be developed for the Steps to refine the timelines and level of effort.
- A project management approach is recommended.
- Level of Effort column indicates whether Internal and/or External resources may be utilized.

Steps	2022 Q		2023				2024				2025				Level of Effort External (E) Internal (I)
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Fire Fleet maintenance and repair alternatives study															E - Low
Budget request for additional mechanic for Georgina (completed)															
Budget request for Georgina garage facility minor upgrade (completed)															
Continue Georgina Fire Fleet migration to Fleet															I - Medium
Garage process improvement and work flow documents															I, E - Medium
Planning and execution to establish Sublet Contracts															I, E - Medium
Planning for FMIS and budget request															I, E - Low
Planning for Facility enhancement or new facility and budget request															I, E - Medium
Budget request for 1 mechanic and 1 parts/admin person															I - Low
Planning for East Gwillimbury Fire Fleet migration to Georgina Fleet Services															I, E - Medium
Development of cost transfer and invoicing method															I - Medium
Development of Georgina garage performance metrics															I, E - Medium
Development of operating guidelines and SLA between the two Towns															I, E - Medium
Start of East Gwillimbury Fire Fleet migration to Georgina Fleet Services															I - Medium
FMIS procurement															I, E - Medium
FMIS implementation as System of Record, and enabler of key work flows, cost transfer data files, KPIs, etc.															I, E - High
Facility enhancement															I, E - High
Completion of migration of Fire Fleets to Georgina Fleet Services															I - Medium

Towns of East Gwillimbury and Georgina

STUDY FOR FIRE FLEET SERVICES ALTERNATIVES

Final Report

January 18, 2023

MERCURY

SUMMARY

Table of Contents

- Purpose
- Project Description
- Methodology
- Options for Fire Fleet Maintenance and Repair
- Key Success Factors
- Significant Cost Elements for the Final Future State
- Anticipated Benefits
- Conclusions and Recommendations
- Implementation Timeline and Level of Effort

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Purpose

- The project objective includes an assessment of Georgina Fleet Services Division providing fleet maintenance and repair services for East Gwillimbury Fire and Emergency Fleet.
- The purpose of this project deliverable is to document the project team's findings, conclusions and recommendations.

Project Description

- Study is limited to the maintenance and repair functions for the Fire Fleet assets in the Towns of East Gwillimbury and Georgina while the Town Fleets are considered for context.
- Key project components are:
  - Establish the current mode of operation (CMO) for both Towns.
  - Develop options or scenarios for future mode of operation (FMO).
  - Compare and contrast the FMO options and identify the most optimal option.
  - Identify impacted areas highlighting the critical success factors for the FMO option.
  - Provide conclusions and recommendations for the FMO.
- Objectives
  - Cost efficiency through economies of scale.
  - Improved service levels and quality.
- Compressed Project timeline:
  - Project initiation and kickoff on October 19, 2022.
  - Mercury Request for information was sent on October 23, 2022, and documents and data received as recently as December 20, 2022.
  - Mercury interviews with both Towns concluded on November 21, 2022.
  - Draft report provided for feedback from Towns' project working team on November 30, 2022.
  - Report revised and in-depth discussions were held on December 21, 2022 and on January 5, 2023.

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Methodology

Collect, review, and analyze data, documents, and narratives

- Fire Fleet inventory data normalized to Vehicle Equivalent Unit (VEU) to derive staffing requirements, and Cost per VEU.
- Establish current mode of operation for Fire Fleet maintenance and repair for both Georgina and East Gwillimbury.
- Conduct facility assessment for Georgina and East Gwillimbury.
- Gather qualitative benefits of Georgina Fire Fleet maintenance and repair migration to Fleet Services.
- Develop Georgina and East Gwillimbury Town Fleet context.

Develop alternatives for future mode

Considerations for future mode:

- Current situation and readiness for change to ensure success.
- Status of required enablers, e.g., Fleet Management Information System (FMIS), facility, staffing, etc.
- Practicability – difficulty, time requirement, budget requirement.
- Probability of success.
- Systematic building block approach to minimize wasted effort or work.

Comparison of four options which can be standalone or used as migration steps: (1) Status Quo, (2) Sublet Contracts, (3) Transition, (4) In-house Final Future State.

Conclusions and recommendations

In-house maintenance and repair of Fire Fleets requires technology (FMIS) enabler, garage process improvements, facility enhancements.

Garage staffing of an additional two mechanics (one requested in 2023 budget), parts person/ admin.

Parts stockroom for commonly used parts for Fire Fleets.

Facility with 6 to 8 work bays are required for a total of 4 mechanics – the current 5 times 2 bays may suffice depending on the mix of light and heavy vehicles for maintenance and repair at a given time. For efficient operation, the facility needs to be enhanced for the long-term.

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Staffing Requirements for Fire Fleets

- Workforce (number of technicians) determined by calculating total required demand hours (workload) based on VEUs and projected technician tolerance levels (i.e., annual demand hours per technician).

	Georgina Fleet Including Fire Fleet	Georgina Fire Fleet	East Gwillimbury Fire Fleet	Subtotal for Two Fire Fleets	Total for Three Fleets
# of Active Assets	268	24	25	49	293
# of VEUs	406	103	89	192	495
Demand Hours	4,872	1,236	1,062	2,298	5,934
# of Required Technicians	**3.4**	**0.9**	**0.7**	**1.6**	**4.1**

- Currently, Georgina Fleet Services has two technicians and with the Fire Fleet migration, there is a technician staffing shortage.
- Fire Fleet M&R work migration to Georgina Fleet Services has just begun and a significant amount of work is still being sublet to external commercial vendors.
- Some M&R work for the Town Fleet (i.e., not Fire Fleet) is also sublet[1].
- The calculation indicates that at least two more technicians[2] will be required for M&R work for the two Fire Fleets for work in-house.

[1] Findings documented in: *Georgina - Mercury Associates Fleet Diagnostic Review FINAL Report 12092020*
[2] It was indicated by Georgina that budget has been requested for one technician in 2023.

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Options for Fire Fleet M&R – Future Mode of Operation (FMO)

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
1. Status Quo	• Continue with migration of Georgina Fire Fleet into Fleet Services • Continue to utilize external vendors • Continue with asset specifications that facilitate in-house M&R	• Continue with external vendors for Fire Fleet	• One additional mechanic requested in 2023 budget • No process or procedural change	• Long downtimes • Service quality not optimized and quality uncertainty • Cost uncertainty • Two drivers and long travel time to sublet vendor • Time to empty asset/refill asset
2. Sublet Contract	• Leverage both Fire Fleet asset quantities to contract external vendor(s) through a procurement process • Ensure contract includes service level agreement, e.g., turnaround times for work type, corrective measures, service quality, right to inspect and audit, etc. • Develop and conduct vendor work quality assurance methodology		• Potential for higher priority with contracted vendor • Cost certainty • Service quality optimized	• Up-front effort for RFP and procurement process for contract • Additional effort for quality assurance • Active contract management required • Long downtimes continue if established service levels cannot be met • Time to empty asset/refill asset

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Options for Fire Fleet M&R – FMO Cont'd

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
3. Transition	• Fleet Services manages East Gwillimbury M&R • Fleet Services uses some in-house and largely sublet vendors for East Gwillimbury Fire Fleet	• Migrate East Gwillimbury Fire Fleet M&R to Georgina Fleet Services - similar process to Georgina's Fire Fleet • Use Work Order management system for M&R workflow	• Cost consistency and potential for reduction if combined with Option 2 • Potential for reduced vehicle downtime especially for small and running repairs • Downtime improvement • Reduction in 2-drivers for delivery and pick-up • Reduction in time to empty asset/refill asset	• Additional mechanic and admin staffing • System of Record and FMIS establishment • Cost transfer process establishment • Operating guidelines establishment
4. In-house M&R (Final Future State)	• Largely in-house work at Fleet Services facility with some sublet work for specialty repairs • Stocked parts inventory and management for commonly used Fire Fleet parts	• Provides vehicle and information for M&R work • Arranges for asset transportation to/from Georgina facility	• Much more influence and control over work quality, prioritization and scheduling • Cost control • Ability to set M&R priorities • Downtime improvement • Reduction in time to empty asset/refill asset • Increased subject matter expertise for Fire apparatus	• Enhanced facility – significant modification and/or careful work planning for mix of light and heavy vehicles in facility at the same time. Facility enhancement is important for long-term efficiency. • Additional mechanic and admin staffing • System of Record and FMIS establishment • Cost transfer process establishment • Operating guidelines and service level establishment

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Key Success Factors for In-house M&R at Georgina Fleet Services

Governance	Staffing	Facilities	M&R Work Design and Management	FMIS
Oversight, operating guidelines, service level agreements, business reviews and issue resolution	Bandwidth - need more technicians and a parts person at Georgina Fleet Services	Modifications to facility and/or work planning to accommodate Fire Fleets M&R. Facility enhancement for long-term efficiency.	PM program, Legislated Inspections – CVOR and NFPA; garage process and procedure improvement	One system of record for assets and enabling fleet work flows
Cost transfer (e.g., chargeback method and rate) from Georgina to East Gwillimbury, and invoicing (e.g., accounts payable and accounts receivable)	Technician - training, Fire Fleet knowledge and EVT qualifications	MTO certification for M&R	Quality Assurance	M&R parts, labour, and sublet cost capture for rate plan development
Insurance considerations - East Gwillimbury vehicles at Georgina garage	Labour Union and CBA impact		Parts Inventory and Management	Management reports, ad hoc reports, key performance indicators (KPIs) and M&R performance management and metrics
Liability considerations, i.e., who is liable if vehicle is unsafe due to deficient M&R			Warranty and recall management	Cost capture and billing for East Gwillimbury Fire Fleet

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Significant Cost Elements for Final Future State

One-time or Transition Cost

- FMIS selection and implementation as the system of record for all fleets that Georgina Fleet Services maintains and repairs, and to facilitate garage workflows – cost will depend on the chosen system and fleet functions to be implemented.
- Facility enhancement for long-term efficiency.
- Process and procedure improvement for Georgina's garage services.
- Training for mechanics to have their EVT certification – current cost for a 4-day course is $650 USD per person.
- Parts management process development.

Ongoing Cost

- Additional technicians – cost of 2 FTE of which budget has been requested for 1 FTE in 2023.
- Addition of a parts person at 0.5 FTE – the same individual would do sublet management, service writing, and admin tasks for a full FTE role.
- Subscription or licence cost for the FMIS.
- Ongoing training and professional development cost.

Anticipated Benefits

- More control over work scheduling and quality when Fire Fleet work is done in-house.
- Economies of scale with both Fire Fleets and Georgina Town Fleet using the same garage services, the same external vendors and the same FMIS.
- Asset downtime reduction.
- Reduction in time to empty asset/refill fire asset.
- Improved negotiating position with external vendors due to larger quantity of assets to establish higher priority and service levels.
- Potential for external vendor cost reduction for both Town Fire Fleets.
- Reduction in time to empty/refill fire assets and for driving assets to an external vendor.

Conclusions and Recommendations

- Anticipated benefits from East Gwillimbury Fire Fleet M&R migration to Georgina Fleet Services similar to benefits seen by Georgina Fire Fleet.
- Benefits seen by Georgina Fire Fleet from migration:
  - Turn around times seem to be better, i.e., truck returns to service faster – metrics not available.
  - Fire apparatus-related knowledge has increased in Fleet Services.
  - Frequently used parts are in stock for faster turn-around.
  - Fleet Services has direct input for apparatus specifications.
  - Similar Heavy Duty Trucks and the same OEM for aerials will lessen the learning curve.
- Georgina Fire Fleet migration to Fleet Services is in early stages with significant remaining work pertaining to process and procedure improvement and the need for enablers.
- Chargeback or cost transfer rates can only be developed once M&R cost capture is systematic and supporting back-up data can be made available with relative ease.
- A stepped approach is recommended and the options provided herein ensure a migration path to the final future state in which Georgina Fleet Services largely does the M&R in-house for both Towns' Fire Fleets.
- A deeper dive for each step is required to develop the detailed implementation and transition plan. Key Performance Metrics (KPIs) and detailed Service Level Agreements between the two Towns can only be developed thereafter.
- Key success factors or enablers need to be developed and implemented as the Towns move towards the final future state.

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Implementation Timeline for Final Future State

- This table depicts a conceptual timeline and level of effort as Low (less than 3 months), Medium (3 to 6 months) and High (more than 6 months).
- Task details need to be developed for the Steps to refine the timelines and level of effort.
- A project management approach is recommended.
- Level of Effort column indicates whether Internal and/or External resources may be utilized.

Steps	2022 Q		2023				2024				2025				Level of Effort External (E) Internal (I)
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Fire Fleet maintenance and repair alternatives study															E - Low
Budget request for additional mechanic for Georgina (completed)															
Budget request for Georgina garage facility minor upgrade (completed)															
Continue Georgina Fire Fleet migration to Fleet Services															I - Medium
Garage process improvement and work flow documents															I, E - Medium
Planning and execution to establish Sublet Contracts															I, E - Medium
Planning for FMIS and budget request															I, E - Low
Planning for Facility enhancement or new facility and budget request															I, E - Medium
Budget request for 1 additional mechanic and 1 parts/admin person															I - Low
Planning for East Gwillimbury Fire Fleet migration to Georgina Fleet Services															I, E - Medium
Development of cost transfer and invoicing method															I - Medium
Development of Georgina garage performance metrics															I, E - Medium
Development of operating guidelines and SLA between the two Towns															I, E - Medium
Start of East Gwillimbury Fire Fleet migration to Georgina Fleet Services															I - Medium
FMIS procurement															I, E - Medium
FMIS implementation as System of Record, and enabler of key work flows, cost transfer data files, KPIs, etc.															I, E - High
Facility enhancement															I, E - High
Completion of migration of Fire Fleets to Georgina Fleet Services															I - Medium

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ATTACHMENT: DETAILED REPORT

Table of Contents

- Purpose
- Project Overview
  - Background and Objectives
  - Description
  - Approach and Deliverables
- Baseline Metrics for Fire Fleets
  - Georgina
  - East Gwillimbury
  - Staffing Requirements
- Current Mode of Operation for Fire Fleets
  - Maintenance and Repair Process
  - Facility
- Options for the Future Mode of Operation
  - Considerations for Options
  - Options
  - Key Success Factors for Final Future State
  - Anticipated Benefits for Final Future State
  - Cost
  - Conclusions and Recommendations
- Appendices
  - A: Interview Details
  - B: Georgina Fleet Metrics
  - C: East Gwillimbury Asset List and Downtime
  - D: About Mercury Associates, Inc.

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Purpose

- The project objective includes an assessment of Georgina Fleet Services Division providing fleet maintenance and repair services for East Gwillimbury Fire and Emergency Fleet.
- The purpose of this project deliverable is to document the project team's findings, conclusions and recommendations.
- This document has been revised to address the feedback received from the Towns' project teams as of January 12, 2023.

PROJECT OVERVIEW

Project Background and Objectives

- As part of the overall assessment, the Towns of Georgina and East Gwillimbury are interested in assessing the impact of any potential fleet maintenance and repair (M&R) services that may be offered by Georgina Fleet Services Department for the East Gwillimbury Fire and Emergency Fleet including specialty apparatus, vehicles, and other support equipment.
- Project started on October 19th with a formal project kickoff meeting. Mercury sent the request for information for both Towns on October 23rd.
- The majority of documents and data received by the Mercury Team on or about November 11th and additional information and revised documents provided until Jan 9,2023 which are used for this document. Fleet data can change over time.
- Mercury interviews with both Towns concluded on Nov 21st with relevant personnel in East Gwillimbury and Georgina – interview details are provided in Appendix A.
- Previous Town of Georgina Diagnostic Review Report completed in 2020 by Mercury was leveraged for background.
- Objectives:
  - Cost efficiency through economies of scale.
  - Improved service levels and quality.

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Project Description

- Study is limited to the Fire Fleet assets in the Towns of East Gwillimbury and Georgina while the Town Fleets are considered for context.
- Project scope examines fleet maintenance and repair functions only.
- Key project components:
  - Establish the current mode of operation (CMO) for both Towns.
  - Develop options or scenarios for future mode of operation (FMO).
  - Compare and contrast the FMO options and identify the most optimal option.
  - Identify impacted areas highlighting the critical success factors for the FMO option.

Approach and Deliverables

- Collaborative approach requiring Fire Chiefs and Deputy Chiefs, Fleet Directors, and other stakeholders' active involvement.
- Information collection for CMO through:
  - Review of documents and analysis of fleet inventory data received as recently as December 20, 2022.
  - Interviews with fleet management personnel and Fire Department representatives.
- Findings and conclusions presented in project report on November 30, 2022. Written feedback addressed.
- Full report review by project working team completed in two sessions: December 21, 2022 and January 12, 2023.
- Presentation document including an Executive Summary to Georgina and East Gwillimbury Senior Staff by December 28, 2022.
- Final Mercury deliverables and project closure January 18, 2023.

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BASELINE METRICS FOR FIRE FLEETS

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Georgina Fire Fleet Data

- Two Fleet Management Information Systems (FMIS) are being utilized
  - Fleet Services utilizes *WorkTech™ Pearl* as its FMIS which has Fire Fleet asset inventory along with the Town fleet assets (see Appendix B).
  - Maintenance and repair (M&R) cost by asset was not be provided.
  - Fire Fleet uses *TargetSolutions™* for M&R work orders, however, M&R costs by asset were not provided.
- Work orders are not centralized in one system, i.e., Fleet Services cannot see M&R history for an asset for which the Work Order was in *TargetSolutions*. Complete M&R history is important for the mechanic to know warranty and recall work performed and to identify any rework/quality issues.
- Fire Fleet category costs were provided as follows (Source document: *Copy of Fire services budget history, November 4, 2022)*:

	Actuals ($)				Budget ($)	
Fleet Expenses	**2018**	**2019**	**2020**	**2021**	**2021**	**2022**
Internal Vehicle Maintenance	17,212	18,955	22,599	24,348	18,000	76,000
Fuel-Vehicles	72,395	68,035	57,485	57,177	58,900	
Repairs	147,943	157,207	199,787	241,467	147,500	147,500
Reserve for Fire Eqmt	474,900	474,900	474,900	529,700	529,700	529,700
Total	**712,450**	**719,097**	**754,771**	**852,692**	**754,100**	**753,200**

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Georgina – Fire Fleet Profile

Count and percentage of active assets by Asset Type[1]

Asset Type	Active Count	% of Active Fleet
Pickups	2	8%
Trailer	4	17%
HD Truck	11	46%
Sport Utility	5	21%
Watercraft	2	8%
Total	**24**	**100%**

[1] Source document, *Book 2, December 15, 2022* included fire fleet data, however, further granularity was provided by Georgia Fire directly, and it is shown in this table.

Vehicle Equivalent Unit (VEU)[2] for active assets by Asset Type

Asset Type	VEU Sum	% of Active Fleet
Pickups	3	3%
Trailer	4	3%
HD Truck	80	77%
Sport Utility	9	8%
Watercraft	8	8%
Total	**103.0**	**100%**

[2] Mercury uses an analytical technique based on the Vehicle Statistical Referencing System (VSRS). This technique allows us to compare statistics from diverse fleets by converting vehicle and equipment types to their equivalent in terms of the level of effort required to maintain a standard passenger sedan, which is used as a baseline and given a value of 1.0 Vehicle Equivalent Unit (VEU).

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East Gwillimbury Fire Fleet Data

- Fire Fleet does not have or use an FMIS for work orders.
- Detailed asset level maintenance and repair information is not being captured and reported.
- Fleet cost information is summarized below (Source documents: *Fleet Repair Variance Analysis 2020- Mercury, Fleet Repair Variance Analysis 2021- Mercury, Fleet Repair Variance Analysis 2022- Mercury, November 11, 2022).*

	2020	2021	2022 YTD
Actual ($)	200,007	170,861	163,372
Budget ($)	42,235	50,000	100,000
Variance ($)	(157,772)	(120,861)	(63,372)

- During an interview, it was indicated that the 2023 budget request will be increased to $200,000.
- The Fire truck replacement cycle is 12 years and funding is reserved for such replacement.
- The other vehicles in the Fire Fleet are replaced dependent on vehicle age, odometer reading, and condition.

East Gwillimbury – Fire Fleet Profile

Count and percentage of active assets by Asset Type[1]

Asset Type	Active Count	% of Active Fleet
HD Truck	10	40%
Pickups	8	32%
Trailer	4	16%
Carts (ATV and UTV)	2	8%
Van	1	4%
Total	**25**	**100%**

[1]The Source Document, *Vehicle Information Listing - EG, November 11, 2022* was used to summarize the information shown in this table. Fleet data can vary over time.

Vehicle Equivalent Unit (VEU)[2] for active assets by Asset Type

Asset Type	VEU Sum	% of Active Fleet
HD Truck	71.0	80%
Pickups	12.0	14%
Trailer	2.0	2%
Carts (ATV and UTV)	2.0	2%
Van	1.5	2%
Total	**88.5**	**100%**

[2] Mercury uses an analytical technique based on the Vehicle Statistical Referencing System (VSRS). This technique allows us to compare statistics from diverse fleets by converting vehicle and equipment types to their equivalent in terms of the level of effort required to maintain a standard passenger sedan, which is used as a baseline and given a value of 1.0 Vehicle Equivalent Unit (VEU).

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Georgina Fleet Employees (FTEs) and Fleet Size

	Georgina	
	Town Fleet	**Fire Fleet**
FTE		
Director or Deputy	0.2	0.25
Supervisor or Coordinator	1.0	0.0
Mechanics	2.0	0
Admin	0.5	0.2
Active Asset Count	244	24
VEU Count	305	103

- Mercury estimated the VEU for each asset provided in the fleet inventory data to calculate the VEU Counts.

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East Gwillimbury Fleet Employees (FTEs) and Fleet Size

	East Gwillimbury	
	Town Fleet	**Fire Fleet**
FTE		
Director or Deputy	0.1	0.35
Supervisor or Coordinator	1.0	0
Mechanics	0	0
Admin	0	0.15
Active Asset Count	103	25
VEU Count	128	88.5

- Mercury estimated the VEU Count using vehicle and equipment Class Codes at a high level.

Staffing Requirements for Fire Fleets

- Workforce (number of technicians) determined by calculating total required demand hours (workload) based on VEUs and projected technician tolerance levels (i.e., annual demand hours per technician).

	Georgina Fleet Including Fire Fleet	Georgina Fire Fleet	East Gwillimbury Fire Fleet	Subtotal for Two Fire Fleets	Total for Three Fleets
# of Active Assets	268	24	25	49	293
# of VEUs	406	103	89	192	495
Demand Hours	4,872	1,236	1,062	2,298	5,934
# of Required Technicians	**3.4**	**0.9**	**0.7**	**1.6**	**4.1**

- Currently, Georgina Fleet Services has two technicians and with the Fire Fleet migration, there is a technician staffing shortage.
- Fire Fleet M&R work migration to Georgina Fleet Services has just begun and a significant amount of work is still being sublet to external commercial vendors.
- Some M&R work for the Town Fleet (i.e., not Fire Fleet) is also sublet[1].
- The calculation indicates that at least two more technicians[2] will be required for M&R work for the two Fire Fleets for work in-house.

[1] Findings documented in: *Georgina - Mercury Associates Fleet Diagnostic Review FINAL Report 12092020*
[2] It was indicated by Georgina that budget has been requested for one technician in 2023.

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CURRENT MODE OF OPERATION FOR TOWN OF GEORGINA AND TOWN OF EAST GWILLIMBURY FIRE FLEETS

Georgina – Fire Fleet M&R Process

- M&R work is largely identified as a result of pre/post trip inspections.
- Fire staff creates a work order (WO) in *TargetSolutions* for M&R work. Fire staff determines whether the work will be performed by Georgina Fleet Services or an external vendor. Fleet Services has only recently started performing M&R services for the Fire Department.
  - Work assignment decision to use external vendor or Fleet Services is not clear and not documented.
- Fire Fleet asset database exists in *WorkTech* and in *TargetSolutions* and Work Orders are created as follows:
  - For external vendors, WO is created in *TargetSolutions.*
  - For inhouse work Georgina fleet services takes the information flag from TargetSolutions and creates a Fleet work order in WorkTech.
  - Fleet Services creates WO in *WorkTech.*
- No data exchange between the two systems -- Fleet Services would need to look up the WO in *TargetSolutions* for M&R history.
- An external vendor, comes in bi-monthly to conduct inspections and perform minor repairs, and some large repairs (e.g., pump).
- Three external vendors are used on a regular basis and some long downtime issues were reported.
- No vendor contracts, performance requirements, service level agreements, etc. are in place.

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Georgina Fleet Services Role for Fire Fleet

- A recent endeavour is to migrate M&R for fire fleet assets from external vendors to Georgina's Fleet Services.
- Georgina has one Emergency Vehicle Technician (EVT).
- EVT provides input on specifications that facilitate in-house M&R.
- Fleet Services performs running repairs (i.e., quick repairs).
- Fleet Services performs mechanical repairs such as brake jobs[1].
- Fleet Services has performed warranty work in-house and invoiced the OEM for the costs of this work.
- Fleet Services occasionally performs small engine repairs only if mechanics have capacity.
- Fleet Services manages mechanical sublet work on behalf of Fire Fleet, e.g., Cummins for EGR, transmission work, etc.
- Some Fire Fleet parts are kept in stock at Fleet Services.
- It was indicated that the intention in 2023 is for Fleet Services to bear all Fire Fleet M&R costs.

[1] EVT certification is not mandatory for such mechanical work, but EVT certification is required for fire specific apparatus M&R.

Reported Improvements – Georgina Fire Fleet Migration to Fleet Services

- Turn around times seem to be better, i.e., truck returns to service faster – metrics not available to support this viewpoint, however, anecdotal evidence would suggest significant positive result in that at times it is worth it for Fire staff to wait for a repair to be completed rather than travelling to drop-off and thereafter, travelling to pick-up the truck.
- Fire apparatus-related knowledge has increased in Fleet Services, i.e. for common repairs and required parts.
- Frequently used parts are in stock for faster turn-around.
- Reduction in two drivers to deliver asset to external vendor and time to empty and refill asset.
- Fleet Services provides input for apparatus specifications which might result in added costs, but the benefits are:
  - Reduction in M&R work through use of better components (i.e., a better and more durable coolant hose, chassis lubrication system, moisture ejectors).
  - Improved safety due to use of disc brakes.

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East Gwillimbury – Fire Fleet M&R Process

- Fire Fleet M&R is sublet to an external vendor in Brampton, Ontario which is about an hour drive from East Gwillimbury.
  - Long downtimes reported (see Appendix C) using this approach – Fire uses their own units that are not currently in use to maintain critical service numbers while the unit is at the Brampton shop.
  - Two drivers are needed to shuttle vehicles back and forth to the vendor.
  - Apparatus has to be changed out before sending an empty asset to the vendor and then again when the asset returns[1].
- Some minor fixes may be done by Queensville Fire personnel, but not routinized or planned. On-site small repairs can be scheduled with the vendor, but appointments are approximately 2 weeks out.

[1] In industry we typically see anywhere from 30 minutes to 2 hours depending on the level of change out.

East Gwillimbury – Town Fleet Services

- The Fleet Services facility is located in the newly built Operations Center. The facility is not staffed with a mechanic.
- Facility is not MTO (Ministry of Transportation Ontario) certified for CVOR (Commercial Vehicle Operator Registration) vehicles.
- Only running repairs are being done by the Fleet Coordinator who has a 310S (Sedan) and 310T (Truck) licence.
- No diagnostic tools are available. All M&R work requiring diagnostics are sublet to external vendors.
- As a new facility, fleet M&R infrastructure and work practices are currently under development and evolving.
- Approximately 80 percent of all M&R is sublet to external vendors.
- Fleet Services does not utilize an FMIS – *Excel*™ is used for fleet management.

Georgina Maintenance and Repair Facility

- Town of Georgina maintains its fleet at a single maintenance facility located at 25291 Warden Avenue (“Bell Haven Yard”).
- The five-bay drive in/back out configured shop is approximately 500 square meters (5,400 square feet). Each bay can reportedly accommodate 2 light or 1 heavy vehicle.
- The facility sits on approximately 4.5 acres. A separate cold storage building and two material domes are also situated on the property.
- Most of the driving/parking/staging surface is hard-packed material or old asphalt/concrete surface. The remaining property is a grass field.

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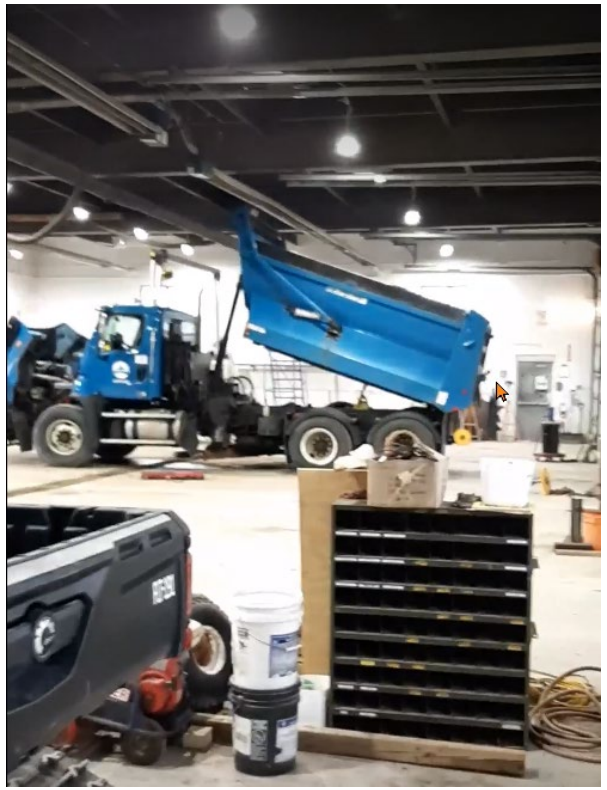
Georgina – Facility Cont'd

- The shop services all of the Town's vehicles and equipment that are not outsourced to local commercial vendors.
- The facility includes a maintenance and repair shop, tool room, two offices, two restrooms, a lunch/break room, and a mezzanine that is used for storage of parts, tires, and other seasonal tools, equipment, etc.
- A small area in the shop has been designated as a tire repair area.
- The shop air compressor is situated on the shop floor against an exterior wall.
- A small overhead gantry crane, a vehicle exhaust system, and a two-post vehicle lift are available in the shop.
- Natural light appears to be abundant through windows throughout the shop including the overhead garage doors.

Georgina – Facility Cont'd

- The effective bay sizes (actual working area of the bays) are approximately 5.5m x 15m (18' x 50').
- The standard for a heavy duty maintenance bay is 7m x 13m (24' x 45').
- For the Town of Georgina and the Town of East Gwillimbury, a bay sized at 7m x 15m (24' x 50') would be appropriate for large fire apparatus.



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Georgina Facility Assessment for Future Mode of Operation

- Some large aerial ladders, quints, platforms, booms, etc. may require up to 25’ of unobstructed overhead clearance so that for example a ladder can be raised far enough to allow for the cab to be tilted forward for access to the engine.
- The site has two points of ingress/egress and appears to have space to either expand or replace the fleet maintenance shop and add additional parking and vehicle and equipment staging depending on the placement of the septic system and provided there are no other limitations in the field area. The additional space would be required for large fire apparatus parking (i.e., dead line, ready line, etc.).
- Using standard bays to technician ratios, the shop as currently sized and configured can reasonably accommodate 2.5 to 3.5 wrench turning full-time equivalent technicians.
- Based on the staffing analysis, the total Fleet would require 4 full-time 100 percent wrench turning technicians.
- Using the minimum bay to technician ratio of 1.5 bays for every technician, a total of 6 bays would be the minimum number of bays required to maintain the combined fleet.
- However, the optimal number of bays to maintain the fleet would be 8 bays (2 bays per technician) to accommodate poor weather conditions, delays in part acquisition, peak demand (i.e., winter storms), indoor quick fixes, etc.
- Additional shop space would also be required to appropriately store additional shop equipment (i.e., portable column vehicle lifts, work benches, toolboxes, etc.) without impacting the actual working space within the bays.

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Georgina Facility Assessment for Future Mode of Operation Cont'd

- To serve the entire Town of Georgina and the Town of East Gwillimbury Fire Fleet, consideration should be given to:
  - Number of existing maintenance and repair bays
  - Effective size of each bay and unobstructed overhead clearance
  - Additional available workspace in the shop, shop support space (i.e., parts room, bulk fluid storage, compressor room, tool storage, shop equipment storage, reference library, etc.), employee amenity areas (i.e., lunch/break room, restrooms, locker rooms, wellness center, etc.)
  - Administrative areas (i.e., offices, workstations, business machines, collaboration areas, meeting rooms, conference rooms, file storage, etc.).
- Based on the limited size of the bays, no additional workspace, lack of appropriately configured shop support areas, etc., the current facility should only be considered for this additional workload as a temporary solution until a larger more appropriately configured facility is available to support the fleet maintenance and repair mission. Facility enhancement is required for long-term efficiency.
- A formal space needs assessment and the development of a Fleet Maintenance Facility Master Plan should be accomplished to identify the appropriate space requirements for a properly sized and configured fleet maintenance facility.
- This would include primary and secondary adjacencies, general space characteristics, critical equipment, all developed with an eye towards improving the effectiveness of the fleet maintenance operation.

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East Gwillimbury Facility

- In 2021, the Town of East Gwillimbury opened a new Operations Centre at 19850 Woodbine Avenue.
- The facility supports many core services including Roads, Fleet, Water and Wastewater, Parks, Facilities, and Emergency Services training and emergency operations.
- Based solely on photographs provided and the EG Operations Centre Virtual Tour, it appears that the 58,000 square foot facility was constructed with many features that positively support these operations including administrative space, training rooms, lunch/break room, locker rooms, etc.
- It is worth reiterating that 80% of the core services Fleet M&R work is sublet due to lack of staffing, diagnostic tools, etc. and the facility is not MTO certified.

East Gwillimbury Facility Cont'd

- Based on photographs provided, there are two large drive through maintenance and repair bays (or 4 standard size bays if utilized as drive in/back out configuration).
- Adjacent to the shop there appears to be an office and some partially secured space for tools, parts, supplies, and other equipment.
- Unobstructed overhead clearance appears to be adequate.
- There is an abundance of natural light in the shop area.
- There is also a large drive through vehicle wash bay with two standard high-pressure manual hose wands and center drain. Circulation and vehicle/equipment staging on the site appears to be adequate.
- For reference purposes, the two fleet maintenance facilities are approximately 17 km from each other.
- The shop is appropriate for 2 fleet maintenance technicians. Any additional workload from the Town of Georgina Fire fleet would add additional workload and a requirement for another fleet maintenance technician.
- Three technicians in this space would put pressure on the facility to accommodate workspace, the workforce, additional tools, work benches, etc.

OPTIONS FOR FUTURE MODE OF OPERATION

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Future Mode of Operation – Considerations for Options

- Synthesis of information gathered from:
  - Documents, data files, photographs, and online information (e.g., virtual tour of East Gwillimbury Operations Centre).
  - Interviews with key fleet personnel and project leaders.
  - Industry norms.
- Current situation and readiness for change to ensure success.
- Status of required enablers, e.g., FMIS, facility, staffing, etc.
- Practicability – difficulty, time requirement, budget requirement.
- Probability of success.
- Systematic building block approach to minimize wasted effort or work.

Options for Fire Fleet M&R – Future Mode of Operation

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
1. Status Quo	• Continue with migration of Georgina Fire Fleet into Fleet Services • Continue to utilize external vendors • Continue with asset specifications that facilitate in-house M&R	• Continue with external vendors for Fire Fleet	• One additional mechanic requested in 2023 budget • No process or procedural change	• Long downtimes • Service quality not optimized and quality uncertainty • Cost uncertainty • Two drivers and long travel time to sublet vendor • Time to empty asset/refill asset
2. Sublet Contract	• Leverage both Fire Fleet asset quantities to contract external vendor(s) through a procurement process • Ensure contract includes service level agreement, e.g., turnaround times for work type, corrective measures, service quality, right to inspect and audit, etc. • Develop and conduct vendor work quality assurance methodology		• Potential for higher priority with contracted vendor • Cost certainty • Service quality optimized	• Up-front effort for RFP and procurement process for contract • Additional effort for quality assurance • Active contract management required • Long downtimes continue if established service levels cannot be met • Time to empty asset/refill asset

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Options for Fire Fleet M&R – FMO Cont'd

Options	Georgina	East Gwillimbury	Advantages	Disadvantages
3. Transition	• Fleet Services manages East Gwillimbury M&R • Fleet Services uses some in-house and largely sublet vendors for East Gwillimbury Fire Fleet	• Migrate East Gwillimbury Fire Fleet M&R to Georgina Fleet Services - similar process to Georgina's Fire Fleet • Use Work Order management system for M&R workflow	• Cost consistency and potential for reduction if combined with Option 2 • Potential for reduced vehicle downtime especially for small and running repairs • Downtime improvement • Reduction in 2-drivers for delivery and pick-up • Reduction in time to empty asset/refill asset	• Additional mechanic and admin staffing • System of Record and FMIS establishment • Cost transfer process establishment • Operating guidelines establishment
4. In-house M&R (Final Future State)	• Largely in-house work at Fleet Services facility with some sublet work for specialty repairs • Stocked parts inventory and management for commonly used Fire Fleet parts	• Provides vehicle and information for M&R work • Arranges for asset transportation to/from Georgina facility	• Much more influence and control over work quality, prioritization and scheduling • Cost control • Ability to set M&R priorities • Downtime improvement • Reduction in time to empty asset/refill asset • Increased subject matter expertise for Fire apparatus	• Enhanced facility – significant modification and/or careful work planning for mix of light and heavy vehicles in facility at the same time. Facility enhancement is important for long-term efficiency. • Additional mechanic and admin staffing • System of Record and FMIS establishment • Cost transfer process establishment • Operating guidelines and service level establishment

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Other FMO Options Considered

Discussion took place for option to provide a Georgina mechanic at East Gwillimbury Operations Centre Facility. This is not a practicable solution due to:

- The current Fleet area is a “flex” space which is jointly used by either Fleet or Roads operations subject to evolving daily needs. There is a future “wing” being planned for Town Fleet M&R, however the time horizon is quite long and reportedly it is part of a much larger buildings project.
- Georgina garage services would be impacted negatively due to mechanic shortage.
- Inefficient use of mechanic resource, especially if the required parts for M&R are not readily available.

We also discussed the option to provide an external vendor mechanic at East Gwillimbury Operations Centre Facility. This is not a practicable solution due to:

- Reportedly, currently on-site work request to external vendors can take a long time – there is no contract, priority establishment, or service level agreements.

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Key Success Factors for In-house M&R at Georgina Fleet Services

Governance	Staffing	Facilities	M&R Work Design and Management	FMIS
Oversight, operating guidelines, service level agreements, business reviews and issue resolution	Bandwidth - need more technicians and a parts person at Georgina Fleet Services	Modifications to facility and/or work planning to accommodate Fire Fleets M&R. Facility enhancement for long-term efficiency.	PM program, Legislated Inspections – CVOR and NFPA; garage process and procedure improvement	One system of record for assets and enabling fleet work flows
Cost transfer (e.g., chargeback method and rate) from Georgina to East Gwillimbury, and invoicing (e.g., accounts payable and accounts receivable)	Technician - training, Fire Fleet knowledge and EVT qualifications	MTO certification for M&R	Quality Assurance	M&R parts, labour, and sublet cost capture for rate plan development
Insurance considerations - East Gwillimbury vehicles at Georgina garage	Labour Union and CBA impact		Parts Inventory and Management	Management reports, ad hoc reports, key performance indicators (KPIs) and M&R performance management and metrics
Liability considerations, i.e., who is liable if vehicle is unsafe due to deficient M&R			Warranty and recall management	Cost capture and billing for East Gwillimbury Fire Fleet

Anticipated Benefits

- More control over work scheduling and quality when Fire Fleet work is done in-house.
- Economies of scale with both Fire Fleets and Georgina Town Fleet using the same garage services, the same external vendors and the same FMIS.
- Asset downtime reduction.
- Reduction in time to empty asset/refill fire asset.
- Improved negotiating position with external vendors due to larger quantity of assets to establish higher priority and service levels.
- Potential for external vendor cost reduction for both Town Fire Fleets.
- Reduction in time to empty/refill fire assets and for driving assets to an external vendor.

One-time or Transition Costs for Final Future State

- FMIS selection and implementation as the system of record for all fleets that Georgina Fleet Services maintains and repairs, and to facilitate garage workflows – cost will depend on the chosen system and fleet functions to be implemented.
- Significant facility enhancement or a new facility – 2023 budget request includes minor upgrades only.
- Process and procedure improvement for Georgina's garage services.
- Training for mechanics to have their EVT certification – current cost for a 4-day course is $650 USD per person (https://www.oafc.on.ca/fdsoa-emergency-vehicle-technician-class-f1-f2-0) for:
  - **LEVEL 1 / F-1 Maintenance, Inspection & Testing**
    This course covers the maintenance, inspection and testing of Fire Apparatus as described in NFPA 1911, Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Fire Apparatus.
  - **LEVEL 1 / F-2 Design & Performance Standards and Preventative Maintenance of Fire Apparatus**
    This course covers the standards for fire apparatus as described in NFPA 1901, Standard for Automotive Fire Apparatus, and in NFPA 1911, Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Automotive Fire Apparatus.
  - **Level 2 and Master EVT** certification programs are also available, and the associated cost will need to be considered for this training.

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Ongoing Cost Elements for Final future State

- Additional technicians – cost of 2 FTE of which budget has been requested for 1 FTE in 2023.
- Addition of a parts person at 0.5 FTE – the same individual would do sublet management, service writing, and admin tasks for a full FTE role.
- Subscription or licence cost for the FMIS.

Conclusions and Recommendations

- Anticipated benefits from East Gwillimbury Fire Fleet M&R migration to Georgina Fleet Services similar to benefits seen by Georgina Fire Fleet.
- Benefits seen by Georgina Fire Fleet from migration:
  - Turn around times seem to be better, i.e., truck returns to service faster – metrics not available.
  - Fire apparatus-related knowledge has increased in Fleet Services.
  - Frequently used parts are in stock for faster turn-around.
  - Fleet Services has direct input for apparatus specifications.
  - Similar Heavy Duty Trucks and the same OEM for aerials will lessen the learning curve.
- Georgina Fire Fleet migration to Fleet Services is in early stages with significant remaining work pertaining to process and procedure improvement and the need for enablers.
- Chargeback or cost transfer rates can only be developed once M&R cost capture is systematic and supporting back-up data can be made available with relative ease.
- A stepped approach is recommended and the options provided herein ensure a migration path to the final future state in which Georgina Fleet Services largely does the M&R in-house for both Towns' Fire Fleets.
- A deeper dive for each step is required to develop the detailed implementation and transition plan. Key Performance Metrics (KPIs) and detailed Service Level Agreements between the two Towns can only be developed thereafter.
- Key success factors or enablers need to be developed and implemented as the Towns move towards the future state.

INTERVIEW DETAILS

Appendix A

Interview Details

Interview Date	Town Represented	Town Attendees' Titles
November 10, 2022	Georgina	Fleet Services: • Director • Supervisor • Coordinator Fire Fleet: • Deputy Fire Chief • Admin
November 16, 2022	East Gwillimbury	Fire Fleet: • Deputy Fire Chief
November 18, 2022	East Gwillimbury	Director of Operations
November 21, 2022	Georgina	Fleet Services Supervisor

All calls were attended by the Towns' project manager and interviews were conducted by Mercury team.

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GEORGINA FLEET METRICS

Appendix B

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Town of Georgina Fleet Profile by Division or Department

Asset Count

Asset Type	Active Count	% of Active Fleet
Parks	95	32.8%
Roads	80	27.6%
Fire and Emergency Services	24	15.9%
Water	20	6.9%
Facilities - Elect. Mainten.	9	3.1%
Fleet	8	2.8%
Facilities - GIP	6	2.1%
Recreation and Culture	6	2.1%
Building	5	1.7%
MLEO	5	1.7%
Development Engineering	3	1.0%
Facilities - SA	2	0.7%
Administrative Services	1	0.3%
Facilities - Civic Centre	1	0.3%
Facilities - Egypt Hall	1	0.3%
Facilities - Peff. Ice Pad	1	0.3%
Public works	1	0.3%
Total	**268**	**100%**

VEU Count

Asset Type	Active Count	% of Active Fleet
Parks	111.1	26%
Roads	116.4	27%
Fire and Emergency Services	103	28%
Water	20.9	5%
Facilities - Elect. Mainten.	13.0	3%
Fleet	2.7	1%
Facilities - GIP	8.0	2%
Recreation and Culture	4.8	1%
Building	6.5	2%
MLEO	6.5	2%
Development Engineering	4.5	1%
Facilities - SA	3.0	1%
Administrative Services	2.0	0%
Facilities - Civic Centre	1.0	0%
Facilities - Egypt Hall	1.0	0%
Facilities - Peff. Ice Pad	1.0	0%
Public works	1.5	0%
Total	**407**	**100%**

Town of Georgina Fleet Age by Asset Type

We calculated the Mean and Median averages for fleet age as well as showing the Minimum and Maximum age. Generally, the Median average can be used to calculate the de facto replacement cycle.

Asset Type	Min Age	Mean Age	Median Age	Max Age
Grounds Equip	0.6	7.1	5.1	27.6
Pickups	0.6	4.5	3.6	9.6
Trailer	0.6	12.3	12.6	34.6
Attachments	0.6	10.1	10.6	22.6
Off Road and Construction	0.6	8.5	5.6	29.6
Mounted	0.6	7.8	4.1	27.6
HD Truck	0.6	9.4	6.6	24.6
Sport Utility	0.6	3.9	3.6	12.6
MD Truck	1.6	3.6	3.6	7.6
Van	2.6	8.1	6.6	14.6
Stationary	1.6	13.6	17.6	22.6
Non Self Propelled	8.6	12.6	12.6	17.6
Carts	2.6	10.6	7.1	25.6
Material Handling	11.6	20.3	22.6	26.6
LD Truck	2.6	2.6	2.6	2.6
Watercraft	2.6	8.6	8.6	14.6
Total	**0.6**	**8.1**	**5.6**	**34.6**

EAST GWILLIMBURY FIRE FLEET DOWNTIME

Appendix C

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November 2022 Fire Fleet Downtime Tracking

ADMINISTRATION STATION 2-4

Car 1	GMC Sierra	2020	BB56177	2 days
Car 2	GMC Sierra	2021	BK25927	10 days (warranty)
Car 3 (E14-25)	Chevrolet Silverado	2014	BP86535	2 days
Car 4 (E13-24)	Dodge Ram 1500	2013	BP86534	5 days
Car 5 (E15-27)	Chevrolet Silverado	2015	AL81261	2 days
Car 6 (E15-26)	Chevrolet Silverado	2015	AL81256	2 days
Car 7 (E16-21)	Chevrolet Silverado	2016	AN76069	2 days
Car 8 (E16-22)	Chevrolet Silverado	2016	AN82220	2 days
Pub Ed Van	GMC Savannah	2018	BL91080	2 days
ATV	Honda TRX350FE6	2006	96KM4	2 days

HOLLAND LANDING STATION 2-4

Pumper 241	Spartan Advantage	2008	834WK	46 days
Tanker 244	Spartan Metro Star	2011	1598ZZ	23 days
Aerial 246	HME Specter 111’	2017	BA40680	7 days plus 120 days for warranty work
Trailer	ATMT 7x16 TA2	2020	S5926T	1 day
Trailer	ATMT 6x12 SA	2020	S7311W	1 day

2022 Fire Fleet Downtime Cont'd

MOUNT ALBERT STATION 2-6

Pumper 261	Spartan Metro Star	2014	AJ35390	12 days
Tanker 264	Spartan Gladiator	2012	AJ71213	10 days
Rescue 269	Freightliner FM2	2016	AN42537	7 days
Trailer (E16-51)	Neo 716	2016	N9096J	1 day
Polaris (E16-41)	Polaris Ranger 6x6	2016	2EM56	16 days
Trailer	NEO 610	2018	P9185S	1 day

QUEENSVILLE STATION 2-8`

Pumper 281	Spartan	2021	BN167790	15 days
Tanker 284	Spartan	2015	AK52883	12 days
Aerial 286	Freightliner 80	2003	DP2380	14 days
Rescue 289	Freightliner FM2	2016	AN42536	7 days

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ABOUT MERCURY

Appendix D

MERCURY

About Mercury Associates, Inc.

- Established in 2002
- Largest dedicated fleet consulting and technology service provider in North America
- Serve fleets of 50 to 250,000 vehicles and pieces of equipment
- Assist organizations improve fleet management practices, increase operational safety and efficiency, optimize asset utilization and reliability, and operate a cost competitive fleet operation

Headquarters - Rockville, MD

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Canada Client List

- Alberta Treasury Bureau
- Aurora, ON
- Calgary, AB
- Capital Regional Dist., BC
- Gravenhurst, ON
- Guelph, ON
- Halton, ON
- Medicine Hat, AB
- Metro Vancouver, BC
- North Bay, ON
- Oakville, ON
- Prince George, BC
- Province of Saskatchewan
- Province of New Brunswick
- Quesnel, BC
- Red Deer, AB
- Region of Waterloo
- Saint John, NB
- Strathmore, AB
- Surrey, BC
- City of Sault Ste. Marie
- Town of Georgina
- Waterloo

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Select United States Client List

- Alexandria, VA
- Annapolis, MD
- Asheville, NC
- Baltimore, MD
- Boston, MA
- Boynton Beach, FL
- Brownsville, TX
- Corpus Christi, TX
- Cumberland City, NC
- Delray Beach, FL
- District of Columbia
- Duluth, MN
- Encinitas, CA
- Fresno, CA
- Glendale, CA
- Gresham, OR
- Harford City, MD
- Harris City, TX
- Huntington Beach, CA
- Jamestown, NY
- Janesville, WI
- Kent, WA
- Kissimmee, FL
- Lincoln, NE
- Los Angeles City, CA
- Maricopa City, AZ
- Mequon, WI
- Montgomery City, MD
- Montgomery City, OH
- Mountain Brook, AL
- Norman, OK
- Oak Brook, IL
- Odessa, TX
- Olympia, WA
- Orange City, CA
- Orange City, FL
- Orlando, FL
- Palm Beach, FL
- Palo Alto, CA
- Port Moody, BC
- Prince George, BC
- Richardson, TX
- Richmond, VA
- Sacramento, CA
- Sacramento City, CA
- Salem, OR
- San Francisco, CA
- Sioux Falls, ID
- Topeka, KS
- Travis City, TX
- Wilmington, DE

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Mercury Clients Overview

- ≈ 50 unique clients served per year
- 33 of 50 largest cities in U.S., including 10 largest, and many of the largest counties
- 34 states / 4 provinces
- U.S. Army, Navy, Air Force, Marines
- GSA, NASA, U.S. Postal Service
- 13 of 16 executive branch agencies including Defense (202,000 vehicles), Homeland Security (58,000 vehicles), State (15,000 vehicles)

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Attachment 3

Refreshed Fire Master Plan

Report No. GFRS-2023-0001
February 15, 2023
Total pages - 226

Town of Georgina
Georgina Fire and Rescue Services

Fire Protection Services Master Plan

January 2023 Update

Emergency Services Consulting International

Introduction

ESCI Update: (2022)

In 2022, ESCI was contracted to provide an update to the Town of Georgina's Fire Master Plan (FMP) on elements related to anticipated growth of the Town. During the course of discussions with the Georgina project team, a modernization element was added to suggest organizational adjustments that would assist with maintaining or enhancing the role of GFRS within the community into the future.

The existing FMP outline was used with ESCI adding, when appropriate, colored boxes to provide updated information in applicable sections.

Background

Within the Region of York, the six most northerly local area municipalities (known as "The N6") have a long history of working collectively and cooperatively together. Through this arrangement, many successes have been achieved in the way of shared services and cost efficiencies. The N6 continue to explore alternative and/or ground breaking service delivery options to the mutual benefit of their municipalities.

The Fire Chiefs, representing the five Fire Departments of The N6, over the past several years have combined efforts in order to explore opportunities and determine innovative and cost effective methods for delivering Fire Protection Services.

Last year, a high level assessment was performed to examine potential areas of improvement between N6 Fire Departments. Through this assessment, a number of strategic and operational areas of improvement have been identified. In some cases, opportunities exist that would pertain to all the Fire Departments whereas in other cases opportunities would only apply to two or more of the Fire Departments. From the results of the assessment it was determined that updating the Fire Masterplans, as a coordinated effort, would be the first priority.

At that point in time, Central York Fire Services had already entered into an agreement for the development of a Fire Masterplan. As such, and in light of comparable business practices, the remaining Fire Departments agreed to proceed in a collective fashion representing:

- The Town of Georgina
- The Township of King
- The Town of East Gwillimbury
- The Town of Whitchurch Stouffville

It was agreed that these four municipal Fire Departments would combine efforts for the purposes of:

1) Preparing individual Fire Masterplans for each of the four municipalities, and in conjunction;
2) Analyzing the results of each of the Fire Masterplans to identify opportunities for new operational strategies, innovative and unique approaches to service delivery, shared services, common Key Performance Indicators, alternative work methodologies, etc.

In turn, a "Collaboration Initiatives" Project was established overseen by a Project Steering Committee comprised of the four Fire Chiefs and the Town of Georgina CAO.

Objectives of this Collaboration Initiative Project

The Objectives of the "Collaboration Initiative" Project are summarized below

- Assess the impacts of existing conditions and future growth patterns and project the anticipated community needs in all areas of fire and emergency services in relation to the Ontario Fire Marshals three lines of defence: Education, Enforcement and Response.
- Thoroughly review existing research, information and strategies as well as conduct a detailed trend analysis including issues and best practices regarding fire and emergency services.
- Development of a Comprehensive Community Risk Assessment as the basis for determining the appropriate level of emergency response deployment to meet the municipalities legislative responsibilities, as well as appropriate level of fire prevention to meet the needs of the building stock and risk in the municipality as well as response.
- An analysis of current Office of the Fire Marshal, Ontario Public Fire Safety Guidelines and National Fire Protection Association Standards to determine options for the optimal level of emergency response deployment to meet the needs and circumstances of the community.
- Work with representatives of Fire Underwriters Survey for the purposes of determining opportunities for insurance premium savings within municipalities
- A fulsome consultation program to seek input from Fire Services Staff and other Stakeholders.

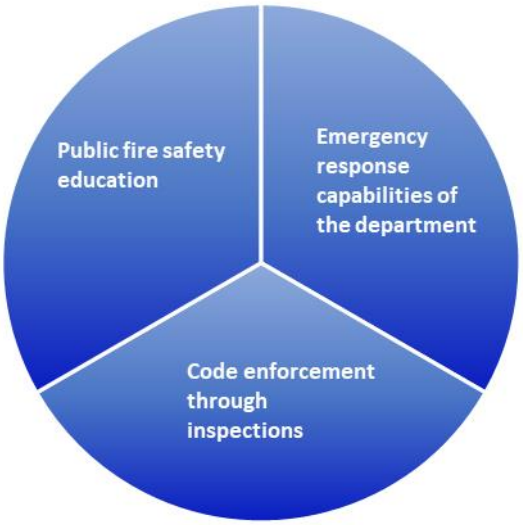
Additional Unique Aspects of the "Collaboration Initiative" Project

The benefits of this Collaboration Initiative project are many, including expanded opportunities for fire services expertise – given that four Fire Chiefs are supporting each other's efforts and providing input on practices that are common to all departments.

This project also incorporates two unique perspectives:

a) **The OFM "Three Lines of Defence"**

Contrary to a single focus on fire suppression activities, a foundational element of this study is that it is based on the Office of the Fire Marshal and Emergency Management (OFMEM), three lines of defence in relation to servicing the community, which include:



1) **Education** – fire safety education is the key to mitigating the fire and life hazards before they start. With the growth of the community, how will GFD continue to meet the fire safety educational needs of the community?

2) **Inspections and Enforcement** – if the public education program does not prove effective then the next step is for the fire department to enforce fire safety requirements through inspections and possible charges. Having a full-time Fire Prevention Division goes a long way to addressing these education and enforcement requirements.

3) **Emergency Response** – if the first two lines of defence fail for whatever reason, the community, through its fire department, should be prepared to respond in an efficient and effective manner to put the fire out and/or mitigate the emergency itself. By evaluating the effectiveness of the fire stations, its staff and equipment, this report will be able to make recommendations for related efficiencies.

b) **Fire Underwriters Survey**

Fire Underwriters Survey (FUS) is a national organization providing data on public fire protection for fire insurance statistical work and underwriting purposes of subscribing insurance companies.

Subscribers of Fire Underwriters Survey represent approximately 85 percent of the private sector property and casualty insurers in Canada.

FUS Certified Fire Protection Specialists conduct detailed field surveys of the fire risks and fire defenses maintained in built up communities and the results of these surveys are used to establish a Public Fire

Protection Classification (PFPC) for each community. The information provided through the Fire Insurance Grading Index is a key factor used in the development of Commercial Lines property insurance rates. The PFPC is also used by underwriters to determine the capacity of risk they are willing to assume in each community or section of a community.

FUS also uses PFPC information to develop the Dwelling Protection Grade (DPG), which is utilized by Personal Lines insurers in determining property insurance rates for detached dwellings. The Dwelling Protection Grade is a measure of the ability of the protective facilities of a community to prevent and control the structure fires in detached dwellings by evaluating the adequacy, reliability, strength and efficiency of the protective facilities and comparing the level of protection against the level of fire risk associated.

The work of FUS was undertaken in parallel with the analysis required for the preparation of the Georgina Fire Masterplan, the results of which have been incorporated into the key Recommendations outlined within this document.

Collaboration Initiatives to Follow

Much reference has been made to the Collaboration Initiatives Project. This report brings forward the first intended deliverable of the project – the Georgina Fire Masterplan. For the final chapter to be written, (i.e. the actual outline of potential new operational strategies/innovative practices) all four individual Fire Masterplans must be completed, and an overarching assessment undertaken. It is anticipated that this work will be finalized by late Spring of 2017.

ESCI Update: (2022)

GFRS continues to submit updated information to potentially improve the PFPC and the DPG.

The updated Fire Master Plans (FMPs) were completed in 2016.

Collaboration Initiative Update
The initiative as a formal project that regularly meets to support the original established objectives no longer exists however the intent and spirit of the project is still active. The Province of Ontario and Office of the Fire Marshal still advocate for greater collaboration amongst local communities and their fire departments. The subsequent updates in this report identify progress on the objectives that were initially established by the project.

Objective #1: "Assess the impacts of existing conditions and future growth patterns and project the anticipated community needs in all areas of fire and emergency services in relation to the Ontario Fire Marshals three lines of defence:

Education, Enforcement and Response."

Objective #2: "Thoroughly review existing research, information, and strategies as well as conduct a detailed trend analysis including issues and best practices regarding fire and emergency services."

Objective #3: "Development of a Comprehensive Community Risk Assessment as the basis for determining the appropriate level of emergency response deployment to meet the municipalities legislative responsibilities, as well as appropriate level of fire prevention and response to meet the needs of the building stock and risk in the municipality."

Objective #4: An analysis of current Office of the Fire Marshal, Ontario Public Fire Safety Guidelines and National Fire Protection Association Standards to determine options for the optimal level of emergency response deployment to meet the needs and circumstances of the community."

Objective #5: "Work with representatives of Fire Underwriters Survey for the purposes of determining opportunities for insurance premium savings within municipalities."

Objective #6: "A comprehensive consultation program to seek input from fire services staff and other stakeholders."

Fire Underwriters Survey

FUS also evaluates and accredits alternative water supplies for public fire protection which GFRS has accomplished. To provide fire protection, most communities across Canada utilize water as the primary extinguishing agent. In areas without pressurized, municipal-type water supply systems, alternative water supplies are used in firefighting operations. When developed and executed with a high level of proficiency, systems of shuttling water to and from alternative water supply sources can be as effective as municipal type water supplies, although typically more labour intensive.

Insurers are advised that Superior Tanker Shuttle Service Accredited areas may be rated as 'hydrant protected'. As a result of this accreditation, residents who own detached dwellings within eight road kilometers from any accredited stations may be eligible to receive a cost reduction in their fire insurance rates.

Table of Contents

Introduction 2
Background 2
Objectives of this Collaboration Initiative Project 3
Additional Unique Aspects of the "Collaboration Initiative" Project 4
Collaboration Initiatives to Follow 5

Executive Summary 10

Overview 15
Project Initiation 15
Review Process and Scope 15
Performance Measures and Standards 16
Project Consultants 17
Technology advancements and adoptions 20
Inclusiveness of the fire and emergency services 20
1.1 Fire Department Overview 21

Section 1: Department and Community Overview 22
1.1 Fire Department Composition 22
1.2 Community Overview 24
Community Growth 24

Section 2: Planning and Stakeholder Surveys 31
2.1 Three Lines of Defence: 31
2.2 Strengths, Weaknesses, Opportunities and Threats 31
Strengths 31
Weaknesses 32
Opportunities 32
Threats/Challenges 33
2.3 National Fire Protection Association (1201, 1221, 1710 and 1720) 36
Establishing & Regulating By-Law 37
Modernization: 39
2.4 Commission on Fire Accreditation International (CFAI) 41
2.6 Stakeholder Surveys 43
Internal Surveys 43
External Surveys and Stakeholder Meeting Results 43

Section 3: Risk Assessment 49
3.1 Community Risk Assessment – Current and Future Needs 49
Municipal responsibilities 49
3.2 Simplified Risk Assessment 52
Current Condition 52
Future Needs 53
3.3 Integrated Risk Management Web Tool 56
3.3.1 Home Fire Sprinklers 59
Facts about home fire sprinklers 59
Recommendations 60

Section 4: Department Staffing 66
Fire Department Organizational Overview 66
4.1 Administration Division 70
4.1.1 Commission on Fire Accreditation International 70

4.2 Training and Education Division 73
4.2.1 Purpose 73
4.2.2 Commission on Fire Accreditation International 74
4.3 Fire Prevention and Public Education 74
4.3.1 Determination of Current Staffing Requirements 75
4.4 Recruitment and Retention of Volunteer Firefighters 77
Recommendations 77

Section 5: Fire Suppression/Dispatching 82
5.1 Fire Suppression/Emergency Response 82
National Fire Protection Association (1710 and 1720) 82
Response Data 84
5.2 Service Level Standards – Dispatching Services 91
NFPA 1221, Section 7.4 Operating Procedures 91
Recommendations 91

Section 6: Facilities 101
6.1 Fire Station Review, Locations, and Suitability for Future Growth 101
Fire Station Location and Other Considerations: 101
Recommendations 102
Brown & Beattie Fire Station Audits: 102

Section 7: Vehicles and Equipment 106
7.1 Fire Apparatus - New and Replacement Schedules 106
Fire Underwriters Survey – Vehicle Replacement Recommendations 106
7.2 Maintenance 108
Recommendations 108

Section 8: Emergency Management 112
8.1 Emergency Management Program 112
Current Condition 112
Future Needs 112
Recommendations 112

Section 9: Mutual and Automatic Aid 117
9.1 Mutual Aid, Automatic Aid & Fire Protection Agreements 117
Mutual and Automatic Aid 117
Recommendations 117

Section 10: Finance, Budgeting, and Capital Investment Plan 121
Operating Budget 121
Capital Forecasts 121
Recommendations 122

Section 11: Review of Previous FMP 127
11.1 Building from the Existing Fire Master Plan of 2010 127
Recommendations 127
11.1.2 Administration 128
11.1.3 Fire Prevention and Public Education 129
11.1.4 Fire Suppression 131
11.1.5 Training 133
11.1.6 Fleet Review 136
11.1.7 Communication & Technology 136
11.1.8 Next Steps 137

Section 12: Fire Underwriters Survey 139
Overview 139
2016 Fire Underwriters Survey Report 140
Overview of the 2016 FUS Recommendations 140
Summary of Recommendations 141

Section 13: Collaboration and Innovation 151

Section 14: Summary of Recommendations 154
Conclusion 154
Recommendations and Estimated Costs 154
Recommendations Contained in the Fire Station Review Document 159

Section 15: Appendices 165

Appendix A – Definitions and References 165
Automatic Aid Agreements – Fire Prevention and Protection Act, 1997 (FPPA 1997) 165
Commission of Fire Accreditation International Community Definitions: 165
National Fire Protection Association (NFPA) Documents: 165
Municipal Responsibilities (FPPA 1997) 166
Mutual Aid 166
Public Fire Safety Guidelines: 166
Shared Responsibilities (FPPA 1997) 166
Volunteer Firefighter (FPPA 1997) 166

Appendix B – Staff Surveys 167
Town of Georgina Fire Masterplan - Internal Survey 167

Appendix C – Community Surveys 169
Georgina Fire Department Fire Master Plan - External Survey 169
About Us 169
Georgina Fire Department Fire Master Plan 169
Public Meeting 170

Appendix D – Public Fire Safety Guideline - Recruitment and Retention of Volunteer Firefighters. 173
Volunteer Fire Service Personnel Recruitment and Retention 173
Scope and Application: 173
Definition of Volunteer: 173
Recruitment and Retention Program: The Benefits 174
Components in the Recruitment and Retention Cycle: Pre-Recruitment 175

Appendix E – Call and Response Data for 2013 and 2014 178
2013 Calls and Response Data 179
2014 Response Data 180

Appendix F – Fire Station Review 182

Executive Summary 183
Station 1-4 (Headquarters) 183
Station 1-6 184
Station 1-8 184

Overview 184
Municipal responsibilities 185
Methods of providing services 185

Executive Summary

The Town of Georgina is a Municipality located on the South-Eastern shores of Lake Simcoe at the top of the Greater Toronto Area (GTA). Georgina comprises several communities including Keswick, Jackson's Point, Pefferlaw, Port Bolster, Sutton and Udora. It is the most northerly local Municipality within the Region of York. Georgina encompasses a land area of 287sq kms and enjoys 52kms of Lake Simcoe's shores.

Currently the Town of Georgina is serviced by a composite Fire Department that consists of three fire stations. These stations are located in Keswick - Station 1-4, in Sutton - Station 1-6, and in Pefferlaw - Station 1-8. In total, there are 108 personnel; the Fire Chief, Deputy Fire Chief, two Administrative Staff, three Fire Prevention Officers, one Training Officer, along with forty full-time Firefighting staff, and sixty Volunteer Firefighting staff. This is a total of 108 personnel.

The Georgina Fire Department (GFD) responds to over 2,200 calls for service per year. These incidents include, but are not limited to, fire related incidents, medical assist, water/ice rescues and motor vehicle collisions.

To ensure that they are meeting the needs of the community and its staff, the Fire Department recognizes that it is necessary to update and maintain a Fire Master Plan (FMP) for the purposes of providing high quality fire services to the residents and businesses of the community along with its visitors. This FMP for the GFD reviews and identifies current and anticipated community fire risks and needs over the next 10-20 years. This will greatly assist the Fire Department with future planning relating to staffing and response, fire and life safety programming and for asset management.

This review has examined and researched all aspects of the Fire Department operations including, planning, fire prevention, training and education, communications, apparatus and equipment, maintenance, human resources, station suitability (accommodations) and locations, budgets, and large-scale emergency preparedness.

This FMP document is a culmination of three individual reports:

- The Fire Station Review, which contains 14 recommendations
- The Fire Underwriters Survey, which contains 20 recommendations and
- The Fire Master Plan document, which contains a total of 24 recommendations

Between the three, there is a total of 58 recommendations for consideration by the GFD and its Council.

As part of the creation of a new FMP, the Town of Georgina Fire Department is also embarking on a very proactive, collaborative effort with the Township of King, the Town of East Gwillimbury and the Town of Whitchurch Stouffville, which will include:

- The creation of individual FMP's that will evaluate all aspects of each Fire Department's services including the operational costs and capital budgets required to maintain or enhance these services;
- Along with a focus on how each Fire Department can work in a collaborative manner to find efficiencies and possible cost savings.

Some of these collaborative efforts have been noted in this document in relation to training initiatives and community partnerships but more opportunities will be identified with each Fire Department review. These collective opportunities will be discussed and summarized in a final report that was scheduled to be presented in late spring of 2017.

A quick reference chart has been included within this executive summary, along with a more detailed chart that includes timelines for implementation and estimated costs, which can be found in Section 13 of this document.

FMP Recommendations for Georgina Fire Department	
Rec #	
1	The Fire Station Report found in Appendix "F" contains a total of 14 recommendations. All the recommendations can be found in the actual document, all with a brief summary noted in Section 13. • As noted in the associated recommendations (in Section 13), many of the items will require immediate attention.
2	It is recommended that a full review and update of the Establishing and Regulating By-law document be completed to include and update the following items: • Update the document's language to reflect what is noted in the FPPA • Incorporate, where appropriate, any references to NFPA standards that the Fire Department deems necessary to be followed • Measurable service levels that can be reported to Council on an annual basis • Composition to represent the level of service to be provided as outlined throughout the FMP, and • A review to be conducted by the Town's Solicitor
3	It is recommended that this Simplified Risk Assessment/Community Risk Assessment (SRA/CRA) be updated in accordance with NFPA 1730, being every five years or as necessary with changes. In order to aid Council in their decision-making process, there is merit in providing an updated assessment at the beginning of every term of Council so that the sitting Council understands the platform on which the services conducted by the Fire Department are built.

4	It is recommended that the Fire Chief provide Council with an updated review of the Simplified Risk Assessment coupled with the Office of the Fire Marshal and Emergency Management's Integrated Risk Management (IRM) tool of the identified High, Medium, and Low risk occupancies.
5	It is recommended that upon completion of the SRA/CRA and IRM, as noted in recommendation 4, that the Fire Chief provides Council with a draft policy for review and passage that outlines a fire inspection program to address identified needs and expected outcomes of the program. This program should outline the building types and the frequency of inspections.
6	It is recommended that the Fire Department meet with all local community groups to form a partnership in relation to organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community.
7	It is recommended that the Fire Prevention Division review its inspection program to identify levels of desired frequency for these inspections. It should also be noted at this time, that the Fire Underwriters Survey supports and recommends that a level of frequency be identified by the Fire Department in its quest towards ensuring a fire safe community.
8	It is recommended that the GFD work with developers and the public to make the Home Sprinkler Systems initiative a part of their fire prevention and public education program.
9	It is recommended that the present part-time Administrative Assistant position be transitioned into a full-time position.
10	It is recommended that to verify the Training Division is meeting related NFPA (and other) training program recommendations, the Training Officer should identify; • What training programs are required in relation to the services that GFD is providing • The number of hours that are required to meet each of those training needs • Resources required to accomplish this training • Joint partnerships with bordering fire departments and private organizations that can be entered into, to achieve the training requirements identified by the Training Officer, and • To present an annual program outline at the start of each year to the Fire Chief, with noted goals and expectation, which are measured and reported on in relation to completion success rate at the end of each year.
11	It is recommended that GFD continue to search out opportunities to conduct joint training programs with other fire departments by securing/scheduling neighboring training facilities whenever possible.
12	It is recommended that GFD explore the partnership opportunity to build a training facility within the northern group's capture area, which would be a cost-effective measure for all the fire departments.

13	It is recommended that greater utilization of the full-time officer resources be incorporated into an annual fire prevention program on a more formal basis. To accomplish this, all full-time officers should be trained and certified to at least: • NFPA 1031 – Fire Inspector I, and • NFPA 1035 – Fire and Life Safety Educator I By having all full-time officers trained to the noted levels, GFD will have a greater number of resources to draw upon in its public fire safety education and inspection programs.
14	Succession planning for Fire Prevention and Training Division personnel should be addressed to ensure trained personnel are ready to take over when the existing personnel retire.
15	The Fire Chief should investigate opportunities to promote retention of the Volunteer Firefighters (VFF) as noted in the OFMEM document (attached in section 14, Appendix "D"). The Fire Chief should continually recruit for VFF's in areas that are presently understaffed or have issues with response numbers (of VFF's) to calls.
16	The Department should complete certification for staff for each position (that requires or recommends certification) and ensure that certifications are maintained.
17	The Fire Chief should continue to monitor and evaluate call volumes of the Department on an annual basis along with the level of Firefighter's response per station to identify any areas of concern that may result in recommending the implementation of an increase to the full-time response component for the Municipality.
18	It is recommended that the Fire Chief present a Standard of Cover for the approval of Council.
19	It is recommended that when possible the present dispatching agreement with the current dispatch provider be updated to included NFPA related standards for GFD to incorporate the necessary performance measures as per the NFPA 1221 standard.
20	The Town should endeavour to maintain a schedule that compiles with the Fire Underwriters Survey (FUS) recommendations on the replacement of vehicles. The industry standard for the design and replacement of vehicles is the National Fire Protection Associations Standard 1901. It is recommended that this and other related NFPA standards relating to vehicle design, maintenance, testing, inspection and replacement and refurbishing be utilized.
21	It is recommended that the Keswick station secondary EOC be relocated in a newer facility so that it is designed and built to better meet the needs of an emergency operations centre.
22	It is recommended that a full review of all mutual aid, automatic aid and Fire protection agreements be completed in the short-term to identify any required revisions.
23	Annual corporate business planning cycles should be more specific in identifying goals and expected outcomes for all Fire Department related programs so as to ensure that adequate funding is secured in relation to the reserve funds for equipment and facilities.
24	Continue updating and completion of any outstanding projects noted in the previous 2010 Fire Master Plan as noted in Section 11.

ESCI Update (2022):

Update to Executive Summary

Complementing the previously mentioned material, according to the *2022 Adopted York Region Official Plan (July 2022),* Georgina continues to be part of a rapidly growing York Region expecting to grow from a 2021 population of 49,000 to a 2051 population of 70,300[1], an average annual growth rate of approximately 1.4%.

In addition, due to several reasons including increased public education, enhanced prevention technologies, improved safety awareness, and efficiency increases in operations, the nature of the fire service is changing. While many elements of fire departments will always be needed, how it approaches its mission is both adapting, and expanding.

In 2021, the Center of Public Safety Excellence (CPSE) and the International City Managers' Association (ICMA) issued a collaborative document with input from the International Association of Firefighters (IAFF) called *21st Century Fire and Emergency Services* outlining initiatives for fire departments to continue to maintain a strong relevance within their communities. Much of ESCI's commentary comes from this document.

The high-level fire service critical issues outlined in the document are:

- Re-Identification
- Culture
- Robust Use of Data
- Health and Wellness
- Partnerships
- Sustainability
- Technology
- Inclusiveness

Updates on the 2016 EMT recommendations are provided as well as updates relative to community growth.

[1] https://www.york.ca/media/107501/download?attachment

Overview

Project Initiation

Early this year, the Town of Georgina took a lead role in overseeing the issuance of an RFP on behalf of the municipalities involved for the preparation of the four Fire Masterplans and the collaboration analysis.

Of note was that in describing the comprehensive collaborative nature of the RFP process it was also made clear that there was no intention to investigate any aspect of fire amalgamation.

Emergency Services Consulting International (ESCI) has worked collaboratively with the Town of Georgina and the Georgina Fire Department in the gathering of data and development of this FMP. ESCI would like to thank all staff and the community for their input into this plan.

Review Process and Scope

Emergency Services Consulting International (ESCI) has based its review process on the Town's initial Request for Proposal (RFP) and the response document submitted by EMT.

The specified areas noted in the project's RFP were reviewed by utilizing best practices, current industry standards, and applicable legislation as the foundation for all work undertaken. EMT also used both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community, and customer service demands of the public.

The review included, but was not limited to, the following key areas:

a) Staffing needs – review capabilities of existing staffing and identify future needs for each of the following divisions: Suppression, Training, Prevention and Administration.
b) Facilities – review capacity and condition of existing facilities and plan for future needs. Specific attention is required to the facility needs for the Training Division, Prevention Division and Administration.
c) Station location – review of existing locations relative to the current and future demands and consideration of potential needs for relocation or additional stations.
d) Apparatus – review existing vehicles and replacement plans relative to the existing and expected demands as well as the review of how apparatus maintenance is conducted and best practices thereof.
e) Service Level Standards – review established benchmarks to ensure they meet the communities' needs and reflect best practices and establish comparable joint Key Performance Indicators that can/will be used to identify performance of the various fire services.
f) The report is a review of the existing Fire Master Plan and an expansion of that document.
g) Plan outcomes must establish strategic priorities complete with action plans. These shall be expressed

in terms of goals, objectives, action steps, resources (human and financial) and the timelines required to successfully complete the priorities.

The study is to also include an updating of the Fire Underwriters Survey (FUS) rating to identify potential opportunities for insurance premium savings for property owners in the municipality.

The review process included a survey of the Council members, the Chief Administrative Officer (CAO), the community, fire administration, and Firefighters to seek input regarding the project components.

Based on the previously noted seven criteria (a – g), through meetings with, the Fire Chief and other stakeholders, the consulting team was able to complete a thorough review of what is working well and what areas require improvement within the GFD. During the program review, the consulting team conducted an assessment of staffing, fire facilities, vehicles and related operations. Data provided by the fire Department was also reviewed in relation to all of the previously noted items contained in the Town's request for proposal (RFP).

Based on the review of the Fire Department's facilities, equipment, programs and related data, EMT is submitting a total of 24 recommendations (noted in this FMP report) that can be implemented.

Along with the FMP recommendations, there is an additional 14 recommendations presented in the Fire Station Review report, of which a copy can be found in Appendix "F". The Fire Underwriters group also conducted their own review of the GFD and has submitted a total of 20 additional recommendations. The recommendation summary found in the FUS report has been included in Section 12 of this document.

Performance Measures and Standards

This FMP update has been based upon (but not limited to) key performance indicators that have been identified in national standards and safety regulations such as:

- The Ontario Fire Marshal's Office and Emergency Management (OFMEM) Public Safety Guidelines
- The Fire Prevention and Protection Act
- The National Fire Protection Association (NFPA) standards
  - NFPA 1221 addresses recommended standards in relation to communications/dispatching services
  - NFPA 1710 addresses recommended standards for career fire departments
  - NFPA 1720 addresses recommended standards for volunteer fire departments
  - NFPA 1730 addresses recommended standards for fire prevention and education activities
- The Commission on Fire Accreditation International, which is a program that evaluates a Fire Department based on related NFPA standards, local legislation and industry best practices (the parent organization for CFAI is the Centre for Public Safety Excellence (CPSE))
- Office of the Fire Marshal and Emergency Management's (OFMEM) Integrated Risk Management program

- The Ontario Health and Safety Act., National Institute for Occupational Safety and Health (NIOSH)
- Ontario Fire Service – Section 21 Guidelines
    - The Section 21 Committee is based on Section 21 of the Ontario Occupational Health and Safety Act. This committee is charged with reviewing industry safety concerns and developing recommended guidelines to reduce injuries for the worker.

Project Consultants

Although several staff at Emergency Management and Training were involved in the collaboration and completion of this Plan, the overall review was conducted by:

- Darryl Culley, President Emergency Management and Training Inc.
- Lyle Quan, Fire & Emergency Services Consultant
- Richard Hayes, Fire & Emergency Services Consultant, and
- Paul Leslie, Fire & Emergency Services Consultant

Together, the team has amassed a considerable amount of experience in all areas of fire and emergency services program development, review and training. The EMT team have worked on projects that range from fire service reviews, creation of strategic and fire master plans and development of emergency response programs for clients.

ESCI Update: (2022)

In 2022, ESCI was asked to provide an update to the Georgina Master Plan along with suggested modernization ideas. In the time since the 2016 Master Plan was completed, Georgina has continued to grow. In 2022, the town's population will surpass 49,000 people and is projected to increase steadily to more than 70,000 in the next 30 years.

In 2020, a collaborative report was produced by the Center of Public Safety Excellence and the International City/County Management Association that was called the *21st Century Fire and Emergency Services.* The purpose of the report was to recognize the changing dynamics of local government and community, their impact on the local fire and emergency services, and provide strategic initiatives on how to remain aligned with those community changes. More specifically, how does the local fire and emergency services:

- Remain relevant for our jurisdictions
- Have the greatest impact in a rapidly changing environment
- Be sustainable
- Address the needs of the whole community — its residents, businesses, governing body, and the personnel who will be tasked with carrying out the mission.

The report identifies critical issues and initiatives that will require attention to thrive in the future. they are:

Re-identification of the fire and emergency services
Initiative #1: Celebrate the heritage of the fire and emergency services while recognizing that services provided have evolved and will continue to experience significant changes over the next 30 years.

Culture of the profession
Initiative #1: Enhance alignment between community, elected officials, management, labor/volunteer representatives, and overall workforce.
Initiative #2: Promote an organizational environment that is adaptable, open to change, innovative, and focused on continuous improvement.
Initiative #3: Establish organizational expectations for employee education, credentialing, and continued professional development.

The robust use of data

Initiative #1: Utilize quality data for evidence-based decision making to assess and produce the best outcomes.

Initiative #2: Implement advanced data analytics to make informed decisions.

Initiative #3: Develop comprehensive records management systems (RMS) to collect and analyze data effectively.

Initiative #4: Focus on developing outcome-based data for all measurable operations and functions within the organization.

Health and wellness threats

Initiative #1: Champion research on the health impacts specific to the fire and emergency services to evaluate the health risk of consecutive hours worked, sleep disruption, and the impacts on employee health.

Initiative #2: Proactively address the increased mental health challenge(s) facing the fire and emergency services.

Initiative #3: Adopt and support fitness and wellness best practices throughout the whole organization and incorporate this philosophy in every aspect of operations.

Initiative #4: Ensure ongoing physical fitness and wellness requirements are standardized, adopted, and used within every department.

Initiative #5: Continue research toward the development of comprehensive decontamination procedures for the fire and emergency services.

Initiative #6: Urge personal protective equipment (PPE) manufacturers to develop new PPE and bio-metric sensors to ensure effectiveness, reduce equipment weight, and provide for the enhanced ability to monitor the physiologic health and stress markers for personnel during response to an incident.

Opportunities for partnerships

Initiative #1: Acknowledge the need to work with a wide range of partners to serve the community and develop local strategies to create new approaches to providing services more effectively.

Initiative #2: Promote a symbiotic relationship with other internal departments and outside agencies that are routinely allied responders to an incident.

Initiative #3: Continue to expand community emergency response capabilities.

Sustainability challenges

Initiative #1: Address aging fire and emergency services vehicles and building structures.

Initiative #2: Reconsider and revamp current deployment methods.

Initiative #4: Adopt and implement a community risk reduction strategy

Initiative #5: Improve resource allocation by focusing on the outcomes trying to be achieved.

Initiative #6: Examine fixed costs associated with current delivery models and associated contracts.
Initiative #7: Explore public/private partnership opportunities.
Initiative #8: Research strategies to assist communities in sustaining their volunteer fire and emergency services or, if needed, how to transition to a new model.
Initiative #9: Dramatically revamp the fire and emergency services education and training model to provide the needed skill sets, knowledge, and abilities required for the anticipated changes in the future and to remain current with the application of emerging technologies.

Technology advancements and adoptions

Initiative #1: Adapt to and leverage rapidly evolving technology to improve service delivery.
Initiative #2: Develop a change mindset to help anticipate and support appropriate use of emerging technology and encourage the development of new technologies.

Inclusiveness of the fire and emergency services

Initiative #1: Make it an organizational priority to recruit, select, and promote members who reflect the demographic makeup of the community they serve.
Initiative #2: Understand the community characteristics, culture, and diversity that exist and determine the most appropriate way to serve and interact with all community members.

In other words, modernization of the fire service will not only be adopting the latest operational tactics and techniques but also revising how we approach our organizational mission, determine the community risk for which we exist and deliver services to the community that prevent, mitigate and respond to that risk. The following ESCI updates are rooted in these modernization efforts.

GFRS is well on their way to incorporating many of the initiatives such as greater attention to physical and mental fitness programs, use of data, addressing sustainability of the organization, and having a spirit of collaboration with other organizations. Where GFRS's previous FMP addresses the critical issues, ESCI has provided comments on their progress.

The original plan which is much of this document was created in 2016 by Emergency Management and Training Inc. (EMT).

Section 1 - Department & Community Overview

1.1 Fire Department Overview
1.2 Community Overview

Section 1: Department and Community Overview

1.1 Fire Department Composition

The Georgina Fire Department covers an area of approximately 238 square kilometres and serves a population of approximately 49,000, with an anticipated growth to 67,000 people over the next 10 years. Georgina is located in central Ontario at the top of the Greater Toronto Area (GTA) in northern York Region. It is nestled on the south-eastern shores of Lake Simcoe and enjoys a 52 km shoreline.

Presently, the Town of Georgina Fire Department responds to an average of 2,100 calls per year. Full- time administration staff includes:

- Fire Chief
- Deputy Fire Chief
- One full-time and one part-time Administrative Assistant
- A Training Officer, and
- Fire Prevention Division consisting of one Fire Prevention Officer and two Fire Prevention Public Educators

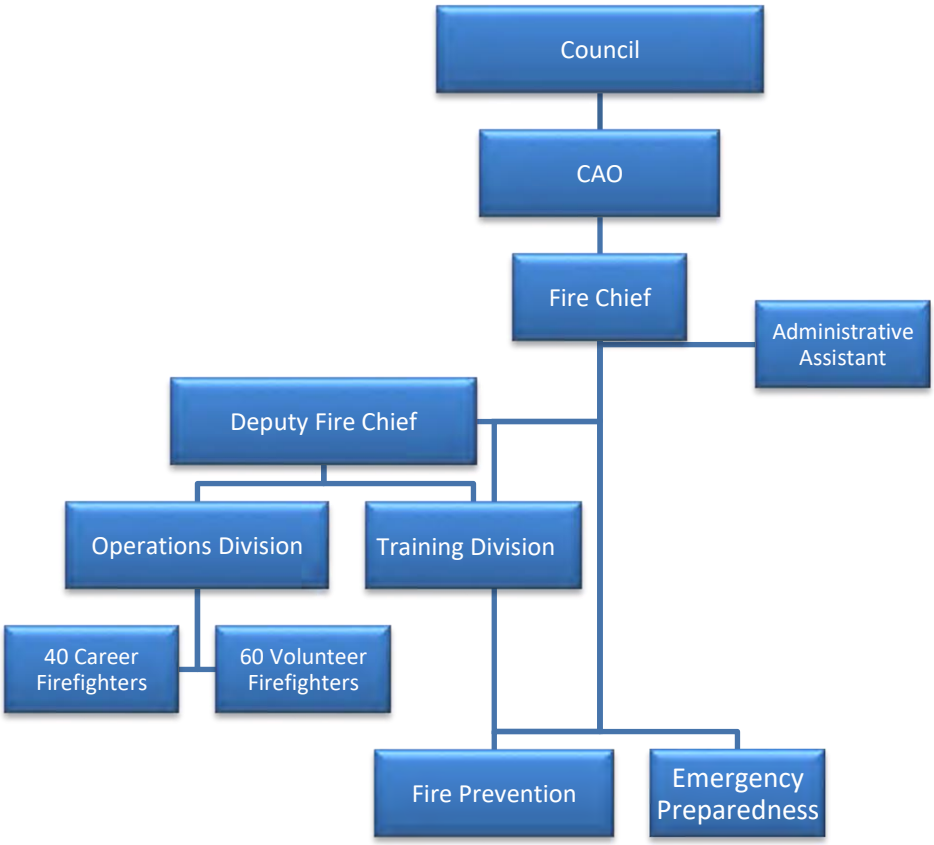
The Department is served by a combination of full-time and Volunteer Firefighters. The Keswick station (1-4) and the Sutton station (1-6) are composite stations; they both have full-time Firefighters on duty to respond 24/7, and are supported by a Volunteer firefighting contingent. The Pefferlaw station (1-8) is a totally Volunteer Firefighter response, but is supported, as required, by the full-time Firefighters from the Sutton station.

The total Firefighting force for the Fire Suppression/Operations Division consists of:

- Full-time firefighting force of 40
- Volunteer firefighting force of 60, which equates to 20 per station.

The organizational chart noted in figure #1.1 reflects the general reporting structure within the Fire Department and also that of the Fire Chief to the CAO and Town Council.

Figure 1: Fire Department Organizational Chart



This current reporting arrangement allows for a sufficient level of involvement by the Fire Chief within the senior management structure of the Town and also allows for a high level of administrative oversight of the day-to-day operations of the Fire Department.

1.2 Community Overview

The Town of Georgina is located in the northern portion of York Region and is comprised of several communities – Keswick, Sutton, Pefferlaw, Port Bolster and Udora. Georgina is made up of mainly residential and commercial properties, with some industrial growth anticipated in the south west portion of the community.

All of these communities are protected by fire stations that are located in Keswick, Sutton and Pefferlaw.

Community Growth

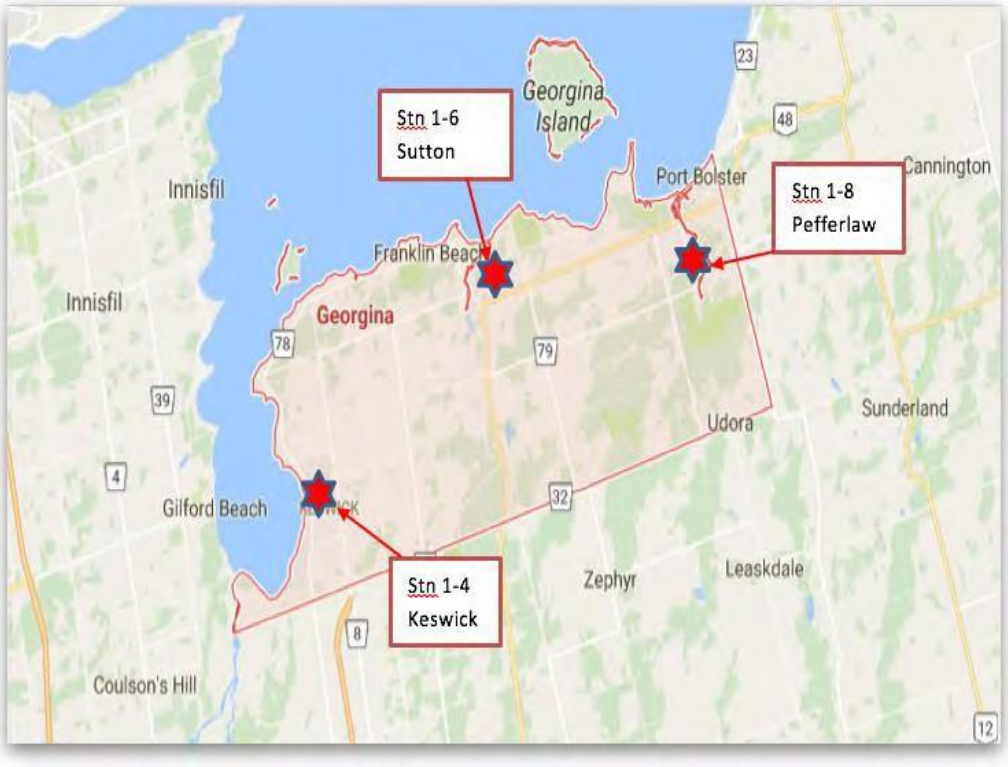
Presently, the population of Georgina is at approximately 49,000 and is forecasted to grow to approximately 67,000 within the next 10 years. This represents an approximate increase of 18,000 population or a 36% increase.

Although there is no actual standard that dictates how many Firefighters are required within a population or whether the fire Department needs to be entirely full-time, composite or Volunteer in nature, there is no doubt that the call volume for the GFD will increase, simply based on the influx of people, traffic, industry and housing over the next 10 years. As such, a careful monitoring of call volumes and response times is critical when it comes to determining if the Fire Department is keeping up with its response expectations or is falling behind in this area. This review of response data is exactly why EMT had requested a full three years of data; this three years of data creates a reliable baseline for identifying how well the Fire Department is meeting any related industry response standards such as those noted in the National Fire Protection Association standards.

Some municipalities have referred to other similar sized municipalities as a guide for staffing numbers and types; i.e. full time and volunteer. But it must be kept in mind that every community is unique in its geographical composition, population demographics and size of residential, commercial and industrial sectors. Therefore, community comparisons should be utilized with all of the aforementioned information in mind.

The community has hired a Fire Chief to manage the Department and to advise on the needs of the organization and, as such, the information received by the Fire Chief should always be taken into consideration when deciding on future fire and emergency service needs of the community.

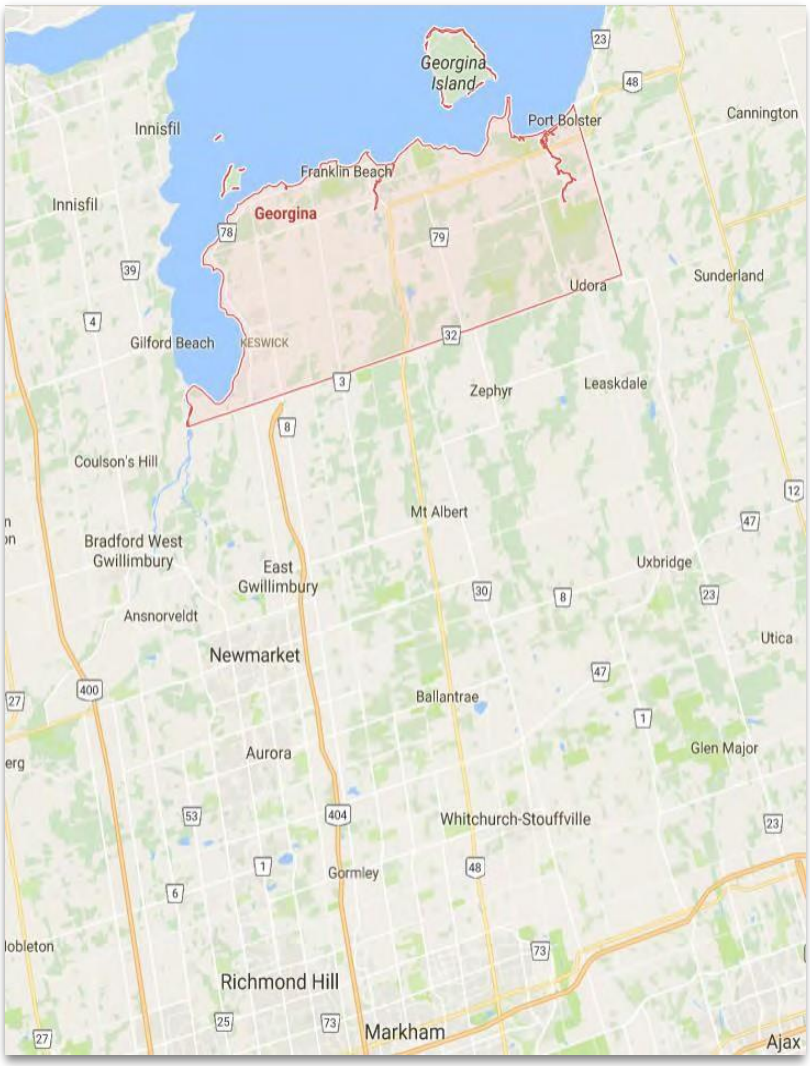
Figure 2: The Town of Georgina Boundaries and Approximate Fire Station Locations



Google maps Aug 20, 2016

FIGURE 3: Georgina Relative to Surrounding Communities

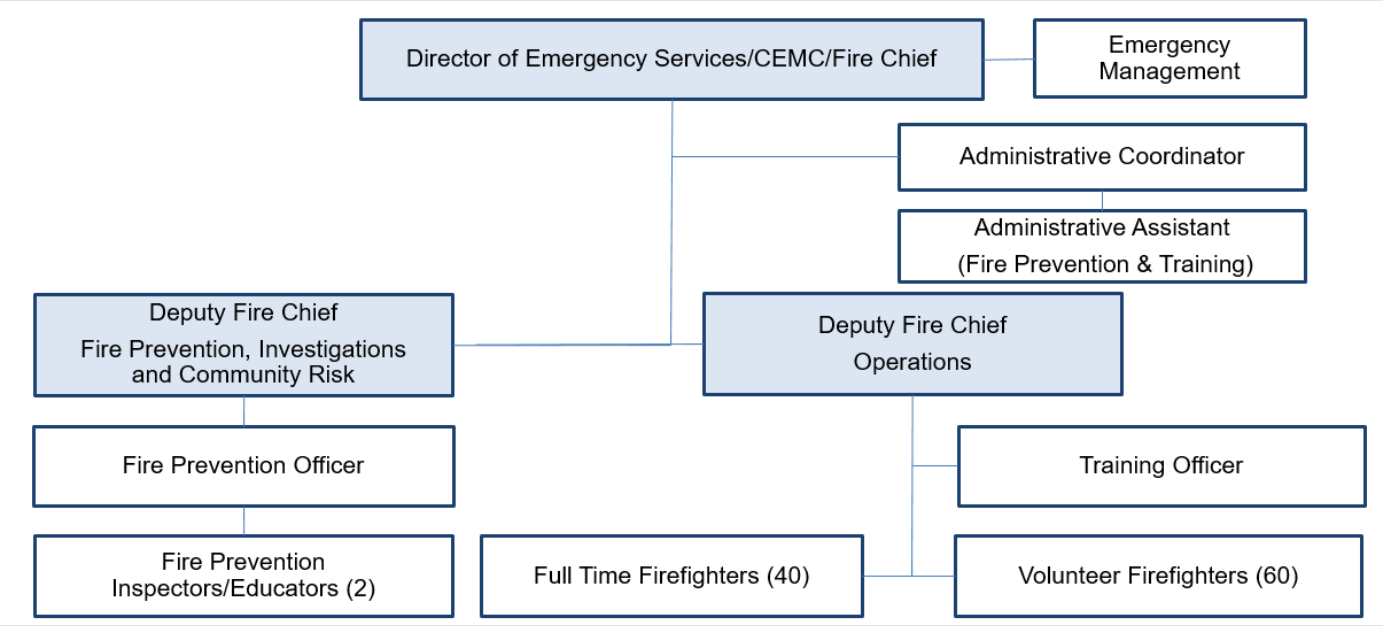
Google maps Aug 20, 2016



ESCI Update (2022):

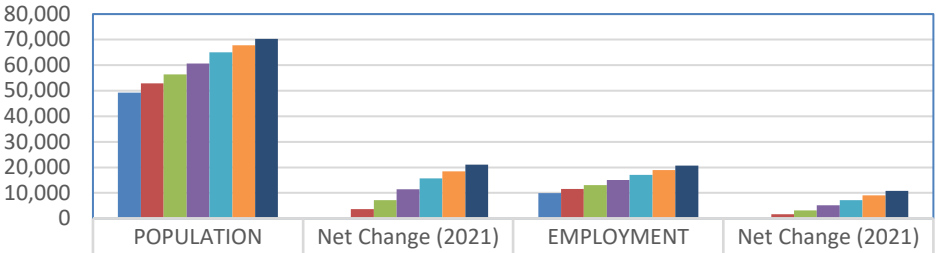
Below is an updated organizational chart for GFRS. This current reporting arrangement allows for a sufficient level of involvement by the Fire Chief within the senior management structure of the Town and also allows for a high level of administrative oversight of the day-to-day operations of the Fire Department.

The organization now has two Deputy Fire Chiefs, one for Operations and one for Fire Prevention, Investigations and Community Risk.



The 2022 latest estimates for Georgina's population growth is 65,000 by 2041 and 70,300 for 2051[2] over the 2021 population of 49,278. Below is a graph of projected population growth and employment.

[2] https://www.york.ca/media/107501/download?attachment



	POPULATION	Net Change (2021)	EMPLOYMENT	Net Change (2021)
2021	49,278		9,900	
2026	52,900	3,622	11,500	1,600
2031	56,400	7,122	13,100	3,200
2036	60,700	11,422	15,100	5,200
2041	65,000	15,722	17,100	7,200
2046	67,750	18,472	18,900	9,000
2051	70,300	21,022	20,700	10,800

GFRS continues to see call volume increase with community growth. In 2021 the Town of Georgina Fire Department responded to 2,245 calls. The volume of emergency calls in the Town of Georgina has increased from 1,520 in 2004 to 1,936 in 2008 to 2,245 in 2021.

In addition to the three existing fire halls, one additional future hall and two replacement halls exist on the 10-year capital plan. These include:

- S. Keswick Station (2024 - New)
- N. Keswick Station and Headquarters (2027 - Replacement)
- Sutton Station (TBD - Replacement)

Presently full- time administration staff includes:

- Director of Emergency Services - Fire Chief
- A Deputy Fire Chief of Operations and Training
- A Deputy Fire Chief of Fire Prevention, Investigations and Community Risk
- One full-time Administrative Coordinator
- One full-time Administrative Assistant

Non-administration staff includes:

- A Training Officer, and
- Fire Prevention Division consisting of one Fire Prevention Officer and two Fire Prevention Public Educators

The total Firefighting force for the Fire Suppression/Operations Division consists of:

- Full-time firefighting force of 40
- Volunteer firefighting force of 60, which equates to 20 per station.
  While Georgina is prescribed 60 volunteer positions, recently they have struggled to

recruit and retain these volunteer ranks. The diminishing pool of available volunteers reflects a trend seen throughout the region and across Canada.

The organizational chart noted in Figure 2 reflects the current updated reporting structure within the Fire Department. In addition, the Director of Emergency Services/CEMC/Fire Chief reports to the CAO and Town Council.

It should be expected that demand for services provided by GFRS will increase as a result of community growth. Both residential and business growth will cause increases in:

- Call volume
- Business inspections
- Community education programs
- Home visits

Modernization:

Growth within the community will also mean questions about whether the existing model of service is still adequate. Several larger departments on the east coast of the United States still use a composite department model but the proportion of career versus paid-on-call is significantly weighted on the career side. This is primarily due to the professionalization that is expected when serving a larger population. In addition, population growth is likely going to be dominated by a transient population that moves into the area rather than expansion due to growth of the existing population. This means that civic service will likely shift away from a local fire department to other services within the community that require less time commitment. Since Georgina's mission is to provide a service to the community, indicators of when the service models should be evaluated are when the services show signs of strain. This is identified further in the report where the National Fire Protection Association (NFPA) recommends response times as the primary indicator of reliable service.

Recommendation #1 - Service level monitoring:

ESCI recommends since GFRS's mission is to provide a service to the community, indicators of when the service models should be assessed are when the services show signs of strain. This is identified further in the report where the National Fire Protection Association (NFPA) recommends response times as the primary indicator of reliable service.

Cost:

Dependent on the growth rate but using the population model, a 1% increase, excluding inflationary costs, in annual fire department expenditures should be planned for.

Timeframe: Short term (0 – 2 yrs)

Section 2 – Planning

2.1 Three Lines of Defence
2.2 Strengths Weaknesses Opportunities and Threats
2.3 National Fire Protection Association Standards (NFPA)
2.4 Commission on Fire Accreditation International (CFAI)
2.5 Stakeholder Surveys

Section 2: Planning and Stakeholder Surveys

Planning is a key function of any organization and should be done with a focus on the present needs of the community, coupled with its future growth and how this will affect the service demands on the Fire Department. Through the work completed on their previous FMP (refer to Section 11, page 86 for further information) and the implementation of this FMP update process, GFD has clearly demonstrated a proactive approach towards it planning initiatives.

2.1 Three Lines of Defence:

Even though this review and its recommendations are grounded, in part, on the future configuration and utilization of the fire stations and its staff, it should be noted that the key focus, based on the Office of the Fire Marshal and Emergency Management (OFMEM), revolves around the following three lines of defence in relation to servicing the community i.e. Education, Inspection and Enforcement and Emergency Response (as described earlier in this report)

Based on these three lines of defence, the following strengths, weaknesses, opportunities and threats were identified.

2.2 Strengths, Weaknesses, Opportunities and Threats

This entire FMP document is the result of conducting a SWOT (strengths, weaknesses, opportunities and threats) analysis on the community which has resulted in a list of recommendations for the Town's Council, CAO and Fire Chief to consider and implement.

It is worth noting that the strengths and weaknesses portion of a SWOT are based on an internal review that identifies what is working well along with areas for improvement. The opportunities and threats portion are related to external influences and how these influences affect the operations and response capabilities of the Department.

As a starting point, this review has identified the following key SWOT themes:

Strengths

The Town of Georgina benefits from having three fire stations responding to emergencies. Two of these three stations (Keswick and Sutton) are staffed by full-time Firefighters, 24 hours a day, 7 days a week. The third fire station, located in Pefferlaw, is a 100% Volunteer fire station, which is supported by the full-time staff from the Sutton fire station. Even though Keswick and Sutton fire stations have a full-time compliment of Firefighters, all three stations are supported by a group of dedicated Volunteer Firefighters.

The Georgina Fire Department has strong relationships with neighbouring departments and a long history of cooperative services. The Fire Prevention Division is very proactive within the community in relation to education

and fire safety inspections and enforcement.

During our community survey and stakeholder meeting, it was noted that quick response to emergencies, along with having a well-equipped and trained cadre of staff is expected. These as well as supporting and promoting a robust public education program for the community rank as the top three anticipations of those who completed the surveys.

Weaknesses

The Georgina Fire Department has limited full-time suppression division staffing which means that it cannot maintain more than two crews capable of initially responding to any emergency (24 hours per day, 365 days per year). The department does have a compliment of Volunteer Firefighters that can respond to calls, but due to other commitments, such as their full-time jobs and family obligations, there is no guarantee these Volunteer Firefighters will be available to respond, as needed for the situation.

The Fire Department is currently operating out of three older stations that are in serious need of replacement / upgrades. That Pefferlaw station 1-8 is unable to accommodate the size of the apparatus that would be most appropriate for the community. All three stations have numerous issues that have been addressed in the Station Review report.

Opportunities

GFD has a mutual aid program in place in which it can call on neighbouring fire departments for assistance whenever resources are exhausted and there is an inability to handle with the situation in an efficient and effective manner. However, this type of resource is not meant to supplement GFD's resources; it is to be used when no other options are available such as automatic aid and fire services agreements. These two types of agreements offer the community a more consistent level of response to areas not properly covered by the local fire department.

As such, continued, active planning and cooperation with neighbouring municipalities is a cost- effective option for such things as automatic aid and fire service agreements.

Also, annual business planning and reporting on objective based results is another proactive approach utilized by the Fire Chief and his staff to update Council on how the fire department is meeting the needs of the community along with what future factors need to be considered by Council.

Threats/Challenges

Major emergencies stressing the available full-time and Volunteer suppression division staffing and equipment must be considered as the community's population continues to grow (both in the residential and commercial sectors) and age. As noted earlier in this document, Georgina can expect to see a 36% increase in population over the next 10 years (or more). This is a challenge that needs to be considered by most communities in the Province of Ontario.

The best way to deal with such challenges is to plan ahead by using related industry standards and look at comparable communities in relation to how they dealt with community growth.

A final challenge that is being seen by all communities is the so called "50 year storms". Due to changes in climate, inclement weather incidents, such as freezing rain/ice storms are becoming more commonplace and need to be part of the response program for each community. This change in climate conditions along with the resulting frequency and severity of incidents had also made the need for a larger response component to these emergencies more common place.

ESCI Update: (2022):

ESCI did not conduct a formal internal SWOT analysis. However, through stakeholder interviews, the following SWOT format presents some of our observations.

Strengths:

GFRS continues to operate from three fire stations. Since the publication of the 2016 FMP, the new Pefferlaw Station 1-8 was opened in 2021. Policy makers have recognized the continued community growth and have added new or renovated stations into the 10 year capital budget for:

- S. Keswick (2024 - New)
- N. Keswick Station and Headquarters (2027 - Replacement)
- Sutton Station (To be determined)

The fire administration reports a positive relationship between paid and volunteer staff. The ability to use volunteers to support full-time staff provides an opportunity to keep expenses down.

GFRS's continued focus on fire prevention is a source of pride for its administration and helps create positive relationships with external stakeholders.

Weaknesses:

Except for Pefferlaw, the remaining stations and facilities are identified as being in poor condition.

Large response areas like Georgina can make incident mitigation and management a challenge. Many incidents required of a fire department require more than one unit (Ideally staffed with 4 firefighters but no less than 3) to successfully and safely mitigate. Long response times, lack of steady response reliability and minimal resources create opportunities for increased risk to community and firefighter safety and increased loss. In addition, the 2010 FMP also identified a migration for the Keswick and Sutton stations to four firefighters per vehicle with funding being allocated for it by a 2017-2019 timeframe. Currently, Operations staffing is four positions short of this goal expected to be requested for 2023.

The ability to recruit and retain active volunteers continues to be a challenge. This mirrors trends seen regionally and throughout the country. Recent legislation has passed to support solutions by allowing firefighters to work and/or volunteer in multiple communities. This potentially increases the available labor pool of experienced firefighters to fill both volunteer and full-time ranks.

Ultimately, a measure of adequate staffing for an emergency is an Effective Response Force (ERF) which identifies standards for the number of resources expected to safely mitigate an incident. NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* recommends an ERF for urban areas (population >385/km^2) of fifteen firefighters to be on scene within nine minutes ninety percent of the time. Questionable staffing puts the ability to achieve this standard at risk and either slows down mitigation of the emergency or puts firefighters at greater risk.

The current staffing level has not increased commensurate with the increase in calls for service. Over the past three years, simultaneous calls have also increased from 10.2% to 13.1%. Increases in simultaneous calls mean longer response times as units from other stations may need to cover for units already on calls. Even in the absence of additional fire hall construction, staffing levels should be monitored and adjusted related to the location and frequency of calls for service.

Opportunities:

The opportunities cited in the 2016 FMP still exists. Automatic aid agreements are widely accepted as a means of communities supporting each other and enhancing service effectiveness without the cost of additional personnel provided there is a mutual and equivalent balance of benefit to all communities involved. Automatic aid is a form of mutual aid where response units of other jurisdictions respond to an incident alongside the initial jurisdiction response creating a heavier and potentially more effective initial attack force.

Also, the opportunity for increased collaboration of services is positive. While local control is usually the main obstacle to regionalization, the willingness to be open to increased collaboration and examine its benefits is by itself, a positive step for the community and organization. Potential long-term cost savings through either immediate savings or future cost-avoidance as well as opportunities for increased professional development via a larger organizational pools can enhance community service and employee well-being.

Threats:

All of the threats cited in the 2016 FMP still exist. These include increased demands for service as well as increased storm frequency related to the changing climate.

Modernization

GFRS staff consistently demonstrate a spirit of desiring to progress. The pace of progress is often a source of tension when engaging in discussions about assuming a proactive or reactive response philosophy to change. GFRS leadership uses a proactive philosophy of change using data and regular staff and community interaction and benchmarks that regularly evaluate its service model. Where in the past a service model that was largely unchanging and incorporating tradition, a culture of change while valuing tradition is being nourished.

Recommendation #2 - Key Performance Standards development:

ESCI recommends that GFRS continue to be proactive in its philosophies of change assuming progressive postures that use data, regular community and staff interaction, and benchmarks that regularly evaluate its service model.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Short term (0 – 2 yrs)

2.3 National Fire Protection Association (1201, 1221, 1710 and 1720)

To assist with EMT's review and related recommendations, reference has been made to National Fire Protection Association Standards, which are seen as the North American benchmark for the fire service.

NFPA Standard 1201 – Standard for Providing Fire and Emergency Services to the Public Section 4.3.5 notes:

- The Fire and Emergency Services Organization (FESO) shall provide customer service-oriented programs and procedures to accomplish the following:
    1. Prevent fire, injuries and deaths from emergencies and disasters
    2. Mitigate fire, injuries, deaths, property damage, and environmental damage from emergencies and disasters
    3. Recover from fires, emergencies and disasters
    4. Protect critical infrastructure
    5. Sustain economic viability
    6. Protect cultural resources

To accomplish this, an FESO must ensure open and timely communications with the CAO and governing body (Council); create a master plan for the organization; ensure there are mutual aid and automatic aid programs in place, along with an asset control system and maintenance program.

Also, to provide the fire department clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure in Fire Departments. This is where NFPA 1710 and 1720 need to be considered. These two standards are utilized for the following:

- NFPA 1710 refers to goals and expectations for career Fire Departments
- NFPA 1720 refers to goals and expectation for Volunteer Fire Departments

The fourth standard noted is NFPA 1221, which addresses the goals and objectives for the taking of calls for service and dispatching of these calls. Georgina Fire Department receives its dispatching services from Richmond Hill Fire Department. GFD has adopted the use of response time measurements as a guide to evaluate their capabilities in relation to the previously noted NFPA standards. However, it should be noted that the GFD's Establishing and Regulating By-law does not actually specify what response time criteria is expected of its Fire Department. This in itself does not restrict GFD from tracking and reporting on its level of service, on a year-to-year basis. In fact, this is seen as a good practice for the Fire Chief, as it allows for a proper assessment of response types, number or responses and a thorough evaluation of response times to assess if the Fire Department is able to keep up to the demands of the community.

Establishing & Regulating By-Law

The current Establishing & Regulating By-Law is a dated document, going back to 2004. Although many parts of the E&R document still line up with the current FPPA, some definitions within the E&R document are no longer to par with the present legislation.

To assist the Fire Chief in meeting the needs and expectations of Council, the E&R By-law does note that the Fire Department shall respond to a variety of incidents (noted below) designed to protect the lives and property of the inhabitants of Georgina. The following list has been extracted from the 2004 Establishing and Regulating By-law #2004-0040:

Fire Suppression and Emergency Response:

1.1 Fire suppression services shall be delivered in both a proactive and reactive mode and shall include search and rescue operations, forcible entry, ventilation, protecting exposures and overhaul.

1.2 Emergency pre-hospital care responses and medical acts such as defibrillation, standard first aid and CPR, shall be maintained to base hospital protocols as agreed.

1.3 Technical rescue services may include confined space rescue and farm rescue incidents, resources permitting. Motor vehicle extrication shall be provided to make accessible and readily removable any trapped patients and to assist with removal and patient care as necessary. Water/ice rescue services as necessary.

1.4 Hazardous material responses shall be conducted to the minimum level to ensure rescues, life safety, evacuation and containment when resources permit.

Even though no actual response time criteria are noted in the Department's E&R By-law, a review of the past three to five years offers a good understanding and baseline for how the Department has been performing, along with identifying areas for improvement.

ESCI Update (2022):

NFPA standards are goals to strive for however it is an imperfect task to try to achieve every national standard. However, even if the objectives identified within the standards are not only unachievable but unrealistic, the models behind NFPA 1710 and 1720 still offer an approach that can be set in place to monitor the efficiency of the organization.

The annual evaluation section of NFPA 1720 (Section 4.4.2) states the following:

"4.4.2.1 The fire department shall evaluate its level of service, deployment delivery, and response time objectives on an annual basis.

4.4.2.2 The evaluations shall be based on data relating to level of service, deployment, and the achievement of each response time objective in each demand zone within the jurisdiction of the fire department. "

Part of the intent of the standard is to have a measurable performance outcome and a standard in which to measure it against. Taking into account community risk, finances, values, operational standards, employee effectiveness and other factors, community leaders choose a level of service to provide to the community. NFPA standards can help direct the discussion if not be the standard chosen. The performance standard then becomes the performance objective and if community leaders decide to increase the level of service, the performance standard gets raised. Community leaders should periodically review the set performance standards along with outcomes to determine if adopted standards are being met.

The most current edition of NFPA 1201 amends sections 4.3.5 to read:

1) *Prevent fires, injuries, and death from emergencies and disasters*
2) *Mitigate fires, injuries, deaths, property damage, and environmental damage from emergencies and disasters*
3) *Recover from fires, emergencies, and disasters*
4) *Protect critical infrastructure*
5) *Sustain economic viability*
6) *Protect cultural and historical items"*

Note: point #6 above was amended to include historical resources.

NFPA 1225 Standard for Emergency Services Communication published its first edition in 2020. As part of the NFPA Emergency Response and Responder Safety Document Consolidation Plan, NFPA 1225 is a combination of Standards NFPA 1061 Standard for Public Safety Telecommunications Personnel and NFPA 1221. The goals and objectives for the taking of calls for service and dispatching of these calls that previously resided in NFPA 1221 now reside in NFPA 1225.

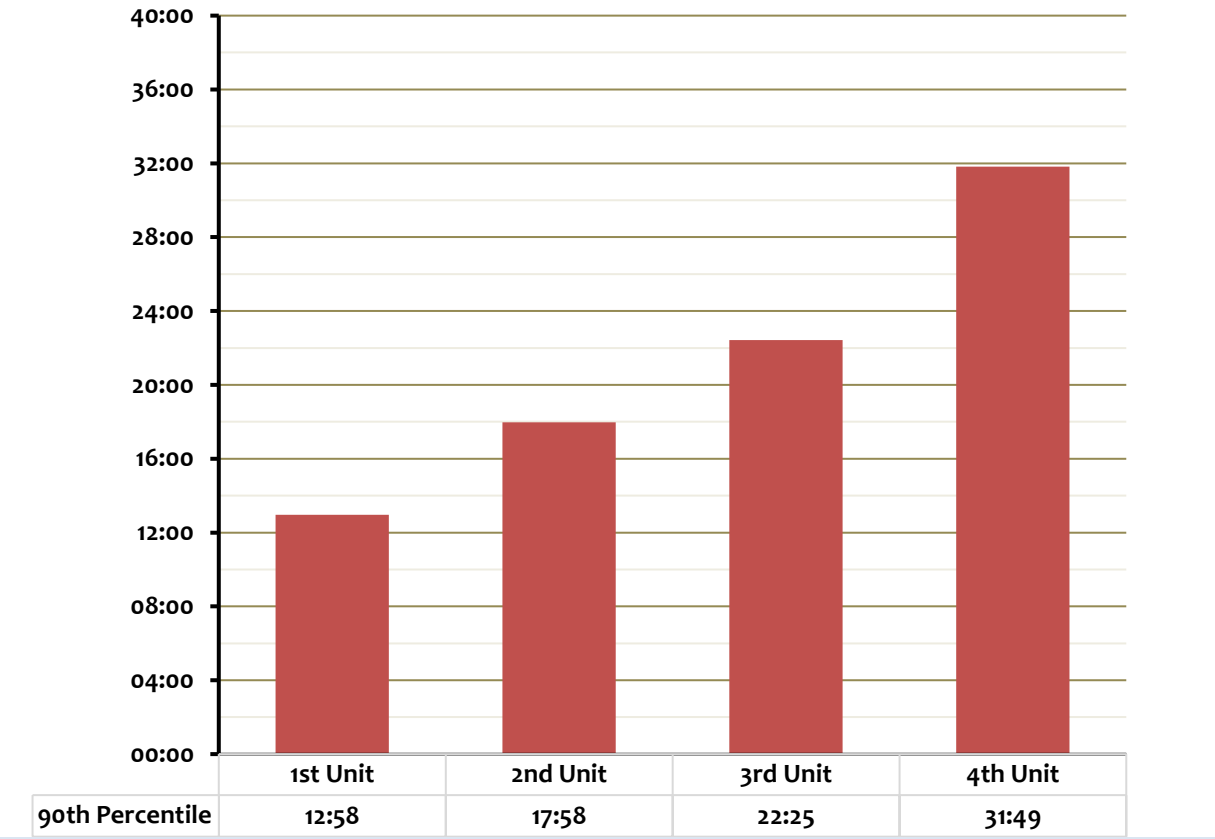
The main establishing and regulating by-law is still the 2004 Establishing and Regulating By-law #2004-0040. In addition to outdated terminology, an antiquated organization chart exists within the by-law. The 2004 by-law should be reviewed and revised as necessary and should be reviewed for revision at regular intervals in the future.

Modernization:

NFPA 1720, Standard on Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments sets a response standard of fifteen firefighters arriving on the scene within nine minutes for ninety per cent of all calls. This can be a starting point for discussion and while this standard may not be achievable, nine minutes to 60% of the calls may be. In addition, having this standard gives the community the opportunity to see where its risks are located which then lead to discussion about possible solutions.

Below is a chart that shows average times of units arriving on scene. Using a staffing of four firefighters per vehicle, one can calculate that the ERF standard will be achieved with the arrival of the fourth vehicle.

Georgina 90% Percentile for Unit arrivals



	1st Unit	2nd Unit	3rd Unit	4th Unit
90th Percentile	12:58	17:58	22:25	31:49

Measurable outcomes and transparency are some of the easiest ways fire department can provide transparency to their stakeholders. If a performance standard is being met, resources are sufficient (or in excess). If a performance standard is not met, additional resourcing is needed or the performance standard must be lowered. Either way, transparency on the state of a local fire department is well-documented.

Lastly, NFPA 1710 and 1720 are undergoing a revision that will be called NFPA 1750 and will combine both standards into one. The Fire Chief should monitor the progress of this change and see if new applicable standards are produced.

Recommendation #3 - Performance standards approval and adoption:

ESCI recommends the Fire Chief, with Town Council approvals, should adopt measurable performance standards for each of the three lines of defence.

Recommendation #4 - NFPA standards monitoring:

ESCI recommends the Fire Chief should monitor the progress of the changing NFPA 1710 and 1720 standards to the new NFPA 1750 and see if new applicable standards are produced.

Recommendation #5 - Establish and Regulate Bylaw update:

ESCI recommends the current bylaw, which is now 18 years old, should be reviewed and updated, as needed. At the least, the organizational structure outlined in Appendix ‘B’ of the bylaw should be updated.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Short term (0 – 2 yrs)

2.4 Commission on Fire Accreditation International (CFAI)

"When a Fire Department applies a model of risk assessment to help determine their level of emergency services commitment, they have moved from being reactive to being proactive." – quote from CFAI overview information.

In the Fire service, the NFPA (National Fire Protection Association) standards are seen as the benchmark to strive for. Many of these standards have, to a large degree, been adopted by the Office of the Fire Marshal and Emergency Management. The CFAI is seen as the organization that has incorporated all national and local standards, which becomes the model for best practices for an organization.

Benefits of Accreditation:

- A system for risk assessment, decision making, and continuous improvement.
- A plan for sustainment and self-assessment.
- Agency performance objectives and performance measures.
- Verification by peers.

The CFAI program revolves around 10 categories, which are:

1. **Governance and Administration** – includes such things as organizational reporting structure, establishing and regulating by-law requirements, etc.
2. **Assessment and Planning** – evaluating the organization in relation to future planning
3. **Goals and Objectives** – what are the goals of the fire service; do they have a strategic plan in place
4. **Financial Resources** – does the organization have sufficient funding in place to effectively meet the needs of internal and external stakeholders
5. **Programs** – this includes fire prevention, fire suppression, training, emergency management
6. **Physical Resources** – what is the state of the fire stations and are they located in the best location to respond to the community in a timely manner
7. **Human Resources** – staffing of the organization in all divisions and also how does the fire
8. service work with the municipality's Human Resources Department
9. **Training and Competency** – review of all training programs based on what the Fire Department is mandated to provide
10. **Essential Resources** – this section covers such things as water supply, communications/dispatch and administrative services
11. **External Systems Relations** – includes such topics as mutual aid, automatic aid, third party agreements, etc.

All of these sections will be discussed within each related section of this FMP plan document.

ESCI Update: (2022)

In the latest version of the CFAI model (10th edition), an eleventh category or program discipline has been added, 'Health & Safety', which focuses on organizational practices to reduce employee injury and liability.

Modernization:

The accreditation model is often ignored when there is belief that the achievement of full accreditation status is not a possibility. This belief stems from the amount of organizational change that would be required to become compliant with the accreditation model or the lack of resources necessary to prepare for the evaluation. (Some estimates are it takes at least a year of time for a single individual in a full-time capacity to create/compile the information required not including any organizational changes that would be required to meet accreditation.)

However, even if the accreditation recognition is not feasible, it is still a strong and nationally recognized model for how to shape a fire service organization. Without it, most fire service leaders just perpetuate what they inherited or create their own. The accreditation model is one that leaders can embrace as full of direction that can improve the integrity of the organization amongst community and staff.

The initial steps of building an accreditation model organization is to understand why the fire department exists in the first place and that is accomplished through a Community Risk Assessment which is currently in progress.

Recommendation #6 - Accreditation:

ESCI recommends even without pursuing full accreditation, GFRS should strongly consider adopting the CFAI model standard for fire service excellence. This would require staff time to be allocated to begin working towards the accreditation model.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Long term (5 - 10 yrs)

2.6 Stakeholder Surveys

In order to get a fullsome understanding of how well GFD is meeting the needs of its staff and the community, surveys were conducted with both the internal staff of the GFD and external stakeholders.

To assist with the completion of the staff surveys, information meetings were held during the months of June and July, 2016. The community survey was advertised through local media and was set up on the Department's web site (in the form of an electronic survey). Within the community surveys, participants were also offered the opportunity to be part of a focus group meeting. This community stakeholder meeting was held on Tuesday, September 13th at the Town's Council Chambers.

Meetings were also held with members of Council and with the Town's Administrative Officer (CAO); along with a meeting with the past three retired Fire Chief's that was conducted on September 16th.

Internal Surveys

During the FMP process, feedback was gathered from internal staff, which included Firefighters, Administration, Training and Fire Prevention.

- Much of the information received from the internal surveys identified the following:
- The majority of the staff are very proud of the service that they offer to the community and believe that the community feels that they are served by a professional and dedicated group of Firefighters.
- There is an overall desire to not only upgrade the present fire stations, but to also look at the relocation of the stations to more effectively meet the needs of the community in relation to response times. The age of the present fleet was also noted as a concern.
- The top three major challenges for the Fire Department are the rapid growth that is occurring in Georgina; the need for better facilities and newer equipment; and also response times to the more rural areas such as Udora.
- The top three services that they feel are priority to the community are:
    - Firefighting
    - Rescue (i.e. motor vehicle accidents)
    - Technical rescue response (i.e. water rescues) and medical responses
- It was noted that in the future, to look at staffing the Pefferlaw fire station as the community grows.
- Also noted that there are different levels of fire service within the Town of Georgina.

External Surveys and Stakeholder Meeting Results

Input from the community is vital as it gives the Fire Department an accurate indication of how the public perceives the Department and suggests areas for improvement from those with first-hand interaction with the Department.

The following input was received:

- Most respondents see the GFD as a dedicated and professional service
  - The top three concerns noted by external respondents are:
  - That the Fire Department responds in a timely manner to calls for assistance
  - The presence of the Fire Department within the community in relation to public education and related safety training, and
  - The cost of the fire service
- The top three services noted by external respondents are:
  - Firefighting
  - Rescue (i.e. motor vehicle accidents)
  - Technical rescue (i.e. water rescues), and also Medical Assist and Response
- In relation to what is needed over the next 10 years, the top responses were:
  - More full-time staff to meet the growing demands of the community
  - More public safety education and attendance at community events
  - Well-equipped fire stations and equipment to meet the demands of a growing community

Overall, both internal and external surveys, and stakeholder meetings were quite positive about the services being offered by GFD. The primary focus we heard (both internally and externally) was ensuring that the Fire Department continues to expand as the community grows and that GFD can continue to provide a quality service to the community.

Recommendations

1. That a full review of the Fire Station Report recommendations be addressed as noted within Appendix "D" of this document.
2. It recommended that a full review of the Establishing and Regulating By-law document be completed to include the following items:
   - Update the document's language to reflect what is noted in the FPPA
   - Incorporate, where appropriate, any references to NFPA standards that the Fire Department deems necessary
   - Measurable service levels that can be reported to Council on an annual basis
   - Composition to represent the level of service to be provided as outline throughout the FMP, and
   - A review to be conducted by the Town's Solicitor

<u>Associated Costs</u> (all costs are approximate)

- The Fire Station Report has noted an approximate costing of $500,000 for the required repairs/upgrades to the three fire stations
- There is no initial cost associated with the updating of the By-law. However, if changes in service levels are made then some associated costs (or savings) may be realized

<u>Timelines</u>

- As those timelines noted with the Fire Station Report – see attached document for more information
- Short Term (1 – 3 years)

ESCI Update: (2022)

In June and July 2022, Emergency Services Consulting International (ESCI) and the Georgina Fire and Rescue Services (GFRS) created a survey using SurveyMonkey to be completed by community members of the town of Georgina. The survey was made available for members to complete from June 8, 2022 through July 31, 2022. One hundred thirty-seven residents completed the survey although not all one hundred thirty-seven completed all fourteen questions of the survey. The survey had an 83% completion rate.

In June 2022, ESCI conducted interviews with stakeholders to solicit feedback, perspectives and thoughts on the consolidation of the fire departments of Georgina and East Gwillimbury. Stakeholders included elected officials, town administrators, department staff and other external partners.

Internal Interviews Summary

Stakeholders collectively indicated that they supported the investigation of a composite consolidated department. Stakeholders did feel changes in department structure were necessary to address a variety of arising issues including population growth, societal changes, lack of adequate staffing, increasing call volume and increasing service delivery need.

Georgina stakeholders placed emphasis on a more robust, effective response force to mitigate emergencies with on-scene full-time resources quickly.

Department staff indicated they were deeply passionate about the fire service, love working for their communities and appreciate the support of their elected officials. Staff also said that they support the municipality and their commitment to crafting innovative ways to respond to these growth challenges as they strive to meet the societal and economic imperatives of the new public safety environment.

External Survey Results

The survey was divided into five sections:

- Mission, Vision, and Guiding Principles
- Community Planning Priorities
- Community Service Priorities
- Public Education Programs, Inspections/Enforcement, Emergency Response
- Customer/Citizen Input

A majority of the respondents were satisfied with the Mission and Vision of the GFRS and provided suggestions to enhance the principles and values of the department.

The two most important planning elements reported were:

- Ensure adequate fire department response time to emergencies
- Ensure adequate resources and staffing

The four most important services ranked by respondents were:

- Technical rescue
- Fire suppression
- Assess risks within community
- Training for staff to safely and professionally deliver services

Respondents felt that public fire education programs should increase their visibility and were in favor of annual scheduled inspections for code enforcement.

When asked open-ended questions to provide input, respondents expressed their expectation that the fire department had quick response times and delivered adequately trained and professional staff.

Modernization:

GFRS should prepare for not only population growth but a change in population character. In other words, the values of the long-standing Georgina communities may be subject to change with not only an increasing population but a demographically different population. Constant interaction with the community stakeholders through state-of-the-art communication technologies (younger generation will prefer) will be vital for the department to stay ahead of potential challenges and keep abreast on the values of the community.

The workforce in Georgina is also changing. Not only is there a transition to a mostly career force in process but the values of career firefighters are or at least can be different than those of volunteer firefighters. The fire chief has recognized that a diverse workforce contributes ideas to a strong organization and works with them regularly to strengthen the organization and its service to the community.

Recommendation #7 - Communication:

ESCI recommends the fire chief should continue to keep open communication channels with both the community and workforce. When possible, the fire chief should keep all staff up-to-date on strategic objective timetables and implementation progress as well as continuing to involve the workforce in implementation processes.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Ongoing

Of the initial Fire Station Report recommendations, nine have been fully completed. These include:

- Complete replacement of Station 1-8 Pefferlaw
- Engineering review of all stations
- Adequate safety features for apparatus bay doors
- Installing fencing around the training tower
- Upgrading and installing gender appropriate showers
- Repairing vehicle exhaust system at Sutton Station 1-6
- Protecting electrical panels on the apparatus floor.

The main establishing and regulating by-law is still 2004 Establishing and Regulating By-law #2004-0040. In addition to outdated terminology, an antiquated organization chart exists within the by-law. The 2004 by-law should be reviewed and revised soon and should be reviewed for revision at regular intervals in the future.

Section 3 – Risk Assessment

3.1 Community Risk Assessment
3.2 Simplified Risk Assessment
3.3 Integrated Risk Management Web Tool

Section 3: Risk Assessment

3.1 Community Risk Assessment – Current and Future Needs

The Georgina Fire Department covers an area of approximately 280 square kilometres and serves a population of approximately 48,000. Georgina is located in central Ontario in the most northern portion of York Region and is nestled on the south-eastern shores of Lake Simcoe, with 52 km of shoreline.

Municipal responsibilities

It is important to note that it is Council that sets the level of service within the community. The Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4, outlines the responsibilities of a municipality, providing a framework for protecting citizens from fire:

2. (1) Every municipality shall,
   (a) Establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and
   (b) Provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Further, the Act provides a description for the methods of providing services; Methods of Providing Services

(2) In discharging its responsibilities under subsection (1), a municipality shall:
   (a) Appoint a community fire safety officer or a community fire safety team; or
   (b) Establish a Fire Department.

The Town of Georgina has established a Fire Department as outlined in Section 2.2(b) of the Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4. The level of service that thereby must be provided is further outlined in Section 2.1(b) of the Act. The level of service to be provided is determined by the needs and circumstances of the community and can be derived from conducting a Fire Masterplan for Council. The 'needs' can be defined by the type of buildings, infrastructure, and demographics of the local area which in turn can be extrapolated into the types of services that would be offered and needed. The 'circumstances' are considered as the ability to afford the level of service to be provided.

Together, the needs and circumstances assist in identifying a level of service for the community. This combination meets the expectations of the public for safety and the affordability of this level provided.

The Georgina Fire Department also provides Firefighting assistance to Georgina Island, Fox Island, and Snake Island, through a Fire Protection Agreement.

Georgina is currently experiencing significant growth in the community. While the majority of this growth is residential in design, there are commercial and industrial possibilities. This increase does impact the service

delivery of the Fire Department, and undoubtedly the need and call for service will increase along with the population.

Detailed growth numbers are outlined within *Appendix D – Georgina Fire Stations Review,* along with more detailed information relating to fire station needs.

ESCI UPDATE: (2022)

The Georgina Fire and Rescue Services Department covers an area of approximately 287 square kilometers and serves a population of approximately 49,000, with an anticipated growth to 67,000 people over the next 10 years. This kind of population growth will require significant changes to the fire department when comparing where the fire department is currently to where it will be and it will be driven by a perpetual need to monitor risk and either choose a proactive or reactive posture.

Proactive postures can take the form of preparation before the need exists or while the need is developing. Reactive postures take the form of responding once the need is established and experienced. There are pros and cons to each.

In a proactive stance, the fire department adjusts prior to the need developing establishing a readiness for whatever may develop. The positive for this philosophy is the department continues its mission with little negative effect as a result of the growth. It has anticipated the impact and is ready for it. The negative is that the anticipated growth may not occur or not occur as expected. This could contribute to a structure that is over prepared or out of alignment with the community with an associated cost. While communities may be willing to accept nominal excesses for short periods of time, extended periods of over preparedness contributes to excess costs as well as increased resistance to whatever change may eventually materialize.

The advantage to a reactive stance, is that costs directly fund an existing need. Once a need has been identified, a sensible solution is applied. The disadvantage is that the anticipated need may have a severe consequence that the community is not prepared for causing the community to incur a loss of some form. In addition, if the recognized need grows rapidly, it may outrun the provision for that need creating a situation of always having to catch up.

The fire protection agreement with Fox Island, Georgina Island and Snake Island are also a unique characteristic of Georgina Fire. The possibility of future development on any or all of these islands would change the required level of fire protection. Current and projected development should be monitored and the fire protection agreement should be revaluated on a scheduled basis.

Modernization:

York Region's identification of Georgina as an anticipated area of rapid growth gives community leaders a strong anchor for creating a proactive management strategy. From the fire department's perspective, this should include the anticipation of risk in quantity, quality, and geography. Far from knowing the exact progress of the growth and its timeframes, the fire department can begin by proactively identifying potential risks, either increased existing risk or new risk, and creating trigger points for actions. Some examples can be:

- "once our annual business inspection rate is above one year for two consecutive years, we hire an additional inspector".
- when our 90th percentile call response time exceeds 8 minutes, we consider the use of part-time or career staffing.
- "when our 90th percentile response times increase to 9 minutes, we examine our staffing, response and fire hall location models."

These risks, standards, and triggers should be transparent and regularly shared with the community so when increased resources or model changes are necessary, the community is well-prepared or at least well-informed.

Part of the development of triggers is the consideration of adequate resources to safely and effectively handle the incident. Effective Response Force (ERF) is a term used to identify the appropriate level of resources required to do this and for volunteer departments is outlined in NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments.* Fire departments can use this standard to establish appropriate responses to best expect sufficient resources to successfully and safely mitigate an incident.

Recommendation #8 - Growth monitoring:

ESCI recommends the Fire Chief should consider the establishment of organizational change trigger points associated with the growth of the community. When trigger points are met, the fire chief and town council should be aligned as to what the next action steps are.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Ongoing

3.2 Simplified Risk Assessment

As noted in the Ontario Fire Marshal's Public Fire Safety Guideline, PFSG 04-40A-03, "The simplified risk assessment (SRA) and ensuing fire concern profile will assist in identifying the degree to which these activities are required in accordance with local needs and circumstances. The simplified risk assessment is made up of the following components:

- Demographic profile
- Building stock profile
- Local and provincial fire loss profiles
- Information analysis and evaluation
- Priority setting for compliance
- Implementing solutions

Conducting a simplified risk assessment is a practical information gathering and analysing exercise intended to create a community fire profile that will aid in identifying appropriate programs or activities that can be implemented to effectively address the community's fire safety needs."
The SRA is an integral building block in the data gathering process to understand the community that is served by the Fire Department. As the community continues to change, the document should not remain stagnant as the results are only accurate to the time of which the review was conducted.

NFPA 1730 Standard on *Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*, notes that this review should be conducted at a minimum every five (5) years or after significant change. This standard also establishes a process to identify and analyze community fire risks. This standard refers to the process as a Community Risk Assessment. There are seven (7) components of a Community Risk Assessment outlined in NFPA 1730. These components are:

1. Demographics
2. Geographic overview
3. Building stock
4. Fire experience
5. Responses
6. Hazards
7. Economic profile

Current Condition

The SRA for the Town of Georgina is dated from 2004 with the last review dated December 2010. Since this time, there has been significant building stock growth in the community (namely residential, but not exclusively). This growth has impacted the demographic profile and consequently, the needs and circumstances for the delivery of services by the Fire Department. It should be noted that the changes from the 2004 SRA will relate to increases in numbers, or frequency, and not necessarily the services that are required to be delivered. One caveat to the

changes in services offered relates to Vulnerable Occupancies. With the inception of the legislation around Vulnerable Occupancies, the Fire Prevention Officers have done an admirable job in maintaining the departmental responsibilities. With the new requirements under the legislation, additional time is necessary for the Fire Prevention staff to adequately ensure compliance. This is time that cannot be spent in conducting other fire prevention inspections and public education.

Future Needs

Understanding the community and its needs allows the Fire Administration to be proactive in education and enforcement programs to the community and to all fire department staff. As noted earlier, detailed growth analysis can be found within *Appendix F – Georgina Fire Stations Review*.

When fires occur within the community, the Firefighters can be ready to battle the Fires because they are trained, not only in the basics of firefighting but, in the special hazards that are found within the community. These hazards are noted in the SRA/CRA so that Fire Administration can ensure programs are in place to deal with them. As the community grows the frequency of, and the need for service will grow. There will be a need for additional staff in the Fire Prevention Office, the Fire Suppression Division, and Training.

ESCI UPDATE: (2022)

Fire departments including Georgina are mandated to replace SRA's (Simplified Risk Assessments) with CRA's (Community Risk Assessments). CRA's and their standards are promoted by the Center for Public Safety Excellence and usually go beyond just identifying risk within the community but then provide the foundation for a Standard of Cover (SOC). In other words, the services that are provided to the community, the SOC or 3 lines of defence, are defined by the risks within the community. Some of those risks are risks that all communities experience such as fire and a need for EMS, other risks are more local such as demographics and geography.

The five steps of developing a CRA/SOC include the following:

1. Documentation of the area characteristics
2. All-hazard risk assessment and response strategies
3. Current deployment and performance
4. The plan for maintaining and improving response capabilities
5. Development of the CRA/SOC.

The most recent SRA was completed in 2004 and updated in 2013. As legislated, all fire departments in Ontario will require a SRA/CRA to be completed prior to 2024. Georgina has currently assigned the task of the CRA to the new Deputy Chief position. This is expected to be completed in 2023.

A HIRA (Hazard Identification Risk Assessment) would be part of a CRA and in Georgina, refers to the larger scale incidents that could be beyond the local management abilities of Georgina staff alone and often involve regional resources. This then makes planning on a regional level the more efficient and effective way of handling large-scale incidents. The HIRA for Georgina is handled locally by the Community Emergency Management Coordinator (fire chief) and is then reviewed by the York Regional Emergency Manager.

Modernization:

CRA's are tools for both the community and the fire department to use. The community learns about the hazards and risks they are exposed to understand the what and the why of their local fire department preparedness needs. The fire department uses the CRA to support the strategies of the organization, determine the requirements to mitigate the risk, and provide reason for the decisions that are made.

Recommendation #9 - Develop and maintain a Community Risk Assessment (CRA):

As directed by the Office of the Fire Marshal, complete the CRA by July 1, 2024 to replace the existing Simplified Risk Assessment (SRA). Maintain a CRA framework.

Cost:

Approximately 20 hrs. or greater staff time annually. GFRS staff to evaluate and budget finances and time accordingly.

Timeframe:

Ongoing

3.3 Integrated Risk Management Web Tool

The Ontario Fire Marshal's Communiqué 2014-12 introduced the Integrated Risk Management Tool to the Fire Service. The document notes:

"The IRM Web Tool was developed as part of a commitment made by the OFMEM to the Ontario Association of Fire Chief s (OAFC) and other stakeholders. The IRM Web Tool can be used by all Ontario's municipalities and Fire Departments to determine building fire risks in their respective communities by taking into account building characteristics (building factors) and the three lines of defence against fire (Three Lines of Defence):

Line one: Public Fire safety education
Line two: Fire safety standards and enforcement
Line three: Emergency response"

The Integrated Risk Management Web Tool is built around the three lines of defence and intended for municipal and fire service decision-makers. The tool was designed to assist municipalities in fulfilling the responsibilities prescribed in Section 2 of the Fire Protection and Prevention Act, 1997 (FPPA).

The concept of the IRM is a "building by building" assessment but its goal is to go beyond simply taking stock of buildings within the community; it was intended to be a holistic approach that is meant to combine all of the Fire Department's efforts in relation to:

- Fire prevention and education initiatives, which includes updated community reviews through the use of the OFMEM Simplified Risk Assessment
- Fire station locations and ability to respond in an efficient and effective manner
- Identification of hazardous situations/locations within the community
- Training and equipping of the Firefighters to execute their duties in a safe and efficient manner

As such, the IRM approach is a combination of all facets of the fire service that is meant to combine a review of building stock, fire safety and prevention related issues to be addressed, ability to effectively and efficiently respond to emergencies and also how well equipped and trained the firefighters are to deal with emergencies within the community. It should be realized that conducting a review of every building within the Town of Georgina may not be practical. Utilizing NFPA 1730 definitions of risk categories may guide Council in deciding the focus and service level within the community. Council should decide (with input from the Fire Chief) what is the acceptable risk to manage in the community based on the needs of the community and balanced with the circumstances to deliver the services.

NFPA 1730 defines the risks in three categories and provides examples for each. These risk categories are:

High-Risk– an occupancy that has a history of high frequency of fires, high potential for loss of life or economic loss, or that has a low or moderate history of fire or loss of life, but the occupants have a high dependency in the built-in fire protection features or staff to assist in evacuation during a fire or other emergency.

Examples: apartment buildings, hotels, dormitories, lodging and rooming, assembly, child care, detention, educational, and health care

Moderate-Risk– an occupancy that has a history of moderate frequency of fires or a moderate potential for loss of life or economic loss

Examples: ambulatory health care, and industrial

Low-Risk – an occupancy that has a history of low frequency of fires and minimal potential for loss of life or economic loss

Examples: storage, mercantile, and business

Current Condition

Based on EMT's review of GFD's Simplified Risk Assessment (2004), it would appear that the key fire safety related issues facing the community are within:

- Vulnerable Occupancies – of which there are 14, as per SRA 2004, and more expected within the coming years
- Schools – of which there are 18
- Residences

The building stock of the Town of Georgina as noted within the SRA (2004) is:

- Group A (Assembly) – 176
- Group B (Institutional) – 14
- Group C (Residential) – 12876
- Group D & E (Commercial) – 568
- Group F (Industrial) – 80
- Not Classified in OBC (trailer parks) – 3

Utilizing the IRM tool, in conjunction with the guidance from NFPA 1730, will provide a picture of the resources, time, and tools required to keep the fire risk in the community to a manageable level, as defined by Council. It is important to note the number of buildings within Georgina and the continual growth that is expected. This current and future building stock put pressure on the Fire Prevention Officers to accomplish an adequate amount of inspections to ensure fire code compliance within the community. To determine the current staffing needs, NFPA 1730 outlines a five step process within Appendix C of the standard. This sample staffing exercise is not part of the requirements of the standard but forms a guide for informational purposes. It is important to restate that it is Council that sets the level of service within the community. This level of service must be based off the local needs and circumstances.

The activities of the Fire Prevention Division (FPD) for the first quarter of 2016 were 157 Fire Prevention Office activities. These range from site plan reviews, routine inspections, licensing, complaints, and requests, to name a few. There were 13 Public Education events that brought the fire safety message to 157 adults and 460 children. The Fire Prevention Division has done a good job in ensuring ongoing inspections and education programs are being conducted. Fire Prevention Officers are duty-bound to conduct inspections upon request or complaint in accordance with the Fire Prevention and Protection Act.

In review of the Georgina Fire Department Guideline 8-1-G, routine inspections are mentioned; however, it is recommended that the FPD review its inspection program to identify levels of desired frequency for these inspections. It should also be noted at this time, that the Fire Underwriters Survey supports and recommends that a level of frequency be identified by the Fire Department in its quest towards ensuring a fire safe community.

FUS Suggested Frequency Chart:

Occupancy	FUS Benchmark
Assembly (A)	3 to 6 months
Institutional (B)	12 months
Single Family Dwellings (C)	12 months
Multi-Family Dwellings (C)	6 months
Hotel/Motel (C)	6 months
Mobile Homes & Trailers (C)	6 months
Seasonal/Rec. Dwellings (C)	6 months
Commercial (F)	12 months
Industrial (F)	3 to 6 months

Future Needs

The utilization of the IRM tool will provide an understanding of a fire risk building by building that can be extrapolated to show the risk in given areas. Along with the Simplified Risk Assessment, this tool will aid in the building and providing for the fire prevention inspection and education programs. Upon updating the Simplified Risk Assessment, the IRM tool could be used to begin the process of measuring the community for fire risk. A thorough risk assessment can also avoid invalid comparisons between your Fire Department and others. A municipality with a similar population may have very different fire risks, and therefore very different fire protection needs. A thorough risk assessment will ensure that such comparisons are valid. By providing a valid basisfor comparison, a sufficient risk assessment can also provide confidence that innovations introduced elsewhere can be successfully applied in your municipality.

3.3.1Home Fire Sprinklers

The NFPA, along with the Ontario Association of Fire Chiefs are strong supporters of home sprinkler systems as a way to reduce the risk to life and property from fire.

In a recent NFPA on-line article, it was noted that because fire sprinklers react so quickly, they can dramatically reduce the heat, flames, and smoke produced in a fire. Properly installed and maintained fire sprinklers help save lives.

Fire sprinklers have been around for more than a century, protecting commercial and industrial properties and public buildings. What many people don't realize is that the same life-saving technology is also available for homes, where roughly 85% of all civilian fire deaths occur.

Facts about home fire sprinklers

Automatic sprinklers are highly effective and reliable elements of total system designs for fire protection in buildings. According to an American Housing Survey, 4.6% of occupied homes (including multi-unit) had sprinklers in 2009, up from 3.9% in 2007, and 18.5% of occupied home built in the previous four years had sprinklers.

Source: *U.S. Experience with Sprinklers*

- 85% of all U.S. fire deaths occur in the home.
- Home fire sprinklers can control and may even extinguish a fire in less time than it would take the fire department to arrive on the scene.
- Only the sprinkler closest to the fire will activate, spraying water directly on the fire. In 84% of home fires where the sprinklers operate, just one sprinkler operates.
- If you have a fire in your home, the risk of dying is cut by about one-third when smoke alarms are present (or about half if the smoke alarms are working), while automatic fire sprinkler systems cut the risk of dying by about 80%.
- In a home with sprinklers, the average property loss per fire is cut by about 70% (compared to fires where sprinklers are not present.)
- The cost of installing home fire sprinklers averages $1.35 per sprinklered square foot.

The Home Fire Sprinkler Coalition (HFSC) is a leading resource for accurate, noncommercial information and materials about home fire sprinklers for consumers, the fire service, builders, and other professionals.

By working the developers and the public in promoting the installation of home sprinkler systems, the Georgina Fire Department is demonstrating a pro-active approach in relation to educating the public on another viable option for home owners to help reduce the risk from fire. As such, it is recommended that GFD investigate this safety initiative as part of their fire prevention and public education initiatives.

Recommendations

3. It is recommended that this Simplified Risk Assessment/Community Risk Assessment (SRA/CRA) be updated in accordance with NFPA 1730, being every five years or as necessary with changes. To aid Council in their decision making, there is merit in providing an updated assessment at the beginning of every Council term so that the sitting Council understands the platform on which the services conducted by the Fire Department are built.

4. It is recommended that the Fire Chief provide Council with an updated review of the Simplified Risk Assessment coupled with the Integrated Risk Management tool of the identified High, Medium, and Low risk occupancies.

    - This picture of the community at large will then provide Council with the information to be able to decide what is an acceptable fire risk within the community. It must be understood that this is not the final step in the equation. This first step, as this will provide a look at the needs of the community. Utilizing the data given, the Fire Chief can then provide Council with the staffing levels and resources to manage the identified risks. If these staffing levels and resources are acceptable to Council, then the fire prevention and education programs can be built thereby. These two parts of the equation represent the 'needs' and 'circumstances' as noted in the Fire Prevention and Protection Act 2(1)(b).

5. It is recommended that upon completion of the SRA/CRA and IRM, as noted in recommendation 4, that the Fire Chief provides Council with a draft policy for review and passage that outlines a fire inspection program to address identified needs and expected outcomes of the program. This program should outline the building types and the frequency of inspections.

6. It is recommended that the Fire Department meet with all local community groups to form a partnership in relation to organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community.

7. It is recommended that the Fire Prevention Division review its inspection program to identify levels of desired frequency for these inspections. It should also be noted at this time, that the Fire Underwriters Survey supports and recommends that a level of frequency be identified by the Fire Department in its quest towards ensuring a fire safe community.

8. It is recommended that the GFD work with developers and the public to make the Home Sprinkler Systems initiative a part of their fire prevention and public education program.

Associated Costs (all costs are approximate)

- No cost associated with the initial development of these recommendations – staff time only. But once approved then new/updated programs that may evolve from the recommendations could incur some associated costs
- FUS chart recommendation will incur more Fire Prevention staff related time

Timelines

- Short-Term (1-3 years), and ongoing for all other recommendations
- Immediate (0-1 year) for recommendations 6 and 8

ESCI UPDATE: (2022):

The IRM tool is an excellent tool to help fire departments manage their occupancy risk. Unfortunately, currently, it appears this tool is no longer available. Most fire department management software packages now include this type of occupancy tracking module. Georgina uses both Firehouse software and Target Solutions as RMS. A transition to ESO is expected as Firehouse Software reaches the end of its service life. All these software packages offer some level of occupancy tracking module.

Georgina regularly uses fire suppression crews to supplement fire prevention personnel although it was paused during the pandemic. At various times suppression crews have been tasked with initial compliance inspections in commercial occupancies, however as of 2022 their primary function is Safe Home inspections of residential occupancies. In 2016 and 2017 all officers received training in in-service inspections and are currently in the process of NFPA 1031 certification training (*Standard for Professional Qualifications for Fire Inspector and Plan Examiner*).

GFRS administration reports that an updated fire inspection program for commercial occupancies is a goal for 2024.

Modernization:

The next practical step to enhance the application of the data collection would be to make the data available to responders. Some fire departments refer to this as pre-planning where suppression crews perform tactical planning on properties using various type of fire and hazard possibilities, developing strategies ahead of time, and practice them ahead of an actual emergency. Sometimes this is at an actual location and other times it is classroom. Either way, knowledge of building construction, layout, and content contributes to tactic selection and execution. Fire departments are now taking the gathered data, including floor plans if they are available or have internal graphic expertise, and making them available to suppression forces so that while enroute to a call, personnel can educate themselves on the building they are responding to and be ready to execute any pre-decided tactics. This makes an emergency safer, managed more efficiently and consequently greatly reduces loss potential.

In order to accomplish this, all responding units require laptops or an equivalent technology with access to the database collection which can be done real-time through a wireless connection or through data that is periodically loaded and updated on each computer. Georgina has the hardware technology in all the vehicles and is in the process of developing the appropriate data processes.

Recommendation #10 - Preplanning:

ESCI recommends GFRS should continue to strive for including building and preplan data vehicle tablets in pre-fire operations.

Cost:

$5,000 for software technology that provides preplan data to apparatus.

Timeframe:

Medium term (2 – 5 yrs)

Update to the NFPA US Experience with Sprinklers Report – (Oct 2021):

- 5% of homes contain home sprinklers

In sprinklered properties

- Civilian fatality rate 88% lower
- Civilian Injury rate 28% lower
- Property loss 62% lower
- Fire spread confined to room of origin – 97%
- Fire controlled – 96%
- 89% fires managed by 1 sprinkler, 99.5% by 5 or fewer

With sprinklered residential fires,

- 1% of fatalities
- 5% of injuries
- 3% of total property loss

Where smoke detectors are present, the statistics are:

- 28 percent lower when battery-powered smoke alarms were present, but AES protection was not
- 46 percent lower when smoke alarms with any power source were present but AES protection was not
- 66 percent lower when hardwired smoke alarms were present but AES protection was not
- 89 percent lower when sprinklers and hardwired smoke alarms were present

Modernization:

Mandatory residential sprinkler systems are a value point of debate between the fire service and the building construction industry. The Canadian Association of Fire Chiefs, estimates for the average cost of home sprinkler installation in new construction is $2.50 - $4.19 per ft^2 or $6,250-$10,475 for a 2,500 ft^2 home. Other sources report costs lower and higher depending on the state of the home and the sprinkler configuration. The building industry projects higher costs and of such nature that it can affect home-purchasing ability.

While the value comparison is sometimes like comparing apples and oranges, i.e. risk of less certain fire/death to the housing costs, a reasonable middle-of-the-road solution is for local communities to mandate with new single-family residential development, the offering of residential sprinkler systems complete with statistical supports and costs. The fire department should validate (or provide) the statistical support and costs for sprinkler systems with input from the builder on necessary costs.

A second option is to move away from the all/nothing concept of home sprinkler protection by having legislation that allows partial home sprinkler installation in those areas that are identified as have the highest potential of fires starting, i.e. the kitchen and furnace area.

Recommendation #11 - Residential sprinklers:

ESCI recommends GFRS should continue collaboration with builders to offer residential sprinkler installation as a part of new construction.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Ongoing

Section 4 – Department Staffing & Related Programs

4.1 Administration Division
4.2 Training & Education Division
4.3 Fire Prevention and Public Education
4.4 Suppression/Operations – Full-time & Volunteer

Section 4: Department Staffing

Within the scope of work noted in the original Request for Proposal document, staffing needs was identified as a priority in which EMT is to review the capabilities of existing staffing and identify future needs for each of the following divisions: Suppression, Training, Prevention and Administration.

When considering the overall staffing needs for the Department, some of the key questions that should be considered are:

- Is there a proper level of senior staff to manage the Department and its divisions?
- Is there adequate administrative support staff to assist with such things as records management and addressing day-to-day operations of the Department?
- Is there a need for other support staff in relation to vehicle and facility maintenance?
- When does a Fire Department switch to a full-time fire service, no longer dependent on response support from Volunteer Firefighters?

This section will discuss the following divisions:

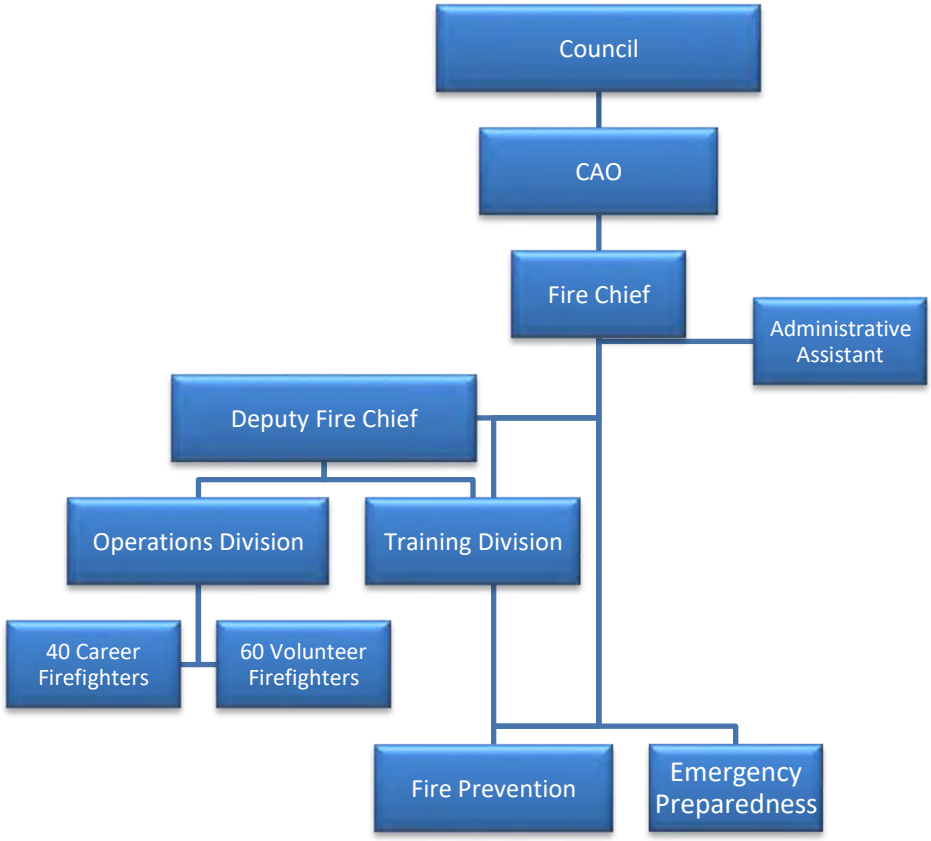
- Administration
- Training
- Fire Prevention, and
- Fire Suppression

Fire Department Organizational Overview

The Fire Chief of the Georgina Fire Department reports to the Town's Chief Administrative Officer (CAO) in a council-manager style of government. The Fire Chief serves as the head of the Fire Department and is supported by:

- Deputy Chief
- One Full Time and one Part Time Administrative Assistant
- A Training Officer, and
- Fire Prevention Division consisting of one Fire Prevention Office and two Fire Prevention Public Educators

FIGURE 4: Fire Department Organizational Chart - Administration



As previously noted, the Georgina Fire Department organizational chart identifies a present strength of 40 full-time Firefighters, 60 Volunteer Firefighters, and eight Administrative Staff (which includes the Fire Chief, Deputy Fire Chief, Administrative Assistant, Fire Prevention and Training Division).

To make an informed decision on staffing requirements, consideration is dependent on the following points:

- Does the Fire Department have an approved response criterion as a baseline?
    - Has Council given direction to the Fire Chief (based on his recommendations) on expected response times that are to be met by the Fire Department?
    - If so, then is the Department meeting this response criterion on a consistent basis or is it struggling to meet the response times and perhaps falling behind?
- Does the Department have issues/concerns with getting enough Volunteer Firefighters to respond during day time hours (or other times) on a consistent basis to ensure a viable level of response (this is a key question for the Pefferlaw fire station as it is dependent on Volunteer Firefighters for response to this area)?
    - Even though the Sutton station can send a full-time crew to the Pefferlaw area in most cases, what are the response times and Volunteer compliment when Sutton is not available to respond?
- What local and national standards and guidelines exist to help direct the Fire Department in its decisions relating to station location and staffing models?

- Specifically, NFPA 1710 and 1720 along with reference to the CFAI "industry best practices" recommendations.

- What growth or decrease in population and industry is occurring that may precipitate more or less fire stations and staffing?

For Fire Departments in Ontario, there are the Public Safety Guidelines that are created and distributed by the Office of the Fire Marshal and Emergency Management. These Guidelines advise fire services in relation to all aspects of delivering Fire Prevention, Fire Suppression and fire station location programs.

There are also industry best practices in the form of the National Fire Protection Association's 1201, 1710 and 1720 standards, which guide:

- 1201 – Standard for Providing Fire and Emergency Services to the Public
- 1710 – Standard for Career Fire Departments, and
- 1720 – Standard for Volunteer Fire Departments.

NFPA 1201 – Standard for Providing Fire and Emergency Services to the Public

The Fire and Emergency Services Organization (FESO) shall provide customer service-oriented programs and procedures to accomplish the following:

1. Prevent fire, injuries and deaths from emergencies and disasters
2. Mitigate fire, injuries, deaths, property damage, and environmental damage from emergencies and disasters
3. Recover from fires, emergencies and disasters
4. Protect critical infrastructure
5. Sustain economic viability
6. Protect cultural resources

NFPA 1710 and 1720 – Career and Volunteer Fire Departments

As for the 1710 and 1720 standards;

- NFPA 1710 In relation to the career Firefighter component, chapter 4 notes, the expectation is that the crew is able to:
  - turnout (respond) from the station within 80 seconds, 90 percent of the time;
  - with a travel time of 240 seconds (4 minutes) for the first unit to arrive on scene, 90 percent of the time in the primary response area
  - and a travel time of 480 seconds (8 minutes) for the remainder of the response contingent, 90 percent of the time.
- NFPA 1720 for Volunteer Fire Departments, chapter 4, notes the following for the deployment of Volunteer Firefighters:
  - 4.3.1 notes the following; "the Fire Department shall identify minimum staffing requirements to ensure that a sufficient number of members are available to operate

safely and effectively.

- *In Urban areas (population greater than 1000 per square mile), there should be a minimum response of **15 staff within 9 minutes**, 80 percent of the time*
- *In Suburban areas (population of 500 – 1000 per square mile), there should be a minimum response of **10 staff within 10 minutes,** 80 percent of the time*
- *In Rural areas (population of less than 500 per square mile), there should be a minimum response of **6 staff within 14 minutes,** 80 percent of the time."*

To accomplish this, as noted in the NFPA Standards, the Fire Department should endeavour to meet the stated minimum response standards based on responding to a 2000 sq. ft. single family dwelling. The dwelling (noted in the Standard) does not have a basement or other exposures (buildings close enough to each other to create a greater possibility for fire spread). However, most homes in Georgina have basements and are built close enough to each other to create that "exposure" for potential fire spread, which must be considered by the Fire Department in its response efforts.

Presently, GFD is diligently working at meeting this standard in relation to population verses staff/response times. Based on response data review and discussions with the Fire Chief, GFD is demonstrating a strong level of success in meeting the response criteria. It should also be noted that with its compliment of dedicated full-time and volunteer staff, they are also doing an admirable job at meeting the needs and expectations of the community, as noted by the input received through the community surveys and stakeholder meeting.

So, one question that is posed in situations like GFD, who are a composite mix of full time and volunteers, when does a fire department move from a composite service to fully career? There is no document that specifically identifies the tipping point for this move. It is based on the level of service set by the community's Council, coupled with regular reports by the Fire Chief on how the Department is meeting or not meeting these expectations.

There are many factors including the number of Volunteers arriving when paged out, how quickly they respond to the page, what the turnout is based on the time of the day and day of the week (e.g. Volunteer availability day shift vs. night shift), etc. Volunteers must be provided with the same minimum training certifications and equipment. Recruitment and retention of Volunteers is becoming more of a challenge with the increasing training that they must commit to on an annual basis and high staff turnover with many younger Volunteers actively looking for full-time Firefighting careers.

Some composite Fire Departments have identified where to focus additional career Firefighters by identifying call volume, growth of the community, and, more specifically, what times of the day were the most challenging for Volunteer Firefighter responses. As with most Fire Departments, the day time hours from Monday to Friday are the greatest challenge for the volunteer component due to fact that most Volunteer Firefighters are either at work, school or taking care of family during the day time hours. As such, some departments initially focus a full-time component that works Monday to Friday. However, as noted, GFD has 24/7 coverage at two of its fire stations – Keswick and Sutton. It is the Pefferlaw fire station that is in need of this regular review and

consideration.

Another indicator for making this decision is tracking the number of Firefighters that arrive at the fire station to respond. If the standard set by the Department is that three or more Volunteer Firefighters must arrive at the station before the fire truck can respond, then this should be monitored along with how many times, a station is not able to muster up the needed personnel to have an effective response force. This type of monitoring would be more suitable to the Pefferlaw fire station as this is a fully Volunteer station.

In summary, going to a completely full-time service is a large cost to the community and this is why many communities have accomplished this in stages to meet the present needs of the community. Georgina's model of a composite fire department is a very cost-effective form of fire protection for a community of its size.

4.1 Administration Division

During EMT's evaluation of GFD, it was identified within the previous Fire Master Plan that more administrative staff were recommended, over and above the one Administrative Assistant that was presently on staff. Since that time (of the previous FMP) a part time Administrative Assistant has be brought onto the staff roster. However, with the growth of the Department, along with the ongoing demands for more accurate records management, fire prevention programs and internal training needs, it would appear that transitioning this part time position into a full time Administrative Assistant position is needed.

4.1.1 Commission on Fire Accreditation International

The CFAI Accreditation program has a specific section that evaluates the administration component of a Fire Department. In this section the following points are noted:

Category 9C: Administrative Support and Office Systems

Administrative support services and general office systems are in place with adequate staff to efficiently and effectively conduct and manage the agency's administrative functions, such as organizational planning and assessment, resource coordination, data analysis/research, records keeping, reporting, business communications, public interaction, and purchasing.

With all this in mind, it was noted during creating of the FMP that there is a total of 3 full-time administrative staff, which include the Fire Chief, Deputy Fire Chief and one full-time Administrative Assistant. There is also one part-time Administrative Assistant. Due to the size of the GFD, it was discovered that the administrative staff are challenged to meet the daily demands of the Department, along with ensuring that all Departmental data and documents are kept up to date. As such, it is recommended that for the immediate future, the part-time Administrative Assistant hours be increased to full-time status.

ESCI UPDATE: (2022):

Presently full- time administration staff includes:

- Director of Emergency Services - Fire Chief
- A Deputy Fire Chief of Operations
- A Deputy Fire Chief of Fire Prevention, Investigations and Community Risk
- One full-time Administrative Coordinator
- One full-time Administrative Assistant

Non-Operational staff include:

- A Training Officer, and
- Fire Prevention Division consisting of one Fire Prevention Officer and two Fire Prevention Public Educators

The total Firefighting force for the Fire Suppression/Operations Division consists of:

- Full-time firefighting force of forty
- Volunteer firefighting force of sixty, which equates to twenty per station. While Georgina is authorized sixty volunteer positions, recently they have struggled to recruit and retain these volunteer ranks. The diminishing pool of available volunteers reflects a trend seen throughout the region and nation.

With a ratio of forty career to sixty paid-on-call firefighters, GFRS does not comply with the definition of a volunteer fire department and is considered a composite fire department which it will remain at until career staff makes up eighty-five percent of the total workforce. With this new definition, elements of the NFPA 1710 standard can be considered as viable performance standards.

Modernization:

In composite fire departments, there are two approaches to performance standards. The first is to have a single standard that takes into consideration that part of the firefighting force will be coming as a paid-on-call force and consequently that is factored into a performance standard. For example, if the national standard for an ERF (effective response force) is to completely arrive within eight minutes, then including a composite factor may change that to ten minutes.

The second approach is to have a performance standard that applies to the career portion of the department and a separate performance standard that applies to the paid-on-call portion of the department with both being routinely evaluated. An example here would be that turnout

times for career staff must be within ninety seconds of the dispatched call. Turnout times for the volunteer staff could be a vehicle staffed with 2 firefighters must be responding within five minutes of dispatch.

A challenge that often occurs is that capabilities become the exclusive driver of response model selection rather than multiple drivers that include risk. In other words, rather than consider a response model change, it can be easier to just reduce performance standards to meet what is currently capable of being providing. The problem is not in having performance standards meet capabilities but in the lack of considering alternate response models before the performance standard is reduced.

Recommendation #12 - Performance standards:

ESCI recommends GFRS should adopt performance standards that are consistent with community expectations and costs that would require incremental improvements of service delivery.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Short term (0 – 2 yrs)

Following the 2016 FMP, Georgina's training officer and administration completed its internal review of its training program. Georgina provides a robust training program to its members. Training ranges from online, to classroom to manipulative. Topics include various sub-disciplines within suppression, rescue, EMS, and administration. Full-time members receive on average 324 hours of training each year. Volunteer members receive approximately seventy-two hours of training per individual annually. Training includes multi-company drills, night drills, and multi-agency drills. An annual training plan is developed and presented to the Fire Chief for approval.

The most challenging area for training is the lack of training facilities. Station bays and classrooms are the only regularly available locations. Only two of the three stations have classroom space. Live fire props must be rented, and no dedicated training ground is provided.

Part of the Joint Fire Services review is to continue the 2016 recommendation of exploring a partnership opportunity to build a training facility within the capture area, which would be a cost effective measure for regional fire departments.

4.2 Training and Education Division

A fire service is only capable of providing effective levels of protection to its community if it is properly trained (and equipped) to deliver these services. Firefighters must be prepared to apply a diverse and demanding set of skills to meet the needs of a modern fire service. Whether assigned to Communication, Administration, Fire Prevention or Fire Suppression, Firefighters must have the knowledge and skills necessary to provide reliable fire protection.

GFD has one full-time Training Officer who is responsible for identifying the training needs of the suppression staff based on industry requirements. The Training Officer is responsible for planning and tracking the training of both full time and volunteer Firefighters.

During EMT's review of the Training and Education Division it was noted that the Training Officer is very active in relation to ensuring that all required training programs are being addressed to the best of the Department's ability. However, it was noted that the Department does lack a proper training facility to conduct regular hands-on programs such as live fire training and other specialized programs that require more training props outside of those available at the fire station. The Sutton fire station does have an area out back of the building where some auto extrication training can take place but since this area is part of a public parking lot and not secured within a fenced off area, there is a safety concern for the public.

NFPA 1201 – Providing Fire and Emergency Services to the Public notes in relation to training and professional development that:

4.2.1 Purpose.

The Fire & Emergency Services Organization shall have training and education programs and policies to ensure that personnel are trained and that competency is maintained in order to effectively, efficiently, and safely execute all responsibilities.

Presently, the Training Officer is aware of the program needs and facility requirements and has indicted that he is tracking much of this. However, to verify in a more formal manner that the Training Division is meeting the related NFPA program recommendations, the Training Officer should identify;

What training programs are required in relation to the services that GFD is providing

The number of hours that are required to meet each of those training needs

Resources required to accomplish this training

Joint partnerships with bordering fire departments and private organizations that can be entered into to achieve the training requirements identified by the Training Officer, and

To present an annual program outline at the start of each year to the Fire Chief, with noted goals and expectation, which are measured and reported on in relation to completion success rate at the end of each year.

4.2.2 Commission on Fire Accreditation International

The CFAI Accreditation program has a specific section that evaluates the training component of a Fire Department. In this section the following points are noted:

- Category VIII: Training and Competency
    - *Training and educational resource programs express the philosophy of the organization they serve and are central to its mission. Learning resources should include a library; other collections of materials that support teaching and learning; instructional methodologies and technologies; support services; distribution and maintenance systems for equipment and materials; instructional information systems, such as computers and software, telecommunications, other audio-visual media, and facilities to utilize such equipment and services. If the agency does not have these resources available internally, external resources are identified, and the agency has a plan in place to ensure compliance with and education requirements.*

Based on EMT's review, it is recommended that GFD continue to search out opportunities to conduct joint training programs with other fire departments by securing/scheduling neighboring training facilities. It is also recommended that GFD explore the opportunity to build a training facility within the capture area, which would be a cost-effective measure for all of the departments.

4.3 Fire Prevention and Public Education

Fire prevention and public education are number one in relation to the three lines of defence as noted by the Office of the Fire Marshal and Emergency Management. As such, fire prevention and public education should be seen as a priority.

NFPA 1730 is the standard relating to Fire Prevention and Public Education. This document makes note of the expectations of the division and also offers offer a formula for the head of fire prevention to utilize.

In relation to fire prevention programs, NFPA 1730 notes that this review should be conducted at a minimum of every five years or after significant change. This standard also establishes a process to identify and analyze community fire risks. This standard refers to the process as a Community Risk Assessment. There are seven components of a Community Risk Assessment outlined in NFPA 1730. As can be noted, these components are very similar in nature to that of the OFMEM Simplified Risk criteria:

- Demographics
- Geographic overview
- Building stock
- Fire experience
- Responses
- Hazards
- Economic profile

4.3.1 Determination of Current Staffing Requirements

To determine the current staffing needs, NFPA 1730 outlines a five-step process within Annex "C" of the standards. This sample staffing exercise is not part of the requirements of the standard, but forms a guide for informational purposes. It is important to restate that it is Council that sets the level of service within the community. This level of service must be based off the local needs and circumstances.

Note: Annex C is not a part of the requirements of this NFPA document, but is included for informational purposes only.

The five-step process involves a review of the following items:

Step 1 – Scope of Service, Duties, and desired outputs

Identify the services and duties that are performed within the scope of the organization. Outputs should be specific, measurable, reproducible, and time limited. Among the elements can be the following:

- Administration
- Data collection, analysis
- Delivery
- Authority/responsibility
- Roles and responsibilities
- Local variables
- Budgetary considerations
- Impact of risk assessment

Step 2: Time Demand

Using the worksheets in Table C.2.2(a) through Table C.2.2(d), quantify the time necessary to develop, deliver, and evaluate the various services and duties identified in Step 1, taking into account the following:

- Local nuances
- Resources that affect personnel needs

Plan Review - Refer to Plan Review Services Table A.7.9.2 of the standard to determine Time Demand.

Step 3: Required Personnel Hours

Based on Step 2 and historical performance data, convert the demand for services to annual personnel hours required for each program *[see Table C.2.3(a) through Table C.2.3(e)*]. Add any necessary and identifiable time not already included in the total performance data, including the following:

- Development/preparation
- Service
- Evaluation
- Commute
- Prioritization

Step 4: Personnel Availability and Adjustment Factor

Average personnel availability should be calculated, considering the following:

- Holiday
- Jury duty
- Military leave
- Annual leave/vacation
- Training
- Sick leave
- Fatigue/delays/other

Example. Average personnel availability is calculated for holiday, annual, and sick leave per personnel member (see Table C.2.4).

Step 5: Calculate Total Personnel Required

Division of the unassigned personnel hours by the adjustment factor will determine the amount of personnel (persons/year) required. Any fractional values can be rounded up or down to the next integer value. Rounding up provides potential reserve capacity; rounding down means potential overtime or assignment of additional services conducted by personnel (personnel can include personnel from other agencies within the entity, community, private companies, or Volunteer organizations).

- Correct calculations based on the following:
- Budgetary validation
- Rounding up/down
- Determining reserve capacity
- Impact of non-personnel resources (materials, equipment, vehicles) on personnel

More information on this staffing equation can be found within the NFPA 1730 standard. The Fire Prevention Division should assess the previous five steps and evaluate their present level of activity and the future goals of the Divisions.

To assist in this process, the Fire Prevention Division should more closely track the actual time spent on each of the Fire Prevention Office activities (ranging from site plan reviews, routine inspections, licensing, complaints, and requests, to name a few). Further, reporting should include clearly identifying the number of public education events including the numbers of adults and children reached. By identifying the time spent on each project and collating this into baseline (approximate) times, then the Fire Prevention Division can now use those hours spent as a baseline figure in applying future initiatives.

Further to what has already been noted by the NFPA, the CFAI outlines the following in relation to fire prevention and public education:

- A public education program is in place and directed toward reducing specific risks in a manner consistent with the agency's mission and as identified within the community risk assessment and standards of cover. The agency should conduct a thorough risk-analysis as part of activities in Category 2 to determine the

need for specific public education programs.

Along with the information noted in the previous paragraphs, the utilization of existing resources is a cost-effective option for the promotion of fire prevention and public education programs. To accomplish this, some fire departments have trained most, if not all their fire suppression staff to be certified to conduct fire prevention/public educations related inspections and programs. This not only brings more resources to the table, it also enhances the level of fire safety awareness by those trained staff.

As such, at this time, GFD should move towards the training and certification of its Fire Officers in the areas of fire prevention and public education trained and certified to at least:

- NFPA 1031 – Fire Inspector I, and
- NFPA 1035 – Fire and Life Safety Educator I

4.4 Recruitment and Retention of Volunteer Firefighters

Georgina Fire Department as with many other Fire Departments is always challenged when it comes to retention of Volunteer Firefighters. In many cases, this is not a reflection of the Fire Department, it is simply a reflection of the need for many of these Firefighters to move to other communities for work, educational or even family needs. This, however, does put a strain on the Department in the areas of recruitment, training and staffing of the fire stations.

The Office of the Fire Marshal and Emergency Management has put out a document on recruitment and retention in an effort to offer some criteria and/or guidelines that Departments can utilize. Refer to Appendix "D" for the document.

Some of these points relate to enhancing training and special projects for the staff to become more involved in; such things as:

- Long service awards in the form of remuneration or a stipend
- Education assistance programs to support the in their professional development
- Increased training opportunities

All of these concepts are great, but have limited effect if the community is not offering the desired employment, education or housing needs of the Firefighters.

Recommendations

9. It is recommended that the present part-time Administrative Assistant position be transitioned into a full-time position.
10. It is recommended that to verify the Training Division is meeting related NFPA (and other) training program recommendations, the Training Officer should identify;
    - What training programs are required in relation to the services that GFD is providing
    - The number of hours that are required to meet each of those training needs
    - Resources required to accomplish this training

- Joint partnerships with bordering fire departments and private organizations that can be entered into to achieve the training requirements identified by the Training Officer, and
- To present an annual program outline at the start of each year to the Fire Chief, with noted goals and expectation, which are measured and reported on in relation to completion success rate at the end of each year.

11. It is recommended that GFD continue to search out opportunities to conduct joint training programs with other fire departments by securing/scheduling neighboring training facilities whenever possible.
12. It is recommended that GFD explore the partnership opportunity to build a training facility within the capture area, which would be a cost-effective measure for all of the fire departments.
13. It is recommended that greater utilization of the full-time Fire Officer resources be incorporated into an annual fire prevention program on a more formal basis. To accomplish this, all full-time officers should be trained and certified to at least:

    - NFPA 1031 – Fire Inspector I, and
    - NFPA 1035 – Fire and Life Safety Educator I

    By having all full-time Officers trained to the noted levels, GFD will have a greater number of resources to draw upon in its public fire safety education and inspection programs.
14. Succession planning for Fire Prevention and Training Division personnel should be addressed to ensure trained personnel are ready to take over when the existing personnel retire.
15. The Fire Chief should investigate opportunities to promote retention of the Volunteer Firefighters as noted in the OFMEM document. The Fire Chief should continually recruit for Volunteer Firefighters in areas that are presently understaffed or have issues with response numbers to calls.
16. The Department should complete certification for staff for each position (that requires or recommends certification) and ensure that certifications are maintained.

Associated Costs *(all costs are approximate)*

- For the Administrative recommendation, the cost would be in relation to the increase in staffing hours from the part-time to full-time level – estimated to be approximately $30,000
- Regarding the training related recommendations, the costs are mostly related to staff hours unless outside facilities or trainers need to be accounted for
- No identified costs at this time in relation to the retention of Volunteer Firefighters. Costing would be based on what is recommended by the Fire Chief, costs could be incurred.

Timelines

- Short Term (1-3 years) – ongoing for all of the noted recommendations within this section except for 16
- Mid-Term (4-6 years) for recommendation 16.

ESCI UPDATE: (2022)

There are some additional questions that an organization can ask internally as to whether or not resources are adequate. It begins with identifying the appropriate levels of service to be provided to the community. These items should be reviewed on an annual basis.

- Is there a proper level of senior staff to manage the Department and its divisions?
- Is there adequate administrative support staff to assist with such things as records management and addressing day-to-day operations of the Department?
- Is there a need for other support staff in relation to vehicle and facility maintenance?
- When does a Fire Department switch to a full-time fire service, no longer dependent on response support from volunteer firefighters?
- Does the Fire Department have an approved response criterion as a baseline?
- Has Council given direction to the Fire Chief (based on his recommendations) on expected response times that are to be met by the Fire Department?
- If so, is the Department meeting this response criterion on a consistent basis or is it struggling to meet the response times and perhaps falling behind?
- Does the Department have issues/concerns with getting enough volunteer firefighters to respond during daytime hours (or other times) on a consistent basis to ensure a viable level of response?
- What local and national standards and guidelines exist to help direct the Fire Department in its decisions relating to station location and staffing models - specifically, NFPA 1710 and 1720 along with reference to the CFAI “industry best practices” recommendations?
- What growth or decrease in population and industry is occurring that may precipitate more or less fire stations and staffing?

ESCI calculates that an appropriate number of non-operational staff is ten to fifteen percent of the total Operational force. For example, if a fire department has one hundred career line firefighters, the department should have a non-operations force of ten to fifteen people.

In the case of Georgina, GFRS reports an operational staffing of 40 career firefighters, 60 volunteer firefighters, five administration staff, one training officer and three fire prevention staff. For the purpose of resource calculations only, various studies have reported a volunteer ratio equivalence to career firefighter of anywhere from 3:1 to 5:1 meaning three to five non-career firefighters count for one career firefighter. Using the middle of 4:1 puts the total operational force at 55 firefighters (40 + (60/4)) = 55. 10-15% of 55 is 6 to 8 non-operations staff. This shows that GFRS could have room for expansion in the administrative ranks provided the need is displayed.

A second calculation option is to use the methodology in outlined in the Fire Prevention part of this section but substitute administrative elements rather than fire prevention in steps 2 and 3 of the process. This calculation yields a personnel demand independent of operations staffing but more tied to exact workloads.

Recommendation #13 - Annual service review:

ESCI recommends GFRS should continue annual reviews of service provision involving all stakeholders.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Ongoing

Section 5 – Fire Suppression/Dispatching

5.1 Fire Suppression/Emergency Response
5.2 Dispatching Services

Section 5: Fire Suppression/Dispatching

5.1 Fire Suppression/Emergency Response

National Fire Protection Association (1710 and 1720)

To provide the Fire Department clearer focus on what the ultimate goals for emergency response criteria are, the National Fire Protection Association (NFPA) suggests that response times should be used as a primary performance measure in Fire Departments.

When considering the response times and related needs for a community, the fire response curve (FIGURE 3) presents the reader with a general understanding of how fire can grow within a furnished residential structure over a short period of time.

Depending on many other factors, the rate of growth can be affected in many different ways, which can increase the burn rate or suppress it through fire control measures within the structure.

When we look at the response time of a Fire Department, it is a function of various factors including, but not limited to:

- The distance between the Fire Department and response location
- The layout of the community
- Impediments such as weather, construction, traffic jams, lack of direct routes (rural roads)
- Notification time
- Assembly time of the Firefighters, both at the fire station and at the scene of the incident
    - Assembly time includes dispatch time, turnout time to the fire station and response to the scene. It should be noted that assembly time can vary greatly due to weather and road conditions, along with the time of day as many Firefighters are at their fulltime jobs and cannot respond to calls during work hours.

As noted in the following fire propagation diagram (or any other related diagram or fire spread data), the need for initiating fire suppression activities as soon as possible is critical.

It must also be noted that GFD responds to more than just fires; for example, motor vehicle collisions can create a medical or fire emergency that needs to be dealt as soon as possible. Hence the reason to be as efficient and effective as possible in responding to calls for assistance.

Figure 4: Fire Response/Propagation Curve

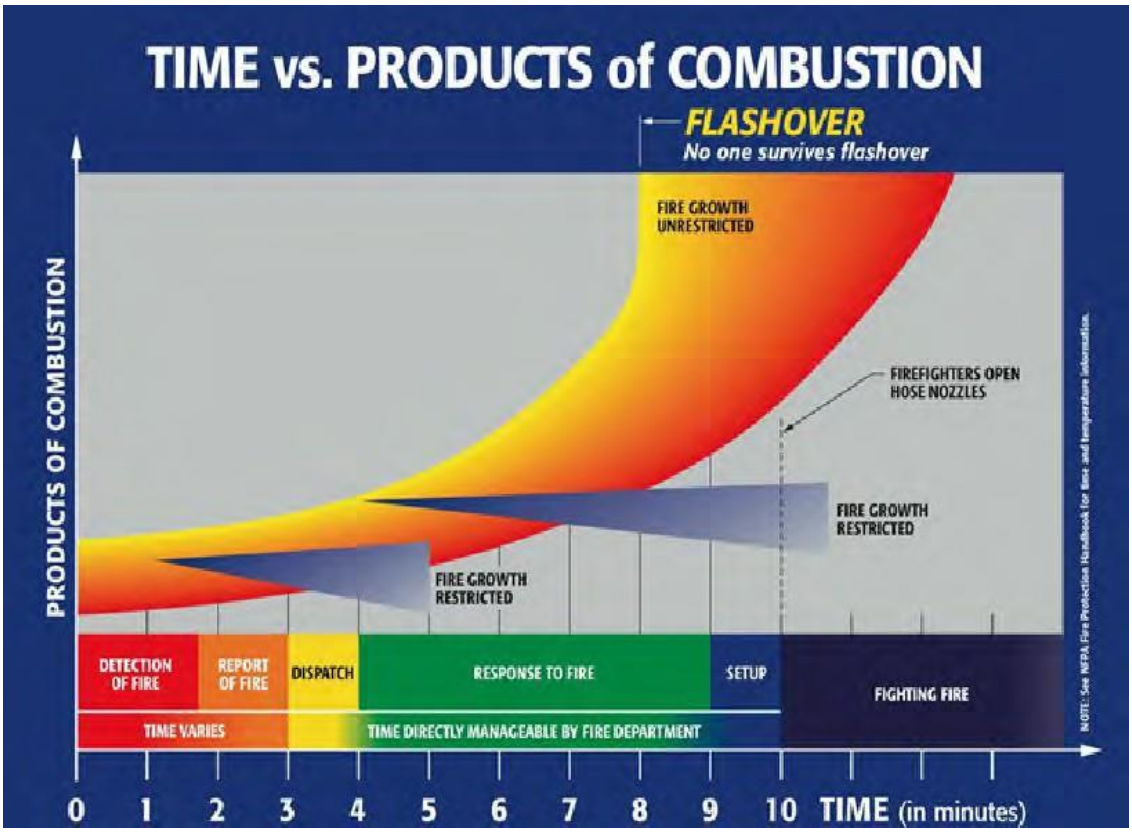


Figure 4 notes the following time variables,

- Detection of fire – this is when the occupant discovers that there is a fire. The fire may be in a very early stage or could have been burning for quite some time before being detected
- Report of fire – this is when someone has identified the fire and is calling 911 for help
- Dispatch – the time it takes the dispatcher to receive the information and dispatch the appropriate resources
- Response to the fire – response time is a combination of the following:
    - Turnout time – how long it takes the career Firefighters to get to the fire truck and respond or how long it takes the Volunteer Firefighters to get to the fire station to respond on the fire truck
    - Drive time – the time from when the crew advises dispatch that they are responding, until the time that they report on scene
    - Setup time – which is the time it takes for the fire crews to get ready to fight the fire, and
    - Fighting the fire – actual time on scene it takes to extinguish the fire.

Based on fire growth as demonstrated in figure 4, and the previously noted associate timelines, the overall goal of any fire department is to arrive at the scene of the fire and/or incident as quickly and as effectively as possible. In other words, if a fire truck arrives on scene in eight minutes or less, with a recommended crew of four or more Firefighters then there is increased opportunity to contain the fire by reducing further spread of the fire to the rest of the structure.

However, if the first arriving fire attack team arrives with only three Firefighters on board, then it is limited to what operations it can successfully attempt. Based on studies and evaluations conducted by the National Institute of Standards and Technology (NIST), the NFPA and Ontario Firefighter Health and Safety Section 21 Guidelines, no interior attack should be made by the Firefighters until more staff arrive on scene. The initial expectation is that a minimum of three Firefighters and one officer arrive on scene to make up the initial response team. This team of 4 can effectively do an assessment of the scene, secure a water source (fire hydrant), ensure the fire truck is ready to receive the water and get the fire pump in gear, and finally to unload and advance the fire hose in preparation for entry into the structure. A team of four also allows for adherence to the recommended "two-in, two-out" rule. Which means that when two Firefighters go into the structure, there are two outside ready to go in as back up.

This information is a valid reason for the Fire Chief to ensure that each station has a compliment that allows for an initial full crew response to such incidents. To accomplish this, a response protocol is in effect that ensures whenever a station and its Firefighters are dispatched to any type of call where back-up may be required, another station is automatically dispatched to the same incident.

Response Data

The following charts identify a comparison of response types and the response breakdown among the three fire stations for 2015. *To view the 2013 and 2014 data, refer to Appendix "E".*

As noted earlier in this document, there also needs to be a review of the future growth statistics and demographics of the community to understand where the potential future needs will be and where some efficiencies can be made.

The Georgina Fire Department response times are calculated based on the OFMEM definition which is from "dispatch time, to time of arrival at the incident". In other words, from the time the fire station or pager tones activate, to the time it takes to get to the fire station, get on the fire truck and drive to the emergency scene location. This response time does not include the time it takes to receive and dispatch the actual call.

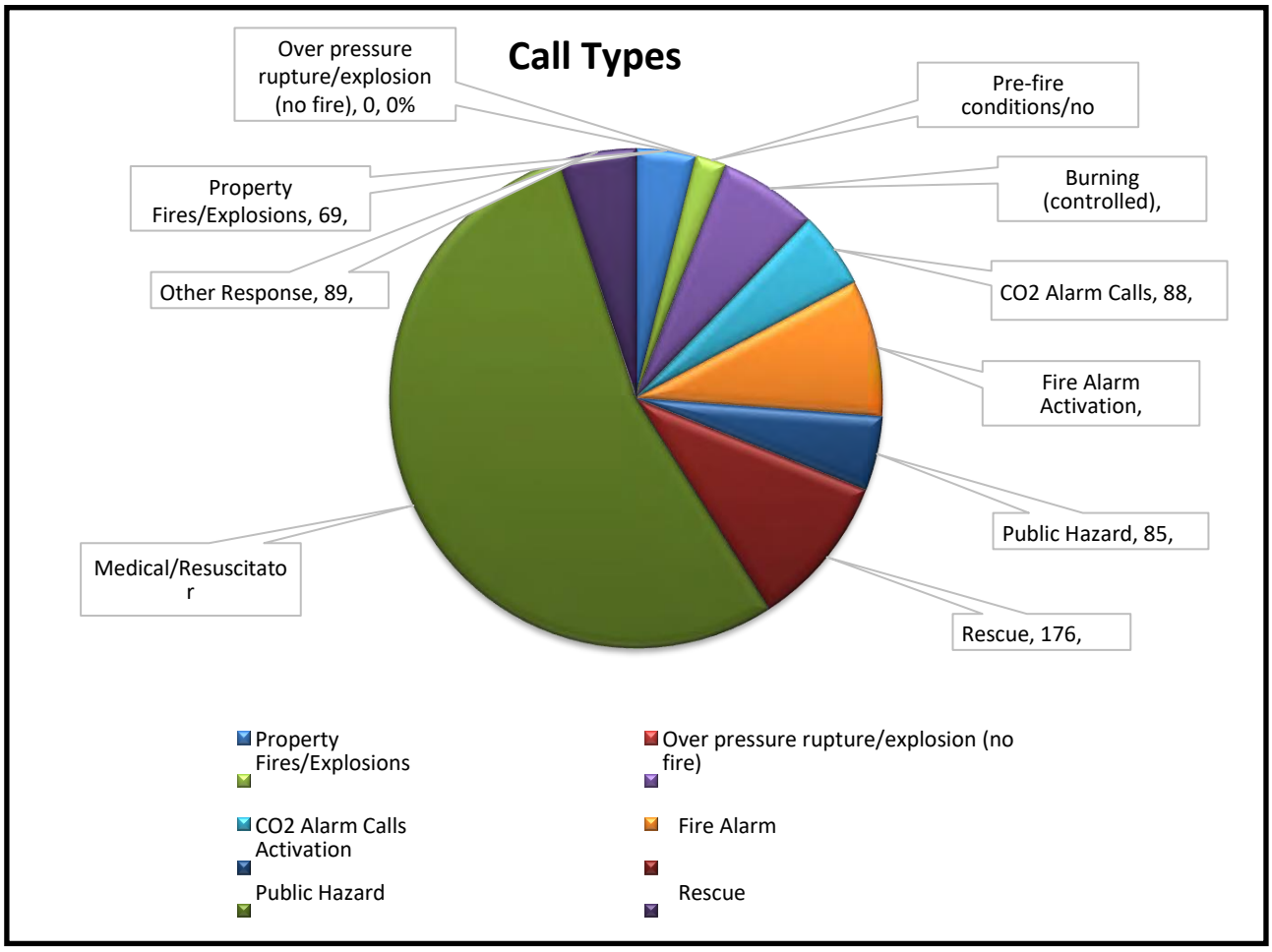
As already noted, fire department response time is a function of various factors including, but not limited to:

- The distance between the Fire Department and response location
- The layout of the community
- Impediments such as weather, construction, traffic, road networks
- Notification time
- Assembly time of the Firefighters, both at the fire station and at the scene of the incident
- The following set of charts (through the use of the supplied data) help to identify the types of calls that are creating the bulk of response demands and which station(s) are called upon the most for these responses.

Note: The following charts may not reflect the full amount of calls that the Fire Chief has noted to Council in a report. This is due to the following points:

- ***In order to get a more accurate accounting of response times, some of the calls were removed from the data analysis due to identified anomalies in time stamping. For example, if an emergency response time was noted as taking hours, then it was removed based on the assumption of a data entry error***
- ***Also, only the emergency responses were measured, which is the recommended practice noted by the NFPA and the Commission of Fire Accreditation International(CFAI)***
    - ***For example, a Department may have noted a total of 2,500 calls for service for the noted year. However, only 2,000 of those calls were emergency responses.***

FIGURE(S) 5: Comparison of Calls and Response Data between Fire Stations



As can be seen in the above chart, the top three types of calls that GFD responds to are:

- Medical/resuscitator, which accounts for 54% of the Department's overall responses
- Rescue related calls, which account for 10% of the Department's overall responses, and
- Fire alarm activations, which account for 9% of the Department's overall response.

Based on this information, the percentage comparison gives the Fire Chief and his staff the ability to monitor where the bulk of their resources are being utilized. This also offers greater focus for the Training Division to ensure that the Firefighters are receiving training related to the types of responses that will demand a higher skill set.

The following chats are a comparison of calls for service by fire stations 1-4, 1-6 and 1-8. The charts will note:

- Total calls per year by fire station
- An overview of the 2015 call breakdown
- The 90th percentile numbers for travel times and total response times

Note:

The 90th percentile criterion is the recommended practice that is endorsed by the National Fire Protection Association (NFPA) and the Commission on Fire Accreditation International (CFAI). This data is seen as being more accurate since it is evaluating the times based on 90 percent of the calls, as opposed to averaging the times at the 50th percentile. For example:

- ***9 out of 10 times the fire department arrives on scene in 8 minutes or less. Which means that only 10 percent of the time they are above that 8-minute mark,***
- ***as opposed to 5 out of 10 times the fire department arrives on scene in 8 minutes or less. Which means that 50 percent of the time they are above the 8-minute mark.***
- ***Travel Time is the time tracked from when the fire vehicle has left the station until arrival at the incident location.***
- ***Response time is the total time from receipt of call (on 911) to the time the fire vehicle arrives at the incident location.***

Yearly Comparisons of Calls for Stations 1-4, 1-6 and 1-8 for the years of 2013, 2014 and 2015

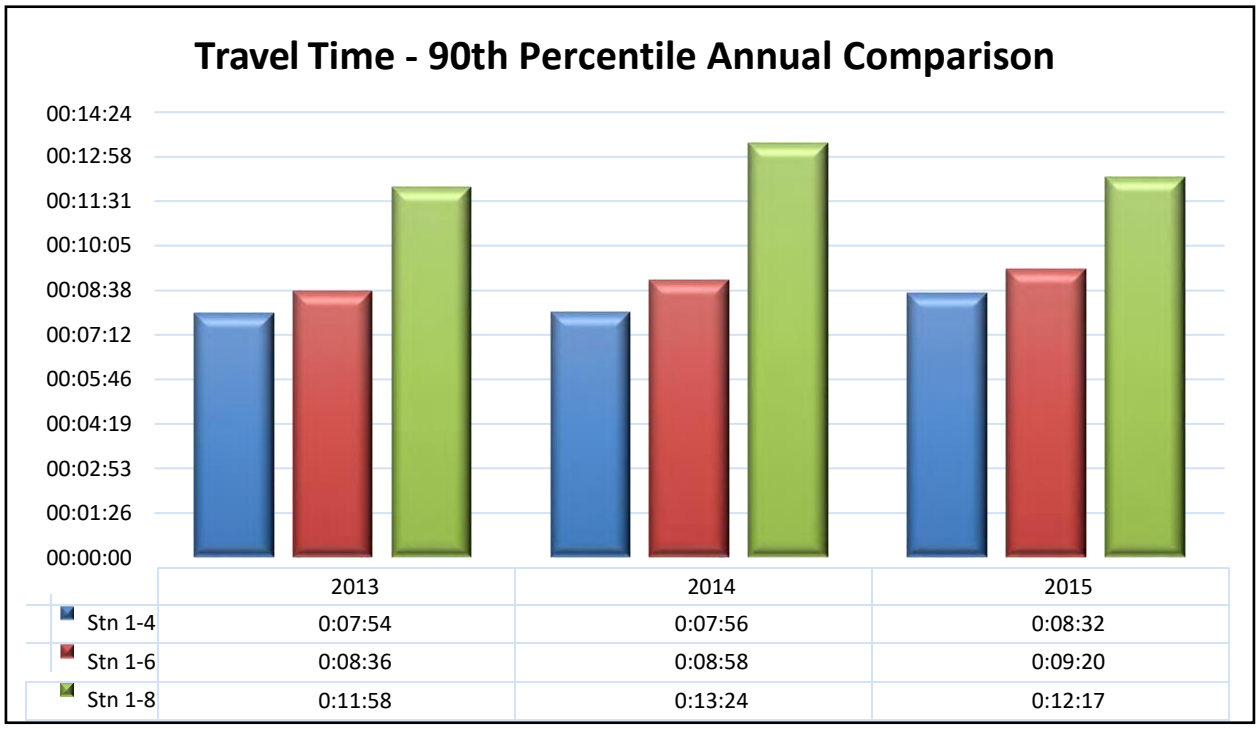
	2013		2014		2015	
	Stn 1-4	% of Calls	Stn 1-4	% of Calls	Stn 1-4	% of Calls
Property Fires/Explosions	34	3.43%	29	3.15%	29	2.93%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	23	2.32%	26	2.83%	19	1.92%
Burning (controlled)	35	3.53%	40	4.35%	53	5.35%
CO2 Alarm Calls	45	4.54%	47	5.11%	57	5.75%
Fire Alarm Calls	86	8.67%	80	8.70%	87	8.78%
Public Hazard	41	4.13%	44	4.78%	52	5.25%
Rescue	62	6.25%	85	9.24%	100	10.09%
Medical/Resuscitator Call	599	60%	513	55.76%	547	55.20%
Other Response	67	7%	56	6.09%	47	4.74%
Total Emergency Calls	992	100.00%	920	100.00%	991	100.00%

	2013		2014		2015	
	Stn 1-6	% of Calls	Stn 1-6	% of Calls	Stn 1-6	% of Calls
Property Fires/Explosions	27	3.88%	12	1.93%	30	4.67%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	15	2.16%	7	1.13%	15	2.34%
Burning (controlled)	28	4.02%	52	8.37%	49	7.63%
CO2 Alarm Calls	22	3.16%	17	2.74%	28	4.36%
Fire Alarm Calls	60	8.62%	75	12.08%	64	9.97%
Public Hazard	28	4.02%	32	5.15%	20	3.12%
Rescue	76	10.92%	44	7.09%	60	9.35%
Medical/Resuscitator Call	408	59%	357	57.49%	339	52.80%
Other Response	32	5%	25	4.03%	37	5.76%
Total Emergency Calls	696	100.00%	621	100.00%	642	100.00%

	2013		2014		2015	
	Stn 1-8	% of Calls	Stn 1-8	% of Calls	Stn 1-8	% of Calls
Property Fires/Explosions	6	4.58%	8	6.45%	10	7.52%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	10	7.63%	2	1.61%	2	1.50%
Burning (controlled)	4	3.05%	2	1.61%	11	8.27%
CO2 Alarm Calls	4	3.05%	4	3.23%	3	2.26%
Fire Alarm Calls	1	0.76%	9	7.26%	5	3.76%
Public Hazard	11	8.40%	3	2.42%	13	9.77%
Rescue	25	19.08%	10	8.06%	16	12.03%
Medical/Resuscitator Call	62	47%	76	61.29%	68	51.13%
Other Response	8	6%	10	8.06%	5	3.76%
Total Emergency Calls	131	100.00%	124	100.00%	133	100.00%

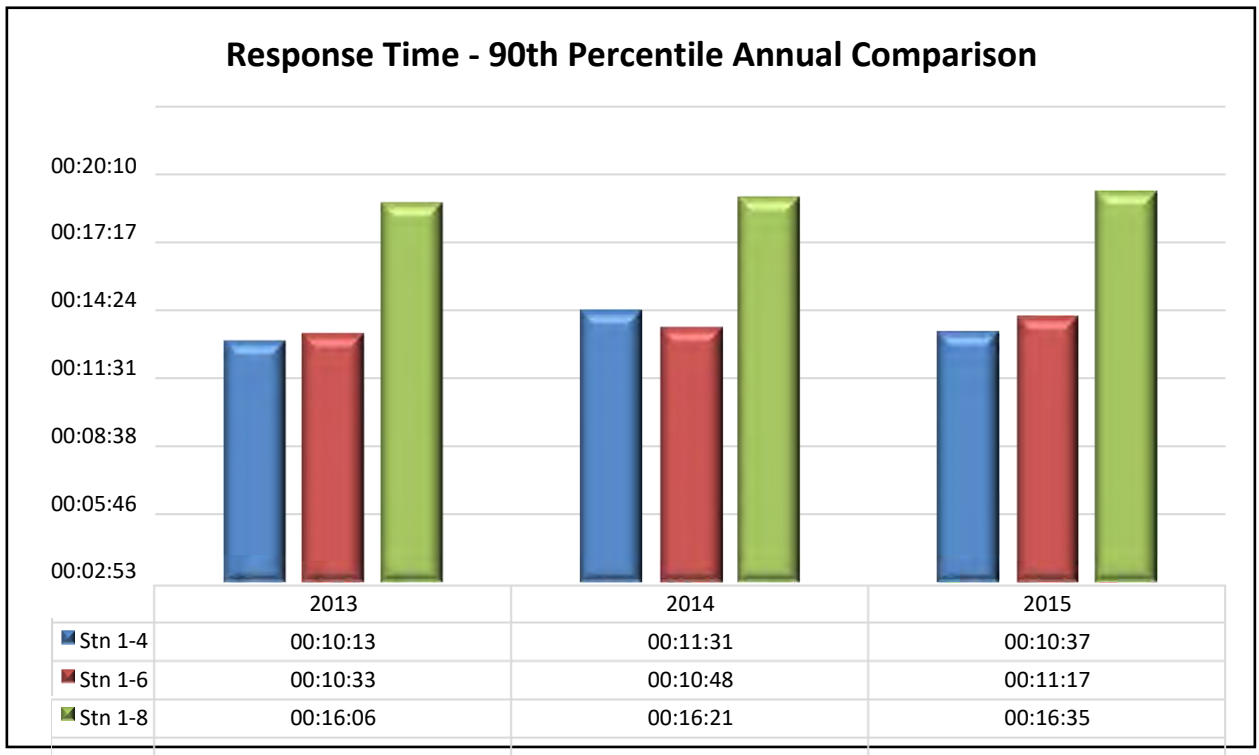
Emergency Calls	1819	88.82%	1665	85.43%	1766	86.44%
Non-Emergency Calls	229	11.18%	284	14.57%	277	13.56%
Total Combined Calls	2048	100.00%	1949	100.00%	2043	100.00%

Yearly Comparisons of 90th Percentile Travel Times for Stations 1-4, 1-6 and 1-8 for the years of 2013, 2014 and 2015

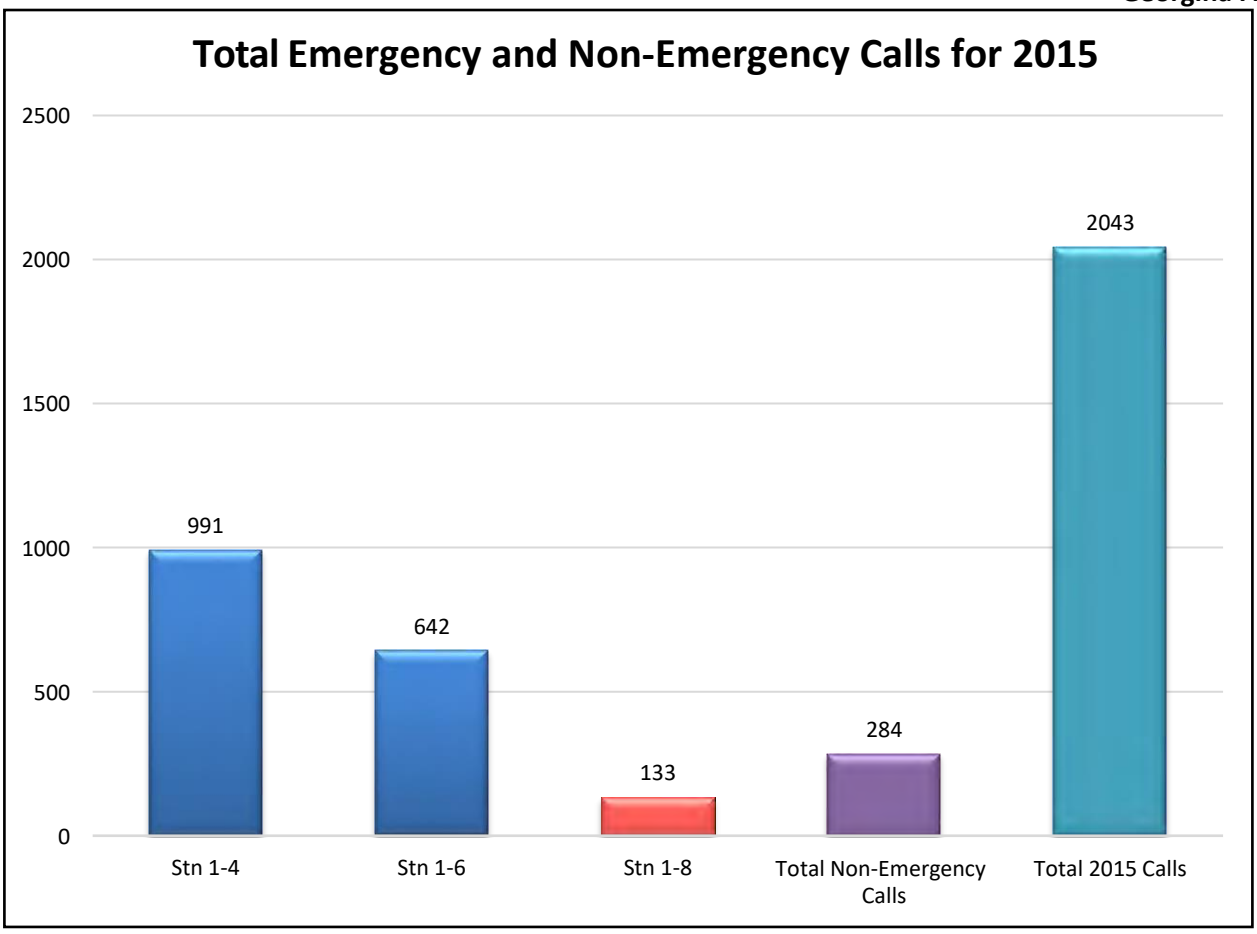


	2013	2014	2015
Stn 1-4	0:07:54	0:07:56	0:08:32
Stn 1-6	0:08:36	0:08:58	0:09:20
Stn 1-8	0:11:58	0:13:24	0:12:17

Yearly Comparisons of 90th Percentile Response Times for Stations 1-4, 1-6 and 1-8 for the years of 2013, 2014 and 2015



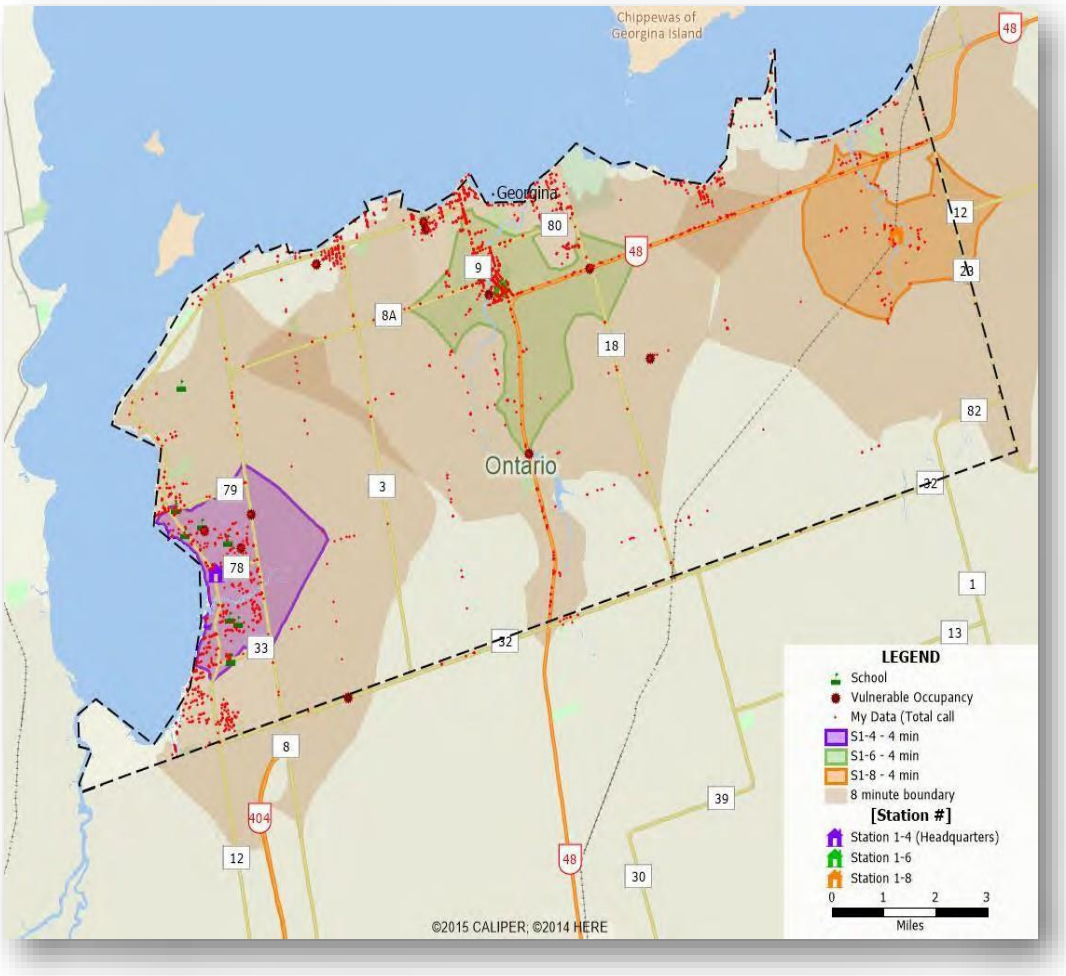
	2013	2014	2015
Stn 1-4	00:10:13	00:11:31	00:10:37
Stn 1-6	00:10:33	00:10:48	00:11:17
Stn 1-8	00:16:06	00:16:21	00:16:35



Note: Similar data and charts for 2013 and 2014 can be found Appendix "E"

Another useful tool is to pinpoint where the bulk of the emergency responses are occurring. This 'clustering' of responses will help to identify where the majority of calls are occurring, which will indicate if the present fire station locations are properly positioned, or is there a shift in call locations that would suggest the possible need for the relocation of a fire station.

Figure 6: Call Clustering Map



This call cluster map plots the location of the fire calls. The map shows a number of calls in the north and south end of Keswick that are outside of the four (4) minute response zone. With planned residential, commercial, and industrial development in the south end, the demand for fire responses will continue to grow in this area. The map also identifies that there is a larger density of calls along the waterfront area in the Sutton region.

5.2 Service Level Standards – Dispatching Services

Georgina Fire Department receives its dispatching services from the Richmond Hill Fire & Emergency Services (RHFES). Based on information received, along with a review of the dispatching data, it would appear that GFD is receiving adequate aid from the RHFES. However, the dispatching agreement has not recently been updated and, as such, a recommendation to review the working agreement is being made.

It was noted that the dispatching agreement was renewed in 2014. However, it is recommended that at the first available opportunity that GFD incorporate the necessary performance measures as per the NFPA 1221 as noted below to ensure a more consistent measure of the dispatching service (in relation to meeting all associated NFPA Standards):

NFPA 1221, Section 7.4 Operating Procedures

7.4.1 Ninety-five percent of alarms received on emergency lines shall be answered within 15 seconds, and 99 percent of alarms shall be answered within 40 seconds. *(For documentation requirements, see 12.5.2.)*

7.4.1.1 Compliance with 7.4.1 shall be evaluated monthly using data from the previous month.

Recommendations

17. The Fire Chief should continue to monitor and evaluate call volumes of the Department on an annual basis along with the level of Firefighter's response per station to identify any areas of concern that may result in recommending the implementation of a partial full-time response component for the municipality.
18. It is recommended that the Fire Chief present a response time criterion for the approval of Council, whether that is the NFPA 1720 – 15 staff in 9-minute rule or the NFPA 1710 standard of four-minute drive time for full-time crews.
19. It is recommended that when possible, the present dispatching agreement with the current dispatch provider be updated to included NFPA related standards for GFD to incorporate the necessary performance measures as per the NFPA 1221 standard.

Associated Costs (all costs are approximate)

- No cost to the monitoring, but staffing costs will increase based on any possible recommendations made by the Fire Chief.
- Based on noted performance measure incorporation into the revised dispatching agreement, some cost may be associated with these changes, but no amount is offered at this time.

Timeline

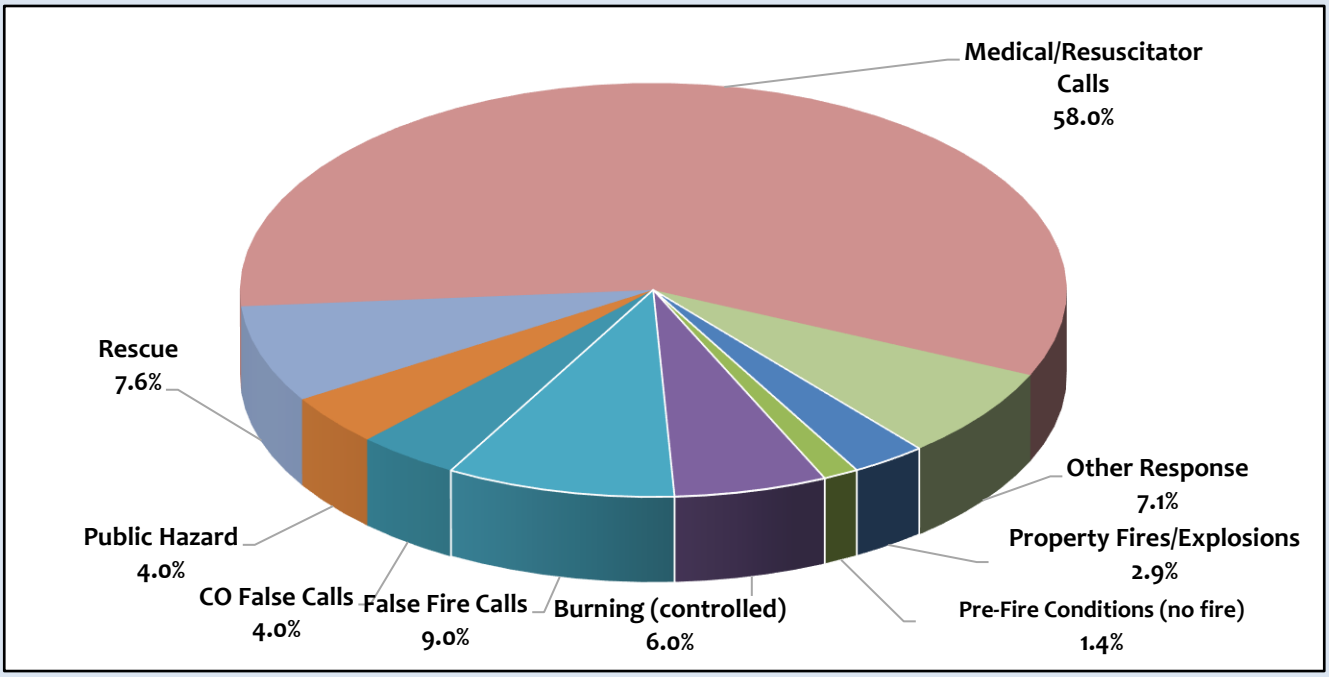
- Immediate and ongoing for response assessments
- Immediate for the presentation and recommendation for a response time criterion
- Immediate with ongoing review of the services provided by RHFD.

ESCI UPDATE: (2022)

Overall, 2019-2021 call data points to a consistent call volume that has 2021 EMS responses at 58.1% of total call volume. Call volume in 2021 was 2,245 versus a call volume in 2015 of 2,043, a 9.9% increase over the 6 yrs. or just over 1% per year. However, as of the time of this report, Georgina was experiencing a 14% increase in call volume from 2021 to 2022. Given the 2015 call volume, it is too early to tell whether this 2022 increase will be a regular rate of change for call volume or if either 2021 or 2022 are aberrant years to be evaluated over a longer period. With a population projection of approximately 75,000 in 2050 (up from 50,000 in 2022), this would be a 25% increase over a roughly 30 year period supporting the concept that, on average, Georgina will continue at a 1% annual population growth rate. While it is unlikely that it will have that predictable growth rate each year, over the larger span of time, this is the rate that can be expected.

Below are updated statistics for the period 2019-2021.

Call Types (2019-2021)



As can be seen in the above chart, the top three types of calls that GFRS responds to are:

1. Medical/Resuscitator Calls, which accounts for 58.0% of the Department's overall responses
2. False Fire Calls which account for 9.0% of the Department's overall responses, and
3. Rescue calls which account for 7.6% of the Department's overall response.

Based on this information, the percentage comparison gives the Fire Chief and his staff the ability to monitor where the bulk of their resources are being utilized. This also offers greater focus for the Training Division to ensure that the firefighters are receiving training related to the types of responses that will demand a higher skill set.

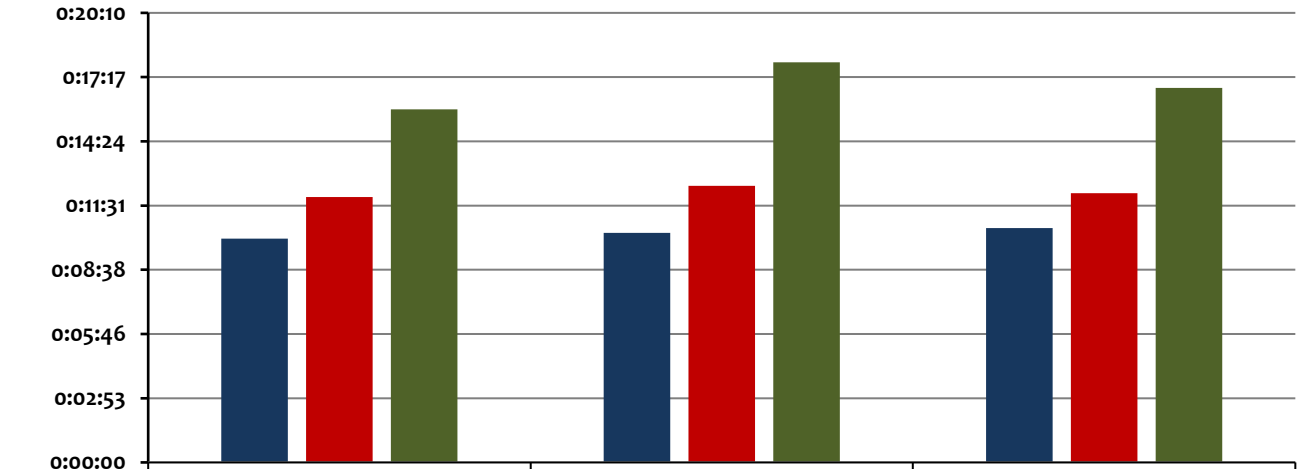
Yearly Comparisons of Station Responses for 2019-2021

	2019		2020		2021	
	1-4	% of Calls	1-4	% of Calls	1-4	% of Calls
Property Fires/Explosions	49	3.72%	44	3.58%	53	3.97%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	19	1.44%	21	1.71%	16	1.20%
Burning (controlled)	61	4.64%	90	7.32%	69	5.16%
CO Alarm Calls	126	9.57%	95	7.73%	113	8.46%
Fire Alarm Activations	67	5.09%	40	3.25%	60	4.49%
Public Hazard	51	3.88%	48	3.91%	51	3.82%
Rescue	118	8.97%	91	7.40%	97	7.26%
Medical/Resuscitator Call	735	55.85%	716	58.26%	786	58.83%
Other Response	90	6.84%	84	6.83%	91	6.81%
Total Responses	1,316	100.00%	1,229	100.00%	1,336	100.00%

	2019		2020		2021	
	1-6	% of Calls	1-6	% of Calls	1-6	% of Calls
Property Fires/Explosions	44	4.81%	50	5.60%	56	6.13%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	16	1.75%	25	2.80%	21	2.30%
Burning (controlled)	43	4.70%	66	7.39%	63	6.89%
CO Alarm Calls	121	13.24%	113	12.65%	90	9.85%
Fire Alarm Activations	37	4.05%	34	3.81%	19	2.08%
Public Hazard	43	4.70%	46	5.15%	44	4.81%
Rescue	102	11.16%	87	9.74%	103	11.27%
Medical/Resuscitator Call	449	49.12%	423	47.37%	454	49.67%
Other Response	59	6.46%	49	5.49%	64	7.00%
Total Responses	914	100.00%	893	100.00%	914	100.00%

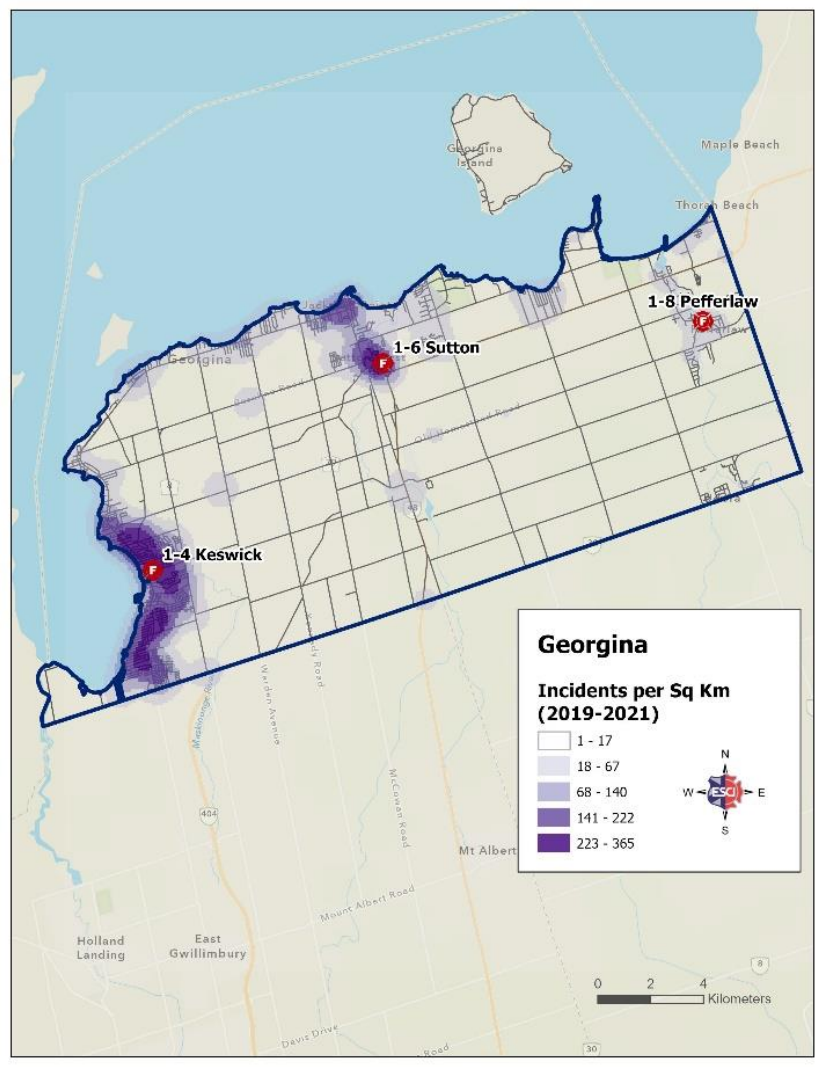
	2019		2020		2021	
	Stn 1-8	% of Calls	Stn 1-8	% of Calls	Stn 1-8	% of Calls
Property Fires/Explosions	8	6.90%	15	11.90%	14	9.86%
Over pressure rupture/explosion (no fire)	0	0.00%	0	0.00%	0	0.00%
Pre-fire conditions/no fire	2	1.72%	8	6.35%	3	2.11%
Burning (controlled)	0	0.00%	1	0.79%	3	2.11%
CO Alarm Calls	9	7.76%	7	5.56%	11	7.75%
Fire Alarm Activations	2	1.72%	0	0.00%	0	0.00%
Public Hazard	8	6.90%	7	5.56%	6	4.23%
Rescue	16	13.79%	16	12.70%	21	14.79%
Medical/Resuscitator Call	66	56.90%	61	48.41%	75	52.82%
Other Response	5	4.31%	11	8.73%	9	6.34%
Total Responses	116	100.00%	126	100.00%	142	100.00%

90th Percentile Response Times for 2019 – 2021



	2019	2020	2021
Station 1-4	0:10:02	0:10:18	0:10:30
Station 1-6	0:11:54	0:12:24	0:12:04
Station 1-8	0:15:50	0:17:56	0:16:48

The following map is an updated version of the call cluster map that shows where all calls occur across the jurisdiction.



Modernization:

A persistent annual growth rate of 1% means that any service level changes that come to the GFRS will likely not be rapid and should able to be adequately planned for. Rather change will likely come from other factors such as cultural, provincial imposed rules, or changes in the nature of the fire service model.

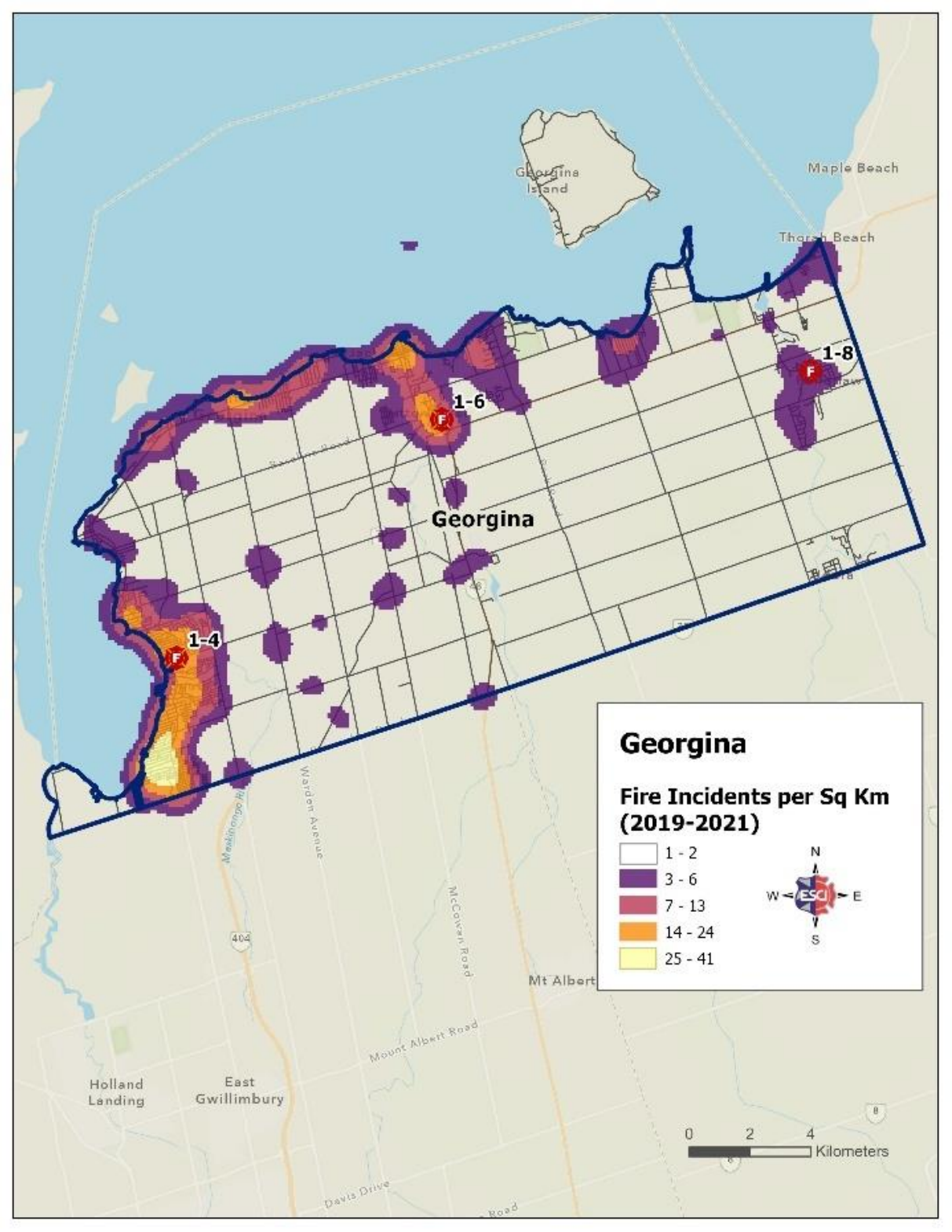
Fire stations are located in the highest population centers where highest incident densities also reside. However, there is a high incident density that is outside the 4-minute response time at the south end of Keswick. In an effort to address this situation as well as provide quicker response depths to the north and east sides of the town, the Fire Chief has suggested that the Keswick Station 1-4 be replaced with two fire stations, one located near the north end of Keswick and one

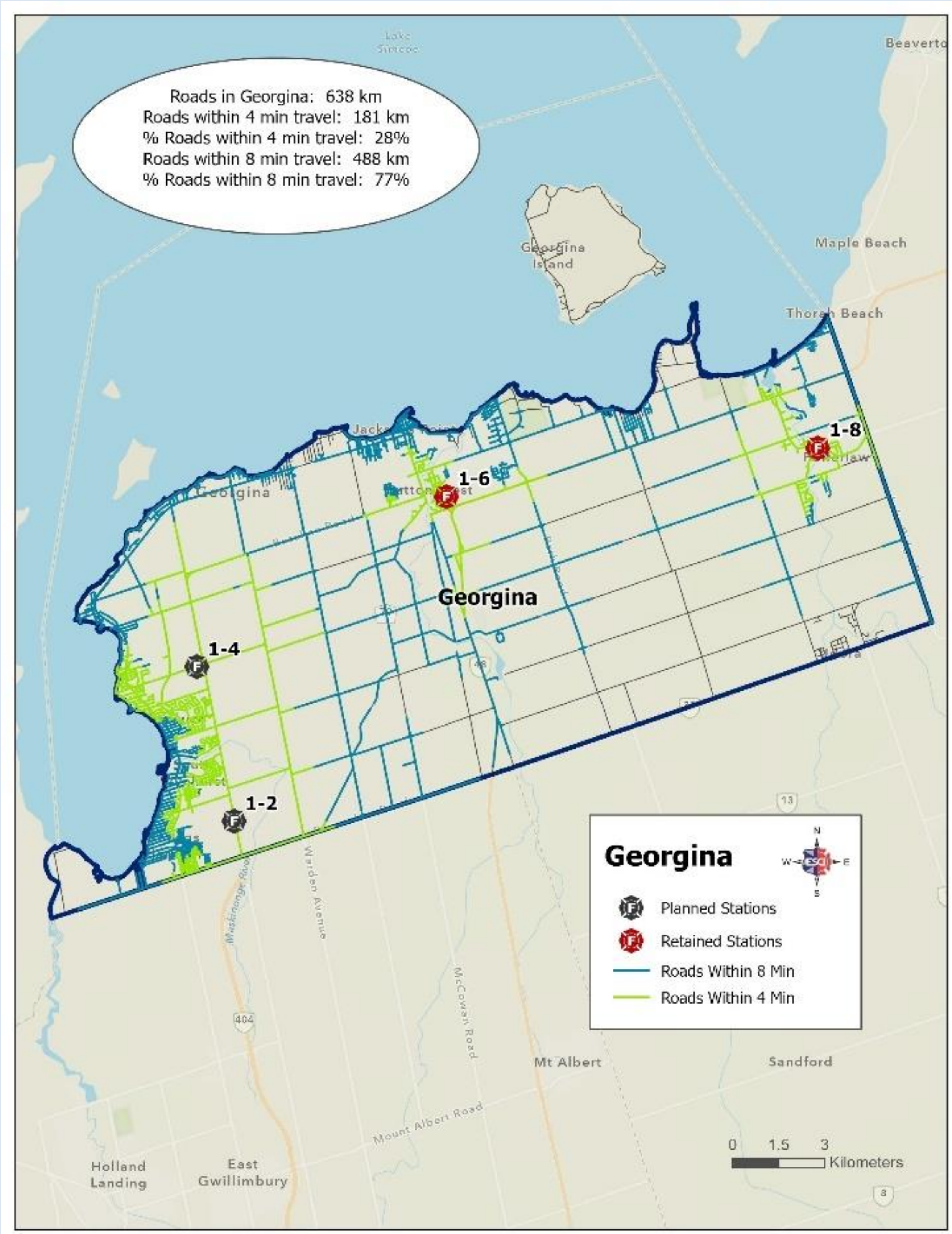
near the south end. ESCI agrees the south station would decrease response times to the south end of Keswick while providing a quick response depth to the east via Ravenshoe Rd or Glenwoods Ave. An ideal location for this station would be located on Woodbine Ave south of Glenwoods Ave.

For the north station, coverage to the north end of Keswick as well as response depth to the beach areas between Keswick and Sutton would be the objective. Fire incident densities along the north shore west of Sutton are elevated and could benefit from quicker response times. Lastly, ESCI agrees that a north Keswick station would provide quicker response depth to Sutton and Pefferlaw via Baseline Rd and Hwy 48. An ideal location for this station would be Woodbine Rd, north of Old Homestead Rd.

Both of these station location recommendations are consistent with the 2016 EMT station location recommendations.

Below is a map showing current fire call densities and 4-min response time projections with new station locations.




Roads in Georgina: 638 km
Roads within 4 min travel: 181 km
% Roads within 4 min travel: 28%
Roads within 8 min travel: 488 km
% Roads within 8 min travel: 77%
Georgina Island
Maple Beach
1-8
1-6
1-4
1-2
Georgina
Georgina
Planned Stations
Retained Stations
Roads Within 8 Min
Roads Within 4 Min
Warden Avenue
McCowan Road
Mount Albert Road
Mt Albert
Sandford
Holland Landing
East Gwillimbury
0 1.5 3 Kilometers

As a part of modernization of the fire service, EMS continues to be the main alternative responsibility of the traditional fire department. While the York Region has its own EMS system, paramedic stations are not as centrally located throughout the community as fire stations are with the north and east portions of the town having the longest response times. While this report is not addressing EMS within the community and a more comprehensive analysis of EMS response times should include York Region EMS data, fire stations are generally situated to have faster response times to some areas of the community. Just as in fire where minutes count, so does EMS intervention. GFRS should consider not taking EMS from the York Region but being able to supplement their care with quicker response times with Advanced Life Support apparatus.

Response times are the primary mechanism for evaluating fire department performance. This is due to

- It is tied to a fire department's traditional mission which is reactive
- It is the primary expectation of the community
- It is more easily measurable while measuring the prevention of emergencies is more challenging

Recommendation #14 - Tiered response:

ESCI recommends GFRS should do a joint engagement with the York Region EMS and the community to discuss EMS response expectations.

Recommendation #15 - Monitor growth and service levels (station 1-8):

ESCI recommends GFRS should establish trigger points in alignment with response performance standards to determine when the Pefferlaw station should consider transitioning to some degree of career response models.

Costs:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Long term (5 – 10yrs)

Section 6 – Facilities

6.1 Fire Station Review, Locations and Suitability for Future Growth

Section 6: Facilities

6.1 Fire Station Review, Locations, and Suitability for Future Growth

A review of the existing fire station facilities was separately conducted for the Fire Chief to utilize for the municipal Development Charges Review. This report is set in whole within Appendix "D" of the Fire Master Plan.

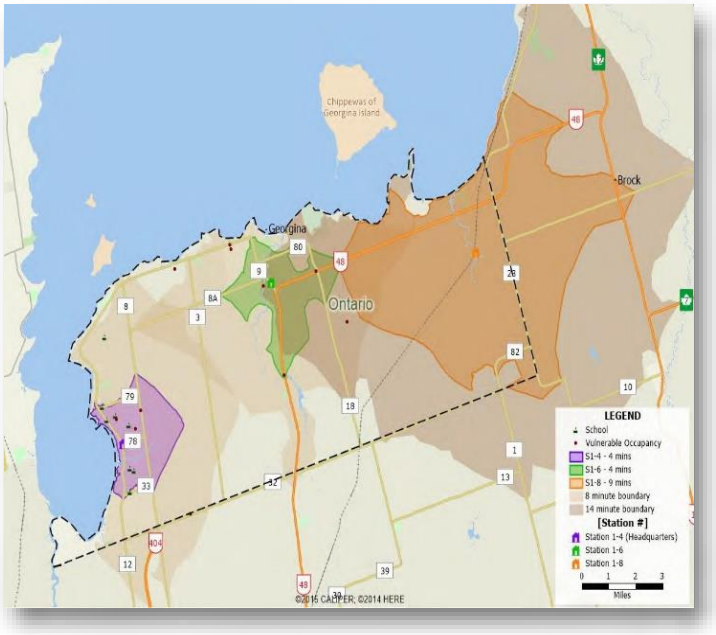
Fire Station Location and Other Considerations:

Fire stations should be positioned to offer the most efficient and effective response to the community they serve. Centering them within a determined response zone that is simply based on "timed" responses is not always the best option to implement. Fire station location depends on many factors such as key risks within the response zone, future growth of the community and even whether or not this will be a station that is staffed by full time or by Volunteer Firefighters. Another consideration is the geographical layout of the community that can include natural barriers or divides, such as water, that makes it necessary to have some stations located within close proximity of each other.

Public Fire Safety Guideline – PFSG 04-08-13 on Fire Station Location notes fire stations should be situated to achieve the most effective and safe emergency responses. Distance and travel time may be a primary consideration; however, if a basic expectation of response time is set by the community's decision makers, then a more realistic level of service and fire station location criteria can be identified.

Figure 7: Present Fire Station Locations with NFPA Related Response Zones Noted

In Appendix "F", there is a copy of a report submitted by EMT in relation to the fire station study that was conducted prior to the completion of this FMP. This report goes into more detail relating to station status, needs and viability of their present locations in relation to meeting future needs of staff and the community.



In the above noted map, the Keswick fire station, Station 1-4, is seen in purple; the Sutton fire station, Station 1-6, is seen in green, and the Pefferlaw fire station, Station 1-8, is seen in orange. The shaded areas around each fire station area denote a response time zone:

- For Keswick and Sutton stations, this is based on the NFPA 1710 standard of 4 and 8-minute response time recommendations for full-time fire stations.
- For the Pefferlaw station, this is based on the NFPA 1720 standard of 9 and 14-minute response time zones.

***Note:* These response times depict the coverage area by travel time as if the crews were actually in the station and immediately ready to respond. In fact, there are many times when the crews and/or the Volunteers are not in the fire station and may (or may not) be either engaged on another call or at a far end of their response zone. These factors can create a longer response time by the crews to the incident location.**

The response mapping and related response data supplied in this document should not be taken in isolation. A full in-depth study along with an annual report submitted to Council by the Fire Chief with an update on the key performance measures and expectations is required.

The fire station review found in Appendix "F" contains a total of 14 related recommendations that have also been included into the overall total of recommendations contained in this report.

Recommendations

As noted in recommendation #1, The Fire Station Report found in Appendix "F" contains a total of 14 recommendations. All of the recommendations along with full explanations can be found in the actual document located in Section 13. The recommendations chart can also be seen on the following two pages.

Brown & Beattie Fire Station Audits:

The Engineer group of Brown and Beattie of Richmond Hill, Ontario were also contracted by the Town of Georgina to conduct facility audits on all Town owned buildings. The three fire stations of GFD were included in this review. The overall findings of Brown and Beattie were quite similar in associated costs and related needs for each of the fire stations.

Being that their report was only in draft form at the time of the submission of this FMP, no approved document could be added at that time. However, reference to these engineer reports will be available in the near future.

Associated Costs *(all costs are approximate)*

Approximate renovation costs for all three fire stations noted in the Fire Station Review is $500,000.00. Refer to the Fire Station Review document for more detail

Timeline

As noted in the following excerpt from the Fire Station Review, the timelines for the repairs range from immediate to long-term. See Fire Station Review document for more detail

Excerpt of Recommendations from the Fire Station Review				ESCI Update (2022)
Rec #	Recommended Solution	Estimated Costs	Suggested Time Line	
	See notes for each station as many items were identified as requiring repairs – only the immediate and key recommendations have been identified in this chart.	***Estimated costs for all visual repairs identified would exceed $500,000***		
1.	Remove the mezzanine in the apparatus bay in Station 1-4, Keswick.	Approximate cost for removal -$1,000	Immediate	**Completed**
2.	Remove any items being stored in the overhead storage (apparatus bay) in Station 1-8, Pefferlaw.	No cost for removal, but new storage area needs to be built	Immediate	**Completed**
3.	Electrical panels on the apparatus floor should be protected from the potential of water spray at all three of the stations.	Proper water proof covers for these panels to be installed - $1,000	Immediate	**Completed**
4.	Have the vehicle exhaust system evaluated / repaired at Station 1-6, Sutton.	Costing unknown based on amount of repairs required	Immediate	**Completed**
5.	Upgrade or install proper male and female showers at Station 1-4, Keswick; 1-6, Sutton and 1-8 Pefferlaw.	Estimated costs of approx. $10,000 per washroom	Immediate	**Completed**
6.	Install fencing around the training tower at Station 1- 6, Sutton.	Costing would depend on type of fencing installed	Immediate	**Completed**
7.	Ensure safety features are adequate for apparatus bay doors.	Costing unknown based on amount of repairs and parts required	Immediate	**Completed**
8.	Conduct an engineering review of all fire stations for an in-depth structural assessment, repairs / upgrades required, and estimate the cost of the work to address the issues. EMT's assessments are from a visual perspective only; no engineering review was performed on the buildings.	Engineering review estimated at approx. $5,000 - $7,000.	Short Term (1-3 years)	**Completed during 2021 Building Audits**

9.	Replace Station 1-8, Pefferlaw. Station 1-8 is in a good location for response to the community, however, it is the size and available space with the present station that is a concern.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Immediate (0–1 year)	**Completed**
10.	Construct a new fire station to the northeast of the current Station 1-4, Keswick, to provide a larger response coverage area. This station will be the new fire headquarters. The station should be designed so that it has the capacity to accommodate, in the future, two full-time crews along with a Volunteer force, plus a spare apparatus (or be designed to be easily expanded).	Construction costs estimate $390 - per square foot. (e.g. 20,000sq ft. building = $7,800,000)	Long Term (7-10 years)	**This is currently in the Capital Budget for a 2026 design with a 2027 build.**
11.	Consider an additional station in the south of Keswick shortly after the new headquarters is built or even simultaneously. With the fairly rapid growth in the community along with the existing call locations, this new additional fire station is warranted. It has been identified that the Town has property and is planning a community centre in the area of Woodbine Avenue and Glenwood Avenue. This location, as plotted above (in Map #4), provides an enhanced four (4) minute response time to the south end of Keswick.	Construction costs estimate $390 per square foot. (e.g. 10,000 sq. ft. building = $3,900,000)	Short Term (1-3 years)	**This is currently in the Capital Budget for a 2023 design with a 2024-25 build.**
12.	The fire service currently does not have an appropriate fire training centre. EMT would recommend that one of the locations include a Firefighter training centre including a training tower, live burn building, space for auto extrication, and a classroom.	Construction costs estimate $390 per square foot. (e.g. 10,000 sq. ft. building = $3,900,000)	Mid Term (4-6 years)	**This station remains part of the ongoing Joint Fire Services Review.**
13.	Replace or renovate Station 1-6, Sutton. Relocating this station to an area such as Dalton Road and Black River would offer a quicker response to the Greater Sutton Area and also for a more efficient response time when backing up (response support to) the Keswick or Pefferlaw stations.	Construction costs estimate $390 per square foot. (e.g. 10,000 sq. ft. building = $3,900,000)	Mid Term (4-6 years)	**Update: This remains under consideration but no action has been taken.**
14.	During all noted replacements or renovations to the fire stations, any related AODA requirements must be incorporated.	As Required	As Required	**This remains ongoing and is being completed during renovations and build-outs.**

Section 7 – Vehicles and Equipment

7.1 New and Replacement Schedules
7.2 Maintenance

Section 7: Vehicles and Equipment

7.1 Fire Apparatus - New and Replacement Schedules

When assessing a Fire Department's ability to respond and meet the needs of the community, the Fire Underwriters Survey considers the age of a fire truck as one of its guidelines.

The fire vehicles are on a 15-year replacement cycle which keeps them within the Fire Underwriters recommendations and more importantly creates a standard when it comes to forecasting fire truck replacements.

Fire Underwriters Survey – Vehicle Replacement Recommendations

The Medium Sized Cities section (outlined in blue) is the recommendation for vehicle replacement for a town the size of Georgina. This allows for up to a 20-year replacement cycle, in which the fire vehicle can be utilized as 2nd Line response status. However, it is recommended that all First Line units should still be replaced by a new or younger unit when it reaches 15 years of age.

Apparatus Age	Major Cities [3]	Medium Sized Cities [4] or Communities Where Risk is Significant	Small Communities [5] and Rural Centres
0 – 15 Years	First Line	First Line	First Line
16 – 20 Years	Reserve	2nd Line	First Line
20 – 25 Years [1]	No Credit in Grading	No Credit in Grading or *Reserve* [2]	No Credit in Grading or *Reserve* [2]
26 – 29 Years [1]	No Credit in Grading	No Credit in Grading Or *Reserve* [2]	No Credit in Grading Or *Reserve* [2]
30 Years [1]	No Credit in Grading	No Credit in Grading	No Credit in Grading

1. All listed fire apparatus 20 years of age and older are required to be service tested by a recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071)
2. Exceptions to age status may be considered in small to medium sized communities and rural centre conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing
3. Major cities are defined as an incorporated or unincorporated community that has:
   a. a populated area (or multiple areas) with a density of at least 400 people per square kilometre; and
   b. a total population of 100,000 or greater.
4. Medium Communities are defined as an incorporated or unincorporated community that has:
   a. a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND
   b. a total population of 1,000 or greater.
5. Small Communities are defined as an incorporated or unincorporated community that has:
   a. no populated areas with densities that exceed 200 people per square kilometre; AND
   b. does not have a total population in excess of 1,000.

FUS definition of 1st line, 2nd line and Reserve is:

- 1st line is the first fire truck utilized for response at the fire station
- 2nd line is the next truck to be used if the 1st line unit is tied up at a call, and

Reserve is the vehicle kept in the fleet to be put into service if a 1st line or 2nd line vehicle is out of service.

The Fire Underwriters Survey (FUS) is reviewed by insurance companies, and as long as the Fire Department adheres to the recommended replacement timelines through an approved capital replacement schedule, the Department will retain its fire rating for vehicle replacement.

By ensuring that the vehicles are being replaced on a regular schedule, the Town is also demonstrating due diligence towards ensuring a dependable response fleet for the Fire Department and the community it serves. This in turn will keep the community's fire rating in good stance, which can also reflect on commercial and residential insurance rates.

A standard that supports a regular replacement schedule of fire vehicles is the NFPA 1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus. This standard includes guidance on retirement criteria for fire apparatus. This standard recommends that all front run vehicles are replaced on a 15 to 20-year cycle, depending on the community size.

Although there is no national standard that legally mandates the replacement of emergency vehicles, it must be kept in mind that it is critical to replace these and other apparatus before they become unreliable. Over the long term, delaying the replacement is inadvisable because it will add to the overall maintenance costs of the apparatus and can have an effect on insurance costs based on the Fire Department's FUS rating.

For the most part, the GFD is well-equipped with pumper trucks, rescues and tankers. There also appears to be a sufficient level of support vehicles and equipment to meet the general needs of the Department. However, with the projected growth of the community, there needs to be consideration given to the need for elevated devices such as an aerial and/or tele-squirt in the Keswick area.

Replacement schedules are identified in the capital forecast for the fire trucks and large cost items.

In relation to vehicle replacement and refurbish, the industry standard for the design and replacement of vehicles is the National Fire Protection Associations Standard 1901. It is recommended that this and other related NFPA standards relating to vehicle design, replacement and refurbishing be utilized.

During the station and equipment review, it was noted that the vehicles and small engines (pumps, generators, boat motors, etc.) are on a standard replacement cycle and that maintenance and repair work is addressed as quickly as possible by the Town or other recommended facilities.

7.2 Maintenance

GFD does not have its own mechanical division to complete all related repairs and testing to its vehicles and equipment. This is handled in the following manner:

Full-time Firefighting staff are expected to complete all daily, weekly and monthly (general) inspections and testing of vehicles and equipment.

If any mechanical repairs are required for a vehicle, it is then decided as to whether or not this repair can be accomplished by the Town's Works Department or if this is a specialized repair that needs to be contracted out to a third-party facility/mechanic.

Recommendations

20. The Town should endeavour to maintain a schedule that compiles with the Fire Underwriters Survey (FUS) recommendations on the replacement of vehicles from a first line to a 2nd line unit.

    - The industry standard for the design and replacement of vehicles is the National Fire Protection Associations Standard 1901. It is recommended that this and other related NFPA standards relating to vehicle design, replacement and refurbishing be utilized.

Associated Costs (all costs are approximate)

- Continued financial forecasting of equipment replacement

Timeline

- Long term (7 – 10 years) – ongoing for fire vehicle replacement and future forecasting – see NFPA 1901

ESCI UPDATE (2022):

Since the publication of the 2016 FMP a 104' HME platform was acquired and placed into service at station 1-4. Aerial 146 is approaching the 15 year life span benchmark.

Tankers 184, 185 and Engine 182 are approaching the 20 years life span benchmark where they may not receive any credit in grading or reserve status for Georgina's medium sized community.

Current production costs and timelines for new apparatus purchases have increased drastically with some fleet purchases now being estimated at a two year delivery. This should be accounted for during the capital budgeting process as previous estimated costs may need adjustment.

The ability to have an on-site either light or heavy duty dedicated fire department mechanic should be evaluated. When considering this item, the cost of in-house vs outsourcing repair should be considered. Apparatus downtime awaiting maintenance can also be impacted by more preventive maintenance and in house repairs.

As regionalization and shared services talks are ongoing, fleet and equipment maintenance should be considered as an opportunity for multiple communities to combine efforts.

Modernization:

The decision on whether to contract for services or to take on a service almost always comes down to one of control and expense. Using contractual services for work is often cheaper than hiring when work is intermittent and/or unpredictable and more costly in time when reliably consistent work is needed and a contractor has multiple clients that can affect immediate work ability. GFRS can use the work determination processes outlined in Section 4 of this report (NFPA 1730) to assist in determining when to make transition to employed mechanics. Consideration should also be given to initial equipment and resource investment that will be needed but will pay for itself over time.

When regionalization is discussed, these issues become decision-factors for other organizations and should GFRS decide to advocate hosting these shared services, they should be aware that, while expenses are shared, so are time-obligations and commitments. An expense that can be shared but that Georgina has already incurred is having an Emergency Vehicle Technician mechanic. This is a certification that qualifies a mechanic to perform maintenance on the unique intricacies of emergency vehicles including fire apparatus, ambulances and law enforcement vehicles.

Recommendation #16 - Fleet services:

ESCI recommends GFRS should continue previous report recommendations to determine feasibility of expanding fleet service depth or participating in a joint fleet services arrangement with another community or organization.

Costs:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

To be evaluated annually

Section 8 – Emergency Management

8.1 Emergency Management Program
8.2 Municipal Hazard Identification and Risk Assessment

Section 8: Emergency Management

8.1 Emergency Management Program

As mandated by the Emergency Management and Civil Protection Act (EMCPA), all municipalities in Ontario must have an emergency response plan and an emergency planning program. For every community in Ontario, there must also be an identified Community Emergency Management Coordinator (CEMC); currently this duty falls to the Fire Chief of the Town.

Georgina's Emergency Response Plan was recently updated in 2014 and complies with all required legislation.

Current Condition

The primary Emergency Operations Centre (EOC) is located at the Town offices at 26557 Civic Centre Road. The secondary (back up) EOC is located on the second floor at the front of the Keswick fire station 1-4.

Future Needs

Specific challenges regarding the current secondary EOC were noted during the Fire Station Review project, and within that noted report, recommendations were made for a more appropriate location for this secondary EOC. Please see Appendix D for more information.

Recommendations

21. It is recommended that the Keswick station secondary EOC be relocated in a newer facility so that it is designed and built to better meet the needs of an emergency operations centre.

Associated Costs (all costs are approximate)

- No identified costs to this recommendation at this time, as a full review of the program needs should be identified and incorporated into a newer facility. Once a full review is completed, projected costs can be determined.

Timeline

- Mid-term (4 – 6 years)

ESCI UPDATE: (2022)

The *Emergency Management and Civil Protection Act* (*EMCPA*), requires each municipality in Ontario to develop and establish, by By-law, an Emergency Management Program that consists of:

- An emergency plan;
- Training programs and exercises for employees of the municipality and other persons with respect to the provision of necessary services and the procedures to be followed in emergency response and recovery activities;
- Public education on risks to public safety and emergency preparedness;
- Hazard Identification and Risk Assessment (referred to as the "HIRA");
- Critical Infrastructure Review; and
- Any other elements required by the standards for emergency management programs.

The Town of Georgina consistently maintains compliance with the above legislation.

The Emergency Management Program is the responsibility of the Community Emergency Management Coordinator (CEMC), who is also the fire chief.

Whenever a larger scale emergency occurs, which affects the lives and property of citizens, the prime responsibility for providing immediate assistance and bringing the situation under control as quickly as possible, rests with the municipal government. Larger scale emergencies are typically coordinated in collaboration with local municipal partners and may escalate up to the provincial and federal governments, if necessary.

In the event of a significant emergency impacting the Town, the CEMC will conduct operations in the Emergency Operations Centre (EOC). EOC is the central facility or headquarters, from which appropriate staff will direct, coordinate, communicate and support operations within the municipality's jurisdiction.

A provincial standard Incident Management System (IMS) is currently being utilized in EOCs across York Region as a means of effectively managing the incident.

IMS consists of five key functions:

1. Command
2. Operations
3. Planning
4. Logistics
5. Finance/Administration

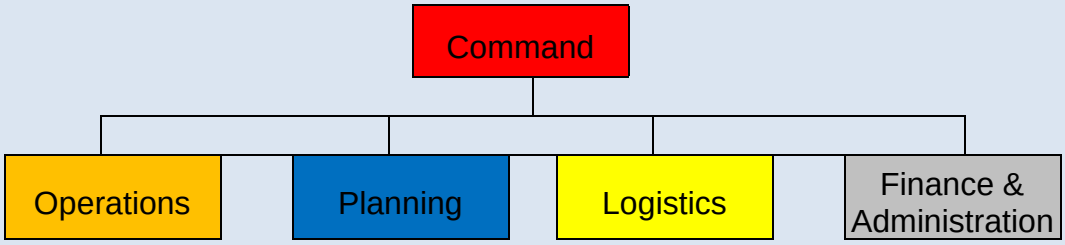


Figure 1: The five functions of the Incident Management System.

The N6 municipal CEMCs, in collaboration with York Region, have established a Memorandum of Understanding (MOU) to retain a shared Program Manager position that would ensure annual compliance with the EMCPA for all six municipalities.

The terms of the MOU have expanded over the years as required and the program continues to be successful. In addition to the annual program, in 2019 this Program Manager position assisted greatly with the COVID-19 response. There could be opportunities to expand the terms of the MOU further to assist municipalities with their Emergency Management Programs.

Progress on the secondary EOC relocation is intertwined with potential station deployment and relocation. The construction of a new headquarters building could provide the opportunity to place either the primary or secondary EOC into a state-of-the-art building with the proper infrastructure in place. EOC activities are also part of the new Civic Centre project.

In 2019 Georgina passed By Law 2019-0034 which further codified the "*emergency management program for protecting property, the environment, and the health safety and welfare of the inhabitants of Georgina".* This includes information on the Emergency Plan, training programs and exercises and the roles of various officials and staff during an emergency.

MODERNIZATION:

The world of emergency management is rapidly expanding as communities prepare for large scale events and disasters that have the potential of affecting a significant portion of the populace. Changes in our culture and environment have increased the possibility of a community experiencing an event of this magnitude. The management and resources required for events of this scale can easily exceed a local community's capabilities and require a large, flexible and coordinated action that includes responders from a distance. Planning for these events has become an increasing priority and includes identifying the community vulnerabilities. In the spirit of risk assessment, the larger and regional scale of HIRAs (Hazard Identified Risk Assessment) can now become extensions of the smaller scale CRAs (Community Risk Assessment).

Recommendation #17 - Emergency management:

Continue working with York Region on expanding the Emergency Management Program to address specific contingency plans for various hazards, technology improvements and expanding collaborative processes.

Cost:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Ongoing

Section 9 – Mutual and Automatic Aid

9.1 Mutual Aid, Automatic Aid & Fire Protection Agreements

Section 9: Mutual and Automatic Aid

9.1 Mutual Aid, Automatic Aid & Fire Protection Agreements

Mutual and Automatic Aid

Georgina Fire Department is a member of the Region's Mutual Aid group and has good working relationships with the other Fire Departments in the surrounding jurisdictions. As such, mutual aid and automatic aid agreements, which provide aid to Brock Town and East Gwillimbury when requested, are in place. The Georgina Fire Department is also member of the York Region Mutual Aid Agreement Plan and Program, which includes Town of East Gwillimbury, Town of King, Central York (Aurora/New Market), Town of Whitchurch-Stouffville, City of Vaughan, Town of Richmond Hill, and the City of Markham.

At this time, it would appear that these agreements are working well, but it has been a while since they were all updated. As such, a full review of all mutual aid, automatic aid and Fire protection agreements are to be completed in the short term to identify any required revisions.

Recommendations

22. It is recommended that a full review of all mutual aid, automatic aid and fire protection agreements be completed in the short-term to identify any required revisions.

Associated Costs (all costs are approximate)

- No identified costs to this recommendation. But based on what is recommended by the Fire Chief, costs could be incurred.

Timeline

- Short term (1 – 3 years) and on an annual review basis

ESCI UPDATE: (2022)

Mutual and automatic aid continue to be the primary methods that communities assist each other when insufficient local resources exist to handle an incident or provide other coverage to a community that is experiencing an incident.

Automatic aid is a form of mutual aid where units from one jurisdiction assist another jurisdiction on the initial response to an incident. The 2018 Ontario Mutual Aid Plan defines automatic aid agreements as:

For the purposes of the Fire Protection and Prevention Act, 1997 an automatic aid agreement means any agreement under which (a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department in the municipality is capable of responding more quickly than any fire department situated in the other municipality; or (b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1

MODERNIZATION:

Mutual and Automatic aid are gaining favor as municipalities are seeking solutions to scale emergency response to address day to day issues, as well as worst case scenarios. More and more, communities are adopting response philosophies that minimize “the name on the side of the truck” when providing emergency services believing a call for help should go to whomever is closest provided levels of service are comparable.

Offsetting this is making sure that one community’s resources do not support or subsidize shortcomings of another community. In other words, there must be equivalent benefit to both communities participating however the benefits do not have to be equal. For example, one community could offer a response benefit to another community while the second community offers an administrative benefit in return. This form of arrangement allows for a more nuanced approach to receiving efficiency assistance from other communities.

RECOMMENDATION #18 - Automatic Aid:

ESCI recommends GFRS should expand its automatic aid agreements with the objective of creating an ERF (effective response force) that is compliant with NFPA standards.

COSTS:

GFRS staff to evaluate and budget finances and time accordingly

TIMEFRAME:

Short/Medium term (0 – 5 yrs)

Section 10 – Finance, Budgeting, and Capital Investment Plan

Section 10: Finance, Budgeting, and Capital Investment Plan

The Georgina Fire Department has an annual operating budget of approximately $7,000,000.00 and a capital forecast that fluctuates based on the equipment that has been identified for replacement. During the review of the budget process for both operating and capital, it was found that GFD is well set up in both areas. This would also indicate a good level of support by Council and the Towns' senior management team in relation to assisting the Fire Department is meeting its service goals.

When reviewing this section, the key areas EMT looks for are whether or not actual operating expenditures are identified and tracked. During the review of the operating budget, it was noted that all key accounts operating sections are identified, such as:

Operating Budget Line Items:

- Staffing related costs
- Training
- Fire Prevention and related Fire Safety Education
- Vehicle and equipment maintenance, and
- Station maintenance

Capital Budget Line Items:

- Vehicle replacement, and
- Equipment replacement (for large cost items that are not covered in the operating budget)

Operating Budget

A review of the operating budget for Georgina Fire Department shows that all general expenses and related revenues are accounted for.

Capital Forecasts

It would appear that there is a 15-year replacement cycle for the fire trucks that is based on the FUS recommendations for front line vehicles. This replacement cycle mirrors the industry standards of 15 and 20 years, depending on the vehicle's function. As such, the Town of Georgina and its Fire Department should be commended for its efforts in endeavouring to adhere to this industry standard.

Along with the replacement schedule, FUS recommends that there should be at least one spare fire truck for every eight related units. For example:

- One pumper truck for every eight,
- One spare aerial truck for every eight,
- One spare tanker truck for every eight, etc.

This would mean that if you have even eight or less of a certain type of vehicle, you should have a replacement unit in reserve, should one of those units go out of service.

A final area that should be reviewed by the Fire Chief is in relation to the reserve funds for equipment to ensure that adequate annual contributions for small equipment along with apparatus repairs, and contributions for future infrastructure (fire stations) are identified. There does appear to be some shortfalls in relation to small equipment and fire stations reserves.

Recommendations

23. Annual corporate business planning cycles should be more specific in identifying goals and expected outcomes for all Fire Department related programs so as to ensure that adequate funding is secured in relation to the reserve funds for equipment and facilities.

Associated Costs (all costs are approximate)

- No identified costs to conducting the annual business planning cycles. However, costing could be associated with items that are identified as requiring insertion into a related budget line.

Timeline

- Short Term – 1 – 3 years, and ongoing

ESCI Update (2022):

Modernization:

Other than labor costs, capital expenditures are frequently the largest expenditure a community incurs. Identifying what these are and when the expenditure will be incurred ahead of time is good planning. Sudden and unplanned large expenses can be detrimental to other parts of a budget or to minimize impact to the remaining part of a budget, capital expenses can be delayed. The potential for either of these to exist becomes more complicated when other factors begin to alter future finance projections and adjustments need to be made.

To balance this risk, reserve funds for capital expenditures can be established. Setting funds aside annually to handle capital expenditures is a way to minimize this risk and while not completely eliminating the risk from unplanned events, it can limit how much adjustment is needed for future planning.

Fleet replacement is the most significant routine capital expenditure fire departments can plan for. Because of the large budgetary expenditures required as well as being seen as an investment, they can frequently take backseats to more immediate needs especially if the immediate needs are in such quantities that multiple needs can be satisfied at the expense of a single vehicle purchase.

Fleet capital planning, by identifying when a future purchase will need to be made, is a good first step towards keeping an eye on the future as to when resources will need to be replaced. A next step for future planning is to identify whether the financial philosophy of capital expenditures is to be a purchase or a lease, both common ways of accommodating these types of expenditures. They each have their pros and cons.

In a purchase arrangement, the buyer has the funds in hand and can pay the full cost of the vehicle at purchase time. Often, sellers will offer discounts in this arrangement.

Pros: Possible discounts, no debt carried, no interest payments, earned interest on set-aside funds

Cons: Funds must be set aside, sometimes years in advance, and not expended. Funds cannot be used for other more immediate expenditures

In a leasing-style arrangement, buyers take a loan to pay for the vehicle for a period of several years and accept vehicle ownership at the end of the loan period.

Pros: No advanced funding needed, expenditure only occurs when vehicle is in possession.

Cons: Fewer discounts, debt must be carried, added expense through interest payments.

If the form of capital expenditure philosophy to be used is the first, annual budgeted allocations are made so that when capital purchases need to be made, funds have already been allocated. For example, if it is known that a firetruck will need to be replaced ten years from now, rather than just acknowledging the need for replacement in a future expenditure plan, proportional funds, in this example ten percent are set aside annually, so that when the vehicle needs to be purchased, funding is already present. (The amount to be set aside is recalculated every year to adjust for inflationary and other cost changes.)

There are two possible ways to approach this. The first approach is to budget for proportional fund contributions annually. As in the previous example, a purchase expected to be made ten years in the future can have ten percent of the anticipated cost budgeted annually. This is done for every vehicle in the fleet that is expected to be replaced.

	Proj Cost	Yr 1 Budget	Yr 2 Budget	Yr 3 Budget	Y4 Budget	Purch Yr Budget
Veh 1	$100	$20	$20	$20	$20	$20
Veh 2	$60	*	$15	$15	$15	$15
Veh 3	$75	*	*	$25	$25	$25
Total Ann Budget		$20	$35	$60	$60	$60

The second approach is to identify all fleet purchases to be made over a period of time, such as 20 years, and the years the purchases are anticipated. Annual budget allocations are calculated based on having the needed funds in the replacement fund at the time of purchase. This uses the fund balance of the fleet replacement fund as the basis for contribution rather than an annual percentage of the fleet. This approach costs less than the first as funds are allocated when needed rather than having funds sitting in a reserve account but not available cause they are allocated for another vehicle. It also provides stability in capital planning as annual calculations on projections over the next 20 years are tweaked in smaller amounts rather than the potential for significant year-to-year capital adjustments.

	Proj Cost	Yr 1 Budget	Yr 2 Budget	Yr 3 Budget	Y4 Budget	Purch Yr Budget
Veh 1	$100	*	*	*	*	$100
Veh 2	$60	*	*	*	*	$60
Veh 3	$75	*	*	*	*	$75
Total Ann Expenditure		$0	$0	$0	$0	$235
Total Ann Budget		$47	$47	$47	$47	$47
Total Res Balance		$47	$94	$141	$188	$0

According to Georgina's Finance Director, the Town practices the second philosophy but has its reserve fund set aside for the town's entire fleet and not department specific. They then make fleet purchases based on the priorities of the town.

Section 11 – Review of Previous FMP

11.1 Building from the existing Fire Masterplan
11.2 Administration
11.3 Fire Prevention and Public Education
11.4 Fire Suppression
11.5 Training
11.6 Fleet Review
11.7 Communication & Technology
11.8 Next Steps

Section 11: Review of Previous FMP

11.1 Building from the Existing Fire Master Plan of 2010

Listed below are the recommendations for the 2010 Fire Master Plan. Most of the recommendations have been, or are in the process of being actioned by the Fire Chief, as appropriate.

Recommendations

24. Continue with the updating and completion of any open projects noted in the previous 2010 Fire Master Plan.

Associated Costs (all costs are approximate)

- No identified costs to this recommendation.

Timeline

- Short Term – 1 – 3 years, and ongoing

Following is the excerpt from the 2010 Georgina Fire Department FMP document. This information can be found on pages IV to X of the original document.

The 2010 FMP Report includes the detailed analysis, results, findings, conclusions and recommendations summarized above. The report provides a detailed assessment of each Division of the Georgina Fire Department.

The 2010 FMP document noted a total of 38 recommendations to be addressed by GFD. Of these 38 recommendations, 19 have been completed, 11 are still in progress by the Department, and 8 will be reviewed as part of this 2016 Fire Master Plan, being conducted by Emergency Management and Training Inc.

Conclusions and Recommendations

The conclusions and recommendations contained within this report are summarized below, by division.

11.1.2 Administration

Under the leadership of the Fire Chief, the Department is achieving the goals and objectives of this division. Through this leadership and positive working relationship with the Deputy Fire Chief,

Association Executive and Volunteer Leadership the Department has achieved provincial accreditation through the Municipal Fire Protection Information Survey (MIFPIS). The Department also takes a leadership role in maintaining the Town of Georgina Emergency Management Plan which is also up to date and compliant with the relative legislation.

Recommendations for this division include:

Short-term:

1. Introduce a second Administrative Assistant position to provide back up to the current Administrative Assistant and administrative support to the other divisions within the Department.
    - Completed – a second, part-time Administrative Assistant has been hired.
2. Establish a second alternate Emergency Management Coordinator (EMC) position using a staff member from outside of the Fire Department (the Clerks Department is a recommended alternative). The Deputy Chief is currently the EMC with the Fire Chief as alternate.
    - To be part of the final project review – final overview to be presented in 2017
3. Develop an annual rotating “on call” schedule for the Fire Chief and Deputy Fire Chief for emergency response coverage. This should be coordinated with scheduling of the third EMC position (the new second alternate EMC).
    - Will incorporate once the FMP is completed
4. Initiate a space needs assessment to include all Fire Department facilities to determine opportunities for work space efficiency and long-term space needs for the Department.
    - Part of the Fire station review being conducted by EMT – refer to the EMT Fire Station
    - Review document found in Appendix “F” for more information.
5. Continue to implement the Firehouse Software as the Department records management technology program and continue to provide staff training and support to further develop the Department’s electronic records management capabilities.
    - Ongoing

Long-term:

6. Upon completion of the space needs assessment, identify and include relevant facility costs within the 10-year capital budget process.

    - To be part of the fire station review being conducted by EMT – Refer to the EMT Fire
    - Station Review document found in Appendix "F" for more information.

11.1.3 Fire Prevention and Public Education

Based on our review, it is evident that the Georgina Fire Department recognizes the importance of public education and prevention programs and is committed to improving and expanding their programs and activities. Completion of the Municipal Fire Protection Information Survey and the Department Simplified Risk Assessment in 2004, including receipt of the "*Certificate of Compliance,*" are recognition of the commitment in this area.

As indicated above, greater use of fire prevention/education programs and activities as the "first line of defence" is an effective strategy for the Town of Georgina to pursue as the community continues to grow. The following recommendations have been developed to assist the Town of Georgina in further developing the core fire prevention and education programs that the Fire Department provides.

Short-term:

1. The Town of Georgina should consider an assessment of opportunities for further collaboration between the building and Fire Departments. This assessment should include a review of responsibilities, such as site plan review, plans examination, and inspection. Cost analysis including opportunities for cost recovery by the Fire Department should also be considered.

    - Completed

2. Complete a risk assessment of the marinas and trailer parks within the community to identify fire and life safety risks. Based on the assessment, identify responsive prevention and public education programs, including the development of fire suppression pre-plans for all facilities.

    - Completed

3. Continue to support certification of Fire Prevention/Public Education Officers including the Fire Service Certification Programs provided by the Office of the Fire Marshal, Ontario. Develop a comprehensive career path and training program for new and existing employees within the division to attain and maintain the certification qualifications.

    - Completed

4. Conduct a review of the Department Home Smoke Alarm Program. The review should include an assessment of current emergency response statistics and emphasize the delivery of the Home Smoke Alarm Program as the "first line of defence", particularly in areas of the community where extended emergency response times are present due to factors such as travel time for emergency response personnel.

    - In progress and ongoing by GFD

5. Utilizing the Firehouse Software program, implement a process to track all prevention and education activities. This should include core programs such as the Home Smoke Alarm Program, distribution of fire safety education materials, and inspections.

    - Completed

6. Further develop the integrated in-service fire prevention and education activities that utilize emergency response staff, including staff that may be available within other programs (such as staff on return-to-work modified duty). This could include activities such as pre-planning high risk occupancies, Home Smoke Alarm Program and supporting the Fire Prevention/Public Education Officers.

    - Completed

7. Identify additional operating funds, for consideration by Council, to support and expand the core prevention and education activities such as the Home Smoke Alarm Program, and education programs specifically targeted at the high-risk demographics of seniors and children.

    - Completed

8. The Town of Georgina should consider further enhancements to the current level of fire prevention and public education programming and service delivery particularly to areas of the community where the OFM 10-in-10 guideline is not being achieved.

    - No longer applicable as this guideline has been rescinded. Now utilizing NFPA standards as guide for responses.

9. Conduct a comprehensive review of the policies and procedures within the division to update existing practices and, where necessary, implement additional policies and/or procedures to assist staff in prioritizing work, sustain certification, and to ensure all programs and activities are delivered to customers in a consistent manner.

    - More work to be done on this item by GFD.

Long-term:

10. Implement a process to regularly update the Department's simplified risk assessment and adjust the prevention and education programs, as required, to respond to the findings of the assessment.

    - GFD presently working on this.

11.1.4 Fire Suppression

The following conclusions and recommendations are based on the analysis of the existing and future operations and requirements of the Fire Suppression Division of the Georgina Fire Department. The composite model Fire Department, including both full-time and Volunteer Firefighters, has proven to be a cost effective and efficient model for Town of Georgina. Sustaining this model and the Volunteer Firefighter component through an effective recruitment and retention strategy should be considered a priority.

Based on current fire suppression resources, the Georgina Fire Department is challenged to meet the emergency response objectives of the *Public Fire Safety Guideline (PFSG) 04-08-12* (also referred to as the OFM "10-in-10" guideline) in areas of the community with fire hydrant protection. In areas without fire hydrant protection, emergency response times are directly related to extended travel times required to respond to these rural areas of the community.

In response to this challenge, the Department has a pro-active fire prevention and education program

that is utilized as the "first line of defence," as defined by the Office of the Fire Marshal, Ontario.

In response to the challenges of recruiting and retaining Volunteer Firefighters and managing the projected growth within the community, the Town of Georgina will need to consider a plan to initiate a gradual increase in full-time Firefighting resources. This plan should be flexible and adaptable to the ability to sustain the composite model and the speed at which growth occurs. Moving towards a full- time Firefighter staffing model that provides four full-time Firefighters on each of the current vehicles at the Keswick and Sutton stations should be considered as a priority.

The current fire stations are located appropriately to address both current service delivery requirements and future projected growth within the 10-year horizon.

The following recommendations have been developed to assist the Town of Georgina in further developing the core fire suppression services that the Fire Department provides.

Short-term:

1. As recommended within the Fire Prevention and Public Education section of this review, the Town of Georgina should consider further enhancements to the current level of fire prevention and public education programming and service delivery, particularly to areas of the community where the OFM 10-in-10 guideline is not being achieved, to further improve the first line of defence.

    - The OFM guideline is no longer applicable, but some information can be offered as a result of this present FMP project – refer to the EMT Fire Station Review document found in

    - Appendix "F" for more information.

2. Moving towards a staffing model that can support four full-time Firefighters on duty at all times, on each of the first response vehicles at the Keswick and Sutton Stations should be considered. In order of priority, the Keswick Station should be considered as the first station for career staffing, based on the history of emergency response calls and risk.

    - Completed

3. The Department should consider implementation of a process to track the arrival time and number of Firefighters responding to emergency calls on an ongoing basis. This would be an effective tool for Council and staff in order to continue monitoring current conditions and the effects of adding additional full-time Firefighters in moving towards the objectives of the OFM 10-in-10 guideline.

    - Completed

4. In consultation with the Volunteer Firefighters, a comprehensive recruitment and retention strategy should be developed and implemented with the objective of maintaining the complement of Volunteer Firefighters at 60 at all times.

    - This is an ongoing challenge but also looking for input from EMT – more information can be found on this item in section "4" and Appendix "D" of the FMP document.

5. The Department should initiate a space needs assessment that looks at the current and future space needs within the Department, including infrastructure replacement and the addition of amenities such as appropriate living and exercise space for both the Volunteer and full-time staff. Attention should be given to the storage of Firefighters' bunker gear and the provision of diesel emissions equipment in the vehicle storage areas. Funding requirements should be identified and then included within the 10-year capital budget to accommodate the recommendations.

    - Part of EMT Fire station review – refer to Appendix "F" – EMT Fire Station Review for more information.

6. The Department should conduct a review of the Ministry of Labour Section 21 guidance notes with regard to Firefighter safety and recommendations in regards to the position of Safety Officer at emergency scenes. This review should be conducted as part of an overall update of the Department's current standard operating guidelines and policies and procedures.

    - Looking for input from EMT on this item.

Long-term:

7. Initiate a process to update the Department's Simplified Risk Assessment to provide ongoing analysis of the community, with regard to risk, as projected growth begins to impact current conditions. This process should include an update to the Fire Master Plan at the five-year benchmark.

    - More information for this item found in section "3" of this FMP document.

8. The Town of Georgina should consider developing a staffing plan to increase the complement of full-time Firefighters required to provide the first response and depth of response objectives of the OFM 10-in-10 guideline. Within the staffing plan, consideration may be given to incremental or phased implementation that is aligned with the projected growth targets of the community and the associated economic conditions.

    - OFM guideline no longer in effect – refer to Appendix "F" – EMT Fire Station Review for more information.

11.1.5 Training

The Georgina Fire Department utilizes a number of strategies to deliver the required training to both full-time and Volunteer Firefighters. These include direct delivery of programs by the Training Officer, Train the Trainer Programs, participation in regional training programs, and attendance at the Ontario Fire College.

The current Training Officer is required to maintain a high degree of qualification and certification, requiring annual renewals and ongoing refresher programs. The Department supports these requirements through attendance at the Ontario Fire College (OFC) and other related conferences. This enables the Training Officer to stay current with changing legislation and industry best practices.

The Department utilizes the Ontario Firefighters Standard and curriculum, developed by the Office of the Fire Marshal, Ontario (OFM) as the basic Firefighter training program for both Volunteers and full- time Firefighters.

The Department utilizes the OFM Trainer Facilitator Program, whereby Company Officers and Firefighters are certified by the OFM to deliver specialty training such as vehicle extrication, pump operations and first aid.

The following recommendations have been developed to assist the Town of Georgina in further developing the training that the Fire Department provides.

Short-term:

1. The Department should consider options to re-assign tasks not specifically related to Firefighter training that are currently completed by the Training Officer, such as;
    - Completed
2. Maintenance of the breathing air compressor (including scheduling bi-annual air sampling and testing);
    - Completed
3. Scheduling bi-weekly testing of the M40 gas detectors;
    - Completed
4. Self-Contained Breathing Apparatus (SCBA) maintenance and minor repairs (including warranty claims and record keeping);
    - Completed
5. Portable radio battery recycling.
    - Completed
6. The Department should consider extending the OFM Trainer Facilitator Program, where possible, to support the "hands on delivery" of training to both full-time and Volunteer Firefighters. This may require additional ongoing costs to support the initial accreditation for trainers and the ongoing costs to maintain accreditation.
    - GFD is updating to NFPA standards
7. Initiate a process to ensure that operating guidelines, procedures, and policies are developed, reviewed, and maintained by the training division.
    - Ongoing

8. Consider the long-term space needs of the Training Division as part of the fire station space needs review, including continued short-term use of the Baseline Road facility for pump training, practical evolutions, and in-class training.

    - Part of Emergency Management and Training Inc. station review – see Fire Station
    - Review Report found in Appendix "F".

9. As part of the Volunteer Firefighter recruitment and retention strategy, the Department should consider revisions to the recruit training program. A review of the recruit training program should be conducted to identify the components of training required for completion, including basic Firefighting, first aid, driver training, and health and safety. From this review, the Department should determine the number of mandatory hours required to complete the Volunteer recruit training program and ongoing training program.

    - Completed

Long-term

10. The Town of Georgina should investigate the potential of forming strategic training partnerships with other area municipalities. Areas to be considered should include hazardous materials response, ice/water rescue and other services requiring a high degree of training and certification where partnering and/or developing reciprocal response protocols would provide cost effective service-delivery alternatives.

    - GFD is still working on this project

11. The Town of Georgina should investigate the potential of forming strategic training partnerships with adjacent municipalities to consider a shared training centre with facilities for live fire training and other equipment/resources to support the ongoing training needs of the Department.

    - GFD is still working on this project

11.1.6 Fleet Review

Based on the review and assessment of the fleet, apparatus, and equipment of the Georgina Fire Department, the following conclusions are noted and actions are recommended:

Short-term:

1. It is recommended that the practice of joint purchasing with other municipalities be given consideration, where possible, using common specifications for the purchasing of major front-line apparatus through strategic alliances with other municipalities.

   - Completed

2. The Town of Georgina should consider a capital budget pre-approval process for major front-line apparatus as a strategy to reduce delivery times as part of developing a reserve fleet.

   - Outstanding

3. The Department should consider implementing strategies to develop a reserve fleet of two heavy apparatus to include one reserve engine and one reserve tanker.

   - Outstanding

Long-term:

4. The Department should consider implementing the revised vehicle replacement schedule for apparatus as part of the 10-year capital budget.

   - Completed

11.1.7 Communication & Technology

The Department is currently investigating opportunities to streamline the dispatch system so it will distinguish between a full-time response and a Volunteer response, and send the correct message to the right cellphone users. This may reduce dependency on the old paging system, potentially reducing pager replacement costs.

The Town of Georgina has a service agreement with the Richmond Hill Fire Department for receiving and dispatching emergency calls and for paging Volunteer Firefighters. The Department's computer hardware and software are supported by the Town Information Technology Department.

The following is a summary of recommendations resulting from the review and assessment of the Communications and Technology Division of the Georgina Fire Department.

Short-term:

1. The Department should consider implementing a process for regularly reviewing the service agreement with the Town of Richmond Hill and consider referencing and/or including the NFPA Standard as a performance measure.

    - Needs to be implemented by GFD

2. The Department should consider the purchase of some additional VHF radios as a backup to the regional 800 MHz system.

    - Outstanding

3. The Department should investigate opportunities to provide a larger photocopier at the Keswick Station to provide more efficient and effective reproduction of materials for training, public education and fire prevention.

    - Completed

11.1.8 Next Steps

As noted in the 2010 FMP review, there were a total of 38 recommendations. Of these 38 recommendations, 19 have been completed, 11 are in progress, and 8 are included in the 2016 Fire Master Plan review, being conducted by Emergency Management & Training Inc.

Section 12 – Fire Underwriters Survey

Section 12: Fire Underwriters Survey

During this Fire Master Plan project, EMT worked with a representative from the Fire Underwriters group. This team effort was to complete a review of the Department from two different perspectives.

Overview

The Fire Underwriters Survey is a national organization that provides data on public fire protection for Fire insurance statistical work and underwriting purposes of subscribing insurance companies. Subscribers of Fire Underwriters Survey represent approximately 85 percent of the private sector property and casualty insurers in Canada.

Fire Underwriters Survey Certified Fire Protection Specialists conduct detailed field surveys of the fire risks and fire defences maintained in built up communities (including incorporated and unincorporated communities of all types) across Canada. The results of these surveys are used to establish a Public Fire Protection Classification (PFPC) for each community. While Fire Underwriters Survey is not involved in rate making matters, the information provided through the Fire Insurance Grading Index is a key factor used in the development of Commercial Lines property insurance rates. The PFPC is also used by underwriters to determine the amount of risk they are willing to assume in a given community or section of a community.

The overall intent of the PFPC system is to provide a standardized measure of the ability of the protective facilities of a community to prevent and control the major fires that may be expected to occur by evaluating, in detail, the adequacy, reliability, strength and efficiency of the protective facilities and comparing the level of protection against the level of fire risk in the built environment.

The Fire Underwriters Survey also uses PFPC information to develop the Dwelling Protection Grade (DPG), which is utilized by Personal Lines insurers in determining property insurance rates for detached dwellings (with not more than two dwelling units). The Dwelling Protection Grade is a measure of the ability of the protective facilities of a community to prevent and control the structure fires in detached dwellings by evaluating the adequacy, reliability, strength and efficiency of the protective facilities and comparing the level of protection against the level of fire risk associated with a typical dwelling.

The Fire insurance grading system used does not consider past fire loss records but, rather, fire potential based on the physical structure and makeup of the built environment.

When a community improves its PFPC or DPG, insurance rates may be reduced, and underwriting capacities may increase. Every insurance company has its own formula for calculating their underwriting capacities and insurance rates, however, the PFPC and DPG classifications are extremely useful to insurers in determining the level of insurable risk present within a community.

2016 Fire Underwriters Survey Report

The original document contains over 200 pages of information and has not been attached to this report in its entirety – only the recommendations have been included.

NOTE: When Fire Underwriters makes a recommendation, it is to identify where the Fire Department presently is, and then what does it need to do to get "FULL" marks for the classification status. Their recommendations do not imply that the Department is not meeting the local needs, only that to obtain a perfect score or rating, then the Fire Department will need to implement the noted recommendations.

Overview of the 2016 FUS Recommendations

Recommendation	Fire Insurance Grading Weighting	Grading Items
Recommendation 8.2-1 Provide Additional Engine Apparatus	Medium	PFPC - FD-1/FD-4
Recommendation 8.2-2 Provide a Reserve Engine Apparatus	Low	PFPC - FD-1/FD-4
Recommendation 8.2-3 Provide a Reserve Ladder Apparatus	Low	PFPC - FD-2/FD-4
Recommendation 8.2-4 Improve First Due Engine Coverage	High	PFPC - FD-3/FD-1/FD-4
Recommendation 8.2-5 Apparatus Replacement Program	Medium	PFPC - FD-1/FD-4/FD-5
Recommendation 8.2-6 Train and Qualify Additional Firefighters to Officer Positions	Low	PFPC - FD-6/FD-8
Recommendation 8.2-7 Improve Total Available Fire Force	High	PFPC - FD-7
Recommendation 8.2-8 Improve In Service Apparatus Company Staffing	Medium	PFPC - FD-8
Recommendation 8.2-9 Continue to Develop Officer Training Program	Medium	PFPC - FD-6/FD-13
Recommendation 8.2-10 Improve Training Facilities	Medium	PFPC - FD-13
Recommendation 8.2-11 Fire Station Replacement Plan	Medium	PFPC - FD-17
Recommendation 8.2-12 Continual Development of Pre-Incident Plan Program	High	PFPC - FD-18
Recommendation 9.2-1 Improve Hydrant Distribution	High	PFPC - WS-11
Recommendation 9.2 2 Frequency of Available Fire Flow Testing	Medium	PFPC - WS-13
Recommendation 9.2-3 Private Hydrants should be Properly Identified	Low	PFPC - WS-13
Recommendation 10.1-1 Qualifications for Fire Prevention Education Providers	Medium	PFPC - FSC-1/FSC-2
Recommendation 10.1-2 Improve Qualifications for Fire Prevention Inspectors	Medium	PFPC - FSC-1/FSC-2
Recommendation 10.1-3 Review NFPA 1730 to aid in the development of the Town's Fire Prevention Program	Low	PFPC - FSC-1/FSC-2
Recommendation 10.1-4 Continue to Develop In-Service Inspection Program	Medium	PFPC - FSC-1/FSC-2
Recommendation 10.1-5 Improve Fire Prevention Inspection Program	High	PFPC - FSC-1/FSC-2
Recommendation 12.2-1 Superior Tanker Shuttle Service Accreditation	Medium	DPG
Recommendation 12.2-2 Develop Formal Water Supply Plan for Non-Hydrant Protected Areas; Consider Dry Hydrants	Medium	DPG

Summary of Recommendations

Recommendation 8.2-1 Provide Additional Engine Apparatus

The engine service requirements for fire insurance grading have not been fully met with the Georgina Fire Department's existing fire apparatus fleet. The Georgina Fire Department may wish to improve its Firefighting capabilities by acquiring additional apparatus. Fire apparatus should be ULC listed, be of an appropriate age, have an adequate pumping capacity, and be proven reliable.

The Georgina Fire Department received credit for 5.33 Engine Companies. Credit up to the maximum amount of 3.7 can still be awarded for this grading item.

Acquiring additional fire apparatus is a serious matter that requires careful consideration. There are many factors to consider and fire insurance grading is only one such factor.

Recommendation 8.2-2 Provide a Reserve Engine Apparatus

To ensure an adequate response when a Fire Department has an engine apparatus out for repair, a Fire Department should have a reserve engine apparatus equipped, maintained and ready for replacement purposes if its primary pumper is out of service. At a minimum, one engine apparatus should be kept in reserve for each eight engine apparatus, which would include a single engine apparatus having a replacement.

For the Georgina Fire Department to receive maximum credit in this portion of the engine service grading item, a reserve engine would be required.

Recommendation 8.2-3 Provide a Reserve Ladder Apparatus

To ensure an adequate response when a Fire Department has a ladder apparatus out for repair, a Fire Department should have a reserve ladder apparatus equipped, maintained and ready for replacement purposes if its primary ladder is out of service. At a minimum, one ladder apparatus should be kept in reserve for each eight ladder apparatus which would include a single ladder apparatus having a replacement.

For the Georgina Fire Department to receive maximum credit in this portion of the ladder service grading item, a reserve ladder would be required.

Recommendation 8.2-4 Improve First Due Engine Coverage

First due coverage for engines could be improved to receive additional credit for fire insurance grading purposes. First due engine response credit only received 43 percent credit and it was determined that an additional five engine companies would be required to receive maximum credit within this grading item for fire insurance grading purposes.

Credit up to the maximum can be received if additional fire stations and engine companies were developed within the municipality to improve first due coverage.

Recommendation 8.2-5 Apparatus Replacement Program

The Georgina Fire Department received full credit for apparatus in 2016. However, numerous apparatus such as Engine 141, Tanker 144, Aerial 163, Engine 181 and Tanker 184 have reached and/or are approaching their maximum age of acceptance, and could result in decreased credit as it pertains to fire insurance grading. Careful and strategic alignment of replacement funding of apparatus will need to be developed to ensure that, as a minimum, front line apparatus do not exceed the 15-year replacement cycle for front line pumpers and ladder companies, as well as the 20-year maximum replacement schedule for mobile water supply apparatus.

Recommendation 8.2-6 Train and Qualify Additional Firefighters to Officer Positions

The Georgina Fire Department received a limited amount credit for career officers when measured against the 44 career officers needed based on a shift factor of 4. The Georgina Fire Department can receive additional credit up to the maximum if it increases the total number of Company Officers on the Fire Department. Credit can be received through a combination of career and auxiliary officers.

A Fire Department should have sufficient Company Officers available and assigned to provide one on- duty response with each required engine or ladder company.

The Company Officers should be adequately trained, preferably in accordance with NFPA 1021: Standard for Fire Officer Professional Qualifications, 2009 Edition or recent edition to receive full credit for fire insurance grading purposes.

Recommendation 8.2-7 Improve Total Available Fire Force

The Georgina Fire Department is credited with 16.17 Fire-fighter equivalent units in its available fire force out of the maximum it can receive of 66. The Georgina Fire Department can receive additional credit up to the maximum if it improves its available fire force. Credit can be obtained through career and auxiliary members.

Note that the available fire forces can be improved through additional auxiliaries up to 50% of the required fire force (in the case of Georgina Fire Department, the required force is 66 Firefighter equivalent units (FFEU), so the maximum available fire force that can be provided through auxiliary Firefighters (Volunteers) and other FFEU sources is 33). Providing additional staffing, through either career or auxiliary Firefighters, is a serious matter that requires careful consideration. There are many factors to consider and the fire insurance grading is only one such factor.

Recommendation 8.2-8 Improve In-Service Apparatus Company Staffing

The Georgina Fire Department can receive additional credit, up to the maximum, in this grading item if it improves its staffing of in-service fire apparatus. It should be noted that this grading item is connected with other fire insurance grading items. They include engine service, ladder service, and total available fire force. Changes in those grading items may affect the amount of credit received in this grading item.

Recommendation 8.2-9 Continue to Develop Officer Training Program

To improve the overall effectiveness of the personnel holding officer positions and personnel working towards an officer's position, it is recommended that an official officer training program with attainable goals be developed for members. The curriculum should include qualitative and quantitative goals and benchmarks that each Fire fighter can work towards.

A standard that should be considered as reference material for developing an officers training program is NFPA 1021: Standard for Fire Officer Professional Qualifications. NFPA 1021 identifies the performance requirements necessary to perform the duties of a Fire officer and specifically identifies four levels of progression.

Recommendation 8.2-10 Improve Training Facilities

The Georgina Fire Department does not have a developed training grounds or facilities. Additional training facilities should be acquired. The following props and facilities are recommended to be developed within the Town of Georgina:

- Wet drill facilities
- Smoke facilities
- Additional training prop for scenario based training
    - Fuel spill fire
    - Vehicle fire
    - LP tank fire
    - Gas main break fire
    - Industrial fire

Training facilities should be developed by the Fire Department in relation to the level of fire risk within the community so that realistic Firefighting training can be conducted.

It is recommended that facilities for drill and training be readily available for purposes that include necessary

buildings or structures for ladder work, smoke and breathing apparatus training, use of pumper and hose lines, lecture space, etc. If the Fire Department were to develop its own training facilities it is recommended NFPA 1402: Guide to Building Fire Service Centres, recent edition be used for development.

Ideally for fire insurance grading purposes, training props and facilities should be located within the municipality of the Fire Department. Credit can be received for the use of training facilities and props in neighbouring communities if the Fire Department has access to use them. To receive full or partial credit, training facilities and props should be within 8 km of the municipal boundary. If training facilities and props are beyond 8 km, credit can still be achieved, but sufficient Fire Department coverage must be maintained within the municipality when Fire Department resources are outside of the community for training purposes.

Recommendation 8.2-11 Fire Station Replacement Plan

The current status of Georgina Fire Stations is they are not effectively serving their purpose. Fire Stations are old and lack modern design features and facilities that aid in the Fire Department programs such as training, proper equipment storage, and the ability to house modern fire apparatus. Each building being used as a fire station has a number of issues as well as health and safety concerns. The stations do not incorporate modern features and best practices for fire stations and have less than desirable living and dormitory area for on-shift crews. The facilities have limited space for administration, training and exercise and are considered inadequate in most respects with regards to meeting the needs of the members of the Department. The poor condition of the buildings adversely affects the morale of the Department and the capacity of the Department to remain in a state of readiness.

Serious consideration should be given to the development of a plan to replace the existing fire stations with modern facilities designed to meet the needs of the Department and community, while at the same time minimizing response times.

Recommendation 8.2-12 Continual Development of Pre-Incident Plan Program

Additional Credit within this grading item can be achieved as a greater number of high occupancy and high fire risk buildings are pre-planned. Regular updating and use in training of pre-incidents plans should occur to ensure credit for fire insurance grading is achieved in the future. This may involve classroom discussions or visiting the site and performing Firefighting or rescue scenarios. Increasing the inventory of pre-incident plans will be paramount in receiving additional credit points.

Credit awarded in this area of the fire insurance grading may help to improve the overall fire insurance grade of the community.

Recommendation 9.2-1 Improve Hydrant Distribution

Hydrant distribution can be improved within the Town of Georgina. Additional credit up to the maximum can be received if hydrant distribution is improved. It is recommended that additional hydrants be installed to allow for a sufficient volume of water being available to buildings. It should be noted that for additional hydrants to be effective, a sufficient amount of water must be available within the water system.

Effective hydrant distribution will help provide a greater level of fire protection throughout commercial and residential areas by allowing for greater volumes of water to be used during fire ground operations, provided that the system has been designed, installed and capable of meeting such demands.

Recommendation 9.2-2 Frequency of Available Fire Flow Testing

Routine available fire flow testing should be completed on water supply systems that provide public Fire protection. At a minimum, available fire flow testing should be conducted every 5 years in accordance with NFPA 25: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, recent edition and NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants, recent edition.

NFPA 25 Reference 7.3.1 Tests

7.3.1 * Underground and Exposed Piping Flow Tests. Underground and exposed piping shall be flow tested to determine the internal condition of the piping at minimum 5-year intervals.

7.3.1.1 Flow tests shall be made at flows representative of those expected during a fire, for the purpose of comparing the friction loss characteristics of the pipe with those expected for the particular type of pipe involved, with due consideration given to the age of the pipe and to the results of previous flow tests.

7.3.1.2 Any flow test results that indicate deterioration of available water flow and pressure shall be investigated to the complete satisfaction of the authority having jurisdiction to ensure that the required flow and pressure are available for fire protection.

NFPA 291 Reference 4.13 Public Hydrant Testing and Flushing

4.13.1 * Public Fire hydrants should be flow tested every 5 years to verify capacity and marking of the hydrant.

4.13.2 Public Fire hydrants should be flushed at least annually to verify operation, address repairs, and verify reliability.

Recommendation 9.2-3 Private Hydrants should be Properly Identified

Private hydrants are encouraged to be colour coded differently than public hydrants. NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants, recent edition recommends the following:

5.2.5.1 Marking on private hydrants within private enclosures is to be at the owner's discretion.

5.2.5.2 When private hydrants are located on public streets, they should be painted red or some other color to distinguish them from public hydrants.

Recommendation 10.1-1 Qualifications for Fire Prevention Education Providers

To ensure that individuals have the necessary skills and knowledge to provide fire prevention education programs and services, should be certified as a Public Fire and Life Safety Educator in accordance with NFPA 1035: Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Fire Setter Intervention.

Additional credit up to the maximum can be achieved if/when members of the Fire Department that are providing fire prevention education are certified to Level 1 and Level 2 as a Public Fire and Life Safety Educator.

At minimum, the most senior member of the Fire Department providing fire prevention education should be certified to Public Fire and Life Safety Educator Level 2 and additional educators should be certified, at minimum, to Level 1.

Recommendation 10.1-2 Improve Qualifications for Fire Prevention Inspectors

To ensure that individuals have the necessary skills and knowledge to provide fire prevention inspections, they should be certified as a Public Fire and Life Safety Educator in accordance with NFPA 1031: Standard for Professional Qualifications for Fire Inspector and Plan Examiner.

At minimum, individuals conducting Fire prevention inspections should be certified to NFPA 1031: Level 1 and strive to achieve Level 2 for conducting inspections in occupancies with a higher risk factor.

Recommendation 10.1-3 Review NFPA 1730 to aid in the development of the Town's Fire Prevention Program

As NFPA has recently released NFPA 1730: Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education

Operations, the Georgina Fire Department is encouraged to review the document to see how they may incorporate aspects of the Standard into development programs in the future as the fire prevention division of the Department grows.

Recommendation 10.1-4 Continue to Develop In-service Inspection Program

Increasing the frequency of inspections can be aided by the addition of in-service companies completing Life Safety and Hazard Identification Occupancy Inspections related to smaller and less technical occupancies (provided adequate training is administered). This will allow Fire Inspectors to focus on larger risks such as vulnerable occupancies, multi-unit residential, industrial, commercial, and institutional as well as assembly occupancies. A critical process to in-service inspections will include appropriate training and a firm quality assurance program.

Recommendation 10.1-5 Improve Fire Prevention Inspection Program

Increasing the frequency of inspections while continuing to meet legislative requirements of the Fire Protection and Prevention Act 1997, The Ontario Fire Code and OFMEM Public Safety Guidelines should be a priority of the Fire Prevention/Public Education division of the Georgina Fire Department. In order to improve the frequency of inspections, additional resources in the form of Fire Prevention Inspectors will likely be necessary.

The amount of inspections should be improved if the Fire Department desires to receive additional credit within this grading item for fire insurance grading purposes. Incorporating a routine inspection program will be necessary to achieve better scoring under this item. The Department should develop an inspection frequency that meets the needs of the community while maximizing fire insurance credit. The development of a plan that includes at a minimum annual inspection frequency of all properties should be investigated as it pertains to the needed resources and functions that will support the objective of annual inspections.

Two documents are recommended to be used as guides for developing an inspection program that goes beyond providing inspections on complaint and requests only.

- NFPA 1730: Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations, Chapter 6 Fire Prevention Inspection and Code Enforcement

- Fire Underwriters Survey – Technical Bulletin – Recommended Frequency of Fire Prevention Inspections, Appendix G

Recommendation 12.2-1 Superior Tanker Shuttle Service Accreditation

In areas without hydrant water supplies, it may be possible to achieve improved insurance rates reductions for Personal Lines and Commercial Lines insured dwellings. A Fire Department must be capable of providing a minimum continuous flow rate that is equivalent to hydrant protection as per the guidelines indicated below.

Essentially, the Fire Department must show, through physical site testing, that it can provide a minimum of 200 Igpm for a period of 2 hours at a limiting distance of 5 km from a recognized water supply point and 8 km

from a recognized fire hall (or lesser distance limited by the Fire Protection Area boundary). For Commercial Lines, 400 Igpm must be provided for a period of 1 hour at a limiting distance of 2.5 km from a recognized water supply point and 5 km from a recognized Fire hall (or lesser distance limited by the Fire Protection Area boundary).

Complete details of the accreditation testing process are provided in Appendix H – Alternative Water Supplies for Public Fire Protection.

A Fire Department should aim to achieve as close as feasible to the Required Fire Flow for a building using a shuttle operation as any future adjustments to the Fire Insurance Grading methodology will likely be based on this measurable. Furthermore, the main reason to maximize water through shuttle operations is to aid Firefighting, as noted in NFPA 1142: Annex C Mobile Water Supply Apparatus.

Additional mobile water supply apparatus would be required to reliably and consistently provide STSS service from each of the fire stations in the Town of Georgina. Annex C of NFPA 1142 should be reviewed to aid a Fire Department in determining flow rates based on desired mobile water supply tank capacities and available water supply points.

Recommendation 12.2-2 Develop Formal Water Supply Plan for Non-Hydrant Protected Areas; Consider Dry Hydrants

The Georgina Fire Department provides structural fire protection to areas in the municipality that are without hydrant water supplies. In these areas, the Fire Department responds utilizing the onboard water storage of the fire apparatus. Plans should be developed to improve continuous flow rates from the Fire Department in areas that do not have hydrants.

Consideration should be given to installing dry hydrants or water tanks connected to a dry hydrant in strategic locations to minimize travel times during shuttling operations. Dry hydrants should be installed and designed in accordance with NFPA 1142: Standard on Water Supplies for Suburban and Rural Fire Fighting, current edition.

Any improvements made to water supplies should be reviewed/approved by Fire Underwriters Survey if they are intended to be credited for fire insurance grading purposes.

ESCI Update (2022):

GFRS conducted its last FUS survey in 2017. FUS has a goal to reevaluate fire departments every five years.

Modernization:

FUS was recently purchased by the Verisk company which is the parent company of the United State's Insurance Services Organization (ISO) and provides a similar rating system to FUS. The main difference in the two rating system is FUS provides several ratings that are fire station based and shaped by occupancy. In the ISO system, a single PPC (Property Protection Classification or ISO rating) is provided for a fire department independent of the number of fire stations and occupancy classifications. This rating system is based on four primary elements: distance from fire station, fire department capabilities, water supply systems, and dispatch communications, and one secondary fire prevention processes.

Recommendation #19 - Fire Underwriters Survey (FUS):

ESCI recommends GFRS should have an updated FUS survey performed.

Costs:

GFRS staff to evaluate and budget finances and time accordingly

Timeframe:

Short term (0 – 2 yrs)

Section 13 – Collaboration and Innovation

13.1 Key Performance Indicators
13.2 Station Location Considerations
13.3 Training Facilities
13.4 Canadian and International Fire Services Examples

Section 13: Collaboration and Innovation

The Collaboration & Innovation Review is ongoing; the Report will be completed by the end of March 2017.

ESCI Update (2022):
This Collaboration and Innovation Review report is now complete.

The purpose of the 2016 report conducted by EMT was to identify potential opportunities for the communities of the N6 fire departments to collaborate on along with innovative service ideas. These ideas were not confined to solely to one department but rather ideas that all the departments could possibly share in.

The report identifies the following areas for potential areas of collaboration among the five organizations (six communities):

1) Staffing
2) Joint Service Level Standards that include operations, dispatch, fire prevention and training
3) Fire Stations and Response Times
4) Vehicles and Equipment

The report identifies the following opportunities for the incorporation of emergency services innovation:

1) Drones
2) Mobile Training Units
3) Fire Prevention Initiatives
4) Home Fire Sprinklers
5) Joint Emergency Management Position

Modernization:
The concept of sharing resources between institutions is a growing application of limited government resources. It is not confined to the sharing of resources solely between fire departments but across all elements of government. Siloism, or the belief that service provision is most effective and efficient in isolation, is giving way to collaboration as not the preferred method of service provision but one that can have value and should not be excluded.

A method of expanding on this concept is to take a traditional way of doing business and seeing if a collaborative approach is more effective but also adopting a posture of whether a new idea can be shared across multiple organizations.

Recommendation #20 - Collaboration:
Continue exploring collaborative services with municipal partners.

Cost:
GFRS staff to evaluate and budget finances and time accordingly

Timeframe:
Ongoing

Section 14 – Summary of Recommendations Final Summary of Recommendations, Solutions and Estimated Costs

Section 14: Summary of Recommendations

Conclusion

During the review conducted by Emergency Management and Training Inc., it was demonstrated that the full-time staff and the Firefighters are truly dedicated to the community they serve. Council, CAO and Fire Chief are sincerely committed to ensuring the safety of the community and the Firefighters of Georgina. Based on the present staffing, equipment and Fire station locations, Georgina Fire Department is endeavoring to offer the most efficient and effective service possible.

All costs and associated times are approximate estimates that can be implemented through prioritization between the Fire Chief, CAO and Council.

Most fire master plans are 10-year documents with a review to be conducted at the five-year point. Due to some of the specific recommendations made in this document, it is advisable that the Fire Chief view this as a "living document" and conduct more frequent reviews of the recommendations, and bring forward updates to Council, as required.

Recommendations and Estimated Costs

The following chart provides further overview of the recommendations found throughout this report along with any estimated costs that can be incurred in the associated areas.

This Fire Master Plan document is a culmination of three individual reports:

- The Fire Station Review, which contains 14 recommendations
- The Fire Underwriters review, which contains 20 recommendations and
- The overarching Fire Master Plan document, which contains a total of 24 recommendations

Between the three documents there is a total of 58 recommendations for consideration by the Georgina Fire Department and its Council.

FMP Recommendations for Georgina Fire Department			
Rec #	Recommendation and Solution	Estimated Costs	Suggested Timeline
1	The Fire Station Report found in Appendix "F" contains a total of 14 recommendations. All of the recommendations can be found in the actual document, all with a brief summary noted in Section 13. As noted in the associated recommendations (in Section 13), many of the items will require immediate attention.	Approximate cost of recommendations is $500,000.	To be dealt with as noted in the report
2	It is recommended that a full review of the Establishing and Regulating By-law document be completed to include the following items: • Update the document's language to reflect what • is noted in the FPPA • Incorporate, where appropriate, any references to NFPA standards that the Fire Department deems necessary to be followed • Measurable service levels that can be reported to council on an annual basis, and • Composition to represent the level of service to be provided as outlined throughout the FMP, and • A review to be conducted by the Town's Solicitor	No cost associated with this recommendation	Short-Term (1-3 years)
3	It is recommended that the Simplified Risk Assessment/Community Risk Assessment (SRA/CRA) be updated in accordance with NFPA 1730, being every five years or as necessary with changes. In order to aid Council in their decision-making process, there is merit in providing an updated assessment at the beginning of every term of Council so that the sitting Council understands the platform on which the services conducted by the Fire Department are built.	No cost associated with this recommendation – staff time only	Short-Term (1-3 years)
4	It is recommended that the Fire Chief provide Council with an updated review of the Simplified Risk Assessment coupled with the Office of the Fire Marshal and Emergency Management's Integrated Risk Management (IRM) tool of the identified High, Medium, and Low risk occupancies.	No cost associated with this recommendation – staff time only	Short-Term (1-3 years)

5	It is recommended that upon completion of the SRA/CRA and IRM, as noted in recommendation 4, that the Fire Chief provides Council with a draft policy for review and passage that outlines a fire inspection program to address identified needs and expected outcomes of the program. This program should outline the building types and the frequency of inspections.	No cost associated with this recommendation – staff time only	Short-Term (1-3 years)
6	It is recommended that the Fire Department meet with all local community groups to form a partnership in relation to organizing fire safety and public education events that can be tailored to the unique needs and challenges within the community	Staff related time – no other costs noted at this time	Immediate (0-1 year)
7	It is recommended that the Fire Prevention Division review its inspection program to identify levels of desired frequency for these inspections. It should also be noted at this time, that the Fire Underwriters Survey supports and recommends that a level of frequency be identified by the Fire Department in its quest towards ensuring a fire safe community.	Staff related time – no other costs noted at this time	Short-Term (1-3 years)
8	It is recommended that the GFD work with developers and the public to make the Home Sprinkler Systems initiative a part of their fire prevention and public education program.	Staff related time – no other costs noted at this time	Immediate (0-1 year)
9	It is recommended that the present part-time Administrative Assistant position be transitioned into a full-time position.	Cost would be related to the number of hours to be increased to make the position full-time	Short-Term (1-3 years)
10	It is recommended that to verify the Training Division is meeting related NFPA (and other) training program recommendations, the Training Officer should identify; • What training programs are required in relation to the services that GFD is providing • The number of hours that are required to meet each of those training needs • Resources required to accomplish this training • Joint partnerships with bordering fire departments and private organizations that can be entered into to achieve the training requirements identified by the Training Officer, and • To present an annual program outline at the start of each year to the Fire Chief, with noted goals and expectation, which are measured and reported on in relation to completion success rate at the end of each year.	Staff related time for the evaluation – no other costs noted at this time, but depending on recommendation s made by the Training Division, costs will be incurred	Short-Term (1-3 years)

11	It is recommended that GFD continue to search out opportunities to conduct joint training programs with other fire departments by securing/scheduling neighboring training facilities whenever possible.	Not identified costs at this time	Short-Term (1-3 years)
12	It is recommended that GFD explore the partnership opportunity to build a training facility within the capture area, which would be a cost-effective measure for all of the fire departments.	Not identified costs at this time	Short-Term (1-3 years)
13	It is recommended that greater utilization of the full- time officer resources be incorporated into an annual fire prevention program on a more formal basis. To accomplish this, all full-time officers should be trained and certified to at least: • NFPA 1031 – Fire Inspector I, and • NFPA 1035 – Fire and Life Safety Educator I By having all full-time officers trained to the noted levels, GFD will have a greater number of resources to draw upon in its public fire safety education and inspection programs.	There is not actual cost to this recommendation other than the training and certification of the Firefighters to the noted levels.	Short-Term (1-3 years)
14	Succession planning for Fire Prevention and Training Division personnel should be addressed to ensure trained personnel are ready to take over when the existing personnel retire.	Recommendation 6 would be a modest monetary cost – anticipated <$1,000 – but would also involve staff time.	Short-Term (1-3 years)
15	The Fire Chief should investigate opportunities to promote retention of the Volunteer Firefighters (VFF) as noted in the OFMEM document (attached in section 14, Appendix “D”). The Fire Chief should continually recruit for VFF’s in areas that are presently understaffed or have issues with response numbers (of VFF’s) to calls.	No Immediate cost for this recommendation	Short-Term and ongoing (1-3 years)
16	The Department should complete certification for staff for each position (that requires or recommends certification) and ensure that certifications are maintained.	Staff time based on training program	Mid-Term (4-6 years)
17	The Fire Chief should continue to monitor and evaluate call volumes of the Department on an annual basis along with the level of Firefighter’s response per station to identify any areas of concern that may result in recommending the implementation of a partial full- time response component for the municipality.	No cost associated with this recommendation	Long Term (7-10 years)
18	It is recommended that the Fire Chief present a Standard of Cover for the approval of Council.	No cost associated with this recommendation	Immediate (0-1 year) and ongoing

19	It is recommended that when possible the present dispatching agreement with the current dispatch provider be updated to included NFPA related standards for GFD to incorporate the necessary performance measures as per the NFPA 1221 standard.	No cost associated with this recommendation	Immediate, (0-1 year) with ongoing review
20	The Town should endeavour to maintain a schedule that compiles with the Fire Underwriters Survey (FUS) recommendations on the replacement of vehicles. The industry standard for the design and replacement of vehicles is the National Fire Protection Associations Standard 1901. It is recommended that this and other related NFPA standards relating to vehicle design, maintenance, testing, inspection and replacement and refurbishing be utilized.	Continued financial forecasting	Long-Term and ongoing (7-10 years)
21	It is recommended that the Keswick Station secondary EOC be relocated in a newer facility so that it is designed and built to better meet the needs of an emergency operations centre.	Cost would be part of the newer facility design and build	Mid Term (4-6 years)
22	It is recommended that a full review of all mutual aid, automatic aid and fire protection agreements be completed in the short-term to identify any required revisions.	No cost associated with this review and updating of agreements	Short-Term (1-3 years)
23	Annual corporate business planning cycles should be more specific in identifying goals and expected outcomes for all Fire Department related programs so as to ensure that adequate funding is secured in relation to the reserve funds for equipment and facilities.	No cost associated with this planning cycle recommendation. However, results of the planning may incur costs	Short-Term (1-3 years) And on an ongoing basis
24	Continue updating and completion of any open projects noted in the previous 2010 Fire Master Plan.	Costs to be identified with each related incomplete project	Short-Term (1-3 years)

Recommendations Contained in the Fire Station Review Document

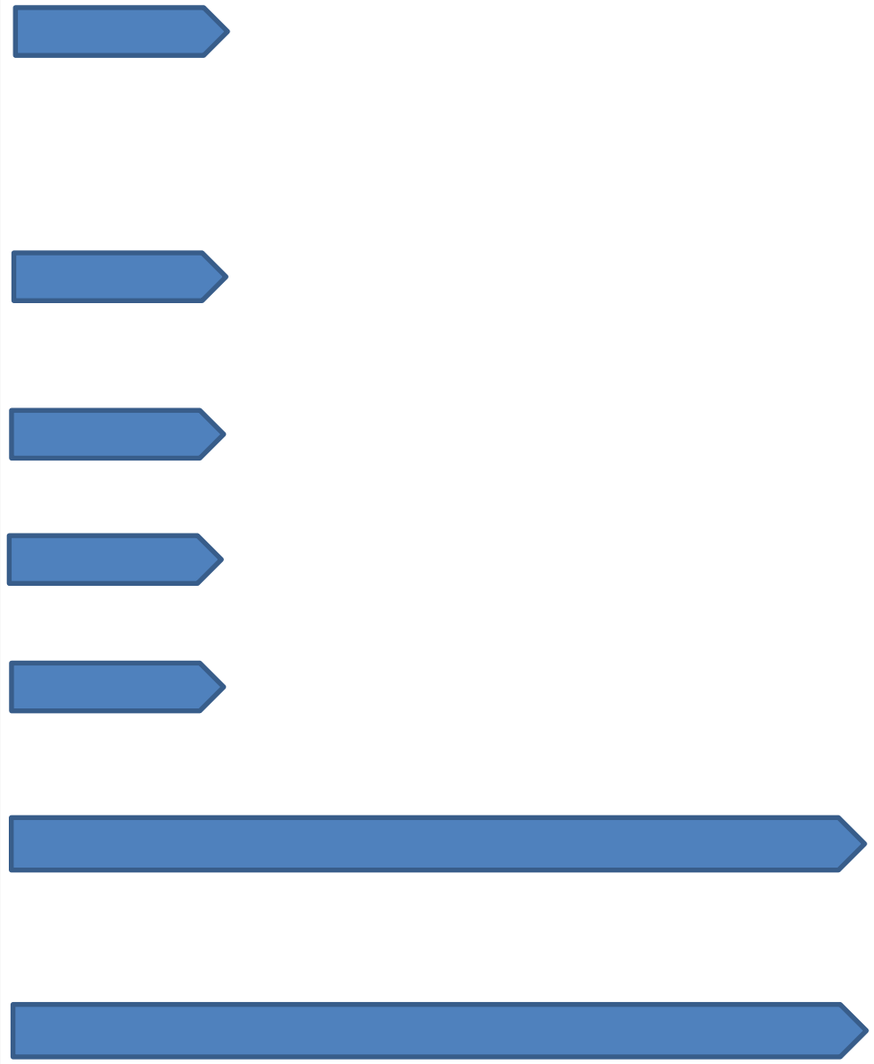
Recommendations for Georgina Fire Department - Fire Station Review			
Rec #	Recommended Solution	Estimated Costs	Suggested Time Line
	See notes for each station as many items were identified as requiring repairs – only the immediate and key recommendations have been identified in this chart.	Estimated costs for all visual repairs identified would exceed $500,000	---------
1.	Remove the mezzanine in the apparatus bay in Station 1-4, Keswick.	Approximate cost for removal - $1,000	Immediate
2.	Remove any items being stored in the overhead storage (apparatus bay) in Station 1-8, Pefferlaw.	No cost for removal, but new storage area needs to be built	Immediate
3.	Electrical panels on the apparatus floor should be protected from the potential of water spray at all three of the stations.	Proper water proof covers for these panels to be installed - $1,000	Immediate
4.	Have the vehicle exhaust system evaluated / repaired at Station 1-6, Sutton.	Costing unknown based on amount of repairs required	Immediate
5.	Upgrade or install proper male and female showers at Station 1-4, Keswick; 1-6, Sutton and 1-8 Pefferlaw.	Estimated costs of approx. $10,000 per washroom	Immediate
6.	Install fencing around the training tower at Station 1- 6, Sutton.	Costing would depend on type of fencing installed	Immediate
7.	Ensure safety features are adequate for apparatus bay doors.	Costing unknown based on amount of repairs and parts required	Immediate
8.	Conduct an engineering review of all Fire stations for an in-depth structural assessment, repairs / upgrades required, and estimate the cost of the work to address the issues. EMT's assessments are from a visual perspective only; no engineering review was performed on the buildings.	Engineering review estimated at approx. $5,000 - $7,000.	Short Term (1-3 years)
9.	Replace Station 1-8, Pefferlaw. Station 1-8 is in a good location for response to the community, however, it is the size and available space with the present station that is a concern.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Immediate (0–1 year)

10.	Construct a new Fire station to the northeast of the current Station 1-4, Keswick, to provide a larger response coverage area. This station will be the new Fire Headquarters. The station should be designed so that it has the capacity to accommodate, in the future, two full-time crews along with a Volunteer force, plus a spare apparatus (or be designed to be easily expanded).	Construction costs estimate $390 - per square foot. (e.g. 20,000sq ft. building = $7,800,000)	Long Term (7-10 years)
11.	Consider an additional station in the south of Keswick shortly after the new Headquarters is built or even simultaneously. With the fairly rapid growth in the community along with the existing call locations, this new additional Fire station is warranted. It has been identified that the Town has property and is planning a community centre in the area of Woodbine Avenue and Glenwood Avenue. This location, as plotted above (in Map #4), provides an enhanced four (4) minute response time to the south end of Keswick.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Short Term (1-3 years)
12.	The Fire service currently does not have an appropriate Fire training centre. EMT would recommend that one of the locations include a Firefighter training centre including a training tower, live burn building, space for auto extrication, and a classroom.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Mid Term (4-6 years)
13.	Replace or renovate Station 1-6, Sutton. Relocating this station to an area such as Dalton Road and Black River would offer a quicker response to the Greater Sutton Area and also for a more efficient response time when backing up (response support to) the Keswick or Pefferlaw stations.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Mid Term (4-6 years)
14.	During all noted replacements or renovations to the Fire stations, any related AODA requirements must be incorporated.	As Required	As Required

ESCI Update (2022):

The following are the recommendations that ESCI has made:

#	Pg. #	Recommendation	Cost	Timeframe	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
1	29	**Service level monitoring:** ESCI recommends since GFRS's mission is to provide a service to the community, indicators of when the service models should be assessed are when the services show signs of strain. This is identified further in the report where the National Fire Protection Association (NFPA) recommends response times as the primary indicator of reliable service.	Dependent on the growth rate but using the population model, a 1% increase, excluding inflationary costs, in annual fire department expenditures should be planned for.	Short term (0 – 2 yrs)										
2	35	**Key Performance Standards development:** ESCI recommends that GFRS continue to be proactive in its philosophies of change assuming progressive postures that use data, regular community and staff interaction, and benchmarks that regularly evaluate its service model.	GFRS staff to evaluate and budget finances and time accordingly	Short term (0 – 2 yrs)										
3	40	**Performance standards approval and adoption:** ESCI recommends the Fire Chief, with Town Council approvals, should adopt measurable performance standards for each of the three lines of defence.	GFRS staff to evaluate and budget finances and time accordingly	Short term (0 – 2 yrs)										
4	40	**NFPA standards monitoring:** ESCI recommends the Fire Chief should monitor the progress of the changing NFPA 1710 and 1720 standards to the new NFPA 1750 and see if new applicable standards are produced.	GFRS staff to evaluate and action accordingly	Short term (0 – 2 yrs)										
5	40	**Establish and Regulate Bylaw update:** ESCI recommends the current bylaw, which is now 18 years old, should be reviewed and updated, as needed. At the least, the organizational structure outlined in Appendix 'B' of the bylaw should be updated.	GFRS staff to evaluate and budget finances and time accordingly	Short term (0 – 2 yrs)										
6	40	**Accreditation:** ESCI recommends even without pursuing full accreditation, GFRS should strongly consider adopting the CFAI model standard for fire service excellence. This would require staff time to be allocated to begin working towards the accreditation model.	GFRS staff to evaluate and budget finances and time accordingly	Long term (5 - 10 yrs)										
7	42	**Communication:** ESCI recommends the fire chief should continue to keep open communication channels with both the community and workforce. When possible, the fire chief should keep all staff up-to-date on strategic objective timetables and implementation progress as well as continuing to involve the workforce in implementation processes.	GFRS staff to evaluate and budget finances and time accordingly	Ongoing										



#	Pg. #	Recommendation	Cost	Timeframe	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
8	46	**Growth monitoring:** ESCI recommends the Fire Chief should consider the establishment of organizational change trigger points associated with the growth of the community. When trigger points are met, the fire chief and town council should be aligned as to what the next action steps are.	GFRS staff to evaluate and budget finances and time accordingly	Ongoing										
9	51	**Develop and maintain a Community Risk Assessment (CRA):** As directed by the Office of the Fire Marshal, complete the CRA by July 1, 2024 to replace the existing Simplified Risk Assessment (SRA). Maintain a CRA framework.	Approximately 20 hrs or greater staff time annually GFRS staff to evaluate and budget finances and time accordingly	Ongoing										
10	55	**Preplanning:** ESCI recommends GFRS should continue to strive for including building and preplan data vehicle tablets in pre-fire operations.	$5,000 for software technology that provides preplan data to apparatus	Medium term (2 – 5 yrs)										
11	63	**Residential sprinklers:** ESCI recommends GFRS should continue collaboration with builders to offer residential sprinkler installation as a part of new construction.	GFRS staff to evaluate and budget finances and time accordingly	Ongoing										
12	64	**Performance standards:** ESCI recommends GFRS should adopt performance standards that are consistent with community expectations and costs that would require incremental improvements of service delivery.	GFRS staff to evaluate and budget finances and time accordingly	Short term (0 – 2 yrs)										
13	72	**Annual service review:** ESCI recommends GFRS should continue annual reviews of service provision involving all stakeholders.	GFRS staff to evaluate and budget finances and time accordingly	Ongoing										
14	80	**Tiered response:** ESCI recommends GFRS should do a joint engagement with the York Region EMS and the community to discuss EMS response expectations.	GFRS staff to evaluate and budget finances and time accordingly	Short term (0 – 2 yrs)										
15	99	**Monitor growth and service levels (station 1-8):** ESCI recommends GFRS should establish trigger points in alignment with response performance standards to determine when the Pefferlaw station should consider transitioning to some degree of career response models.	GFRS staff to evaluate and budget finances and time accordingly	Long term (5 - 10 yrs)										

#	Pg. #	Recommendation	Cost	Timeframe	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
16	110	**Fleet services:** ESCI recommends GFRS should continue previous report recommendations to determine feasibility of expanding fleet service depth or participating in a joint fleet services arrangement with another community or organization.	GFRS staff to evaluate and budget finances and time accordingly	To be evaluated annually										
17	115	**Emergency management:** Continue working with York Region on expanding the Emergency Management Program to address specific contingency plans for various hazards, technology improvements and expanding collaborative processes.	GFRS staff to evaluate and budget finances and time accordingly	Ongoing										
18	119	**Automatic Aid:** ESCI recommends GFRS should expand its automatic aid agreements with the objective of creating an ERF (effective response force) that is compliant with NFPA standards.	GFRS staff to evaluate and budget finances and time accordingly	Short or Medium term (0 – 5 yrs)										
19	149	**Fire Underwriters Survey (FUS):** ESCI recommends GFRS should have an updated FUS survey performed.	GFRS staff to evaluate and budget finances and time accordingly	Short term (0 – 2 yrs)										
20	152	**Collaboration:** Continue exploring collaborative services with municipal partners.	GFRS staff to evaluate and budget finances and time accordingly	Ongoing										

Section 15 – Appendices

Appendix A	Definitions and References
Appendix B	Staff Surveys
Appendix C	Community Surveys
Appendix D	Public Fire Safety Guideline - Recruitment and Retention of Volunteer Firefighters
Appendix E	Call and Response Data for 2013 and 2014
Appendix F	Georgina Fire Station Review

Section 15: Appendices

Appendix A – Definitions and References

Automatic Aid Agreements – Fire Prevention and Protection Act, 1997 (FPPA 1997)

For the purposes of this Act, an automatic aid agreement means any agreement under which,

a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department in the municipality is capable of responding more quickly than any Fire Department situated in the other municipality; or

b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4).

- *Automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.*

Commission of Fire Accreditation International Community Definitions:

Suburban – an incorporated or unincorporated area with a total population of 10,000 to 29,999 and/or any area with a population density of 1,000 to 2,000 people per square mile

Rural – an incorporated or unincorporated area with a total population of 10,000 people, or with a population density of less than 1,000 people per square mile.

National Fire Protection Association (NFPA) Documents:

- NFPA 1201 - Standard for Providing Fire and Emergency Services to the Public
- NFPA 1500 – Standard on Fire Department Occupational Safety and Health Program, 2013 editions
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Medical Operations, and Special Operations to the Public by Career Departments
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments.

Municipal Responsibilities (FPPA 1997)

Every municipality shall,

a) establish a program in the municipality which must include public education with respect to Fire safety and certain components of Fire prevention; and

b) provide such other Fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Mutual Aid

a) Mutual aid plans allow a participating Fire Department to request assistance from a neighbouring Fire Department authorized to participate in a plan approved by the Fire Marshal.

b) Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is responsible for arranging an acceptable response for back-up fire protection services. In those cases where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

Public Fire Safety Guidelines:

- PFSG 04-40A-12, Fire Prevention and Public Safety Education; Simplified Risk Assessment March 2001
- PFSG 04-41-12, Fire Prevention and Public Safety Education; Community Fire Safety Officer/Team, January 1998
- PFSG 04-08-13 on Fire Station Location, September 2004

Shared Responsibilities (FPPA 1997)

FPPA notes that;

1. Two or more municipalities may appoint a community fire safety officer or a community fire safety team or establish a Fire Department for the purpose of providing fire protection services in those municipalities

Volunteer Firefighter (FPPA 1997)

- Means a Firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance. (“pompier volontaire”) 1997, c. 4, s. 1 (1); 2001, c. 25, s. 475 (1).”

Appendix B – Staff Surveys

The following survey was presented to internal stakeholders:

Town of Georgina Fire Masterplan - Internal Survey

Emergency Management & Training Inc. (EMT) have been hired to prepare a Fire Master Plan for the Georgina Fire Department. Your feedback is necessary in assisting EMT in developing this document for the Fire Department. The intent of this document is to provide a 10-year community-driven master plan to guide operational improvements and enhance how services are provided throughout the community.

Please take the time to complete this survey. Your confidential responses will help to ensure focused action that continues to meet the diverse needs of our staff and residents.

Questions:

1. Are you a…:

□ Career/full-time member

□ Volunteer Firefighter

2. What are the things that make you most proud of the Georgina Fire Department – for example, the level of professionalism, community involvement or making a positive difference within the community?

_____

_____

_____

3. How do you think most people living in Georgina perceive the Fire Department?

_____

_____

_____

4. What would you say are the top three issues facing the Georgina Fire Department today?

_____

_____

_____

5. There are nine core services that the Georgina Fire Department delivers. Which services do you believe are most valued by the community? Please rank in order of priority from 1 (most important) to 9 (least important). *Please use each number **only once** and use all nine numbers.*

____ Fire fighting

____ Rescue (motor vehicle)

____ Fire origin and cause investigations

____ Fire prevention and safety inspections

____ Community outreach / Public education

____ Hazardous materials and technical rescue response (water/ice rescue)

____ Public assist / Non-emergency responses

____ Emergency planning

____ Medical assist and response

6. Are there any other services that you believe the Georgina Fire Department should provide and why?

_____

_____

_____

_____

7. What improvements does the Georgina Fire Department need to make to its services to be more efficient and what do you believe would be the outcome by implementing these efficiencies?

_____

_____

_____

_____

8. If it were up to you, what would the Department be like 10 years from today and why?

_____

_____

_____

9. Are there any other comments/suggestions that you would like to add that would help to improve the services the Georgina Fire Department delivers to the community and to the Firefighters?
   For example: more public education, more training for staff, succession planning, equipment upgrades, etc.

_____

_____

_____

Thank you for completing this survey. Your feedback is greatly appreciated and will help to shape future service delivery efforts.

If you have any questions, please contact:

Lyle Quan lquan@emergencymgt.com

Appendix C – Community Surveys

During the FMP process, feedback was gathered from both the community in the form or an online survey and also a meeting with those from the community who have utilized the services of the GFD.

The following survey was presented to the external stakeholders:

Georgina Fire Department Fire Master Plan - External Survey

About Us

The Georgina Fire Department has a proud tradition of assisting residents and businesses by effectively responding to emergencies.

We are comprised of both full-time and Volunteer Fire fighters, plus an administrative staff complement that includes training and fire prevention officers. Our Department responds to approximately 2,100 emergency calls annually from our three fire stations for medical assists, motor vehicle collisions and structural fires.

Georgina Fire Department Fire Master Plan

In our ongoing efforts to ensure that we continue to meet the growing needs of the community we serve, we are creating a 10-year Fire Master Plan to help guide operational improvements and enhance our service.

We have engaged Emergency Management & Training Inc. (EMT), to assist us with this initiative. EMT is a local consulting firm that has worked with many Fire Departments to develop their Fire Master Plans, station assessments, and fire service reviews.

Your Input Is Important to Us

As part of this initiative, we are asking Georgina residents and businesses to fill out our online survey. The survey will take approximately ten minutes to complete. Your identity and responses are confidential. It will be available until midnight on Wednesday, September 7.

Please feel free to contact Lyle Quan with EMT with any questions regarding the survey at lquan@emergencymgt.com

Public Meeting

A public meeting will be held on Tuesday, September 13 at 7 p.m. in the Council Chambers of the Georgina Civic Centre, which is located at 26557 Civic Centre Drive.

This meeting will allow members of the public to discuss the proposed Fire master plan as well as the survey.

We wish to thank you for your assistance in this very important process.

1. What is your general impression of the Georgina Fire Department in relation to its level of professionalism, community safety, education and Fire prevention awareness programs?

   _____
   _____
   _____

2. Have you been approached by Georgina Fire Department staff in relation to their Smoke Alarm Program, and if so how did you find this interaction?

   _____
   _____
   _____

3. How important are the following statements to you:

	Extremely important	Very important	Important	Not very important	Not important at all
How quickly the Fire Department gets to me if I have an emergency					
Whether the Fire Department will visit my home to give me safety advice and/or fit smoke alarms					
How much the Fire services costs me as a tax payer					
How well the Fire Department works with other agencies to provide wider community safety services					
How often the Fire Department consults me about their services					

How often the Fire Department provides community training opportunities (e.g. Fire extinguisher training; school safety programs; older and wiser program; smoke alarms; Fire escape planning)	☐	☐	☐	☐	☐
How visible the Fire Department is at local community events	☐	☐	☐	☐	☐
Contacting assistance services after an emergency, as required	☐	☐	☐	☐	☐
Timeliness to any request for services or assistance from the Fire Department	☐	☐	☐	☐	☐
Purchasing and maintaining new and applicable equipment	☐	☐	☐	☐	☐
Continued and relevant training	☐	☐	☐	☐	☐

4. What do you think are the top three issues facing our Fire service today?

_____

_____

_____

5. There are nine core services delivered by the Georgina Fire Department. Which services are most important to you? Please rank in order of priority from 1 (most important) to 9 (least important). *Please use each number **only once** and use all nine numbers.*

_____ Fire fighting
_____ Rescue (i.e. motor vehicle accidents)
_____ Fire/Arson investigations
_____ Fire prevention and safety inspections
_____ Community outreach / Public education
_____ Hazardous materials (i.e. gas or chemical spills) and technical rescue response (i.e. water rescues)
_____ Public assistance requests / Non-emergency responses
_____ Emergency management and planning
_____ Medical assist and response

6. Are there any additional services that you believe should be provided? If so, please specify.

_____
_____
_____

7. Over the next 10 years, if you could implement up to three things to improve how the current services are provided by the Georgina Fire Department, what would those things be?

_____
_____
_____

8. Have you directly received service from the Georgina Fire Department? (If no, skip to question 10)

- ☐ Yes
- ☐ No

9. Could you share some details of your experience and any recommendations for service improvements?

_____
_____

10. Would you be willing to participate in a special focus group to discuss improvements to the Fire service?

- ☐ Yes
- ☐ No

11. Please provide your name and contact information so we can get in touch with you about participating in a focus group.

_____
_____

Appendix D – Public Fire Safety Guideline - Recruitment and Retention of Volunteer Firefighters

Volunteer Fire Service Personnel Recruitment and Retention

Public Fire Safety Guidelines	Subject Coding **PFSG 04-84-13**
Section **Fire Administration**	Date **October 2006**
Subject **Volunteer Fire Service Personnel Recruitment and Retention**	Page

Scope and Application:

This guideline provides municipal officials and Fire Chief s of Volunteer and composite fire services with a general overview of principles to consider in the recruitment and retention of Volunteers.

There are many factors that contribute to the success of a Volunteer recruitment and retention program. These include implementing organized marketing, recruitment, selection, hiring, training and retention plans.

Establishing and following a formal recruitment and retention program offers fire services the opportunity to increase the likelihood of finding, and keeping, the right people, doing the right tasks, at the right time.

Definition of Volunteer:

According to the Fire Protection and Prevention Act 1997, a Volunteer Firefighter is defined as “a Firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance. (“pompier volontaire”) 1997, c. 4, s. 1 (1); 2001, c. 25, s. 475 (1).”

The majority of Fire Departments in Ontario (450 out of 478) utilize the services of Volunteer fire service personnel. Recognized for their commitment and generosity, saving residents in Ontario more than an estimated one billion dollars annually, these professionals strive to provide skilled, competent and caring service.

Fire services that rely on Volunteers to comprise, or enhance, their staffing capability continue to face the challenge of recruiting and retaining a sufficient number of capable and experienced personnel. This impacts on the effective, efficient, safe and timely delivery of fire protection services.

Recruitment and Retention Program: The Benefits

A coordinated, organized program demonstrates:

a. how seriously the leadership takes the services provided and the individuals who provide that service,
b. sound risk management principles,
c. proactive vs. reactive leadership within the Department, and
d. leadership's commitment to recognize Volunteers, families and employers who support Volunteerism.

It identifies:

a. shortfalls and availability of Volunteers in the community and,
b. the number, type and quality of Volunteers required to meet current or future needs.

It allows planning for:

a. recruitment and selection,
b. retention and succession, and
c. training and development of Volunteers.

Responsibility for Recruitment

Recruiting and retaining Volunteers does take effort. Creating a committee within the municipality and assigning specific tasks can create opportunities for others besides the leadership to contribute to the growth of the fire service and allows for a more concentrated effort.

Annual Recruitment and Retention Plan

An annual recruitment and retention plan is a cyclic, ongoing process that will assist the fire service in planning and focusing its efforts. It should be a logical consideration of the time of the year, changing commitments throughout the seasons, weather, and psychological impact of seasons, milestones in the Department, annual events and other trends. This will prevent the Department from coming up short in membership by not having good candidates to replace those leaving.

Policies and Guidelines

Fire service leaders benefit from having the necessary policies and procedures to ensure a safe, lawful, organized, empowering, non-discriminatory environment for their Volunteers. No matter how large or small a Department, policies and operating guidelines are essential management tools that set the standard for

conduct and provide guidance for action. It is suggested that existing municipal policies, if available, be referenced.

Evaluation

Evaluation of the recruitment and retention program is necessary to identify strengths and areas to improve. It is an ongoing process that is built into all the components of the program.

Components in the Recruitment and Retention Cycle: Pre-Recruitment

Prior to recruiting, it would be beneficial to conduct a needs assessment to determine the role and number of Volunteers required. Completing a Community Profile will determine community members who may best fit those roles. Answering these questions prior to recruiting enables the fire services to target specific individuals for specific roles and may increase the chance of success.

Recruitment

In order to promote diversity and involve Volunteers with different skill sets, knowledge and perspectives, more than one recruitment method is necessary. Regardless of the method and knowing the Department is seeking the best possible candidates, effective marketing and communication strategies are necessary to draw the interest of potential Volunteers.

Selection and Hiring

Once received and acknowledged, all applicants require screening to determine those who will move on to the next step in the hiring process.

The Fire Service takes great pride in service to communities. A screening process is essential in order demonstrate that the Volunteers serve in the community's best interest. The leadership will have to decide which screening methods and tools are appropriate for their Department and should ensure that they reflect human rights and privacy legislation and existing municipal policies.

Upon selection, a written agreement between the Volunteer and the Fire Department will ensure that expectations and responsibilities for each side are clearly identified and agreed to.

Orientation and Probation

Fire Departments and their Volunteers will benefit from having an organized system to orient, train and advance recruits. One of the most successful and safe approaches for developing Volunteers and establishing a commitment is to initially offer specific tasks that allow them to become involved in a limited way, followed by opportunities to grow into a role with more responsibilities.

Ongoing Recruitment Efforts

Successful recruitment efforts should be ongoing throughout the year in order to ensure that there is a waiting list of interested individuals to draw from.

Ongoing Retention Efforts

Recruiting and training new Volunteers is just the beginning. The long-term challenge is to create an environment in which individuals continue to be motivated, interested, challenged, supported and satisfied with the work they've accomplished. Factors that contribute to this environment include leadership practices, operating guidelines, recognition initiatives, support efforts, teamwork and fellowship.

Exit Processes

When an individual leaves the Fire Department, it is a good opportunity to solicit input to determine the Department's strengths and opportunities for improvement. Exit processes should reflect understanding that, whether leaving on a positive or negative note, the Volunteer and the Fire Department deserve fair and respectful treatment.

Resource Book:

The Application of Recruitment and Retention Principles:

The Volunteer Recruitment and Retention Resource Book that supports this guideline, was developed by the Ontario Fire Marshal's Office, in collaboration with representatives from the Ontario Fire Service.

This resource describes effective practices and strategies for recruitment and retention of Volunteer Fire Service personnel. It also provides a compilation of tools and templates that can be used to support the best practice or strategy. These may be photocopied or edited to meet the needs of the individual Fire Service.

A CD-ROM and printed copy of this resource has been made available to all Fire Services that maintain a Volunteer complement. It can also be accessed and downloaded from the Ontario Fire Marshal's public access website http://www.mcscs.jus.gov.on.ca/.

Codes, Standards & Best Practices:

Codes, standards and best practices resources are available to assist in establishing local policy. All are available at http://www.mcscs.jus.gov.on.ca/.

Volunteer Resource Management

The following resources and links describe effective practices and strategies for Volunteer Resource Management. The principles and topics can be applied to the fire service.

The Canadian Code for Volunteer Involvement http://www.Volunteer.ca

HR Council for the Voluntary and Non Profit Sector http://www.hrvs-rhsbc.ca Knowledge Development Centre, Canada Volunteerism Initiative http://www.kdc-cdc.ca

Please feel free to copy and distribute this document. We ask that the document not be altered in any way, that the Office of the Fire Marshal be credited and that the documents be used for non- commercial purposes only.

Additional References:

See also:

Office of the Fire Marshal's Public Fire Safety Guidelines

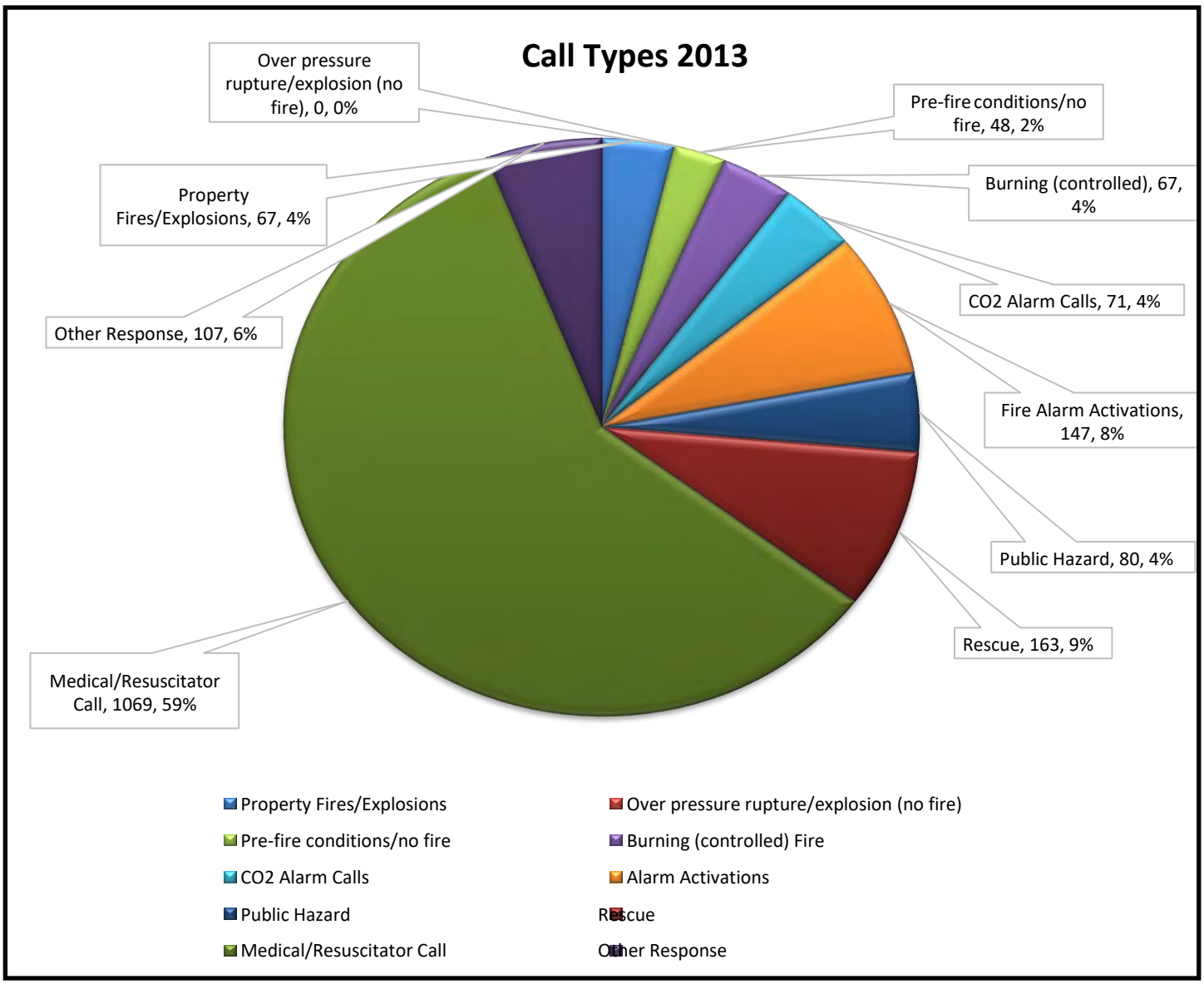
The following guidelines can be referenced when conducting a needs assessment to determine the role, quantity and characteristics of Volunteers required by the fire service.

04-08A-03 Optimizing Rural Emergency Response

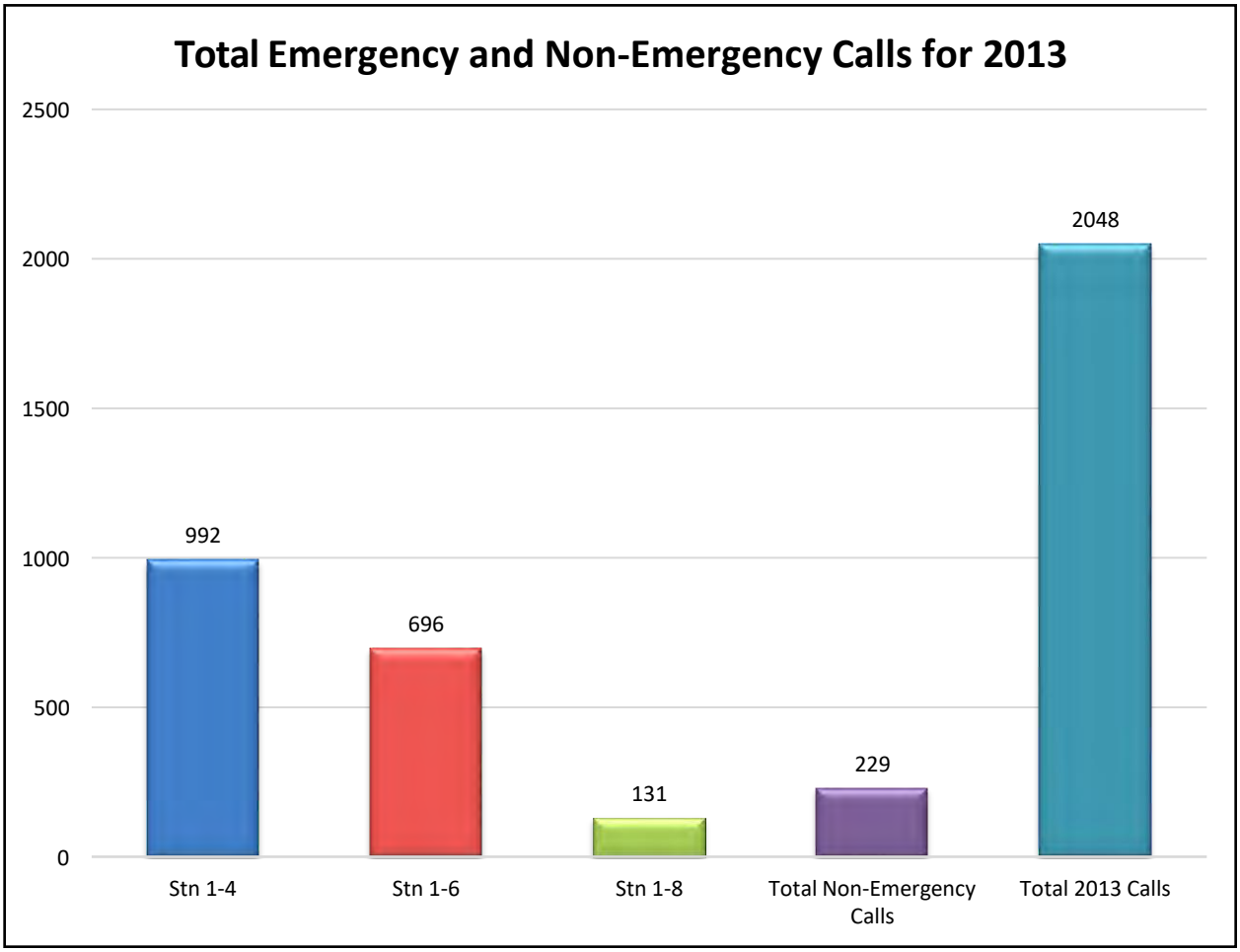
04-12-13 Core Services (Response and Support) and Associated Guidelines

04-40 A-03 Simplified Risk Assessment

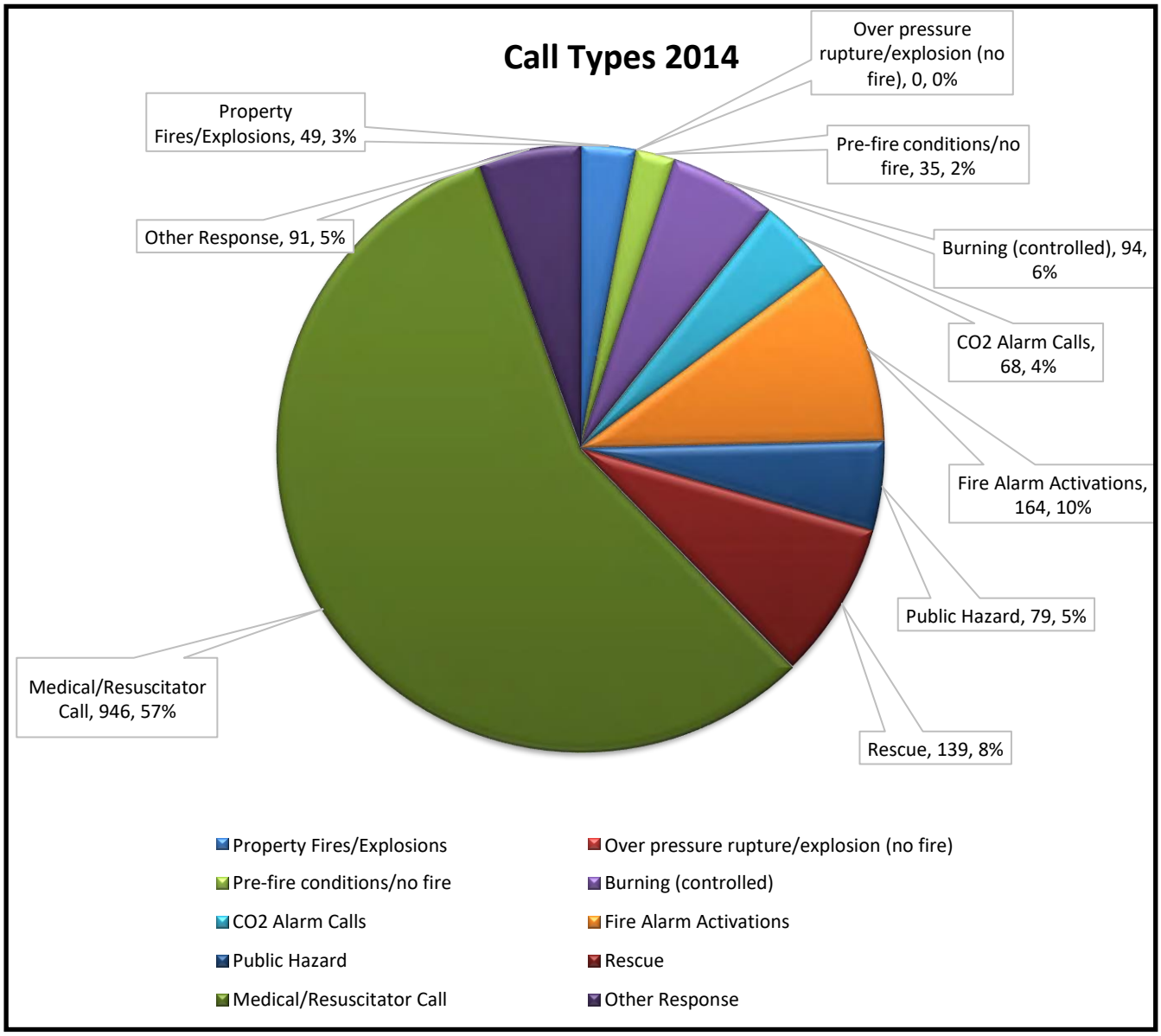
Appendix E – Call and Response Data for 2013 and 2014

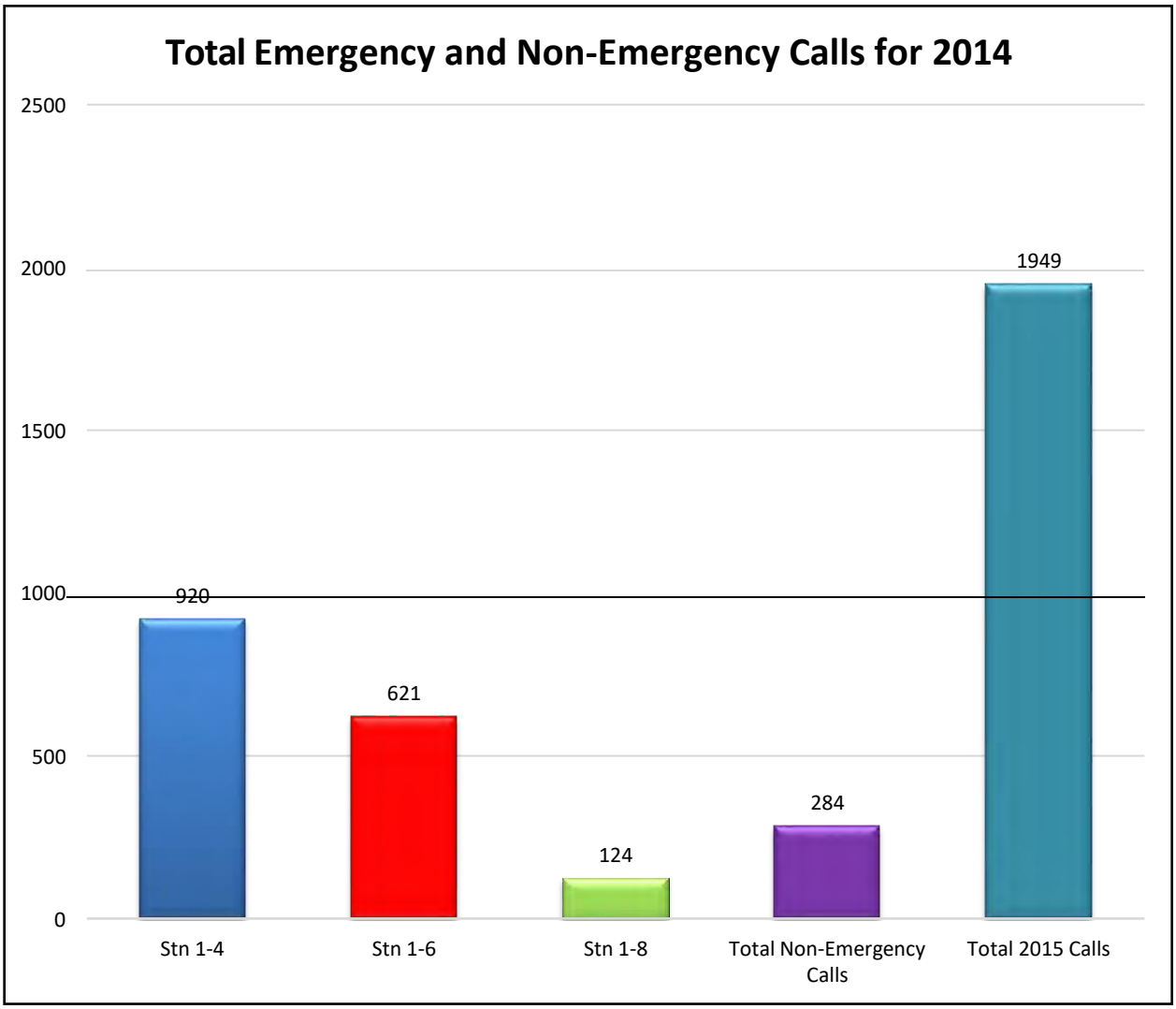


2013 Calls and Response Data



2014 Response Data




Total Emergency and Non-Emergency Calls for 2014
2500
2000
1500
1000
500
0
920
621
124
284
1949
Stn 1-4
Stn 1-6
Stn 1-8
Total Non-Emergency Calls
Total 2015 Calls

Appendix F – Fire Station Review

Discussion Paper Outlining the needs of the Town of Georgina Fire Department Fire Station Infrastructure

Developed by:
Emergency Management & Training Inc.
65 Cedar Pointe Drive, Suite 144 Barrie, ON L4N 9R3

Executive Summary

The Town of Georgina Fire Department has commissioned a Fire Master Plan utilizing the services of Emergency Management and Training Inc. (EMT). As part of this FMP planning process a review and analysis of the current state of the fire station infrastructure was requested primarily to provide budget requirements and submissions for 2016/2017 and into the future. As such, this document can be used to validate the Town Development Charge By- Law information relating to fire station needs.

In completing this review, EMT was directed to utilize industry best practices to create and support any recommendations within this report and the overall Fire Master Plan document. These best practices included but are not limited to:

- National Fire Protection Association standards;
  - 1710 for career Fire Departments
  - 1720 for Volunteer Fire Departments
  - The Fire Underwriters Survey standards, and
  - Reference to the Commission on Fire Accreditation International (CFAI) which incorporates industry best practices in evaluating if a fire service meets the goals and expectations of a community.

Therefore, this report will review each of the current three fire stations physical status and response time criteria, and will outline the needs and recommendations for each. Along with the needs and recommendations will be budgetary numbers that could be utilized for planning purposes. It is important to note that while EMT strives to ensure these numbers are as accurate as possible by utilizing best practices, there may be local circumstances that could increase or decrease the actual costs of a given project. Proper price comparisons through utilizing the Corporate Purchasing Policy should be applied for figures that are more exact.

The three fire stations within this review are:

Station 1-4 (Headquarters)

165 The Queensway South, Keswick

All administration staff as well as the Fire Prevention Division and Training Division operate from this fire station. The full-time Firefighters are also at this station, 24 hours a day, 7 days per week, complimented by a committed group of Volunteer Firefighters.

Station 1-6

37 Snooks Road, Sutton

This station is staffed with full-time Firefighters 24 hours a day, 7 days per week, and is complimented by a committed group of Volunteer Firefighters.

Station 1-8

270 Pefferlaw Road, Pefferlaw

This station is staffed with a committed group of Volunteer Firefighters. Full-time staff from the Sutton station responds with the Pefferlaw Volunteers to all calls.

After a thorough review of the three fire stations, EMT is presenting a total of 13 recommendations noted within the body of this report. These recommendations are also accompanied with suggested timelines for implementation.

Overview

Georgina Fire Department covers an area of approximately 280 square kilometres and serves a population of approximately 48,000. Presently, the Department responds to an average of 2,100 calls per year.
Full-time administration staff include:

- Fire Chief
- Deputy Chief
- One full-time and one part-time Administrative Assistant
- A Training Officer, and
- Fire Prevention Division consisting of one FPO and two FPI/Public Educators

The Department is served by a combination of full-time and Volunteer Firefighters. The Keswick station (1-4) and the Sutton station (1-6) are composite, with the Pefferlaw station (1-8) being totally Volunteer.
The total Firefighting force for Fire suppression consists of:

- Full-time Firefighting force of 40 (at stations 1-4 and 1-6)
- Volunteer Firefighting force of 60, dispersed throughout the three stations

Although this report does identify a total of 13 recommendations, it is fully recognized that Council sets the level of service within any community. With this in mind, to assist Council in making a decision on the level of fire protection service for the community, the Fire Protection and Prevention Act, (1997, S.O. 1997) needs to be considered as it is a Provincial Act that sets the standard for fire protection and prevention within Ontario communities. Section 2 notes Municipal responsibilities, which are:

Municipal responsibilities

2. (1) Every municipality shall,

(a) establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and

(b) provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Further, the Act provides further description for the methods of providing services;

Methods of providing services

(2) In discharging its responsibilities under subsection (1), a municipality shall,

(a) appoint a community fire safety officer or a community fire safety team; or

(b) establish a Fire Department.

The Town of Georgina has established a Fire Department as outlined in Section 2(b) of the Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4. The level of service that must be provided is further outlined in Section 1(b) of the Act. This section notes that the level of service is to be based on the needs and circumstances of the community.

The 'needs' portion can be defined by the type of buildings, infrastructure, and demographics of the local area which in turn can be extrapolated into the types of services that would be offered and needed. The 'circumstances' are considered as the ability to afford the level of service to be provided. Together, the needs and circumstances meet to set a level of service for the community. This combination meets the expectations of the public for safety and the affordability of this level provided.

This paper will focus on the needs of the Fire Department in its ongoing challenge to meet the needs of the community and how the fire station locations and physical set up can affect the operational efficiency of the Georgina Fire Department.

As a final point, it should be noted that the two key references to be utilized in this fire station review are the National Fire Protection Association (NFPA) and the Commission on Fire Accreditation International (CFAI).

The two NFPA standards referenced in this document are the NFPA 1710, which focuses on such things as response times and other criteria relating to the career (full time) component of a fire service, and NFPA 1720, which focuses on the same criteria when it comes to the Volunteer component of a fire service.

As for the CFAI, the Commission is in full support of fire services striving to meet the two previously noted NFPA standards, based on the community's circumstances. These circumstances can relate to a number of things such as:

- The anticipated growth of a community
- The ability for the municipality to pay for services due to local economic growth
- The location and physical set up of the fire stations
- The geography of a community, which in the case of Georgina does have a consideration in relation to fire station location – due to the lake, and
- A risk and hazard analysis of the community, coupled with the Fire Department's abilityto effectively and efficiently mitigate the noted hazards.

All of these points have been taken into consideration during the compilation of this report and the associated recommendations present by Emergency Management and Training Inc.

1. Fire Station Evaluations

1.1 Keswick Station 1-4 – Headquarters (165 The Queensway South)

The building was constructed in 1990 as a car dealership and presently serves as the Fire Department headquarters. The Fire Department moved into the service area of the building (but not the showroom area) in 1994. The station hosts both career and Volunteer Firefighters as well as the administrative offices of the Fire Department including the Fire Chief , Deputy Fire Chief , Training, Fire Prevention and support staff.

The current location of the fire station is at the junction of The Queensway South and Morton Avenue and is very close to Lake Simcoe on the west side within the core area of Keswick. This diminishes the stations

potential coverage area geographically by up to a third as the lake is a natural barrier to the west. As such, the present location of the fire station should be evaluated in conjunction with future growth expectations, which would encompass type of growth (residential, commercial, or industrial) and the location(s) of this growth.

1.1.1 Keswick Fire Station Current Considerations:

The building, primarily a two-story structure, is built on multiple levels with stair access from parts of the second floor to other parts of the second floor. The steps are at unequal heights and pose a potential trip hazard. These multiple steps and unequal heights are not Building Code compliant.

The current Keswick fire station has a number of limitations and challenges.

1.1.2 Building and Related Facility Concerns:

- The station's present set up fails to meet AODA requirement.
- On the exterior, the ladders accessing the roof area are in a state of disrepair and are not safe for use.
- This is a Health & Safety concern for any who need to utilize these ladders for roof access. They should be replaced, maintained, and inspected regularly.
- Parking lot lights are of an older, less energy efficient design and should be upgraded when possible.
- Due to the slope of the parking lot, there is an ice build-up issue due to water runoff from the roof area. Additionally, accumulation of water/ice just outside of the main entrance to the administration area was noted.
- This is a Health & Safety concern. Plans to mitigate the water pooling and subsequent ice build-up are required.
- Offices for Administration, Fire Chief, Deputy Chief, Training Division, and Fire Prevention are located at this station, and space is very limited for file and records storage.
- Fire Prevention Division utilize the office space in the rear portion of the main floor which is a shared space. This is inadequate for the inspectors to have private discussions with individuals who they are dealing with.
- The "car showroom" located at the front of the building is not effectively utilized by the Fire Department at this time. There is no direct access from this part of the building to the main area at the rear and the area would require significant renovation.
- The second floor of the "car showroom" was used for Fire Prevention, but Fire Prevention moved

to the first floor in the rear portion of the building due to the disconnect between the other divisions that are located in the rear part of the building. The second floor is now designated as the backup Emergency Operations Centre, however, it lacks the space to be practical and therefore limited to its use. The Fire Department has adopted this backup EOC area as a functional small-scale event or Departmental operations centre which can be rapidly set up and used.

- As recently determined in an annual emergency exercise, the primary EOC, which is located in the Civic Centre, is not ideal for designation as the primary EOC as it lacks the space required to meet the long term needs of the EOC group.
- Consideration for a future new fire station should be to incorporate a primary EOC concept that integrates all of the needs of an EOC.
- Due to the design and layout of the building, it does not meet AODA accessibility standards.

(photo: steps from the second floor Chief's office to the crew/training room)

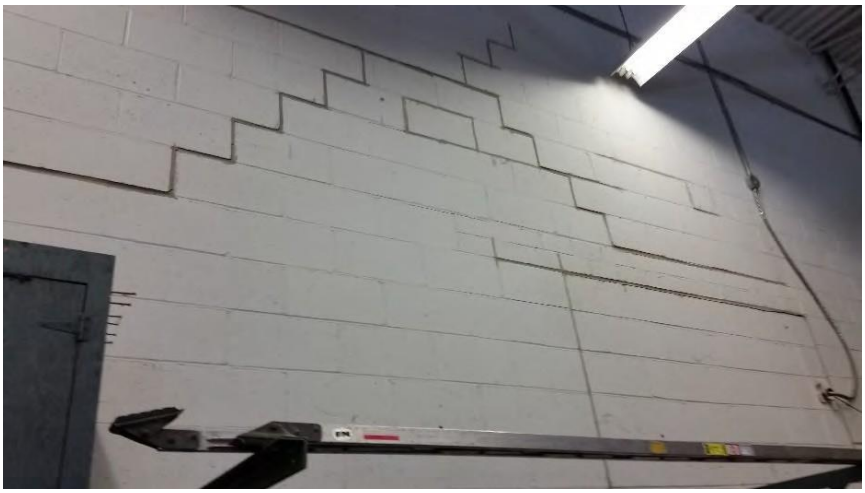
- The multiple levels and areas of the building add increased time to the "turn out time" (time from when a fire call is received until the trucks are responding). This is due to a lack of hallways and stairways leading to the apparatus floor which makes it challenging to meet the NFPA "turn out" standard for career Firefighters of 60 seconds for medical calls and 80 seconds for fire calls (includes the donning of bunker gear).
- Modern fire stations are designed with the crew quarters and training rooms being directly adjacent to the apparatus floor to ensure quick turnout.
- There are signs of "settling cracks" throughout the building.

- An engineering review should be conducted of the building prior to any repairs or renovations being approved as the cost of repairs may be more than the present building value.

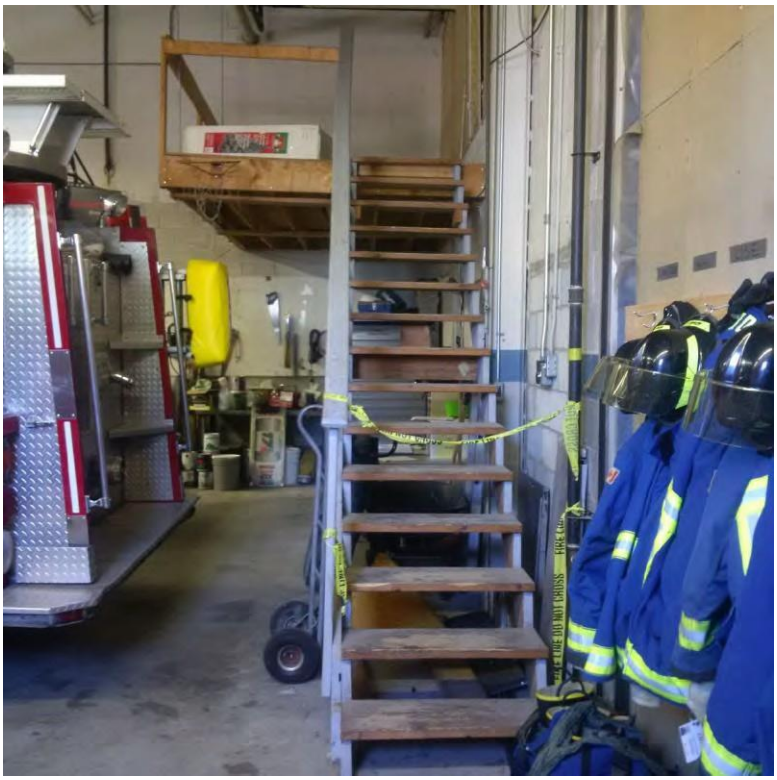
(photo: training room where the floor originally was open for a parts hoist. This area appears to be settling and feels soft when walking on it)

- There are signs of the floor degrading around the floor drains. The Deputy Chief noted that an estimate was obtained a year ago for repairs to the floor drains of which they were quoted at $30,000.00.

- Other signs of floor and wall joint sections are showing signs of degrading due to age and settling of the building.



- The mezzanine area in the apparatus bay does not meet the Ontario Building Code and is unsafe. As such, it has been taped off to discourage use of this area.
- Access into this area is a Health & Safety concern. The area should be rebuilt to comply with the Ontario Building Code or be removed.



- There are numerous building repair and maintenance issues as a result of the age of the building.

1.1.3 Kitchen, Crew Quarters, and Washrooms

- The full-time crew quarters area is located on the second floor behind the kitchen area – it is a sprinklered area but the only exit out of this dorm is through the kitchen. Therefore, if a fire occurs in the kitchen, the crew has no secondary (safe) exit.
- The crew quarters area is on the second floor along with indirect access to the apparatus floor that increases the “turn out” time (which is time from notification to time trucks are responding)
- The kitchen cooking area has no auto shut off in the event the crew has to respond to an emergency call.

- The kitchen is a tight spot for 4 persons at a time. In some cases, during the day there may be up to 13 persons active in the building on weekdays.
- Presently, there is only one female washroom on the second floor. There is no female washroom on the first floor. Furthermore, the door to the female washroom opens into the training room providing little privacy when entering or leaving the washroom.
- There is no female shower area. Firefighters should have the ability to shower following calls to decontaminate from contaminates such as blood, smoke, and chemicals.

1.1.4 Apparatus Area

(photo: only exit from the crew dormitory through the kitchen)

- The north side bay entrance has no room for the passenger side Firefighters to safely enter and exit the vehicle (due to restricted space allotted).
- Three bay doors in the main apparatus area are smaller than normal in size and limit the placement for response for the aerial truck (A146) and the marine airboat. Newer apparatus will have difficulty fitting into the small bay door areas increasing risk of damage and injury.

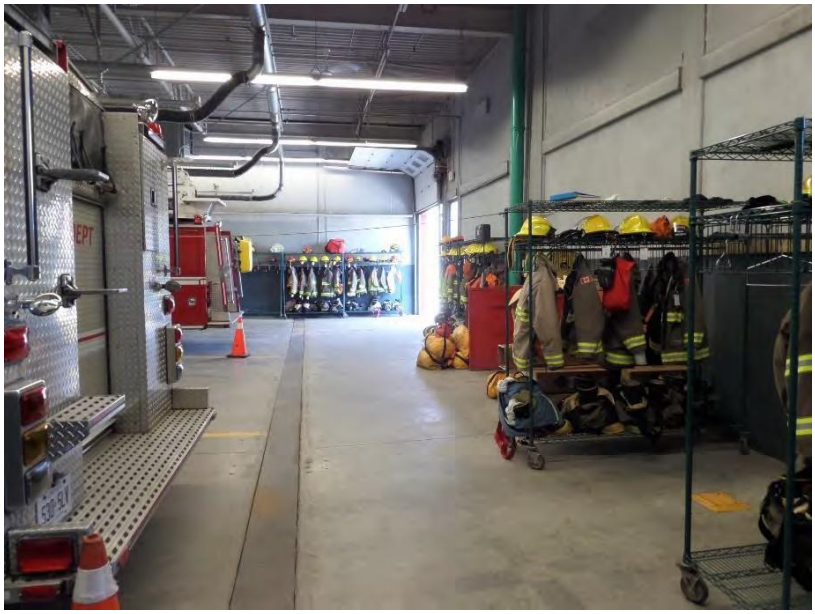
- The station has four (4) primary bays and a secondary bay at the side of the building. Only one (1) of the four (4) primary bays is a drive-through, however, due to the narrow driveway at the rear of the building, the turning radius does not permit large apparatus to use the drive-through.
- New station design includes drive-through bays to eliminate/decrease the safety hazard of reversing apparatus.

(photo: secondary bay on the south side of the building)

- The secondary garage bay is used for the reserve engine, the air boat, and the command (large incident) trailer. To access the airboat, the engine must be removed first. To access the command trailer, both the engine and the airboat must first be removed. Moving the apparatus and trailers is a manual process that is labour intensive and takes time which, consequently, increases response time.
- There is no exhaust capture system in this secondary garage area.
- Bay doors do not have the safety stop pressure bar on the bottom which would stop the door from continuing its downward movement if a person or vehicle is caught under the door. This is a Health & Safety concern that should be addressed.
- Bay doors are also showing wear and may soon require replacement.
- The main station area is equipped with an “at source exhaust capture system”, which helps to reduce contamination of Firefighters’ gear due to vehicle exhaust. The Firefighters’ bunker gear is stored on the apparatus floor, which still exposes the gear to exhaust and ultra violet light contaminates, eventually degrading the efficiency of the equipment and reducing life span. The

storage of the bunker gear in this manner exposes the general area to contaminants obtained from fire responses (and others).

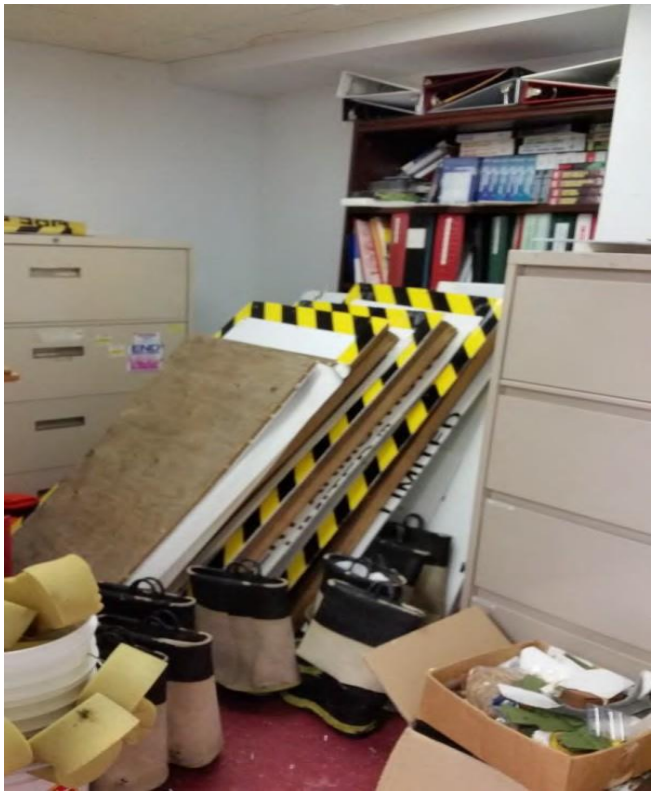
- New station design incorporates a storage room that is properly ventilated whereby bunker gear is able to be laundered, dried, and returned to service which, at all times, limits the exposure of toxic fumes to the gear.

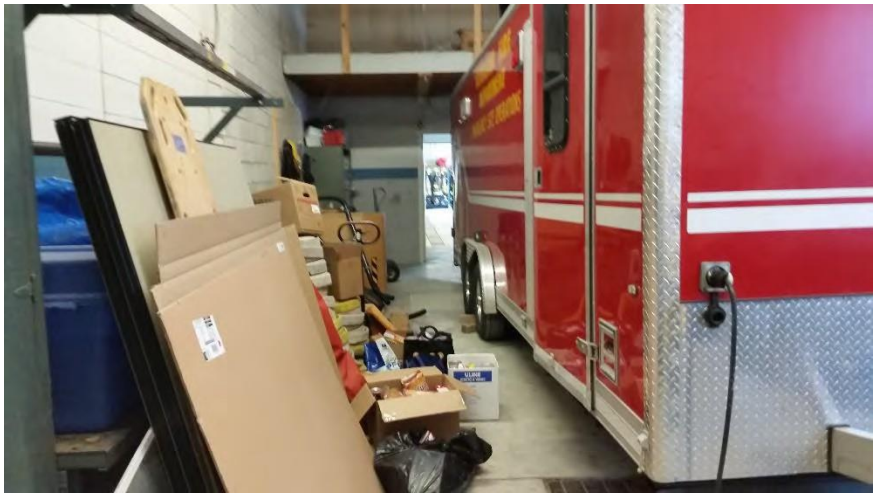


(photo: bunker gear storage)

1.1.5 Storage Space

- Storage is lacking for materials, supplies, and equipment stored throughout the building.
- Incident records are stored with bunker gear and equipment.
- Fire prevention records should be stored in a double locked area (locked cabinet in a locked room).



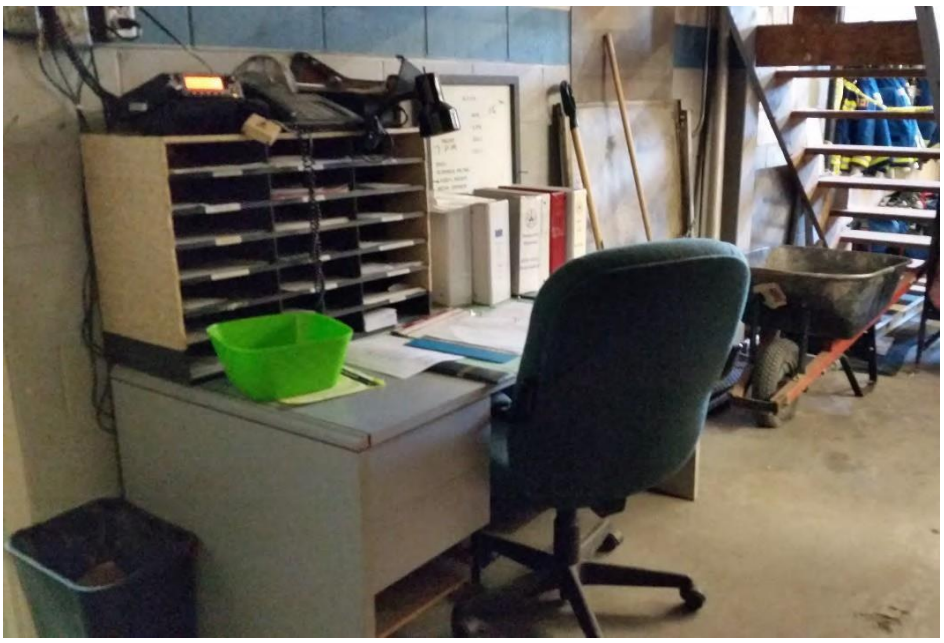


1.1.6 Volunteer Firefighter Accommodations

- Volunteers are still a significant contributor to the Fire Department operations but work in less than ideal conditions.
- A proper meeting place for the Volunteer staff is essential for pride of ownership and professionalism. Having such an area provides a positive motivational factor.
- Adequate office space for the Volunteer staff is essential for them to complete any required

paperwork.

- A place for the Volunteers to come to study, and prepare for training in their off time promotes ownership within the Fire Department.



(photo: Volunteer desk relegated to a space under a stairway at the back of the secondary apparatus bay)

1.1.7 Keswick Fire Station Location Considerations:

Proposed Growth

Currently, proposed plans for subdivisions are in place, or are in the process, for increased commercial/industrial areas in the south of Keswick in addition to increased plans for residential. The commercial/industrial areas are within the east of Woodbine Avenue and Glenwoods Avenue. This is a large section of land that has the potential of attracting many commercial/industrial buildings along with the population for employment. Further, the residential plans in the Queensway/Joe Dales Drive area along with an area off Glenwoods Avenue and Woodbine Avenue have the potential of increasing the combined residential units by up to 1002. The Glenwoods Avenue and Woodbine Avenue subdivision may also see an increase in density.

This will mean a greater number of people in a smaller geographical zone. In the northern area of the urban centre of Keswick, residential subdivisions are planned north of Church Street and south of Old Homestead Road. This subdivision has the potential of increasing the residential units by 436. As noted by the Town Planners, the current plan for the Town indicates that by 2031 it is estimated that there will be a population of 70,300 with employment of 22,000. As of today, the population is 48,000 with an employment number of 7,000.

The Fire Department must be prepared for this community growth and intensification as this increase in population and types of industry will create an increase in call volume for the Fire Department.

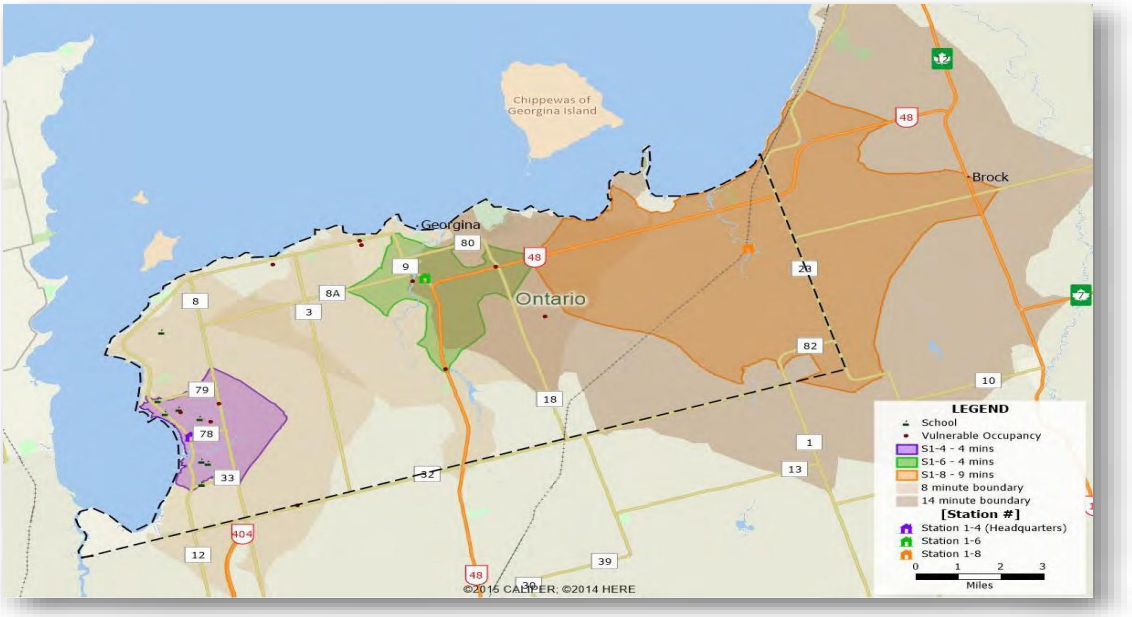
Proposed Station Relocation

In reviewing the NFPA 1710 Standard (for career Fire Departments), it was noted that with the subdivision plans and the estimated population noted in the Official Plan, it is evident that the current location of Station 1-4 would increase the response travel times to over four (4) minutes (drive time) to the future populated areas (this means that it would take over 4 minutes for emergency services to reach the call location after receipt of call). The areas affected by increased response times, should the current station remain, would include the southeastern portion of the commercial/industrial area along with the large residential subdivision south of Glenwoods Avenue consisting of 897 residential units.

The following map displays the current station location and the four (4) and eight (8) minute or nine (9) and fourteen (14) minute response (travel time) zones. The Keswick fire station location four (4) minute travel time zone is highlighted in purple and the eight (8) minute response zone is in brown shading. NFPA 1710 states that the first apparatus should be on scene within 4 minutes (drive time from fire station to the scene of the incident) and additional resources within 8 minutes.

Note:

The response zones for the Pefferlaw fire station (in orange) are noted as nine (9) and fourteen (14) minute zones. This is due to the fact that the Pefferlaw station is a fully Volunteer fire station. However, the full time Firefighters from the Sutton station are also paged out in support of the Volunteers for any emergency calls. As a comparison, map #1 in Appendix "A" on page 45 identifies response zones for all three station if they were based on the NFPA 1710 "full time" criteria.



NFPA 1710 Response Standards

Criterion Topic	Related Response Times
Alarm Handling and Call Processing Times	*This is handled by other agencies outside of GFD control*
Turnout Time (Time for crews to get to the fire trucks and start responding)	80 seconds, except for EMS responses, which is 60 seconds
Travel Time (First due unit)	240 seconds (4 minutes) for the first arriving engine/pumper
Travel Time (Effective response force)	480 Seconds (8 minutes)

Additional considerations for fire station location(s) are the distances recommended by the Fire Underwriters Survey (FUS) in order to achieve premium insurance ratings, and thereby maximum savings for the building owner/tenant. Based on this recommendation by the Fire Underwriters, commercial/industrial buildings must be within five (5) kilometers of the fire station. Residential buildings would receive premium insurance ratings if they are within eight (8) kilometers of the fire station. Being at distances greater than those outlined above could subject the building owner/tenant to higher insurance costs.

The planned commercial/industrial subdivision in the Woodbine Avenue and Glenwoods Avenue area would, for the greater part, be within five (5) kilometers from the current location. There would be portions of the subdivision that would be outside of the five (5) kilometer zone, depending on road access, that would subject the building owners to higher insurance rates.

The southern portion of Keswick, where the larger residential growth is to occur, does lie within the eight (8) kilometer travel zone for the current fire station location. However, there are portions at the north end of the current fire station response zone that are outside of the eight (8) kilometers which subjects the building owners to higher insurance rates.

As already depicted on the previous map, the Pefferlaw fire station (in orange and tan) response zones shows 9 (nine) and fourteen (14) minute travel times from the station – it must be noted that this is travel time only and does not take into consideration how long it takes the Volunteers to respond to the fire station, gear up and their actual response to the location of the incident. Therefore, if the Volunteers were actually in the fire station at the time of the call, then what is noted on the travel time coverage zones would meet the current NFPA 1720 standards, which is in relation to Volunteer Fire Departments. The following chart outlines the expectations for response times for the Volunteer Firefighters. Presently, Georgina would fall into the ranges of 'Urban and Rural' demand zone criteria. This is why nine (9) and fourteen (14) response zones have been depicted for Pefferlaw and not for Keswick and Sutton as they are staffed 24/7 by full time Firefighters, supported by Volunteer Firefighters.

NFPA 1720 Response Standards

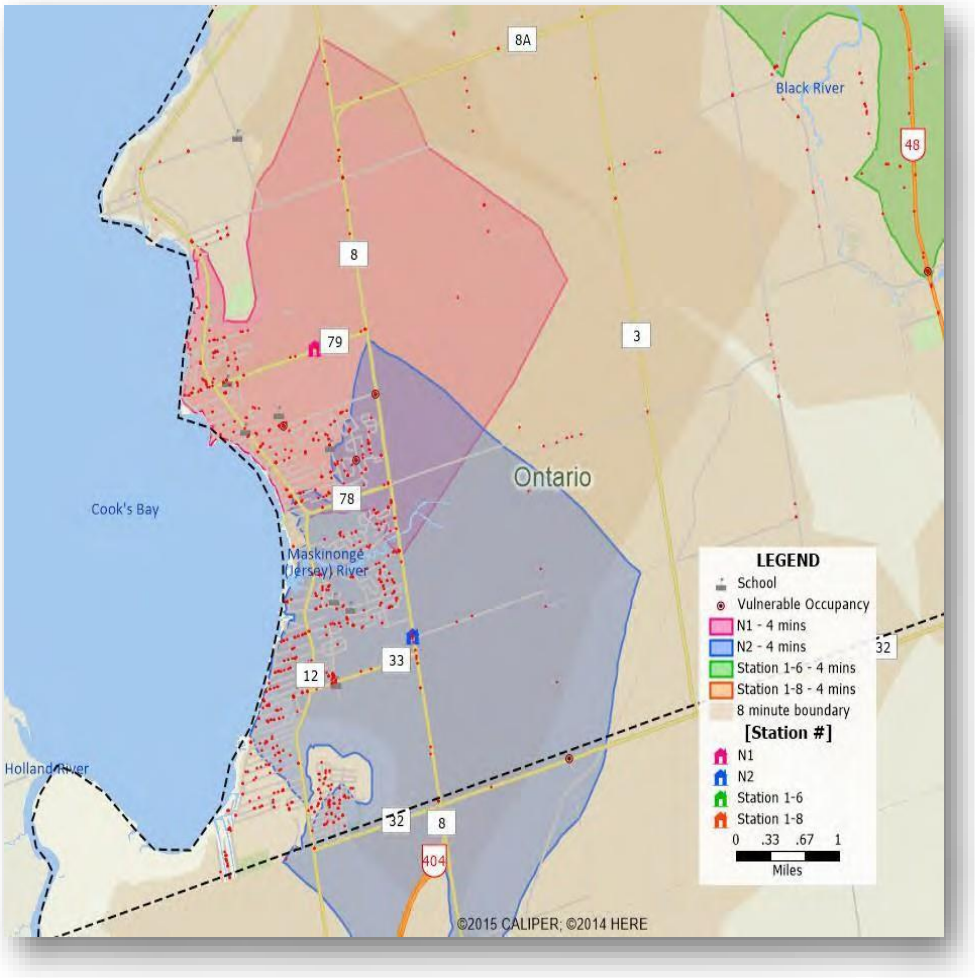
Demand Zone	Demographics	Minimum # of Firefighters responding	Response time (turnout + travel) in minutes	Performance Objective
Urban	>1000 people per square mile	15	9	90%
Suburban	500-1000 people per square mile	10	10	80%
Rural	<500 people per square mile	6	14	80%
Remote	Travel distance + or – 8 miles (12.9 km)	4	Dependent upon travel distance	90%
Special risks	To be determined by Fire Department	To be determined by Fire Department	To be determined by Fire Department	90%

Map #3, seen on page 47 of this document indicates the five (5) kilometer (for industrial) and eight (8) kilometer (for residential) travel zones as prescribed by Fire Underwriters as discussed in relation to travel areas of all three fire stations.

In conclusion, if the Georgina Fire Department is to continue meeting the FUS travel zone expectations and strive to meet the NFPA 1710 four (4) and eight (8) minute response standard, an evaluation of future fire station locations must be considered.

Therefore, based on future growth projections, the Town should consider building a new headquarters to the northeast of the current location and to build a smaller station to the south (as noted in the map below) where future commercial and industrial growth is anticipated. For now, the priority would be to focus on the construction of the south end fire station first, with the new northern location for the fire headquarters to follow.

Proposed locations for the two new Keswick fire stations:



Note: This map has been modified from its original version, which included stations 1-6 and 1-8 as noted in the legend.

The proposed location map identifies four (4) and eight (8) minute response capabilities from two projected stations in Keswick. Vulnerable occupancies and schools are also identified along with a plotting of call locations. To help support the reasoning for the recommended station locations.

When planning for future fire stations, the long term must be taken into consideration. A well- built fire station is a building that will last for 50 – 60 years, or longer. It is therefore critical to look at the long-term implications when designing and pinpointing the appropriate location for future stations.

The planning Department has advised that the south end of Keswick has planned growth of 6,000 new homes bringing 15,000 additional people into the area, plus additional commercial and industrial development. As the density and intensification of Keswick continues, including increased commercial and industrial properties, the fire service must plan ahead to be prepared for this south end growth.

As a final note, the incorporation of a 'safe haven' at each fire station will create a more effective utilization of these public buildings. And the associated cost is minimal compared with the cost of the overall renovations required by each fire station and/or the cost building a new fire station.

The safe haven concept is based on the concept that anyone, at any time can come to the front lobby of the fire station, lock themselves in a small vestibule area and pick up a phone that has a direct connection to the fire dispatch centre to summon help for the individual.

1.2 Sutton Fire Station 1-6 (37 Snooks Road)

Station 1-6, Sutton, was built in 1972 as a Volunteer fire station. With the changes to the fire service over the years, this station now serves as a composite station (both full-time and Volunteer Firefighters work out of the station) and has been renovated as best as possible to accommodate a full-time crew.
It is a three-bay fire station, with the training room now being used as both a crew dormitory for the full-time crew as well as for training.

1.2.1 Sutton Fire Station Current Considerations:

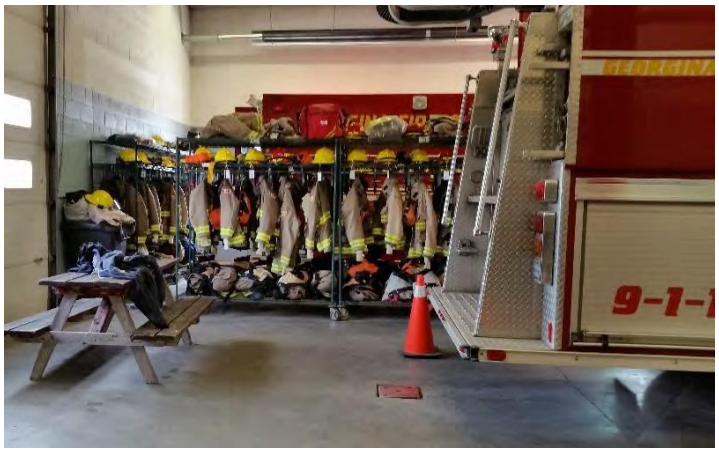
1.2.1.1 Building and Related Facility Concerns:

The current building has a number of limitations and challenges.

- The station's present set up fails to meet AODA requirement.
  - Bay doors do not have the safety stop pressure bar on the bottom, which would stop the door from continuing its downward movement if a person or vehicle is caught under the door.
  - This is a Health & Safety concern that should be addressed.
  - There are no proper showers for the Firefighters if needed, other than one decontamination-style shower that is to be used by any of the Firefighters.
  - Separate shower and related facilities should be installed for male and female Firefighters. Firefighters should have the ability to shower following calls to decontaminate from contaminates such as blood, smoke, and chemicals.

- The fire station does have an "at source" exhaust extractor system but it is very loud and may be in need of repairs. Servicing should be conducted on this piece of equipment to evaluate its status.
- The station is equipped with an "at source exhaust capture system", which helps to reduce contamination of Firefighters' gear due to vehicle exhaust. However, all of the Firefighters' bunker gear is stored on the apparatus floor, which still exposes the gear to exhaust and ultra violet light contaminates, eventually degrading the efficiency of the equipment and reducing life span. The storage of the bunker gear in this manner also exposes the general area to contaminants obtained from fire responses (and others).

- New station design incorporates a storage room that is properly ventilated whereby bunker gear is able to be laundered, dried, and returned to service which, at all times, limits the exposure of toxic fumes to the other areas of the fire station.



- Being that the Sutton station is the central station in the Town of Georgina, hands on training for firefighting activities are done here when required. Space at the back of the fire station is utilized for auto extrication training and other firefighting evolutions. This is not a fenced off area and could pose some liability with children and others in the area who may get injured due to sharp metals and glass.

(photo: minivan parked for extrication training)

Note: this is a shared parking lot with the community arena, recreational facility, apartment building, and the fire station.

- At the rear of the station is a training prop that is utilized for firefighting evolutions. It contains an opening that allows anyone access to the second level and could pose some liability issues with children and others in the area who may get injured if they gain access.

(photo: training structure behind the fire station)

- The station is equipped with a back-up generator should a power failure occur, which would also be a necessity for any new fire station.

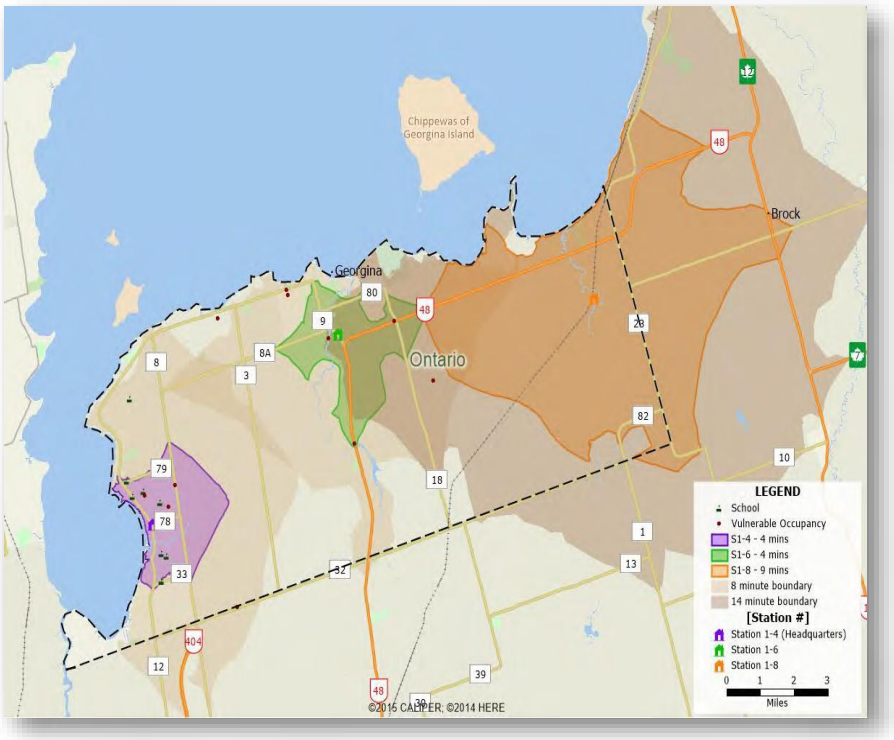
1.2.2 Sutton Fire Station Location Considerations:

Even though the station is located in the centre of the community, it is not well suited for quick response as the Volunteer Firefighters have to drive through the residential area (and side streets) to get to the fire station and must drive through the same areas to respond (from the fire station) to reach the major arterial roads. Due to the response challenges from the station, response times are greater than if the station was on a main street.

Relocating this station to an area such as Dalton Road and Black River would offer a quicker response to the greater Sutton area. It would also allow for a more efficient response times into the Keswick or Pefferlaw areas. Additionally, it would suit the proposed Highway 404 expansion located just under three (3) kilometers away.

Proposed Growth

Currently, proposed plans for subdivisions are in place, or are in the process, for increased residential growth in the Sutton area. In total, subdivisions that are planned for, will equate to an increase of 1,244 residential units.



In reviewing the NFPA 1710 Standard, four (4) minute response time mapping is being presented. It is noted that there are a number of subdivisions that would have a greater response time with the current Sutton fire station location.

These subdivisions are:

- Black River Road/Hedge Road with 320 residential units.
- Catering Road with 183 residential units. Only the westerly portion of this subdivision would be outside of the 4-minute response time.
- Dalton Road/Nasello Avenue 16 residential units

New developments within the current station location 4-minute response zone are:

- Baseline Road with 321 residential units
- High Street/Burke Street with 16 residential units
- Highway 48 with 194 residential units

The following map shows the current Sutton Station location (in green) with the four (4) minute and eight (8) minute response zones.

There are no commercial/industrial subdivisions planned for the Sutton area (in the immediate future). However, there are a number of residential subdivisions that are planned. Within this residential area there are a number of residents that will have a greater than four (4) minute response time but they all fall within the eight (8) kilometer zone of the current fire station location as prescribed by Fire Underwriters Survey. It is

important to note that there is a greater than eight (8) kilometer distance to the southern boundary of the Town of Georgina; it is just over 9 kilometers from the current fire station to the southern border, utilizing Highway 48. Any buildings off this straight road south may increase the response distance over 8 kilometers from the fire station. The most northerly point of this stations' response zone is within the Sibbald Point Provincial Park. This distance is approximately seven (7) kilometers. It is important to keep in mind that the Black River inhibits response times and distances due to the limited accessible road crossings.

Map #3 seen on page 47 of this document indicates the five (5) kilometer and eight (8) kilometer Fire Underwriters travel zones as previously discussed in relation to travel areas of all three fire stations.

In conclusion, relocating the Sutton fire station to the area of Dalton Road and Black River would offer a more efficient response location and also put the fire station in an area that is more accessible by the public. As noted with the Keswick fire station comments, the

incorporation of a 'safe haven' at each fire station creates a more effective utilization of these public buildings, and the associated cost is minimal compared with the cost of the overall renovations required by each fire station or the cost building a new fire station.

1.2.3 Pefferlaw Fire Station 1-8 – (270 Pefferlaw Road)

Current Building and Related Facilities:

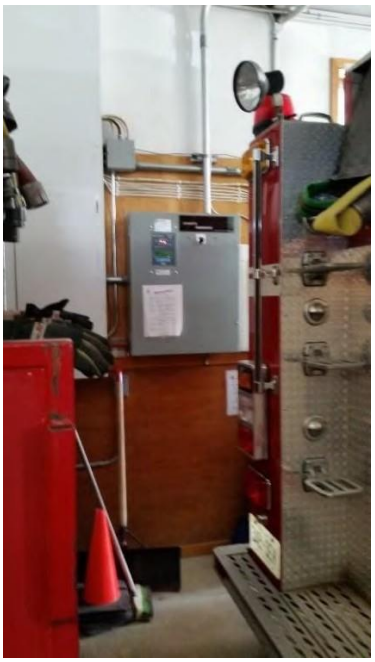
Station 1-8, Pefferlaw was built in 1960 as a Volunteer fire station and continues in the same capacity. The original building consists of a two-bay garage with a meeting / training room that was added at a later date at the rear of the structure. Due to its size and limited ability to accommodate the housing of newer (and larger) fire vehicles, along with its limited storage space available, this station has reached the end of its useful life – it can no longer accommodate any new growth relating to more staff, vehicles, or equipment. Overall, this station location appears to be well situated for responses to the community it serves today. The greater populace is within the 4-minute response time from the current station.

Pefferlaw Fire Station Current Considerations: Building Utilization

- The current building has a number of limitations and challenges.
- The station's present set up fails to meet AODA requirement.
- This is a two-bay station with no drive-through capability
- New station design includes drive-through bays to eliminate/decrease the safety hazard of reversing apparatus.
- When this station was designed and built, fire apparatus were not as large as they are today. Due to its original design, it is not able to house newer and larger fire apparatus.
- Currently space is very limited as stored apparatus do not allow for adequate walking and working space around each truck.

Firefighters have to obtain and put on their bunker gear in very close proximity to the trucks creating a potential Health & Safety issue.

Approximately 6 cm of clearance between tanker bumper and the fire station wall creating a significant crush hazard.



Unprotected electrical panels in the garage bay create a potential hazard when washing the fire apparatus.

- When reviewing the response requirements and water delivery for the rural area around Pefferlaw, larger tankers are more effective in providing for the need for rural areas without fire hydrants.
    - Being able to transport large volumes of water is very important to ensure water supply while fighting a fire. To provide for this need, it can be anticipated that new tanker trucks should be 2,500 to 3,000-gallons. This sized truck could not be housed in the Pefferlaw station, where they are needed most.
- Electrical panels in the garage bay are in close proximity to the vehicles which creates a Health & Safety issue for washing the apparatus inside the station.

- The station is not equipped with an “at source exhaust capture system”, which helps to reduce contamination of Firefighters’ gear due to vehicle exhaust. All of the Firefighters’ bunker gear is stored on the apparatus floor which exposes the gear to exhaust and ultra violet light contaminates resulting in the degrading of the efficiency of the equipment and reduced life span. The storage of the bunker gear in this manner exposes the general area to contaminants obtained from fire responses (and others).
    - New station design incorporates a storage room that is properly ventilated whereby bunker gear is able to be laundered, dried, and returned to service which, at all times, also limits the exposure of toxic fumes to the other areas of the fire station.

- There are no showers available.
    - Firefighters should have the ability to shower following calls to decontaminate from contaminates such as blood, smoke, and chemicals.
- The Town is not on municipal water, therefore there are no fire hydrants on the main street. This means that there is a reliance on water being delivered from tanker shuttles and/or long distance relay pumping from a water source.
- Bay doors do not have the safety stop pressure bar on the bottom which would stop the door from continuing its downward movement if a person or vehicle is caught under the door.
    - This is a Health & Safety concern that should be addressed.
- Some mould issues were present in the rear meeting room area, but do appear to have been remedied for the time being.
- Storage space is lacking and the use of current storage above the garage bays is limiting in terms of weight and size.
    - Lifting items in and out of the storage space while on a ladder is a potential Health & Safety issue.

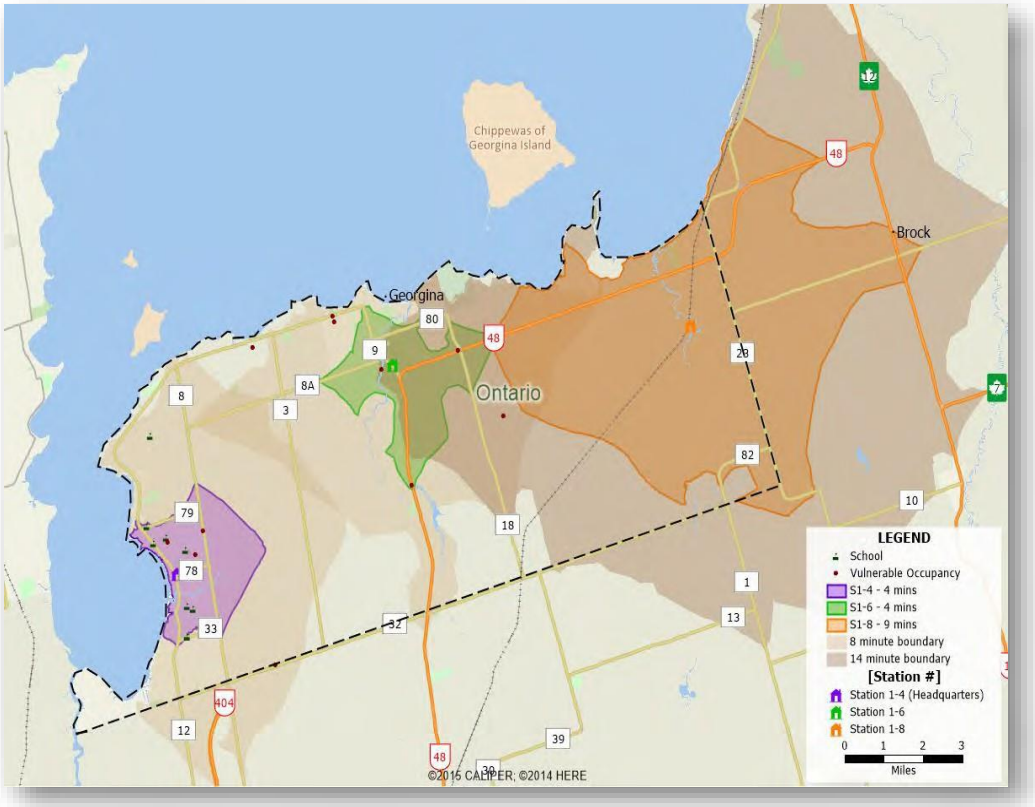
(photo: storage in the garage bay requires ladder access and is limited in storage space and weight limits)

- There is inadequate parking at the fire station.
    - Firefighters must park on the opposite side of the road creating potential risks crossing the road when responding to a fire.
- Although there is a 5,000-gallon cistern at the station, the pump on the cistern takes approximately 20 minutes to fill the 1,500-gallon tanker making it ineffective during a fire. Further, 5,000 gallons would be inadequate in a structure fire.

Pefferlaw Fire Station Location Considerations:

At present, there does not appear to be a need to move the station from its present location. However, consideration should be given to some immediate plans to increase the size of the building to meet the growing needs of the community and its Firefighters.

Again, the map below shows the current Pefferlaw fire station location (in orange) with the nine (9) and fourteen (14) minute response zones based on its Volunteer Firefighter response situation. Again, it needs to be noted that this area is also supported by responses from the full time Sutton fire station.



Map #3 seen on page 47 of this document indicates the five (5) kilometer and eight (8) kilometer Fire Underwriters travel zones as discussed in relation to travel areas of all three fire stations.

The following NFPA 1720 Standards chart outlines response expectations for the related demand zone populations.

NFPA 1720 Standards

Demand Zone	Demographics	Minimum # of Firefighters responding	Response time (turnout + travel) in minutes	Performance Objective
Urban	>1000 people per square mile	15	9	90%
Suburban	500-1000 people per square mile	10	10	80%
Rural	<500 people per square mile	6	14	80%
Remote	Travel distance + or – 8 miles (12.9 km)	4	Dependent upon travel distance	90%
Special risks	To be determined by Fire Department	To be determined by Fire Department	To be determined by Fire Department	90%

As previously noted in this document, additional considerations of fire station location are the distances recommended by the Fire Underwriters Survey. In order to achieve premium insurance ratings and thereby maximum savings for the building owner/tenant, commercial/industrial buildings must be within five (5) kilometers of the fire station.

Residential buildings would receive premium insurance ratings if they are within eight (8) kilometers of the fire station. Being at distances greater than those outlined above would subject the building owner/tenant to higher insurance costs.

There are some areas to the south that are outside of the eight (8) kilometer response distance according to the Fire Underwriters Survey. This includes a distance of 8.5 kilometers to the corner of Lake Ridge Road and Ravenshoe Road at the south eastern corner of the Town from the current Pefferlaw fire station location. Also, in the current developed area off Ravenshoe Road in Udora, there is a maximum distance of over twelve (12) kilometers to the corner of Narva Avenue and Linda Road.

In conclusion, the present location of the Pefferlaw fire station is well suited to meeting the general response needs of the community (with the exception of the two areas previously

noted). However, the actual station needs to be replaced if it going to continue to meet the future needs of the community. This replacement or major upgrade should be a priority and addressed within the short term.

As also noted in the other two fire station comments, the incorporation of a ‘safe haven’ at each fire station would create a more effective utilization of these public buildings, and the associated cost is minimal compared with the cost of the overall renovations required by each fire station or the cost building a new fire station.

2.0 Conclusion

As noted in this report, the fire stations for the most part have been well located and have served the community as best as possible. But with the growth of the community and its Fire Department, along with increase in staffing and equipment, the three fire stations have become less efficient in meeting the growing demands of the fire service.

There have been many recommendations made in this report that range from conducting much needed repairs to the construction and relocation of new fire stations within each of the three communities. These recommendations for new fire stations are made with a focus on the future needs of the Georgina Fire Department.

Council has the choice of spending more money on buildings that are showing their age and will need some major repairs to simply make them livable for the next 5 years or they can look at the long term, coupled with the anticipated growth projections and prepare for this growth by building the new facilities as funding allows.

Emergency Management and Training Inc. would like to recognize and thank all those involved in this fire station review for their assistance and input into this report.

Recommendations for Fire Stations:

Recommendations are noted in immediate, short, mid and long term. These timelines equate to the following:

- Immediate – needs to be addressed immediately due to Health & Safety issues
- Short Term – recommended that these be addressed within 1 – 3 years
- Mid Term – recommended that these be addressed within 4 – 6 years, and
- Long Term – recommended that these be addressed with 7 – 10 years.

Recommendations for Keswick Fire Station 1-4 Locations:

- To begin with, EMT is recommending to relocate the current Station 1-4, further north or northeast, for example, on Old Homestead Road east of The Queensway. This would provide enhanced coverage to the north of the community as well as reaching into the current core along the lake. If there is any extension of this recommendation timeline, renovations should be considered to move the fire prevention and administrative offices into the front (car showroom) portion of the building, moving the firefighter dormitory to the current fire prevention offices located on the ground floor. This would provide a more direct and shorter route for Firefighters to respond to alarms, as well as private offices for fire prevention and potentially additional administrative space. A link between the front and rear portions of the building would be required.

- EMT would also recommend that an additional station in the south of Keswick be considered shortly prior to the new Headquarters being built (or even simultaneously dependent of available funds). With the fairly rapid growth in the community along with the existing call locations, this new additional fire station is warranted. It has been identified that the Town is planning a community centre in the area of Woodbine Avenue and Glenwood Avenue. This location, as plotted above (in Map #4, also seen on page 48), provides an enhanced four (4) minute response time to the south end of Keswick.

These two stations would provide exceptional coverage to the Keswick community as well as providing enhanced response to an extended area.

In developing future plans for the stations, it is important to allocate adequate space for the many functions within the fire service including: adequate dormitories for future firefighter expansion, administration, fire prevention, training, and emergency management (including an Emergency Operations Centre).

Recommendation for Sutton Fire Station 1-6 Location:

Replace or renovate Station 1-6, Sutton. As with any recommendations, Council does have choices. In the case of Station 1-6, Sutton, Council could choose to renovate or replace the building. Relocating this station to an area such as Dalton Road and Black River would offer a quicker response to the Greater Sutton Area and also for a more efficient response time when backing up (response support to) the Keswick or Pefferlaw stations.

In addition, it would suit the proposed Highway 404 expansion being just under three (3) kilometers away.

Recommendation for Pefferlaw Fire Station 1-8 Location:

Replace Station 1-8, Pefferlaw. Station 1-8 is in a good location for response to the community, however, it is the size and available space with the present station that is a concern.

Although the current location is appropriate, the lot appears to be too small to accommodate an appropriately sized station including the accommodating parking and other needs of the Firefighters. We were advised that the vacant building beside the fire station is owned by the town and the combining of the lots should provide appropriate space.

General Recommendations with Timelines for All Fire Stations:

Immediate Repairs Required:

- Ensure that all fire stations are designed/renovated to meet AODA requirements.
- Remove the mezzanine in the apparatus bay in Station 1-4, Keswick.
- Have the vehicle exhaust system installed in the rear of Station 1-4, Keswick.
- Electrical panels on the apparatus floor should be protected from the potential of water spray at all

three of the stations.

- Have the vehicle exhaust system evaluated / repaired at Station 1-6, Sutton.
- Upgrade or install proper male and female showers at Station 1-6, Sutton.
- Install fencing around the training tower at Station 1-6, Sutton.
- Remove any items being stored in the overhead storage (apparatus bay) in Station 1-8, Pefferlaw.
- Ensure safety features are adequate for apparatus bay doors.

Short term (1-3 years)

- Conduct an engineering review of all fire stations for an in-depth structural assessment, repairs / upgrades required, and estimate the cost of the work to address the issues. Our assessments are from a visual perspective only and although we can identify operational and space issues, we have not performed a structural review of the buildings.

Mid Term (4-6 years)

- The fire service currently does not have an appropriate fire training centre. EMT would recommend that one of the locations include a firefighter training centre including a training tower, live burn building, space for auto extrication, and a classroom.

3.0 Chart of Recommendations, Solutions and Estimated Costs

The following chart provides a further overview of the recommendations found throughout this report along with any estimated costs that can be incurred in the associated areas.

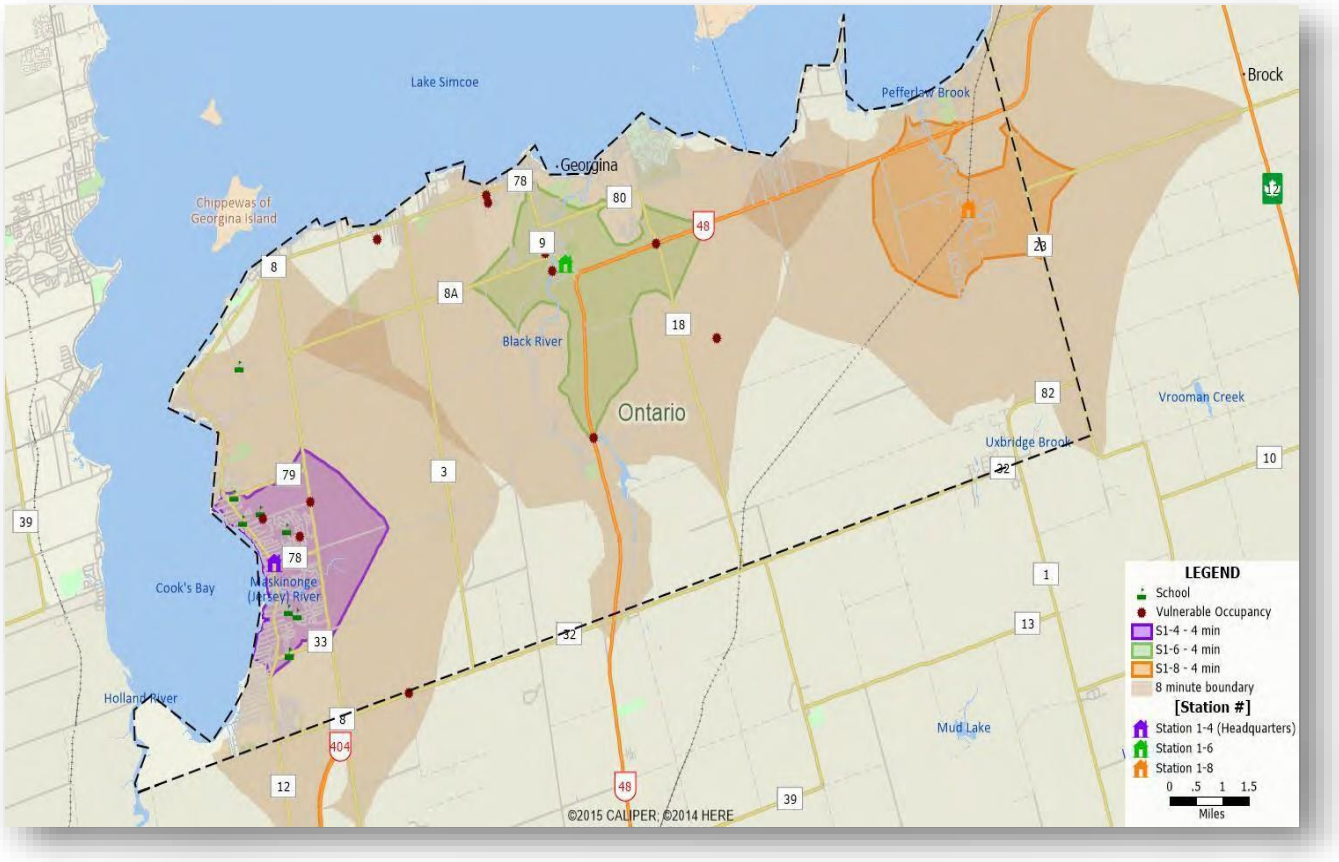
Recommendations for Georgina Fire Department			
Rec #	Recommended Solution	Estimated Costs	Suggested Time Line
	See notes for each station as many items were identified as requiring repairs – only the immediate and key recommendations have been identified in this chart.	**Estimated costs for all visual repairs identified would exceed $500,000**	---------
1.	Remove the mezzanine in the apparatus bay in Station 1-4, Keswick.	Approximate cost for removal - $1,000	Immediate
2.	Remove any items being stored in the overhead storage (apparatus bay) in Station 1-8, Pefferlaw.	No cost for removal, but new storage area needs to be built	Immediate
3.	Electrical panels on the apparatus floor should be protected from the potential of water spray at all three of the stations.	Proper water proof covers for these panels to be installed - $1,000	Immediate
4.	Have the vehicle exhaust system evaluated / repaired at Station 1-6, Sutton.	Costing unknown based on amount of repairs required	Immediate
5.	Upgrade or install proper male and female showers at Station 1-4, Keswick; 1-6, Sutton and 1-8 Pefferlaw.	Estimated costs of approx. $10,000 per washroom	Immediate
6.	Install fencing around the training tower at Station 1-6, Sutton.	Costing would depend on type of fencing installed	Immediate
7.	Ensure safety features are adequate for apparatus bay doors.	Costing unknown based on amount of repairs and parts required	Immediate
8.	Conduct an engineering review of all fire stations for an in-depth structural assessment, repairs / upgrades required, and estimate the cost of the work to address the issues. EMT's assessments are from a visual perspective only; no engineering review was performed on the buildings.	Engineering review estimated at approx. $5,000 - $7,000.	Short Term (1-3 years)
9.	Replace Station 1-8, Pefferlaw. Station 1-8 is in a good location for response to the community, however, it is the size and available space with the present station that is a concern.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Immediate (0–1 year)

10.	Construct a new fire station to the northeast of the current Station 1-4, Keswick, to provide a larger response coverage area. This station will be the new Fire Headquarters. The station should be designed so that it has the capacity to accommodate, in the future, two full-time crews along with a Volunteer force, plus a spare apparatus (or be designed to be easily expanded).	Construction costs estimate $390 - per square foot. (e.g. 20,000sq ft. building = $7,800,000)	Long Term (7-10 years)
11.	Consider an additional station in the south of Keswick shortly after the new Headquarters is built or even simultaneously. With the fairly rapid growth in the community along with the existing call locations, this new additional fire station is warranted. It has been identified that the Town has property and is planning a community centre in the area of Woodbine Avenue and Glenwood Avenue. This location, as plotted above (in Map #4), provides an enhanced four (4) minute response time to the south end of Keswick.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Short Term (1-3 years)
12.	The fire service currently does not have an appropriate fire training centre. EMT would recommend that one of the locations include a firefighter training centre including a training tower, live burn building, space for auto extrication, and a classroom.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Mid Term (4-6 years)
13.	Replace or renovate Station 1-6, Sutton. Relocating this station to an area such as Dalton Road and Black River would offer a quicker response to the Greater Sutton Area and also for a more efficient response time when backing up (response support to) the Keswick or Pefferlaw stations.	Construction costs estimate $390 per square foot. (e.g. 10,000sq ft. building = $3,900,000)	Mid Term (4-6 years)
14.	During all noted replacements or renovations to the fire stations, any related AODA requirements must be incorporated.	As Required	As Required

5.0 Appendix "A" – Maps of Georgina and the Fire Station Locations

Map 1:

Map #1, identifies the current station locations with a four (4) and eight (8) minute travel time from each station based on normal road conditions – **If all stations were staffed by full time Firefighters. However, Pefferlaw is still a fully Volunteer fire station and that is why a nine (9) and fourteen (14) minute response zone was utilized for the maps within the report**.



The Firefighters at the Keswick and Sutton stations would normally be out of the station within 60 seconds for a medical call and 80 seconds for a fire call providing an on-scene time in these noted areas under six (6) and ten (10) minutes respectively. The Pefferlaw Station, being fully Volunteer, would have a turnout time (time from alarm to being on the road) of four (4)

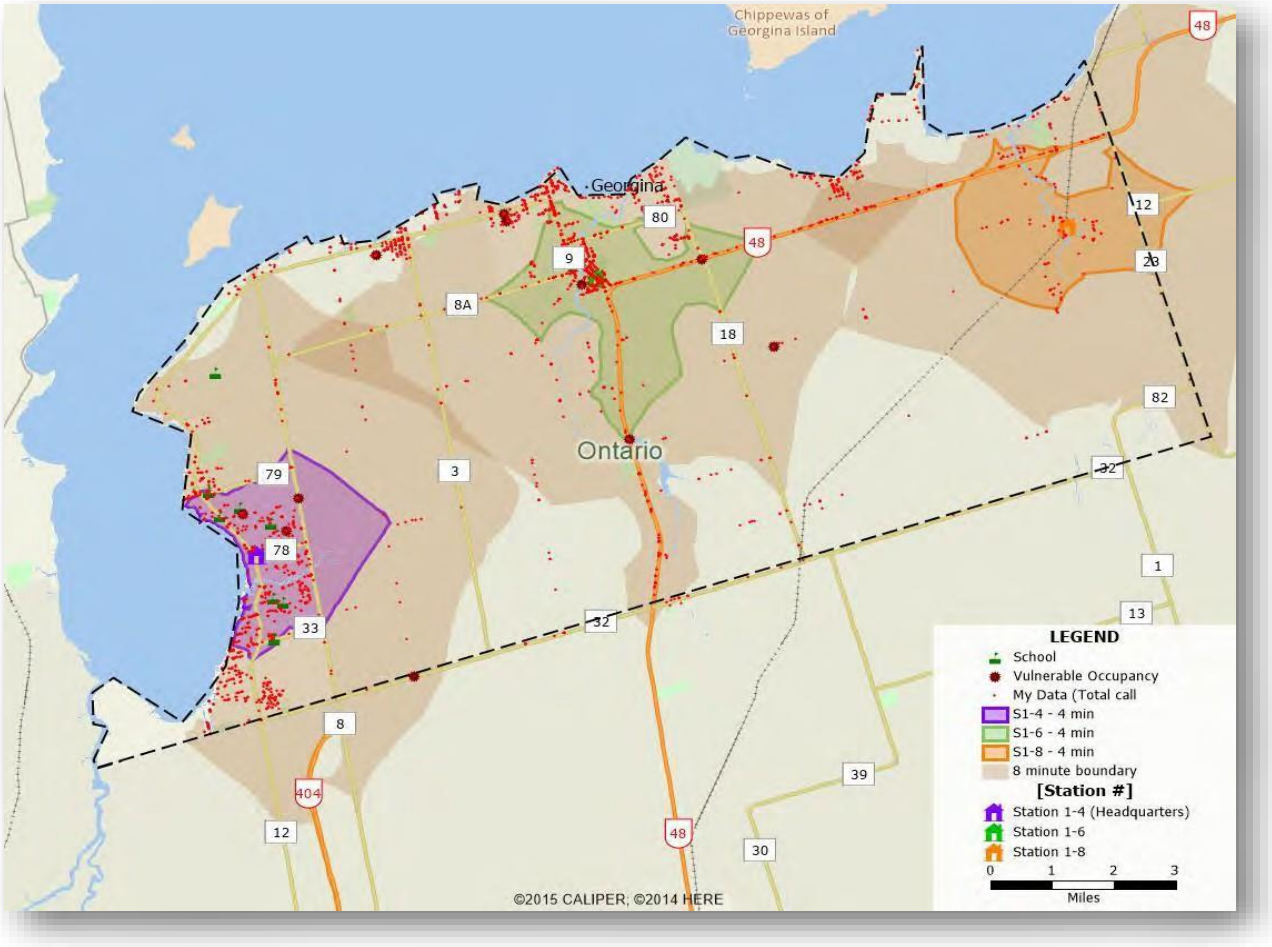
minutes (or longer), giving a response time to the indicated response area of eight (8) and twelve (12) minutes.

The map also indicates the locations of schools and vulnerable occupancies (Long Term Care, retirement

residences, group homes). These are considered high risk occupancies and as such, identifying where they are in respect to the responding fire station is a key component of assessing fire station locations.

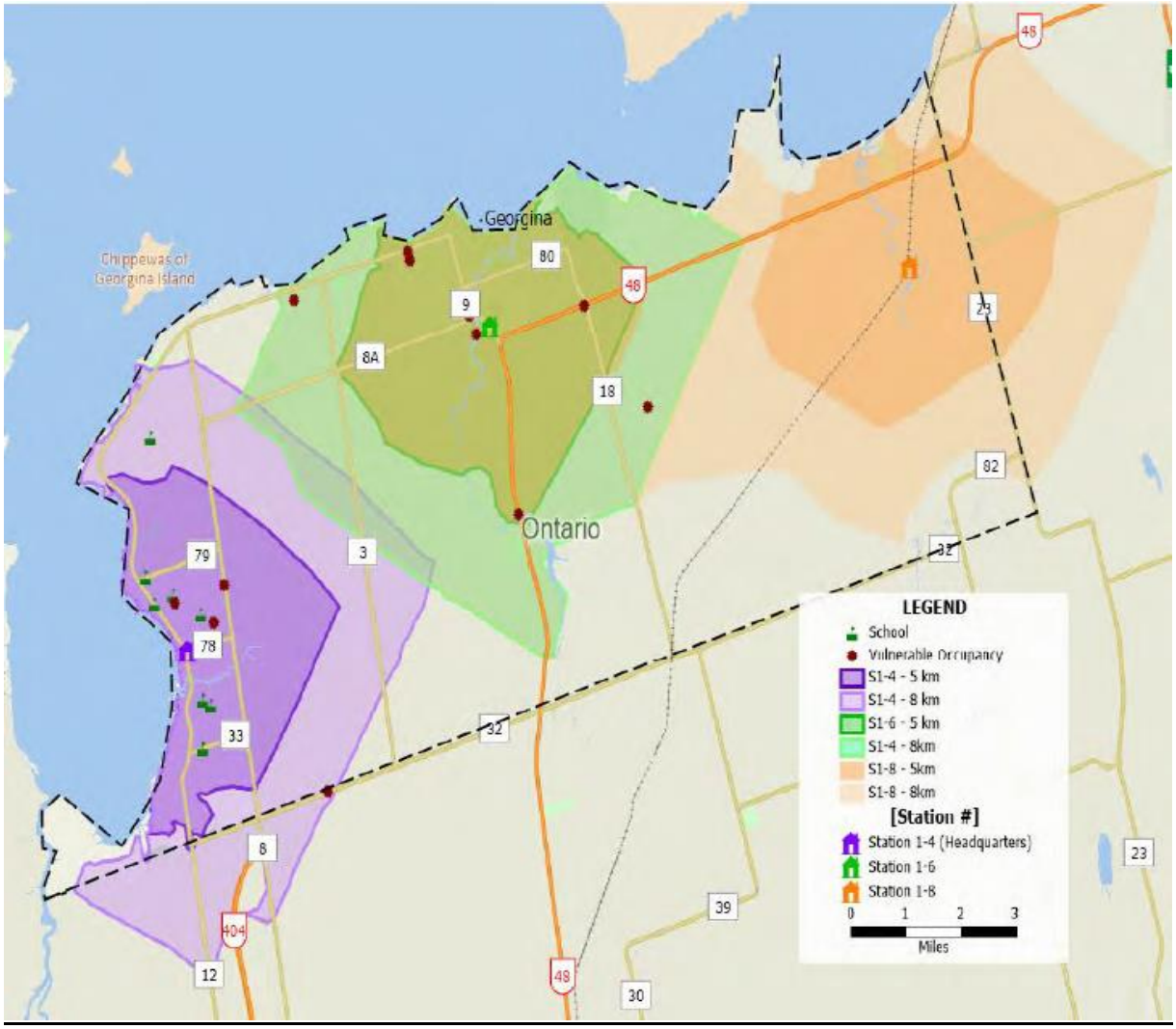
Map 2:

Map #2, plots the location of the fire calls along with the normal fire response times. The maps show a growing number of calls in the north and south end of Keswick that are outside of the four (4) minute response zone. With planned residential, commercial, and industrial development in the south end, the demand for fire responses will continue to grow in this area. The map also identifies that there is a larger density of calls along the waterfront area in the Sutton region.



Map 3:

Map #3 indicates the five (5) kilometer and eight (8) kilometer Fire Underwriters travel zones as discussed in relation to travel areas of all three fire stations.



Map 4:

Map #4 indicates the recommended locations for the two Keswick fire stations in order to meet the growth of the community and in keeping with meeting the recommended NFPA 1710 Standard.